Bill No. 166
2026

By-law No. C.P.-____-___

A by-law to adopt the Kelly Stanton Environmentally Significant Area Conservation Master Plan Phase I.

WHEREAS the Official Plan, The London Plan, for the City of London Planning Area – 2016 includes policies for conservation master plans for environmentally significant areas and other natural heritage areas;

AND WHEREAS the Kelly Stanton Environmentally Significant Area Conservation Master Plan Phase I is a conservation master plan pursuant to policy 1421 of the Official Plan, The London Plan, for the City of London Planning Area – 2016;

NOW THEREFORE the Municipal Council of The Corporation of the City of London enacts as follows:

1. The Kelly Stanton Environmentally Significant Area Conservation Master Plan Phase I, as attached hereto and forming part of this by-law, is adopted.

PASSED in Open Council on April 28, 2026, subject to the provisions of PART VI.1 of the *Municipal Act*, 2001.

Josh Morgan
Mayor

Michael Schulthess
City Clerk

First Reading – April 28, 2026
Second Reading – April 28, 2026
Third Reading – April 28, 2026

Kelly Stanton

Environmentally Significant Area

Conservation Master Plan Phase I

Draft

London
CANADA

Conservation Master Plan History

The history of versions of the Conservation Master Plan (CMP) are provided in **Table 1**.

Table 1. Conservation Master Plan History

Version	Date	Author	Reviewed By	Description of Revision(s)
Restoration Plan	December 11, 2020	William Van Hemessen	Linda McDougall	Preliminary report to inform CMP.
CMP 1.0	November 21, 2023	Pauline Catling	Kiana Lee	First draft of CMP
CMP 2.0	December 1, 2025	Pauline Catling	Kiana Lee	Second draft of CMP

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Statement of Limitations

This Conservation Master Plan (CMP) has been prepared for the purpose of guiding conservation, restoration, and management activities within the project area. The information, analyses, and recommendations presented are based on the best available data, professional judgment, and site assessments conducted at the time of study. While every effort has been made to ensure accuracy and completeness, the following limitations apply:

- Temporal Limitations: Natural systems are dynamic and subject to change over time. The conditions described in this plan reflect observations made during the assessment period and may not capture seasonal, annual, or longer-term ecological variability.
- Data Limitations: Certain information used in developing this plan was obtained from secondary sources or existing databases. These sources may contain inaccuracies or gaps that were beyond the control of the authors.
- Scope of Work: Field investigations and analyses were limited to the scope deemed necessary to develop a CMP. Detailed surveys (e.g., for rare species, hydrology, or soils) have not been undertaken, and further specialized studies may be beneficial or necessary in future to update or supplement the data collected.
- Future Conditions: The plan does not account for unforeseen natural events (e.g., extreme weather, fire, pest outbreaks) or future land use changes beyond those reasonably anticipated at the time of writing.
- Implementation: Recommendations are provided as guidance to support conservation decision-making. Actual implementation will depend on available resources, permitting requirements, stakeholder collaboration and adaptive management as new information emerges.

This plan should be considered a living document. It is intended to inform and support conservation efforts but should not be interpreted as an absolute prediction of future conditions or outcomes. Periodic review and updates are recommended to ensure ongoing relevance and effectiveness.

Acknowledgements

We acknowledge that the City of London is situated on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron. We acknowledge all

the treaties that are specific to this area: the Two Row Wampum Belt Treaty of the Haudenosaunee Confederacy/Silver Covenant Chain; the Beaver Hunting Grounds of the Haudenosaunee NANFAN Treaty of 1701; the McKee Treaty of 1790, the London Township Treaty of 1796, the Huron Tract Treaty of 1827, with the Anishinaabeg, and the Dish with One Spoon Covenant Wampum of the Anishnaabek and Haudenosaunee.

This land continues to be home to diverse Indigenous people (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors to society. We hold all that is in the natural world in our highest esteem and give honor to the wonderment of all things within Creation. We bring our minds together as one to share good words, thoughts, feelings and sincerely send them out to each other and to all parts of creation. We are grateful for the natural gifts in our world, and we encourage everyone to be faithful to the natural laws of Creation.

The three Indigenous Nations that are neighbors to London are the Chippewas of the Thames First Nation; Oneida Nation of the Thames; and the Munsee-Delaware Nation who all continue to live as sovereign Nations with individual and unique languages, cultures and customs.

This Land Acknowledgement is a first step towards reconciliation. Awareness means nothing without action. It is important that everyone takes the necessary steps towards decolonizing practices. We encourage everyone to be informed about the traditional lands, Treaties, history and cultures of the Indigenous people local to their region.

The report authors acknowledge the previous work by Stephanson (1989) and Bowles et al. (1994), which provide the initial life science inventory of Kelly Stanton.

The report authors acknowledge and thank all contributors to citizen science programs that were utilized for the preparation of these documents. Fieldwork for the Ecological Restoration Plan (ERP), which formed the basis for the CMP, was conducted by local volunteer naturalists as well.

City of London

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Kiana Lee- Ecologist Planner, Community Planning, Planning and Economic Development

Consultant Team (North-South Environmental Inc.)

Pauline Catling – Project Manager (CMP), Report Author (CMP), Report Contributor (ERP), Field Work (ERP)

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Special thanks to Quinten Wiegersma for his contributions to fieldwork during the development of the Ecological Restoration Plan (NSE 2020).

List of Abbreviations

Table 2. List of Abbreviations

Acronym	Full Definition
AODA	Accessibility for Ontarians with Disabilities Act
B	Breeding (provincial conservation status)
BMPs	Best Management Practices
C	Common (regional conservation status)
CMP	Conservation Master Plan
CUM1	Mineral Cultural Meadow (Ecological Land Classification code)
CUS1	Mineral Cultural Savannah (ELC code)
CUT1	Mineral Cultural Thicket (ELC code)
ELC	Ecological Land Classification
EMG	Environmental Management Guidelines
END	Endangered (Species at Risk status)
ERP	Ecological Restoration Plan
ESA	Environmentally Significant Area
ESA	Endangered Species Act
FNA	Flora of North America
FOD7	Fresh-Moist Lowland Deciduous Forest (ELC code)
FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest (ELC code)
FOD7-5	Fresh-Moist Black Maple Lowland Deciduous Forest (ELC code)
FOD8-1	Fresh-Moist Poplar Deciduous Forest (ELC code)
H	Historic (regional conservation status)
hyb	Hybrid species (regional conservation status)
I	Exotic species (regional conservation status)
LIO	Land Information Ontario
LIPMS	London Invasive Plant Management Strategy
LP	The London Plan (City of London, 2018)
MAM2-2	Reed Canary Grass Mineral Meadow Marsh (ELC code)
MAM2-10	Forb Mineral Meadow Marsh (ELC code)
MAS2-8	Rice Cutgrass Mineral Shallow Marsh (ELC code)
MIDD	Middlesex County
MMP	Marsh Monitoring Program
MNRF	Ontario Ministry of Natural Resources and Forestry

Acronym	Full Definition
N	Nesting (provincial conservation status)
NAR	Not At Risk (provincial conservation status)
NHIC	Natural Heritage Information Centre
NSE	North-South Environmental
OBBA	Atlas of the Breeding Birds of Ontario
OIPC	Ontario Invasive Plant Council
RO	Restoration Overlay
ROW	Right of Way
R	Regionally Rare (regional conservation status)
S1	Extremely rare
S2	Very rare (provincial conservation status)
S3	Rare to uncommon (provincial conservation status)
S4	Common and apparently secure (provincial conservation status)
S5	Very common and demonstrably secure (provincial conservation status)
SARA	Species at Risk Act
SAR	Species at Risk
SC	Special Concern (Species at Risk status)
SE	Exotic (provincial conservation status)
SH	Historic (provincial conservation status)
SNR	Species not ranked (provincial conservation status)
SOCC	Species of Conservation Concern
SWH	Significant Wildlife Habitat
SWD4	Mineral Deciduous Swamp (ELC code)
SWD4-1	Willow Mineral Deciduous Swamp (ELC code)
SWT2	Mineral Thicket Swamp (ELC code)
SWT2-2	Willow Mineral Thicket Swamp (ELC code)
SWT2-5	Red-osier Dogwood Mineral Thicket Swamp (ELC code)
SX	Extirpated (provincial conservation status)
THR	Threatened (Species at Risk status)
TPS2	Fresh-Moist Tallgrass Savannah (ELC code)
TPO2-1	Fresh-Moist Tallgrass Prairie (ELC code)
U	Uncommon (regional conservation status)
UTRCA	Upper Thames River Conservation Authority
X	No status / data deficient (regional conservation status)

1. Introduction

The City of London is undertaking natural heritage planning studies to develop Conservation Master Plans (CMPs) for several of its Environmentally Significant Areas (ESAs). These plans are used to guide management of the ESAs, which are considered the most significant and largest areas of the City's Natural Heritage System (NHS). CMPs within the City of London are undertaken in two phases. The purpose of Phase I is to inventory and evaluate the natural heritage features and functions and identify potential management issues. Phase II builds on Phase I and provides a more detailed and comprehensive management plan for the ESA. A key component of the overall CMP process is public and stakeholder engagement.

This report constitutes Phase I-Life Sciences Inventory and evaluation for Kelly Stanton Environmentally Significant Area (ESA) North and Kelly Stanton ESA South, henceforth known as Kelly Stanton ESA.

Kelly Stanton ESA is part of a larger area of ESA and potential ESA lands identified on Map 5 of *The London Plan*, east of Kains Woods ESA and the Thames River Significant Valleylands (City of London, 2018).

1.1. Environmentally Significant Areas (ESAs)

The southern portion of Kelly Stanton ESA is part of a larger, regionally significant life science Area of Natural and Scientific Interest (ANSI). The Kains Road River Valley ANSI is identified on Map 5 of *The London Plan* (City of London, 2018) and is addressed in the following *The London Plan* policies:

> "1356: Areas of natural and scientific interest (ANSIs) represent high-quality and unique life science and earth science features across a variety of landscapes throughout the province. Life science areas of natural and scientific interest are significant representative segments of Ontario's biodiversity and natural landscapes including specific types of forests, valleys, prairies and wetlands, their native plants and animals, and their supporting environments. Earth science areas of natural and scientific interest include the best representative of bedrock, fossils and glacial landforms."
>
> "1357: There are two provincially significant life science ANSIs in London: Warbler Woods or the Byron Woods, and Komoka Provincial Park. The Komoka Provincial Park ANSI exhibits part of a Lake Maumee II bluff, which is a provincially significant earth

science ANSI. Kilworth Lake Maumee provincially significant earth science ANSI also represents a Lake Maumee shoreline and bluff. There are several regionally significant life science ANSIs located within Environmentally Significant Areas. These include Sifton Bog, Westminster Ponds, and Kains Road River Valley. These areas are included within recognized Environmentally Significant Areas as identified on Map 5."

Policies 1367 and 1368 of *The London Plan* (City of London, 2018) define ESAs as:

"1367: Environmentally Significant Areas (ESAs) are large areas that contain natural features and perform ecological functions that warrant their retention in a natural state. [ESAs] are large features of the Natural Heritage System (NHS), often represented by a complex of wetlands, woodlands, significant wildlife habitat or valleylands. Wetlands, areas of natural and scientific interest and species at risk will be identified and evaluated in accordance with provincial requirements. While [ESAs] are protected by their inclusion in the Green Space Place Type, additional measures to provide for their protection, management and utilization are considered necessary and may include the preparation of conservation master plans. [ESAs] are delineated through the application of the City Council approved Guideline Documents for Environmentally Significant Areas Identification, Evaluation, and Boundary Delineation and through the application of provincial guidelines."

"1368: [ESAs] that have been identified by City Council as being of city-wide, regional, or provincial significance are included in the Green Space Place Type on Map 1 and are identified on Map 5 [of *The London Plan*]. New [ESAs] may be identified by Council and added to Map 5 by amendment to this Plan and in conformity with the criteria set out in the [ESA] policies of this Plan. Areas that have the potential to meet the criteria for an [ESA] but have not been thoroughly studied are identified as potential [ESAs] on Map 5 and are included in the Environmental Review Place Type on Map 1. Further study of these areas following City policies and guidelines is required through any planning and development application process. [ESAs] recognized by Council are identified as [ESAs] on Map 5 and included in the Green Space Place Type on Map 1."

Environmentally Significant Areas are recognized and designated as fully protected natural areas that contain natural features and perform ecological functions that warrant their protection in a natural state. In the hierarchy of the NHS, ESAs are considered the largest, highest quality areas within the City. They represent areas that may have unusual geological processes, contribute important hydrological functions related to wetlands and watercourses,

contain high quality vegetation communities, support rare and uncommon vegetation communities and species, including Species at Risk, are of sufficiently large size to support critical wildlife habitat and linkage functions, and represent important areas of biodiversity. Protection of important ecological areas, including the physical and ecological features and functions that sustain these areas, is therefore the primary management goal for ESAs.

1.2. ESA Designation Criteria

The Kelly Stanton ESA meets all seven of the ESA criteria in *The London Plan* (City of London, 2018). An evaluation based on each criterion is represented below in **Table 3**. The priority for this ESA is to protect its ecological integrity and maintain all seven of these criteria.

Table 3. ESA Designation criteria for Kelly Stanton.

ESA Criterion	Evaluation
Criterion 1: The area contains unusual landforms and/or rare to uncommon natural communities within the country, province or London subwatershed region.	• Kelly Stanton ESA is part of a regionally significant life science Area of Natural and Scientific Interest (ANSI) known as Kains Road River Valley.
Criterion 2: The area contains high-quality natural landform-vegetation communities that are representative of typical pre-settlement conditions of the dominant physiographic units within the London subwatershed region, and/or that have been classified as distinctive in the Province of Ontario	• Contains Rare Vegetation Community (TPO2-1, Fresh-Moist Tallgrass Prairie). • Existing vegetation reflects historical (pre-European) tallgrass prairie, savannah, and oak woodland with deciduous forest communities.
Criterion 3: The area, due to its large size, generally more than 40 hectares, provides habitat for species intolerant of disturbance or for species that require extensive blocks of suitable habitat.	• With its current boundaries, Kelly Stanton ESA is 8.4 ha in size; however, associated ESA and potential ESA communities could result in an expanded boundary of up to 18.6 ha in the future. The current study area represents what remains of natural heritage features in this area of the city, since urbanization has occupied most of the area not within the two creek valleys. As such, it is an important area for wildlife habitat and movement corridor within an otherwise urban landscape.

ESA Criterion	Evaluation
Criterion 4: The area, due to its hydrologic characteristics, contributes significantly to the healthy maintenance (quality or quantity) of a natural system beyond its boundaries.	• Significant Groundwater Recharge Area identified, containing 2 groundwater seepage areas. • 4.52 ha of wetlands or potential wetlands are identified on Map 5 of *The London Plan*.
Criterion 5: The area has a high biodiversity of biological communities and/or associated plant and animal species within the context of the London subwatershed region.	• 12 Ecological Land Classification (ELC) Vegetation Types, 7 ELC Community Series. • Rare Vegetation Community (TPO2-1). • 8 herpetofauna species. • 84 bird species.
Criterion 6: The area serves an important wildlife habitat or linkage function.	• Candidate Seasonal Concentration Areas of Animals (Raptor Overwintering Area and Bat Maternity Colony). • Candidate Specialized Habitat for Wildlife. • Habitat for Species of Conservation Concern (SOCC).
Criterion 7: The area provides significant habitat for rare, threatened or endangered indigenous species of plants or animals that are rare within the country, province or county.	• 2 provincially rare and 15 regionally rare plant species are present. • 4 bird Species at Risk (SAR) and 4 bird SOCC. • Special Concern Eastern Milksnake is present. • Special Concern Monarch butterfly is present. • Significant Wildlife Habitat for Terrestrial Crayfish, Woodland and Wetland Amphibian Breeding, Marsh Bird Breeding, and Shrub/Early Successional Bird Breeding.

1.3. Vision for the CMP

The CMP is part of a municipal planning process that provides a framework for the assessment of ESAs within the City and develops guidelines for the protection, management and potential expansion of ESA boundaries. Building on existing ESA information, a CMP addresses natural features and their significance or sensitivity, public access and use, and identification of degraded or disturbed areas that present opportunities for restoration and rehabilitation. The City can utilize this process to identify lands that may be acquired within or adjacent to the existing ESA to improve resiliency, diversity and connectivity between natural features within

the greater landscape. Resources to assist with the management and restoration initiatives in ESAs include the expertise of staff from the Upper Thames River Conservation Authority (UTRCA).

1.3.1. Goal

The primary goal of a CMP is to develop a long-term approach for the management of the ESA, including ecological stability and protection, through the implementation of an environmental management strategy.

1.3.2. Guiding Principles

The following policies from Section 2.1 of Guidelines for Management Zones & Trails in Environmentally Significant Areas (City of London, 2016) will lead the decision-making process regarding the future of Kelly Stanton ESA:

- Identified natural features and ecological functions of the ESA shall be protected.
- The ecological integrity and ecosystem health of the ESA shall have priority in any use or design-related decision.
- A properly designed and implemented trail system appropriate to specific management zones and reflecting sensitivity of the natural features will be implemented to achieve the primary objective of protection and the secondary objective of providing suitable recreational and educational opportunities.
- The community will be engaged in appropriate natural areas protection and the trail planning process to build awareness, foster education, and encourage participation to increase the capacity for creating a conservation culture that promotes natural areas as a common good and conservation as a collective responsibility.
- Enjoyable, safe, accessible trails for recreation appropriate in an ESA and learning environment will be permitted in accordance with any/all recognized accessibility legislation (such as the *Accessibility for Ontarians with Disabilities Act*, 2014 [AODA]), best practices and the above principles.

1.3.3. Objectives

The objectives of the Phase CMP I are to inventory the flora and fauna of the ESA, evaluate the significance of the flora and fauna and the ecological communities they form, identify the vegetated boundary of the ESA, and identify management zones as well as management threats, including a review of trails.

1.4. CMP Planning Process

A combination of background document and mapping review pertaining to Kelly Stanton ESA and field inventory completed by North-South Environmental Inc (NSE) ecologists was used to establish a current baseline for natural heritage and identify priorities for management.

2. Life Science Inventory Methods

Completing a Life Sciences Inventory is the first step in the development of a CMP. The resulting data and its analysis provides the framework for assessing the current status of the natural features and for the evaluation of the ESA.

The Life Science Inventory preparation process included a review of background materials pertaining to Kelly Stanton ESA and field investigations to document existing natural heritage features.

2.1. Background Data Review

The field investigations and background review conducted for the Ecological Restoration Plan (ERP) for Kelly Stanton ESA prepared by NSE (2020) form the basis of the data used in the Life Science Inventory of this CMP. Similar to a CMP, an ERP functions as a tool to guide the management and restoration of an ESA and has a particular focus on invasive species management. The existing natural heritage features documented in the ERP have been used as the baseline for the Phase I CMP for Kelly Stanton ESA and the scope of the proposed restoration efforts has been expanded beyond invasive species management.

Previous studies that examined all, or part of Kelly Stanton ESA, included the Preliminary Life Science Inventory of Kains Road Forest (Stephenson, 1989), which included the south block of Kelly Stanton. Hilts and Cook (1982) mentioned the area in their description of the Kains Road Forest but provided few details. In 1995, what is now Kelly Stanton ESA was recommended as a Candidate ESA in Subwatershed Studies for Medway, Stanton and Mud Creeks (City of London, 1995).

A variety of sources were consulted to identify species and natural heritage features in Kelly Stanton ESA, including:

- Preliminary Life Science Inventory of Kains Road Forest (Stephenson, 1989);
- City of London Subwatershed Studies Life Science Inventories (Bowles et al., 1994);
- Group 1 Subwatershed Studies for Medway, Stanton and Mud Creeks (City of London, 1995);
- 2017 Watershed Report Card for Riverbend (UTRCA, 2017);
- species lists and habitat descriptions from the Environmental Impact Study (EIS) for 1176, 1200 and 1230 Hyde Park Road (Stantec, 2018);
- historical imagery of the ESA dating back to 1954;
- geospatial data from the City of London, UTRCA and Land Information Ontario (LIO);

- Natural Heritage Information Centre's (NHIC's) Natural Heritage Areas mapping application; and
- citizen science applications, namely iNaturalist and eBird.

iNaturalist and eBird were vital data collection tools for this inventory. A collection project for Kelly Stanton ESA was created on iNaturalist in February of 2020, which has collected records of over 200 species in the ESA as of August, 2020. Kelly Stanton is also a birdwatching hotspot on eBird and over 40 checklists containing a total of 93 bird species have been submitted for the ESA as of August, 2020. Both iNaturalist and eBird provided high quality data vetted by local and global taxonomic experts.

2.2. Field Methods

Field investigation data is a critical component of the CMP preparation process. Field investigations were conducted by NSE ecologists along with other naturalists between 2017 and 2020, and consisted of:

- high-level classification of vegetation communities using the Ecological Land Classification (ELC) system for southern Ontario (Lee et al., 1998);
- a three-season (spring, summer and fall) inventory of plant species;
- mapping the locations and densities of invasive species;
- Breeding Bird Surveys (Ontario Bird Breeding Atlas, OBBA, protocol);
- documentation of other wildlife observed incidentally within the ESA; and
- a review of significant wildlife habitat (SWH) in the ESA using the SWH Criteria Schedules for Ecoregion 7E (MNRF, 2015).

For the purposes of vegetation community classification (i.e., ELC) and mapping invasive species, vegetation community polygons were delineated on desktop using geographic information systems software. Polygons were then visited in the field and were refined, merged or split depending on field conditions. Vegetation community polygons were numbered and used to develop the Restoration Overlays described in **Section 5.3.2**.

Table 4 below lists the date of field visits, the surveyor, and the field work surveys conducted by NSE between 2017 and 2020. The results of field investigations are discussed in **Section 3.0**.

Table 4. Date of field investigations

Date	Surveys/ Target Data	Field Staff
June 23, 2017	Summer vegetation survey	Will Van Hemessen

Date	Surveys/ Target Data	Field Staff
July 27, 2017	Summer vegetation survey	Will Van Hemessen
August 18, 2017	Summer vegetation survey	Will Van Hemessen
October 27, 2017	Fall vegetation survey	Will Van Hemessen
April 27, 2018	Spring vegetation survey	Will Van Hemessen
June 3, 2018	Spring vegetation survey, ELC, breeding bird surveys	Will Van Hemessen
August 30, 2018	Summer vegetation inventory, ELC	Will Van Hemessen
May 29, 2020	Spring vegetation survey	Will Van Hemessen, Pauline Catling, Quinten Wiegersma
August 5, 2020	ELC, invasive species mapping	Will Van Hemessen, Pauline Catling
August 6, 2020	ELC, invasive species mapping	Will Van Hemessen, Pauline Catling

2.3. 2024 Policy Updates to Methods

The Life Science Inventory Methods were updated to adhere with policy changes that occurred up to and including the year 2024. The following are relevant policy changes and their updates that are relevant to the Phase I CMP for Kelly Stanton ESA :

- The *Provincial Planning Statement* (2024) came into effect on October 20, 2024, replacing the *Provincial Policy Statement* (2020). No major changes were made to the Natural Heritage component of the *Provincial Planning Statement*.
- The list of Species at Risk (SAR) in the CMP has been updated to include all species that have been uplisted or downlisted either provincially or federally as of 2024. These species include Barn Swallow and Monarch.

3. Life Science Inventory Results

3.1. Physiographic Setting

The majority of Kelly Stanton ESA is located on tablelands above the Thames River. Kelly Stanton ESA is in the Strathroy-Caradoc Sand Plain physiographic region, which is characterized by deep, well-drained sandy and gravelly substrates deposited by glacial meltwaters at the end of the most recent ice age (Chapman and Putnam, 1984). Soils in Kelly Stanton ESA consist mainly of well-drained coarse sandy loam with finer substrates in low-lying areas along the two creeks (Kelly Creek in the west and Stanton Creek in the east). Kelly StantonESA's north block slopes gently from its highest point at the western end of the ESA to its lowest point at the eastern end. The south block contains more rugged topography owing to the steep valley occupied by Stanton Creek. Topography in both the north and south blocks is defined by Kelly Creek, Stanton Creek and their tributaries.

3.2. Land Use History

Prior to European settlement, vegetation in the Hyde Park area was likely a mosaic of tallgrass prairie, savannah and oak woodland with deciduous forest communities in the Thames River valley and the smaller valleys of Kelly Creek, Stanton Creek and other watercourses. Based on reconstructions of historical vegetation in Middlesex County from a variety of sources, Findlay (1973) identified an area of "open plains" to the north of the village of Hyde Park (**Figure 1**) and mapped the area around Hyde Park and south to the Thames River as a mixture of "oak plains" and maple-ash forest (W. Bakowski, pers. comm., August, 2020). With this historical context in mind, the existing vegetation in Kelly Stanton ESA (e.g., remnant tallgrass prairie vegetation on tablelands and hickory-maple-ash forest on valley slopes) seems to be an excellent, albeit degraded, reflection of pre-European vegetation.

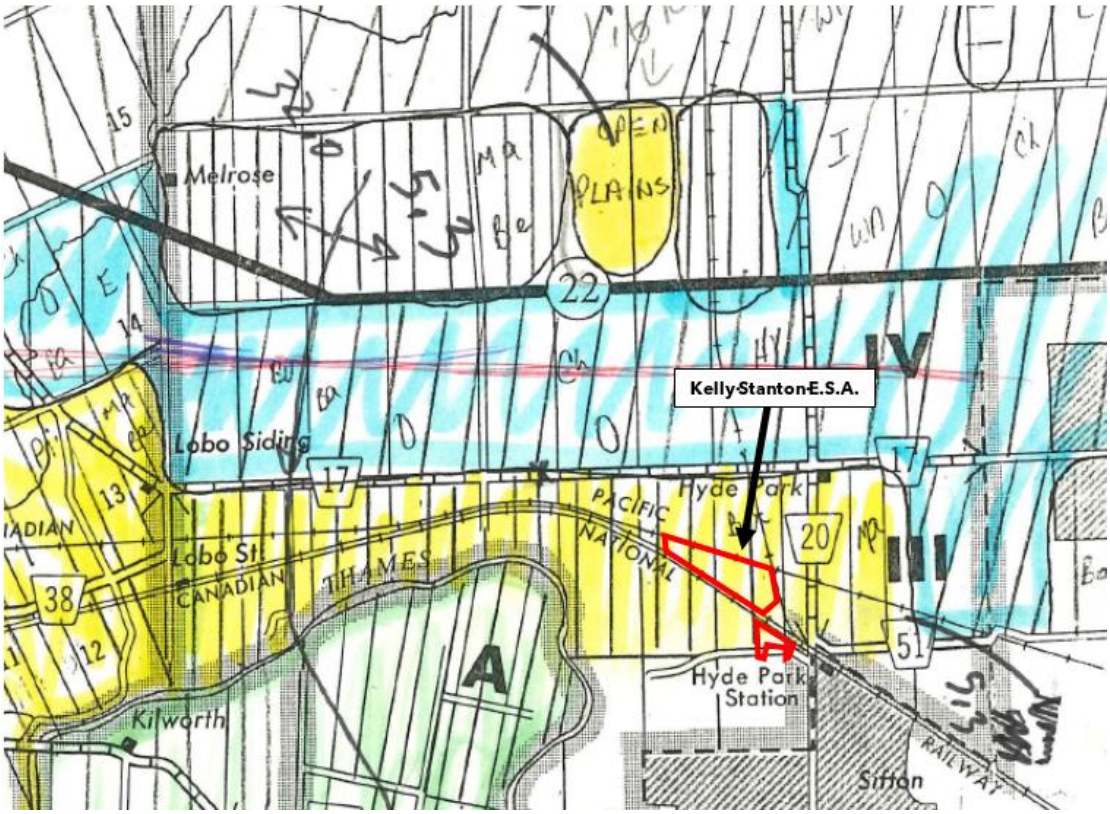

Figure 1. Reconstruction of vegetation composition in the Hyde Park area at the time of European settlement (Findlay, 1973). Solid yellow indicates "open plains" and hatched yellow indicates "oak plains".

An 1878 map of the Hyde Park area indicates that the lots currently occupied by Kelly Stanton ESA were owned by George Dickey (who owned most of what is now the north block of Kelly Stanton ESA), Thomas Lewis and John Barclay, but nothing else is known about these early landowners (Page and CO., 1878). The first railway through Hyde Park was constructed in the 1850s and the modern Canadian National (CN) tracks occupy the same right of way (CN Rail Company, 2020). The Canadian Pacific (CP) railway was constructed in the 1880s along with a north-south spur line from the CN railway that connected the village of Hyde Park to Lucan in the north.[1] The triangle of land between these three railways corresponds roughly to the current boundaries of the north block of Kelly Stanton ESA. It remained relatively untouched through the first half of the twentieth century, perhaps because its small size and relative inaccessibility made it unprofitable for agriculture. Aerial imagery from 1954 suggests that this triangle of land consisted primarily of remnant prairie vegetation well into the twentieth century. Hay farming began in two small areas in the north block of what is now Kelly Stanton

ESA at some point between 1954 and the 1990s but ceased in approximately 2001 (University of Toronto, 2025; GoogleEarth, 2025). Because agricultural activity in Kelly Stanton ESA's north block lasted only a few decades and consisted of hay farming rather than row crops, much of the original seed bank remained intact, which is evidenced by the native open country plant species that currently grow in the former hay fields. Kelly Stanton ESA's south block has experienced considerably more disturbance than the north block and has suffered from infestations of Common Buckthorn (*Rhamnus cathartica*), which dominates most of the subcanopy and understory, and Emerald Ash Borer (*Agrilus planipennis*), which has killed most of the ash trees in its forest communities.

[1] The right-of-way of this spur line is now occupied by the London Hyde Park Rotary Link trail.

3.3. Surface Water Features

3.3.1. Kelly Creek

Kelly Creek flows in a generally northwest-to-southeast direction through the western half of Kelly Stanton ESA's north block. The creek enters Kelly StantonESA after flowing through a culvert beneath the CP railway and it flows through a second culvert beneath the CN railway after exiting the ESA. Kelly Creek was described as having a moderately tolerant warmwater fish community in the 1995 subwatershed study, but recent fish community data was not available. Kelly Creek is a slower-moving watercourse than Stanton Creek and contains a mix of sandy and gravelly substrates and a large amount of woody debris, which may present barriers to fish passage.

3.3.2. Stanton Creek

Stanton Creek flows in a north-to-south direction through the north and south blocks of Kelly Stanton ESA. It enters the north block of Kelly Stanton +ESA after flowing through a culvert beneath the CN railway. The creek then flows through a culvert underneath the CN right-of-way before entering the south block. In the north block, Stanton Creek occupies a shallow valley and is fast moving with a mix of gravelly and cobbly substrates. Halfway along its course through the north block, Stanton Creek flows beneath a former laneway through two severely degraded corrugated steel pipe culverts. In the south block, Stanton Creek has cut a much deeper valley as it descends towards its confluence with the Thames River. Stanton Creek was described as having a moderately tolerant warmwater fish community in the 1995 subwatershed study. Recent fish community data was not available.

3.3.3. Groundwater Features

Most of Kelly Stanton ESA is within a significant groundwater recharge area (Thames-Sydenham and Region Source Protection Committee, 2020). Groundwater seepage areas are in the north block at the sources of two intermittent tributaries to Kelly Creek. Groundwater seepage is probably not the primary source of these tributaries since they are wet only during spring freshet and after major storm events.

3.4. Vegetation

A total of 256 vascular plant species have been identified in Kelly Stanton ESA in the spring, summer and fall from 2017 to 2018 (see **Appendix B**). This included several provincially and regionally rare plant species (see **Section 3.4.2**) and various invasive plant species (see **Section 3.4.3**).

3.4.1. Ecological Land Classification (ELC) Communities

A total of 24 vegetation community polygons were delineated in Kelly Stanton ESA consisting of ten different vegetation community types (**Table 5** and **Map 2** in Appendix A). Communities were difficult to delineate in some instances where "complexes" of various vegetation types have developed (e.g., tallgrass prairie succeeding into cultural thicket or deciduous forest transitioning to cultural woodland where ash trees have died off). Some polygons were assessed as complexes of more than one community type. Some vegetation communities in Kelly Stanton are of cultural origin (e.g., old hay fields) but most communities are of natural origin. Remnant tallgrass prairie vegetation is dominant in some areas (e.g., Polygon #s 10 and 20 on **Map 2** in **Appendix A**) and persists in others despite encroachment of other types of vegetation in the absence of disturbance (e.g., Polygon #s 3 and 8 on **Map 2** in **Appendix A**).

Table 5. Vegetation communities in Kelly Stanton ESA

ELC Code	Community Type	Area (ha)	Description
CUM1	Mineral Cultural Meadow (Polygon #s 1, 8, 17, 24)	4.00	Cultural meadows in Kelly Stanton ESA occur in old hayfields and in other open areas that have experienced either human disturbance or have succeeded from tallgrass prairie into forb-dominated meadow communities. The largest cultural meadows occur in former hay fields in the north block. These meadows are dominated by non-

ELC Code	Community Type	Area (ha)	Description
			native cool-season grasses but also contain native open country species such as Big Bluestem (*Andropogon gerardi*), Little Bluestem (*Schizachyrium scoparium*), evening-primroses (*Oenothera* spp.), Common Milkweed (*Asclepias syriaca*) and Showy Tick-trefoil (*Desmodium canadense*).
CUT1	Mineral Cultural Thicket (Polygon #s 2, 4, 6, 11, 13, 18, 19)	2.04	Cultural thickets in Kelly Stanton ESA are mainly dominated by invasive Common Buckthorn (*Rhamnus cathartica*) and Glossy Buckthorn (*Frangula alnus*) but some thickets are dominated by native Grey Dogwood (*Cornus racemosa*) and Staghorn Sumac (*Rhus typhina*).
CUW1	Mineral Cultural Woodland (Polygon #23)	3.13	The eastern half of the south block of Kelly Stanton ESA (Polygon #23) was historically dominated by White Ash (*Fraxinus americana*) but the majority of ash trees have died due to infestation by Emerald Ash Borer (*Agrilus planipennis*), which has left substantial gaps in the canopy. The relatively open canopy and buckthorn-dominated understory mean that this community now qualifies as a woodland rather than forest.
FOD6-5	Fresh-Moist Sugar Maple-Hardwood Deciduous Forest (Polygon #21)	1.85	Most of the Stanton Creek valley in the south block of Kelly Stanton ESA is covered with Sugar Maple-dominated deciduous forest, which also contains a diversity of other deciduous species such as Bitternut Hickory (*Carya cordiformis*), American Beech (*Fagus grandifolia*) and Northern Hackberry (*Celtis occidentalis*). White Ash was

ELC Code	Community Type	Area (ha)	Description
			historically abundant, but most ash trees have died due to infestation by Emerald Ash Borer.
FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest (Polygon #7)	0.13	Portions of the Kelly Creek floodplain that are dominated by mature White Willow (*Salix alba*) are classified as this community type.
FOD8-1	Fresh-Moist Poplar Deciduous Forest (Polygon #12)	0.48	Polygon #12 is a relatively young forest of Trembling Aspen (*Populus tremuloides*). Trembling Aspen is a pioneer species and it is probable that this forest occupies an area that was historically tallgrass prairie but transitioned to deciduous forest in the absence of natural disturbance.
FOD9-5	Fresh-Moist Bitternut Hickory Deciduous Forest (Polygon #14)	3.71	The largest forest in the north block of Kelly Stanton ESA (Polygon #14) is dominated by Bitternut Hickory with abundant Sugar Maple and other hardwoods. White Ash was historically abundant but most ash trees here and throughout the ESA have died due to infestation by Emerald Ash Borer. Buckthorns (*Rhamnus cathartica* and *Frangula alnus*) dominate the subcanopy and understory of this community, especially where ash die off has resulted in canopy openings.
MAM2-2	Reed Canary Grass Mineral Meadow Marsh (Polygon #s 15, 22)	0.84	Meadow marshes in the Stanton Creek floodplain in both the north and south blocks of the ESA are dominated almost entirely by Reed Canary Grass (*Phalaris arundinacea*).
MAM2-10	Forb Mineral Meadow Marsh (Polygon #5)	0.35	Most of the Kelly Creek floodplain is covered by forb-dominated meadow marsh. Common species in this community include spotted Joe Pye-weed (*Eutrochium maculatum*), Spotted Jewelweed (*Impatiens*

ELC Code	Community Type	Area (ha)	Description
			capensis), Lake Sedge (*Carex lacustris*) and Swamp Aster (*Symphyotrichum puniceum*).
SWT2	Mineral Thicket Swamp (Polygon #9)	0.47	Polygon #9 is a thicket swamp with relatively equal abundance of Grey Dogwood, willows and Glossy Buckthorn.
TPO2-1	Fresh-Moist Tallgrass Prairie (Polygon #s 10, 20)	0.41	Tallgrass prairie communities have persisted in the north block of Kelly Stanton ESA since before European settlement. These communities are primarily the fresh-moist type and are dominated by Big Bluestem and Indian Grass. Abundant species include Smooth Aster (*Symphyotrichum laeve*), Early Goldenrod (*Solidago juncea*), Grey Goldenrod (*Solidago nemoralis*) and Showy Tick-trefoil. Tallgrass prairie communities contain provincially and regionally rare species such as Mead's Sedge (*Carex meadii*) and False Tomentose Balsam Ragwort (*Packera paupercula* var. *pseudotomentosa*).
TPO2-1/CUT1	Fresh-Moist Tallgrass Prairie/ Mineral Cultural Thicket Complex (Polygon #3)	0.75	Tallgrass prairies require periodic disturbance (primarily fire) in order to persist and avoid succession into other types of vegetation communities such as meadows and thickets. In the absence of fire and other types of disturbance, tallgrass prairie vegetation in Kelly Stanton ESA is being overtaken by shrubs (primarily Grey Dogwood and Staghorn Sumac), creating complexes of tallgrass prairie and cultural thicket.

Open country communities in Kelly Stanton ESA include cultural meadows, which are dominated by non-native species (e.g., cool season grasses and forage crops) and tallgrass prairies. Tallgrass prairies in Kelly Stanton ESA are of the fresh-moist type (TPO2-1) and are dominated by warm-season grasses such as Big Bluestem (*Andropogon gerardii*) and Indian Grass (*Sorghastrum nutans*). One indicator species of provincially significant prairie remnants is found in Kelly Stanton ESA: Mead's Sedge (*Carex meadii*) (MNR, 2000).

Forests in Kelly Stanton ESA occur primarily in the Stanton Creek valley and are dominated by Bitternut Hickory (*Carya cordiformis*) and Sugar Maple (*Acer saccharum*). These forests have been heavily invaded by Common Buckthorn (*Rhamnus cathartica*), especially in areas where ash trees have died off and opened the canopy. Moist lowland forest dominated by White Willow (*Salix alba*) occurs in the floodplain of Kelly Creek.

Wetland communities include meadow marsh and thicket swamp. Meadow marshes are primarily dominated by Reed Canary Grass (*Phalaris arundinacea*) in the Stanton Creek floodplain and by forbs in the Kelly Creek floodplain. The thicket swamp contains Grey Dogwood (*Cornus racemosa*) and willows (*Salix* spp.).

3.4.2. Rare Plant Species

Of the 256 plant species identified in Kelly Stanton ESA (**Appendix B**), two are provincially rare and 13 are regionally rare (noted in **Table 6**). Regional rarity (i.e., conservation status in Middlesex County) was determined using the List of the Vascular Plants of Ontario's Carolinian Zone (Ecoregion 7E) (Oldham, 2017). Provincially and regionally rare species in Kelly Stanton ESA are primarily associated with tallgrass prairie (e.g., Mead's Sedge, False Tomentose Balsam Ragwort [*Packera paupercula* var. *pseudotomentosa*]) but some are associated with forests (e.g., One-flowered Cancer-root [*Orobanche uniflora*]) or wetlands (e.g., Small-headed Bulrush [*Scirpus microcarpus*]). The importance of these vegetation communities for providing habitat for rare plant species is reflected in the Restoration Overlays in **Section 5.3**.

Table 6. Rare plant species in Kelly Stanton ESA

Species	Status[2]	Polygon(s)	Discussion
Provincially Rare			
Mead's Sedge *Carex meadii*	NHIC – S2 MIDD – R	3	A large colony of Mead's Sedge was found growing beneath Grey Dogwood in Polygon #3. In Ontario, Mead's Sedge only grows in open prairies (MNR, 2000), so the presence

Species	Status[2]	Polygon(s)	Discussion
			of this species indicates that this community was once open prairie that is experiencing succession to a thicket type community.
False Tomentose Balsam Ragwort *Packera paupercula var. pseudotomentosa*	NHIC – S2S3 MIDD – R	10	A small population of False Tomentose Balsam Ragwort was found in moist tallgrass prairie in Polygon #10.
Regionally Rare			
Bristly Blackberry *Rubus setosus*	NHIC – S4 MIDD – R	8	The population of Bristly Blackberry found in Kelly Stanton ESA is the first record of this species for Middlesex County. This species grows in "open woodlands, savannahs, prairies, meadows and disturbed areas" (Flora of North America (FNA), 2020).
Butterfly Milkweed *Asclepias tuberosa*	NHIC – S4 MIDD – R	3	Butterfly Milkweed is found in scattered locations in Polygon #3.
Cockspur Hawthorn *Crataegus crus-galli*	NHIC – S4 MIDD – R	3, 6	Cockspur Hawthorn is found in scattered locations at the western end of the ESA
Greater Straw Sedge *Carex normalis*	NHIC – S4 MIDD – R	8	Greater Straw Sedge is found in wet areas of Polygon #8.
Jointed Rush *Juncus articulatus*	NHIC – S5 MIDD – R	17	Jointed Rush was found in a wet seepage area in Polygon #17. This species is common farther north but is rare in Middlesex County.
Muhlenberg's Sedge *Carex muehlenbergii*	NHIC – S4S5 MIDD – R	8	Muhlenberg's Sedge was found at several locations in dry, sandy soil in Polygon #8. This species grows in "dry grasslands and open forests, commonly on sand" (FNA, 2020).

Species	Status[2]	Polygon(s)	Discussion
Narrow-leaved Blue-eyed-grass *Sisyrinchium angustifolium*	NHIC – S4 MIDD – R	17	Narrow-leaved Blue-eyed-grass was found in disturbed, gravelly soil in Polygon #17.
One-flowered Cancer-root *Aphyllon uniflorum*	NHIC – S4 MIDD – R	14	One-flowered Cancer-root was found growing at the edge of an old laneway in Polygon #14.
Pale Sedge *Carex pallescens*	NHIC – S4 MIDD – R	3	Pale Sedge was found in Polygon #3 a short distance down the slope from the large population of Mead's Sedge.
Parasol Sedge *Carex umbellata*	NHIC – S5 MIDD – R	13, 14	Parasol Sedge is found in Polygon #13 and openings in Polygon #14.
Prairie Smoke *Geum triflorum*	NHIC – S4 MIDD – R	1	A single stem of Prairie Smoke was found in Polygon #1. It is unclear whether this plant could have been introduced here or whether it may be the last remnant of a natural population.
Small-headed Bulrush *Scirpus microcarpus*	NHIC – S5 MIDD – R	15	Small-headed Bulrush grows along Stanton Creek in Polygon #15.
Swan's Sedge *Carex swanii*	NHIC – S4 MIDD – R	2	Swan's Sedge was found in a dense dogwood thicket in Polygon #2. This species is found in "dry to wet mesic forests and scrub" (FNA, 2020) so its habitat in Kelly Stanton is typical of this species.

[2] Provincial conservation status (NHIC, 2020): S2 – Imperiled, S2S3 – Imperiled or Vulnerable; Regional conservation status in Middlesex County (Oldham, 2017): R – Rare, MIDD- Middlesex County.

3.4.3. Invasive Plant Species

Seventeen invasive plant species are present within Kelly Stanton ESA (see **Table 7**), with some exhibiting particularly aggressive growth habits and establishment. Invasive species are most abundant in the south block, especially in areas where ash trees have died off and have been

invaded by Common Buckthorn. The most abundant invasive species in the ESA are Common Buckthorn, Glossy Buckthorn, and cool season grasses (**Table 7**).

Other invasive species in Kelly Stanton ESA are in low abundance and can be easily managed (**Table 7**). The species listed in **Table 7** may require targeted and aggressive measures for control and, where possible, should be considered for management programs and activities.

Table 7. Invasive plant species in Kelly Stanton ESA

Species	Polygon(s)	Discussion
High abundance species		
Common Buckthorn (*Rhamnus cathartica*)	4, 14, 16, 19, 21, 23	Outcompetes understory and subcanopy species in most forest thicket communities.
Glossy Buckthorn (*Frangula alnus*)	16, 19, 23	Outcompetes understory and subcanopy species in most forest thicket communities.
Cool Season Grasses: • Creeping Bentgrass (*Agrostis stolonifera*) • Smooth Brome (*Bromus inermis*) • Kentucky Bluegrass (*Poa pratensis*) • Red Fescue (*Festuca rubra*)	1, 5, 8, 15, 17, 22, 24	Form dense monocultures and can outcompete native warm-season prairie grasses such as Big Bluestem and Indian Grass.
Low abundance species		
Dog-strangling Vine (*Vincetoxicum rossicum*)	7, 12, 14, 21	Abundant along the CN and CP railways, and it could easily be reintroduced into Kelly Stanton ESA and become extremely invasive.
Autumn Olive *(Elaeagnus umbellata)*	3, 8, 1, 18	Colonizes prairie ecosystems quickly and grows fast. Prescribed burns may not be effective in prairie

Species	Polygon(s)	Discussion
		ecosystems due to excess woody growth (Warne, 2018a).
Bird's-foot Trefoil *(Lotus corniculatus)*	8	Outcompetes native species and forms dense colonies
Common Reed (*Phragmites australis* ssp. *australis*)	Occurred on fringes of southern portions of Kelly Stanton ESA at time of assessment.	Rapidly colonizes new habitats and outcompetes native species. Is expected to establish rapidly within Kelly Stanton ESA.
Creeping Thistle (*Cirsium arvense*)	1, 8, 17, 24	Currently present at low densities in meadow communities in Kelly Stanton ESA.
Eastern Hedge Bedstraw (*Galium album*)	8	This long-lived perennial can take hold in meadow and prairie communities where it easily outcompetes native plants.
Garlic Mustard (*Frangula alnus*)	7, 12, 14, 21	Outcompetes native species. Abundant in forest and woodland communities in Kelly Stanton ESA.
Honeysuckles (*Lonicera* spp.)	7, 12, 14, 21	Outcompetes native species. Are present at low densities in most forest and thicket communities in Kelly Stanton ESA.
Knapweeds (*Centaurea* spp.)	8	Outcompete native species and forms dense colonies. Monckton's Knapweed (*C.* x *moncktonii*) and Spotted Knapweed (*C. stoebe*) are abundant in meadow communities.
Purple Loosestrife (*Lythrum salicaria*)	8	Quickly outcompetes native plants in wetland and moist areas. Currently present at low densities in moist habitats in Kelly Stanton ESA.
Willows (*Salix* spp.)	24	Quickly outcompetes native plants in moist areas. Currently present at low

Species	Polygon(s)	Discussion
		densities in moist habitats in Kelly Stanton ESA.

3.5. Birds

A full list of bird species documented in Kelly Stanton ESA during field investigations in 2018 can be found in **Appendix B**.

3.5.1. Breeding Birds

Breeding bird surveys were carried out in June of 2018. Additionally, numerous bird checklists for the ESA have been submitted by local naturalists to eBird, which serves as an excellent source of supplementary data. A full list of bird species documented in Kelly Stanton ESA during the breeding season can be found in **Appendix B**.

A total of 84 bird species have been documented during the breeding season at Kelly Stanton ESA. Of these, six species were confirmed to be breeding in Kelly Stanton ESA and 61 species were determined to be probable or possible breeders. Kelly Stanton ESA provides breeding habitat for bird species with a variety of life histories and habitat requirements, including grassland birds, forest birds, marsh birds and birds of thickets and early successional habitats.

3.5.2. Species At Risk (SAR) Birds

Three bird SAR and four bird SOCC use Kelly Stanton ESA as habitat for breeding and other life processes. In addition, 43 bird species documented in Kelly Stanton ESA are considered Conservation Priority in Middlesex County by Bird Studies Canada (Couturier, 1999).

3.5.3. Migratory Birds

A total of 25 bird species have been documented in Kelly Stanton ESA that are not believed to breed in the ESA but use habitat there for winter foraging or as a stopover location during migration. Kelly Stanton ESA provides important overwintering habitat for these species and as a place to feed or rest during migration to their breeding grounds.

3.6. Reptiles and Amphibians

Three species of snakes – DeKay's Brownsnake (*Storeria dekayi*), Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) and Eastern Milksnake (*Lampropeltis triangulum*) – were observed in Kelly Stanton ESA. One species of turtle – Midland Painted Turtle (*Chrysemys picta*

marginata) – was seen in Kelly Stanton ESA's north block by a local naturalist and submitted to iNaturalist. This is the only turtle observation in Kelly Stanton ESA.

Formal amphibian breeding surveys were not conducted for this study, but several nighttime visits were conducted during which four amphibian species were heard calling: American Toad (*Anaxyrus americanus*), Spring Peeper (*Pseudacris crucifer*), Western Chorus Frog (*Pseudacris triseriata*) and Northern Leopard Frog (*Lithobates pipiens*). These species breed in vernal pools in Polygon #14 (**Map 2** in **Appendix A**). The number of breeding individuals of these species is sufficient for this ELC community to qualify as significant amphibian breeding habitat (woodland type) based on MNRF (2015) criteria (i.e., more than 20 individuals of all species combined).

3.7. Incidental Observations

Other wildlife species observed in Kelly Stanton ESA include mammals, insects and crayfish. Many of these were not documented during formal surveys but have been observed by local naturalists and submitted to iNaturalist. White-tailed Deer (*Odocoileus virginianus*) are common in the ESA along with other mammals such as Northern Raccoon (*Procyon lotor*) and Eastern Cottontail (*Sylvilagus floridanus*).

Monarch butterflies, which are listed as a Special Concern species under the *Endangered Species Act* (ESA) and Endangered under the *Species at Risk Act* (SARA), are common in Kelly Stanton ESA and larvae have been observed on milkweed (*Asclepias* spp.) plants. At least 16 other Lepidoptera (butterfly and moth) species have been observed in Kelly Stanton ESA. American Dog Ticks (*Dermacentor variabilis*) are abundant in Kelly Stanton ESA, especially in the spring.

A terrestrial crayfish (Cambaridae sp.) burrow was observed near Kelly Creek. Ontario is home to several species of terrestrial crayfish, which construct underground burrows in wet habitats with "chimneys" at their entrances. All native terrestrial crayfish are of conservation concern and their habitat is considered Significant Wildlife Habitat (SWH) (MNRF, 2015).

3.8. Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) in Kelly Stanton ESA was assessed using the SWH Criteria Schedules for Ecoregion 7E (MNRF, 2015) (see **Appendix C**). SWH discussed in the following sections is confirmed to occur in Kelly Stanton ESA unless otherwise indicated. SWH in Kelly Stanton ESA is illustrated on **Map 3** in **Appendix A**.

3.8.1. Seasonal Concentration Areas of Animals

Raptor Wintering Area (candidate)

The surrounding landscape contains a mosaic of forest and open country habitat that is larger than 20 ha. Kelly Stanton ESA could be a component of a significant raptor wintering area. Formal raptor surveys could be completed to confirm whether the area provides the minimum number of raptor use days to be considered significant.

Bat Maternity Colony (candidate)

Many dead ash trees in the south block of Kelly Stanton ESA (Polygon #s 21 and 23, **Map 2** in **Appendix A**) may provide maternity habitat for Big Brown Bat (*Eptesicus fuscus*) and/or Silver-haired Bat (*Lasionycteris noctivagans*) and may occur at densities suitable for a maternity colony. A snag density survey and acoustic surveys for bats could be completed in Kelly Stanton ESA to confirm the presence of bat SWH.

3.8.2. Rare Vegetation Communities

Tallgrass Prairie

Kelly Stanton ESA's tallgrass prairie communities are the signature feature of the ESA. These communities are remnants of pre-European vegetation and are extremely rare in Ontario. One tallgrass prairie community in Kelly Stanton ESA (Polygon #3, **Map 2** in **Appendix A**) contains Mead's Sedge, an indicator species listed in Appendix N of the SWH Technical Guide (MNR, 2000), which makes this community provincially significant.

3.8.3. Specialized Habitat for Wildlife

Amphibian Breeding Habitat (Woodland) (candidate)

Two indicator species (Spring Peeper and Western Chorus Frog) have been heard calling from vernal pools in Polygon #14 in the north block of Kelly Stanton ESA during the breeding season (**Map 2** in **Appendix A**). Call count surveys for breeding amphibians could be conducted to confirm whether these habitats are SWH.

Amphibian Breeding Habitat (Wetland) (candidate)

Two indicator species (American Toad and Western Chorus Frog) have been heard calling from vernal pools in Polygon #14 during the breeding season (**Map 2** in **Appendix A**). Call count surveys for breeding amphibians could be conducted to confirm whether those features are SWH.

3.8.4. Habitat for Species of Conservation Concern

Marsh Bird Breeding Habitat (candidate)

Sedge Wren (*Cistothorus platensis*), an indicator species for this SWH type, has been observed in suitable habitat in the ESA during the breeding season. However, it is extremely unlikely that more than five pairs of Sedge Wrens breed in the publicly owned Kelly Stanton ESA (the minimum number for the habitat to qualify as significant). No other indicator species have been observed in Kelly Stanton ESA.

Shrub/Early Successional Bird Breeding Habitat

Both of the indicator species – Brown Thrasher (*Toxostoma rufum*) and Clay-coloured Sparrow (*Spizella pallida*) – are probable breeders in Kelly Stanton ESA. Two of the common species are confirmed breeders – Field Sparrow (*Spizella pusilla*) and Eastern Towhee (*Pipilo erythrophthalmus*) – and another two are probable breeders – Black-billed Cuckoo (*Coccyzus erythrophthalmus*) and Willow Flycatcher (*Empidonax traillii*). The only indicator species that has not been observed in Kelly Stanton ESA is Golden-winged Warbler (*Vermivora chrysoptera*). If vegetation communities in the north and south blocks are combined, there is over 10 ha of suitable early successional and shrub thicket habitat in Kell Stanton ESA, which would qualify as SWH for these species.

Terrestrial Crayfish Habitat

Terrestrial crayfish burrows were observed in the Kelly Creek floodplain (Polygon #7) and may also occur elsewhere in the ESA. Wet to moist communities adjacent to Kelly Creek are therefore SWH for terrestrial crayfish.

Habitat for Species of Conservation Concern

Table 8 lists the Special Concern and provincially rare plant and wildlife species in Kelly Stanton ESA and describes their habitats that are SWH, if applicable.

Table 8. Species of conservation concern in Kelly Stanton ESA

Species	Status[3]	Polygon(s)	Habitat
Plants			
False Tomentose Balsam Ragwort *Packera paupercula* var. *pseudotomentosa*	SARA – n/a ESA – n/a NHIC – S2S3	10	Prairies, savannahs and dry, open places (MNR, 2000).
Mead's Sedge	SAR. – n/a	3	Prairies (MNR, 2000).

Species	Status[3]	Polygon(s)	Habitat
Carex meadii	ESA – n/a NHIC – S2		
Birds			
Eastern Wood-pewee *Contopus virens*	SARA – SC ESA – SC NHIC – S4B	7, 12, 14, 21, 23	Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks (MNR, 2000).
Barn Swallow *Hirundo rustica*	SARA –THR ESA – SC NHIC – S4B	n/a	Barn Swallows do not breed in Kelly Stanton ESA since there are no suitable barns, culverts or other structures for them to nest in. However, they forage over Kelly Stanton ESA in large numbers, especially during migration.
Grasshopper Sparrow *Ammodramus savannarum*	SARA – SC ESA – SC NHIC – S4B	3, 8, 10	Well-drained grassland or prairie with low cover of grasses, taller weeds on sandy soil; hayfields or weedy fallow fields; uplands with ground vegetation of various densities; perches for singing; requires tracts of grassland >10 ha (MNR, 2000).
Olive-sided Flycatcher *Contopus cooperi*	SARA – SC ESA – SC NHIC – S4B	n/a	Stops over during migration but does not breed in Kelly Stanton ESA.
Rusty Blackbird *Euphagus carolinus*	SARA – SC ESA – SC NHIC – S4B	n/a	Stops over during migration but does not breed in Kelly Stanton ESA.
Reptiles			
Eastern Milksnake *Lampropeltis triangulum*	SARA – SC ESA – NAR NHIC – S4	All	Farmlands, meadows, hardwood or aspen stands; pine forest with brushy or woody cover; river bottoms or bog woods; hides under logs,

Species	Status[3]	Polygon(s)	Habitat
			stones, or boards or in outbuildings; often uses communal nest sites (MNR, 2000).
Insects			
Monarch *Danaus plexippus*	SARA – ESA – SC NHIC – S2N, S4B	All	Any habitat containing milkweed plants, the larvae's primary food source.

[3] *Species at Risk Act* (SARA): Status on Schedule 1 of the SARA (2002) (SC – Special Concern, THR – Threatened); ESA: Status on the provincial *Endangered Species Act* (2007) (SC – Special Concern, NAR – Not at Risk); NHIC: provincial conservation status (S2 – Imperiled, S2S3 – Imperiled or Vulnerable, S4 – Apparently Secure, B – breeding, N – nesting).

3.8.5. Animal Movement Corridors

Amphibian Movement Corridors (candidate)

There may be localized movement corridors of frogs and toads that breed in vernal pools in Polygon #14 in the north block and move into adjacent forests and thickets outside of the breeding season.

Other Animal Movement Corridors

Well established deer trails occur throughout the north block of Kelly Stanton ESA, especially in prairie and thicket communities towards the western end. Coyotes and other wildlife were observed using these trails.

3.9. Species at Risk

Kelly Stanton ESA provides habitat for at least three species listed as Threatened under the provincial ESA (2007) and the federal SARA (2002). These are listed in **Table 9**. Additionally, Monarch is listed as Endangered under SARA (2002); however, this species is Special Concern under the ESA (2007) (see **Table 8**).

Table 9. SAR in Kelly Stanton ESA

Species	Status[4]	Polygon(s)	Habitat
Bobolink	SARA – THR ESA – THR	n/a	Although Bobolinks have been seen in Kelly Stanton during migration, no

Species	Status[4]	Polygon(s)	Habitat
Dolichonyx oryzivorus	NHIC – S4B		evidence of breeding has been documented. It is possible that the relatively small area of suitable habitat cannot support breeding Bobolinks, especially in competition with other grassland birds that breed in Kelly Stanton ESA Restoration of open country habitat in Kelly Stanton ESA (particularly Polygon #3) could improve the habitat available for Bobolinks.
Eastern Meadowlark *Sturnella magna*	SARA – THR ESA – THR NHIC – S4B	3, 8, 10	Eastern Meadowlarks have been confirmed to breed in Polygon #8, the largest grassland unit in Kelly Stanton ESA, for multiple years in a row.
Western Chorus Frog	SARA – THR ESA – NF NHIC – S4	14	Heard calling from vernal pools (Polygon #17) in Kelly Stanton ESA. However, target studies are required to see if there is evidence of breeding

[4] SARA: Status on Schedule 1 of the SARA (2002) (THR – Threatened); ESA: Status on the provincial *Endangered Species Act* (2007) (THR – Threatened); NHIC: provincial conservation status (S4 – Apparently Secure, B – breeding).

3.10. Trails and Disturbances

Feature and trail disturbances were not evaluated during the 2017 to 2020 field investigations conducted for the Kelly Stanton ERP. Evaluation of the existing trails and associated disturbances is addressed through the Existing Trail Compatibility Review in **Section 5.3.5** and the Trail Management recommendations in **Section 5.4**. Ongoing maintenance of trails and disturbances is incorporated into the ESA adaptive management and monitoring framework outlined in **Section 6.0**.

4. Environmental Management Strategy

4.1. Existing ESA Boundary Refinement

A primary focus for this CMP was to refine the boundaries of the ESA in accordance with the Boundary Delineation Guidelines in Section 4.8 of the EMG (City of London, 2021) and in collaboration with City ecologists.

The existing ESA boundary (**Map 4** in **Appendix A**) as provided by the City and found on Map 5 of *The London Plan* (City of London, 2018), encompasses 8.4 ha of public lands. The existing boundary excludes contiguous natural features that occur on both public and private lands. It is anticipated that future studies would support expansion of Kelly Stanton ESA to incorporate these lands. The revised Kelly Stanton ESA boundary (**Map 4 in Appendix A**) includes many of the excluded natural features connected via the creek and valley corridor and is thus more representative of ecological boundaries. The revised Kelly Stanton ESA boundary increases the ESA area to 18.6ha.

The following guideline criteria were applied in the revised delineation of ESA boundaries for Kelly Stanton ESA:

- Guideline 1: All contiguous Species at Risk (SAR) habitat and Significant Wildlife Habitat (SWH) must be included within the ESA boundary and will also typically, once confirmed, also need to be included in the natural feature boundary.

- Guideline 2: Swamps, marshes, thicket swamps, or other untried wetland communities and their associate Critical Function Zones (CFZ) contiguous with the wetlands feature must be included within the ESA and/or NHS boundary in accordance with the criteria provided.

  a) The wetland strengthens a linkage between natural features by filling in a bay or connecting two or more natural features or is contiguous with another natural feature.

- Guideline 3: Projections of naturalized vegetation less than thirty meters (30m) wide that extend from the main body of the woodland features:

  a) must be included within the boundary if the projection includes a wooded ravine or valley with untreed or successional habitat below the top-of-slope;

b) must be included within the boundary if the projection provides an ecological linkage within the landscape.

- Guideline 6: Cultural meadows must be included in an ESA if they meet one (1) of the following criteria that fill in gaps between patches or features are included within the revised boundary.

  a) a portion of meadow habitat surrounds a feature on one or more sides, and provides improved ecological function to the established NHS Feature by its inclusion;

  b) strengthen internal linkages between NHS Features by filling in "bays";

  c) connect one or more NHS Features to a watercourse;

  d) connect two or more NHS Features to each other (inset d of Figure 4.7); or,

  e) are below the top-of-stable-slope in a stream corridor or ravine.

- Guideline 8: Existing land uses within or adjacent to a confirmed NHS Feature may be included in an ESA and/or NHS boundary subject to the following considerations:

  a) Existing heavily managed or manicured areas that are surrounded on at least three sides by a NHS Feature are included in the ESA feature boundary if they are less than one hectare (1 ha) in total area (Figure 4.9). Such features include, but are not limited to agricultural croplands, active pasture, golf courses, lawns, ornamental treed lots, gardens, nurseries, orchards, and Christmas tree plantations. Subsequent abandonment or potential for rehabilitation of patches larger than one hectare (1 ha) may qualify such areas for inclusion in the patch; and,

  b) Existing residential building envelopes and institutional building envelopes surrounded on at least three sides by a NHS Feature are not included in the ESA. Building envelopes and access routes of existing structures must be determined on a site-specific basis.

4.2. Natural Heritage Features

The Map 5- Natural Heritage features and areas found in London include ESAs, Provincially Significant Wetlands, wetlands, fish habitat, significant woodlands and woodlands, significant valleylands, the habitat of Endangered and Threatened species, SWH, and ANSIs, which are

all important for their environmental and social values as a legacy of the natural landscapes of the City of London and the surrounding area (LP_1229).

As mentioned in Section 1.1, ESAs are often represented by a complex of natural heritage features (LP_1367). The City's NHS, including ESAs, is shown on Map 5 of *The London Plan* (LP_1298); however, not all components of the City's NHS are necessarily included in the mapping of ESAs (LP_1367). Within Kelly Stanton ESA, only features that are regulated by provincial requirements and those that are contiguous, extending beyond the ESA boundary (Significant Valleylands), are identified on Map 5 (LP_1229).

While all natural heritage features within ESAs are protected by their inclusion in the ESA boundary and Green Space Place Type, delineating and mapping the boundaries of features not shown on Map 5 is an additional measure to ensure their protection and assist in their management (LP_1367). Understanding the natural heritage features present within an ESA allows for ecological buffers to be correctly applied should development be proposed within their proximity. The required minimum ecological buffer width for an ESA is based on the associated component of the NHS with feature specific buffers outlined in Table 5-2 of the EMG. Map 8 in Appendix A shows the natural heritage features located in Kilally Meadows ESA based on the results of this Life Sciences Inventory.

4.2.1. Delineating Natural Heritage Features

The Map 5-Natural Heritage features within Kelly Stanton ESA, as shown on **Map 8** in **Appendix A**, were delineated based on the vegetation communities surveyed in 2018 (see **Section 3.4.1**) and the application of the EMG (2025) and the Environmental Policies of *The London Plan* (City of London, 2018). **Table 10** summarizes the results of the natural heritage feature delineation for each ELC polygon including rationale and policy support for each designation.

Table 10. Natural Heritage Features

Polygon No.	ELC Community	Natural Heritage Feature / Area	Rationale	Policy Reference
1,8	CUM1	SWH	• SWH (Breeding Bird Habitat-Grasshopper Sparrow) present or previously identified	• SWH Section 3.8[5]
2	CUT1	SWH	• SWH (Shrub/Early Successional Bird Breeding Habitat) present or previously identified	• SWH Section 3.8
3	TPO2-1/CU	SWH	• Rare Vegetation Community: Tallgrass prairies are extremely rare habitats in Ontario • SWH (Shrub/early Successional Bird Breeding Habitat-Grasshopper Sparrow) present or previously identified	• SWH Section 3.8
4	CUT1	Significant Woodland	• SWH (Terrestrial Crayfish and Shrub/Early Successional Bird Breeding Habitat) present or previously identified	• EMG Section 8.0[6] • SWH Section 3.8
5	MAM2-10	Unevaluated Wetland	• Identified wetland ELC Community Series (marsh) • SWH (Terrestrial Crayfish) present or previously identified	• EMG Section 3.31[7] • SWH Section 3.8
6,11, 13, 16	CUT1	SWH	• SWH (Shrub/Early Successional Bird Breeding Habitat) present or previously identified	• SWH Section 3.8
7	FOD7-3	Significant Woodland and SWH	• Treed vegetation community that contains greater than 25% tree cover	• EMG Section 8.0 • SWH Section 3.8

Polygon No.	ELC Community	Natural Heritage Feature / Area	Rationale	Policy Reference
			• SWH (Terrestrial Crayfish) present or previously identified	
9	SWT2	Unevaluated Wetland	• Identified wetland ELC Community Series (swamp) • SWH (Terrestrial Crayfish and Shrub/Early Successional Bird Breeding Habitat) present or previously identified	• EMG Section 3.31 • SWH Section 3.8
10	TPO2-1	SWH	• Rare Vegetation Community: Tallgrass prairies are extremely rare habitats in Ontario • SWH (Bird Breeding Habitat-Grasshopper Sparrow) present or previously identified	• SWH Section 3.8
12	FOD8-1	Significant Woodland and SWH	• Treed vegetation community that contains greater than 25% tree cover • SWH (Amphibian Breeding Habitat-woodland) present or previously identified	• EMG Section 8.0 • SWH Section 3.8
14	FOD9-5	Significant Woodland and SWH	• Treed vegetation community that contains greater than 25% tree cover • SWH (Amphibian Breeding Habitat-woodland) present or previously identified	• EMG Section 8.0 • SWH Section 3.8
15	MAM2-2	Unevaluated Wetland and SWH	• Identified wetland ELC Community Series (marsh) • SWH (Marsh Breeding Bird Habitat) present or previously identified	• EMG Section 3.31 • SWH Section 3.8

Polygon No.	ELC Community	Natural Heritage Feature / Area	Rationale	Policy Reference
20	TPO2-1	SWH	• Rare Vegetation Community: Tallgrass prairies are extremely rare habitats in Ontario	• SWH Section 3.8
21	FOD6-5	Significant Woodland and SWH	• Treed vegetation community that contains greater than 25% tree cover • SWH (Bat Maternity Colonies) present or previously identified	• SWH Section 3.8
22	MAS2-2	Unevaluated Wetland	• Identified wetland ELC Community Series (marsh)	• SWH Section 3.8
23	CUW1	Significant Woodland and SWH	• Treed vegetation community that contains greater than 25% tree cover • SWH (Bat Maternity Colonies and Shrub/Early Successional Bird Breeding Habitat) present or previously identified	• EMG Section 8.0 • SWH Section 3.8

[5] Section 1.2.1: Rare Vegetation Communities or Specialized Habitat for Wildlife, *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E*, 2015.

[6] Section 8.0: Glossary of Terms, "woodland feature", *Environmental Management Guidelines,* 2025.

[7] Section 3.3: Evaluation of Significance and Ecological Function – Provincially Significant Wetlands, Wetlands and Unevaluated Wetlands, *Environmental Management Guidelines,* 2025.

5. Environmental Management Recommendations

Following the Life Sciences Inventory of Kelly Stanton ESA and refinement of the ESA boundaries, the data collected was utilized to map Kelly Stanton ESA into management zones and applicable overlay zones were applied. Recommendations for restoration and trail management are provided to aid in the maintenance of natural features and functions and aim to improve them through the control of invasive species, restoration where appropriate, and manage visitor related impacts. The recommendations provided are intended to be carried forward to the Phase II CMP and implemented to improve and maintain the ecological integrity

of Kelly Stanton ESA.

5.1. Management Zones

Management zones are established based on the type of vegetation communities present in an ecosystem and are delineated following the Guidelines for Management Zones and Trails in ESAs (City of London, 2016). Management zones are the foundation of the ESA management strategy and encourage the protection of more ecologically sensitive features by directing appropriate recreation use to areas identified as less ecologically sensitive. The following Management zones were identified in Kelly Stanton ESA and their locations are displayed on **Map 5** in **Appendix A**.

Nature Reserve Zone: These areas represent natural vegetation communities and require a higher level of protection to preserve the ecological integrity of Kelly Stantone ESA. This zone is delineated using ELC (Lee et al., 1998) to identify vegetation communities that are the result of natural processes. The majority of an ESA is anticipated to be identified as a Nature Reserve Zone.

Natural Environment Zone: Areas of cultural vegetation communities that result from, or are maintained by, existing or previous cultural or anthropogenic disturbances. These areas often contain a large proportion of non-native species. These communities include plantations, cultural meadows, cultural thickets, cultural woodlands, and cultural savannahs, as well as manicured areas such as mowed lawn or hedgerows.

5.2. Overlay Zones

Following the establishment of management zones, where applicable, various overlay zones were applied to the area based on existing and future land use priorities. Overlay zones offer further direction for the management of the associated ESA lands and can include Utility, Restoration and Trail Review Overlay zones.

5.2.1. Utility Overlay

The Utility Overlay is introduced where an existing condition such as a utility site or corridor (e.g., hydro transmission lines, gas or water pipeline, railroad lines, sanitary sewer) or other servicing infrastructure or facilities (e.g., sanitary sewer pumping station or stormwater management facility) is present within the ESA and may preclude restoration to the original ecological condition.

There are no Utility Overlay zones in Kelly Stanton ESA, and there are no overlay zones related to the CPR and CN railway lines.

5.2.2. Restoration Overlay

Restoration Overlays highlight areas within the ESA that require active ecological restoration or specific management to restore or improve ecological conditions. As outlined in the Guidelines for Management Zones & Trails in Environmentally Significant Areas (City of London, 2016), the goals of a restoration overlay are to:

1. "Maintain or restore the indicator feature(s) of the underlying management zone, while providing opportunities for community-based stewardship activities and education."

2. "Offer an opportunity to study the recovery of natural ecosystems that have been modified by human disturbances from the past and present and, to facilitate public education, appreciation and stewardship."

For the purposes of the Phase I CMP, Restoration Overlays refer to polygons within Kelly Stanton ESA where ecological restoration activities should be conducted. Restoration activities may include: habitat creation or enhancement, invasive species management, native vegetative plantings, and/or prescribed burns. Details on the development and prioritization of Restoration Overlays and activities can be found in **Section 5.3.**

5.2.3. Trail Review Overlay

The Trail Review Overlay is to be used as part of trail planning and review. The overlay is to be applied to areas where existing trails are located within a significant ecological feature and further review is required to determine the appropriate resolution if the existing trail is deemed to be incompatible with a certain species and/or habitat. Assessing the compatibility of significant ecological features in an ESA with the existing managed trail system is a critical first step in the development of the Trail Review Overlay. The Existing Trail Compatibility Review for Kelly Stanton ESA is described in **Section 5.2.5**.

5.3. Restoration

Ecological restoration broadly refers to improving the integrity and function of a degraded, damaged, or destroyed ecosystem through active management. The Restoration Overlays developed for Kelly Stanton ESA, defined in **Section 5.3.1**, identify areas with unique ecological restoration objectives that could be achieved, with funding and direction from the

City, by the ESA management team, community volunteers, and others.

5.3.1. Developing Restoration Overlays

Kelly Stanton Restoration Overlays are defined by targeted combinations of the following management objectives:

- tallgrass prairie maintenance;
- tallgrass prairie restoration; and
- invasive species management.

5.3.2. Identifying Restoration Priorities and Timelines

The management objectives for Kelly Stanton ESA described above were prioritized with the following principles in mind:

- Restoration and enhancement of habitat for SAR and SOCC is a priority.
- Existing tallgrass prairie communities and SWH are provincially significant and significant in the City of London, and maintenance of these features will be a priority.
- Maintaining and/or increasing native species richness of plants and wildlife is a primary restoration objective.
- Areas with low densities of invasive species should be prioritized for restoration since they have the greatest potential for ecological improvement with the lowest cost and effort.
- Areas with high densities of invasive species will have lower priority for restoration since they will require more funding, resources and time to successfully restore.

Restoration priorities were assigned to each vegetation community polygon in Kelly Stanton ESA using a scoring system based on the attributes listed in **Table 11**. Polygons with higher scores were assigned the highest restoration priority, as follows:

- Score of 7 or higher: Priority 1 (High);
- Score of 4 to 6: Priority 2 (Medium); and
- Score of 0 to 3: Priority 3 (Low).

Restoration Overlays (ROs) to guide restoration activities are listed in **Table 11** and are presented on **Map 6** in **Appendix A**. The overlays are categorized by the type of vegetation community that is targeted for restoration and are also assigned a priority category as follows:

- High

- Medium
- Low

These priorities should reflect the effort and time required to implement the restoration activities, although the use of an adaptive management approach is recommended to assess priorities regularly and adjust as necessary.

Table 11. Restoration overlays and proposed activities for Kelly Stanton ESA

ID	Area (ha)	Description	Restoration Activities	Priority
RO1a	0.41	Tallgrass prairie maintenance: general maintenance and monitoring Polygon #s 10, 20	Monitor for new invasive species occurrences and remove as required; monitor proportion of forbs and cool season grasses vs. warm season grasses and consider controlled burn if proportion of forbs/cool season grasses exceeds 50%.	High to Medium
RO1b	0.75	Tallgrass prairie maintenance: shrub removal, controlled burn Polygon #3	Remove encroaching shrubby vegetation; consider conducting a controlled burn; monitor for new invasive species occurrences and proportion of forbs and cool season grasses vs. warm season grasses and consider controlled burn if proportion of forbs/cool season grasses exceeds 50%.	High
RO2a	3.74	Tallgrass prairie restoration: cultural meadow to tallgrass prairie Polygon #s 1, 8, 17	Consider controlled burn; hand sow native prairie grasses and wildflowers, ideally collected from other parts of Kelly Stanton ESA. Monitor as described above.	Medium

ID	Area (ha)	Description	Restoration Activities	Priority
RO2b	2.04	Tallgrass prairie restoration: cultural thicket to tallgrass prairie Polygon #s 2, 4, 6, 11, 13, 16, 19	Remove shrubby vegetation; hand sow native prairie grasses and wildflowers, ideally collected from other parts of Kelly Stanton ESA. Monitor as described above.	Medium to Low
RO3	6.05	Forest maintenance: buckthorn management Polygon #s 12, 14, 21	Remove buckthorn in subcanopy, understory and groundcover; monitor buckthorn cover and for other invasive species and manage as required.	Medium to Low
RO4a	0.26	Forest restoration: tree planting Polygon #24	Plant native trees, ideally species that are characteristic of forest communities in Kelly Stanton (e.g., Bitternut Hickory, Sugar Maple, Northern Hackberry, American Beech).	Low
RO4b	3.13	Forest restoration: buckthorn management, tree planting Polygon #23	Remove buckthorn; plant native trees, ideally species which are characteristic of forest communities in Kelly Stanton ESA; monitor buckthorn cover and for other invasive species and manage as required.	Low

5.3.3. Restoration Recommendations

The following restoration practices are recommended to enhance the ecological form and function of Kelly Stanton ESA. A complete list of areas where restoration work is to be completed as well as details on how this work should be carried out and its benefits is shown

in the restoration table (**Appendix D**). The locations of the restoration areas within this table are shown on **Map 7** in **Appendix A**.

5.3.3.1. Unsanctioned Trail Assessment

Unsanctioned trails have the potential to negatively impact surrounding vegetation communities, particularly those located within the Nature Reserve management zones. Unsanctioned trails should be assessed for proper design, location, and associated ecological impact, and areas requiring ecological restoration should be identified.

The main trail in Kelly Stanton ESA is historically an unmanaged trail. This trail will be managed by UTRCA moving forward as the official trail within Kelly Stanton ESA.

5.3.3.2. Invasive Species Management

Invasive species are present in several areas within Kelly Stanton ESA. Invasive species that were identified and recommended for management include but are not limited to Common Buckthorn, Glossy Buckthorn, Cool Season Grasses, Dog Strangling Vine and Garlic Mustard. These species were found to be abundant in certain areas, many of which have been identified as priority species within the London Invasive Plant Management Strategy (City of London, 2017). It is recommended that invasive species be removed before they spread further throughout Kelly Stanton ESA and surrounding environments.

Removal of invasive plants should be completed on a species-by-species basis following published provincial Best Management Practices (e.g., Anderson, 2012a-d). In addition to removing invasive species, it is necessary to ensure that further invasive species are not introduced into Kelly Stanton ESA. To prevent this, it is recommended that the Clean Equipment Protocol for Industry (Halloran et al. 2013) be applied for any equipment entering the ESA and the surrounding environment.

5.3.3.3. Controlled Burns

Controlled burns will be an important tool for managing succession and restoring tallgrass prairie communities in Kelly Stanton ESA. Burns are recommended for communities that retain propagules of tallgrass prairie species in their seedbanks, particularly Polygons 3 and 8 (**Map 2** in **Appendix A**). Manual removal of shrubby vegetation will be necessary in Polygon #3 (**Map 2 in Appendix A**) prior to undertaking a burn.

Controlled burns may not need to be conducted across entire polygons but could be staged, for example, by burning one hectare each year. Note that controlled burns should be

conducted only by licensed and experienced professionals. The controlled burn will be completed in consultation with First Nations.

How to determine where a controlled burn is required: controlled burns should be conducted in tallgrass prairie communities when forb and/or cool season grass starts to exceed prairie grass cover (i.e., exceeds 50%). Communities that are currently dominated by prairie grasses (e.g., Polygon #s 10, 20) do not currently require a burn but the relative proportions of these types of vegetation cover should be monitored over time.

5.3.3.4. Waste Removal

The removal of any waste that has been dumped in Kelly Stanton ESA is one of the first restoration techniques that can be put into practice, to improve habitat for wildlife and plant species. 'No Dumping' signs and dense plantings should be provided in areas to discourage foot traffic and unauthorized dumping. Waste and litter removal should be completed prior to the implementation of other restoration activities.

5.3.3.5. Native Vegetation Plantings

Native vegetation plantings are an excellent way to enhance and restore degraded environments impacted by invasive species or human disturbance.

Native vegetation plantings can be used to provide higher quality wildlife habitat, limit the effects of erosion, and prevent the establishment of invasive species in natural areas. The planting of prickly or thorny species can be used in areas susceptible to unauthorized pedestrian traffic and waste dumping, as these plants act as a natural deterrent for both humans and pets and can assist in limiting access to sensitive areas. Native vegetation planting should commence following the removal of waste and invasive species.

5.3.3.6. Monitoring

To ensure the success of restoration and enhancement projects, it is necessary to regularly assess the areas where these measures have been implemented. Monitoring should be completed on an annual basis and should focus on areas where invasive plant species have been removed and where restorative plantings have been completed.

5.3.4. Trail Hierarchy and Specifications

There are three tiers, or levels of trails and pathways that are permitted within the publicly owned ESAs in the City:

- Level 1: Natural surface or boardwalk, 1.0 – 1.5 m width;

- Level 2: Non-erodible firm and stable surface, 1.0 – 2.0 m width; and
- Level 3: Non-erodible firm and stable surface, 2.0 – 3.0 m width.

The surface, structure, width, and permitted uses of each trail varies by level and is determined based on the management zone in which they are located.

As discussed in **Section 5.1**, Management Zones are designed to protect sensitive ecological features within an ESA by directing access and use to areas of lower sensitivity and that provide greater accessibility and are delineated following the Guidelines for Management Zones and Trails in Environmentally Significant Areas (City of London, 2016).

5.3.5. Existing Trail Compatibility Review

The existing unmanaged trail was reviewed for compatibility with the ecological features of Kelly Stanton ESA (see **Table 12**) in the context of the Guidelines for Management Zones and Trails in Environmentally Significant Areas (City of London, 2016) as described on page 24, Chart 2 and Table 1 of that document. The first step in this review is to determine if there is potential for the existing trails to negatively impact the significant ecological features identified in the Life Sciences Inventory. All significant ecological features are screened with the "Yes / No" answer to the question "Does this feature require review for compatibility with trails?" Results of this initial screening completed for Kelly Stanton ESA can be found in **Table 12**.

During this evaluation the following questions were considered and rationale for the final decision has been provided:

- Would a trail designed to be compatible with the underlying landform and/or significant ecological feature(s) harm the feature or its ecological function?
- Would responsible trail use harm the feature or its function?

Table 12. Significant ecological features and compatibility with managed trails

Feature	Trail Compatibility Review Required?	Rationale
Significant Wildlife Habitat		
Seasonal Wildlife Concentration Areas		

Feature	Trail Compatibility Review Required?	Rationale
Raptor Wintering Area	No	In general, trails do not cause changes (reductions) to vegetation communities or alterations that may reduce prey populations. Raptors roosting in Kelly Stanton ESA would not likely be sensitive to the limited disturbance that occurs in the winter months.
Bat Maternity Colonies*	No	Wildlife trees are retained in ESAs and trees along hiking trails are not routinely inspected. In the unlikely event that a large tree would need to be proactively managed for risk to public safety, a cavity search is completed in advance by qualified personnel to avoid impacts to the species. As bats do not generally exhibit site fidelity to any one wildlife tree, trails would not impact bats or this type of wildlife habitat.
Specialized Habitat Areas		
Amphibian Breeding Habitat*	No	Amphibians breeding in water are not anticipated to be impacted by trails and/or trail use. Given that most amphibian breeding occurs when public access to Kelly Stanton ESA is prohibited, impacts to this type of wildlife habitat due to trail use are not anticipated.
Animal Movement Corridors and Linkages		
Amphibian Movement Corridors*	No	Trails are not a barrier to connectivity for amphibian species. Most non-salamander species' movement between amphibian habitats is typically random dispersal rather than following a distinct corridor.

Feature	Trail Compatibility Review Required?	Rationale
Rare Vegetation Communities		
Tallgrass Prairie	No	A well-designed trail would not significantly impact this community or threaten its continued persistence in Kelly Stanton ESA.
Habitat for Species of Conservation Concern		
Shrub/Early Successional Bird Breeding Habitat	No	Trails located in or adjacent to this habitat type would not result in habitat loss.
Marsh Bird Breeding Habitat	Yes	Trails through Polygon #15 are likely to be minimal and would require a bridge and boardwalk, but the diverse assemblage of species which may use this habitat have specific habitat requirements which should be considered.
Terrestrial Crayfish	Yes	The use of suitable habitats by terrestrial crayfish should be reviewed as colonies can be as small as a few square meters, making trail placement or use of boardwalks important to avoid impacting the habitat.
False Tomentose Balsam Ragwort	Yes	Trails should not be constructed within 5 m of the population of False Tomentose Balsam Ragwort in Polygon #10.
Mead's Sedge	Yes	Trails should not be constructed within 5 m of the population of Mead's Sedge in Polygon #3.
Eastern Wood-pewee	No	Trails generally do not result in a loss of nesting habitat and this species is not highly sensitive to disturbance.

Feature	Trail Compatibility Review Required?	Rationale
Grasshopper Sparrow	Yes	Grasshopper Sparrow requires extensive areas of grassland habitat and is sensitive to human disturbance.
Olive-sided Flycatcher (migration only)	No	Trails will not result in a loss of migratory stopover habitat and trail use is not likely to deter this species from stopping over during migration.
Rusty Blackbird (migration only)	No	Trails will not result in a loss of migratory stopover habitat and trail use is not likely to deter this species from stopping over during migration.
Eastern Milksnake	No	This species has potential to occur throughout the entire ESA and trail construction will not result in a loss of suitable habitat.
Monarch	No	Trail construction is not likely to reduce the abundance of milkweed in Kelly Stanton ESA.
Species at Risk		
Barn Swallow	No	There is no suitable breeding habitat for Barn Swallows in Kelly Stanton ESA but this species forages over the ESA. Trails are not likely to result in a loss of foraging habitat and this species is not highly sensitive to disturbance.
Bobolink	Yes	Although Bobolinks have been seen in the Kelly Stanton ESA during migration, no evidence of breeding has been documented. However, all open country habitat in Kelly Stanton ESA is potential breeding habitat for Bobolinks and construction of trails through

Feature	Trail Compatibility Review Required?	Rationale
		these habitats should be reviewed to ensure that Bobolinks are not deterred from nesting.
Eastern Meadowlark	Yes	Eastern Meadowlarks are confirmed to breed in Polygon #8 and any open country habitat in Kelly Stanton ESA is suitable for Eastern Meadowlark nesting. Construction of trails through these habitats should be reviewed to ensure that Eastern Meadowlarks are not directly harmed or deterred from nesting.

Please note that the Guidelines for Management Zones and Trails in Environmentally Significant Areas (City of London, 2016) takes into account best policy implementation and available scientific data at the time of Council adoption. We acknowledge that the science in these areas may have progressed since 2016. All trail compatibility measures noted with an (*) were reviewed against the 2016 policy document and may require additional review or consideration to align with current scientific best practices.

For significant ecological features that were flagged as requiring review for compatibility with trails, these are then mapped in association with the underlying management zone to determine where overlap occurs. The sections of the trail requiring review are then identified by applying a Trail Review Overlay.

When reviewing trails for compatibility appropriate, relevant accepted Government of Canada or Government of Ontario publications and resources should be reviewed to provide guidance on how trails and/or trail use may impact the significant ecological feature under review. Reputable resources include technical reports published by government agencies. Where the preferred resources are not available for a significant ecological feature that requires further review, alternate sources of information may be considered. Based on the results of this review, the following options are:

- keep the existing trail, as is;

- keep the existing trail and include design features to preserve ecological integrity;
- realign the trail to avoid the significant ecological feature; or,
- close the trail.

Table 13 details the trail compatibility results for the significant ecological features flagged as requiring review and offers recommendations for future trail management.

Table 13. Trail compatibility assessment for Kelly Stanton ESA

Significant Ecological Feature	Is this feature compatible with the existing ESA trails?	Rationale	Recommended Action
Habitat for Species of Conservation Concern			
Marsh Bird Breeding Habitat	Yes	Only a candidate feature due to the observance of Sedge Wren during the breeding season. This feature would be confirmed Marsh Bird Breeding Habitat if 5 or more breeding pairs of Sedge Wrens occur in the ESA, which is highly unlikely.	Trail to remain, no further action required
Shrub/Early Successional Bird Breeding Habitat	Yes	A confirmed habitat feature in Kelly Stanton ESA.	Existing trails to remain. Trail density impacts to be considered prior to new trail development.
Terrestrial Crayfish	Yes	The use of suitable habitats by terrestrial crayfish should be reviewed as colonies can be as small as a few square meters, making trail placement or use of boardwalks important to avoid impacting the habitat.	TBD

Significant Ecological Feature	Is this feature compatible with the existing ESA trails?	Rationale	Recommended Action
False Tomentose Balsam Ragwort	Yes	Trails are not within 5 m of the population of False Tomentose Balsam Ragwort in Polygon #10.	Trail to remain, no further action required
Mead's Sedge	Yes	Trails are not within 5 m of the population of Mead's Sedge in Polygon #3.	Trail to remain, no further action required
Grasshopper Sparrow	Yes	Grasshopper Sparrow is unlikely to use the small amount of grassland habitat within Kelly Stanton ESA.	Trail to remain, no further action required
Species at Risk			
Bobolink	Yes	No evidence of breeding has been documented within Kelly Stanton ESA	Trail to remain, no further action required.
Eastern Meadowlark	Yes	Eastern Meadowlarks are confirmed to breed in Polygon #8 and existing trail use has not deterred nesting. Any open country habitat in Kelly Stanton ESA is suitable for Eastern Meadowlark nesting. Construction of new trails through these habitats should be reviewed to ensure that Eastern Meadowlarks are not directly harmed or deterred from nesting.	Trail to remain, new trail development should be minimized as increased trail density may have a negative impact.

5.4. Trail Management

The Phase 2 CMP will review the results of the Phase 1 study and through public consultation to determine a trail system that is sustainable and addresses the priority of maintaining ecological integrity of the ESA. Trail design, as identified in the Guidelines includes:

- ecological sustainability to avoid impacts to ecological features and functions;
- physical sustainability of the trails and/or structures so they retain their form and function over time and can withstand the natural forces acting on them;
- stewardship by the greater community to foster a sense of individual and collective responsibility for the protection of the ESA; and
- how the proposed Sustainable Trail Concept Plan complies with the Guidelines.

To protect the ESA while allowing for appropriate trail use, the City's Guidelines for Management Zones and Trails in ESAs (City of London, 2016) are applied.

As discussed in **Section 5.3.5**, the existing managed trails within Kelly Stanton ESA were reviewed for compatibility with significant ecological features. The review concluded that the existing managed trails are currently compatible with the significant ecological features in the ESA.

5.4.1. Issues and Considerations

At this stage, there are several issues pertaining to trail uses and protection of Kelly Stanton ESA's natural heritage features and functions that likely require further discussion and consideration. The consultation process with the public and the City may identify additional issues.

5.4.1.1. Closed Unmanaged Trails

There are no unmanaged trails within Kelly Stanton ESA that are 'closed'.

5.4.1.2. Trail Condition

Regular trail usage can lead to the deterioration of trail conditions due to foot traffic impact on the trail substrate as well as natural factors such as erosion from surface runoff and drainage through stream channels and gulleys. The trails in Kelly Staton ESA are thin trails maintained by foot traffic and cutting vegetation. The trails are a combination of dirt, gravel and cut vegetation. The trails are stable and no erosion was noted. Areas that are frequently wet or muddy may be bypassed, resulting in the widening or braiding of the trail footprint over time. Makeshift boardwalks and bridges have been placed in some of the wet sections of trail.

5.4.1.3. Non-permitted Uses

Non-permitted uses within Kelly Stanton ESA were observed, although appeared to be infrequent. Such uses included the dumping of refuse, and construction of lean-to shelters

using downed woody material from the forest floor. A reduction in non-permitted uses can be achieved through continued enforcement via the City's by-laws, stewardship and education initiatives with the surrounding community, and sustainable trail design.

5.4.1.4. ESA Protection, Use and Accessibility

ESAs allow for a variety of community uses and to connect with the City's natural heritage through a well-managed and accessible trail system. The current trails in Kelly Stanton ESA will be managed to meet current accessibility standards. To meet the needs of community members of all ages and abilities to realize the health benefits of the natural environment, including physical and mental well-being and social interaction, the Guidelines provide for both sustainable trail design to protect Kelly Stanton ESA and accessibility to meet AODA requirements.

6. Adaptive Management and Monitoring Framework

The Phase I CMP for Kelly Stanton ESA should be periodically updated as required to address current or new threats that may arise through the adaptive management approach. Adaptive management allows for changes in the management strategy in response to the receipt and analysis of additional data from implementation of recommended management actions. Should an action be implemented, and the desired results are not achieved, management is adjusted, and monitoring of the adjusted strategy continues.

6.1. Approach to Adaptive Management

Adaptive management is typically applied once a baseline has been determined against which results of the implemented management strategy can be measured. Baseline data was collected as part of the Phase ICMP for Kelly Stanton ESA, and additional data can be collected via monitoring conducted by the UTRCA or through public comment provided to the City.

An effective monitoring program and the assessment of results is essential to the adaptive management approach so that the ecological integrity of Kelly Stanton ESA can be maintained.

6.1.1. Trail Hierarchy and Specifications

As discussed in **Section 5.1**, Management Zones were delineated in Kelly Stanton ESA following Guidelines for Management Zones and Trail in ESAs (City of London, 2016). The trail system within Kelly Stanton ESA should adhere to the principles outlined in **Section 4** of the Guidelines with respect to Management Zones.

6.2. Monitoring Framework

A monitoring framework is used to evaluate the use of trails and manage changes within natural environments through the assessment of abiotic, biotic and cultural components. Monitoring the implemented strategies presented in **Section 5** measures the effectiveness of management activities. If a management activity is proven ineffective, the management activity can be adjusted, or a different method can be applied to achieve the desired results. The monitoring framework for abiotic, biotic, and cultural components is presented in **Table 14.**

Table 14. Monitoring framework for Kelly Stanton ESA

Component	Monitoring Variable	Focus of Monitoring	Methods for Monitoring	Frequency	Requirements for Management Response	Management Response
Abiotic	Trail Condition	Unsanctioned trails, trail width, trail substrate, flooding.	Document location of trail saturation, widening, unsanctioned trail connections.	Annually	If annual review of data indicates continued trail issues, implement management response.	Through use of the Guidelines (2016), determine if the issue can be addressed through trail redesign or closure.
	Erosion	Areas of erosion and safety concerns.	Record location and extent of erosion, cause of erosion (if known). Unsafe conditions resulting from erosion (steep slope, loose soil, slumping slopes, falling rocks or trees)	Annually	When erosion presents hazards to trails and trail uses.	Using the Guidelines, determine if additional measures can be implements to address erosion concerns, or if trail should be realigned or closed.

Component	Monitoring Variable	Focus of Monitoring	Methods for Monitoring	Frequency	Requirements for Management Response	Management Response
Biotic	Sensitive Species	Presence and abundance of SAR and rare species within or in proximity to management activities	Follow methods in Section 2 of this report to identify sensitive species; this may involve several methods (birds, vegetation)	1-3 years following activity	Compare pre and post data to determine if impacts detected; if no impacts detected, monitoring frequency may be reduced.	Determine if species impacts resulting from activities/local conditions or possibly external factors such as decline of a species province-wide; next steps to be determined by management team.
	Invasive Species	Non-native or invasive species in areas of management (restoration or naturalization).	Continued monitoring of management areas by professionals and public observations	Annually in areas where SAR/rare species present; every 2 years where SAR/rare species not present	If recorded instances of invasive species pose risk to the ESA, implement management response	Depending on target species, initiate best management and control practices if available; if not available, develop a management plan

Component	Monitoring Variable	Focus of Monitoring	Methods for Monitoring	Frequency	Requirements for Management Response	Management Response
Cultural	Encroachment	Yard waste, mowing/clearing, garden expansion.	Continued monitoring by the ESA management teams and the encouragement of observation reporting from the public	Ongoing	When encroachment into the ESA boundaries has been identified	Initiate by-law enforcement for compliance, educate the public and surrounding community on encroachment impacts via mail outs, brochures, etc.

Component	Monitoring Variable	Focus of Monitoring	Methods for Monitoring	Frequency	Requirements for Management Response	Management Response
	Trails	Usage of existing trails and informal trails	Record the location and type of issue (structural wear/damage, informal trail use/creation)	Annually	Review every 2 years for indication of continued use of informal trails, structure damage; where usage continues or structure damage poses a safety risk, implement management response.	Follow the trail closure process in section 7.2.6 of the Guidelines and apply best management practices; repair or replacement of damaged structure, apply safety measures as applicable (e.g., create barrier to hazard, temporarily close/reroute trail until repair or replacement has occurred).
	Non-permitted uses	By-law violation: littering, bicycles, off-leash dogs	Observations from management team, public observation and City by-law enforcement staff	Every 2 years	If review of data indicates continued or increasing violations, implement management response.	Review of violation types; management team to determine corrective action approaches which could include additional enforcement, signs and education.

Component	Monitoring Variable	Focus of Monitoring	Methods for Monitoring	Frequency	Requirements for Management Response	Management Response
	Restoration	Restoration overlay areas	Review of the restoration areas in Table 9 to record the success and condition of plantings; where applicable, review the progress of succession; could be combined with other monitoring types (invasive species, etc.)	Every 2 years starting the year of restoration efforts	Review of data to determine if restoration efforts have been effective. If further effort is required, implement management response.	Develop a restoration plan that is to be reviewed by the ESA management team prior to implementation.

Component	Monitoring Variable	Focus of Monitoring	Methods for Monitoring	Frequency	Requirements for Management Response	Management Response
	Naturalization	Naturalization areas	Review of the naturalization areas in Table 9 to record the success and condition of plantings; where applicable, review the progress of succession; could be combined with other monitoring types (invasive species, etc.)	Every 2 years starting the year of naturalization efforts	Review of data to determine if naturalization efforts have been effective. If further effort is required, implement management response.	Develop a naturalization plan that is to be reviewed by the ESA management team prior to management.

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7. Community Engagement and Education

The purpose of community engagement pertaining to natural area protection is to promote education, awareness, and participation to develop interest in conservation. The resulting interest allows all to contribute and benefit from the natural area. Engagement can include stewardship initiatives that provide opportunities for public involvement, education, outreach and research.

7.1. Stewardship and Education

Stewardship refers to the care taken by one or more individuals of natural features and systems to protect or enhance their quality and functions, including the recognition that the outcomes of those actions are of benefit to all those who utilize natural areas.

7.1.1. Existing Community Groups and Organizations

There are several different groups in the London area that engage in stewardship activities and promote and educate the community on local environmental issues aid in developing and maintaining an appreciation for the natural environment through activities such as guided hikes, mood walks, newsletters, volunteer flora and fauna counts and monitoring, and educational events. Some of these organizations include:

- Nature London
- Thames Valley Trail Association

7.1.2. Citizen Science

The participation of community members in monitoring and education initiatives can benefit the protection and stewardship of Kelly Stanton ESA while encouraging citizens to learn about the natural environment and the species that it supports. The participation of citizens in the monitoring recommended in **Section 6** is just one way for this to occur. Other potential efforts that could be implemented include:

- Christmas Bird Count;
- butterfly / dragonfly counts;
- Bumble Bee Watch; and
- recording and submitting flora and fauna observations via citizen science applications, including but not limited to, iNaturalist and eBird.

7.1.3. Educational Initiatives

Local schools in the vicinity of ESA present opportunities for educational outreach and

stewardship through engagement of staff and students. Potential initiatives should be devised to create interest and foster stewardship of Kelly StantonESA among young people. In class presentations and activities allow students to develop an understanding for the need to manage and conserve the natural environment and spur involvement in community efforts. Such initiatives could include:

- in-class presentations;
- guided hikes;
- citizen science; and
- co-op placement with the UTRCA/City.

7.1.4. Adopt-An-ESA

The Neighbors of Hunt Club previously adopted the north part of the ESA in mid-2020 to help with stewardship of Kelly Stanton ESA. They are to be commended for their initiative in removing litter from Kelly Stanton ESA with the community. This could help raise awareness about the significant ecological features in Kelly Stanton ESA within the local community and across the city. This program has been discontinued.

7.2. Engagement

7.2.1. Ecological Restoration Plan Engagement

Following project initiation, a meeting was held online via a Zoom webinar on January 27, 2021, and included representatives from the City, North South Environmental, Upper Thames River Conservation Authority (UTRCA), Neighbours of Hunt Club, Thames Valley Trail Association, and members of the public. At this meeting, City staff presented the objectives of the Kelly Stanton ERP and summarized the ongoing restoration work. Members of the public and interested parties in attendance at the meeting had the opportunity to provide feedback on the ERP.

7.2.2. Public Information Centre

A Public Information Center (PIC) was held on June 20, 2025 at City Hall where City staff led discussions and gathered feedback from interested parties on the draft mapping for the Phase I CMP for Kelly Stanton ESA. Invitations were circulated to UTRCA, Nature London, Thames Talbot Lands Trust, Hyde Park Business Association, and Oakridge Crossing Neighborhood Association. The group was generally supportive of revising the Restoration Plans into CMPs with specific support expressed for the proposed ESA boundary revisions. It was recommended that a Get Involved site be created as another means for gathering community input and communicating project updates.

7.2.3. Get Involved Webpage

The draft Phase I CMP for Kelly Stanton ESA was posted on the Get Involved webpage on January 29, 2026; public comments submitted through this webpage were collected until March 23, 2026. Comments have been reviewed and incorporated into the Phase I CMP for Kelly Stanton ESA, where appropriate.

7.2.4. Indigenous Engagement

City staff met with Chippewas of the Thames First Nation (COTTFN) and Oneida Nation of the Thames (Oneida Nation) to discuss the CMP and provide opportunities to include input into the process.

Phase I CMP documents for Kelly Stanton ESA were submitted through Nations Connect, as requested by COTTFN. The following materials were submitted on Nations Connect for review: the Get Involved webpage, a spatial file of the revised Kelly Stanton ESA boundary, the draft Phase I CMP for Kelly Stanton ESA, the Official Plan Amendment Notice of Application, and COTTFN meeting notes.

COTTFN expressed interest in having Indigenous art, design, and/or language incorporated in to trail signage; being involved in prescribed burns for tallgrass prairie restoration; and the development of additional mapping for First Nations community use. Oneida Nation was in agreement with the suggestions put forward by COTTFN, and also expressed interest in having Indigenous art, design, and/or language incorporated in to trail signage, with particular interest in having the Oneida language incorporated in to interactive trail signage; being involved in prescribed burns for tallgrass prairie restoration; and the development of additional mapping for First Nations community use.

Recommendations based on discussions with local First Nations Communities:

1. Biological inventories be established following any prescribed burns to determine if rare tallgrass prairie species persist in the seedbank of the area.
2. COTTFN and Oneida ecological monitors be present during any prescribed burns in Kelly Stanton ESA.
3. Indigenous art and design are recommended to be incorporated into trail signage at Kelly Stanton ESA. Wayfinding signs that include First Nations language (Deshkan Ziibii), and Quick Response (QR) signs that include information about native plants in Oneida language, are recommended to be developed.

7.3. Community Events

Community events can rally community members to a common cause and promote awareness of environmental stewardship. Initiatives including the City's Clean and Green Community Clean Up Day encourage litter clean up. Planting events are also facilitated by various groups and allow for public investment of effort, which can increase overall support of conservation and stewardship and increase compliance with ESA rules and by-laws.

7.4. Opportunities for Scientific Research

Scientific research conducted by professionals such as biologists, ecologists and other academics can expand knowledge of the cultural and natural environments of Kelly Stanton ESA. Proposed research is to be approved by the Managing Director of Parks and Recreation through the review of a submitted workplan that demonstrates no negative impacts. The research must also adhere to all applicable provincial and federal legislation. Some suitable fields of study applicable to Kelly Stanton ESA include:

- vegetation, fish, wildlife, and landforms;
- SAR, rare species and communities;
- invasive species density and spread; or
- management and restoration.

8. Closure

We trust that this report meets the current requirements for the Phase I Conservation Master Plan for Kelly Stanton ESA. Should there be any further questions or concerns, please do not hesitate to contact the undersigned.

Regards,

North-South Environmental Inc.

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Senior Ecologist
pcatling@nsenvironmental.com

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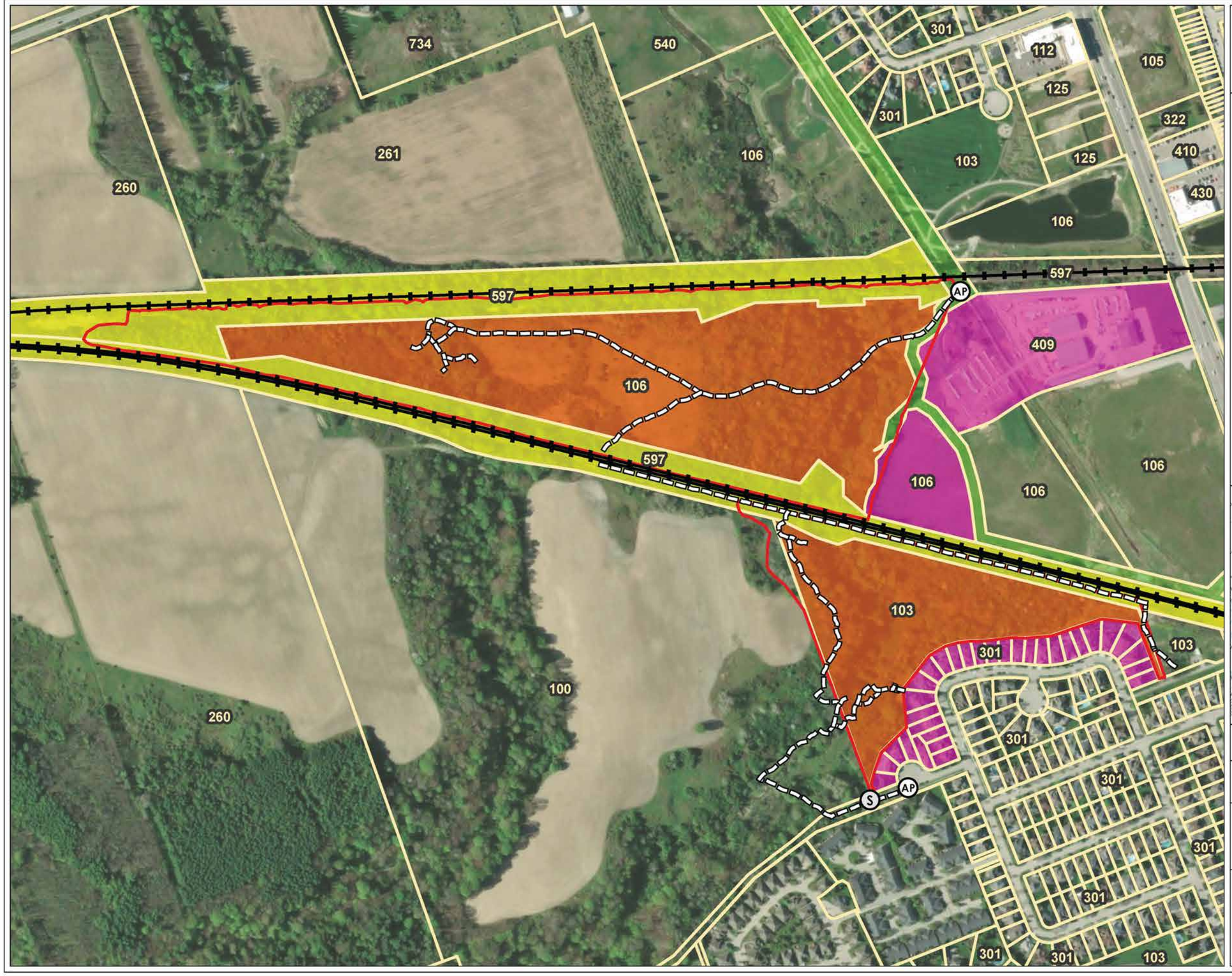
APPENDIX 1 | Mapping



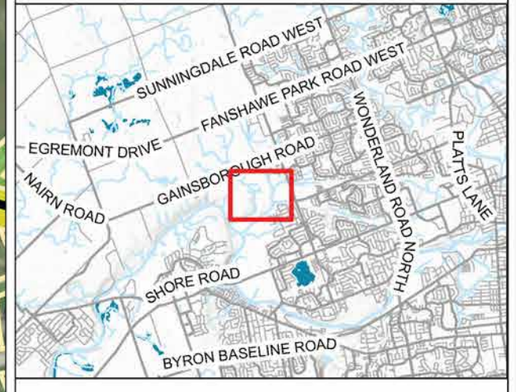
Map 1 | ESA Overview
Kelly Stanton CMP

Legend

- AP Access Points
- S Signage
- Trails
- Railways
- Kelly Stanton Boundary
- Parcels

Ownership

- City Of London
- City Of London Parks
- Private
- Railway



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Project Number	Date:	N
23-1344	2025-11-10	

north-south ENVIRONMENTAL

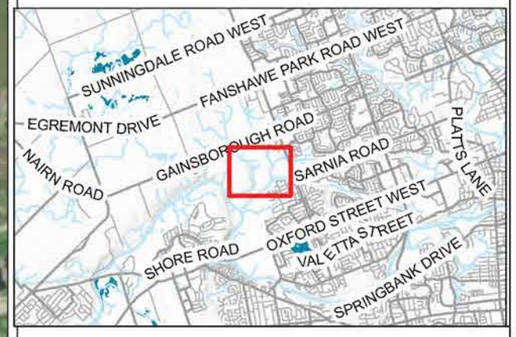
Map 2 | Vegetation Communities
Kelly Stanton CMP

Legend

- Kelly Stanton Boundary

Vegetation Communities

- CUM: Cultural Meadow (#24)
- CUM1: Mineral Cultural Meadow Ecosite (#1, 8 , 17)
- CUT1: Mineral Cultural Thicket Ecosite (#2, 4, 6, 11, 13, 16, 18, 19)
- CUW1: Mineral Cultural Woodland Ecosite (#23)
- FOD6-5: Fresh Moist Sugar Maple - Hardwood Deciduous Forest Type (#21)
- FOD7-3: Fresh Moist Willow Lowland - Deciduous Forest Type (#7)
- FOD8-1: Fresh Moist Poplar Deciduous Forest Type (#12)
- FOD9-5: Fresh Moist Bitternut Hickory - Deciduous Forest Type (#14)
- MAM2-2: Reed-canary Grass Mineral Meadow Marsh Type (#15)
- MAM2-10: Forb Mineral Meadow Marsh Type (#5)
- MAS2-2: Bulrush Mineral Shallow Marsh Type (#22)
- SWT2: Mineral Thicket Swamp Ecosite (#9)
- TPO2-1: Fresh Moist Tallgrass Prairie Type (#10, 20)
- TPO2-1/CU: Fresh Moist Tallgrass Prairie Type / Cultural (#3)



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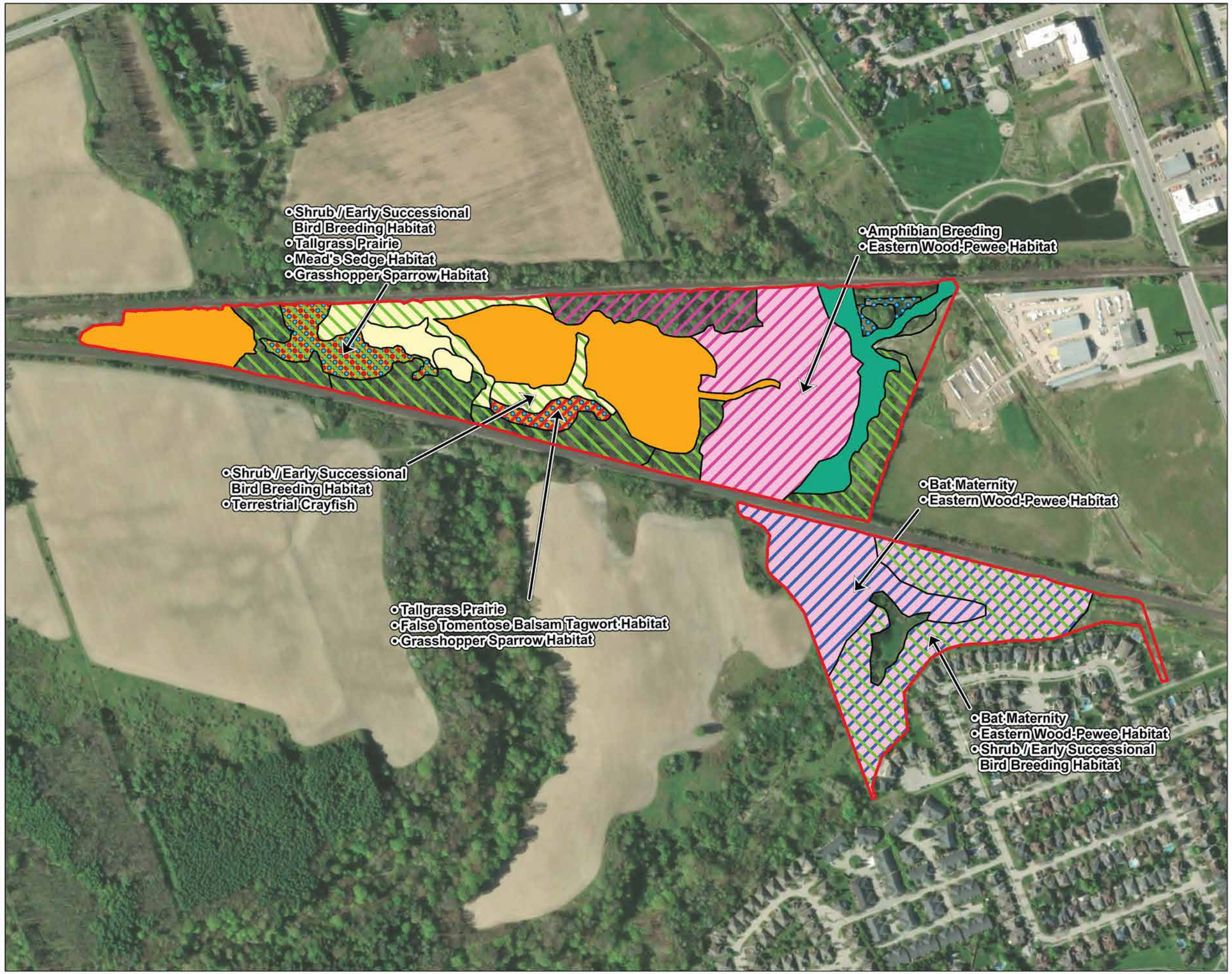
N

Project Number	Date:	
23-1344	2025-10-17	

north-south ENVIRONMENTAL

Map 3 | Significant Wildlife Habitat
Kelly Stanton CMP



Legend

- Kelly Stanton Boundary
- Mead's Sedge Habitat
- Tallgrass Prairie
- Bat Maternity
- False Tomentose Balsam Ragwort Habitat
- Amphibian Breeding
- Shrub/Early Successional Bird Breeding Habitat
- Eastern Wood-Pewee Habitat
- Grasshopper Sparrow Habitat
- Marsh Bird Breeding Habitat
- Terrestrial Crayfish

0 100 200 300 Meters

Project Number	Date:	N
23-1344	2025-10-17	

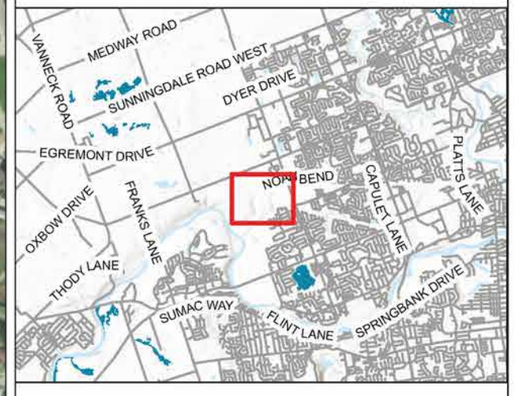
north-south ENVIRONMENTAL

Map 4 | Existing & Revised ESA Boundary

Kelly Stanton CMP

Legend

- Revised Kelly Stanton Boundary
- Current ESA Boundary
- Additional ESA Lands



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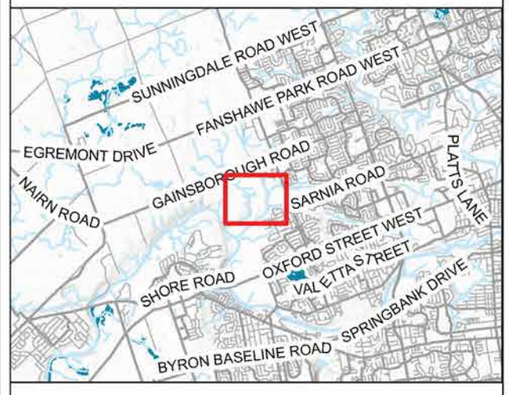
Project Number	Date:	N
23-1344	2025-08-29	

north-south ENVIRONMENTAL

Map 5 | Management Zones
Kelly Stanton CMP

Legend

- Kelly Stanton Boundary
- Trails
- Nature Reserve
- Natural Environment



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Project Number	Date:	N
23-1344	2025-10-17	

north-south ENVIRONMENTAL

Map 6 | Restoration Overlays

Kelly Stanton CMP

Legend

- Kelly Stanton Boundary

Restoration Overlay

RO1: Tallgrass Prairie Maintenance

- RO1a - General Maintenance and Monitoring
- RO1b - Shrub Management and Controlled Burning

RO2: Tallgrass Prairie Restoration

- RO2a - Cultural Meadow to Tallgrass Prairie
- RO2b - Cultural Thicket to Tallgrass Prairie

RO3: Forest Maintenance

- RO3a - Buckthorn Management

RO4: Forest Restoration

- RO4a - Tree Planting
- RO4b - Buckthorn Management and Tree Planting

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Project Number	Date:	N
23-1344	2025-10-17	

north-south ENVIRONMENTAL

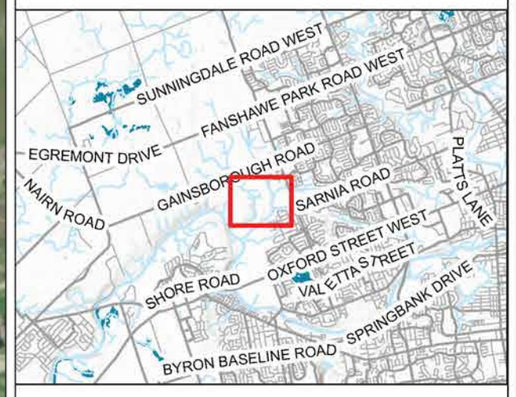
Map 7 | Restoration Priorities
Kelly Stanton CMP

Legend

- Kelly Stanton Boundary

Restoration Priorities

- High
- Medium
- Low



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Project Number	Date:	N
23-1344	2025-10-17	

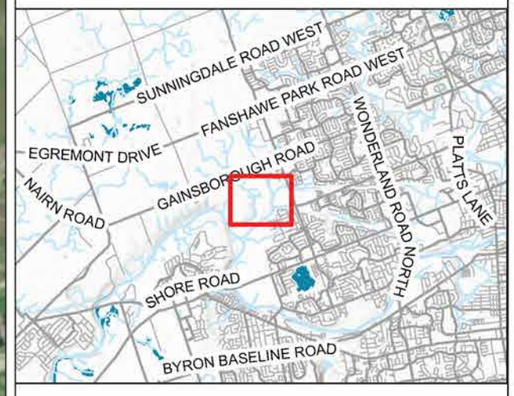
north-south ENVIRONMENTAL

Map 8 | New London Plan Map 5 Natural Heritage Features (2025-11-10)

Kelly Stanton CMP

Legend

- Kelly Stanton Boundary
- Significant Woodland
- Unevaluated Wetland



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Project Number	Date:	N
23-1344	2025-11-10	

north-south ENVIRONMENTAL

Map 9 | Trail Review Overlay
Kelly Stanton CMP

Legend

- Kelly Stanton Boundary
- Trails

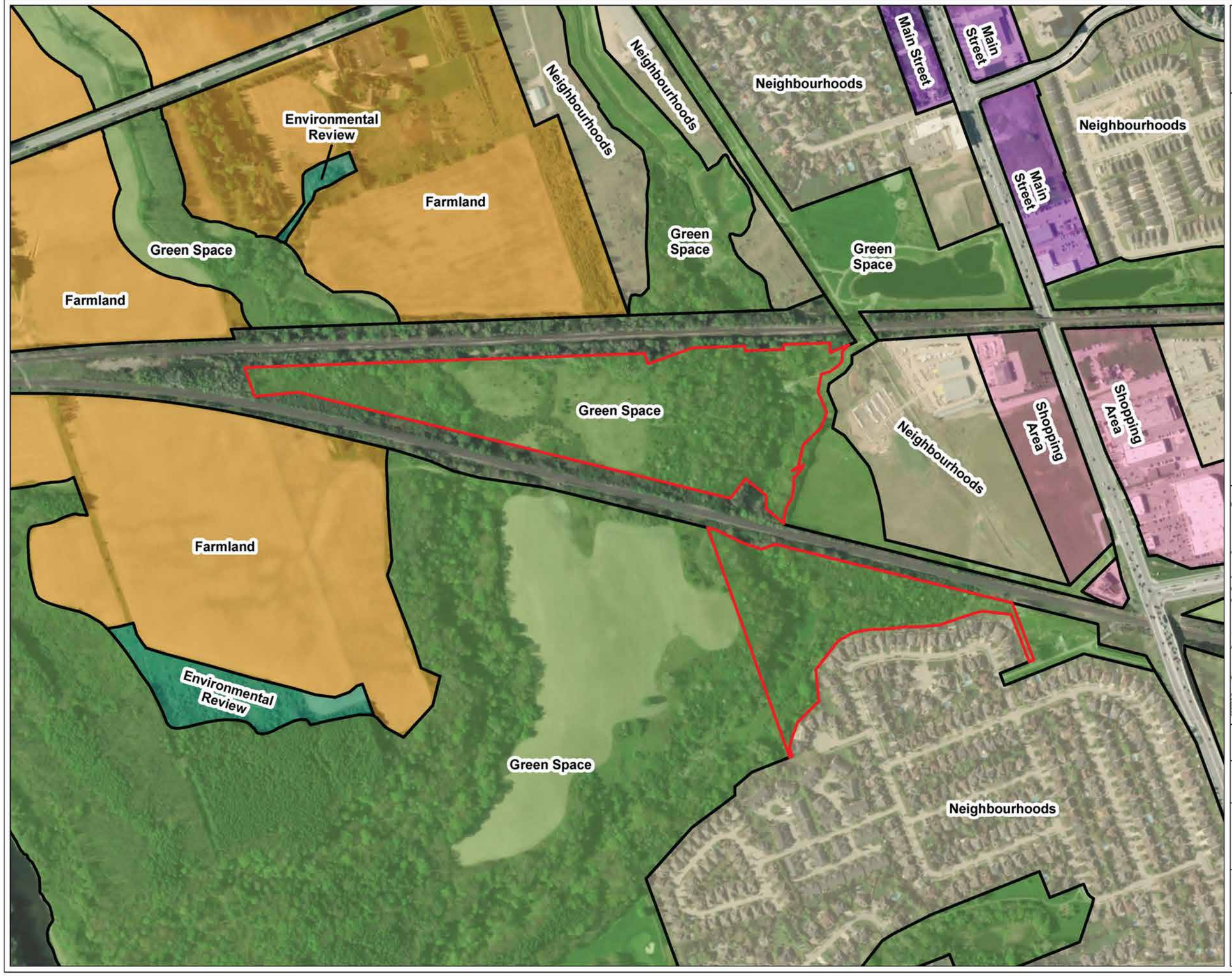
0 100 200 300 Meters

Project Number	Date:	N
23-1344	2025-10-17	

north-south ENVIRONMENTAL

Map 10 | London Plan Place Types

Kelly Stanton CMP

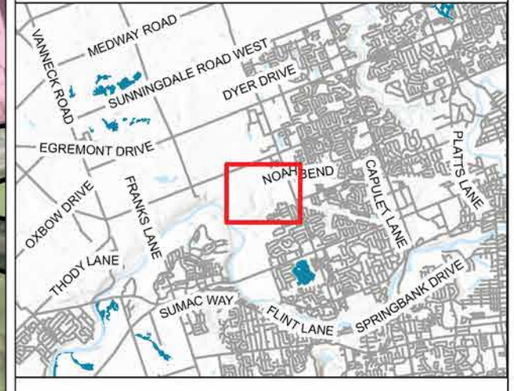


Legend

- Kelly Stanton Study Area

Place Types

- Green Space
- Environmental Review
- Farmland
- Neighbourhoods
- Shopping Area
- Main Street



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Project Number	Date:	
23-1344	2025-08-29	N

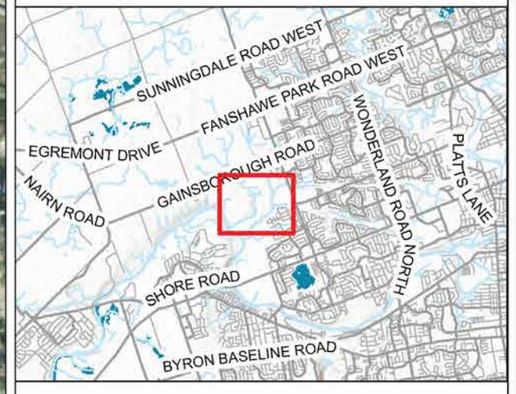
north-south ENVIRONMENTAL

Map 11 | Current London Plan Map 5 Natural Heritage Feature (2025-11-10)

Kelly Stanton CMP

Legend

- Kelly Stanton Boundary
- Potential Naturalization Areas
- Environmentally Significant Areas (ESAs)
- Areas of Natural and Scientific Interest
- Unevaluated Veg Patches
- Potential ESAs
- Significant Valleylands
- Significant Woodlands
- Unevaluated Wetlands



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Project Number	Date:	N
23-1344	2025-11-10	

north-south ENVIRONMENTAL

APPENDIX 2 | Species Lists

Table A2.1 – List of plant species identified in Kelly Stanton ESA

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
Adoxaceae	*Sambucus canadensis*	Black Elderberry	NSE	S5	X					✓	✓	
	Viburnum opulus var. opulus	European Cranberry Viburnum	iNaturalist	SE5	IR		✓		✓			
Amaryllidaceae	*Allium tricoccum var. tricoccum*	Wide-leaved Wild Leek	NSE	S5	C				✓			
Amblystegiaceae	*Hygroamblystegium varium*	Tangled Thread Moss	NSE	S5					✓			
Anacardiaceae	*Rhus typhina*	Staghorn Sumac	NSE	S5	C	✓	✓					✓
	Rhus x borealis	Northern Sumac	NSE	SNA	hyb			✓				
	Toxicodendron radicans	Climbing Poison Ivy	NSE	S5	C	✓	✓	✓	✓			
Apiaceae	*Daucus carota*	Wild Carrot	NSE	SE5	IC	✓						✓
	Torilis japonicus	Upright Hedge Parsley	NSE	SE3	IR				✓			
Apocynaceae	*Apocynum androsaemifolium*	Spreading Dogbane	NSE	S5	C	✓						✓
	Apocynum cannabinum	Hemp Dogbane	NSE	S5	C	✓						
	Asclepias incarnata	Swamp Milkweed	NSE	S5	C					✓	✓	
	Asclepias syriaca	Common Milkweed	NSE	S5	C	✓						✓
	Asclepias tuberosa	**Butterfly Milkweed**	**NSE**	**S4**	**R**							✓
	Vincetoxicum rossicum	Dog-strangling Vine	NSE	SE5	IR				✓			
Araceae	*Arisaema triphyllum*	Jack-in-the-pulpit	NSE	S5	C				✓			
	Symplocarpus foetidus	Eastern Skunk Cabbage	NSE	S5	C				✓			
Asteraceae	*Achillea millefolium*	Common Yarrow	NSE	S5	C	✓						✓
	Ambrosia artemisiifolia	Eastern Ragweed	NSE	S5	C	✓						✓
	Bidens frondosa	Devil's Beggarticks	NSE	S5	X				✓	✓		
	Centaurea jacea	Brown Knapweed	NSE	SE5	IX	✓						
	Centaurea stoebe	Spotted Knapweed	NSE	SE5	IX	✓						
	Centaurea x moncktonii	Monckton's Knapweed	NSE	SE	hyb	✓						
	Cichorium intybus	Chicory	NSE	SE5	IC	✓						
	Cirsium arvense	Creeping Thistle	NSE	SE5	IC	✓						
	Cirsium vulgare	Bull Thistle	NSE	SE5	IX	✓						
	Erigeron pulchellus	Robin's Plantain	NSE	S5	X	✓						
	Erigeron strigosus	Daisy Fleabane	NSE	S5	C	✓	✓	✓	✓			✓
	Eupatorium perfoliatum	Common Boneset	NSE	S5	C	✓				✓		
	Euthamia graminifolia	Grass-leaved Goldentop	NSE	S5	C	✓						✓
	Eutrochium maculatum	Spotted Joe-Pye-weed	NSE	S5	C					✓	✓	
	Lactuca canadensis	Canada Wild Lettuce	iNaturalist	S5	X				✓			

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
	Leucanthemum vulgare	Oxeye Daisy	NSE	SE5	IC	✓	✓					✓
	Packera paupercula var. pseudotomentosa	**False Tomentose Balsam Ragwort**	**NSE**	**S2S3**	**R**							✓
	Pilosella piloselloides	Smooth Hawkweed	NSE	SE5	IR	✓						
	Rudbeckia hirta	Black-eyed Susan	NSE	S5	C	✓						✓
	Solidago altissima	Late Goldenrod	NSE	S5	U	✓						✓
	Solidago caesia	Blue-stemmed Goldenrod	NSE	S5	X				✓			
	Solidago canadensis	Canada Goldenrod	NSE	S5	X		✓					
	Solidago flexicaulis	Zigzag Goldenrod	NSE	S5	X				✓			
	Solidago gigantea	Tall Goldenrod	NSE	S5	X				✓	✓		
	Solidago juncea	Early Goldenrod	NSE	S5	X	✓						✓
	Solidago nemoralis	Grey Goldenrod	NSE	S5	X	✓						✓
	Symphyotrichum ericoides	Heath Aster	NSE	S5	C	✓						✓
	Symphyotrichum laeve	Smooth Aster	NSE	S5	C	✓						✓
	Symphyotrichum lanceolatum	Panicled Aster	NSE	S5	C	✓				✓	✓	
	Symphyotrichum lateriflorum	Calico Aster	NSE	S5	C		✓	✓	✓			
	Symphyotrichum novae-angliae	New England Aster	NSE	S5	C	✓						
	Symphyotrichum pilosum var. *pilosum*	Frost Aster	NSE	S5	U	✓						✓
	Symphyotrichum puniceum	Swamp Aster	NSE	S5	X	✓				✓	✓	
	Symphyotrichum urophyllum	Arrow-leaved Aster	NSE	S4	X	✓						✓
	Tragopogon pratensis	Yellow Salsify	NSE	SE5	IX		✓					
Athyriaceae	*Athyrium angustum*	Northern Lady Fern	NSE	S5	X				✓			
Balsaminaceae	*Impatiens capensis*	Spotted Jewelweed	NSE	S5	C	✓	✓	✓	✓	✓	✓	
	Impatiens pallida	Pale Jewelweed	NSE	S4	X				✓			
Berberidaceae	*Podophyllum peltatum*	Mayapple	NSE	S5	X				✓			
Betulaceae	*Carpinus caroliniana*	American Hornbeam	NSE	S5	C				✓			
	Ostrya virginiana	Hop-hornbeam	NSE	S5	C				✓			
Boraginaceae	*Echium vulgare*	Viper's Bugloss	NSE	SE5	IC	✓						
Brassicaceae	*Alliaria petiolata*	Garlic Mustard	NSE	SE5	IC		✓	✓	✓			
	Barbarea vulgaris	Yellow Rocket	NSE	SE5	IC	✓						
	Cardamine bulbosa	Bulbous Cress	iNaturalist	S4	X					✓	✓	
	Diplotaxis muralis	Annual Wall Rocket	NSE	SE3	IR	✓						
	Hesperis matronalis	Dame's Rocket	NSE	SE5	IX			✓	✓			

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
Campanulaceae	*Lobelia inflata*	Indian Tobacco	NSE	S5	X				✓			
Caprifoliaceae	*Lonicera x bella*	Bell's Honeysuckle	NSE	SE	hyb				✓			
	Symphoricarpos albus	Common Snowberry	NSE	S5	X				✓			
	Triosteum aurantiacum	Orange-fruited Horse-gentian	NSE	S5	X	✓			✓			
Caryophyllaceae	*Dianthus armeria*	Deptford Pink	NSE	SE5	IX	✓	✓					
	Silene latifolia	White Campion	NSE	SE5	IX	✓	✓	✓	✓			
	Stellaria media	Common Chickweed	NSE	SE5	IC				✓			
Conocephalaceae	*Conocephalum salebrosum*	Snakewort	iNaturalist	S5					✓			
Convolvulaceae	*Calystegia sepium*	Hedge Bindweed	NSE	S5	X	✓						✓
	Convolvulus arvensis	Field Bindweed	NSE	SE5	IX	✓						
Cornaceae	*Cornus amomum*	Silky Dogwood	NSE	S5	X		✓				✓	
	Cornus racemosa	Grey Dogwood	NSE	S5	X	✓	✓	✓	✓		✓	✓
	Cornus sericea	Red Osier Dogwood	NSE	S5	C					✓		
Cucurbitaceae	*Echinocystis lobata*	Wild Cucumber	NSE	S5	X	✓	✓	✓	✓	✓	✓	
Cupressaceae	*Juniperus virginiana*	Eastern Red Cedar	NSE	S5	X	✓						✓
Cuscutaceae	*Cuscuta gronovii*	Common Dodder	NSE	S5	C					✓		
Cyperaceae	*Carex arctata*	Drooping Woodland Sedge	iNaturalist	S5	C				✓			
	Carex aurea	Golden Sedge	NSE	S5	C	✓						✓
	Carex flacca	Blue Sedge	NSE	SE2	IR	✓						
	Carex flava	Yellow-green Sedge	NSE	S5	C	✓						✓
	Carex granularis	Limestone Meadow Sedge	NSE	S5	C	✓						✓
	Carex hirtifolia	Hairy-leaved Sedge	NSE	S4S5	C				✓			
	Carex hystericina	Bottlebrush Sedge	NSE	S5	C					✓	✓	
	Carex lacustris	Lake Sedge	NSE	S5	C					✓		
	Carex meadii	**Mead's Sedge**	**NSE**	**S2**	**R**		✓					✓
	Carex molesta	Troublesome Sedge	NSE	S4S5	U	✓						
	Carex muehlenbergii	**Muhlenberg's Sedge**	**NSE**	**S4S5**	**R**	✓						
	Carex normalis	**Greater Straw Sedge**	**NSE**	**S4**	**R**	✓						
	Carex pallescens	**Pale Sedge**	**iNaturalist**	**S4**	**R**							✓
	Carex radiata	Star Sedge	NSE	S5	C				✓			
	Carex rosea	Rosy Sedge	NSE	S5	C				✓			
	Carex sparganioides	Bur-reed Sedge	NSE	S5	U				✓			
	Carex spicata	Spiked Sedge	NSE	SE5	IC	✓	✓					

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
	Carex swanii	**Swan's Sedge**	**NSE**	**S4**	**R**		✓					
	Carex umbellata	**Parasol Sedge**	**NSE**	**S5**	**R**		✓					
	Carex vulpinoidea	Fox Sedge	NSE	S5	C	✓				✓		✓
	Schoenoplectus tabernaemontani	Soft-stemmed Bulrush	NSE	S5	C	✓				✓		
	Scirpus atrovirens	Dark Green Bulrush	NSE	S5	C	✓				✓		
	Scirpus microcarpus	**Small-headed Bulrush**	**iNaturalist**	**S5**	**R**					✓		
	Scirpus pendulus	Nodding Bulrush	NSE	S5	C	✓				✓		
Dipsacaceae	*Dipsacus fullonum*	Fuller's Teasel	NSE	SE5	IC	✓						
Dryopteridaceae	*Dryopteris carthusiana*	Spinulose Wood Fern	NSE	S5	C				✓			
	Dryopteris intermedia	Intermediate Wood Fern	NSE	S5	C				✓			
	Polystichum acrostichoides	Christmas Fern	NSE	S5	X				✓			
Elaeagnaceae	*Elaeagnus umbellata*	Autumn Olive	NSE	SE5	IR	✓	✓					
Equisetaceae	*Equisetum arvense*	Field Horsetail	NSE	S5	C	✓						
	Equisetum fluviatile	River Horsetail	iNaturalist	S5	U					✓		
	Equisetum hyemale	Rough Horsetail	NSE	S5	C	✓						
Fabaceae	*Desmodium canadense*	Showy Tick-trefoil	NSE	S4	X	✓						✓
	Desmodium perplexum	Perplexed Tick-trefoil	NSE	S4	X		✓					✓
	Lathyrus latifolius	Broad-leaved Sweet Pea	NSE	SE5	IX	✓	✓					
	Lotus corniculatus	Bird's-foot Trefoil	NSE	SE5	IX	✓						
	Medicago lupulina	Black Medick	NSE	SE5	IC	✓						
	Medicago sativa	Alfalfa	NSE	SE5	IC	✓						
	Melilotus albus	White Sweet-clover	NSE	SE5	IC	✓						
	Trifolium pratense	Red Clover	NSE	SE5	IX	✓	✓					
	Trifolium repens	White Clover	NSE	SE5	IX	✓						
	Vicia cracca	Cow Vetch	NSE	SE5	IX	✓						
Fagaceae	*Fagus grandifolia*	American Beech	NSE	S5	C				✓			
	Quercus alba	White Oak	NSE	S5	C				✓			
	Quercus macrocarpa	Bur Oak	NSE	S5	C	✓			✓			
	Quercus rubra	Northern Red Oak	NSE	S5	C				✓			
Geraniaceae	*Geranium maculatum*	Spotted Geranium	NSE	S5	X				✓			
	Geranium robertianum	Herb-Robert	NSE	S5	C		✓	✓	✓			
Grossulariaceae	*Ribes americanum*	American Black Currant	NSE	S5	C				✓	✓	✓	
	Ribes cynosbati	Prickly Gooseberry	NSE	S5	C				✓			

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
Hypericaceae	*Hypericum perforatum*	Common St. John's-wort	NSE	SE5	IC	✓			✓			✓
Iridaceae	*Iris pseudacorus*	Yellow Iris	NSE	SE4	IR					✓		
	Iris versicolor	Northern Blueflag	NSE	S5	X					✓		
	Sisyrinchium angustifolium	**Narrow-leaved Blue-eyed-grass**	**NSE**	**S4**	**R**	✓						
	Sisyrinchium montanum	Strict Blue-eyed-grass	NSE	S5	X	✓						
Juglandaceae	*Carya cordiformis*	Bitternut Hickory	NSE	S5	X			✓	✓			
Juncaceae	***Juncus articulatus***	**Jointed Rush**	**iNaturalist**	**S5**	**R**	✓						
	Juncus dudleyi	Dudley's Rush	NSE	S5	C	✓						
	Juncus tenuis	Path Rush	NSE	S5	X	✓	✓	✓	✓			
	Juncus torreyi	Torrey's Rush	NSE	S5	U	✓						
	Luzula multiflora	Heath Woodrush	iNaturalist	S5	X				✓			
Lamiaceae	*Clinopodium vulgare*	Wild Basil	NSE	S5	X				✓			
	Leonurus cardiaca	Common Motherwort	NSE	SE5	IC	✓	✓	✓	✓			
	Lycopus americanus	American Bugleweed	NSE	S5	C				✓	✓		
	Monarda fistulosa	Wild Bergamot	NSE	S5	C	✓						✓
	Prunella vulgaris	Self-heal	NSE	S5	C	✓			✓			✓
	Scutellaria lateriflora	Side-flowering Skullcap	NSE	S5	X				✓	✓		
Liliaceae	*Erythronium americanum*	Yellow Trout-lily	NSE	S5	X				✓			
Lythraceae	*Lythrum salicaria*	Purple Loosestrife	NSE	SE5	IC	✓				✓	✓	
Malvaceae	*Tilia americana*	Basswood	NSE	S5	C				✓			
Melanthiaceae	*Trillium grandiflorum*	White Trillium	NSE	S5	X				✓			
Menispermaceae	*Menispermum canadense*	Canada Moonseed	NSE	S4	X				✓			
Mniaceae	*Plagiomnium ciliare*	Wavy-leaved Moss	NSE	S5					✓			
Montiaceae	*Claytonia virginica*	Virginia Spring Beauty	NSE	S5	C				✓			
Oleaceae	*Fraxinus americana*	White Ash	NSE	S4	C		✓	✓	✓			
	Fraxinus pennsylvanica	Green Ash	NSE	S4	C		✓	✓	✓			
	Ligustrum vulgare	Common Privet	NSE	SE5	IX		✓					
Onagraceae	*Circaea canadensis*	Broad-leaved Enchanter's- nightshade	NSE	S5	X			✓	✓			
	Oenothera parviflora	Northern Evening-primrose	NSE	S5	X	✓						✓
Onocleaceae	*Onoclea sensibilis*	Sensitive Fern	NSE	S5	X				✓		✓	
Orchidaceae	*Cypripedium parviflorum*	Yellow Lady's-slipper	NSE	S5	X		✓				✓	✓
	Epipactis helleborine	Helleborine Orchid	NSE	SE5	IX		✓	✓	✓			

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
	Liparis loeselii	Fen Orchid	NSE	S4S5	X	✓						
	Spiranthes incurva	Sphinx Ladies'-tresses	NSE	S5	X							✓
Orobanchaceae	***Aphyllon uniflorum***	**One-flowered Cancer-root**	**NSE**	**S4**	**R**				✓			
Oxalidaceae	*Oxalis stricta*	Upright Wood-sorrel	NSE	S5	X	✓						
Papaveraceae	*Sanguinaria canadensis*	Bloodroot	NSE	S5	X				✓			
Pinaceae	*Pinus strobus*	Eastern White Pine	NSE	S5	X	✓						
Plantaginaceae	*Chelone glabra*	White Turtlehead	NSE	S5	X					✓	✓	
	Penstemon digitalis	Foxglove Beardtongue	NSE	S4	X	✓						✓
	Plantago lanceolata	English Plantain	NSE	SE5	IC	✓						
	Plantago major	Common Plantain	NSE	SE5	IC	✓			✓			
	Veronica anagallis-aquatica	Water Speedwell	NSE	SE	IX					✓	✓	
	Veronica officinalis	Heath Speedwell	NSE	SE5	IX				✓			
	Veronica serpyllifolia	Thyme-leaved Speedwell	NSE	SE5?	IX				✓			
Poaceae	*Agrostis gigantea*	Redtop Bentgrass	NSE	SE5	IC	✓				✓		
	Agrostis stolonifera	Creeping Bentgrass	NSE	SE5	IC	✓						
	Andropogon gerardii	Big Bluestem	NSE	S4	C	✓						✓
	Bromus inermis	Smooth Brome	NSE	SE5	IC	✓						
	Dactylis glomerata	Orchard Grass	NSE	SE5	IC	✓		✓	✓			
	Danthonia spicata	Poverty Oatgrass	NSE	S5	X	✓						✓
	Dichanthelium implicatum	Hairy Panic Grass	NSE	S5	X	✓						✓
	Elymus virginicus	Virginia Wild Rye	NSE	S5	X				✓			
	Festuca rubra	Red Fescue	NSE	S5	IX	✓						
	Glyceria striata	Fowl Manna Grass	NSE	S5	X	✓			✓	✓		
	Leersia virginica	Virginia Cutgrass	NSE	S5	X				✓			
	Lolium arundinaceum	Tall Fescue	NSE	SE5	IC	✓						
	Muhlenbergia schreberi	Nimblewill	NSE	S4	X				✓			
	Phalaris arundinacea	Reed Canary Grass	NSE	S5	X	✓				✓		
	Phleum pratense	Timothy	NSE	SE5	IC	✓						
	Poa compressa	Flattened Bluegrass	NSE	SE5	IX	✓						
	Poa pratensis	Kentucky Bluegrass	NSE	SE5	IC	✓						
	Schizachyrium scoparium	Little Bluestem	NSE	S4	X	✓						✓
	Sorghastrum nutans	Indian Grass	NSE	S4	X	✓						✓
Polygonaceae	*Persicaria maculosa*	Lady's-thumb	NSE	SE5	IX				✓	✓	✓	

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
	Persicaria virginiana	Jumpseed	NSE	S4	X				✓			
	Polygonum aviculare	Prostrate Knotweed	NSE	SE5	IC	✓						
	Rumex crispus	Curled Dock	NSE	SE5	IC	✓				✓		
Primulaceae	*Lysimachia ciliata*	Fringed Loosestrife	NSE	S5	X				✓	✓	✓	
	Lysimachia nummularia	Creeping Jenny	NSE	SE5	IX				✓			
Ranunculaceae	*Anemone virginiana*	Tall Thimbleweed	NSE	S5	C	✓			✓			✓
	Caltha palustris	Marsh Marigold	NSE	S5	C					✓	✓	
	Clematis virginiana	Virgin's-bower	NSE	S5	C	✓					✓	
	Ranunculus acris	Field Buttercup	NSE	SE5	IC	✓						
Rhamnaceae	*Frangula alnus*	Glossy Buckthorn	NSE	SE5	IU	✓	✓	✓	✓		✓	✓
	Rhamnus cathartica	Common Buckthorn	NSE	SE5	IC	✓	✓	✓	✓			✓
Rosaceae	*Agrimonia gryposepala*	Common Agrimony	NSE	S5	C				✓			
	Amelanchier arborea	Downy Serviceberry	iNaturalist	S5	C				✓			
	Crataegus crus-galli	**Cockspur Hawthorn**	**iNaturalist**	**S4**	**R**	✓	✓					✓
	Crataegus sp.	Unidentified Hawthorn	NSE			✓	✓	✓	✓			✓
	Fragaria vesca	Woodland Strawberry	NSE	S5	X				✓			
	Fragaria virginiana	Field Strawberry	NSE	S5	C	✓	✓	✓	✓			
	Geum canadense	White Avens	NSE	S5	X				✓			
	Geum triflorum	**Prairie Smoke**	**NSE**	**S4**	**R**	✓						
	Geum urbanum	Wood Avens	NSE	SE3	IR				✓			
	Malus coronaria	Sweet Crabapple	NSE	S4	X		✓	✓				
	Malus pumila	Common Apple	iNaturalist	SE4	IX		✓					
	Potentilla recta	Sulphur Cinquefoil	NSE	SE5	IX	✓						
	Prunus virginiana	Choke Cherry	NSE	S5	C	✓	✓	✓	✓	✓	✓	
	Rosa multiflora	Multiflora Rose	NSE	SE5	IX	✓						
	Rubus allegheniensis	Allegheny Blackberry	NSE	S5	C	✓						
	Rubus idaeus ssp. strigosus	American Red Raspberry	NSE	S5	X	✓						
	Rubus occidentalis	Black Raspberry	NSE	S5	C	✓						
	Rubus setosus	**Bristly Blackberry**	**NSE**	**S4**	**R**	✓						
Rubiaceae	*Galium album*	White Hedge Bedstraw	NSE	SE5	IX	✓						
	Galium aparine	Catchweed Bedstraw	NSE	S5	X	✓						
	Galium boreale	Northern Bedstraw	iNaturalist	S5	X				✓			
	Galium palustre	Marsh Bedstraw	NSE	S5	X					✓	✓	

Family	Scientific Name	Common Name	Source[1]	SRank[2]	RRank[3]	Vegetation Community						
						CUM	CUT	CUW	FOD	MAM	SWT	TPO
Salicaceae	*Populus balsamifera*	Balsam Poplar	NSE	S5	X	✓						
	Populus deltoides	Eastern Cottonwood	NSE	S5	X	✓			✓			
	Populus tremuloides	Trembling Aspen	NSE	S5	X	✓			✓			
	Salix alba	White Willow	NSE	SE5	IX				✓		✓	
	Salix amygdaloides	Peach-leaved Willow	NSE	S5	X						✓	
	Salix discolor	American Pussy Willow	NSE	S5	X	✓					✓	
	Salix eriocephala	Heart-leaved Willow	NSE	S5	X	✓					✓	
	Salix purpurea	Purple Willow	NSE	SE4	IX	✓						
Sapindaceae	*Acer x freemanii*	Freeman's Maple	NSE	SNA	hyb				✓			
	Acer saccharum	Sugar Maple	NSE	S5	C				✓			
Solanaceae	*Physalis heterophylla*	Clammy Ground-cherry	NSE	S4	X	✓						✓
	Solanum dulcamara	Bittersweet Nightshade	NSE	SE5	IC					✓	✓	
	Solanum emulans	Eastern Black Nightshade	NSE	S5	X	✓			✓			
Thuidiaceae	*Thuidium recognitum*	Hook-leaved Fern Moss	NSE	S5					✓			
Ulmaceae	*Celtis occidentalis*	Northern Hackberry	NSE	S4	X				✓			
	Ulmus americana	American Elm	NSE	S5	C				✓			
Urticaceae	*Boehmeria cylindrica*	False Nettle	NSE	S5	X				✓	✓	✓	
	Pilea pumila	Common Clearweed	NSE	S5	X				✓			
	Urtica dioica	Stinging Nettle	iNaturalist	S5	C					✓		
Verbenaceae	*Verbena hastata*	Blue Vervain	NSE	S5	C	✓				✓		
	Verbena urticifolia	White Vervain	NSE	S5	X				✓			
Violaceae	*Viola pubescens*	Downy Yellow Violet	NSE	S5	C				✓			
	Viola sororia	Common Blue Violet	NSE	S5	X				✓			
	Viola sp.	Unidentified Violet	iNaturalist						✓			
Vitaceae	*Parthenocissus inserta*	Thicket Creeper	NSE	S5	X	✓	✓	✓	✓			
	Parthenocissus quinquefolia	Virginia Creeper	NSE	S5	X				✓			
	Vitis riparia	Riverbank Grape	NSE	S5	C	✓	✓	✓	✓			✓

[1]Source: NSE – Observed by NSE during field investigations; iNaturalist – submitted to iNaturalist by other naturalists.

[2]Provincial conservation status: S5 – Secure; S4 – Apparently Secure; S2S3 – Imperiled to Vulnerable; S2 – Imperiled; SE – Exotic (number denotes abundance in Ontario); SNA – Not applicable (generally refers to hybrids).

[3]Regional conservation status (Middlesex County): C – Common; U – Uncommon; R – Rare; X – Data deficient; I – Introduced (suffix denotes abundance in Middlesex); hyb – Hybrid (not typically ranked).

Table A2.2 – Bird species observed in Kelly Stanton ESA

Scientific Name	Common Name	Source[1]	SAR A[2]	ESA[3]	SRank[4]	RRank[5]	Breeding Evidence
Accipiter cooperii	Cooper's Hawk	NSE	NAR	NAR	S4	L3	Observed
Actitis macularius	Spotted Sandpiper	NSE			S5	L3	Observed
Agelaius phoeniceus	Red-winged Blackbird	NSE			S4		Probable
Aix sponsa	Wood Duck	NSE			S5	L4	Possible
Ammodramus savannarum	Grasshopper Sparrow	NSE	SC	SC	S4B	L3	Probable
Anas platyrhynchos	Mallard	NSE			S5		Possible
Archilochus colubris	Ruby-throated Hummingbird	eBird			S5B	L2	Possible
Ardea herodias	Great Blue Heron	NSE			S4		Possible
Bombycilla cedrorum	Cedar Waxwing	NSE			S5B		Possible
Branta canadensis	Canada Goose	NSE			S5		Possible
Buteo jamaicensis	Red-tailed Hawk	NSE	NAR	NAR	S5		Possible
Cardinalis cardinalis	Northern Cardinal	NSE			S5		Probable
Cathartes aura	Turkey Vulture	NSE			S5B	L3	Possible
Catharus guttatus	Hermit Thrush	NSE			S5B		Observed
Chaetura pelagica	Chimney Swift	eBird	THR	THR	S4B,S4 N		Observed
Charadrius vociferus	Killdeer	NSE			S5B,S5 N		Possible
Cistothorus platensis	Sedge Wren	eBird	NAR	NAR	S4B	L2	Possible
Coccyzus erythropthalmus	Black-billed Cuckoo	NSE			S5B	L2	Probable
Colaptes auratus	Northern Flicker	NSE			S4B		Probable
Columba livia	Rock Pigeon	NSE			SNA		Possible
Contopus cooperi	Olive-sided Flycatcher	eBird	SC	SC	S4B		Observed
Contopus virens	Eastern Wood-pewee	NSE	SC	SC	S4B		Probable
Corvus brachyrhynchos	American Crow	NSE			S5B		Possible
Cyanocitta cristata	Blue Jay	NSE			S5		Probable
Dolichonyx oryzivorus	Bobolink	NSE	THR	THR	S4B	L2	Possible
Dumetella carolinensis	Gray Catbird	NSE			S4B	L4	Confirmed
Empidonax alnorum	Alder Flycatcher	eBird			S5B	L3	Observed
Empidonax minimus	Least Flycatcher	NSE			S4B	L3	Probable
Empidonax traillii	Willow Flycatcher	NSE			S5B		Probable
Eremophila alpestris	Horned Lark	NSE			S5B	L3	Observed
Euphagus carolinus	Rusty Blackbird	eBird	SC	SC	S4B		Observed

Scientific Name	Common Name	Source[1]	SARA[2]	ESA[3]	SRank[4]	RRank[5]	Breeding Evidence
Falco sparverius	American Kestrel	NSE			S4	L2	Possible
Gavia immer	Common Loon	NSE	NAR		S5B, S5N		Observed
Geothlypis trichas	Common Yellowthroat	NSE			S5B		Probable
Grus canadensis	Sandhill Crane	NSE	NAR		S5B		Observed
Haemorhous mexicanus	House Finch	NSE			SNA		Possible
Hirundo rustica	Barn Swallow	NSE	THR	SC	S4B	L3	Observed
Icterus galbula	Baltimore Oriole	NSE			S4B		Probable
Junco hyemalis	Dark-eyed Junco	NSE			S5B		Observed
Lanius borealis	Northern Shrike	NSE			SNA		Observed
Larus delawarensis	Ring-billed Gull	NSE			S5B, S4N		Observed
Megaceryle alcyon	Belted Kingfisher	NSE			S4B		Possible
Melanerpes carolinus	Red-bellied Woodpecker	NSE			S4	L1	Probable
Meleagris gallopavo	Wild Turkey	NSE			S5		Probable
Melospiza georgiana	Swamp Sparrow	NSE			S5B	L2	Probable
Molothrus ater	Brown-headed Cowbird	NSE			S4B		Probable
Myiarchus crinitus	Great Crested Flycatcher	NSE			S4B		Probable
Oreothlypis ruficapilla	Nashville Warbler	eBird			S5B	L2	Possible
Pandion haliaetus	Osprey	NSE			S5B		Observed
Passerculus sandwichensis	Savannah Sparrow	NSE			S4B	L1	Confirmed
Passerina cyanea	Indigo Bunting	NSE			S4B		Probable
Phalacrocorax auritus	Double-crested Cormorant	eBird	NAR	NAR	S5B		Observed
Pheucticus ludovicianus	Rose-breasted Grosbeak	NSE			S4B		Probable
Picoides pubescens	Downy Woodpecker	NSE			S5		Probable
Picoides villosus	Hairy Woodpecker	NSE			S5		Probable
Pipilo erythrophthalmus	Eastern Towhee	NSE			S4B	L2	Confirmed
Piranga olivacea	Scarlet Tanager	eBird			S4B	L2	Possible
Poecile atricapillus	Black-capped Chickadee	NSE			S5	L4	Probable
Polioptila caerulea	Blue-gray Gnatcatcher	NSE			S4B	L4	Possible
Progne subis	Purple Martin	eBird			S4B	L2	Observed
Quiscalus quiscula	Common Grackle	NSE			S5B		Possible
Regulus calendula	Ruby-crowned Kinglet	NSE			S4B	L4	Observed

Scientific Name	Common Name	Source[1]	SAR A[2]	ESA[3]	SRank[4]	RRank[5]	Breeding Evidence
Regulus satrapa	Golden-crowned Kinglet	NSE			S5B	L3	Observed
Sayornis phoebe	Eastern Phoebe	NSE			S5B	L3	Probable
Scolopax minor	American Woodcock	NSE			S4B	L4	Confirmed
Seiurus aurocapilla	Ovenbird	eBird			S4B	L4	Probable
Setophaga petechia	Yellow Warbler	NSE			S5B		Probable
Setophaga ruticilla	American Redstart	NSE			S5B	L2	Probable
Sitta carolinensis	White-breasted Nuthatch	NSE			S5		Probable
Sphyrapicus varius	Yellow-bellied Sapsucker	eBird			S5B	L2	Possible
Spinus tristis	American Goldfinch	NSE			S5B	L3	Probable
Spizella arborea	American Tree Sparrow	NSE			S4B		Observed
Spizella pallida	Clay-colored Sparrow	eBird			S4B	L1	Possible
Spizella passerina	Chipping Sparrow	NSE			S5B		Probable
Spizella pusilla	Field Sparrow	NSE			S4B	L3	Confirmed
Stelgidopteryx serripennis	Northern Rough-winged Swallow	eBird			S4B	L2	Observed
Sturnella magna	Eastern Meadowlark	NSE	THR	THR	S4B	L2	Confirmed
Sturnus vulgaris	European Starling	NSE			SNA		Probable
Tachycineta bicolor	Tree Swallow	NSE			S4B		Possible
Toxostoma rufum	Brown Thrasher	NSE			S4B	L1	Probable
Tringa solitaria	Solitary Sandpiper	eBird			S4B		Observed
Troglodytes aedon	House Wren	NSE			S5B		Probable
Troglodytes hiemalis	Winter Wren	eBird			S5B	L4	Observed
Turdus migratorius	American Robin	NSE			S5B		Probable
Tyrannus tyrannus	Eastern Kingbird	NSE			S4B	L3	Probable
Vermivora cyanoptera	Blue-winged Warbler	NSE			S4B	L1	Possible
Vireo flavifrons	Yellow-throated Vireo	eBird			S4B	L3	Possible
Vireo gilvus	Warbling Vireo	NSE			S5B		Probable
Vireo olivaceus	Red-eyed Vireo	NSE			S5B		Probable
Vireo solitarius	Blue-headed Vireo	NSE			S5B	L3	Observed
Zenaida macroura	Mourning Dove	NSE			S5		Possible
Zonotrichia albicollis	White-throated Sparrow	NSE			S5B	L2	Observed

[1]Source: NSE – Observed by NSE during field investigations; eBird – submitted to eBird by other naturalists.

[2]Status under the SARSARA (2002): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

[3]Status under the *Endangered Species Act* (2007): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

[4]Provincial conservation status: S5 – Secure; S4 – Apparently Secure; S2S3 – Imperiled to Vulnerable; S2 – Imperiled; SE – Exotic (number denotes abundance in Ontario); SNA – Not applicable (generally refers to hybrids).

[5]Regional conservation status (Middlesex County) (Couturier, 1999): C – Common; U – Uncommon; R – Rare; X – Data deficient; I – Introduced (suffix denotes abundance in Middlesex); hyb – Hybrid (not typically ranked).

Table A2.3 – Mammal species observed in Kelly Stanton ESA

Scientific Name	Common Name	Source[1]	SARA[2]	ESA[3]	SRank[2]
Odocoileus virginianus	White-tailed Deer	NSE			S5
Procyon lotor	Common Raccoon	NSE			S5
Sciurus carolinensis	Eastern Gray Squirrel	NSE			S5
Tamias striatus	Eastern Chipmunk	NSE			S5

[1]Source: NSE – Observed by NSE during field investigations; iNaturalist – submitted to iNaturalist by other naturalists.

[2]Status under the SARSARA (2002): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

[3]Status under the *Endangered Species Act* (2007): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

[4]Provincial conservation status: S5 – Secure; S4 – Apparently Secure; S2S3 – Imperiled to Vulnerable; S2 – Imperiled; SE – Exotic (number denotes abundance in Ontario); SNA – Not applicable (generally refers to hybrids).

Table A2.4 – Reptiles and amphibians observed in Kelly Stanton ESA

Scientific Name	Common Name	Source[1]	SARA[2]	ESA[3]	S Rank[2]
Anaxyrus americanus	American Toad	NSE			S5
Chrysemys picta marginata	Midland Painted Turtle	iNaturalist	SC		S4
Lampropeltis triangulum	Eastern Milksnake	iNaturalist	SC	SC	S4
Lithobates pipiens	Northern Leopard Frog	NSE			S5
Pseudacris triseriata	Western Chorus Frog	NSE	THR	SC	S4
Storeria dekayi	DeKay's Brownsnake	NSE			S5

Scientific Name	Common Name	Source[1]	SARA[2]	ESA[3]	S Rank[2]
Thamnophis sirtalis sirtalis	Eastern Gartersnake	NSE			S5

[1]Source: NSE – Observed by NSE during field investigations; iNaturalist – submitted to iNaturalist by other naturalists.

[2]Status under the SARSARA (2002): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

[3]Status under the *Endangered Species Act* (2007): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

[4]Provincial conservation status: S5 – Secure; S4 – Apparently Secure; S2S3 – Imperiled to Vulnerable; S2 – Imperiled; SE – Exotic (number denotes abundance in Ontario); SNA – Not applicable (generally refers to hybrids).

Table A2.5 – All other wildlife observed in Kelly Stanton ESA

Scientific Name	Common Name	Source[1]	SARA[2]	ESA[3]	S Rank[2]
Argia fumipennis violacea	Violet Dancer	iNaturalist			S5
Calopteryx maculata	Ebony Jewelwing	iNaturalist			S5
Celithemis eponina	Halloween Pennant	iNaturalist			S4
Cercyonis pegala	Common Wood-Nymph	NSE			S5
Coenonympha tullia	Common Ringlet	iNaturalist			S5
Ctenucha virginica	Virginia Ctenucha	NSE			S5
Danaus plexippus	Monarch	NSE	END	SC	S2N,S4B
Epitheca cynosura	Common Baskettail	iNaturalist			S5
Euphydryas phaeton	Baltimore Checkerspot	iNaturalist			S4
Leucorrhinia intacta	Dot-tailed Whiteface	iNaturalist			S5
Libellula pulchella	Twelve-spotted Skimmer	iNaturalist			S5
Limenitis arthemis astyanax	Red-spotted Purple	iNaturalist			S5
Megisto cymela	Little Wood-Satyr	iNaturalist			S5
Papilio polyxenes	Black Swallowtail	iNaturalist			S5

Scientific Name	Common Name	Source[1]	SARA[2]	ESA[3]	S Rank[2]
Poanes hobomok	Hobomok Skipper	iNaturalist			S5

[1]Source: NSE – Observed by NSE during field investigations; iNaturalist – submitted to iNaturalist by other naturalists.

[2]Status under the SARSARA (2002): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

[3]Status under the *Endangered Species Act* (2007): THR – Threatened; SC – Special Concern; NAR – Not at Risk.

APPENDIX 3 | Significant Wildlife Habitat Assessment

Table A3.1 – Significant Wildlife Habitat Assessment

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Seasonal Concentration Areas of Animals					
Waterfowl Stopover and Staging Areas (Terrestrial) Rationale: Habitat important to migrating waterfowl.	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan	CUM1 CUT1 Plus evidence of annual spring flooding from meltwater or run-off within these Ecosites. Fields with seasonal flooding and waste grains in the Long Point, Rondeau, Lake St. Clair, Grand Bend and Point Pelee areas may be important to Tundra Swans.	• Fields with sheet water during Spring (mid-March to May) • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available <u>Information Sources</u> • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities • Sites documented through waterfowl planning processes (e.g. EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Any mixed species aggregations of 100 or more individuals required • The flooded field ecosite habitat plus a 100-300m radius, dependent on local site conditions and adjacent land use is the significant wildlife habitat • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates) • SWH MIST Index #7 provides development effects and mitigation measures.	ABSENT – No suitable open fields containing spring sheet water are present in the ESA

Waterfowl Stopover and Staging Areas (Aquatic) Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	American Black Duck Northern Pintail Gadwall Blue-winged Teal Green-winged Teal American Wigeon Northern Shoveler Tundra Swan Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• Ponds, marshes, lakes, bays, coastal inlets and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). <u>Information Sources</u> • Environment Canada • Naturalist clubs often are aware of staging/stopover areas. • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (e.g. EHJV implementation plan) • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in >700 waterfowl use days • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100m radius area is the SWH • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • SWH MIST Index #7 provides development effects and mitigation measures.	ABSENT – No suitable ponds, marshes or other aquatic stopover features are present in the ESA

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Shorebird Migratory Stopover Area Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	• Shorelines of lakes, rivers and wetlands, including beach area, bars and seasonally flooded, muddy and un-vegetated shoreline habitats • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October • Sewage treatment ponds and storm water ponds do not qualify as SWH. <u>Information Sources</u> • Western hemisphere shorebird reserve network • Canadian Wildlife Service (CWS) Ontario Shorebird Survey • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Centre (NHIC) Shorebird Migratory Concentration Area	Studies confirming: • Presence of 3 or more of listed species and >1000 shorebird use days during spring or fall migration period (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #8 provides development effects and mitigation measures.	ABSENT – No suitable shorelines or mudflats are present in the ESA

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Raptor Wintering Area Rationale: Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl Special Concern: Short-eared Owl Bald Eagle	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM, CUT, CUS, CUW. Bald Eagle: Forest Community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors • Raptor wintering (hawk/owl) sites need to be >20 ha with a combination of forest and upland • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water and large trees and snags available for roosting <u>Information Sources</u> • OMNRF Ecologist or Biologist • Naturalist clubs • Natural Heritage Information Centre (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts • Reports and other information available from Conservation Authorities	Studies confirm the use of these habitats by: •One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. •To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. •The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area •Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” •SWHMiST Index #10 and #11 provides development effects and mitigation measures.	CANDIDATE – The ESA itself is too small to be a significant raptor wintering area (<20 ha), but the surrounding landscape does provide a good mosaic of forest and open country habitats far larger than 20 ha. The ESA may therefore form part of a significant raptor wintering area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Bat Hibernacula Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR3 CCA1 CCA2 (Note: buildings are not considered SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts • Active mine sites should not be considered as SWH • The locations of Bat Hibernacula are relatively poorly known. <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • Natural Heritage Information Centre (NHIC) Bat Hibernaculum • Ministry of Northern Development and Mines for location of mine shafts. • Clubs that explore caves (eg. Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH • The area includes 200 m radius around the entrance of the hibernaculum for most development types and 1000 m for wind farms • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #1 provides development effects and mitigation measures.	ABSENT – No caves, mine shafts, underground foundations or other suitable structures are present in the ESA.
Bat Maternity Colonies Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD, FOM, SWD, SWM	• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario • Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees • Female bats prefer wildlife trees (snags) in early stages if decay, class 1-3 or class 1 or 2 • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred <u>Information Sources</u> • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity colonies with confirmed use by: >10 Big Brown Bats >5 adult female Silver-haired Bats • The area of habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #12 provides the development effects and mitigation measures.	CANDIDATE – A large number of dead ash trees in the south part of the ESA may provide maternity habitat for Big Brown Bat and/or Silver-haired Bat and may occur at densities suitable for a maternity colony.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Turtle Wintering Areas Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant	Special Concern: Midland Painted Turtle Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles: SW, MA, OA and SA; FEO and BOO. Northern Map Turtle: Open water areas such as deeper rivers or streams and lakes with current can also be used as overwintering habitat.	• For most turtles, wintering areas are in the same general areas as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Overwintering sites are permanent water bodies, large wetlands and bots or fens with adequate dissolved oxygen. • Manmade ponds such as sewage lagoons or storm water ponds should not be considered SWH. <u>Information Sources</u> • EIS studies carried out by conservation authorities. • Field naturalists clubs. • OMNRF ecologist or biologist • NHIC	Presence of five overwintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle overwintering within a wetland is significant. • The mapped ELC ecosite area with the overwintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are overwintering is the SWH. • Overwintering areas may be identified by searching for congregations (basking areas) of turtles on warm, sunny days during the fall (September to October) or spring (March to May). Congregation of turtles is more common where wintering areas are limited and therefore significant. • SWH MIST Index #28 provides development effects and mitigation measures for turtle wintering habitat	ABSENT – No turtles have been observed in the ESA and no large waterbodies or wetlands are present where turtles could overwinter below the frost line.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Reptile Hibernaculum Rationale: Generally sites are the only known sites in the area. Sites with the highest number of individuals are	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern: Milksnake Eastern Ribbonsnake	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. <u>Information Sources</u> • In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs • University herpetologists • Natural Heritage Information Centre (NHIC)	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • NOTE: If there are Special Concern Species present, then site is SWH • NOTE: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. • The feature in which the hibernacula is located plus a 30 m radius area is the SWH • SWH MIS Index #13 provides development effects and mitigation measures for snake hibernacula.	ABSENT – Snakes are present in the ESA, but no concentrations of snakes were observed that might suggest the presence of significant hibernacula.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. <u>Information Sources</u> • Reports and other information available from Conservation Authorities • Ontario Breeding Bird Atlas • Bird Studies Canada NatureCounts http://www.birdscanada.org/birdmon • Field Naturalist Clubs	Studies confirming: • Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • SWH MIST Index #4 provides development effects and mitigation measures.	ABSENT – There are no exposed banks, bluffs or cliffs in the ESA which would be suitable nesting habitat.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs) Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. <u>Information Sources</u> • Ontario Breeding Bird Atlas colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Centre (NHIC) Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from Conservation Authorities. • MNRF District Offices • Field Naturalist Clubs.	Studies confirming: • Presence of 2 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15 ha with a colony is the SWH • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells • SWH MIST Index #5 provides development effects and mitigation measures.	ABSENT – No evidence of nesting has been observed for any of the indicator species in the ESA

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Colonially -Nesting Bird Breeding Habitat (Ground) Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6 MAS1 – 3 CUM CUT CUS	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands. <u>Information Sources</u> • Ontario Breeding Bird Atlas, rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from Conservation Authorities. • Natural Heritage Information Centre (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices. • Field Naturalist Clubs	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern • Presence of 5 or more pairs for Brewer's Blackbird • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3 ha with a colony is the SWH • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #6 provides development effects and mitigation measures.	ABSENT – The ESA does not contain rocky islands or peninsulas which would be suitable for colonies of ground-nesting birds.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Migratory Butterfly Stopover Areas Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral Special Concern: Monarch	Combination of ELC Community Series; need to have present one Community Series from each landclass: FIELD: CUM, CUT, CUS FOREST: FOC, FOD, FOM, CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	• A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Erie or Lake Ontario • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes <u>Information Sources</u> • MNRF District Offices • Natural Heritage Information Centre (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days the site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWH MIST Index #16 provides development effects and mitigation measures.	ABSENT – The ESA is not located within 5 km of Lake Erie and is therefore not eligible to be a significant migratory butterfly stopover area.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Landbird Migratory Stopover Areas Rationale: Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/default.asp?lang=En&n=421B7A9D-1 All migrant raptor species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD	• Woodlots >5 ha in size and within 5 km of Lake Erie and Lake Ontario. If woodlands are rare in an area of shoreline, woodland fragments 2-5 ha can be considered for this habitat • If multiple woodlands are located along the shoreline those woodlands <2 km from Lake Erie and Lake Ontario are more significant • Sites have a variety of habitats: forest, grassland and wetland complexes • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and within 5 km of Lake Erie and Lake Ontario are Candidate SWH. <u>Information Sources</u> • Bird Studies Canada • Ontario Nature • Local birders and field naturalist clubs • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the habitat by >200 birds/day and with >35 species and with at least 10 bird species recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant • Studies should be completed during spring (Mar.-May) and fall (Aug.-Oct.) migration using standardized assessment techniques. Evaluation to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #9 provides development effects and mitigation measures.	ABSENT – The ESA is not located within 5 km of Lake Erie and is therefore not eligible to be a significant landbird migratory stopover area.
Deer Winter Congregation Areas Rationale: Deer movement during winter in the southern areas of Eco-region 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions	White-tailed Deer	All forested Ecosites with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD Conifer plantations much smaller than 50 ha may also be used.	• Woodlots >100 ha in size or if large woodlots are rare in a planning area, woodlots >50 ha • Deer movement during winter in the southern areas of Ecoregion 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands • Large woodlots >100 ha and up to 1,500 ha are known to be used annually by densities of deer that range from 0.1-0.5 deer/ha • Woodlots with high densities of deer due to artificial feeding are not significant. <u>Information Sources</u> • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF • Studies should be complete4d during winter (Jan./Feb.) when >20 cm of snow is on the ground using aerial survey techniques, ground road surveys, or a pellet count deer survey • SWH MIST Index #2 provides development effects and mitigation measures	ABSENT – MNRF has not mapped any deer winter congregation areas in the ESA or the surrounding area.
RARE VEGETATION COMMUNITIES					

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Cliffs and Talus Slopes Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO TAS TAT CLO CLS CLT	A Cliff is vertical to near vertical bedrock >3 m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.	• Most cliff and talus slopes occur along the Niagara Escarpment <u>Information Sources</u> • The Niagara Escarpment Commission has detailed information on location of these habitats • OMNRF Districts • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • SWH MIST Index #21 provides development effects and mitigation measures	ABSENT – None of the listed Ecosites are present in the ESA.
Sand Barren Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always <60%	Sand barrens typically are exposed sand, generally sparsely vegetated and caused by a lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.	• A sand barren area >0.5 ha in size <u>Information Sources</u> • The Niagara Escarpment Commission has detailed information on location of these habitats • OMNRF Districts • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic spp.) • SWH MIST Index #20 provides development effects and mitigation measures	ABSENT – None of the listed Ecosites are present in the ESA.

Alvar Rationale: Alvars are extremely rare habitats in Ecoregion 7E.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 Five Alvar Indicator Species: Carex crawei Panicum philadelphicum Eleocharis compressa Scutellaria parvula Trichostema brachiatum These indicator species are very specific to Alvars within Ecoregion 7E	An Alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from	• An Alvar site >0.5 ha in size • Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie <u>Information Sources</u> • Alvars of Ontario (Federation of Ontario Naturalists, 2000) • Conserving Great Lakes Alvars (Ontario Nature) • OMNRF Districts • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	• Field studies identify that four of the five Alvar Indicator Species at a Candidate Alvar Site is significant • Site must not be dominated by exotic of introduced species (<50% vegetative cover are exotic spp.) • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses • SWH MIST Index #17 provides development effects and mitigation measures	ABSENT – None of the listed Ecosites or indicator species are present in the ESA.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
		patchy to barren with a less than 60% tree cover			
Old Growth Forest Rationale: Due to historic logging practices and land clearance for agriculture, old growth forest is rare in Ecoregion 7E.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth Forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	• Woodland area is >0.5 ha <u>Information Sources</u> • OMNRF Forest Resource Inventory mapping • OMNRF Districts • Field Naturalist Clubs • Conservation Authorities • Sustainable Forestry License (SFL) companies will possibly know locations through field operations • Municipal forestry departments	Field studies will determine: • If dominant tree species of the forest are >140 years old, then the area containing these trees is SWH • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contain the old growth characteristics is the SWH • Determine ELC vegetation types for the forest area containing the old growth characteristics • SWH MIST Index #23 provides development effects and mitigation measures	ABSENT – No trees estimated to be older than 140 years were identified in the ESA.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25-60% In Ecoregion 7E, known tallgrass prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	• No minimum size to site • Site must be restored or a natural site. Remnant sites such as railway right-of-ways are not considered SWH <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	Field studies confirm: • One or more of the Savannah indicator species listed in Appendix N should be present. Note: savannah plant spp. List from Ecoregion 7E should be used. • Area of the ELC Ecosite is the SWH • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic spp.) • SWH MIST Index #18 provides development effects and mitigation measures.	ABSENT – None of the listed Ecosites are present in the ESA, but tallgrass woodland communities could be restored.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Tallgrass Prairie Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A tallgrass prairie has ground cover dominated by prairie grasses. An open tallgrass prairie habitat has <25% tree cover. In Ecoregion 7E, known tallgrass prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	• No minimum size to site • Site must be restored or a natural site. Remnant sites such as railway right-of-ways are not considered SWH <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	Field studies confirm: • One or more of the Prairie indicator species listed in Appendix N should be present. Note: savannah plant spp. List from Ecoregion 7E should be used. • Area of the ELC Ecosite is the SWH • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic spp.) • SWH MIST Index #19 provides development effects and mitigation measures.	CONFIRMED – Tallgrass prairie communities are present throughout the north part of the ESA. One indicator species listed in Appendix N of the SWH Technical Guide (MNR, 2000) occurs in these communities: Mead's Sedge (*Carex meadii*).

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Other Rare Vegetation Communities Rationale: Plant communities that often contain rare specieswhich depend on the habitat for survival.		Provincially rare (S1, S2, S3) vegetation communities are listed in Appendix M of the Significant Wildlife Habitat Technical Guide (MNRF, 2000). Any ELC Ecosite Code that has a possible ELC Vegetation Type that is provincially rare is candidate SWH. Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	• ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M of the Significant Wildlife Habitat Technical Guide (MNRF, 2000). • MNRF/NHIC will have up to date listing for rare vegetation communities. <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) has location information available on their website • Field Naturalist Clubs • Conservation Authorities	• Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of the Significant Wildlife Habitat Technical Guide (MNRF, 2000). • Area of the ELC Vegetation Type polygon is the SWH. • SWH MIST Index #37 provides development effects and mitigation measures.	ABSENT – None of the vegetation communities assessed in the study area are classified as rare according to MNRF.
SPECIALIZED HABITAT FOR WILDLIFE					

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Waterfowl Nesting Area Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 NOTE Includes adjacency to Provincially Significant Wetlands	• A waterfowl nesting area extends 120 m from a wetland (>0.5 ha) or a wetland (>0.5 ha) and any small wetlands (0.5 ha) within 120 m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur • Upland areas should be at least 120 m wide so that predators such as raccoons, skunks and foxes have difficulty finding nests • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites. <u>Information Sources</u> • Ducks Unlimited staff may know the locations of particularly productive nesting sites • MNRF Wetland Evaluations for indication of significant waterfowl nesting habitat • Reports and other information available from Conservation Authorities	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • A field study confirming waterfowl nesting habitat will determine boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest • SWH MIST Index #25 provides development effects and mitigation measures.	ABSENT – No evidence of waterfowl breeding has been observed in the ESA

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat Rationale: Nest sites are fairly uncommon in Eco -region 7E and are used annually by the se species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey SPECIAL CONCERN Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.	• Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms) <u>Information Sources</u> • NHIC compiles all known nesting sites for Bald Eagles in Ontario • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat • Nature Counts, Ontario Nest Records Scheme data. • OMNRF District. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800 m is dependent on sight lines from the nest to the development and inclusion of perching and foraging habitat • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from early March to mid-August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • SWH MIST Index #26 provides development effects and mitigation measures	ABSENT – No Osprey or Bald Eagle nests have been documented in the ESA

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Woodland Raptor Nesting Habitat Rationale: Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	• All natural or conifer plantation woodland/forest stands >30 ha with > 4 ha of interior habitat. Interior habitat determined with a 200 m buffer. • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests, within tops or crotches of trees. Species such as Cooper's Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest <u>Information Sources</u> • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of one or more active nests from species list is considered significant • Red-shouldered Hawk and Northern Goshawk – A 400 m radius around the nest or 28 ha areaof habitat is the SWH. The 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest. • Barred Owl – A 200m radius around the nest is the SWH • Broad-winged Hawk and Coopers Hawk, – A 100m radius around the nest is the SWH • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH • Conduct field investigations from early March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • SWH MIST Index #27 provides development effects and mitigation measures	ABSENT – No forest or swamp ecosites larger than 30 ha are present in the ESA and no raptor nests have been documented.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Turtle Nesting Areas Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles	Special Concern: Midland Painted Turtle Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC Ecosites: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, BOO1, FEO1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and is located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes and rivers are most frequently used. <u>Information Sources</u> • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Centre (NHIC). • Field naturalist clubs.	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles. • One ore more Northern Map Turtles or Snapping Turtles nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30 to 100 m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30 to 100 m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWH MIST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	ABSENT – No turtles have been observed in the ESA

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Seeps and Springs Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamanders	Seeps/springs are areas where groundwater comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	• Any forested area (with <25% meadow/field/ pasture) within the headwaters of a stream or river system • Seeps and springs are important feeding and drinking areas. Especially in the winter will support a variety of plant and animal species. <u>Information Sources</u> • Topographical Map. • Thermography. • Hydrological surveys conducted by Conservation Authorities and MOECC. • Field Naturalists Clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped	Field studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of an ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat • SWH MIST Index #30 provides development effects and mitigation measures	ABSENT – No seeps or springs have been found in the ESA
Amphibian Breeding Habitat (Woodland) Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians.	• Presence of a wetland, pond or woodland pool (including vernal pools) >500 m2 (about 25 m diameter) within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF Districts and wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or egg masses) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys will be required during the spring (Mar.-Jun.) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWH MIST Index #14 provides development effects and mitigation measures	CANDIDATE – Spring Peeper and Western Chorus Frog have been heard calling in the ESA during the breeding season. However, formal call count surveys per the MMP protocol have not been conducted.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Amphibian Breeding Habitat (Wetlands) Rationale: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120 m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bullfrog) may be adjacent to woodlands.	• Wetlands >500m2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators • Bullfrogs require permanent water bodies with abundant emergent vegetation. <u>Information Sources</u> • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations. • Reports and other information available from Conservation Authorities	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3 or; Wetland with confirmed breeding Bullfrogs are significant • The ELC ecosite wetland area and the shoreline are the SWH • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWH MIST Index #15 provides development effects and mitigation measures.	CANDIDATE – American Toad and Western Chorus Frog have been heard calling in the ESA during the breeding season. However, formal call count surveys per the MMP protocol have not been conducted.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Woodland Area - Sensitive Bird Breeding Habitat Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Pileated Woodpecker Special Concern: Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series: FOC, FOM, FOD, SWC, SWM, SWD	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha • Interior forest habitat is at least 200 m from forest edge habitat Information Sources: • Local birder clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH • Conduct field investigations in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • SWH MIST Index #34 provides development effects and mitigation measures HABITATS OF SPECIES OF CONSERVATION CONCERN	ABSENT – Interior forest is not present in the ESA
HABITAT OF SPECIES OF CONSERVATION CONCERN (Not including Endangered or Threatened Species)					

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Marsh Breeding Bird Habitat Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Gallinule American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Green Heron Trumpeter Swan Special Concern: Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: all SW, MA and CUM1 sites	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water <u>Information Sources</u> • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Centre (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • SWH MIST Index #35 provides development effects and mitigation measures	CANDIDATE – Sedge Wren has been observed in Kelly Stanton ESA during the breeding season, but breeding has not been confirmed. It is unlikely that five or more breeding pairs of Sedge Wrens occur in the ESA No other indicator species have been observed.

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Open Country Bird Breeding Habitat Rationale; This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly in the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow Special Concern: Short-eared Owl	CUM1 CUM2	• Large grassland areas (includes natural and cultural fields and meadows) >30 ha • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years) • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species <u>Information Sources</u> • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • EIS Reports and other information available from Conservation Authorities	Field studies confirm: • Presence of nesting or breeding of 2 or more of the listed species • A field with 1 or more breeding Short-eared Owls is to be considered SWH • The area of SWH is the contiguous ELC ecosite field areas • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • SWH MIST Index #32 provides development effects and mitigation measures	ABSENT – Three indicator species are probable breeders in the ESA (Grasshopper Sparrow, Vesper Sparrow, Savannah Sparrow), but nesting habitat is too small to be considered significant at a provincial level (<30 ha).

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Shrub/Early Successional Bird Breeding Habitat Rationale; This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Species: Brown Thrasher Clay-coloured Sparrow Common Species: Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher Special Concern: Yellow-breasted Chat Golden-winged Warbler	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	• Large field areas succeeding to shrub and thicket habitats >10 ha in size • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years) • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands <u>Information Sources</u> • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities	Field studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories • Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” • SWH MIST Index #33 provides development effects and mitigation measures	CONFIRMED – Both indicator species and all four common species of this SWH type are probable breeders in the ESA When both blocks are looked at in combination, there is over 10 ha of early successional and shrub thicket habitats in the ESA
Terrestrial Crayfish Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crayfish or Meadow Crayfish; (*Cambarus diogenes*)	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM CUM1 with inclusions of above meadow marsh ecosites can be used by terrestrial crayfish	• Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish • Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well-formed. <u>Information Sources</u> • Information sources from “Conservation Status of Freshwater Crayfishes” by Dr. Premek Hamr for the WWF and CNF, March, 1998	Studies confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites • Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult • SWH MIST Index #36 provides development effects and mitigation measures	CONFIRMED – Terrestrial crayfish burrows were found in the north part of the ESA

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Presence of Habitat in Kelly Stanton ESA
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
Special Concern and Rare Wildlife Species Rationale: These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1, S2, S3, SH) plant and animal species. Lists of these species are tracked by the NHIC	All plant and animal element occurrences (EOs) within a 1 km or 10 km grid. Older EOs were recorded prior to GPS being available, therefore location information may lack accuracy.	• When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites <u>Information Sources</u> • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website "Get Information": http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. Have little information available about their requirements	Studies confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. • SWH MIST Index #37 provides development effects and mitigation measures	CONFIRMED – The following Special Concern and provincially rare species were observed in the study area: • False Tomentose Balsam Ragwort • Mead's Sedge • Eastern Wood-pewee • Grasshopper Sparrow • Olive-sided Flycatcher • Rusty Blackbird • Eastern Milksnake • Monarch
ANIMAL MOVEMENT CORRIDORS					
Amphibian Movement Corridors Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	• Movement corridors between breeding habitat and summer habitat • Movement corridors must be determined when amphibian breeding habitat is confirmed as SWH (Amphibian Breeding Habitat, Wetland) <u>Information Sources</u> • MNRF District Office. • Natural Heritage Information Centre (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites • Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat • SWH MIST Index #40 provides development effects and mitigation measures	CANDIDATE – There are probably local amphibian movement corridors between wetland and terrestrial communities in the ESA.

APPENDIX 4 | Restoration Overlays and Priorities by Polygon

Table A4.1 – Restoration overlays and priorities by polygon

Polygon #	Area (ha)	Vegetation Community	Invasive Species Cover (%)	SAR/SWH/Rare Species	Restoration Overlay	Restoration Target Community	Restoration Tasks	Priority	Volunteer Opportunities
1	1.23	CUM1	<5	Prairie Smoke	RO2a	Tallgrass Prairie	Consider conducting controlled burn Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Medium	Yes
2	0.61	CUT1	<5	Shrub/Early-successional Bird Breeding Habitat, Swan's Sedge	RO2b	Tallgrass Prairie	Remove invasive buckthorn and other shrubs Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Medium	Yes
3	0.94	TPO2-1/CUT1	5-25	Shrub/Early-successional Bird Breeding Habitat, Tallgrass Prairie, Mead's Sedge, Butterfly Milkweed, Cockspur Hawthorn, Pale Sedge	RO1b	Tallgrass Prairie	Remove encroaching shrubby vegetation Consider conducting controlled burn Monitor vegetation composition Monitor for new invasive species occurrences	High	Yes
4	0.95	CUT1	>25	Shrub/Early-successional Bird Breeding Habitat, Terrestrial Crayfish Habitat	RO2b	Tallgrass Prairie	Remove invasive buckthorn and other shrubs Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Low	Yes
5	0.35	MAM2-10	>5	Terrestrial Crayfish Habitat	n/a	n/a	No specific restoration objectives.	n/a	n/a
6	0.83	CUT1	>25	Shrub/Early-successional Bird Breeding Habitat, Cockspur Hawthorn	RO2b	Tallgrass Prairie	Remove invasive buckthorn and other shrubs Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Low	Yes
7	0.13	FOD7-3	>25	Terrestrial Crayfish Habitat	n/a	n/a	No specific restoration objectives.	n/a	n/a
8	3.54	CUM1	>25	Eastern Meadowlark, Bristly Blackberry, Greater Straw Sedge, Muhlenberg's Sedge	RO2a	Tallgrass Prairie	Consider conducting controlled burn Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Medium	Yes
9	0.47	SWT2	5-25	Terrestrial Crayfish Habitat	n/a	n/a	No specific restoration objectives.	n/a	n/a

Polygon #	Area (ha)	Vegetation Community	Invasive Species Cover (%)	SAR/SWH/Rare Species	Restoration Overlay	Restoration Target Community	Restoration Tasks	Priority	Volunteer Opportunities
10	0.37	TPO2-1	<5	Tallgrass Prairie, False Tomentose Balsam Ragwort	RO1a	Tallgrass Prairie	Monitor vegetation composition Monitor for new invasive species occurrences	High	Yes
11	0.72	CUT1	5-25	Shrub/Early-successional Bird Breeding Habitat,	RO2b	Tallgrass Prairie	Remove invasive buckthorn and other shrubs Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Low	Yes
12	1.21	FOD8-1	>25	n/a	RO3	Deciduous Forest	Remove invasive buckthorn Monitor buckthorn cover and for new invasive species occurrences	Low	Yes
13	0.36	CUT1	5-25	Shrub/Early-successional Bird Breeding Habitat, Parasol Sedge	RO2b	Tallgrass Prairie	Remove invasive buckthorn and other shrubs Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Low	Yes
14	4.20	FOD9-5	>25	Amphibian Breeding Habitat, One-flowered Cancer-root, Parasol Sedge	RO3	Deciduous Forest	Remove invasive buckthorn Monitor buckthorn cover and for new invasive species occurrences	Low	Yes
15	1.20	MAM2-2	<5	Marsh Bird Breeding Habitat (candidate), Small-headed Bulrush	n/a	n/a	No specific restoration objectives.	n/a	n/a
16	0.99	CUT1	>25	Shrub/Early-successional Bird Breeding Habitat,	RO2b	Tallgrass Prairie	Remove invasive buckthorn and other shrubs Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Low	Yes
17	0.29	CUM1	5-25	Jointed Rush, Narrow-leaved Blue- eyed-grass	RO2a	Tallgrass Prairie	Consider conducting controlled burn Hand sow native prairie grasses and wildflowers Monitor vegetation composition	Medium	Yes

Polygon #	Area (ha)	Vegetation Community	Invasive Species Cover (%)	SAR/SWH/Rare Species	Restoration Overlay	Restoration Target Community	Restoration Tasks	Priority	Volunteer Opportunities
18	0.08	CUT1	<5	Shrub/Early-successional Bird Breeding Habitat,	n/a	n/a	No specific restoration objectives.	n/a	n/a
19	0.30	CUT1	>25	Shrub/Early-successional Bird Breeding Habitat,	RO2b	Tallgrass Prairie	Remove invasive buckthorn and other shrubs Hand sow native prairie grasses and wildflowers Monitor vegetation composition Monitor for new invasive species occurrences	Low	Yes
20	0.13	TPO2-1	<5	Tallgrass Prairie	RO1a	Tallgrass Prairie	Monitor vegetation composition Monitor for new invasive species occurrences	Medium	Yes
21	2.40	FOD6-5	>25	Bat Maternity Colony (candidate)	RO3	Deciduous Forest	Remove invasive buckthorn Monitor buckthorn cover and for new invasive species occurrences	Medium	Yes
22	0.37	MAM2-2	<5	n/a	n/a	n/a	No specific restoration objectives.	n/a	n/a
23	3.49	CUW1/CUT1	>25	Shrub/Early-successional Bird Breeding Habitat, Bat Maternity Colony (candidate)	RO4b	Deciduous Forest	Remove invasive buckthorn Plant native trees Monitor buckthorn cover and for new invasive species occurrences	Low	Yes
24	0.36	CUM1	5-25	n/a	RO4a	Deciduous Forest	Plant native trees Monitor for new invasive species occurrences	Low	Yes