

2013

# Essex Region Natural Heritage System Strategy

(An Update to the Essex Region Biodiversity Conservation Strategy)



Essex Region  
Conservation  
Authority



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Corporation of the County of Essex  
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*TABLE OF CONTENTS*

1 INTRODUCTION..... 6

    1.1 Background ..... 6

    1.2 Regional Context..... 7

    1.3 Study Purpose..... 8

    1.4 Natural Heritage System Approach..... 9

    1.5 Detroit River Remedial Action Plan (RAP) Context ..... 11

2 METHODOLOGY ..... 12

    2.1 GIS Data Compilation ..... 12

    2.2 Analysis of Existing Natural Features..... 13

        2.2.1 Forest Cover ..... 13

        2.2.2 Riparian Analysis..... 14

        2.2.3 Built-up Areas ..... 15

        2.2.4 Wetland Extent..... 15

        2.2.5 Extent of Other Natural Features ..... 15

        2.2.6 Prioritization Criteria ..... 15

    2.3 Restoration Guidelines/Local Targets ..... 18

        2.3.1 Guiding Principles ..... 18

        2.3.2 Forest Habitat..... 19

        2.3.3 Riparian Habitat ..... 21

        2.3.4 Wetland Habitat ..... 22

        2.3.5 Fish Habitat..... 23

        2.3.6 Tallgrass Prairie, Savanna, and Alvar..... 24

        2.3.7 Species at Risk ..... 25

        2.3.8 Prioritization Criteria ..... 25

3 RESULTS..... 27

    3.1 Jurisdictional Analysis ..... 27

        3.1.1 County of Essex ..... 29

        3.1.2 Town of Amherstburg..... 36

        3.1.3 Town of Essex..... 43

        3.1.4 Town of Kingsville ..... 50

        3.1.5 Town of Lakeshore ..... 57

3.1.6	Town of LaSalle.....	67
3.1.7	Municipality of Leamington .....	74
3.1.8	Township of Pelee.....	81
3.1.9	Point Pelee National Park .....	88
3.1.10	Town of Tecumseh .....	92
3.1.11	City of Windsor.....	99
3.2	Watershed Analysis.....	106
3.2.1	ERCA Watershed.....	106
3.2.2	Atwell Drain.....	119
3.2.3	Belle River .....	125
3.2.4	Big Creek .....	133
3.2.5	Canard River .....	139
3.2.6	Cedar Creek .....	147
3.2.7	Colchester Area Drainage System .....	153
3.2.8	Coterie Park Drainage System .....	159
3.2.9	Detroit River Drainage Area.....	163
3.2.10	Duck Creek .....	171
3.2.11	Elmdale Drainage System.....	177
3.2.12	Fox/Dolson’s Creek .....	181
3.2.13	Hillman Creek.....	187
3.2.14	Lake Erie Islands Drainage Area .....	193
3.2.15	Little Creek .....	197
3.2.16	Little River .....	203
3.2.17	Lower Thames Valley Conservation Authority within the County of Essex .....	209
3.2.18	Mill Creek.....	217
3.2.19	Moison Creek.....	223
3.2.20	Muddy Creek .....	229
3.2.21	Pelee Island .....	235
3.2.22	Pike Creek.....	241
3.2.23	Point Pelee Marsh .....	247
3.2.24	Puce River.....	251
3.2.25	Ruscom River.....	257
3.2.26	Ruthven Area Drainage.....	265
3.2.27	Southeast Leamington.....	271



3.2.28 Stoney Point Area Drainage..... 277

3.2.29 Sturgeon Creek..... 283

3.2.30 Tecumseh Area Drainage..... 289

3.2.31 Turkey Creek ..... 295

3.2.32 Wigle Creek ..... 301

4 RECOMMENDATIONS ..... 307

4.1 Policy Development and Implementation Concepts ..... 307

4.1.1 Policy Recommendations..... 307

4.1.2 Restoration Recommendations ..... 309

4.1.3 Mitigation Techniques ..... 310

4.1.4 Monitoring ..... 310

4.1.5 Rehabilitation of Core Natural Heritage Features ..... 311

5 REFERENCES ..... 312

6 APPENDIX – GIS TECHNICAL INFORMATION ..... 314

## 1 INTRODUCTION

### 1.1 Background

A natural heritage system is defined as “an ecologically based delineation of nature and natural function- a system of connected or to be connected green and natural areas that provide ecological functions over a longer period of time and enable movement of species” (Ontario Ministry of Natural Resources, 2010). Natural heritage systems encompass natural heritage features of various terrestrial types, functions and linkages between them. The concept of natural heritage system planning is now recognized and utilized world-wide in order to protect and improve biodiversity and ecological function in the long term. Another important component of the natural heritage system recognized by the Provincial Policy Statement (PPS) is the important linkage between natural heritage and water features based on ecological functions such as hydrological connectivity.

In the fall of 2008, the Corporation of the County of Essex entered into an agreement with the Essex Region Conservation Authority (ERCA) to undertake a natural heritage system mapping and prioritization exercise. The intent of this Essex Region Natural Heritage System Strategy (ERNHSS) is to accurately map existing natural heritage features as well as to prioritize habitat restoration opportunities within the region. This strategy includes a broad, landscape level natural heritage modeling exercise utilizing the ERCA Geographic Information System (GIS) as the main tool for the analysis.

Environment Canada, in partnership with other government agencies, has developed a guideline document entitled "*How Much Habitat is Enough? - A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern*" (Environment Canada, *et al.*, 1998; Environment Canada, 2004), which provides a methodology to establish habitat restoration guidelines and priorities for degraded ecosystems utilizing geographical information systems (GIS) technology. In 2002, the Essex Region Biodiversity Conservation Strategy (BCS) (ERCA, 2002) was completed and was the first attempt at completing a comprehensive spatial analysis of all natural areas within the Essex region. This analysis resulted in a depiction of existing natural heritage features, as well as recommended restoration opportunities based on application of the guidelines from the Environment Canada framework.

The ERNHSS is considered to be an update to the original BCS completed in 2002; however it is not intended to duplicate all analyses completed in 2002. Rather, the purpose of this study is to meet current Provincial Policy directives utilizing up-to date GIS technology and data to produce an accurate prioritization of the natural heritage system, both from the standpoint of identifying high priority core natural heritage features for stewardship and securement as well as identify high priority restoration opportunities which will maximize ecological benefits.

## 1.2 Regional Context

The County of Essex is located in the extreme southwest quadrant of the Carolinian Canada forest zone, which is roughly delineated south of a line running from Grand Bend to Toronto (Figure 1). The southerly location and moderate climate of this region is the main reason for the existence of such a unique and diverse ecosystem in Canada. Although the Carolinian forest zone is quite small in comparison with other vegetation zones, it hosts a greater number of floral and faunal species than any other ecosystem in Canada (Carolinian Canada, 2006).

It is estimated that approximately 2,200 species of herbaceous plants are found here and there are seventy different species of trees alone. Approximately 400 bird species have been recorded in this zone - over half of the bird species in all of Canada (Carolinian Canada, 2006).

Prior to European Settlement, the Essex region was dominated by lush natural areas including Carolinian woodlands, wetlands and tallgrass prairies. Since this time of settlement in the 1830's, much of the original natural resources of the Essex region have either been removed from the landscape or have become extremely degraded as a direct or indirect result of clearing and drainage for timber, agriculture, and urban development (ERCA, 1986; Oldham, 1983). Within the region, there has been an overall loss of approximately 97% of the original wetland area (Snell, 1989) and 95% of the original forest area (Vandall, 1979). This has resulted in a degraded ecosystem characterized by a lack of riparian habitat, wetland area and appropriate buffers, forest cover and core natural areas, few green linkages between natural features, and poor water quality and aquatic habitat. Our region's remaining natural heritage, consisting of small, isolated remnants of forest, wetland, prairie, savanna, alvar, and riparian habitat, constitutes one of the lowest percentages of natural cover of any region in Ontario (Oldham, 1983).

It has long been realized that this cumulative loss and alteration of the region's natural heritage (i.e., habitats) since European settlement has had profound consequences on the region's

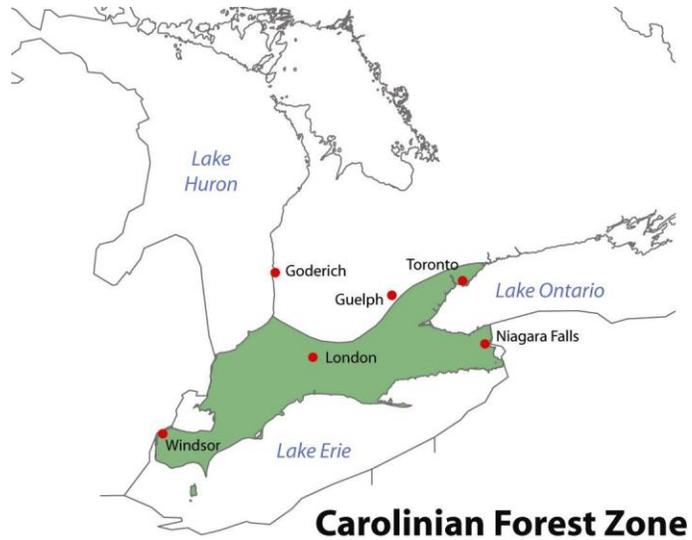


Figure 1: Map of the Carolinian Forest Zone



*“It was realized in the latter half of the nineteenth century that too much timber had been wastefully cut; in many cases only to reveal land that was not profitable to farming. Some criticized earlier generations which had ‘ripped away’ the forest. They believed that the solutions to the problems lay in replacing the trees.”*

From: Fur Trade To Farmstead (ERCA, 1986) paraphrasing the Bureau of Forestry in 1885.



sustainability and ecosystem health, necessitating the need to significantly increase the extent and quality of remaining natural habitats.

### 1.3 Study Purpose

The purpose of the ERNHSS is to assist the County of Essex in determining an appropriate strategy to protect natural heritage features and their functions as part of the update to the Official Plan process. The current Official Plan supports the preparation of a regional natural heritage system strategy through policies such as in Section 1.3.3 Natural Environment Areas:

*“...although good for farming, these past practices have resulted in limited habitat, few green linkages between natural features and poorer water quality. As a result, it is increasingly important to work with private property owners in their efforts to preserve these remaining areas and enhance their effectiveness through promoting the development or preservation of natural linkages between the areas and increasing the amount of core natural area.”*

(County of Essex, 2002)

In addition, within Section 3.4 Natural Environment Areas, Section 3.4.2 Goals states:

*“f) to establish framework with which the County and local municipalities will incorporate comprehensive and innovative policies in local Official Plans in an attempt to work with private property owners toward preserving and enhancing natural heritage features;*

*g) to increase the size of core natural areas and to create and protect important natural area linkages and corridors as part of linked greenway systems, connecting wildlife habitat areas to each other, human settlements to human settlements and people to nature. Inter-municipal coordination to accomplish this goal is encouraged.”*

(County of Essex, 2002)

One component of the ERNHSS is to scientifically identify and prioritize the system of natural heritage features from a regional perspective. The study area includes all urban and rural lands within the Essex region, including the County of Essex and its seven lower tier municipalities, the City of Windsor, and the Township of Pelee. Completed at the landscape scale, this study should be considered a “broad brush” depiction of the natural system of features and linkages to support biodiversity within the Essex region. The original BCS completed in 2002 serves as baseline information for this study. The ERNHSS is an update to this existing spatial database which will result in a more accurate and up to date assessment of the extent of the region’s existing natural vegetation and identify the prioritized natural heritage system.

*“Natural heritage systems are identified to help define integrated networks of conservation lands and waters linked by natural and restored corridors. System definition is a practical technique to define conservation and protection objectives in land-use, watershed and resource planning. They can also define baseline or benchmark landscape systems against which to monitor cumulative effects and assess acceptable levels of landscape change.”*

(Riley and Mohr, 1994)

Applying similar restoration guidelines as in the 2002 BCS, the ERNHSS will depict lands recommended for restoration and then prioritize these opportunities. Strategic planning for the restoration of ecosystem features focuses on identifying high priority opportunities to restore features and ecological functions that have been lost or degraded, in a fashion that maximizes ecological benefit. The objective of these measures is to increase the size, connectivity, and quality of core natural heritage features, through restoration, buffering and the creation of natural corridors and linkages, thereby improving ecosystem diversity and ecological function. This is the first step in the construction of a healthy, self-sustaining, natural heritage system. This holistic approach that works towards restoring, to the extent possible, ecological function, linkage, and diverse species composition that comprise undegraded natural ecosystems is more likely to ensure that maximum biodiversity is conserved over the long term. Strategic planning for restoration and conservation of biodiversity is based on the premise that all existing natural areas remain intact and that there is no further loss.

A connected and diverse natural heritage system also provides a scenic landscape with opportunities for extensive trail systems, in appropriate locations. The outcome of this study will provide updated baseline information useful for developing and strengthening policies focused on the natural heritage system.

#### 1.4 Natural Heritage System Approach

Core natural areas provide habitat for a wide variety of animals and plants. In general, the larger the natural area, the more diversity that can exist within it. However, isolated patches of habitat alone are not adequate to sustain healthy populations of plants and animals. Core natural features must be connected with each other. While some species of wildlife do travel over agricultural lands between natural features, others require vegetated corridors between the major core areas. These corridors are essential in order to allow for migration of wildlife, to provide escape routes, and to foster biodiversity of natural communities and genetic pools through immigration and emigration.

*“The science of landscape ecology suggests that the diversity of native species and communities can be sustained by a system of core natural areas with connecting corridors. In many parts of the Carolinian region, natural habitats are fragmented and isolated. It is vital to protect those habitats that remain, to buffer them from incompatible nearby land use, and to restore large core areas and connecting corridors in appropriate locations.”*

*(Reid and Symmes, 1997)*

In fragmented landscapes such as the Essex region, the identification of natural heritage systems, and the associated recommendations designed for their protection and restoration, can accomplish the following:

1. Maintain or enhance the overall diversity and health of native species populations;
2. Conserve rare plant communities (e.g. alvars, tallgrass prairies);
3. Assist in the recovery of Species at Risk;
4. Maintain and enhance natural corridors for wildlife movement and genetic exchange;
5. Help protect the quality and quantity of water resources;
6. Establish priorities for restoration, stewardship and securement; and,

7. Assist decision makers in making sound, informed decisions on how and where development should occur without compromising the ecological integrity of natural systems.

The results from the ERNHSS will guide where high priority habitat restoration is recommended to promote a more healthy and self-sustaining ecosystem.

*“The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.”*

Provincial Policy Statement 2005, policy 2.1.2  
(Ontario Ministry of Municipal Affairs and Housing, 2005)

The changes to Provincial policies and legislation, including those brought about in the 2005 Provincial Policy Statement (PPS), provide new opportunities for further strengthening the County of Essex environment and water resource policies. The PPS undertakes a “systems approach as a centralized theme”. Undertaking a natural heritage systems approach to planning reinforces the understanding that natural features have strong ecological ties to other physical features and areas in the landscape and encourages biodiversity.

The term “natural heritage system” as defined in Section 6.0 of the PPS is *“a system made up of natural heritage features and areas, linked by natural corridors which are necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state.”* (Ontario Ministry of Municipal Affairs and Housing, 2005). Therefore the vision for the natural heritage system within the Essex region consists of the core natural features, which are linked by existing and proposed natural corridors such as shelterbelts, hedgerows and watercourses, which when fully restored will ensure the overall functioning of the ecosystem. According to the Province of Ontario’s Natural Heritage Reference Manual regarding the creation and protection of the natural heritage system, *“Where few natural areas remain, identifying a connected natural heritage system may not be possible except where efforts are made to encourage restoration or rehabilitation. In such parts of the province, the emphasis should be on protecting most of the remaining natural area and lands surrounding it where natural cover can be improved or restored.”* (Ontario Ministry of Natural Resources, 2010).

The following statements are general objectives which are appropriate for any type of natural heritage study:

1. Protect the best features (based on significance, representation and distribution);
2. Large areas are more valuable and are typically more significant and of higher preference for protection (particularly creating interior forest habitat);
3. Strive to create and enhance biodiversity, which is a key determinant of ecological health;
4. Those sites with lesser amounts or opportunities for disturbance are of higher value;
5. Promote connectivity and natural linkages between natural features.

It is expected that the ERNHSS will result in an accurate depiction of the overall natural heritage system within the Essex region and provide the necessary background justification providing for its protection and restoration. In addition, the resulting natural heritage system is intended to accomplish multiple watershed management objectives concurrently; for example, public and private stewardship initiatives, consistency in addressing planning applications, encourage and support watershed and sub-watershed studies and identify areas for natural heritage inventories where necessary.

The purpose of the ERNHSS is also to provide the various planning jurisdictions with the information and tools necessary to update their natural heritage policies in their respective Official Plans. As well, the up to date mapping of natural heritage features produced from the ERNHSS will be useful for each of the lower-tier municipalities in order to facilitate the implementation of natural heritage systems approaches at the local levels, where those do not currently exist.

### 1.5 Detroit River Remedial Action Plan (RAP) Context

In 1986, through the Great Lakes Water Quality Agreement, the United States and Canada agreed to clean up 43 Areas of Concern (AOCs) across the Great Lakes Basin, which have identified “beneficial use impairments” such as the loss of fish and wildlife habitat and the degradation of fish and wildlife populations.

One of the goals of the 2002 BCS was to apply the restoration guidelines outlined in *"How Much Habitat is Enough? - A Framework for Guiding Habitat Rehabilitation in Great Lakes Areas of Concern"* (Environment Canada, *et al.*, 1998; Environment Canada, 2004) to the Detroit River AOC. The ERNHSS applies the same guidelines and is considered to be a more accurate application of the various guidelines to the region’s landscape. The application of these habitat rehabilitation guidelines results in the establishment of appropriate local targets for natural area cover, and will continue to assist the Detroit River Canadian Cleanup (DRCC) in the following:

- providing a review of existing habitat conditions;
- defining data gaps;
- developing delisting criteria for impaired beneficial use #14, loss of fish and wildlife habitat;
- developing implementation plans, and;
- prioritizing implementation project proposals.

## 2 METHODOLOGY

The Corporation of the County of Essex retained ERCA to complete the study. Bill King, *Manager, Planning Services* was the lead administrative staff person from the County of Essex involved with the study. Rebecca Belanger, *ERCA Conservation Planner* coordinated the study. Report preparation was completed by Dan Lebedyk, *Conservation Biologist*, Tom Dufour, *Geomatics Technician*, Rebecca Belanger, *Conservation Planner* and Michael Nelson, *Watershed Planner*. All maps (and associated GIS data analysis) were produced by the following ERCA staff – Tom Dufour, *Geomatics Technician* and Jovana Ilic, *Assistant GIS Technician*. The following methods were utilized by technical staff to generate the ERNHSS.

### 2.1 GIS Data Compilation

The following information was compiled into a Geographic Information System (GIS) for this study. The data is from a series of sources, vintages, and scales, and are described below. The data used was considered the best available data at the time of the study. A complete list of data inputs is available in Table 1 within the Appendix.

- **Digital Aerial Photography:** 2008 10 cm resolution digital air photography was utilized for the delineation of natural features in Essex County and the City of Windsor while 30 cm resolution 2006 digital aerial photography was utilized for the Township of Pelee. Photography was provided by the County of Essex, City of Windsor, the Township of Pelee and Point Pelee National Park. This digital aerial photography was also used to correct and refine the GIS layers originally generated through the 2002 BCS.
- **Watercourses:** Watercourse centreline data within the ERCA watershed was delineated using 2004 black and white 10cm digital aerial photography for the mainland, and 30cm digital aerial photography for Pelee Island. Watercourse data within the Lower Thames Valley Conservation Authority (LTVCA) watershed was provided by the Town of Lakeshore and Municipality of Leamington. Subwatershed delineations and floodplain mapping was provided by ERCA and LTVCA.
- **Natural areas and features:**
  - Provincially Significant Wetland (PSW) boundaries were obtained from the Ontario Ministry of Natural Resources (OMNR).
  - Areas of Natural and Scientific Interest (ANSI) boundaries were obtained from the OMNR.
  - Environmentally Significant Area (ESA) boundaries and associated data are compiled, maintained and provided by ERCA. The ESA's dataset was last updated in 2006.
  - Forested features, valleylands and other natural features were delineated by ERCA using digital aerial photography.
- **Normalized Difference Vegetation Index (NDVI):** NDVI (Weier and Herring, 2000) data and analysis was produced from 2006 satellite imagery and provided by ERCA.
- **Physiography:** Physiography data (1:600:000) was obtained from Ontario Geological Survey (Chapman and Putnam, 1984).
- **Land Ownership:** Land identified as held in public ownership. Derivative product compiled by ERCA.

- **Nature Conservancy of Canada (NCC) Priority Areas:** Priority provided by the NCC (NCC, 2008).

The majority of the work performed for this study consisted of GIS mapping and analysis. The GIS generated all maps, statistics, and documentation describing the current state of natural vegetation and, ultimately, areas for possible restoration. ESRI's ArcGIS software was used to compile, manage and analyse the digital data. The data was imported into, and managed by, ESRI's File Geodatabases framework. Geoprocessing was used as the system for manipulating the data (e.g. overlays, buffers) in defined workflows. ESRI's ModelBuilder was used to manage these geoprocessing workflows. ModelBuilder is a visual programming language that can be used as a tool to encapsulate workflows. The benefits of using ModelBuilder include their reusability, automation, and use as a visual representation of analysis operations.

**DISCLAIMER** – Due to the variety of sources, vintages, formats, and scales of the input datasets, the accuracy of any data, statistics, or maps reported in this document is hereby qualified. The appropriate scale for mapping and reporting data at a landscape level is 1:10,000 or greater. Statistics within the ERNHSS are reported with two significant digits for consistency but should not be interpreted as a claim of its accuracy, due to the scale of the exercise.

## 2.2 Analysis of Existing Natural Features

A complete list of data outputs is available in Table 4 of the Appendix. Throughout the document the use of the terms 'areas' and 'features' may be used interchangeably. The intent is to use the term areas to refer to a locally identified natural area where the use of the term feature is used to refer to an identified feature.

### 2.2.1 Forest Cover

Forest cover within the ERNHSS refers to features which were identified through aerial photography interpretation as natural features with tree cover. These features not only include vegetation communities which meet the definition of a "forest" based on the Ecological Land Classification (ELC) system - a treed community with greater than 60% tree cover, but also include features which meet the ELC definition of a "woodland" - a treed community composed of between 35% and 60% tree cover (Lee et. al., 1998). In addition, this layer also includes features which were readily identifiable from aerial photography as containing greater than approximately 10% tree cover, which is now referred to as "sparsely treed" communities in the newest version of the ELC system currently in development (Lee, 2011).

The initial mapping phases included an update to the existing "forest cover layer" which consisted of removing features where structures and yards now exist based on air photo interpretation. Although this mapping exercise updates the "forest cover" boundary delineations through interpretation of the 2008 air photos available for the region, it does not differentiate between various treed community types, except for the distinction of swamp forest. Those treed features which resulted in being included in both the forest cover layer (from air photo interpretation) and the wetland layer (from the Provincially Significant Wetland layer) were categorized as swamp forest to be included in the calculation of percentage of wetlands for each

jurisdiction and watershed. This is in recognition of the role of these features in providing a wetland hydrologic function such as groundwater recharge. Additional level of detail with respect to specific ELC vegetation types can only be defined accurately through field application of the ELC on the ground.

No minimum size limit was set for delineated patches; however discretion was utilized in order to identify features of sufficient size to be mapped. Substantial efforts were made to remove discernible anthropogenic land uses such as manicured, residential yards, orchards, etc. from the resulting forest cover layer. Hedgerows (i.e., long linear features of woody vegetation typically separating agricultural fields) were also not included within the forest cover dataset. In addition, areas such as golf courses, roadside plantings, windbreaks, non-native plantings, anthropogenic parkland, or treed boulevards which are actively managed to reduce understory growth (e.g., through mowing), were not included in the delineation of forest cover, as these non-natural habitats do not serve in providing significant ecosystem functions, such as wildlife habitat. However, a small number of municipal parks and golf courses have initiated a program to naturalize sections of their properties, allowing woody and herbaceous vegetation to re-establish beneath the tree canopy. These wooded features associated with and adjacent to golf courses were identified, delineated, and retained in the forest cover layer.

Plantations of native species have been included in the forest layer, as these areas have been planted in order to re-establish future forests. Detailed records were available for those plantations that were established through the ERCA tree planting program. Features over five acres in size were delineated from ERCA records and included in the forest layer. It is realized that in some cases it may be several years until such time as these plantations will require no further maintenance to control weeds, have a closed canopy, and have developed a substantial understory complete with associated wildlife. However, because participating landowners sign Stewardship Agreements as part of these planting projects, it is expected that these plantations will remain in the landscape; and in order to prevent the ERNHSS from becoming quickly “out of date” with respect to the amount of forest cover in the landscape, it was decided to include these “young” forests within the layer, realizing their future ecological role.

Once the data for the forest cover layer had been verified and corrected, spatial analysis on the information was conducted. GIS software was used to determine the total amount and the relative percentage of forest cover within each jurisdiction and watershed. In addition, the size of the largest forest patch, and the amount of forest cover either 100 m or 200 m from edge (i.e., how much of the forest cover is considered to be interior forest habitat) was also calculated. The amount of interior forest was calculated for forested features greater than 10 ha in size, as smaller features would not contain any interior forest habitat.

### ***2.2.2 Riparian Analysis***

The 2005 ERCA watercourse dataset, digitized from 2004 aerial photography, was utilized for the mapping and analysis of riparian habitat. This dataset includes both natural watercourses and open Municipal Drains.

### 2.2.3 *Built-up Areas*

As part of the study, existing developed and other anthropogenic land uses (e.g., transportation corridors, quarries, urbanized areas, etc.) were mapped as areas of exclusion where natural features no longer exist and where large scale restoration would not be possible. These were used to refine the final layers for all existing natural features as well as areas for potential wetland buffer, riparian buffer and other restoration opportunities. Built up areas identified by the OMNR through their SOLRIS product. Transportation features were compiled by ERCA from various municipal sources as well as from ERCA data.

### 2.2.4 *Wetland Extent*

The 2012 Provincially Significant Wetland (PSW) dataset was obtained from the OMNR and utilized for the mapping and calculation of existing inventoried and identified wetlands. As mentioned above, all features known to be swamp forest were included in the wetland calculations. Once the data for wetland extent had been checked and corrected, spatial analysis on the information was conducted. Spatial analysis was conducted to determine the percent of a reporting area (jurisdiction or watershed) that is occupied by wetland habitat. There may be wetlands that have not been evaluated by the Ministry of Natural Resources. In most cases, these features are captured as an existing natural feature.

### 2.2.5 *Extent of Other Natural Features*

Other natural features include meadows, grasslands, tallgrass prairie, alvars, and shrub thickets and some open water features but are not explicitly described as such in the GIS database. Features within this layer are those which have been identified as natural features through past natural heritage inventories and evaluations (e.g., Candidate Natural Heritage Sites (CNHSs), Environmentally Significant Areas (ESAs), Significant Valleylands, etc.) but are not already included within the forest or wetland layers, or which were otherwise discernible through aerial photography interpretation. Details regarding the characteristics of these other natural features will be added to the GIS database as information becomes available.

### 2.2.6 *Prioritization Criteria*

Existing natural features were then prioritized with respect to natural heritage significance. This prioritization exercise assessed the relative significance of natural heritage features through the summation of overlapping recognitions which have been identified through various natural heritage evaluations and analyses. The following set of criteria was utilized in the prioritization exercise. These criteria were felt to capture the full range of environmental variables considered within all known assessments completed within the region.

1. **Existing Natural Feature** – There are 2 types of existing natural features. Each type is mutually exclusive of the other.
  - a. **Wetland** represents those features identified by the OMNR as Provincially Significant Wetlands (PSW) through application of the Ontario Wetland Evaluation System (OWES) (OMNR, 1994). Wetlands are areas which are

seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case, the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants.

- b. **Terrestrial** represents those features being the greatest extent of identified terrestrial (upland) natural heritage areas (e.g., forests, woodlands, thickets, meadows, prairies, alvars), Candidate Natural Heritage Sites (CNHSs), valleylands, and plantations regardless of size, and not already included within the other existing layers. Excludes any area identified as a wetland.
2. **Areas of Natural or Scientific Interest (ANSI)** are areas of land and water that represent significant biological features that contain exemplary representative examples of the many natural landscapes, communities, plants and animals found in the 14 natural regions of the province. ANSIs are identified by the OMNR by surveying regions and evaluating sites to decide which have the highest value for conservation, scientific study and education.
3. **Environmentally Significant Area (ESA)** are remnant, regionally and provincially significant, natural ecosystems, as identified by ERCA, which contain features such as significant landforms, linkage systems, migratory stopovers, communities, hydrology, diversity, rare species, large size, research or educational value and aesthetic or historical value. ESAs serve to protect and provide habitat for all species of flora and fauna (rare, endangered, or otherwise), as well as protecting representative examples of plant associations, landforms, and other features that are part of our natural heritage.
4. **Significant Valleyland** represents features identified by the ERCA that occur in a valley or other landform depression that has water flowing through or standing for some period of the year. These features often link or border natural areas and provide ecological functions such as habitat (including refuge), corridor, or buffering from adjacent land use impacts. Significant Valleyland features are identified utilizing guidelines provided in the *Natural Heritage Reference Manual* (OMNR, 2010) and are based on the following features:
  - a. more or less continuous natural areas providing connections within the watershed;
  - b. contains a diversity of native species, natural communities and landscapes;
  - c. provides ecological functions such as habitat, passage, refuge, hydrological flow, and buffering from adjacent areas.
5. **Significant Woodland** being treed features that are greater than 2 ha in size. All woodland features that met the size criteria were considered (ie. upland woodlands and swamp forests).
6. **Interior Forest** consisting of treed features which is a minimum of 100 m inside the length of its perimeter (100 m from edge). Thus, a feature must be greater than 200 m width to contain any interior forest. All woodland features were considered (ie. upland woodlands and swamp forests).

7. **Favourable Vegetation Index (NDVI - Healthy Riparian Vegetation Cover)** being features within 200 m of a main watercourse of a subwatershed that is estimated as having healthy riparian vegetation cover within that area using the Normalized Difference Vegetation Index (NDVI) (Weier and Herring, 2000).
8. **Favourable Physiography** being any existing natural feature underlain by a favourable physiography type (i.e., sand plain, beach, or limestone plain) as identified within the Ontario Geological Survey (OGS) soils mapping. The unique habitats created by these uncommon and distinct physiographic features result in ecosystems that typically support a greater diversity of plant species as well as support a greater number of rare species in comparison with the region's more common clay plain type of physiography. Natural features associated with the identified favourable physiography typically include rich Carolinian forests, tallgrass prairies and savannas, alvars, and dynamic beach-associated vegetation communities.
9. **Flood Land** being existing natural features within the 1:100 year floodplain of a watercourse or large waterbody as identified by the ERCA and LTVCA. This criterion was utilized in recognition of those natural areas which are associated with the dynamic nature of flood prone areas.
10. **Public Land** being existing natural features within public ownership (including federal, provincial, municipal, and Conservation Authority and non-government organization) which are typically secured and managed for conservation purposes. These lands include primarily national parks, provincial parks and nature reserves, conservation areas, as well as municipally-owned properties which have been identified as existing natural features.
11. **Nature Conservancy of Canada (NCC) Priority Land** being existing natural features within lands identified as a priority for protection (including lands which are already protected) by the Nature Conservancy of Canada (NCC). These lands have been identified within the NCC's Essex Forests and Wetlands Natural Area Conservation Plan (NCC, 2008).

Occurrences of rare, threatened or endangered species, from the OMNR Natural Heritage Information Centre's databases, were felt to be already inherent in other already utilized evaluations of significance, such as ANSI, ESA or CNHS evaluations. Specific locations of endangered or threatened species or mapping of their significant habitat are not available in a form or to the level of detail to add value, and therefore are not specifically included in the prioritization analysis. In addition, no mapping of Significant Wildlife Habitat has been completed for the region, and is therefore also not directly incorporated into the analysis. If this information does become available in the future, this could add additional criteria for consideration within the prioritization exercise.

All criteria were weighted equally and polygons were evaluated with respect to presence or absence. The evaluation of each criteria resulted in the generation of 11 unique data layers. These layers were overlain onto each other and their accumulation summed. The final result of the overlay process was rasterized (25 m x 25 m grid) to generalize the data.

A technical list of criteria specifications for prioritizing existing natural areas is available in Table 2 of the Appendix.

## 2.3 Restoration Guidelines/Local Targets

The habitat guidelines outlined in the Environment Canada Framework (Environment Canada, *et al.*, 1998; Environment Canada, 2004) represent the optimum conditions for diverse, healthy, functioning ecosystems. Based on input from the original BCS committee, the results of ERCA investigations, and practical considerations for long-term ecosystem health these optimal environmental guidelines were adapted to the Essex region yielding appropriate interim local targets. These local targets reflected an overall desire to ensure:

- that ecosystem integrity was protected and maintained;
- that those aspects of the ecosystem which have been lost or degraded over time were restored and enhanced to healthy, self-sustaining, diverse conditions; and
- that the resulting potential and proposed land use changes were practical, feasible, and realistic based on the local context.

### 2.3.1 Guiding Principles

Due to the history of land use in the Essex region, especially agricultural land clearing, there are few natural areas remaining. Consequently, further losses should be prevented to the greatest extent possible. Co-ordinated steps should be taken to rebuild a pattern of core areas, nodes and corridors of natural features back into the landscape. Restoration planning should concentrate on enhancing, linking and building outwards from existing core natural features in the landscape. This will greatly improve and diversify the biodiversity of the Essex region.

Each of the following principles are comprised of a series of goals, designed to protect and enhance the natural features and ecological functions; to restore those features/functions that have been degraded; and to guide future development in a manner that will ensure the long-term health of the environment. These principles and goals guided the development of the ERNHSS. Goal achievement will be accomplished through full implementation of the ERNHSS.

- To stop further losses of significant natural features and to minimize other losses.

Goals:

- Identify and preserve significant environmental features and ecological functions (e.g., fish and aquatic habitat, significant woodlands, significant wetlands, significant valleylands, and (indirectly) habitats of threatened and endangered species).
- Perpetuate existing significant vegetation communities.
- No loss of existing natural areas
- No loss of existing habitat and buffering along watercourses.
- Identify and preserve sensitive water quality and quantity features and hydrologic functions.

- To achieve a net increase in natural cover and enhance the existing ecological resources.

## Goals:

- Restore appropriate biological communities to yield diverse composition and age structure of vegetation.
- Natural communities - to increase the area of naturally sustaining or successional vegetation.
- Uplands - to retain and improve the existing woodland communities without losses.
- Wetlands - to retain and improve the existing wetland communities without losses.
- Riparian habitat - to retain existing habitat and restore riparian vegetation and watercourse buffers.
- Tallgrass prairie/savanna/alvar habitats - to retain existing habitats and restore/enhance where appropriate.
- Reduce the impacts of existing agricultural and/or urban land uses in an effort to reduce degradation of natural ecosystems.

- To create and improve linkages between natural areas.

## Goal:

- Net gain of appropriate, priority linkages and corridors.

- To prescribe for the creation/restoration of larger contiguous areas of natural communities.

## Goal:

- To identify, protect, and restore (utilizing existing fragments) major natural nodes.

- To monitor guiding principles and goals, as they provide a direct measure of the state of the environment; and modify as appropriate so as to accommodate new information and/or changes that occur.

### 2.3.2 *Forest Habitat*

Guidelines for the protection and restoration of woodlands are based on objectives to promote healthy, self-sustaining treed ecosystems. Planting to expand existing areas and/or create new forested areas responds to the goal to increase the percentage of total forest cover within the Essex region, as well as increase the amount of interior forest habitat. Enhancement and creation of natural corridors to produce a greenway system involves vegetative plantings that would extend the valleylands and stream corridor systems, connect woodlands and vegetative remnants, and re-establish linkages to major natural nodes. This in turn would create new habitat and terrestrial resource areas, reduce fragmentation, facilitate the movement of native plant and animal species, and increase the percentage of natural cover. It is estimated that for plantation type tree-planting, the planting of one million trees will yield an increase in forest cover of one percent. An improvement program would include natural succession regeneration or active plantings at suitable locations. Further study to prescribe the details of a restoration concept should be completed for each site to ensure compatibility with the local environment. Examples of restoration opportunities include:

- natural regeneration or plantings on retired or marginal lands;
- restoration of vegetated corridors in high priority areas to improve corridor function and connectivity between major natural nodes;
- natural regeneration or plantings to provide buffers to significant or sensitive areas (e.g. ESAs, ANSIs, PSWs, proximity to Species at Risk populations, etc.) where needed and where feasible;
- regeneration in areas of high land conversion (i.e., fields to greenhouses);
- wooded areas expanded and consolidated to reduce edge effect by active planting and natural regeneration measures.

### Forest Habitat Guidelines (from Environment Canada, 2004)

- 1) Percent forest cover
  - 30%
- 2) Size of largest forest patch
  - more than one 100 ha forest patch which is a minimum 500 m in width
- 3) Percent of watershed that is forest cover 100 m and 200 m from edge
  - 100 m or farther from the edge > 10%
  - 200 m or farther from the edge > 5%
- 4) Forest shape and proximity to other areas
  - circular or square in shape
  - in close proximity to adjacent patches (within 2 km)
- 5) Fragmented landscapes and the role of corridors
  - corridors designed to facilitate species movement should be a minimum of 100 m in width
  - corridors designed for specialist species should be a minimum of 500 m wide and refined to meet the needs of the target species
- 6) Forest quality - species composition and age structure
  - species composition - as naturally diverse as possible
  - age structure - ideal basal area (m<sup>2</sup>/Ha) on average:
    - polewood (10 - 24 cm) - 4
    - small (26 - 38 cm) - 6
    - medium (40 - 48 cm) - 5
    - large (50+ cm) - 5
    - Total – 20 (OMNR, 1990; 1993)

While it is recognized that the forest guidelines from the Framework (Environment Canada, *et al.*, 1998; Environment Canada, 2004) include a recommendation of at least 30% forest cover, it is realized that within the Essex region this target may be impractical to achieve due to the extent of deforestation that has taken place since European settlement. Therefore, no specific local target for the amount of forest cover has been set, but rather efforts are recommended to be concentrated on reforestation opportunities which improve function such as reducing edge effect, increasing interior forest habitat and providing connecting linkages. This is due to the fact that interior forest habitat supports many neotropical migrant and interior-specialist bird species, which require sheltered, quiescent conditions away from the forest edge to successfully forage

and reproduce. Forest restoration opportunities concentrate on creating larger, more consolidated and regular forest patches which are circular or square in shape thereby providing more interior habitat than smaller sized forests which are elongate or irregular in shape.

Possible restoration areas were selected, targeting openings and edge irregularities associated with existing forest patches, consolidation of adjacent forest patches to increase overall core area and the amount of interior forest habitat, and restoration to create connecting linkages between disjunct core areas. The extent of restoration opportunities were then mapped and compared to the extent of existing natural heritage features. Spatial analysis then showed the predicted effects of restoration.

### ***2.3.3 Riparian Habitat***

Riparian areas occur immediately adjacent to rivers and streams and are inhabited by diverse plant communities adapted to the hydrology, nutrient-rich soils, and microclimates found in this transition zone between land and water (Daigle and Havinga, 1996). The variation in moisture conditions, plant communities, and natural debris provides habitat, protection, and movement corridors for a wide variety of aquatic, avian, terrestrial fauna, and especially to highly sensitive herptiles (Daigle and Havinga, 1996). There is a need to have adequate vegetative cover present to protect banks and dissipate energy during high flows. Plant communities in the riparian area are an important source of coarse and large woody debris - a food source for stream invertebrates and an important structural component.

The general emphasis of stream and aquatic habitat restoration is to improve the overall physical structure of the stream channels and bordering shorelines while restoring the stream's natural morphological characteristics. In addition, within the Essex region, agriculture is the dominant land use with causing watercourse sedimentation due to the lack of appropriate buffering, which is one of the major causes of water quality degradation. It is also recognized that surface and sub-surface drainage has historically been planned to outlet directly into municipal drains and watercourses rather than into header tiles and settling ponds. This traditional method of agricultural drainage has also contributed to sedimentation in watercourses and nutrient loadings as there is no control on flow or movement through the drainage system. The riparian restoration efforts recommended in this section when combined with controlled agricultural drainage systems and related in-field beneficial management practices will provide optimum water quality improvements. Riparian restoration, focusing on the establishment of effective buffering to reduce sediment inputs into watercourses, is considered to be one of the most important restoration initiatives recommended for agricultural lands within the Essex region.

#### **Riparian Habitat Guidelines (from Environment Canada, 2004)**

- 1) Percent of natural vegetation along first to third order streams
  - 75% of stream length should be naturally vegetated - either woody or grassy
- 2) Amount of natural vegetation adjacent to streams
  - generally, 30 m naturally vegetated buffer on both sides would be optimal. For specific functions:

- species diversity - 3 to 100 m
  - wildlife movement (corridors) - 3 to 200 m
  - sediment removal - 10 to 60 m
  - nutrient removal - 3 to 90 m
- 3) water temperature moderation - 15 to 30 m
  - 4) Total suspended solids concentrations
    - below 25 mg/l for the majority of the year
  - 5) Percent of urbanized watershed that is impervious
    - less than 15%

Stream rehabilitation techniques could be employed to achieve a stable equilibrium of erosion and deposition along degraded reaches. Measures to rehabilitate and enhance riparian habitat, aquatic habitat and general water quality could include:

- stabilization of currently eroding stream banks, preferably using natural channel design techniques and natural materials (such as root wads, live-log crib walls, willow brush bundles and live willow stakes);
- replanting of vegetative buffer zones using native plant species to stabilize stream banks, reduce sedimentation, filter nutrients, improve groundwater infiltration, provide shade, increase vegetative diversity, as well as function as effective corridors and linkages;
- inclusion of buffer zones in engineer's reports for municipal drains; and,
- restriction of livestock access to watercourses.

As part of the study, a 30 m riparian buffer was placed on either side of existing watercourses to delineate areas for potential riparian habitat restoration. This width is a recommended generalized guideline which should function to provide wildlife habitat and corridors for wildlife movement, as well as assist in the removal of sediments and nutrients from surface stormwater runoff (Environment Canada, *et al.*, 1998; Environment Canada, 2004). ArcGIS software was used to determine the percent of a study area that is proposed to be restored to riparian habitat.

#### 2.3.4 Wetland Habitat

Guidelines for the protection and restoration of wetlands are based on objectives to return the system to a close approximation of the predisturbance ecosystem (i.e., it would be persistent and self-sustaining although dynamic in its composition, structure and functioning). Goals include the restoration of functional values such as providing persistent vegetative cover, filtration, storage of flood waters, self-maintaining fish and wildlife populations, and de-nitrification.

#### Wetland Habitat Guidelines (from Environment Canada, 2004)

- 1) Percent wetlands in watershed or sub-watershed
  - 10% in each major watershed; 6% in each sub-watershed; or restore to original percentage
- 2) Amount of natural vegetation adjacent to wetland
  - 240 m of adjacent natural habitat (can be herbaceous or woody vegetation)
- 3) Wetland type
  - marshes and swamps

- 4) Wetland location
  - original headwater swamps
  - on-stream or floodplain marshes and swamps on second and third order watercourses
  - lacustrine wetlands
  - any other location
- 5) Wetland size
  - swamps - as large as possible
  - marshes - range of sizes
- 6) Wetland shape
  - swamps - regularly shaped with minimum edge and maximum interior habitat
  - marshes - irregularly shaped with maximum interspersion

Spatial analysis of the existing natural features was conducted to determine the percent wetland across the study area, in particular with respect to the habitat guidelines for wetland quantity and quality.

Potential areas for wetland rehabilitation and restoration were selected. Areas targeted for rehabilitation and restoration included linkages between established wetlands, as well as new wetlands to provide diversity in habitat (e.g., mudflats, river delta marshes and headwater swamps). Some key criteria utilized to determine the most feasible locations for wetland restoration include location within the floodplain, appropriate physiography such as the presence of marsh or muck soils, potential groundwater recharge areas, and lands situated in close proximity to other wetlands or the shoreline. Marshes and swamps are the two wetland types that are most practical for widespread restoration. Marshes are easier to create, rehabilitate and manage and a newly created marsh can become at least partially functional within only a few years. In contrast, newly created swamps may take much longer before becoming fully functional due to the length of time required for the woody species (i.e., trees and shrubs) to mature.

A buffer of 240 m wide was also placed around existing wetlands to identify potential areas for habitat restoration. This critical function zone provides cover for wildlife species requiring both wetland and upland habitat, reduces the rate of nest predation to moderate levels, and provides very good removal of sediments and nutrients (Environment Canada, *et al.*, 1998; Environment Canada, 2004). Site specific restoration plans for the buffer area should be developed in order to take into consideration the critical attributes of the area of interest, including the desired existing or future wildlife populations affected, as well as the adjacent land use stressors.

### **2.3.5 Fish Habitat**

Guidelines for the protection and restoration of fish and fish habitat are based on objectives to maintain/rehabilitate fish species composition and diversity to promote healthy, self-sustaining populations. To protect, maintain and enhance fish and aquatic habitats, a minimum buffer should be established for the main watercourses and their tributaries (see Section 2.3.3 Riparian Habitat). These buffer areas targeted for restoration are to be used as a guide in the development of site specific protection and restoration initiatives (i.e., fish habitat management plans). The actual buffer dimensions should be based on criteria established through a detailed, site-specific

assessment of the existing shoreline and stream bank characteristics, the specific aquatic communities and populations which would benefit, as well as input from relevant agencies such as the OMNR and Fisheries and Oceans Canada (DFO). It should also integrate such aspects as groundwater seepage, geomorphology, streamside vegetation, shoreline and benthic characteristics, barriers, and opportunities for stormwater management that best fit the specific site characteristics for habitat protection/restoration. In the interim, riparian habitat guidelines will be generally employed until specific recommendations resulting from the completion of site-specific fish habitat management plans become available.

### 2.3.6 Tallgrass Prairie, Savanna, and Alvar

Tallgrass prairies, savannas, and alvars are some of the most endangered ecological communities in the Essex region. Tallgrass communities once covered a significant part of southern Ontario's landscape. Owing to degradation and destruction through urban development, agriculture, pollution and mismanagement, less than 3 percent of the original southern Ontario extent remains. Most remnants exist in small, isolated patches; with the municipalities of the City of Windsor and the Town of LaSalle containing some of the most extensive intact remnants in Ontario. As these highly diverse communities themselves are rare and threatened so too are many of the wildlife species which depend on these communities for their survival (Rodger, 1998).

To make significant strides toward recovering tallgrass communities region-wide, a larger, more coordinated and strategic approach is required. The *Tallgrass Communities of Southern Ontario: A Recovery Plan* (Rodger, 1998) produced by the World Wildlife Fund and the Ontario Ministry of Natural Resources deals with recovering tallgrass communities as a whole, across their range in Ontario. The overall goal of this Recovery Plan is to recover, reconstruct and conserve a representative network of tallgrass communities, and to recover and protect the full complement of plant and animal life that makes up these diverse ecological communities. To do this on a region-wide scale in a strategic and comprehensive manner, the following goals (adapted from Rodger, 1998) provide key direction:

- Improve communication, coordination and information-sharing among those involved in tallgrass community conservation, such as Tallgrass Ontario.
- Compile information on the extent of all remaining tallgrass community remnants, as well as areas of high restoration potential.
- Encourage restoration and habitat creation initiatives where appropriate to enlarge existing remnants, and create linkages as well as new habitat.
- Encourage rehabilitation and enhancement of tallgrass remnants through sound management.
- Raise public awareness and appreciation of tallgrass communities.
- Encourage basic and applied research relevant to tallgrass community conservation.

Detailed information is required with respect to the extent of existing remnants, as well as areas of high restoration potential based on landscape context and physiography. This information will generally focus within the sand plain regions found within the City of Windsor and the Town of LaSalle. As this information becomes available, through partnerships with key organizations such as Tallgrass Ontario, a Tallgrass Communities Protection and Restoration Plan should be

developed to guide specific initiatives within the target areas. In addition, site specific biological inventories should be completed across all potential areas in the region to determine the presence of these rare habitat types. In many cases, these rare vegetation communities are also identified as being provincially rare and considered as Significant Wildlife Habitat.

### 2.3.7 *Species at Risk*

Species at risk are usually dependent on particular habitat conditions which provide species-specific features for certain life processes (e.g., reproduction, feeding grounds, etc.). Identification of such habitats, and any recommendations for their enhancement or management, are usually prescribed in species-specific Recovery Plans or Recovery Strategies. In addition, Habitat Regulations and Habitat Descriptions may also be useful references to inform natural heritage protection. When information from these Recovery Plans or Recovery Strategies becomes available, identified Regulated or General Habitat should be overlaid and incorporated into habitat restoration plans, and protected in land use plans where feasible. In addition, management plans for sustaining rare and unusual plant communities should be prepared on a watershed-wide basis.

### 2.3.8 *Prioritization Criteria*

Restoration opportunities were then prioritized. This prioritization exercise assessed the relative significance of the restoration opportunities through the summation of overlapping benefits which consist of application of the restoration guidelines as well as consideration of other preferences. The following set of criteria was utilized in the prioritization exercise. These criteria were felt to capture the full range of appropriate considerations for indicating relative priority of restoration opportunities.

1. **Identified Restoration Opportunity** – There are 3 types of restoration opportunities identified, and each is mutually exclusive of the other:
  - a. **Wetland Buffer** - Areas identified as restoration opportunities within 240 m of a wetland feature.
  - b. **Riparian Buffer** - Areas identified as restoration opportunities within 30 m of a 1<sup>st</sup> to 3<sup>rd</sup> order stream.
  - c. **Other** - Areas identified as restoration opportunities through a qualitative interpretation of the existing landscape using available aerial photography. These include opportunities to increase interior forest habitat, consolidate forest patch shape/reduce edge, wetland restoration areas, as well as provide linkage and connectivity between core natural features.
2. **Favourable Physiography** - Areas identified as restoration opportunities that are underlain by a favourable physiography type (i.e., sand plain, beach, or limestone plain) as identified within the Ontario Geological Survey (OGS) physiography mapping. The unique habitats created by these uncommon and distinct physiographic features result in ecosystems that typically support a greater diversity of plant species as well as support a greater number of rare species in comparison with the region's more common clay plain

type of physiography. Natural features associated with the identified favourable physiography typically include rich Carolinian forests, tallgrass prairies and savannas, alvars, and dynamic beach-associated vegetation communities.

3. **Flood Land** - Areas identified as restoration opportunities within the floodplain of a watercourse or large waterbody as identified by the ERCA and LTVCA.
4. **Public Land** - Areas identified as restoration opportunities that are within public ownership (including federal, provincial, municipal, conservation authority and non-government organization properties). These lands can include national parks, provincial parks and nature reserves, conservation areas, as well as municipally-owned properties.
5. **Nature Conservancy of Canada (NCC) Priority Land**- Areas identified as restoration opportunities that are within lands identified as a priority for protection/restoration (including lands which are already protected) by the Nature Conservancy of Canada (NCC). These lands have been identified within the NCC's Essex Forests and Wetlands Natural Area Conservation Plan (NCC, 2008).

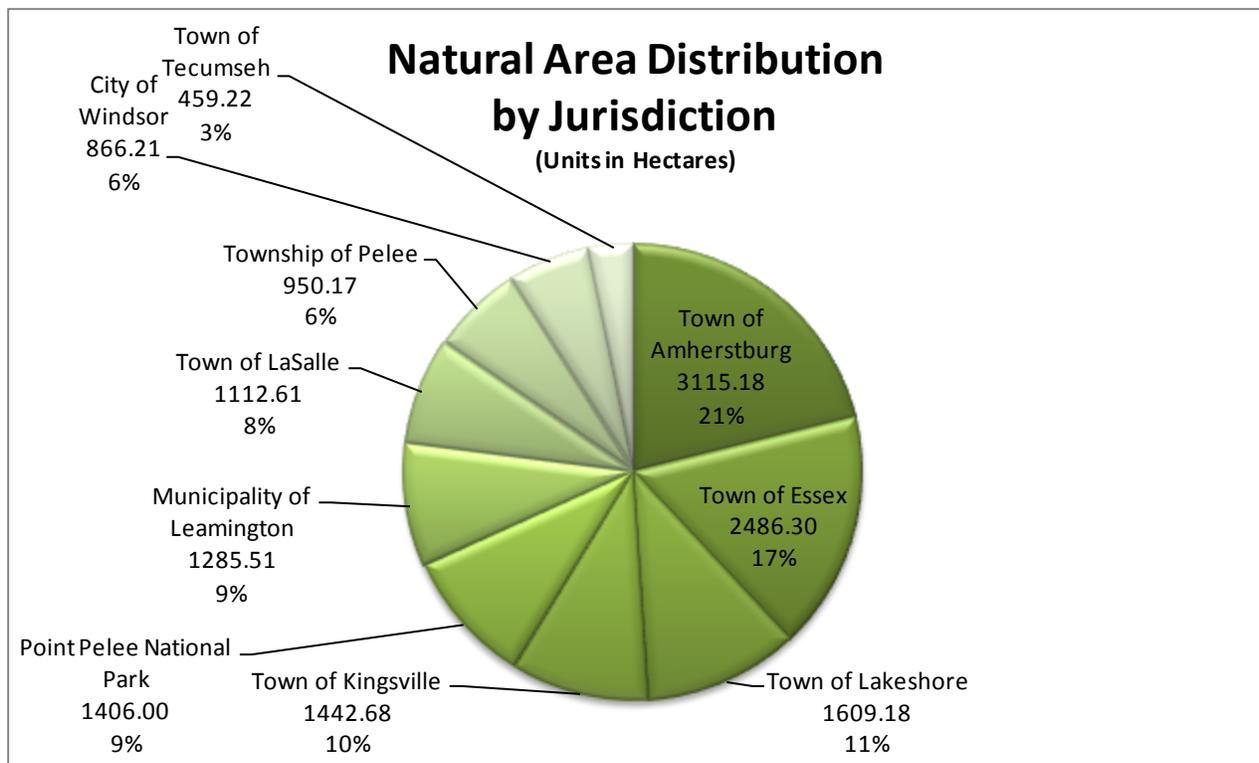
All criteria were weighted equally and polygons were evaluated with respect to presence or absence. The evaluation of these 5 criteria resulted in the generation of 5 unique data layers. These layers were overlain onto each other and their accumulation summed. The final result of the overlay process was rasterized (25 m x 25 m grid) to generalize the data.

A technical list of criteria specifications for prioritizing potential restoration opportunities is available in Table 3 of the Appendix.

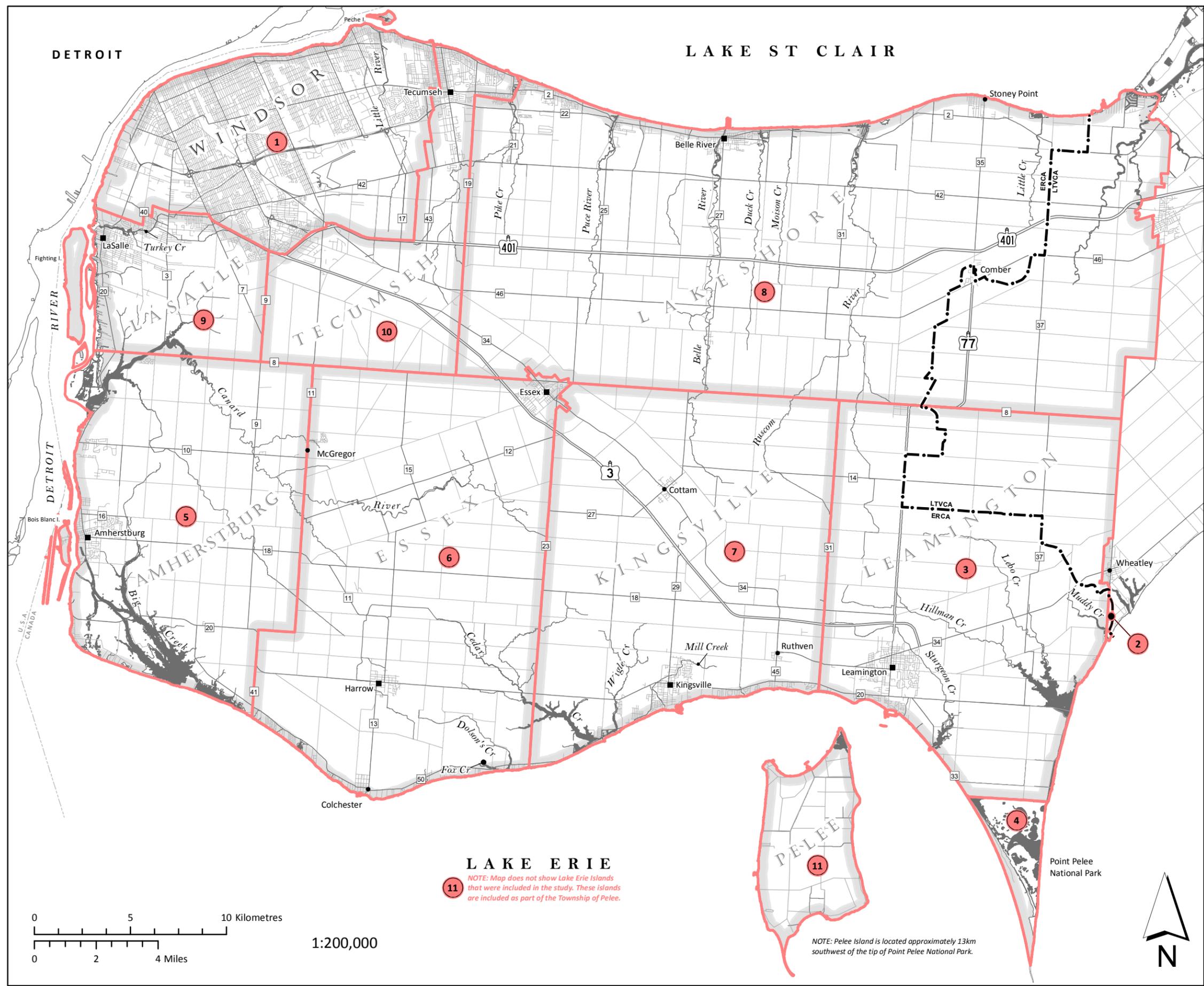
### 3 RESULTS

#### 3.1 Jurisdictional Analysis

Natural Areas Coverage by Jurisdiction					
Jurisdiction	Total Area		Natural Coverage		% Natural
	Hectares	Acres	Hectares	Acres	
Town of Amherstburg	19521.48	48238.44	3115.18	7697.75	15.96
Town of Essex	27826.60	68760.76	2486.30	6143.75	8.93
Town of Kingsville	24821.47	61334.93	1442.68	3564.93	5.81
Town of Lakeshore	53253.15	131590.87	1609.18	3976.35	3.02
Town of LaSalle	6805.10	16815.70	1112.61	2749.32	16.35
Municipality of Leamington	25359.67	62664.85	1285.51	3176.55	5.07
Town of Tecumseh	9538.60	23570.30	459.22	1134.76	4.81
<b>County of Essex Subtotal</b>	<b>167126.06</b>	<b>412975.86</b>	<b>11510.69</b>	<b>28443.42</b>	<b>6.89</b>
City of Windsor	14626.96	36143.86	866.21	2140.45	5.92
Township of Pelee	4169.53	10303.09	950.17	2347.91	22.79
<b>Municipal Subtotal</b>	<b>185922.55</b>	<b>459422.80</b>	<b>13327.07</b>	<b>32931.79</b>	<b>7.17</b>
Point Pelee National Park	1507.87	3726.02	1406.00	3474.28	93.24
<b>Overall Total</b>	<b>187430.42</b>	<b>463148.82</b>	<b>14733.07</b>	<b>36406.07</b>	<b>7.86</b>



# Jurisdictional Reporting Areas



## Legend

- Extent of Jurisdictional Reporting Area
- Conservation Authority Boundary
- ERCA - Essex Region Conservation Authority
- LTVCA - Lower Thames Conservation Authority

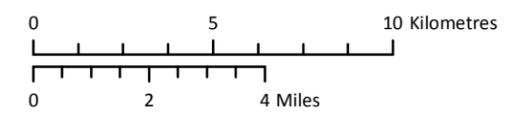
## Jurisdictions

1. City of Windsor
  2. Municipality of Chatham-Kent\*
  3. Municipality of Leamington
  4. Point Pelee National Park
  5. Town of Amherstburg
  6. Town of Essex
  7. Town of Kingsville
  8. Town of Lakeshore
  9. Town of LaSalle
  10. Town of Tecumseh
  11. Township of Pelee
- \*within ERCA watershed

## LAKE ERIE

NOTE: Map does not show Lake Erie Islands that were included in the study. These islands are included as part of the Township of Pelee.

NOTE: Pelee Island is located approximately 13km southwest of the tip of Point Pelee National Park.



1:200,000

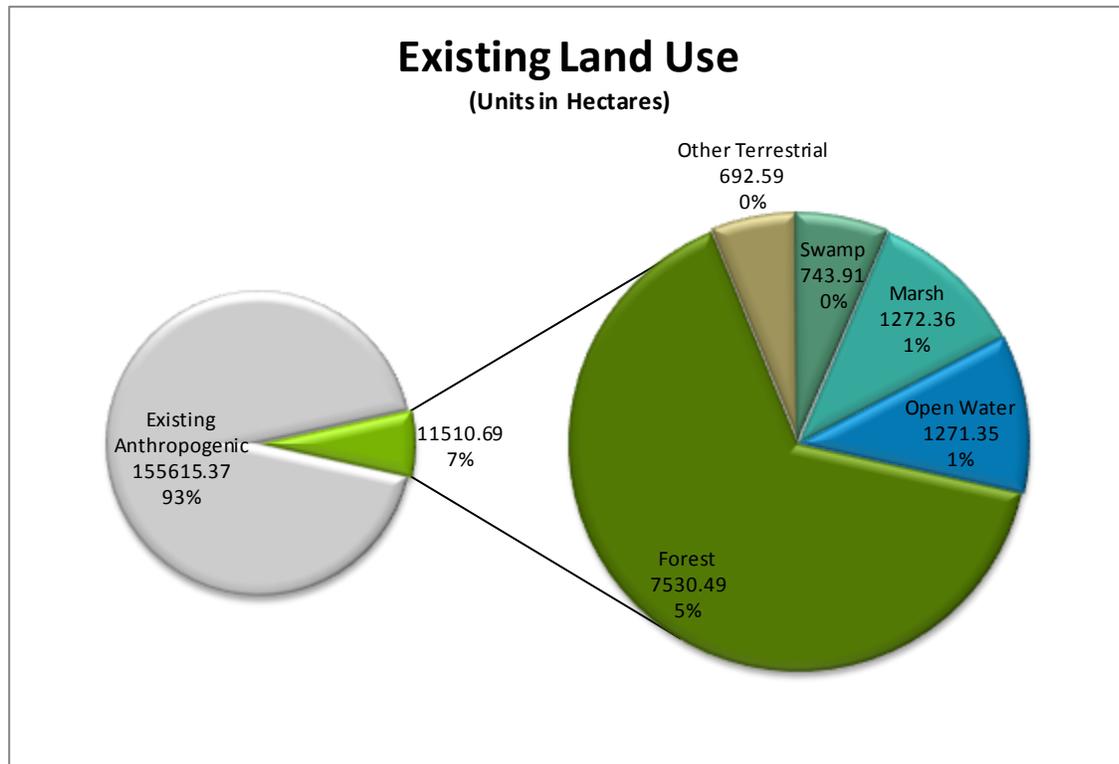


3.1.1 County of Essex

3.1.1.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the County of Essex.

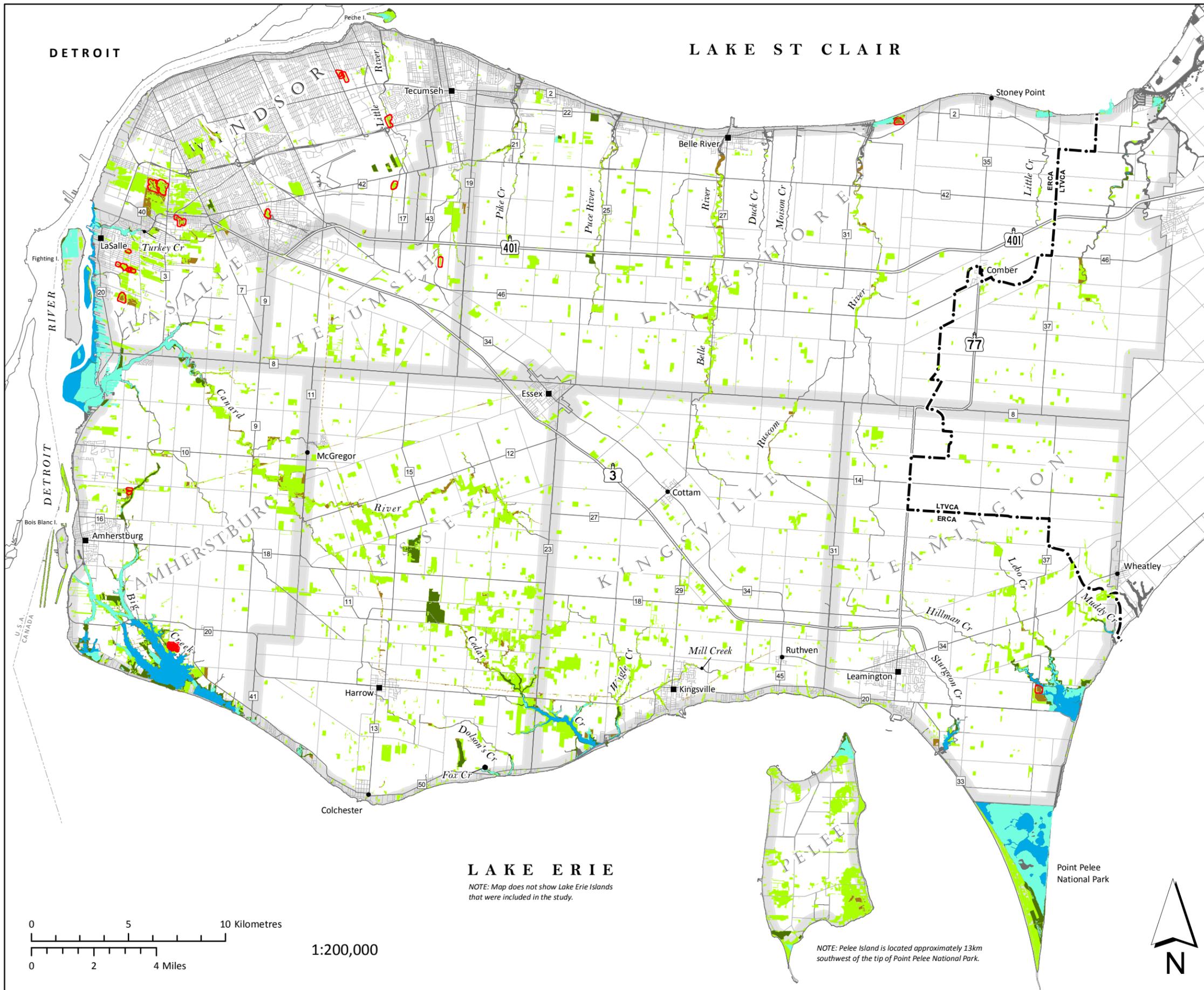
Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	7530.49	18608.17	4.51
Other Terrestrial	692.59	1711.41	0.41
<b>Total Terrestrial Habitat</b>	<b>8223.07</b>	<b>20319.58</b>	<b>4.92</b>
Wetland Habitat	Hectares	Acres	%
Swamp	743.91	1838.23	0.45
Marsh	1272.36	3144.06	0.76
Open Water	1271.35	3141.56	0.76
<b>Total Wetland Habitat</b>	<b>3287.62</b>	<b>8123.85</b>	<b>1.97</b>
<b>Existing Natural Area</b>	<b>11510.69</b>	<b>28443.42</b>	<b>6.89</b>
<b>Existing Anthropogenic</b>	<b>155615.37</b>	<b>384532.43</b>	<b>93.11</b>
<b>Total Land Area</b>	<b>167126.06</b>	<b>412975.86</b>	<b>100.00</b>



DETROIT

LAKE ST CLAIR

# Existing Natural Features



### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

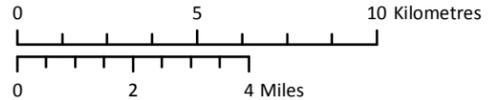
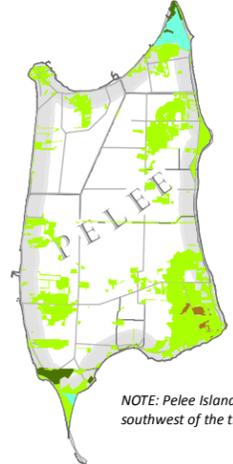
#### Features of Interest

- Tallgrass Prairie Community

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.

### LAKE ERIE

NOTE: Map does not show Lake Erie Islands that were included in the study.



1:200,000

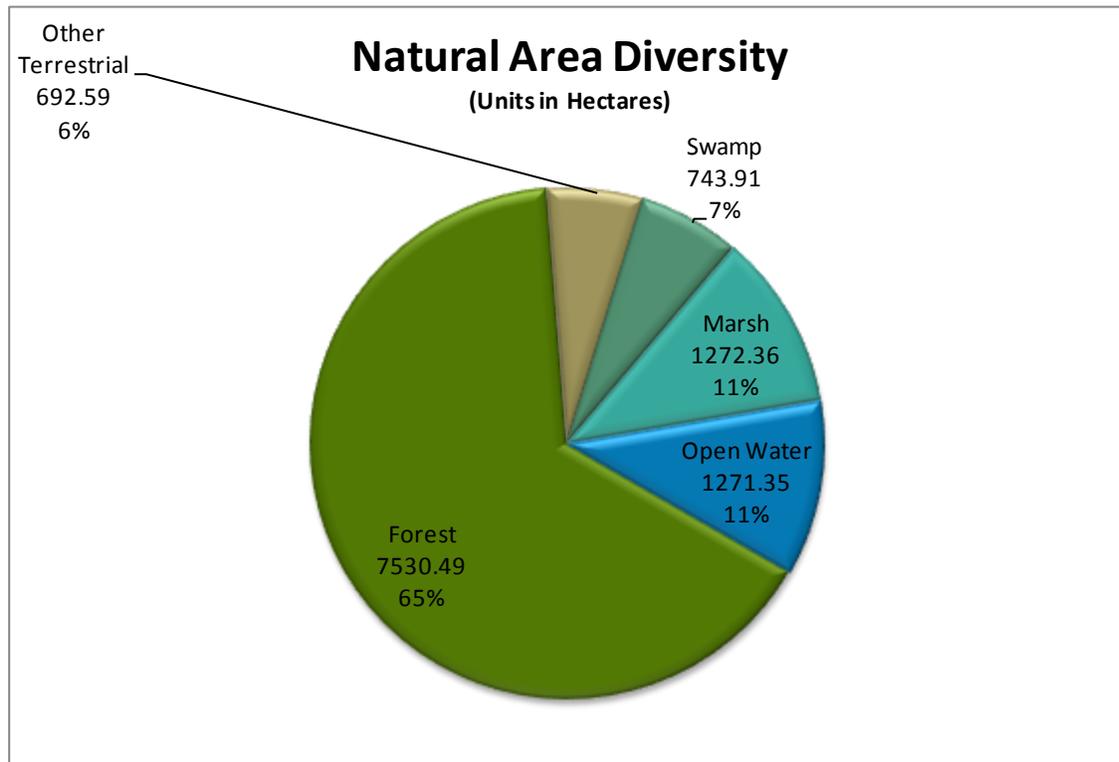


Within the study area there are 4 forest patches greater than 100 ha in size. These are associated with the Arner Pin Oak Woods, Canard River Kentucky Coffee Tree Woods, Cedar Creek, and Marshfield Woods. The largest forest patch is part of Canard River Kentucky Coffee Tree Woods and is 259.9 ha in size. In addition, 259 forest patches within the study area contain 100 m interior forest, of which 29 patches contain 200 m interior forest.

**3.1.1.2 Natural Area Composition**

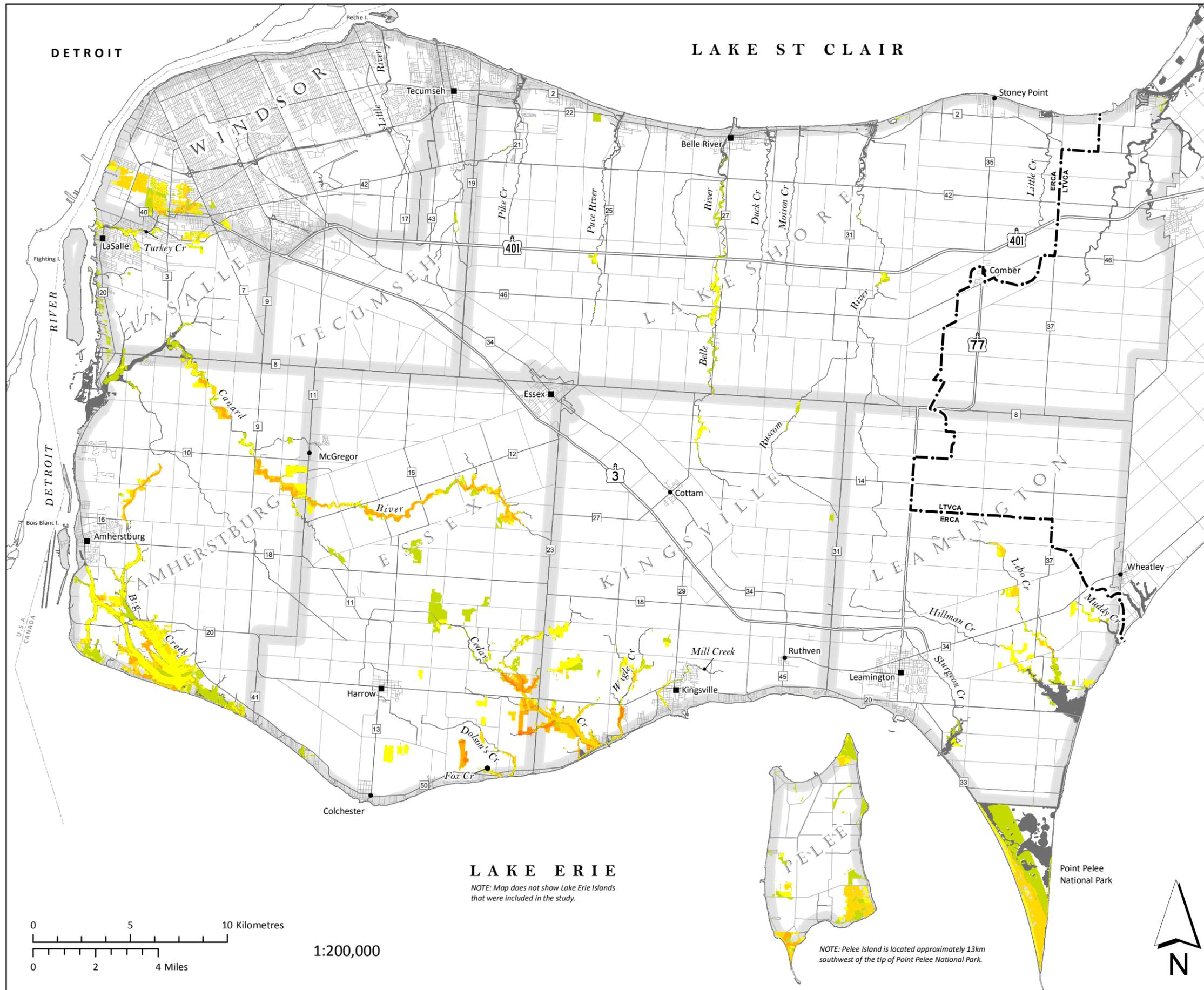
The following Table and Figures summarizes the findings for the composition of existing natural areas within the County of Essex.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	7530.49	18608.17	65.42
Other Terrestrial	692.59	1711.41	6.02
Swamp	743.91	1838.23	6.46
Marsh	1272.36	3144.06	11.05
Open Water	1271.35	3141.56	11.04
<b>Total Terrestrial Habitat</b>	<b>8223.07</b>	<b>20319.58</b>	<b>71.44</b>
<b>Total Wetland Habitat</b>	<b>3287.62</b>	<b>8123.85</b>	<b>28.56</b>
<b>Existing Natural Area</b>	<b>11510.69</b>	<b>28443.42</b>	<b>100.00</b>

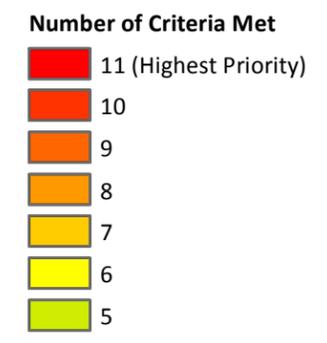


This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

# Priority of Existing Natural Features



## Legend

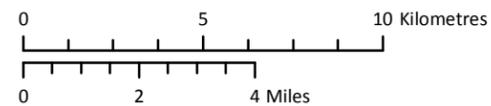


The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

### INPUT CRITERIA:\*

- Existing Natural Feature (Wetland or Terrestrial)
- Areas of Natural or Scientific Interest (ANSI)
- Environmentally Significant Area (ESA)
- Significant Valley Land
- Significant Woodland (> 2ha)
- Interior Forest (100m)
- Favourable Vegetation Index (NDVI)\*\*
- Favourable Physiography\*\*
- Flood Land\*\*
- Public Land\*\*
- Nature Conservancy of Canada (NCC) Priority Land\*\*

\* See report for full descriptions of input criteria  
 \*\* Only within an existing natural feature



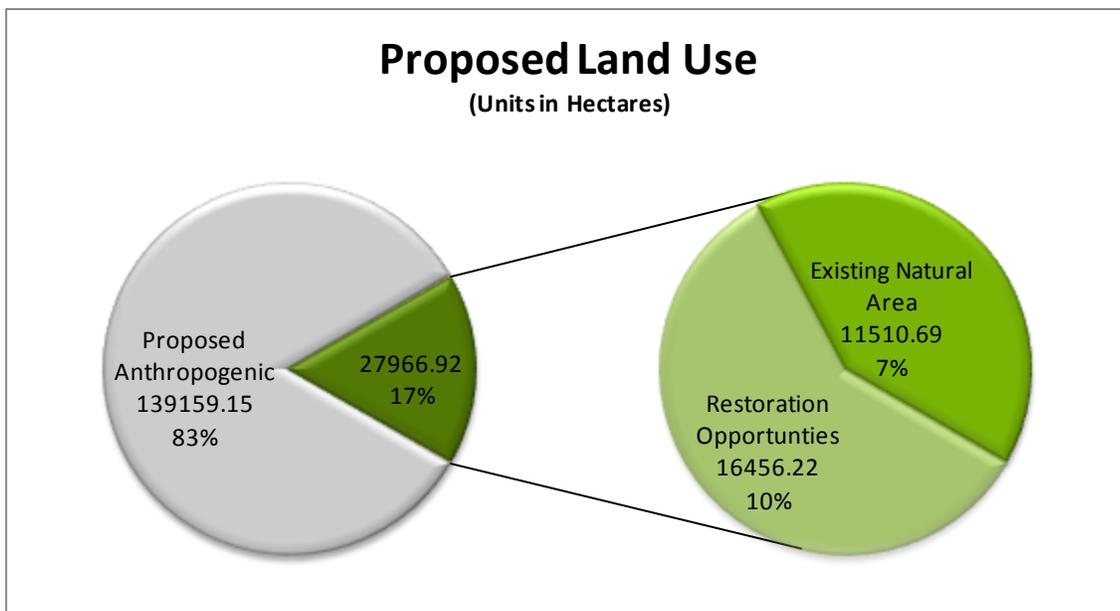
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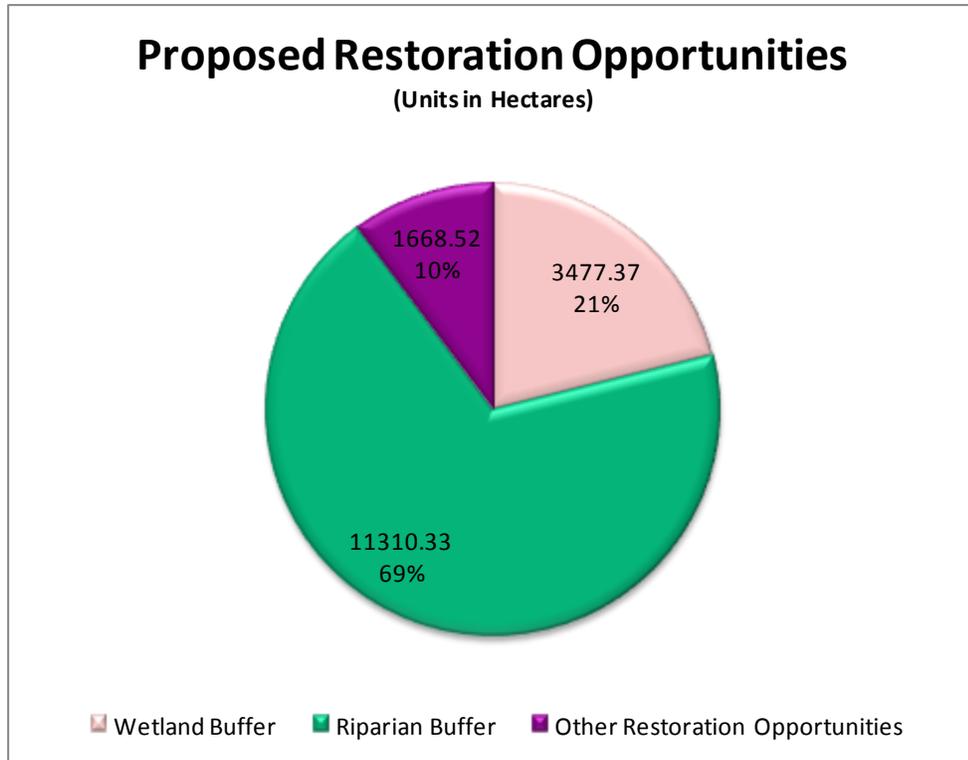


**3.1.1.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the County of Essex.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	3477.37	8592.74	2.08
Riparian Buffer	11310.33	27948.32	6.77
Other Restoration Opportunities	1668.52	4122.99	1.00
<b>Total Restoration Opportunities</b>	<b>16456.22</b>	<b>40664.05</b>	<b>9.85</b>
<b>Status Quo Anthropogenic</b>	<b>139159.15</b>	<b>343868.38</b>	<b>83.27</b>
<b>Total Land Area</b>	<b>167126.06</b>	<b>412975.86</b>	<b>100.00</b>





The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include:

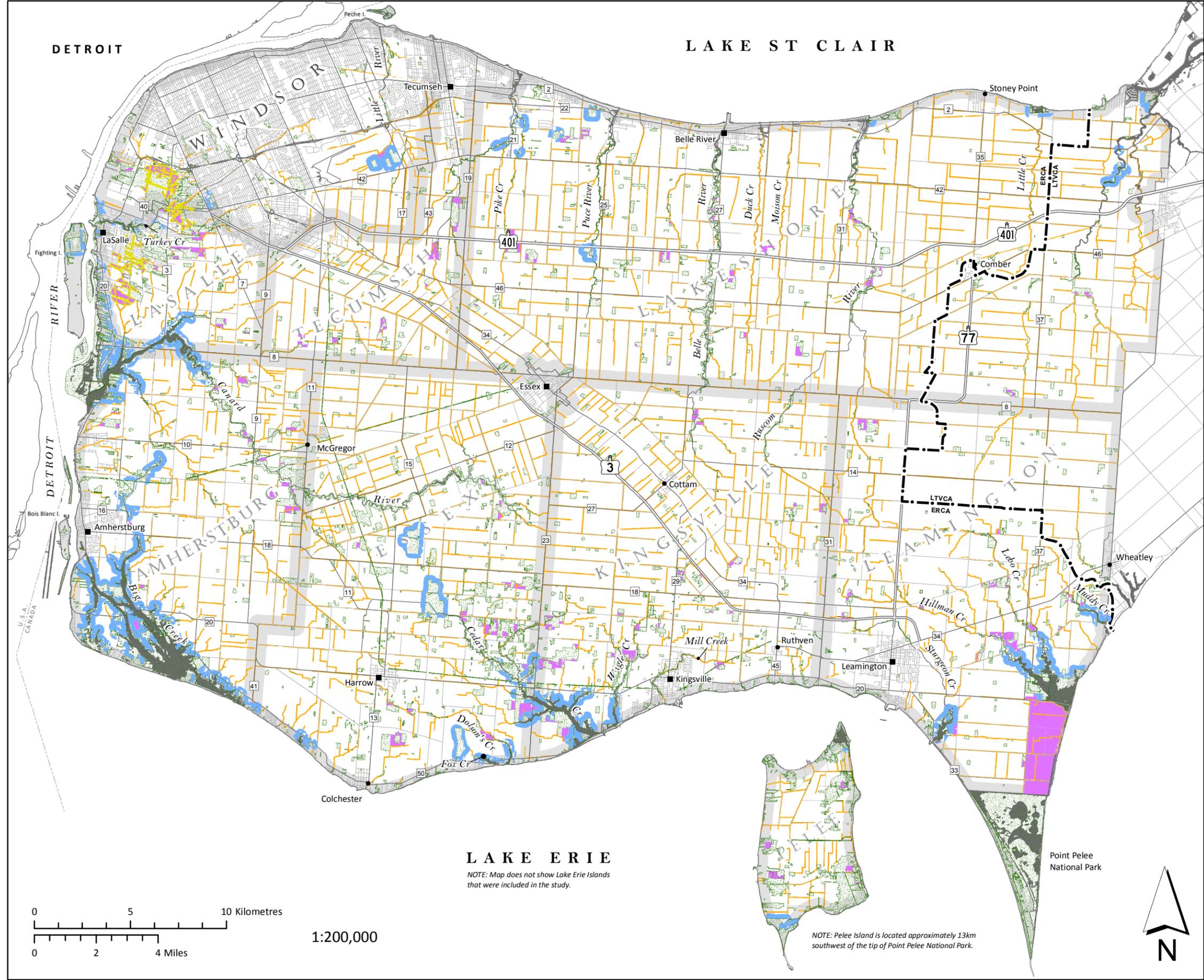
- Wetland buffers adjacent to Big Creek Marsh, Canard River Marshes, Cedar Creek, Detroit River Marshes Fox/Dolson’s Creek, Hillman Marsh, Lypp’s Beach, Muddy Creek, Oxley Poison Sumac Swamp, Ruscom Shores, Sturgeon Creek, Thames River Mouth Complex and Tremblay Beach Provincially Significant Wetlands;
- Restoration associated with the ERCA owned Arner Woods property (Town of Essex), Fairplay Woods (Town of Tecumseh), LaSalle Woods (Town of LaSalle), and New Settlement Woods (Town of Essex);
- Restoration associated with the Upper Hillman, Hillman Sand Hills and Hillman Three-Birds Woods Environmentally Significant Areas (Municipality of Leamington);
- Lands which have been identified as high priority opportunities for the restoration of tallgrass prairie vegetation communities in the Town of LaSalle; and
- Riparian restoration along select first to third order streams throughout the County (refer to individual reports for details).

# Restoration Opportunity Concepts

## Legend

- Concept Type**
- Wetland Buffer (240m)
  - Riparian Buffer (30m)
  - Other
- Opportunity of Interest**
- Tallgrass Prairie
  - Existing Natural Feature

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.



**LAKE ERIE**  
 NOTE: Map does not show Lake Erie Islands that were included in the study.

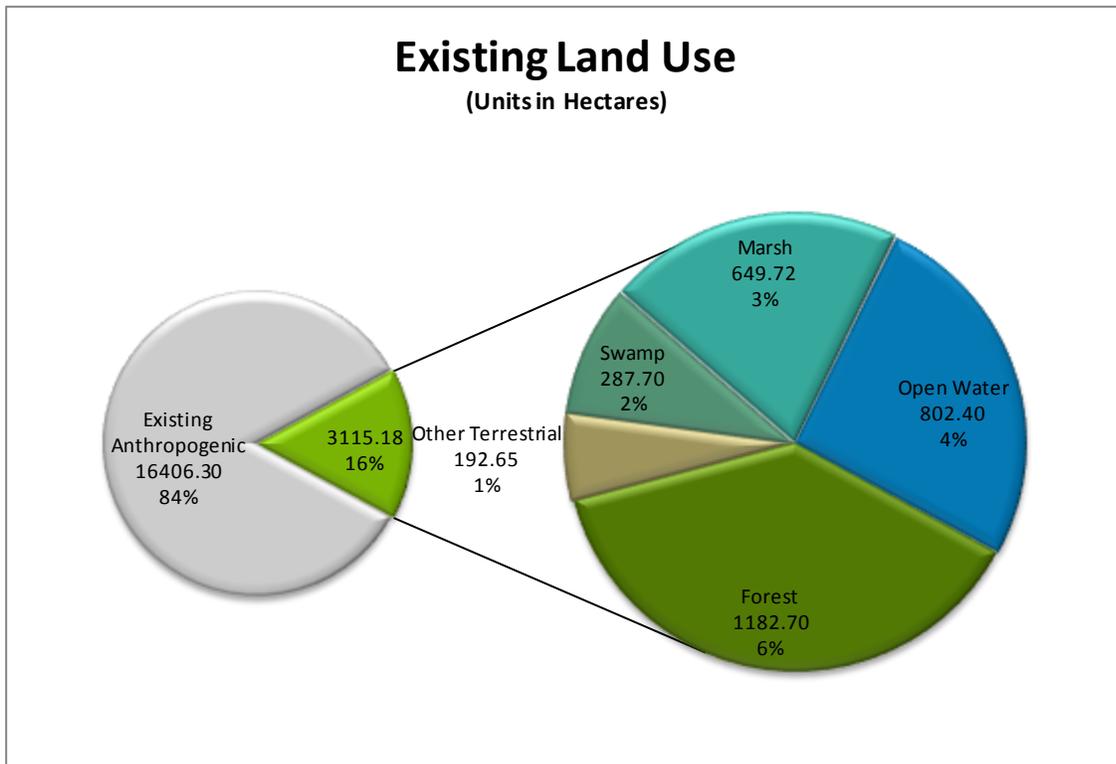
NOTE: Pelee Island is located approximately 13km southwest of the tip of Point Pelee National Park.

3.1.2 Town of Amherstburg

3.1.2.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Town of Amherstburg.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	1182.70	2922.51	6.06
Other Terrestrial	192.65	476.06	0.99
<b>Total Terrestrial Habitat</b>	<b>1375.36</b>	<b>3398.57</b>	<b>7.05</b>
Wetland Habitat	Hectares	Acres	%
Swamp	287.70	710.92	1.47
Marsh	649.72	1605.50	3.33
Open Water	802.40	1982.76	4.11
<b>Total Wetland Habitat</b>	<b>1739.82</b>	<b>4299.18</b>	<b>8.91</b>
<b>Existing Natural Area</b>	<b>3115.18</b>	<b>7697.75</b>	<b>15.96</b>
<b>Existing Anthropogenic</b>	<b>16406.30</b>	<b>40540.69</b>	<b>84.04</b>
<b>Total Land Area</b>	<b>19521.48</b>	<b>48238.44</b>	<b>100.00</b>



# Existing Natural Features

## Town of Amherstburg

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

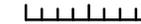
#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

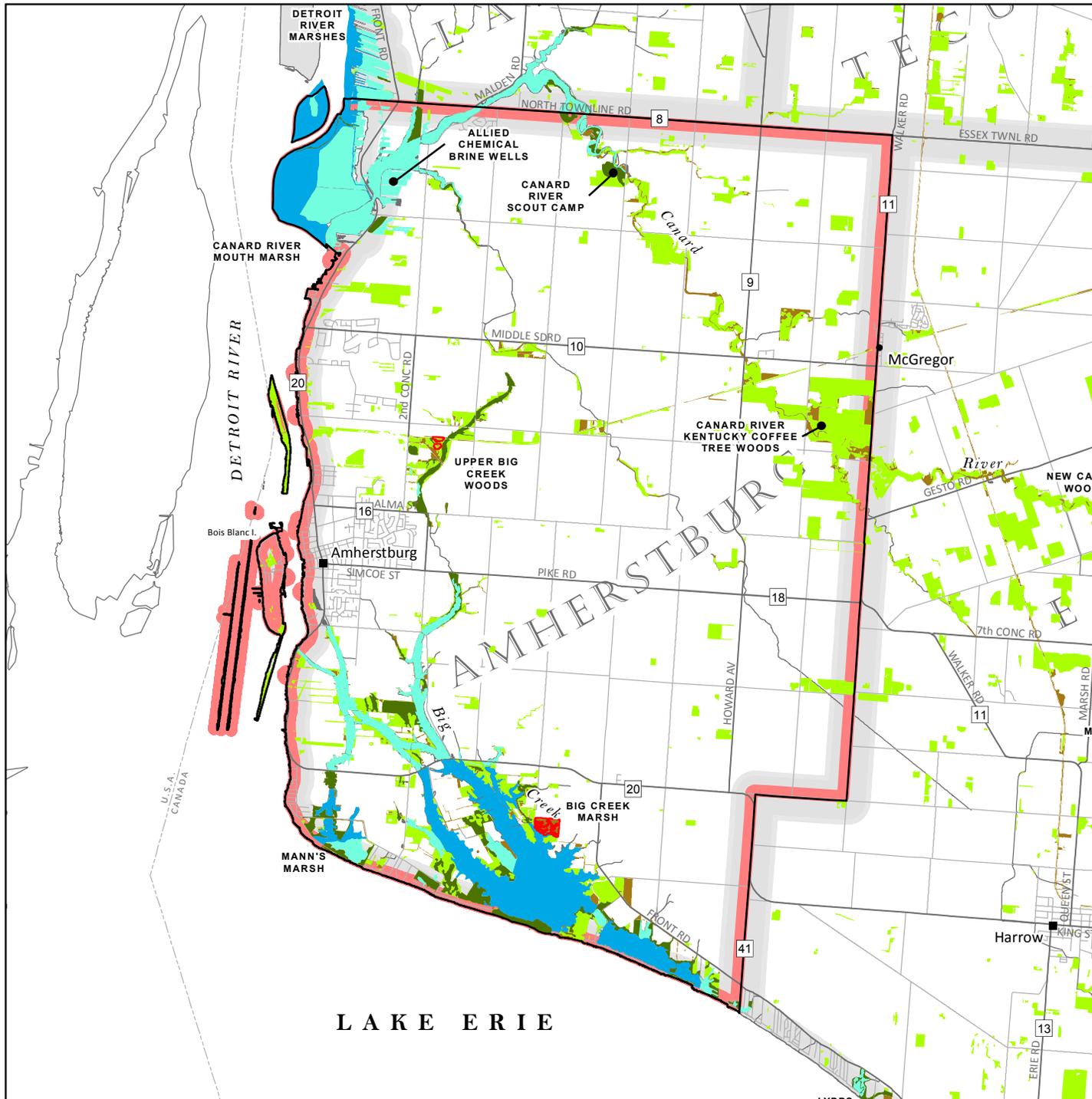
The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.

0 1 2 Kilometres



0 1 2 Miles

1:120,000



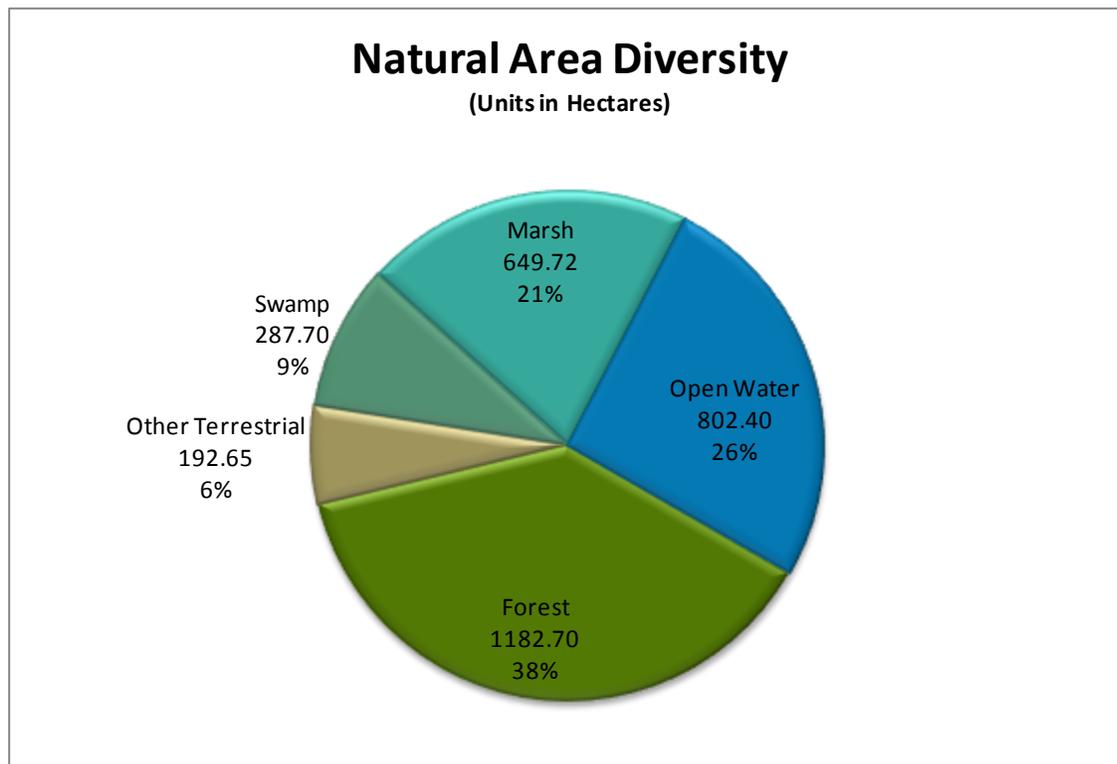
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Amherstburg - 20130424.mxd  
TD 25/04/2013

Within the study area there is 1 forest patch greater than 100 ha in size, associated with the Canard River Kentucky Coffee Tree Woods. The largest forest patch is part of Canard River Kentucky Coffee Tree Woods and is 259.9 ha in size. In addition, 44 forest patches within the study area contain 100 m interior forest, of which 8 patches contain 200 m interior forest.

**3.1.2.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Town of Amherstburg.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	1182.70	2922.51	37.97
Other Terrestrial	192.65	476.06	6.18
Swamp	287.70	710.92	9.24
Marsh	649.72	1605.50	20.86
Open Water	802.40	1982.76	25.76
<b>Total Terrestrial Habitat</b>	<b>1375.36</b>	<b>3398.57</b>	<b>44.15</b>
<b>Total Wetland Habitat</b>	<b>1739.82</b>	<b>4299.18</b>	<b>55.85</b>
<b>Existing Natural Area</b>	<b>3115.18</b>	<b>7697.75</b>	<b>100.00</b>



This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

# Priority of Existing Natural Features

## Town of Amherstburg

### Legend

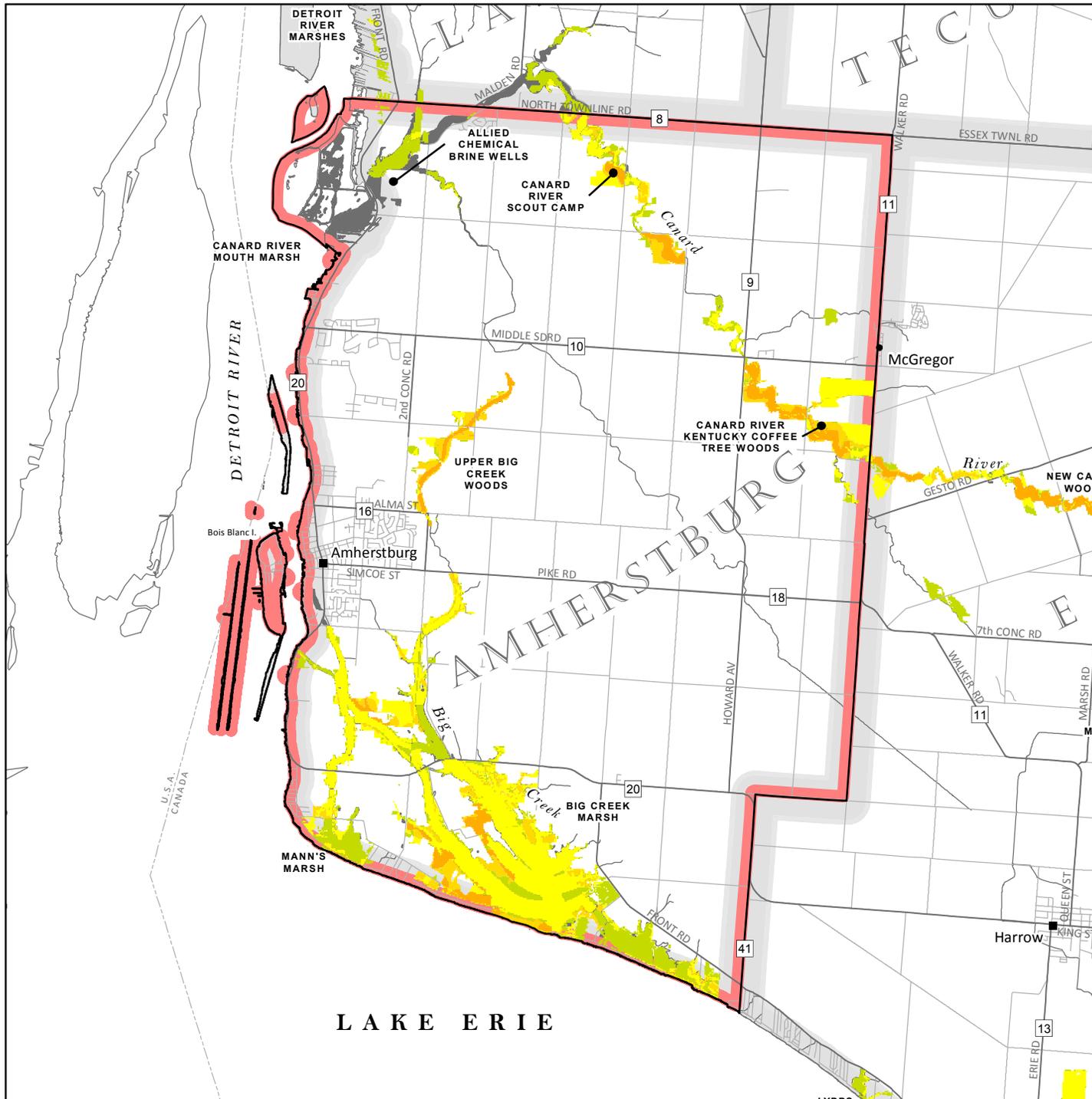
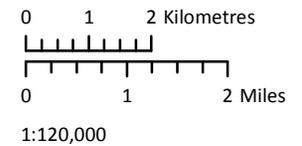
#### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

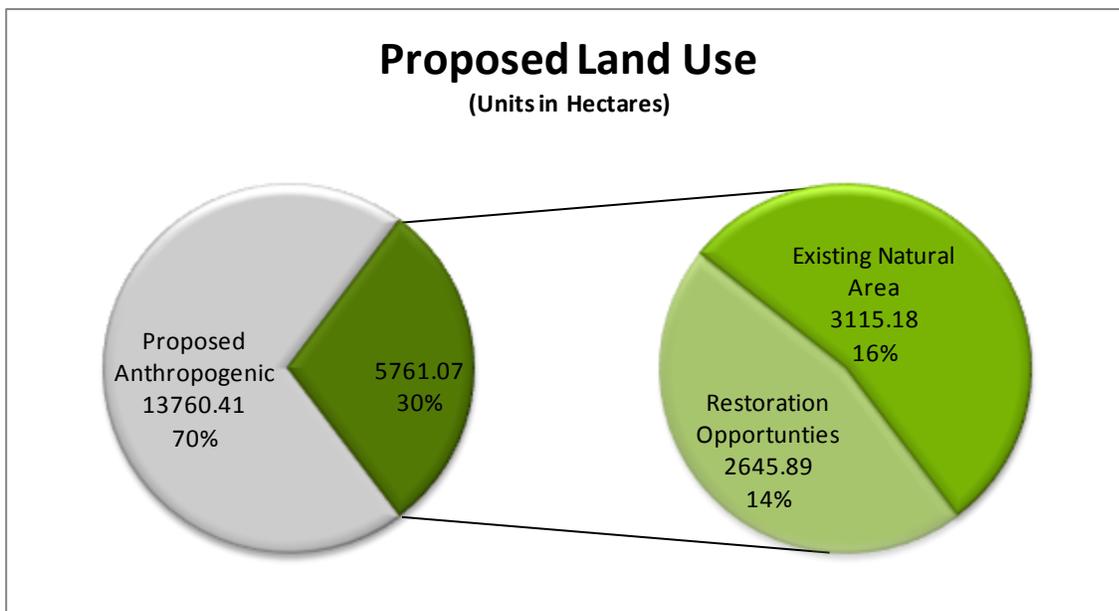


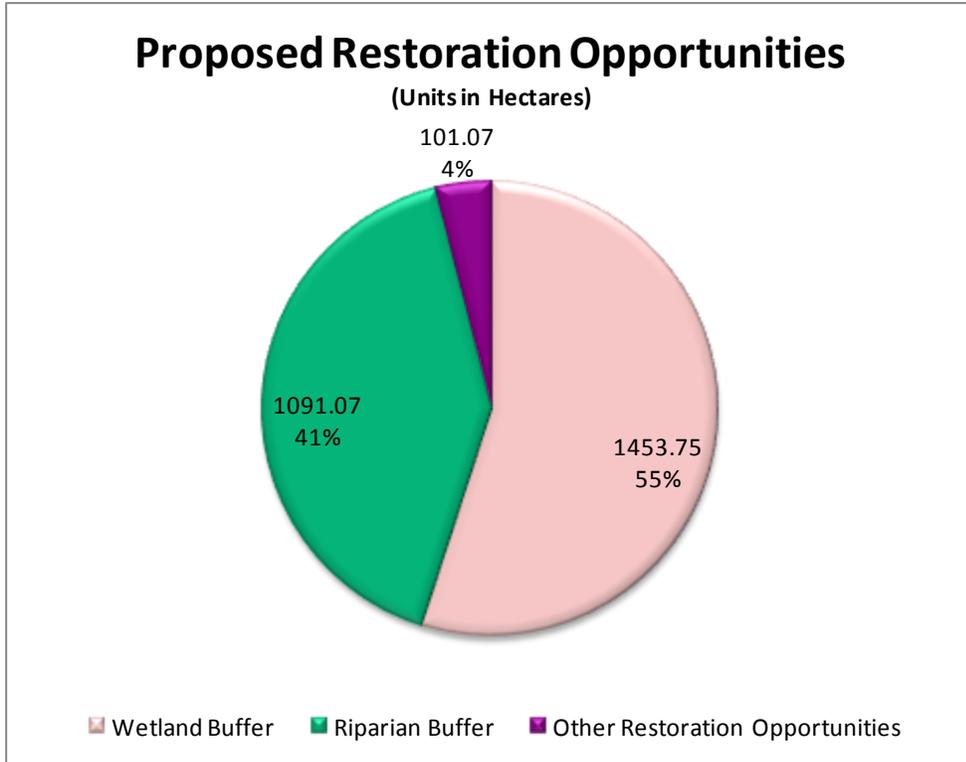
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - Amherstburg - 20130424.mxd  
 TD 25/04/2013

**3.1.2.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Town of Amherstburg.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	1453.75	3592.29	7.45
Riparian Buffer	1091.07	2696.07	5.59
Other Restoration Opportunities	101.07	249.75	0.52
<b>Total Restoration Opportunities</b>	<b>2645.89</b>	<b>6538.11</b>	<b>13.55</b>
<b>Status Quo Anthropogenic</b>	<b>13760.41</b>	<b>34002.59</b>	<b>70.49</b>
<b>Total Land Area</b>	<b>19521.48</b>	<b>48238.44</b>	<b>100.00</b>





The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Big Creek Marsh and the Canard River Marshes Provincially Significant Wetlands.

# Restoration Opportunity Concepts

## Town of Amherstburg

### Legend

#### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

#### Opportunity of Interest

- Tallgrass Prairie

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

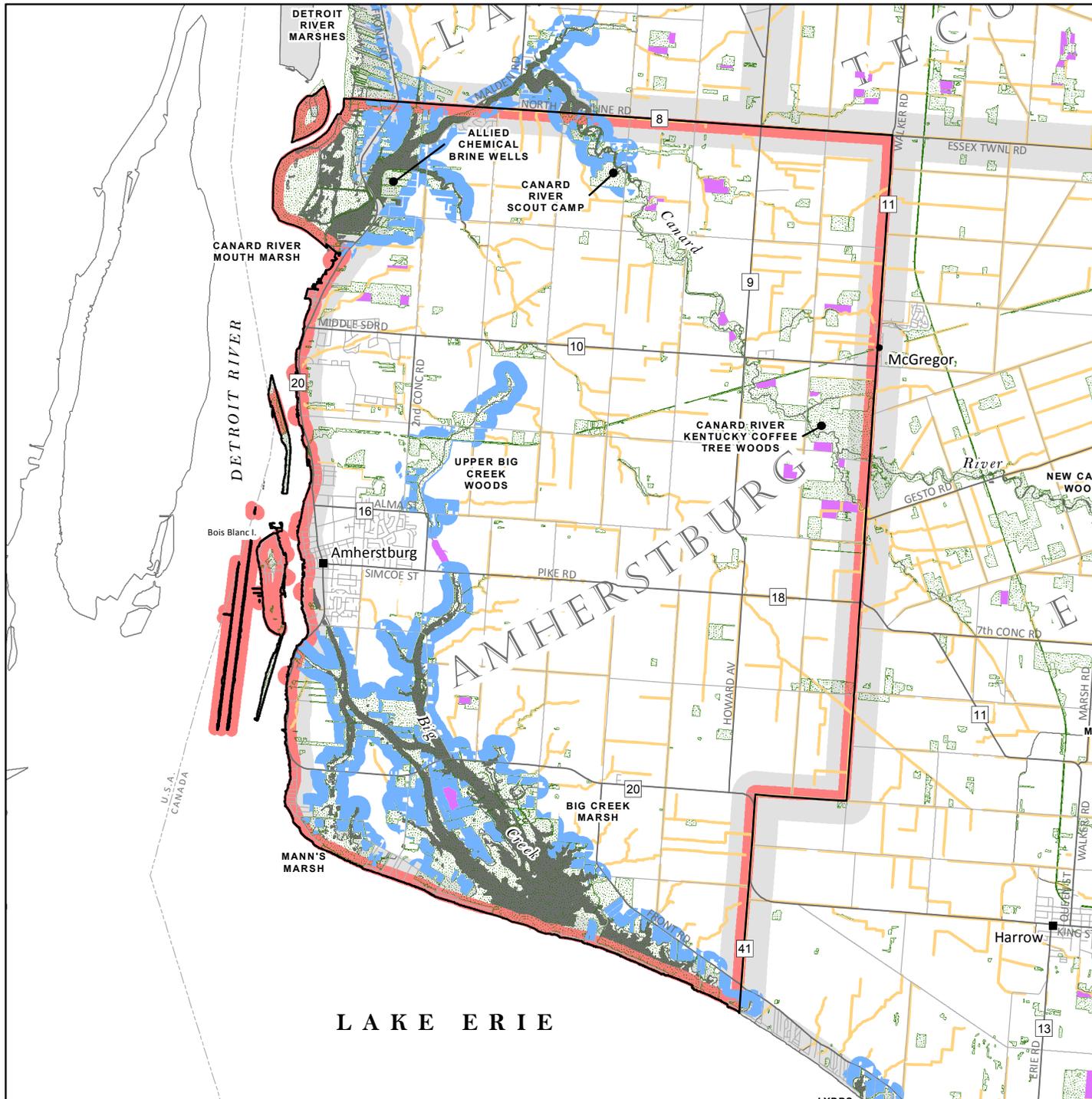
The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.

0 1 2 Kilometres



0 1 2 Miles

1:120,000



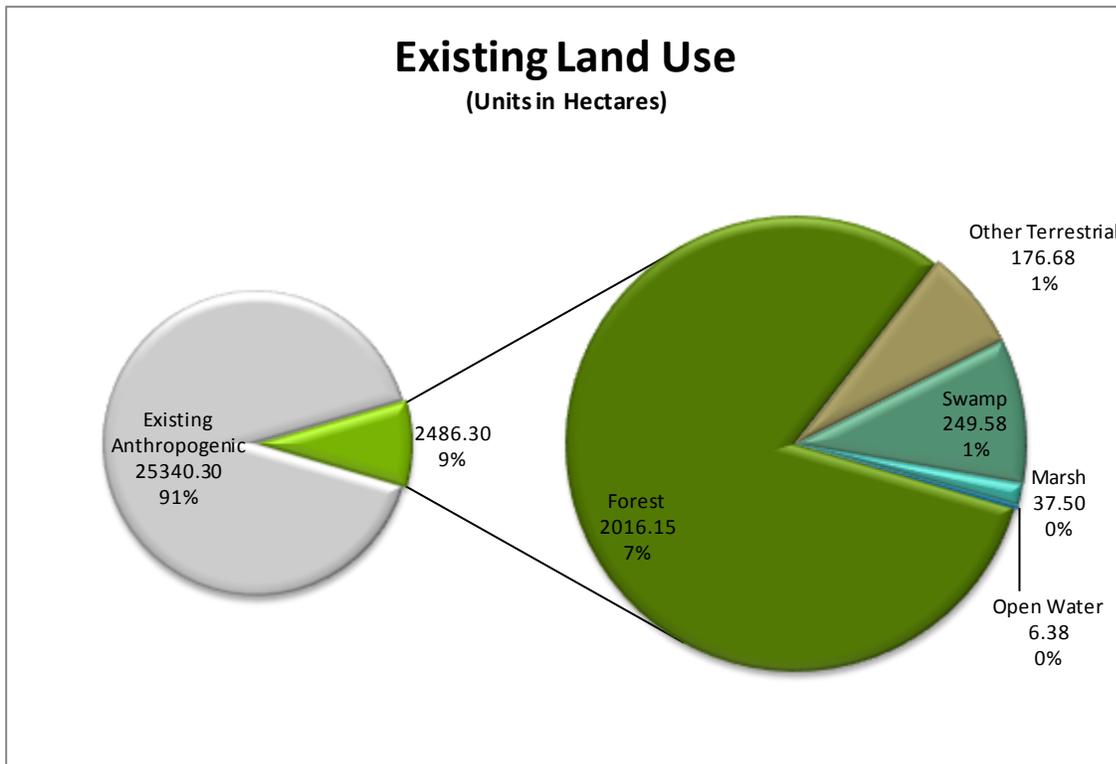
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Amherstburg - 20130424.mxd  
 TD 25/04/2013

3.1.3 Town of Essex

3.1.3.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Town of Essex.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	2016.15	4981.99	7.25
Other Terrestrial	176.68	436.59	0.63
<b>Total Terrestrial Habitat</b>	<b>2192.83</b>	<b>5418.58</b>	<b>7.88</b>
Wetland Habitat	Hectares	Acres	%
Swamp	249.58	616.72	0.90
Marsh	37.50	92.67	0.13
Open Water	6.38	15.77	0.02
<b>Total Wetland Habitat</b>	<b>293.47</b>	<b>725.17</b>	<b>1.05</b>
<b>Existing Natural Area</b>	<b>2486.30</b>	<b>6143.75</b>	<b>8.93</b>
<b>Existing Anthropogenic</b>	<b>25340.30</b>	<b>62617.01</b>	<b>91.07</b>
<b>Total Land Area</b>	<b>27826.60</b>	<b>68760.76</b>	<b>100.00</b>



# Existing Natural Features

Town of Essex

## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

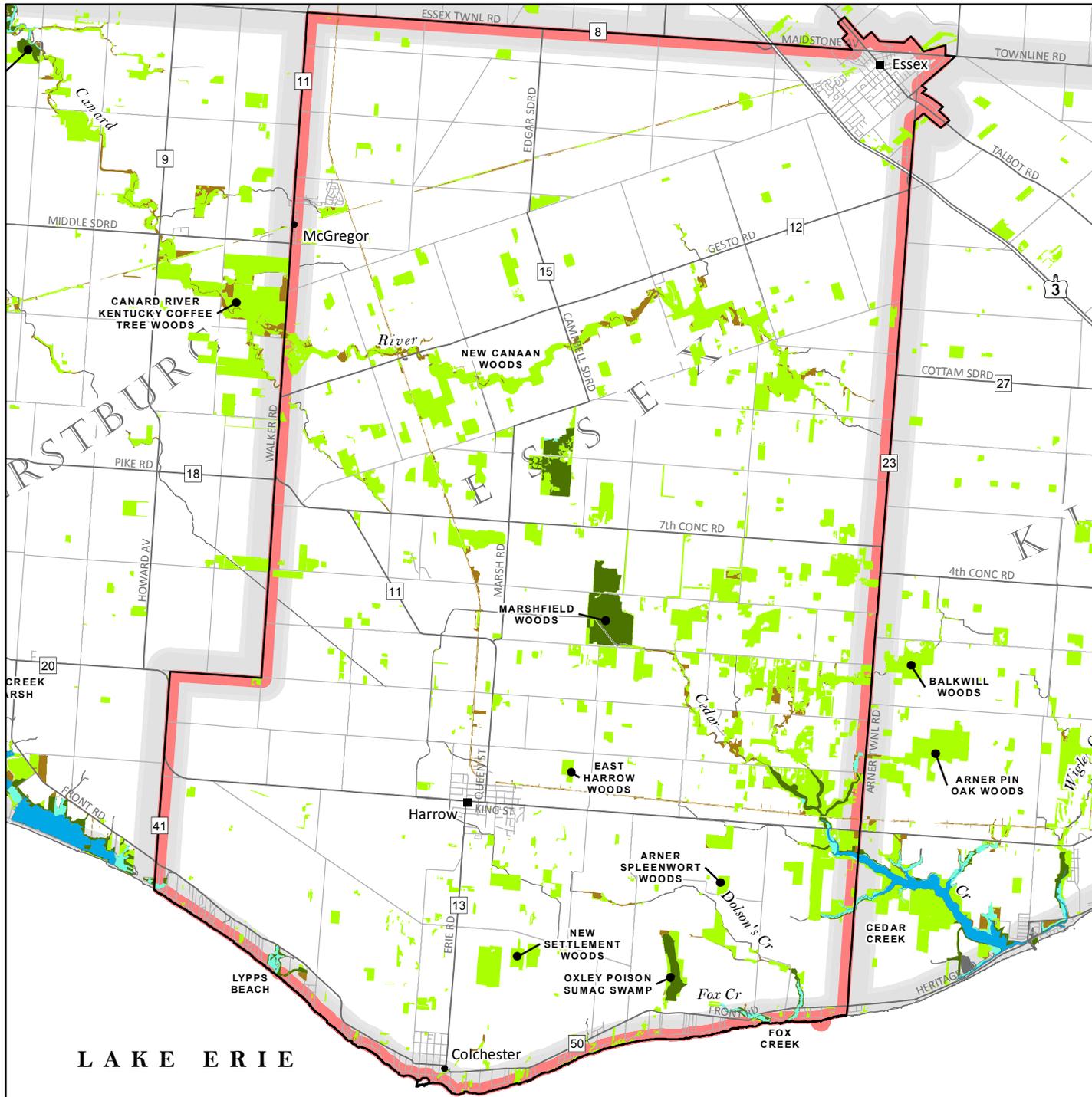
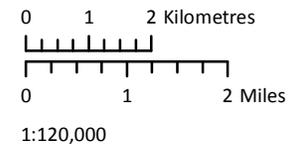
- Forest
- Other

### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



LAKE ERIE



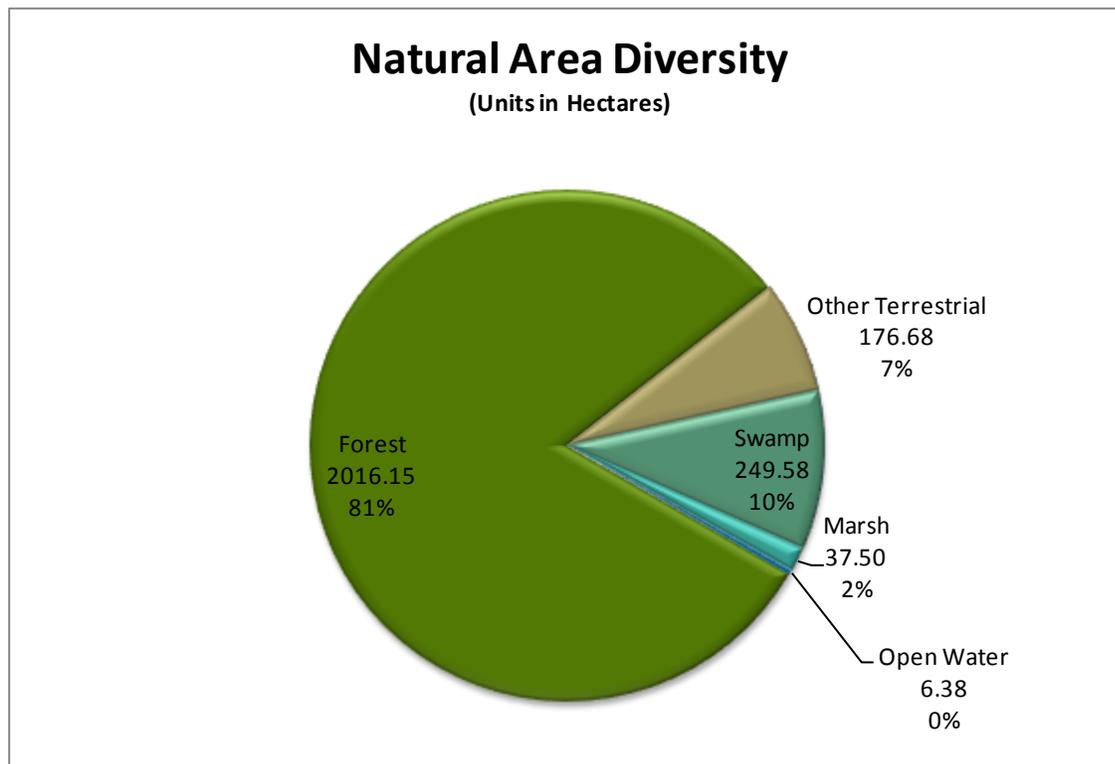
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Essex - 20130424.mxd  
TD 25/04/2013

Within the study area there are 2 forest patches greater than 100 ha in size. These are associated with Cedar Creek and Marshfield Woods. The largest forest patch is part of Cedar Creek and is 186.2 ha in size. In addition, 74 forest patches within the study area contain 100 m interior forest, of which 9 patches contain 200 m interior forest.

**3.1.3.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Town of Essex.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	2016.15	4981.99	81.09
Other Terrestrial	176.68	436.59	7.11
Swamp	249.58	616.72	10.04
Marsh	37.50	92.67	1.51
Open Water	6.38	15.77	0.26
<b>Total Terrestrial Habitat</b>	<b>2192.83</b>	<b>5418.58</b>	<b>88.20</b>
<b>Total Wetland Habitat</b>	<b>293.47</b>	<b>725.17</b>	<b>11.80</b>
<b>Existing Natural Area</b>	<b>2486.30</b>	<b>6143.75</b>	<b>100.00</b>



# Priority of Existing Natural Features

Town of Essex

## Legend

### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

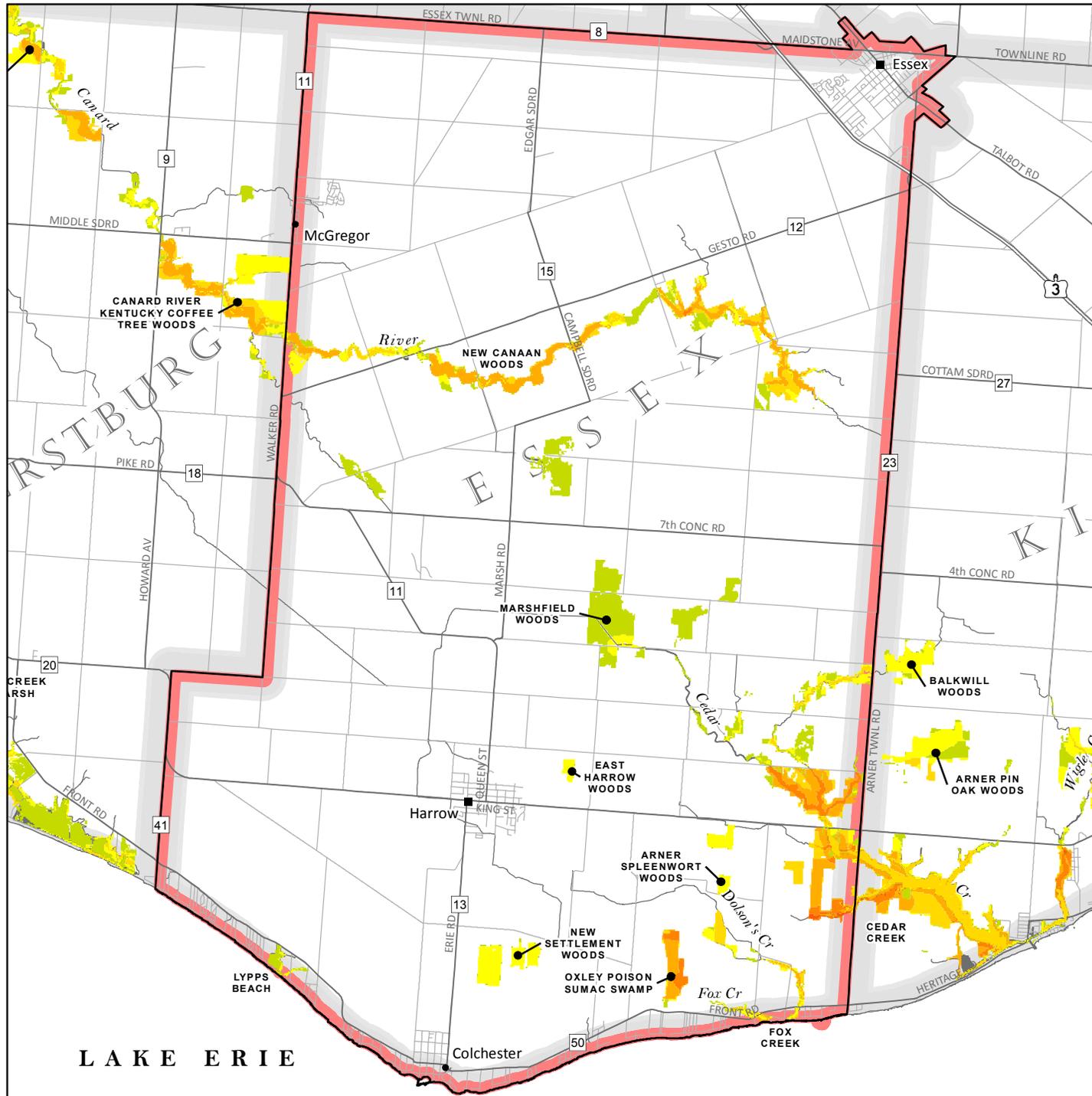
The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

0 1 2 Kilometres



0 1 2 Miles

1:120,000



LAKE ERIE

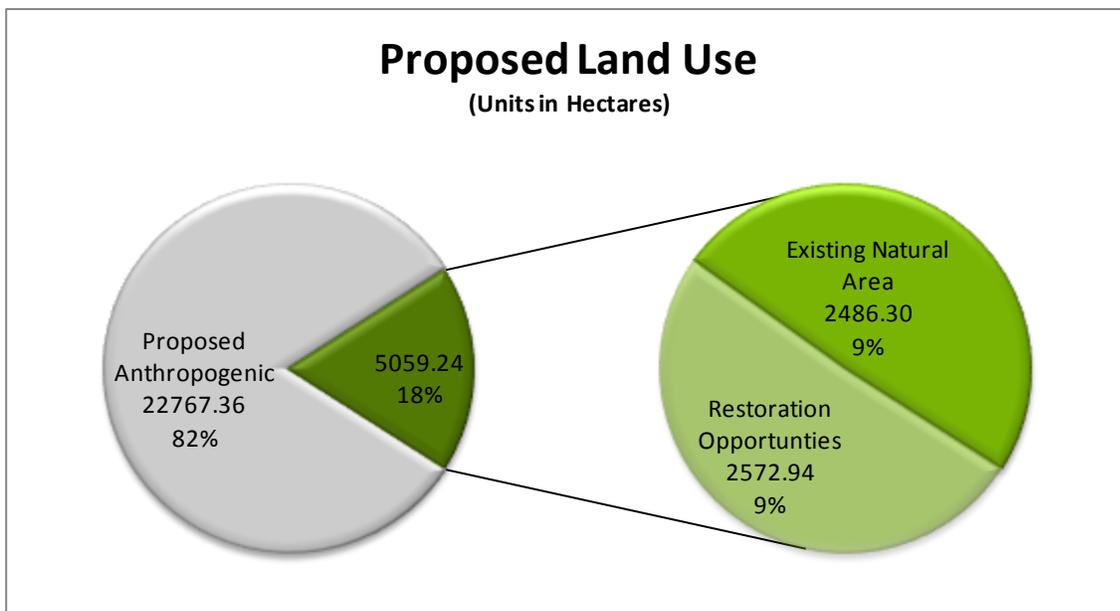


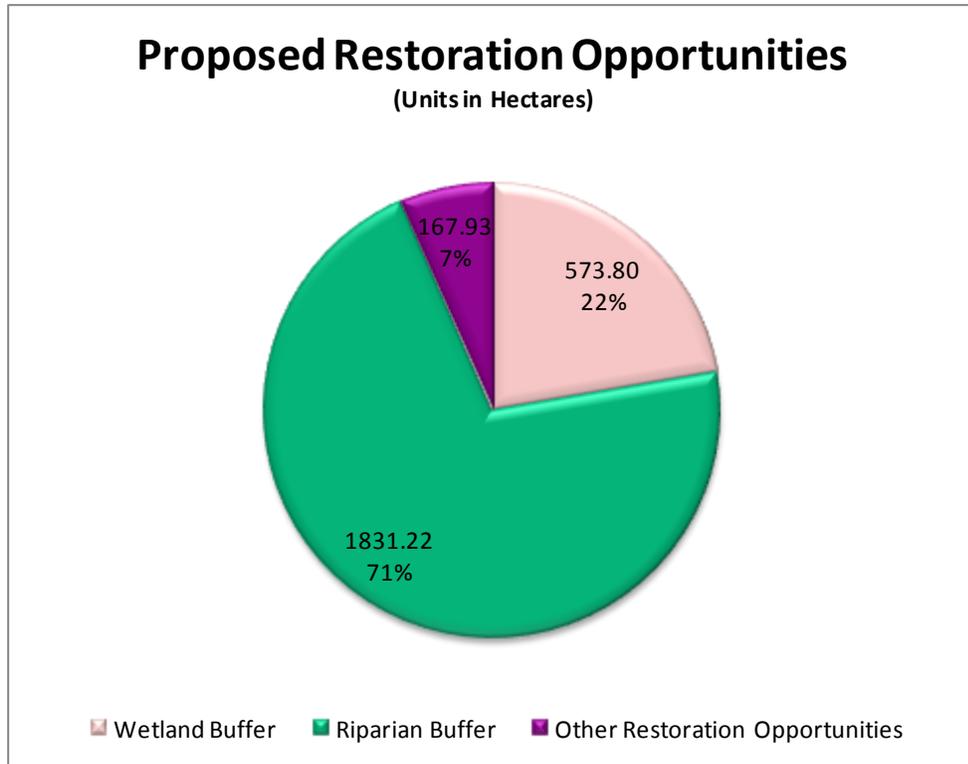
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - Essex - 20130424.mxd  
TD 25/04/2013

**3.1.3.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Town of Essex.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	573.80	1417.88	2.06
Riparian Buffer	1831.22	4525.02	6.58
Other Restoration Opportunities	167.93	414.96	0.60
<b>Total Restoration Opportunities</b>	<b>2572.94</b>	<b>6357.86</b>	<b>9.25</b>
<b>Status Quo Anthropogenic</b>	<b>22767.36</b>	<b>56259.15</b>	<b>81.82</b>
<b>Total Land Area</b>	<b>27826.60</b>	<b>68760.76</b>	<b>100.00</b>

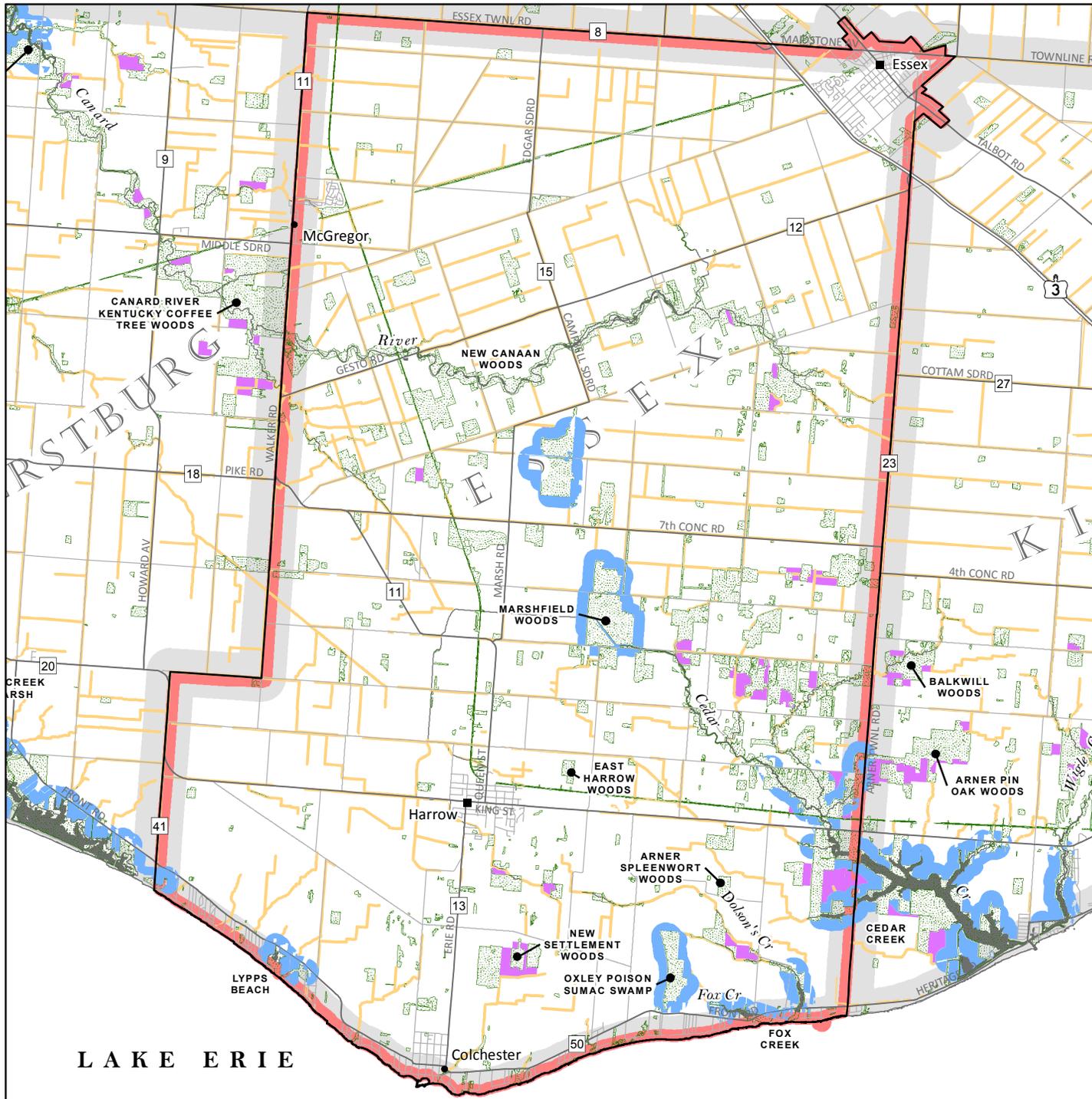




The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Oxley Poison Sumac Swamp, Cedar Creek, Fox/Dolson’s Creek and Lypp’s Beach Provincially Significant Wetlands; as well as reforestation adjacent to the ERCA owned Arner Woods property and between the forest patches associated with New Settlement Woods.

# Restoration Opportunity Concepts

Town of Essex



## Legend

### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

### Opportunity of Interest

- Tallgrass Prairie

Existing Natural Feature

Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.

0 1 2 Kilometres



0 1 2 Miles

1:120,000



LAKE ERIE



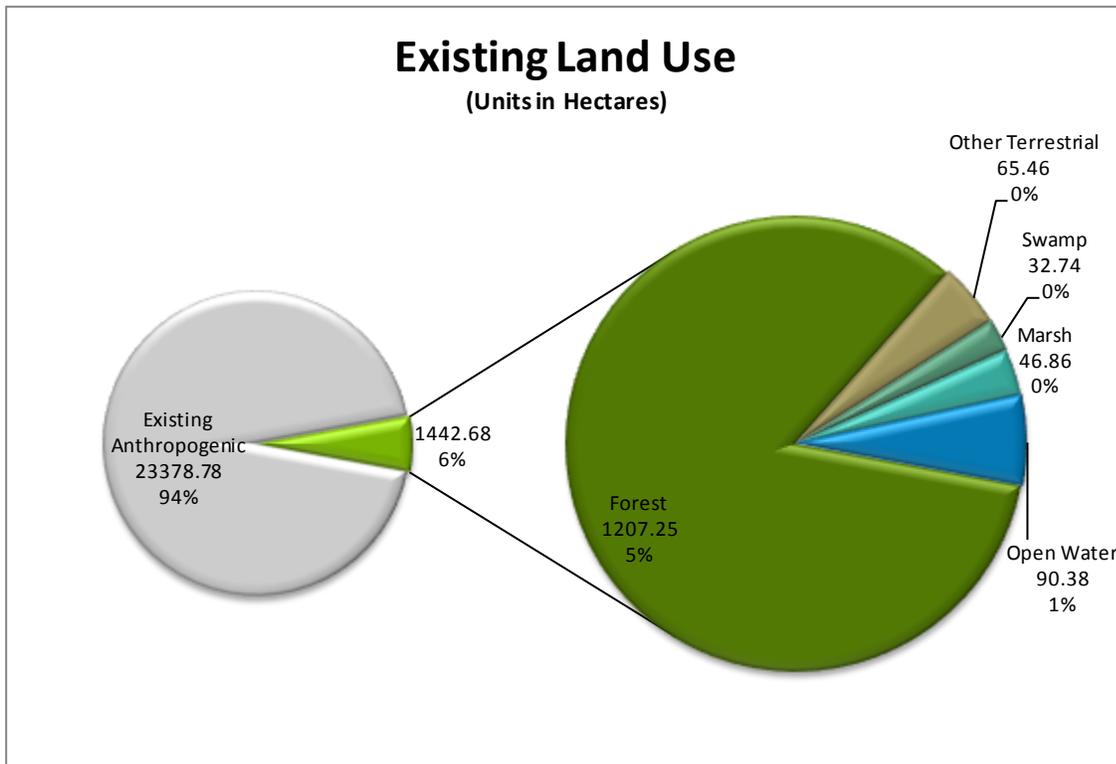
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Essex - 20130424.mxd  
TD 25/04/2013

**3.1.4 Town of Kingsville**

**3.1.4.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Town of Kingsville.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	1207.25	2983.16	4.86
Other Terrestrial	65.46	161.75	0.26
<b>Total Terrestrial Habitat</b>	<b>1272.71</b>	<b>3144.91</b>	<b>5.13</b>
Wetland Habitat	Hectares	Acres	%
Swamp	32.74	80.90	0.13
Marsh	46.86	115.78	0.19
Open Water	90.38	223.34	0.36
<b>Total Wetland Habitat</b>	<b>169.98</b>	<b>420.02</b>	<b>0.68</b>
<b>Existing Natural Area</b>	<b>1442.68</b>	<b>3564.93</b>	<b>5.81</b>
<b>Existing Anthropogenic</b>	<b>23378.78</b>	<b>57770.00</b>	<b>94.19</b>
<b>Total Land Area</b>	<b>24821.47</b>	<b>61334.93</b>	<b>100.00</b>



# Existing Natural Features

## Town of Kingsville

### Legend

#### Wetland

-  Open Water
-  Marsh
-  Swamp

#### Terrestrial

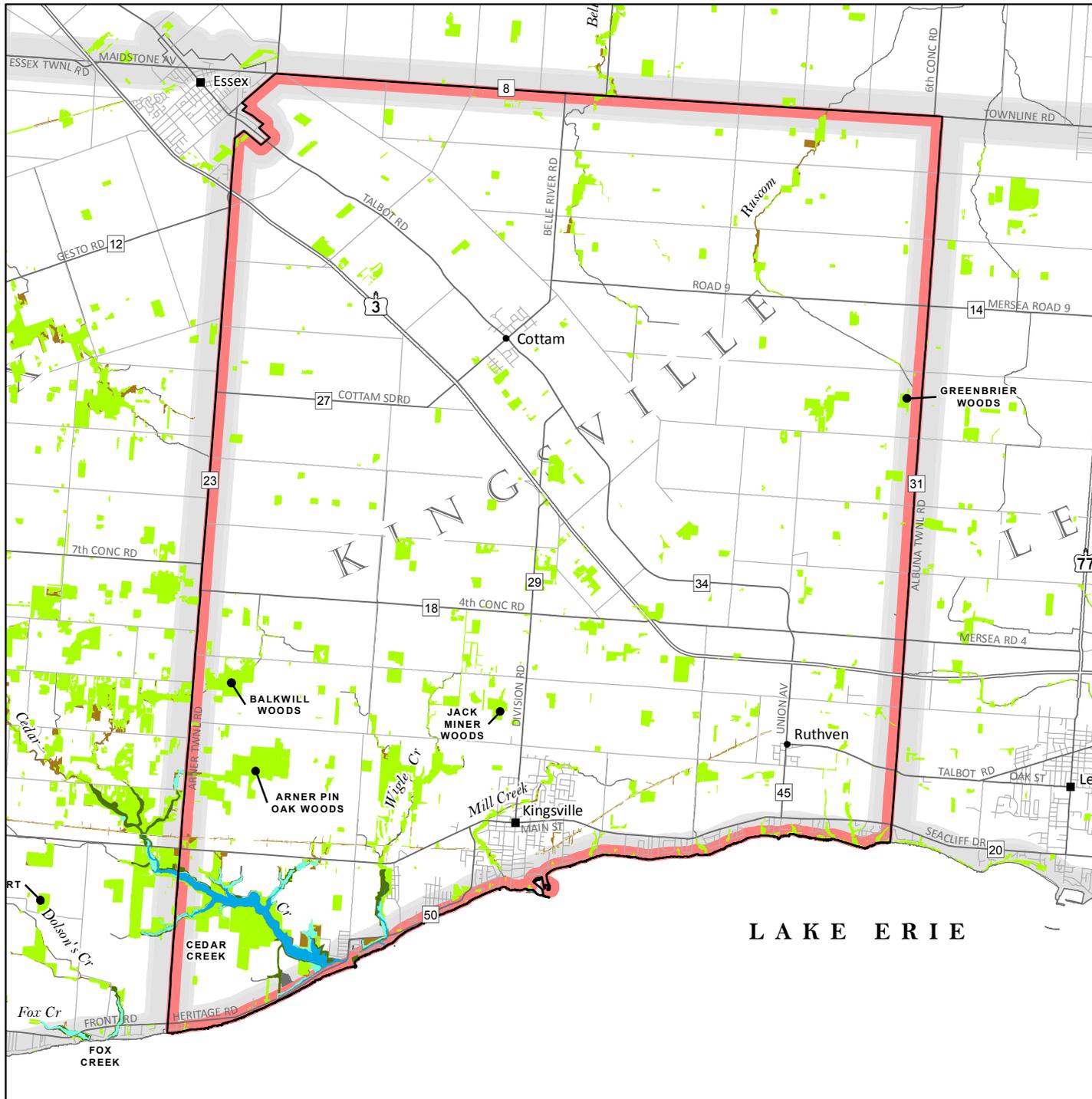
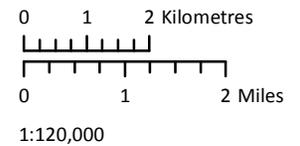
-  Forest
-  Other

#### Features of Interest

-  Tallgrass Prairie Community
-  Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



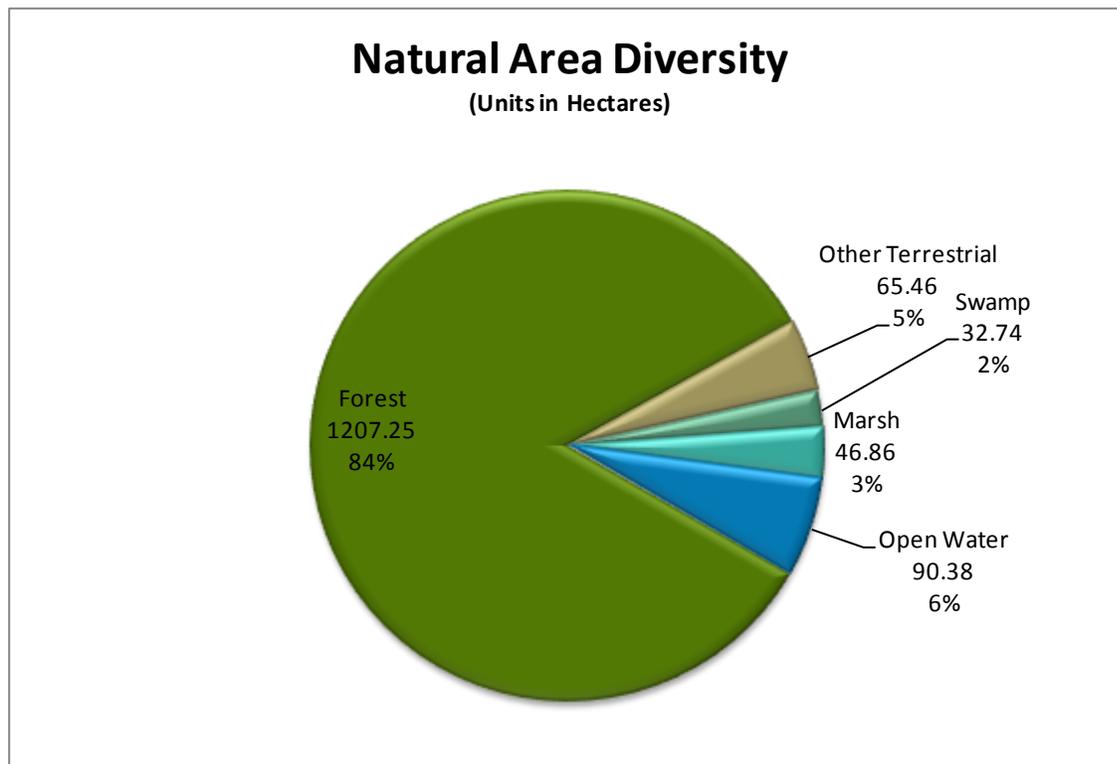
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Kingsville - 20130424.mxd  
TD 25/04/2013

Within the study area there are 2 forest patches greater than 100 ha in size. These are associated with the Arner Pin Oak Woods and Cedar Creek. The largest forest patch is part of Cedar Creek and is 186.2 ha in size. In addition, 36 forest patches within the study area contain 100 m interior forest, of which 5 forest patches contain 200 m interior forest.

**3.1.4.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Town of Kingsville.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	1207.25	2983.16	83.68
Other Terrestrial	65.46	161.75	4.54
Swamp	32.74	80.90	2.27
Marsh	46.86	115.78	3.25
Open Water	90.38	223.34	6.26
<b>Total Terrestrial Habitat</b>	<b>1272.71</b>	<b>3144.91</b>	<b>88.22</b>
<b>Total Wetland Habitat</b>	<b>169.98</b>	<b>420.02</b>	<b>11.78</b>
<b>Existing Natural Area</b>	<b>1442.68</b>	<b>3564.93</b>	<b>100.00</b>



# Priority of Existing Natural Features

## Town of Kingsville

### Legend

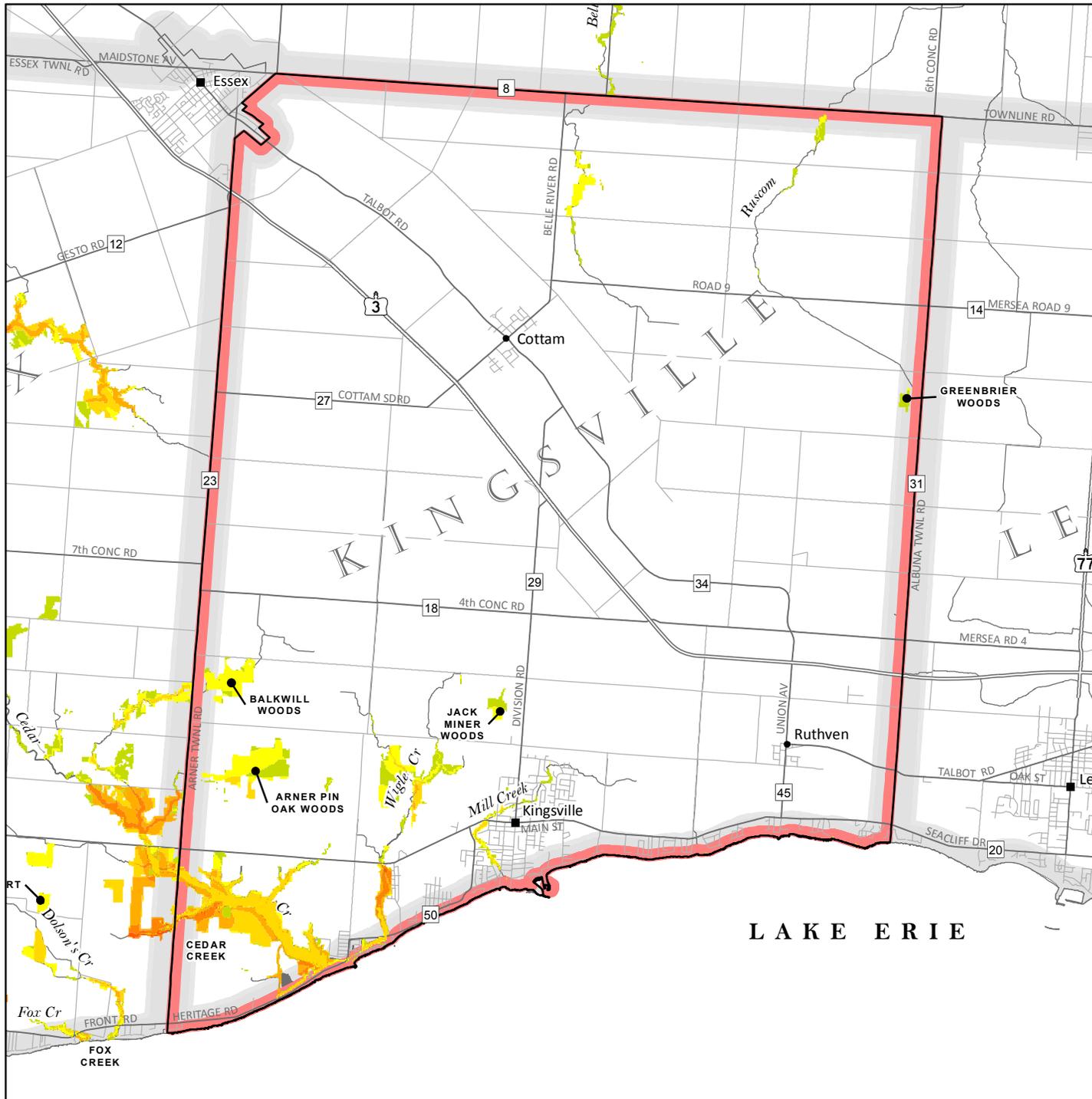
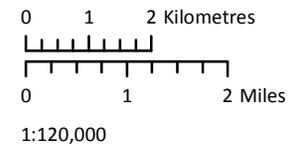
#### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

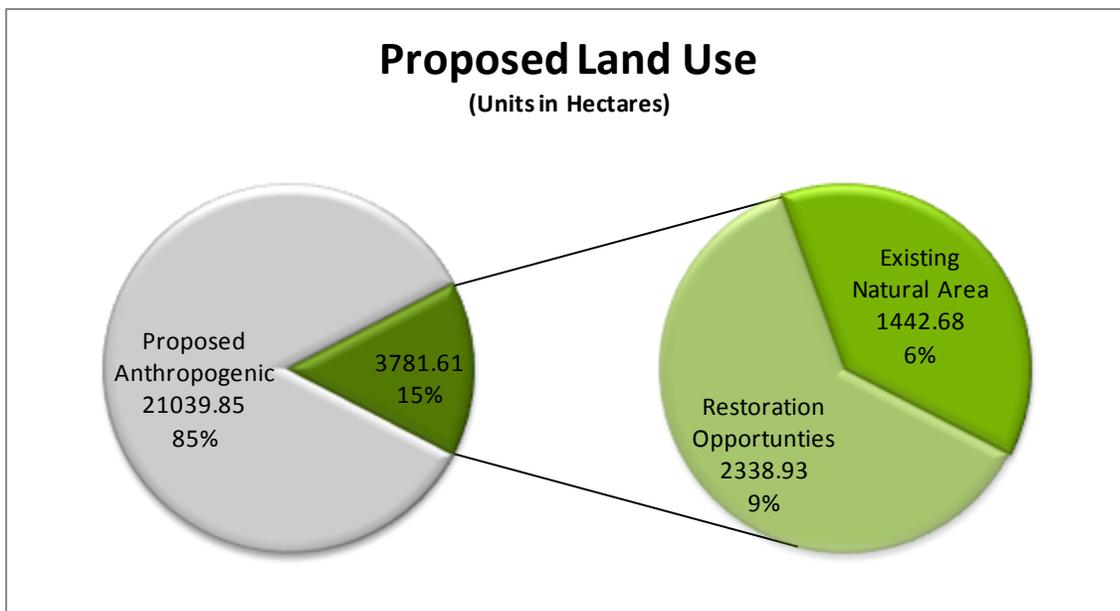


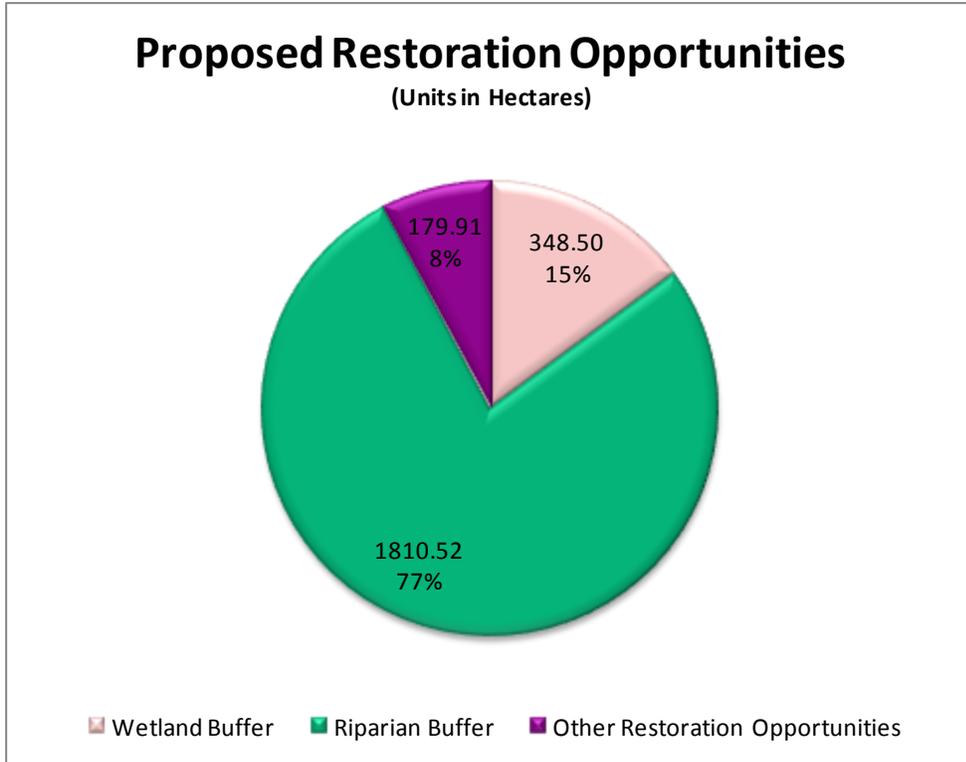
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - Kingsville - 20130424.mxd  
TD 25/04/2013

**3.1.4.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Town of Kingsville.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	348.50	861.15	1.40
Riparian Buffer	1810.52	4473.89	7.29
Other Restoration Opportunities	179.91	444.57	0.72
<b>Total Restoration Opportunities</b>	<b>2338.93</b>	<b>5779.60</b>	<b>9.42</b>
<b>Status Quo Anthropogenic</b>	<b>21039.85</b>	<b>51990.40</b>	<b>84.76</b>
<b>Total Land Area</b>	<b>24821.47</b>	<b>61334.93</b>	<b>100.00</b>





The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to the Cedar Creek Provincially Significant Wetlands.

# Restoration Opportunity Concepts

## Town of Kingsville

### Legend

#### Concept Type

-  Wetland Buffer (240m)
-  Riparian Buffer (30m)
-  Other

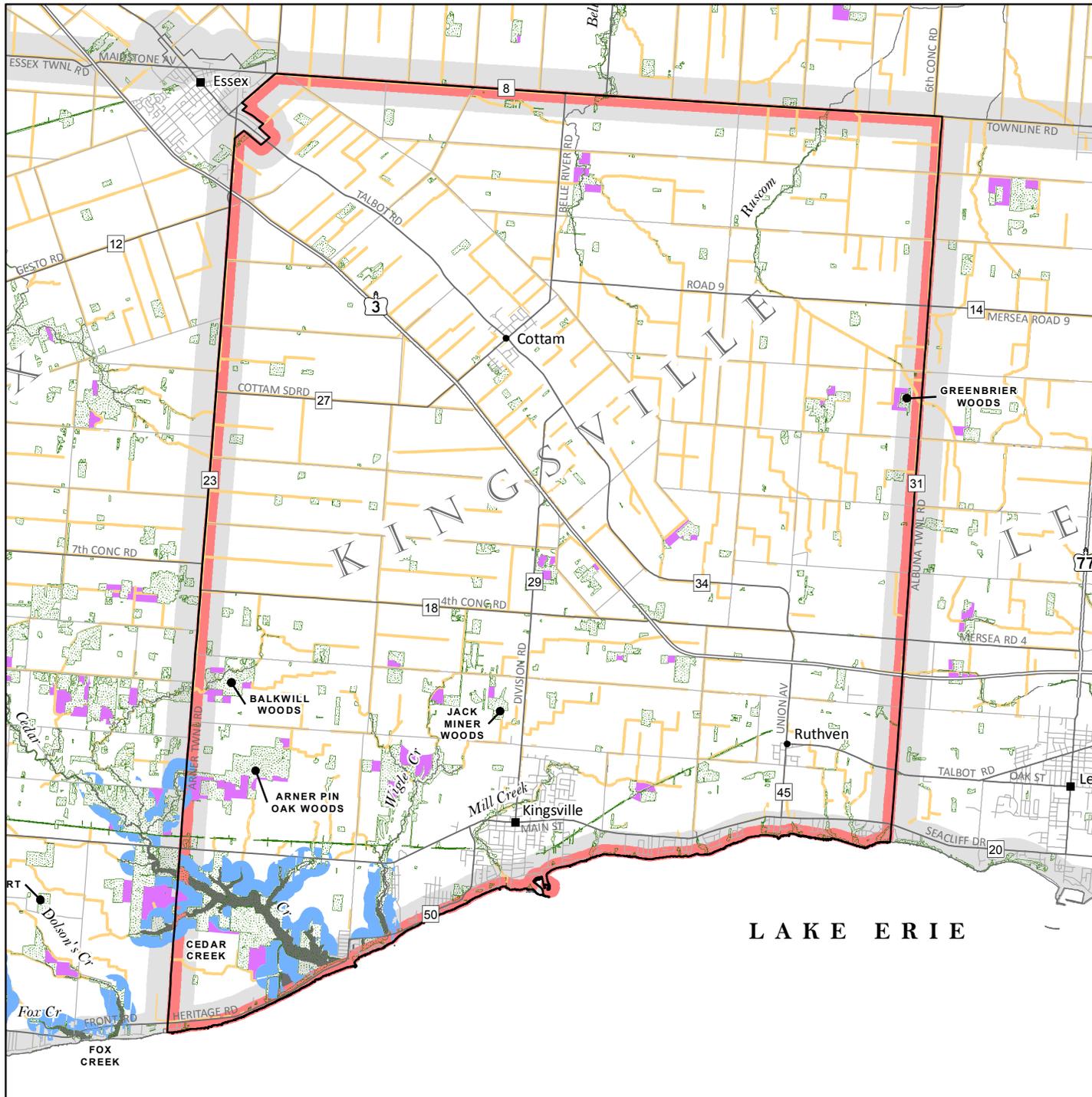
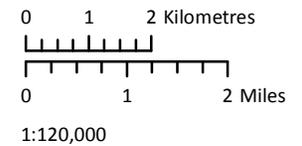
#### Opportunity of Interest

-  Tallgrass Prairie

-  Existing Natural Feature
-  Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.



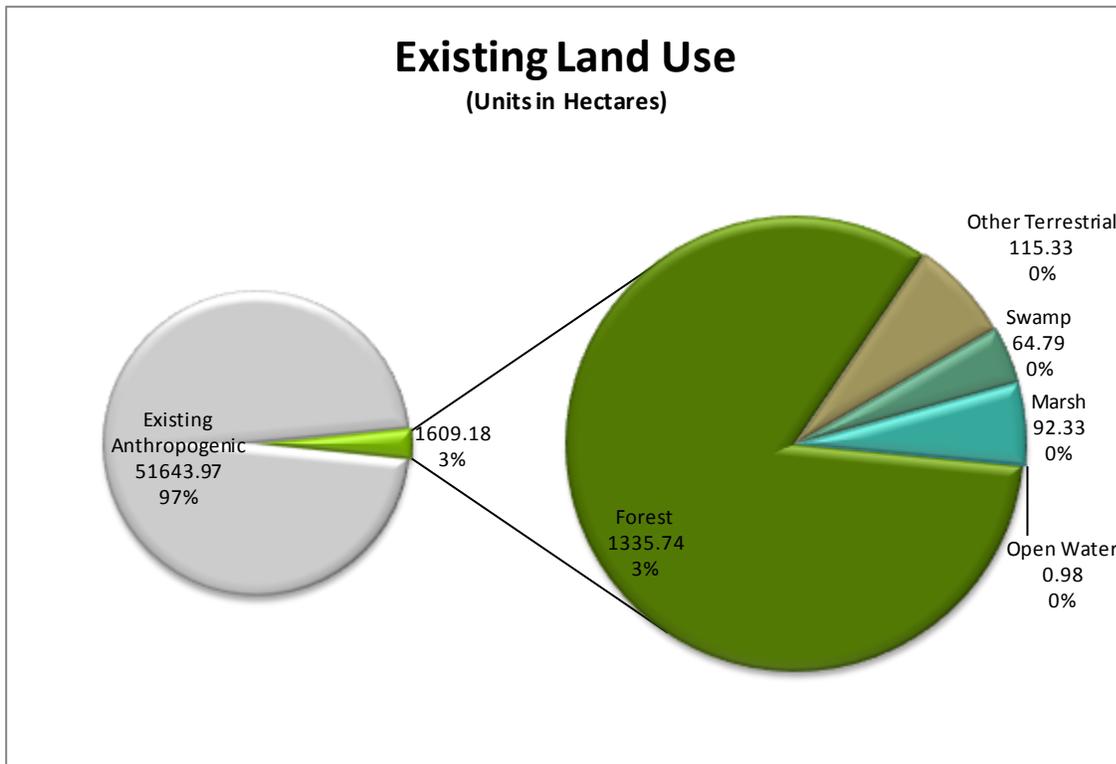
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Kingsville - 20130424.mxd  
TD 25/04/2013

3.1.5 Town of Lakeshore

3.1.5.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Town of Lakeshore.

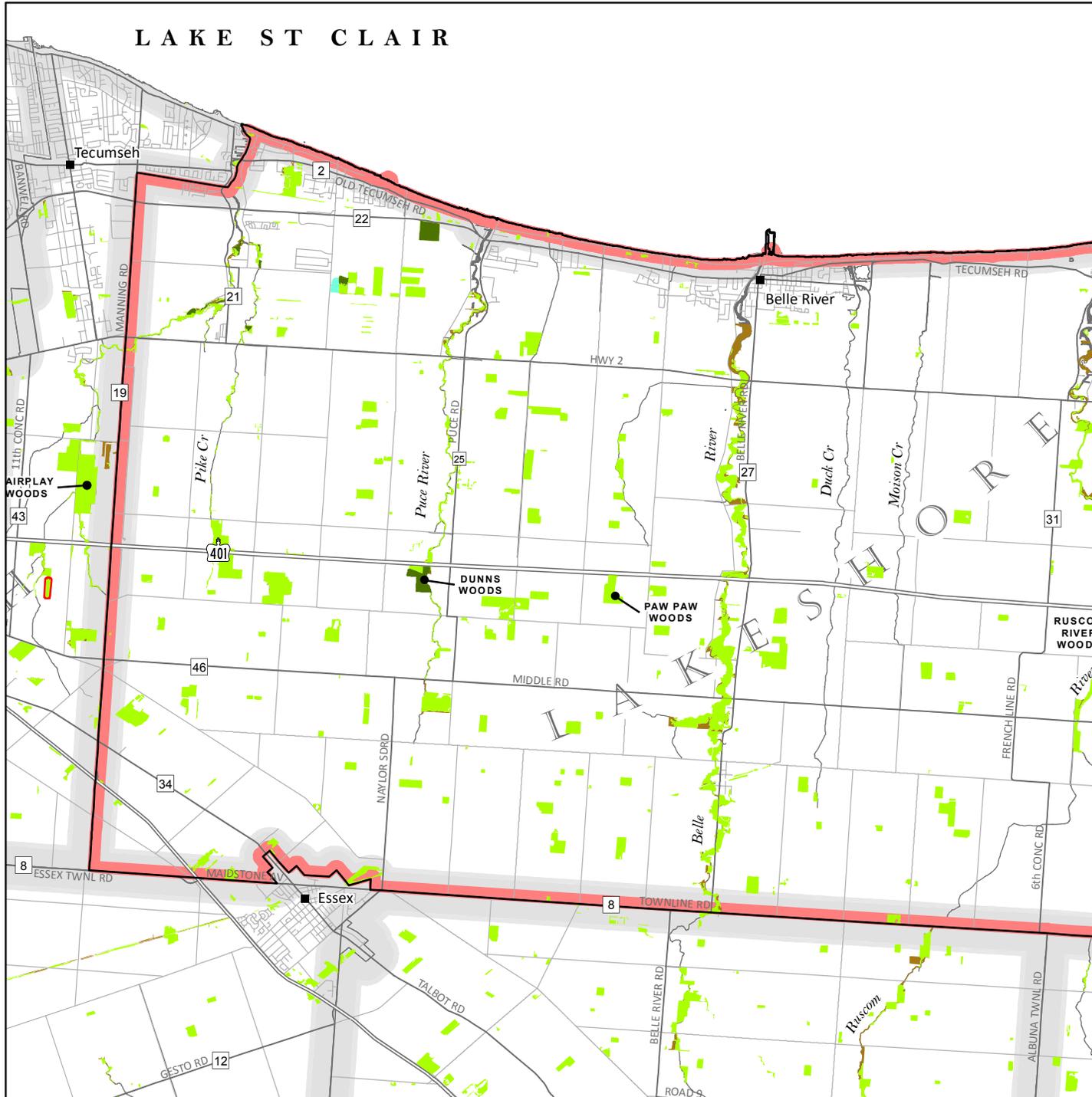
Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	1335.74	3300.67	2.51
Other Terrestrial	115.33	285.00	0.22
<b>Total Terrestrial Habitat</b>	<b>1451.07</b>	<b>3585.67</b>	<b>2.72</b>
Wetland Habitat	Hectares	Acres	%
Swamp	64.79	160.10	0.12
Marsh	92.33	228.16	0.17
Open Water	0.98	2.43	0.00
<b>Total Wetland Habitat</b>	<b>158.11</b>	<b>390.69</b>	<b>0.30</b>
<b>Existing Natural Area</b>	<b>1609.18</b>	<b>3976.35</b>	<b>3.02</b>
<b>Existing Anthropogenic</b>	<b>51643.97</b>	<b>127614.51</b>	<b>96.98</b>
<b>Total Land Area</b>	<b>53253.15</b>	<b>131590.87</b>	<b>100.00</b>



# LAKE ST CLAIR

## Existing Natural Features

### Town of Lakeshore (West)



#### Legend

##### Wetland

- Open Water
- Marsh
- Swamp

##### Terrestrial

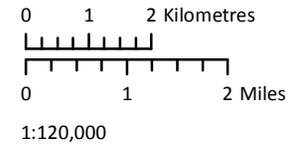
- Forest
- Other

##### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.

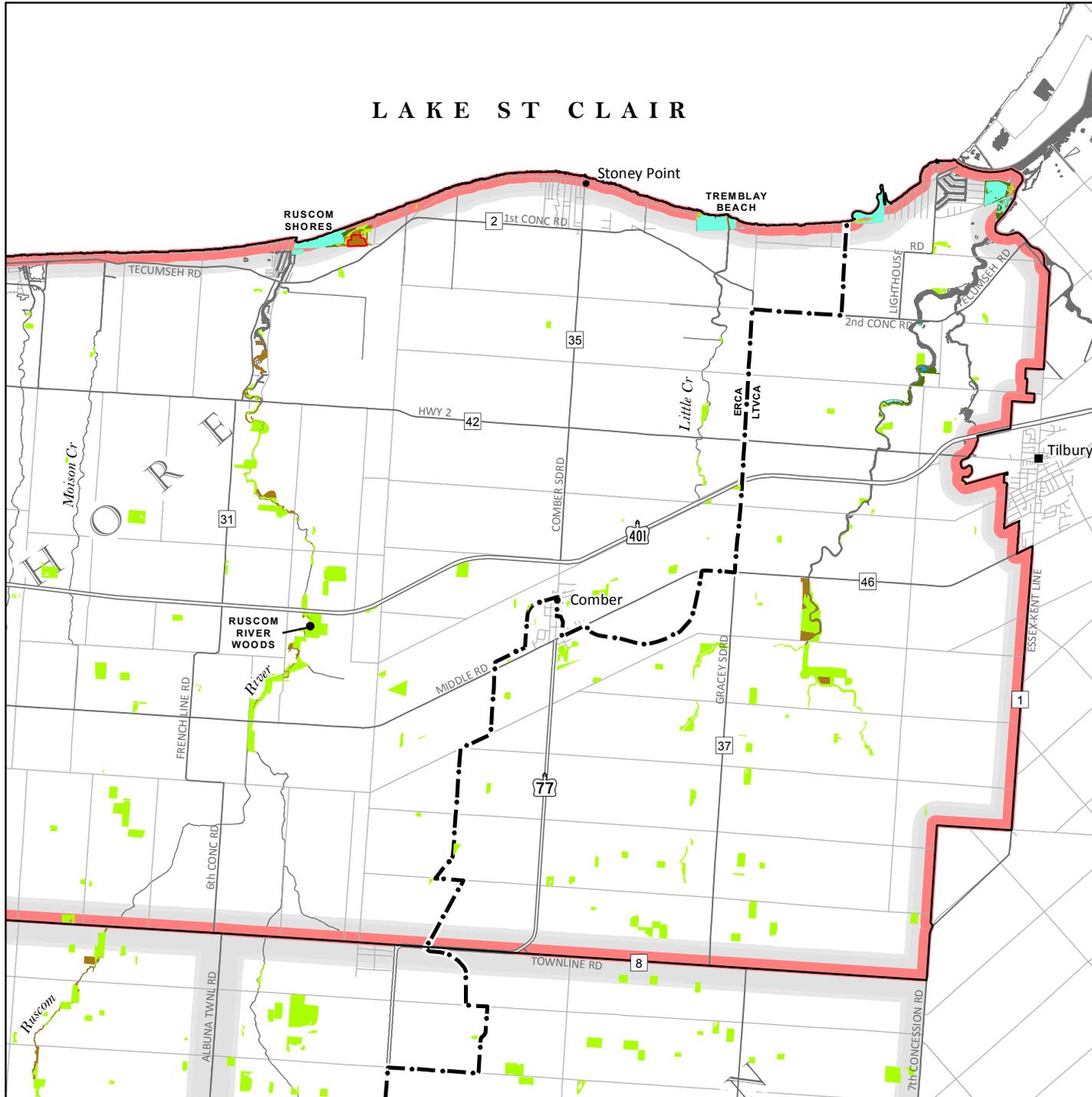


Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Lakeshore West - 20130424.mxd  
TD 25/04/2013

# LAKE ST CLAIR

## Existing Natural Features

Town of Lakeshore (East)



### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

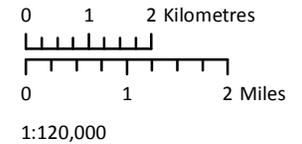
- Forest
- Other

#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



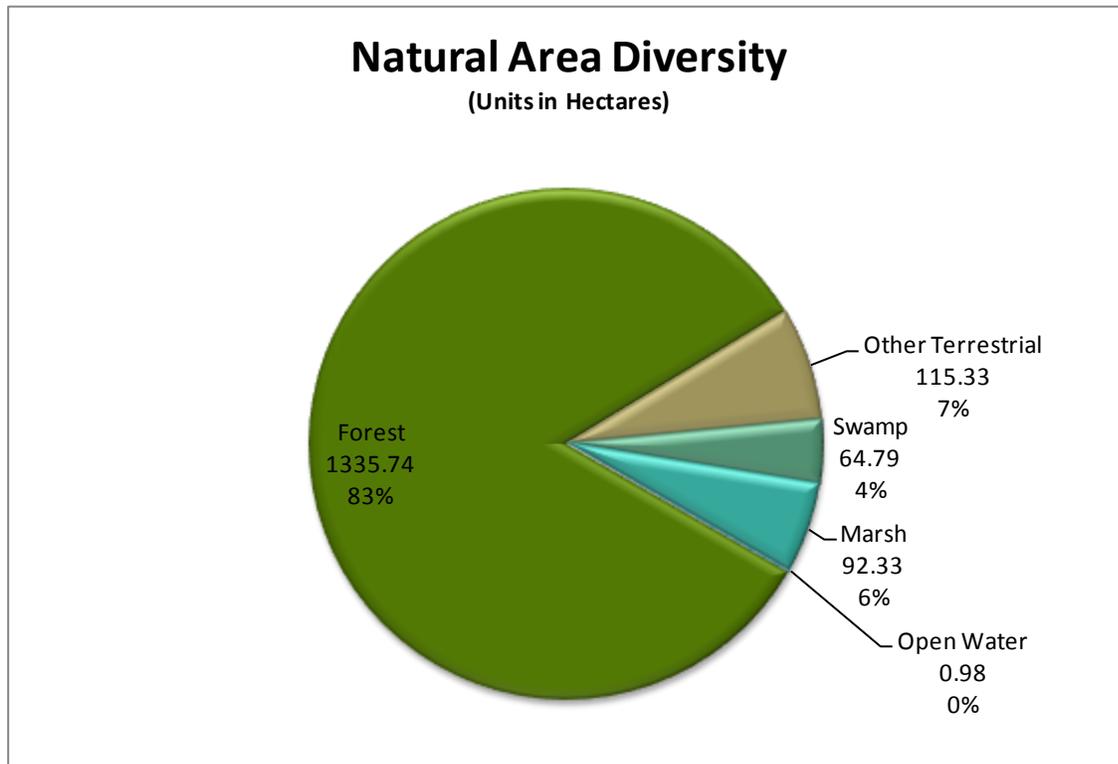
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Lakeshore East - 20130424.mxd  
TD 25/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Belle River and is 39.4 ha in size. In addition, 44 forest patches within the study area contain 100 m interior forest, of which 1 patches contain 200 m interior forest.

**3.1.5.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Town of Lakeshore.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	1335.74	3300.67	83.01
Other Terrestrial	115.33	285.00	7.17
Swamp	64.79	160.10	4.03
Marsh	92.33	228.16	5.74
Open Water	0.98	2.43	0.06
<b>Total Terrestrial Habitat</b>	<b>1451.07</b>	<b>3585.67</b>	<b>90.17</b>
<b>Total Wetland Habitat</b>	<b>158.11</b>	<b>390.69</b>	<b>9.83</b>
<b>Existing Natural Area</b>	<b>1609.18</b>	<b>3976.35</b>	<b>100.00</b>

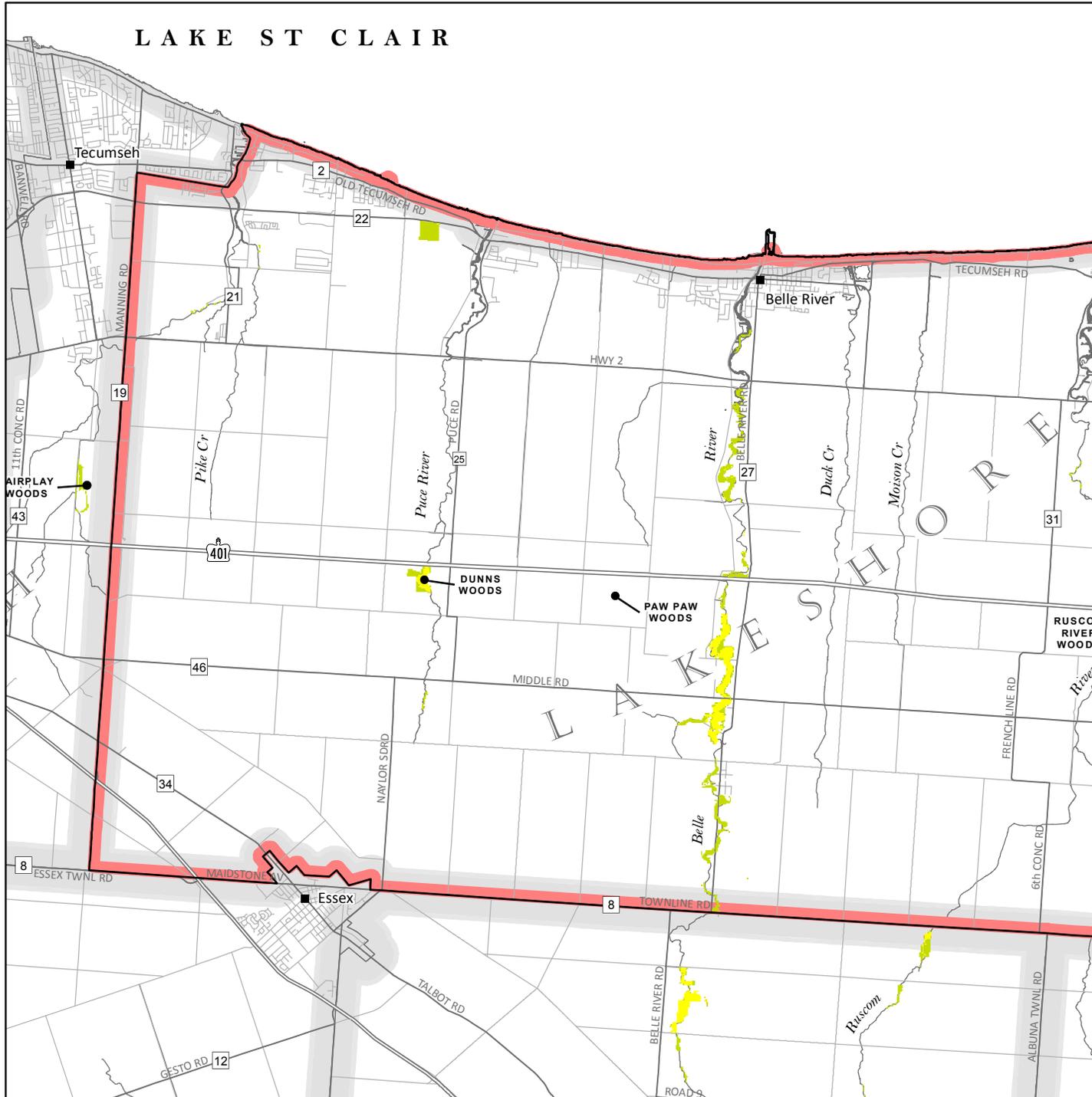


This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

# LAKE ST CLAIR

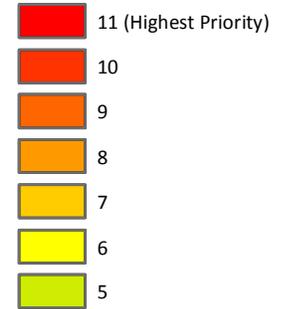
## Priority of Existing Natural Features

Town of Lakeshore (West)



### Legend

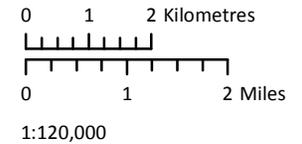
#### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

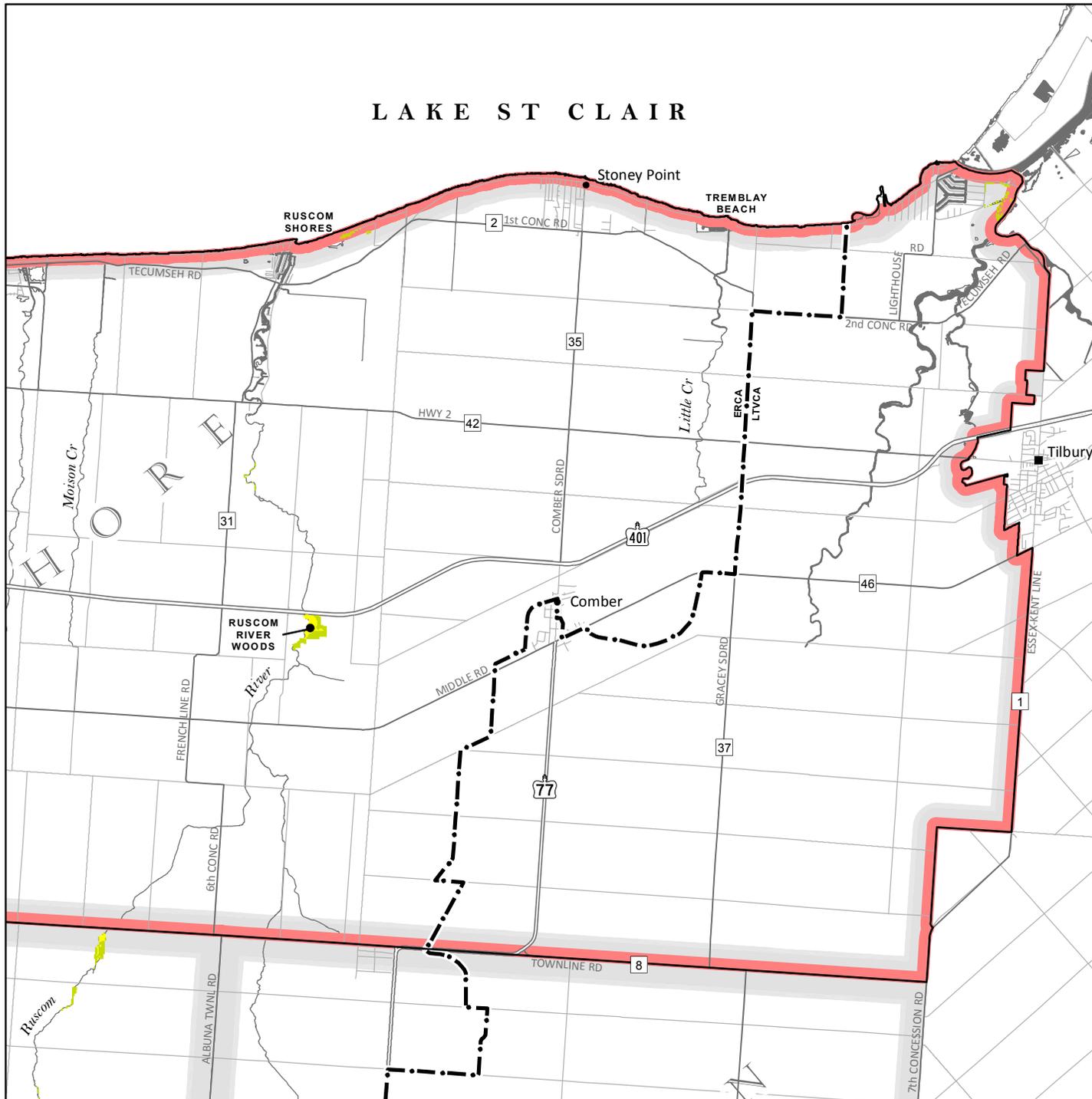


Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - Lakeshore West - 20130424.mxd  
TD 25/04/2013

# LAKE ST CLAIR

## Priority of Existing Natural Features

Town of Lakeshore (East)



### Legend

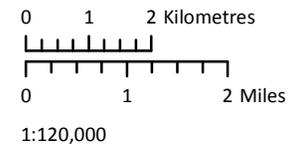
#### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

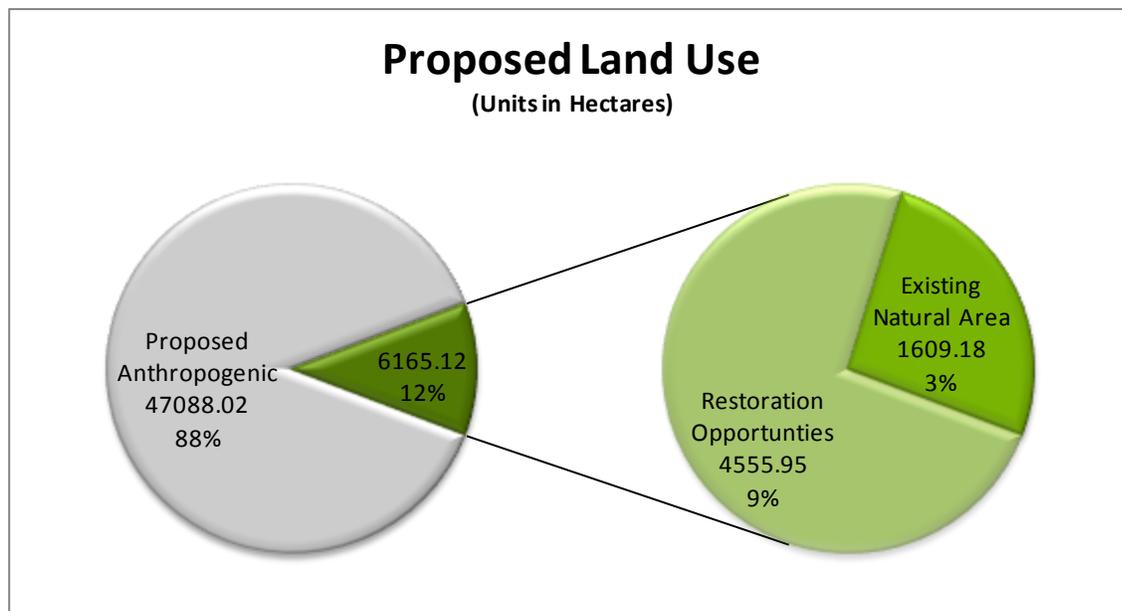


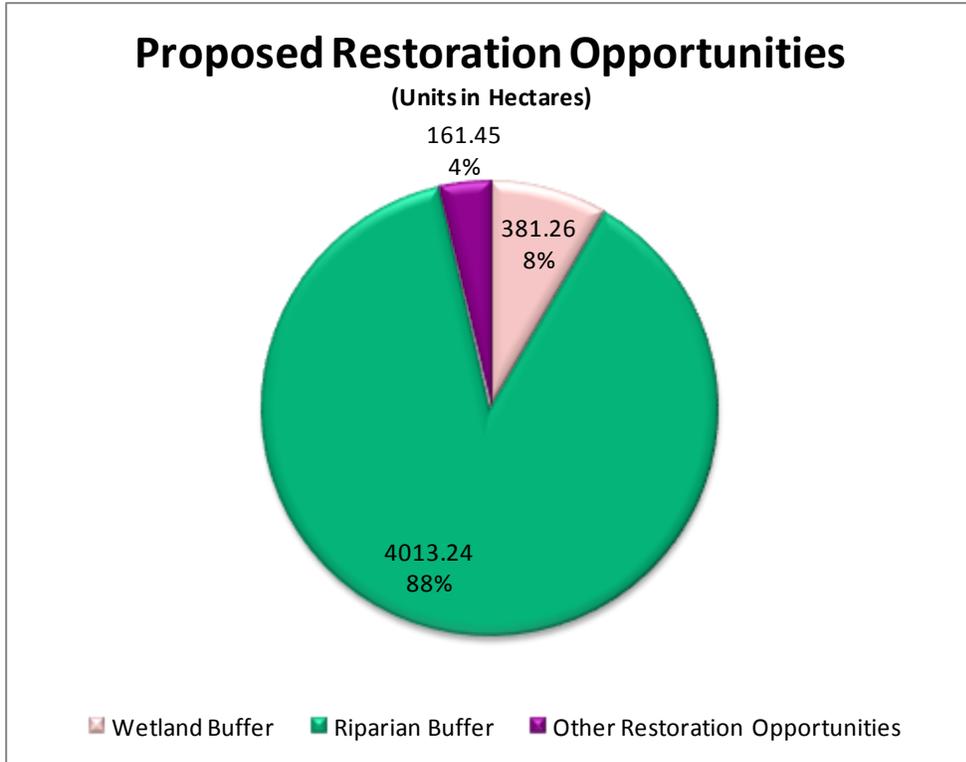
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdiction\Priority Map - Existing Natural Features - Lakeshore East - 20130424.mxd  
TD 25/04/2013

**3.1.5.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Town of Lakeshore.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	381.26	942.11	0.72
Riparian Buffer	4013.24	9916.90	7.54
Other Restoration Opportunities	161.45	398.94	0.30
<b>Total Restoration Opportunities</b>	<b>4555.95</b>	<b>11257.94</b>	<b>8.56</b>
<b>Status Quo Anthropogenic</b>	<b>47088.02</b>	<b>116356.57</b>	<b>88.42</b>
<b>Total Land Area</b>	<b>53253.15</b>	<b>131590.87</b>	<b>100.00</b>



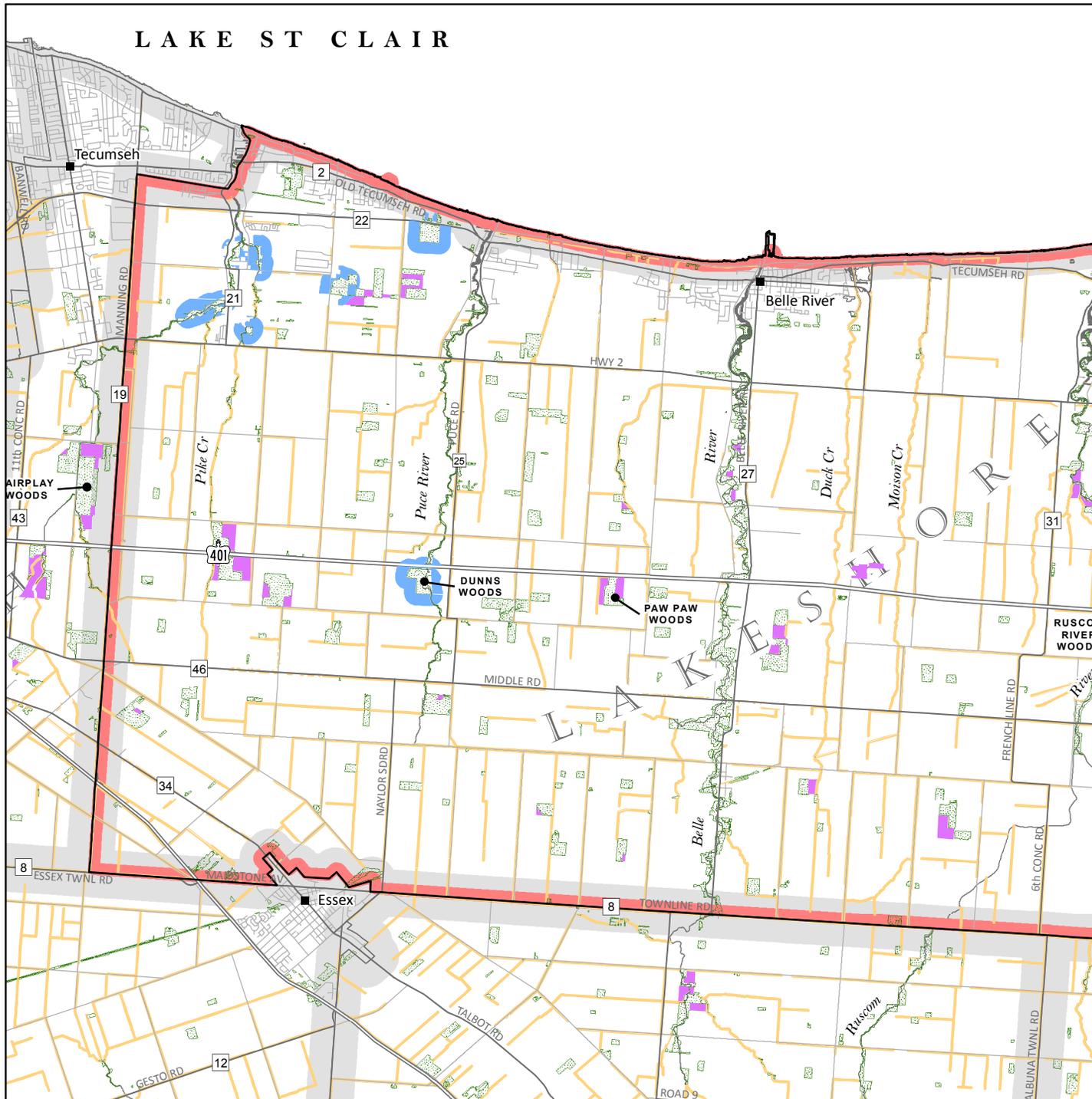


The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Tremblay Beach and Ruscom Shores Provincially Significant Wetlands, as well as riparian restoration along first to third order streams in close proximity to the Lake St. Clair shoreline.

# LAKE ST CLAIR

## Restoration Opportunity Concepts

### Town of Lakeshore (West)



#### Legend

##### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

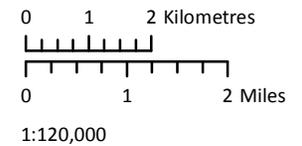
##### Opportunity of Interest

- Tallgrass Prairie

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.

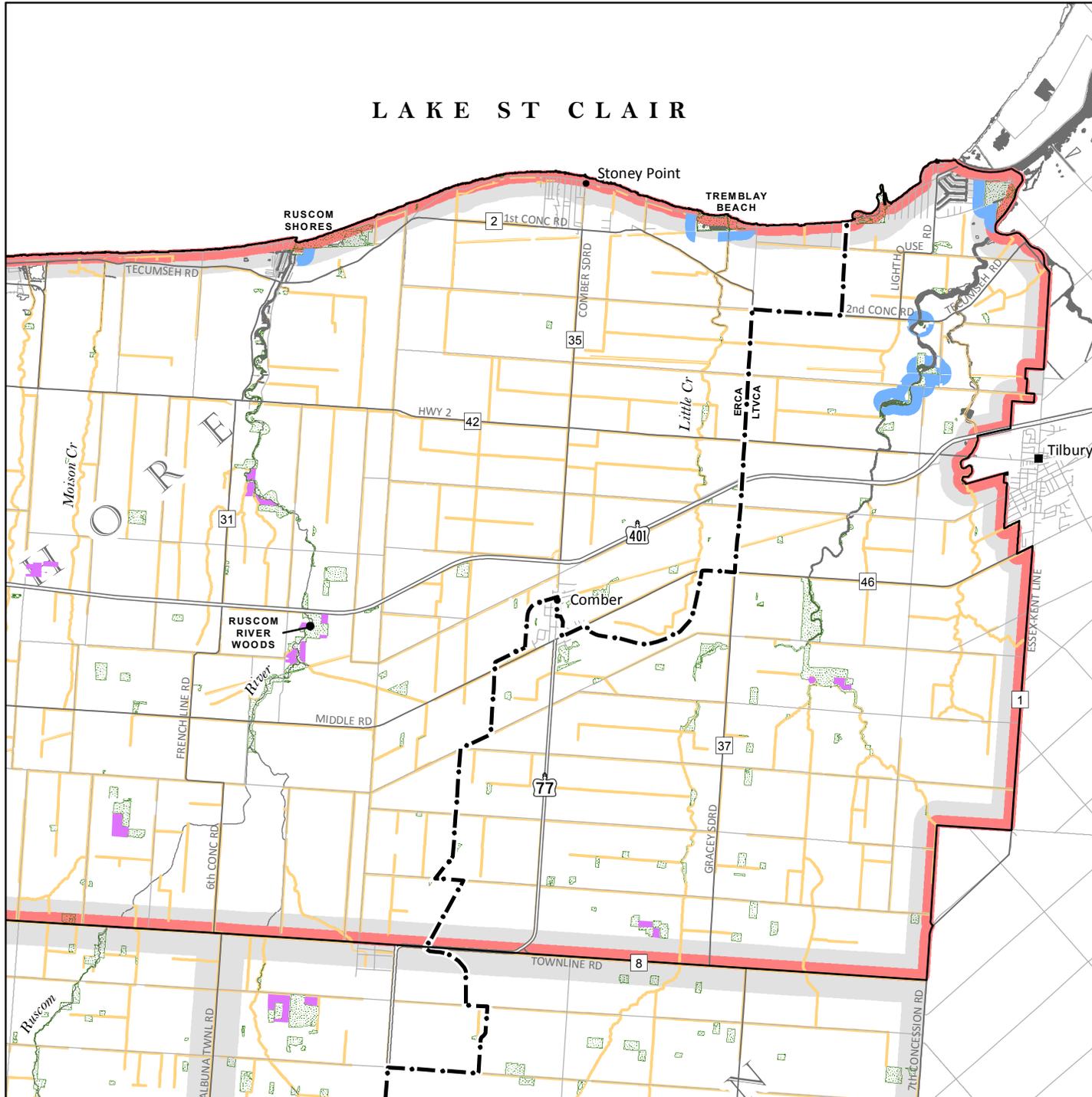


Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Lakeshore West - 20130424.mxd  
TD 25/04/2013

# LAKE ST CLAIR

## Restoration Opportunity Concepts

Town of Lakeshore (East)



### Legend

#### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

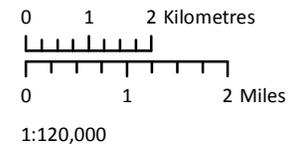
#### Opportunity of Interest

- Tallgrass Prairie

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.



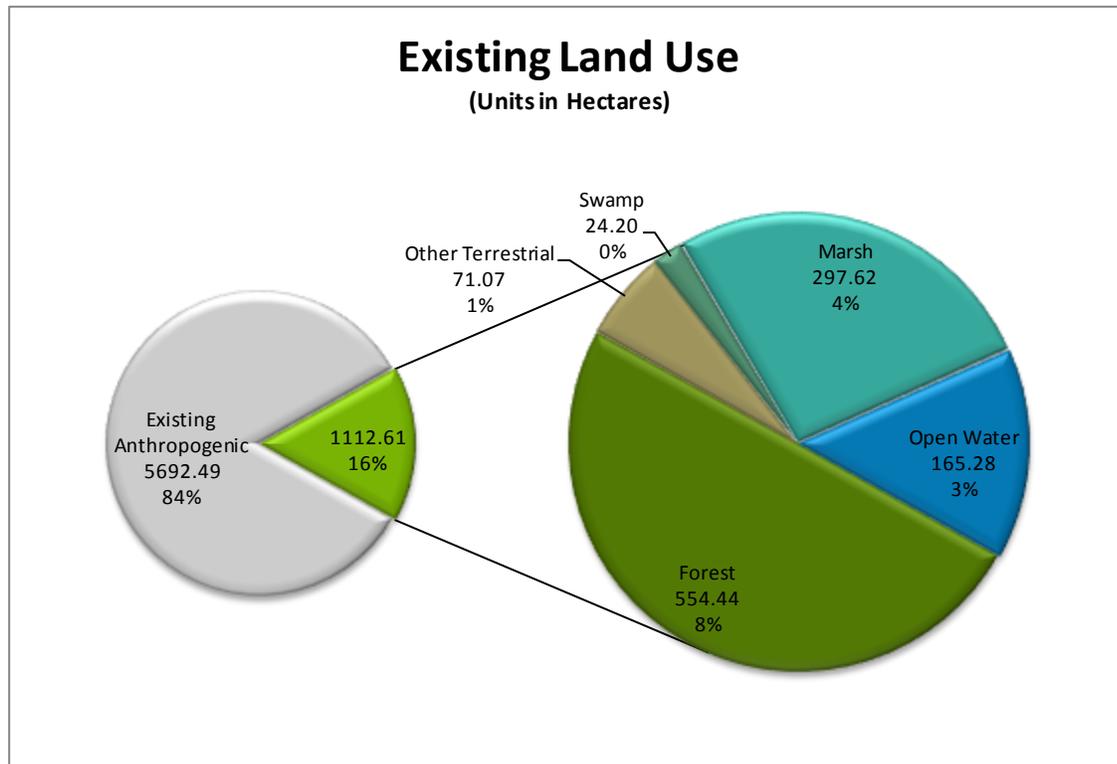
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Lakeshore East - 20130424.mxd  
TD 25/04/2013

**3.1.6 Town of LaSalle**

**3.1.6.1 Existing Land Use**

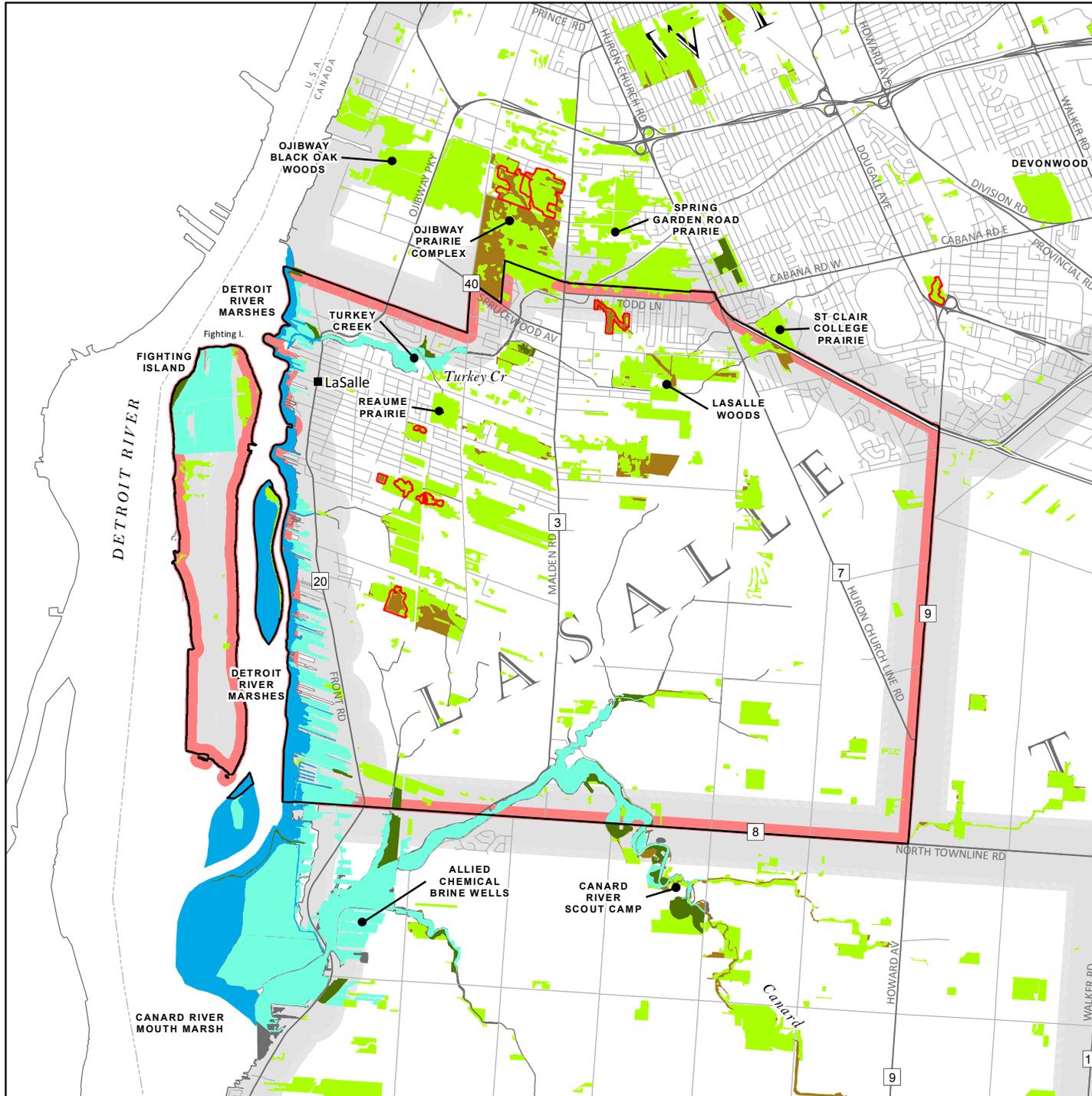
The following Table and Figure summarizes the findings for existing land use within the Town of LaSalle.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	554.44	1370.05	8.15
Other Terrestrial	71.07	175.62	1.04
<b>Total Terrestrial Habitat</b>	<b>625.51</b>	<b>1545.67</b>	<b>9.19</b>
Wetland Habitat	Hectares	Acres	%
Swamp	24.20	59.81	0.36
Marsh	297.62	735.43	4.37
Open Water	165.28	408.41	2.43
<b>Total Wetland Habitat</b>	<b>487.10</b>	<b>1203.65</b>	<b>7.16</b>
<b>Existing Natural Area</b>	<b>1112.61</b>	<b>2749.32</b>	<b>16.35</b>
<b>Existing Anthropogenic</b>	<b>5692.49</b>	<b>14066.38</b>	<b>83.65</b>
<b>Total Land Area</b>	<b>6805.10</b>	<b>16815.70</b>	<b>100.00</b>



# Existing Natural Features

## Town of LaSalle



### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

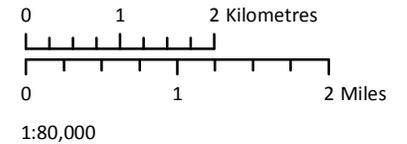
- Forest
- Other

#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



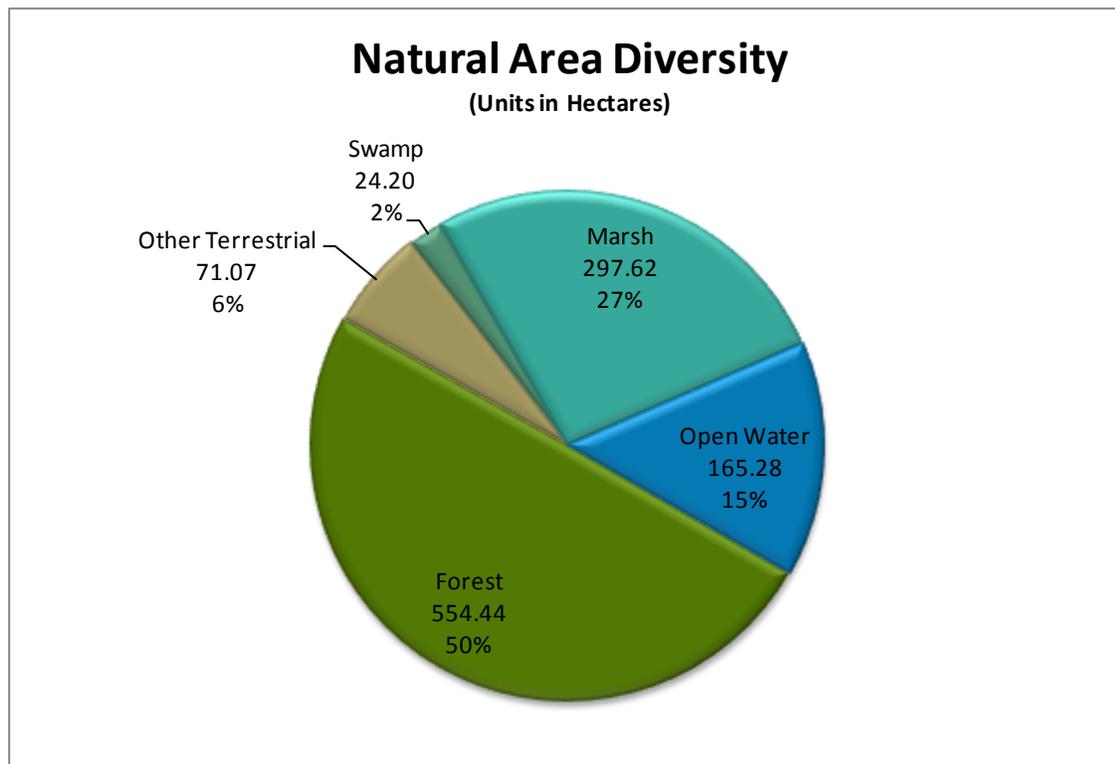
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - LaSalle - 20130424.mxd  
TD 25/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of the Ojibway Prairie Complex and is 60.6 ha in size. In addition, 20 forest patches within the study area contain 100 m interior forest, of which 1 patch contains 200 m interior forest.

**3.1.6.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Town of LaSalle.

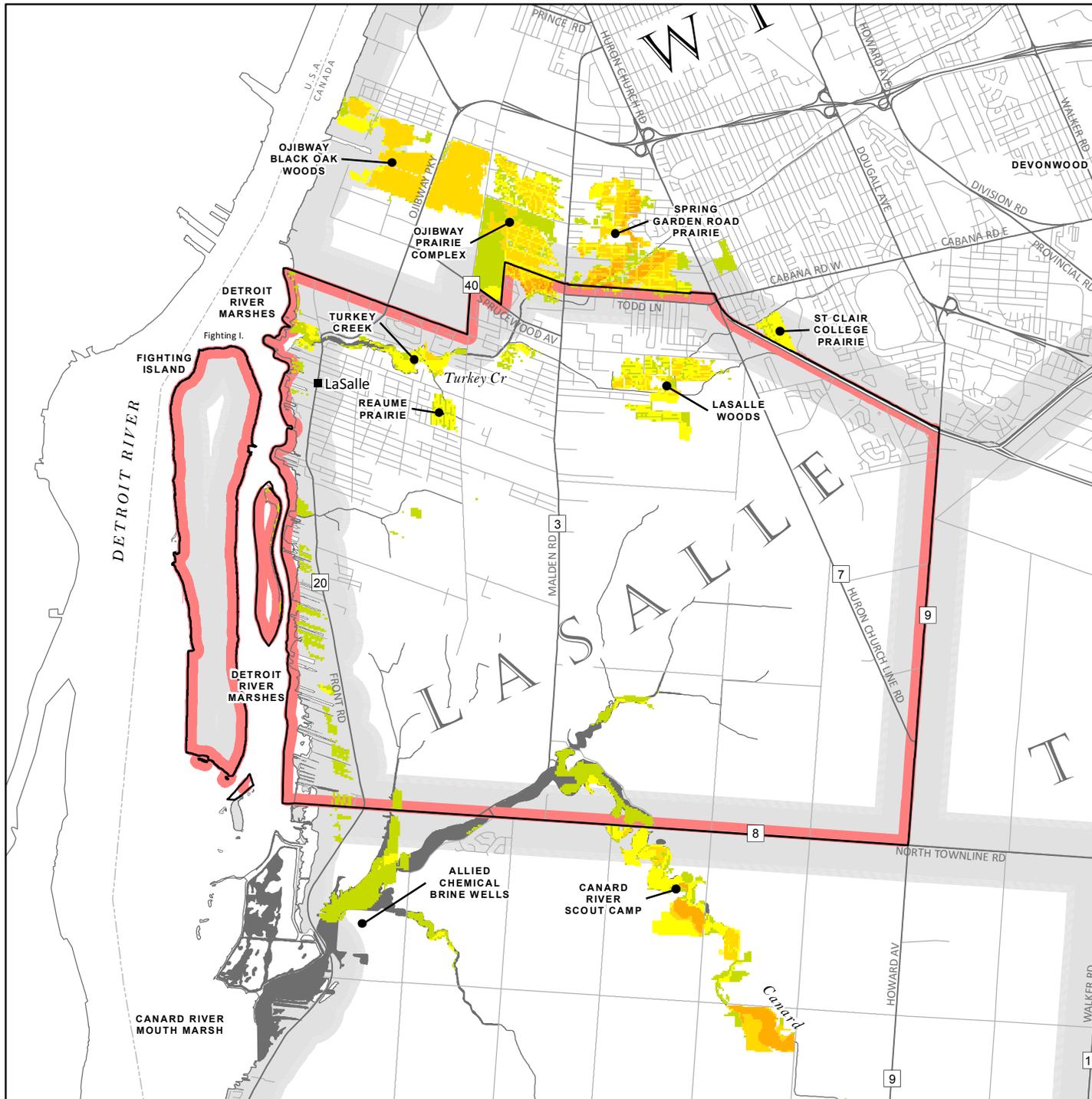
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	554.44	1370.05	49.83
Other Terrestrial	71.07	175.62	6.39
Swamp	24.20	59.81	2.18
Marsh	297.62	735.43	26.75
Open Water	165.28	408.41	14.85
<b>Total Terrestrial Habitat</b>	<b>625.51</b>	<b>1545.67</b>	<b>56.22</b>
<b>Total Wetland Habitat</b>	<b>487.10</b>	<b>1203.65</b>	<b>43.78</b>
<b>Existing Natural Area</b>	<b>1112.61</b>	<b>2749.32</b>	<b>100.00</b>



This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

# Priority of Existing Natural Features

Town of LaSalle



## Legend

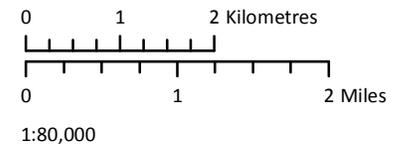
### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

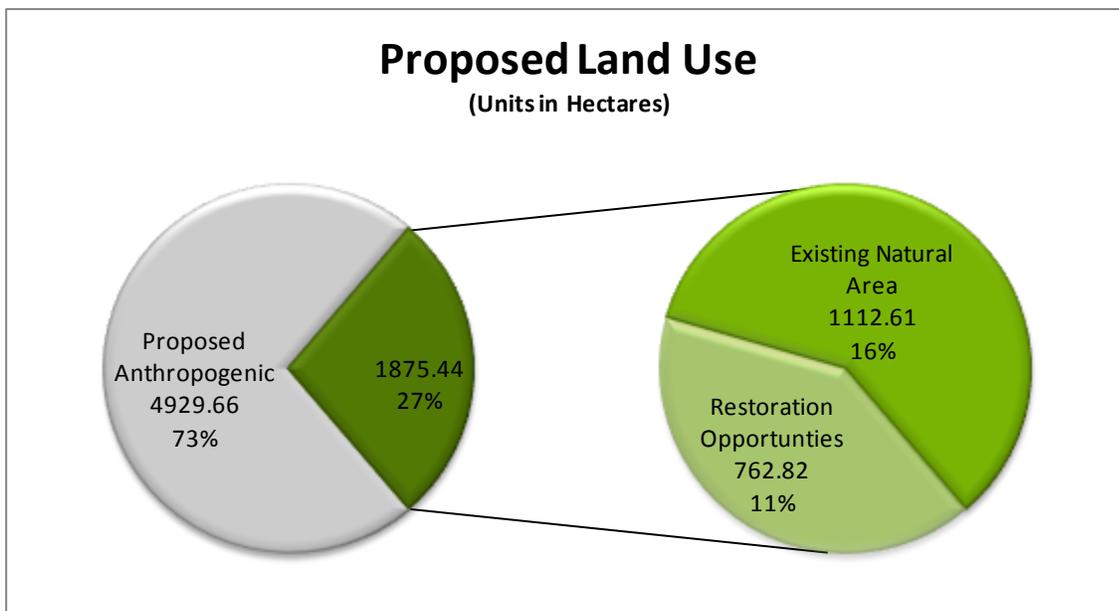


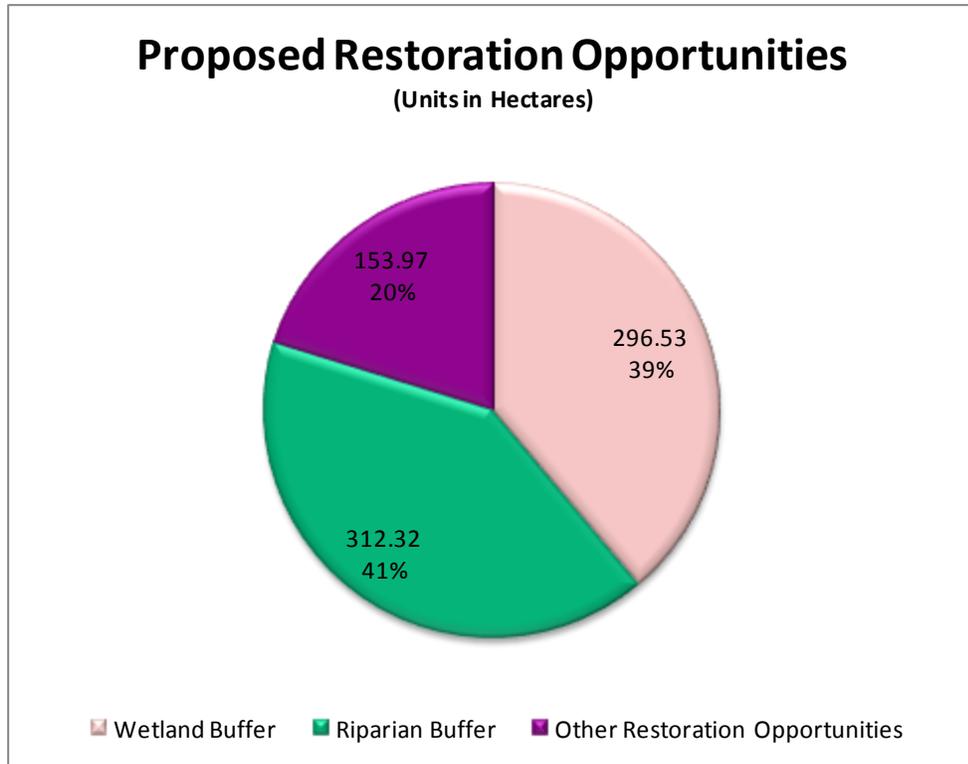
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - LaSalle - 20130424.mxd  
TD 25/04/2013

**3.1.6.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Town of LaSalle.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	296.53	732.75	4.36
Riparian Buffer	312.32	771.75	4.59
Other Restoration Opportunities	153.97	380.48	2.26
<b>Total Restoration Opportunities</b>	<b>762.82</b>	<b>1884.97</b>	<b>11.21</b>
<b>Status Quo Anthropogenic</b>	<b>4929.66</b>	<b>12181.42</b>	<b>72.44</b>
<b>Total Land Area</b>	<b>6805.10</b>	<b>16815.70</b>	<b>100.00</b>





The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include reforestation associated with LaSalle Woods, as well as wetland buffers adjacent to the Detroit River Marshes Provincially Significant Wetlands.

This study area also contains lands which have been identified as high priority opportunities for the restoration of tallgrass prairie vegetation communities, as shown in the following map.

# Restoration Opportunity Concepts

Town of LaSalle

## Legend

### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

### Opportunity of Interest

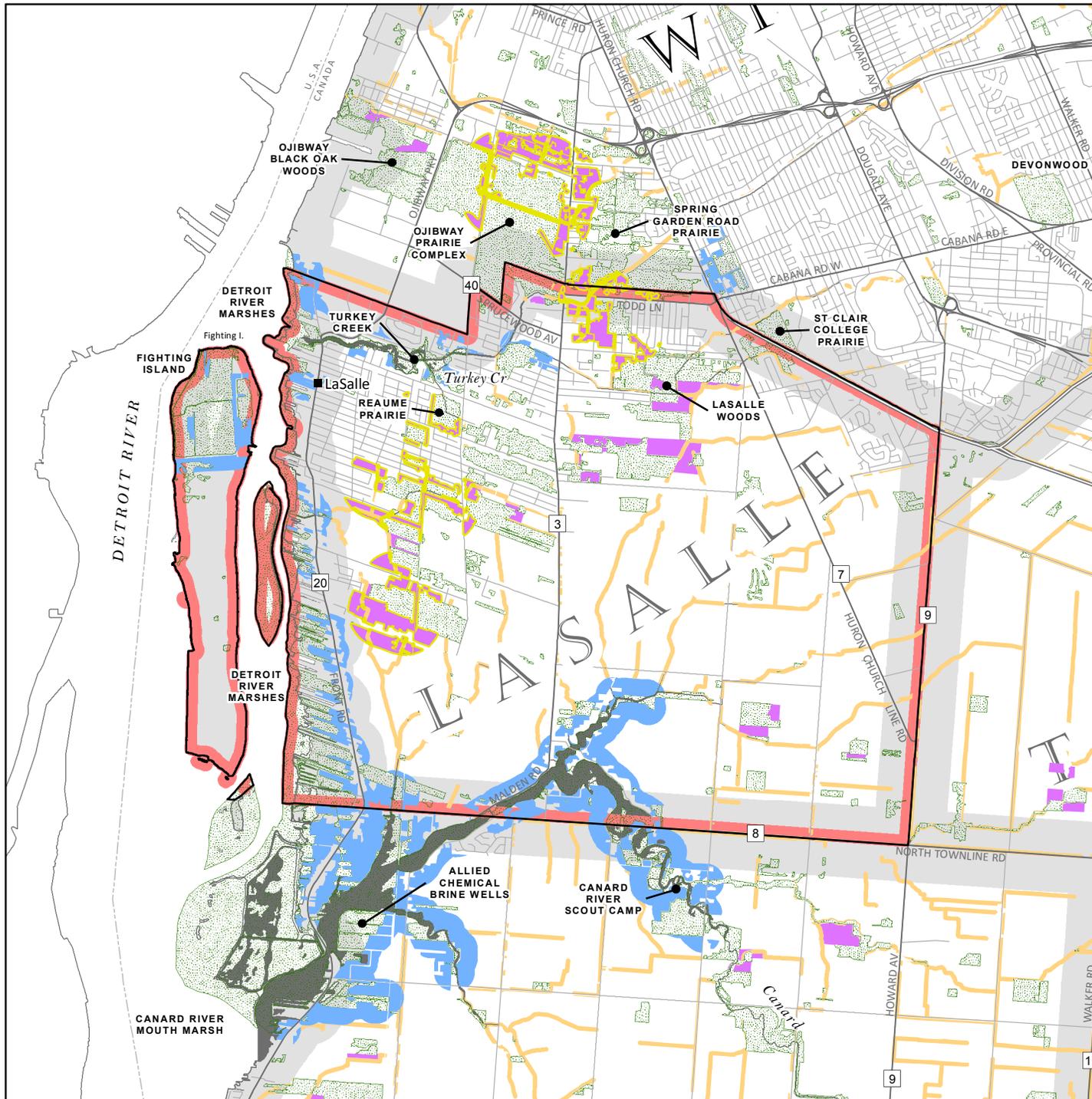
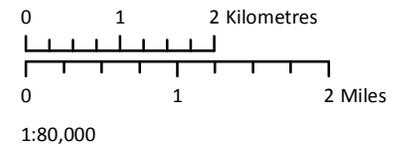
- Tallgrass Prairie

Existing Natural Feature

Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.



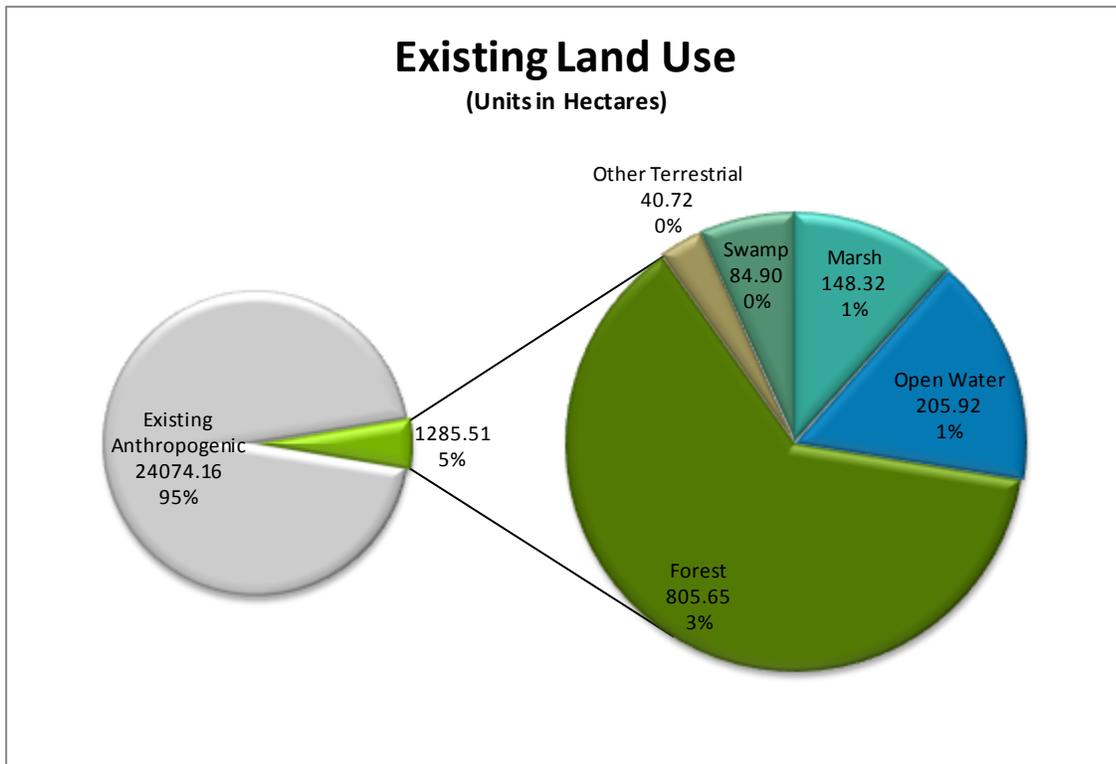
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - LaSalle - 20130424.mxd  
TD 25/04/2013

**3.1.7 Municipality of Leamington**

**3.1.7.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Municipality of Leamington.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	805.65	1990.78	3.18
Other Terrestrial	40.72	100.62	0.16
<b>Total Terrestrial Habitat</b>	<b>846.37</b>	<b>2091.41</b>	<b>3.34</b>
Wetland Habitat	Hectares	Acres	%
Swamp	84.90	209.79	0.33
Marsh	148.32	366.51	0.58
Open Water	205.92	508.85	0.81
<b>Total Wetland Habitat</b>	<b>439.14</b>	<b>1085.14</b>	<b>1.73</b>
<b>Existing Natural Area</b>	<b>1285.51</b>	<b>3176.55</b>	<b>5.07</b>
<b>Existing Anthropogenic</b>	<b>24074.16</b>	<b>59488.30</b>	<b>94.93</b>
<b>Total Land Area</b>	<b>25359.67</b>	<b>62664.85</b>	<b>100.00</b>



# Existing Natural Features

## Municipality of Leamington

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

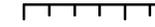
#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

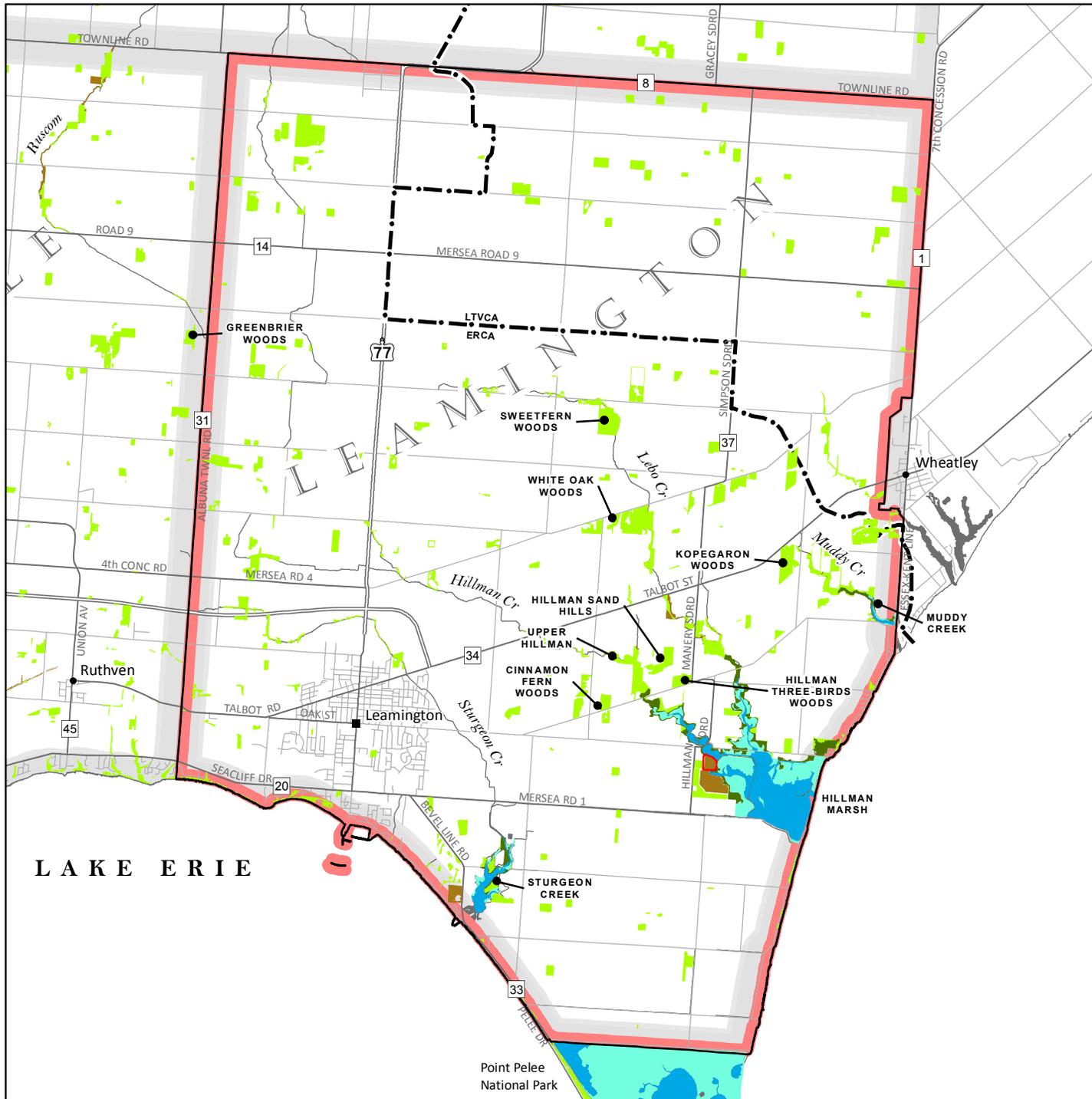
The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.

0 1 2 Kilometres



0 1 2 Miles

1:120,000



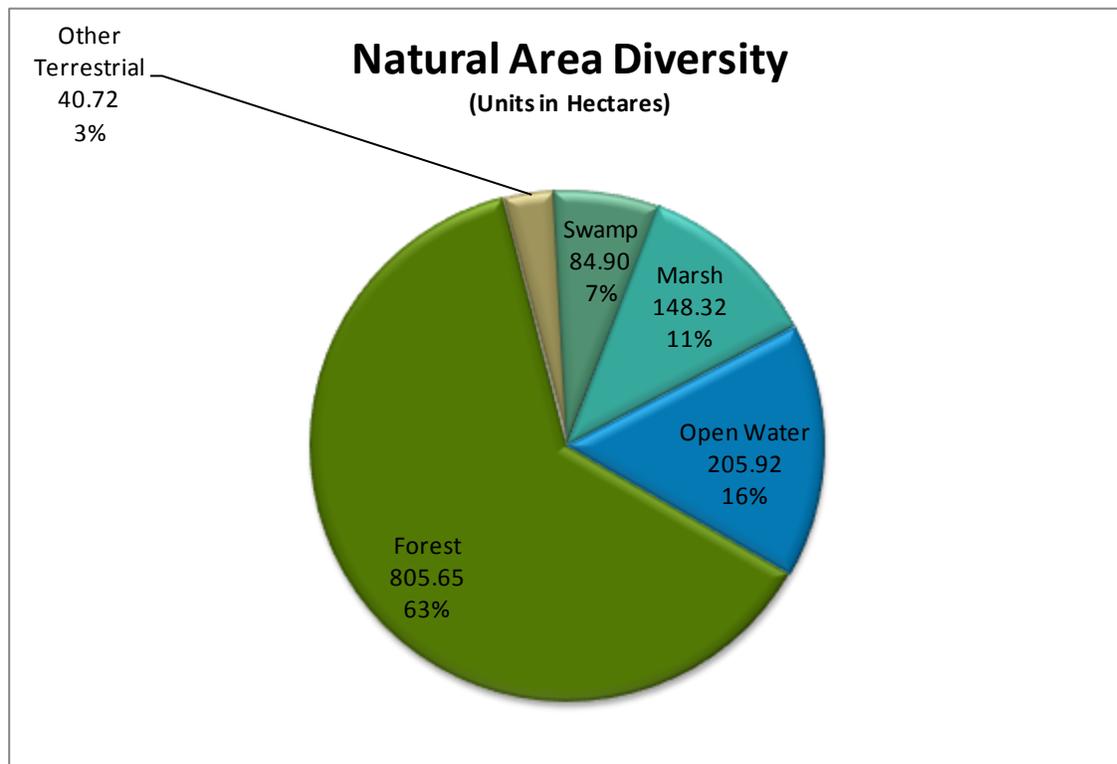
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Leamington - 20130424.mxd  
TD 26/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Hillman Creek and is 48.7 ha in size. In addition, 23 forest patches within the study area contain 100 m interior forest, of which 3 patches contain 200 m interior forest.

**3.1.7.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Municipality of Leamington.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	805.65	1990.78	62.67
Other Terrestrial	40.72	100.62	3.17
Swamp	84.90	209.79	6.60
Marsh	148.32	366.51	11.54
Open Water	205.92	508.85	16.02
<b>Total Terrestrial Habitat</b>	<b>846.37</b>	<b>2091.41</b>	<b>65.84</b>
<b>Total Wetland Habitat</b>	<b>439.14</b>	<b>1085.14</b>	<b>34.16</b>
<b>Existing Natural Area</b>	<b>1285.51</b>	<b>3176.55</b>	<b>100.00</b>



# Priority of Existing Natural Features

## Municipality of Leamington

### Legend

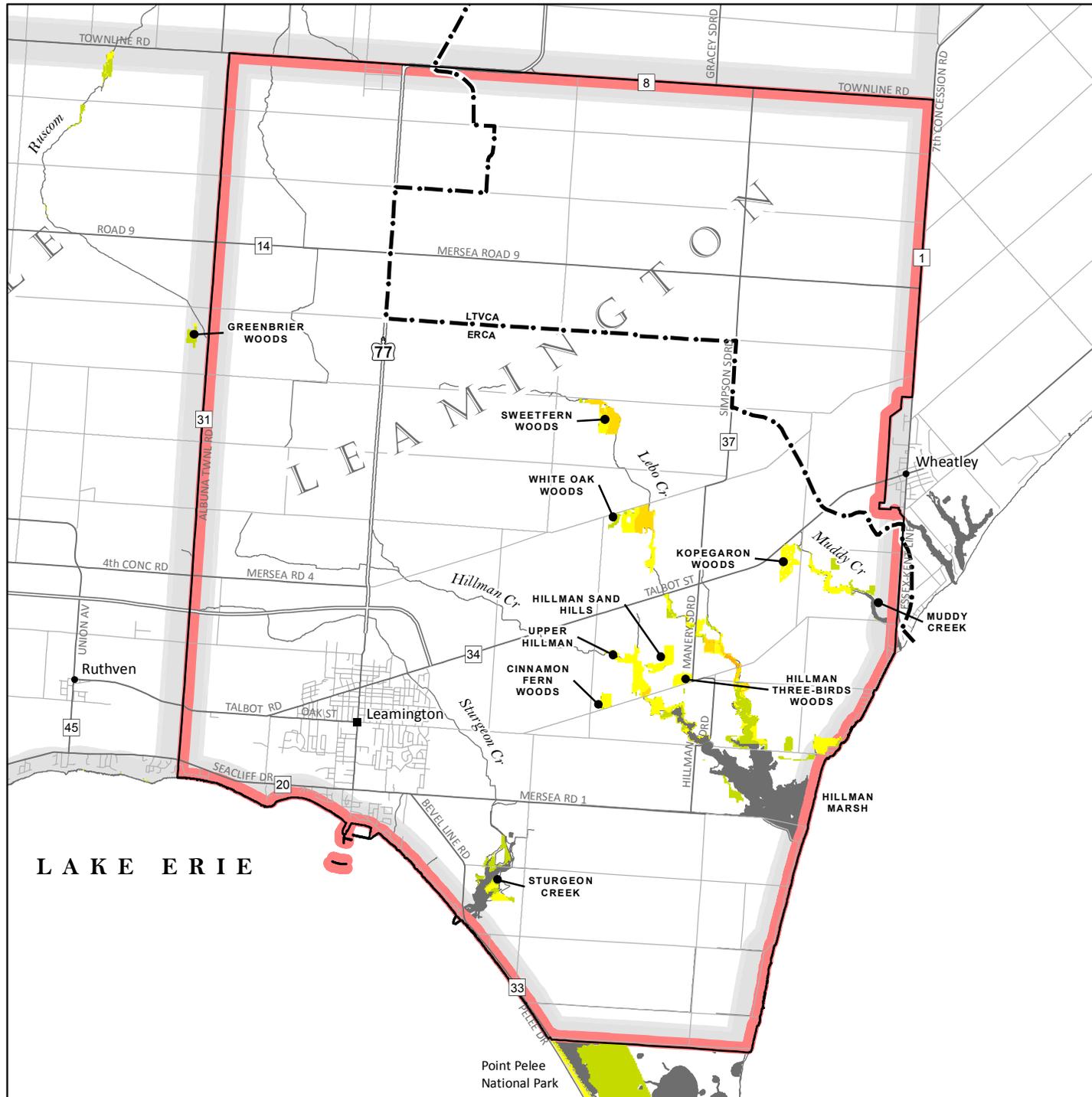
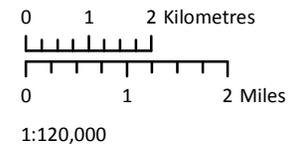
#### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

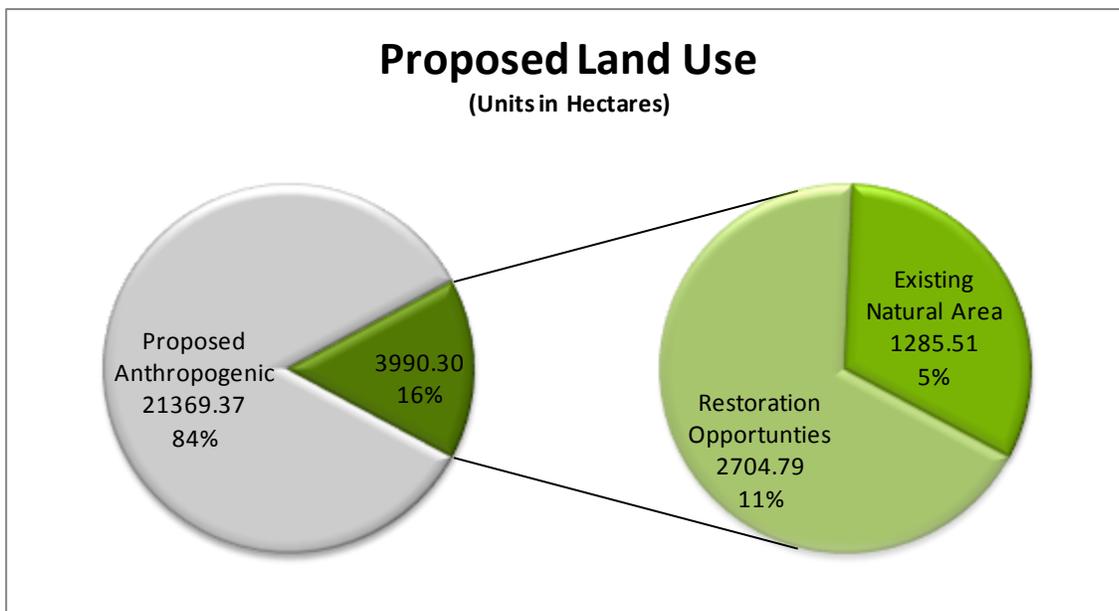
The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

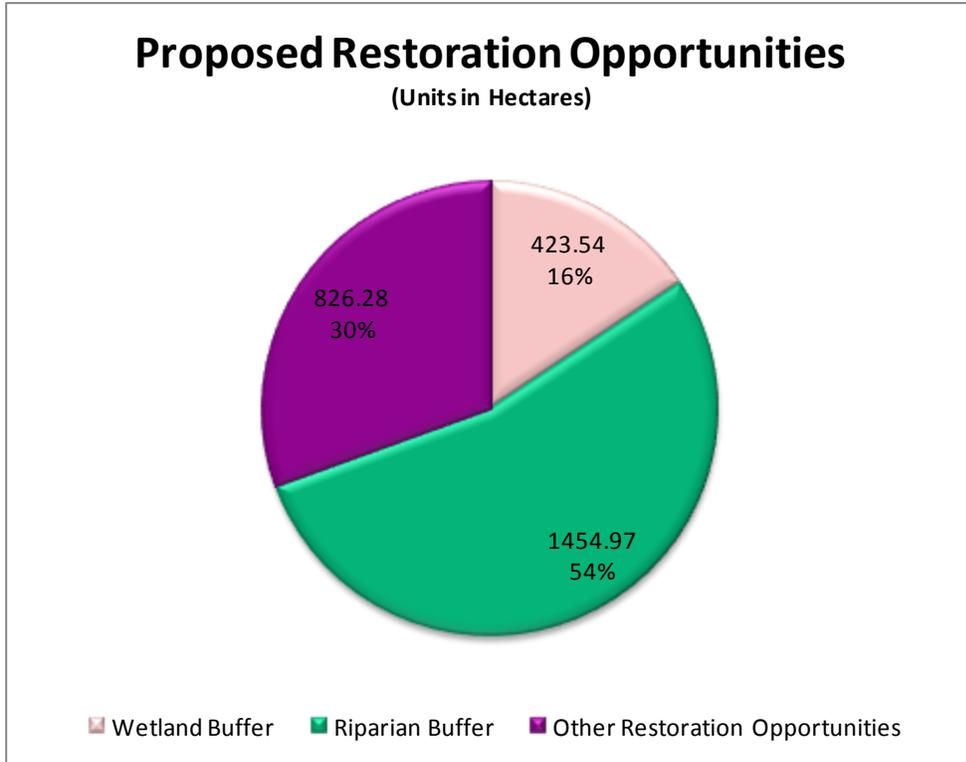


**3.1.7.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Municipality of Leamington.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	423.54	1046.58	1.67
Riparian Buffer	1454.97	3595.30	5.74
Other Restoration Opportunities	826.28	2041.76	3.26
<b>Total Restoration Opportunities</b>	<b>2704.79</b>	<b>6683.64</b>	<b>10.67</b>
<b>Status Quo Anthropogenic</b>	<b>21369.37</b>	<b>52804.65</b>	<b>84.27</b>
<b>Total Land Area</b>	<b>25359.67</b>	<b>62664.85</b>	<b>100.00</b>





The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Hillman Marsh and Sturgeon Creek Provincially Significant Wetlands.

# Restoration Opportunity Concepts

Municipality of Leamington

## Legend

### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

### Opportunity of Interest

- Tallgrass Prairie

- Existing Natural Feature

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

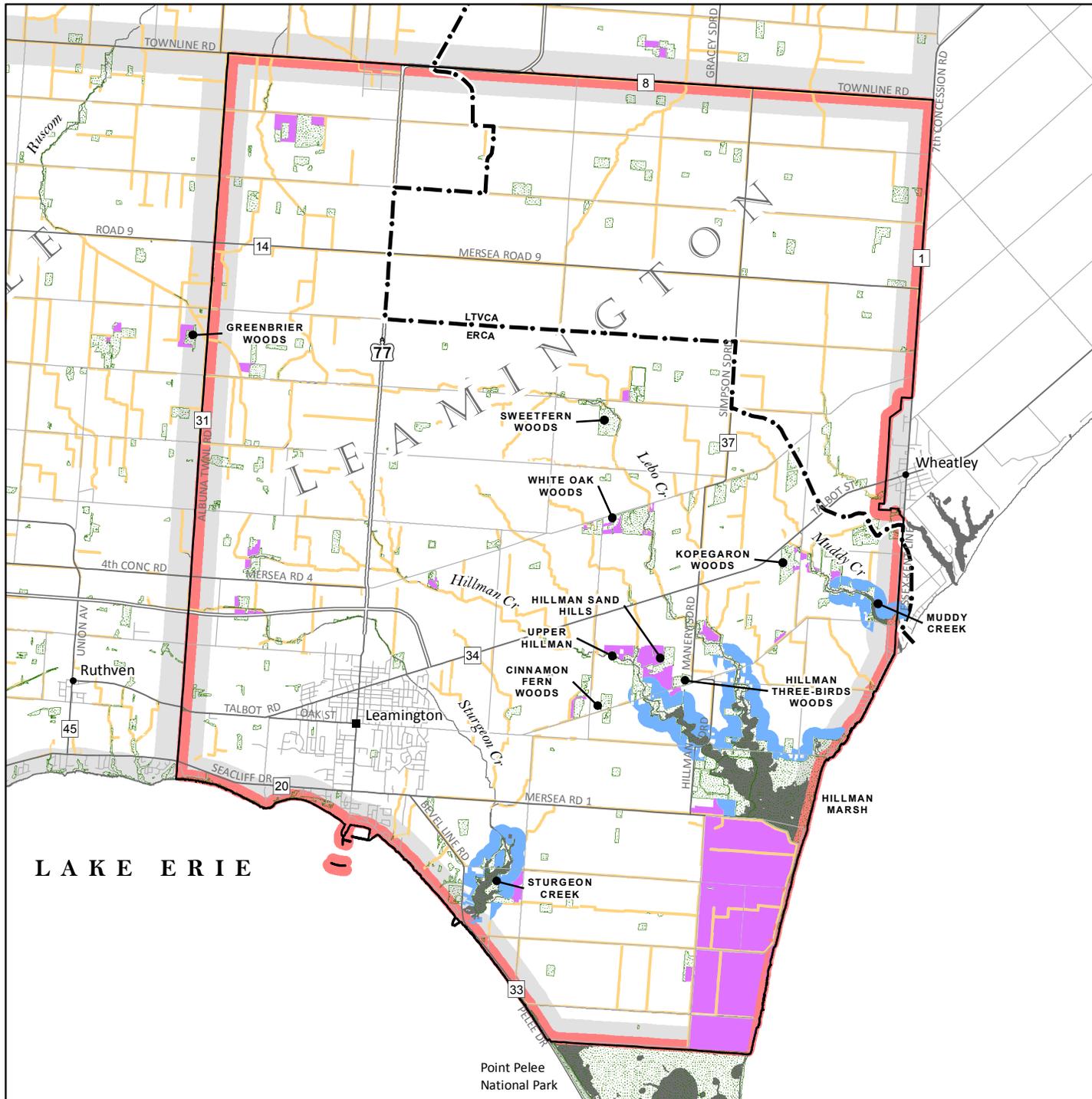
The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.

0 1 2 Kilometres



0 1 2 Miles

1:120,000



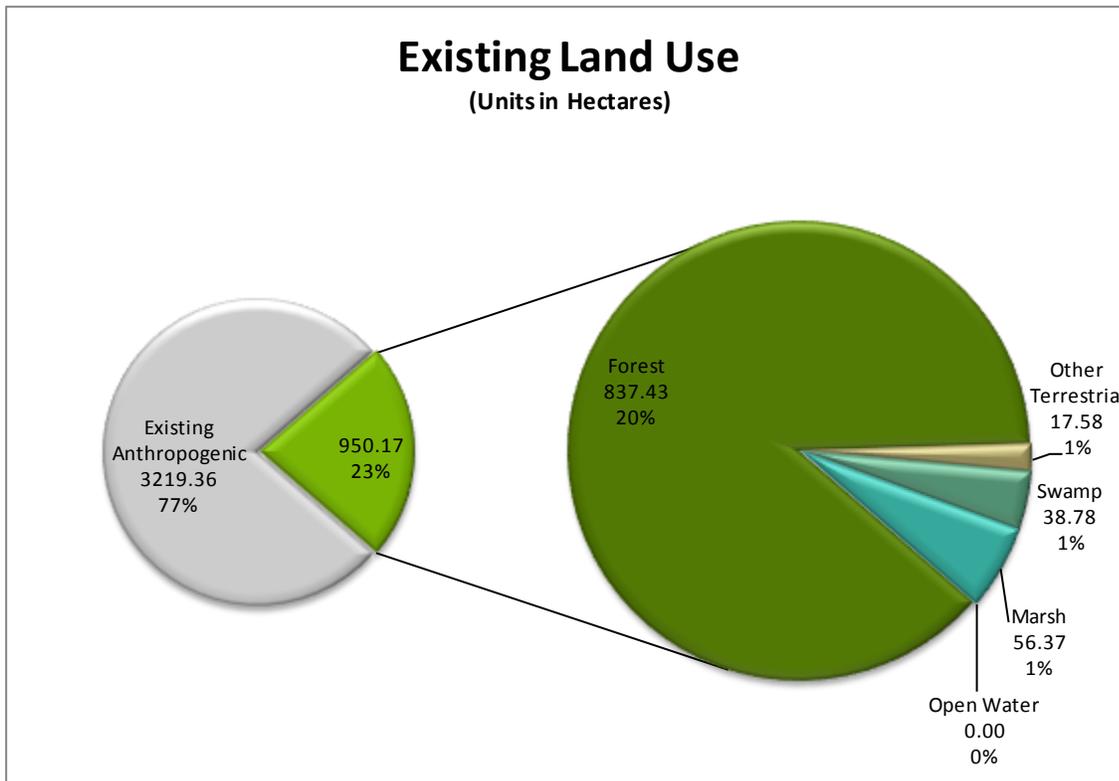
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Leamington - 20130424.mxd  
TD 26/04/2013

3.1.8 Township of Pelee

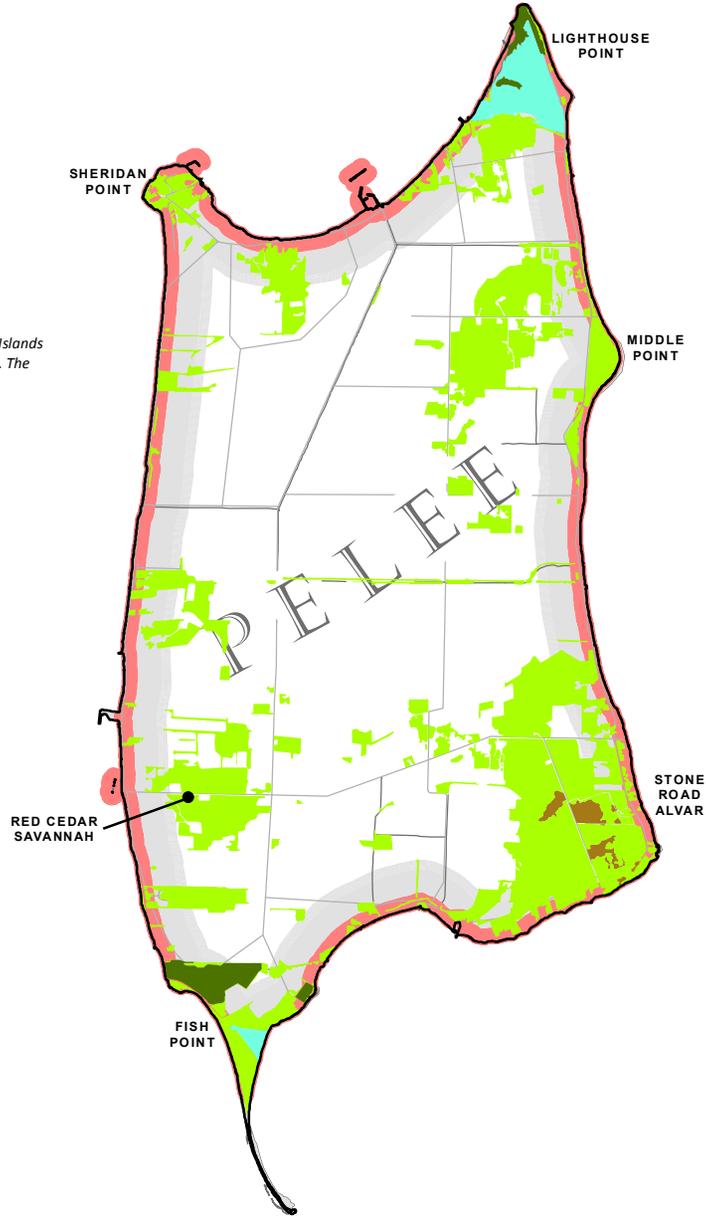
3.1.8.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Township of Pelee.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	837.43	2069.33	20.08
Other Terrestrial	17.58	43.45	0.42
<b>Total Terrestrial Habitat</b>	<b>855.02</b>	<b>2112.78</b>	<b>20.51</b>
Wetland Habitat	Hectares	Acres	%
Swamp	38.78	95.84	0.93
Marsh	56.37	139.29	1.35
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>95.15</b>	<b>235.13</b>	<b>2.28</b>
<b>Existing Natural Area</b>	<b>950.17</b>	<b>2347.91</b>	<b>22.79</b>
<b>Existing Anthropogenic</b>	<b>3219.36</b>	<b>7955.17</b>	<b>77.21</b>
<b>Total Land Area</b>	<b>4169.53</b>	<b>10303.09</b>	<b>100.00</b>



# L A K E E R I E



NOTE: Map does not show the Lake Erie Islands that were included in this reporting area. The islands not shown include  
 Big Chicken Island  
 Chick Island  
 East Sister Island  
 Hen Island  
 Little Chicken Island  
 Middle Island  
 Middle Sister Island  
 North Harbour Island

## Existing Natural Features

Township of Pelee

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

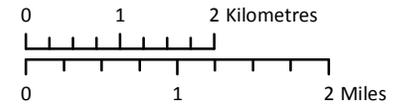
- Forest
- Other

#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



1:80,000



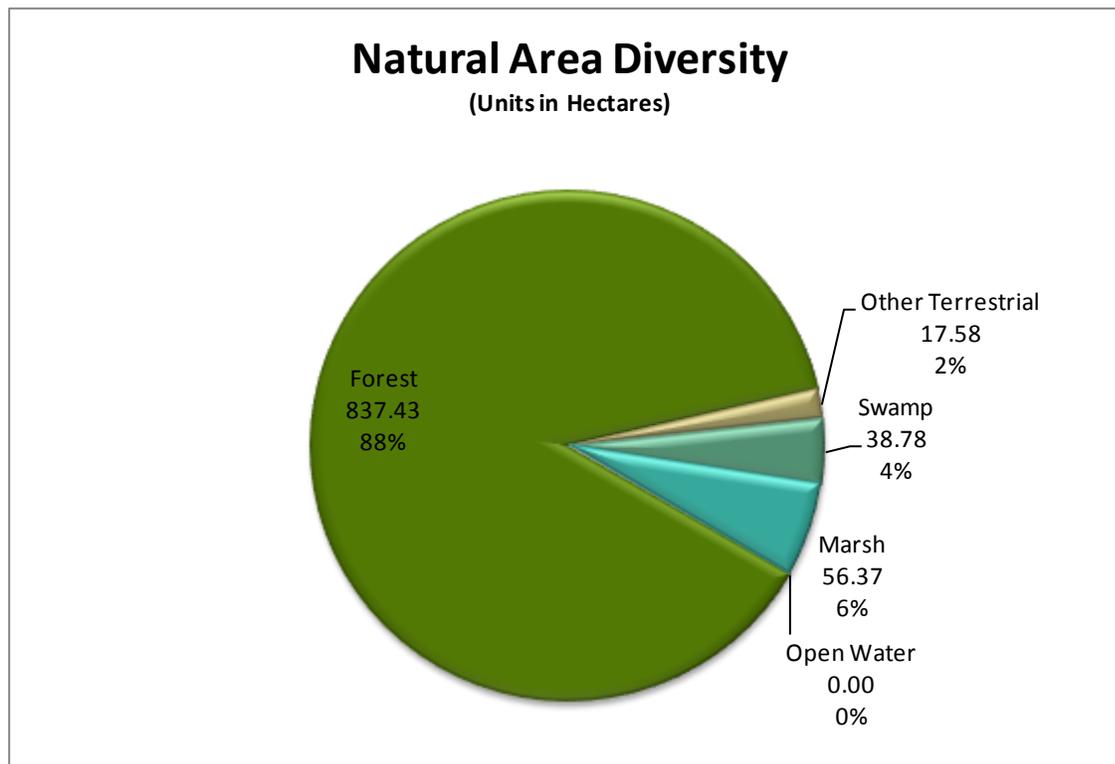
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Pelee - 20130424.mxd  
 TD 25/04/2013

Within the study area there are 2 forest patches greater than 100 ha in size. These are associated with the Middle Point/Brown’s Road Savannah and Stone Road Alvar. The largest forest patch is part of the Stone Road Alvar and is 300.6 ha in size. In addition, 24 forest patches within the study area contain 100 m interior forest, of which 5 patches contain 200 m interior forest.

**3.1.8.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Township of Pelee.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	837.43	2069.33	88.14
Other Terrestrial	17.58	43.45	1.85
Swamp	38.78	95.84	4.08
Marsh	56.37	139.29	5.93
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>855.02</b>	<b>2112.78</b>	<b>89.99</b>
<b>Total Wetland Habitat</b>	<b>95.15</b>	<b>235.13</b>	<b>10.01</b>
<b>Existing Natural Area</b>	<b>950.17</b>	<b>2347.91</b>	<b>100.00</b>



This study area also contains patches of significant tallgrass prairie vegetation communities, however these have not yet been mapped.

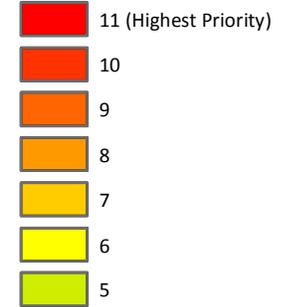
# L A K E E R I E

## Priority of Existing Natural Features

### Township of Pelee

#### Legend

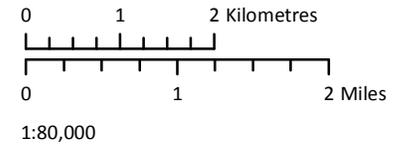
##### Number of Criteria Met



 Extent of Reporting Area

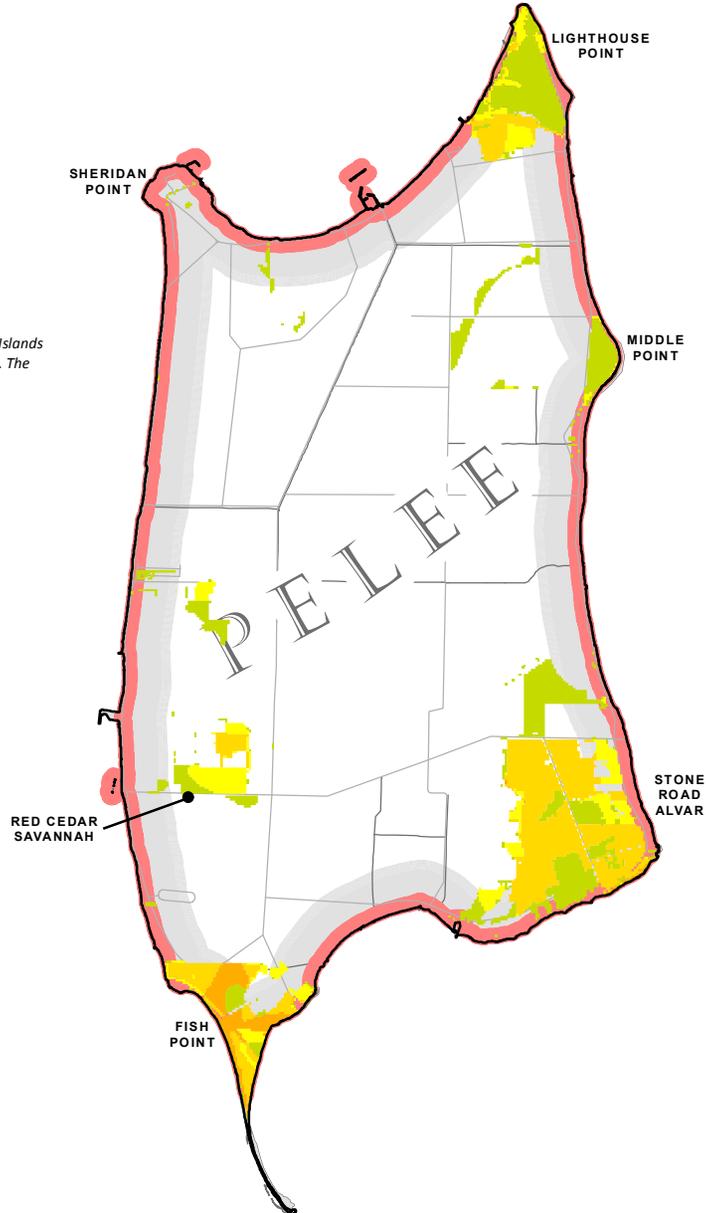
Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - Pelee - 20130424.mxd  
TD 25/04/2013

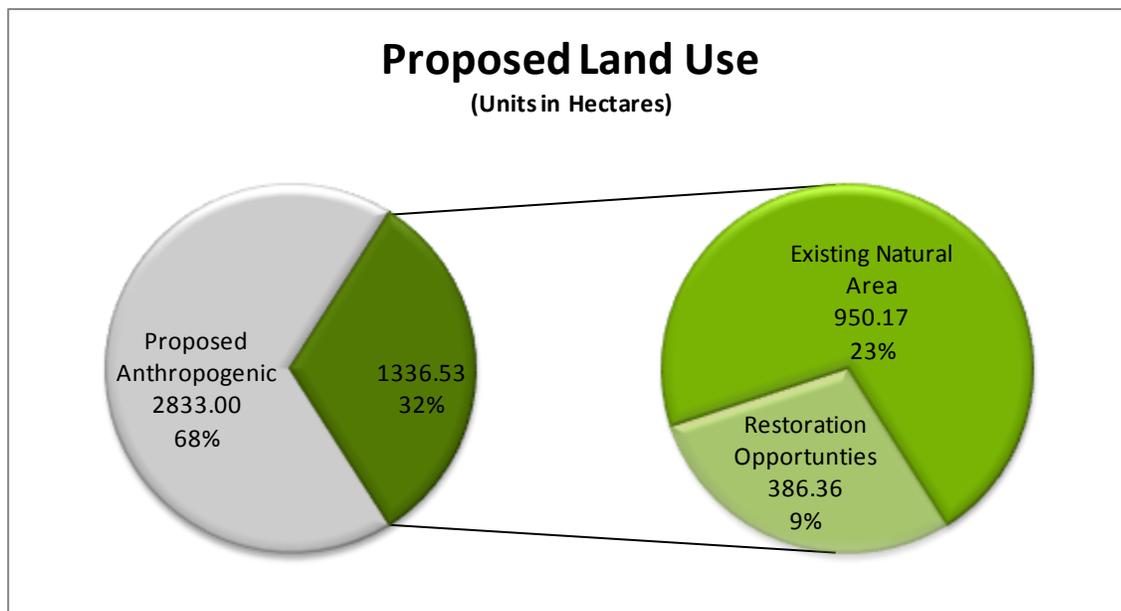
NOTE: Map does not show the Lake Erie Islands that were included in this reporting area. The islands not shown include  
Big Chicken Island  
Chick Island  
East Sister Island  
Hen Island  
Little Chicken Island  
Middle Island  
Middle Sister Island  
North Harbour Island

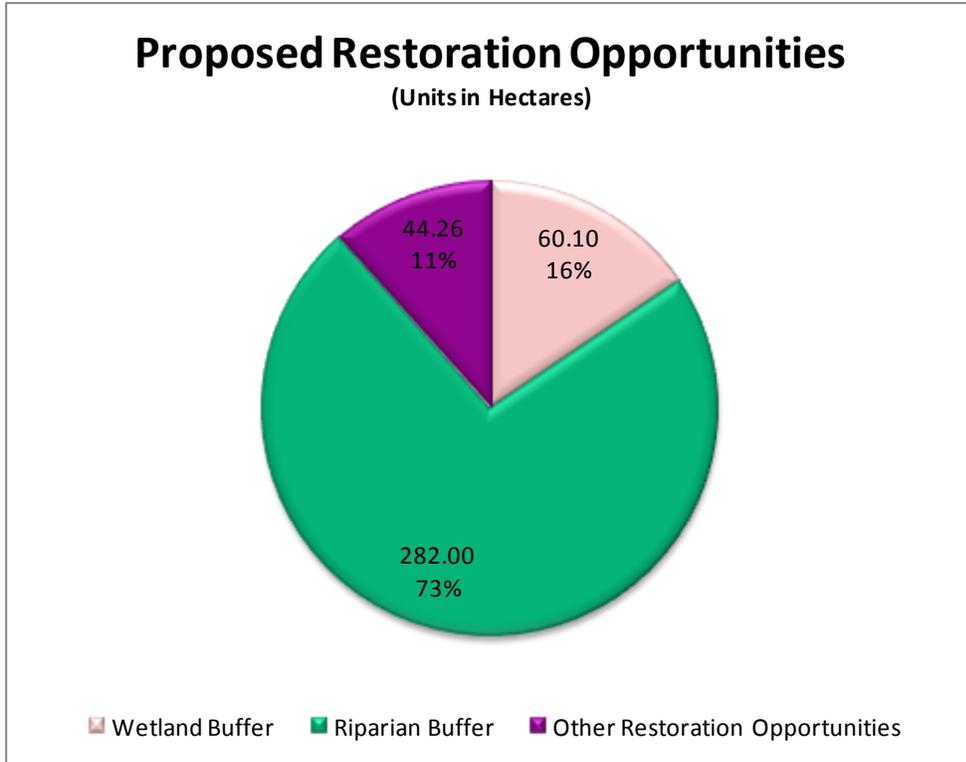


**3.1.8.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Township of Pelee.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	60.10	148.50	1.44
Riparian Buffer	282.00	696.83	6.76
Other Restoration Opportunities	44.26	109.37	1.06
<b>Total Restoration Opportunities</b>	<b>386.36</b>	<b>954.71</b>	<b>9.27</b>
<b>Status Quo Anthropogenic</b>	<b>2833.00</b>	<b>7000.46</b>	<b>67.95</b>
<b>Total Land Area</b>	<b>4169.53</b>	<b>10303.09</b>	<b>100.00</b>





The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include restoration associated with the Red Cedar Savannah as well wetland buffers adjacent to Fish Point Provincially Significant Wetlands.

# L A K E E R I E

## Restoration Opportunity Concepts

### Township of Pelee

#### Legend

##### Concept Type

-  Wetland Buffer (240m)
-  Riparian Buffer (30m)
-  Other

##### Opportunity of Interest

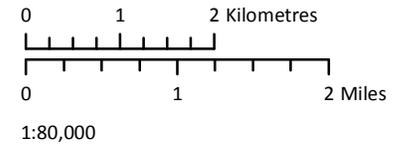
-  Tallgrass Prairie

-  Existing Natural Feature

-  Extent of Reporting Area

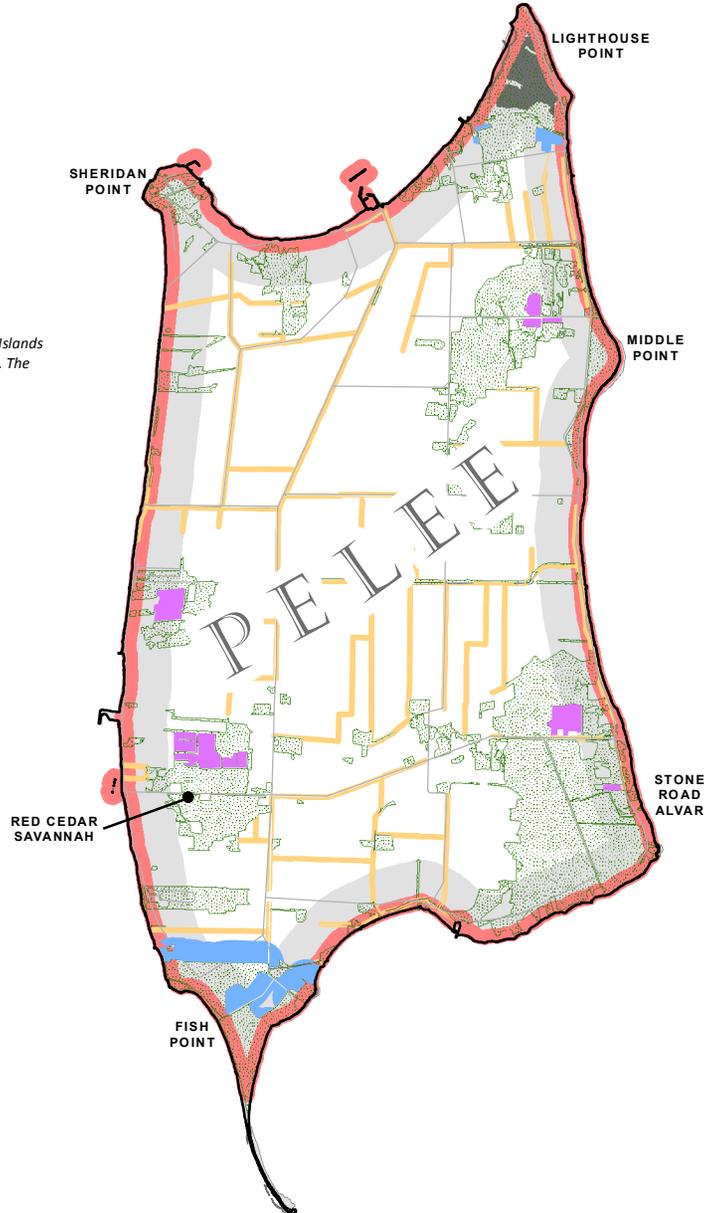
Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Pelee - 20130424.mxd  
TD 25/04/2013

NOTE: Map does not show the Lake Erie Islands that were included in this reporting area. The islands not shown include  
Big Chicken Island  
Chick Island  
East Sister Island  
Hen Island  
Little Chicken Island  
Middle Island  
Middle Sister Island  
North Harbour Island

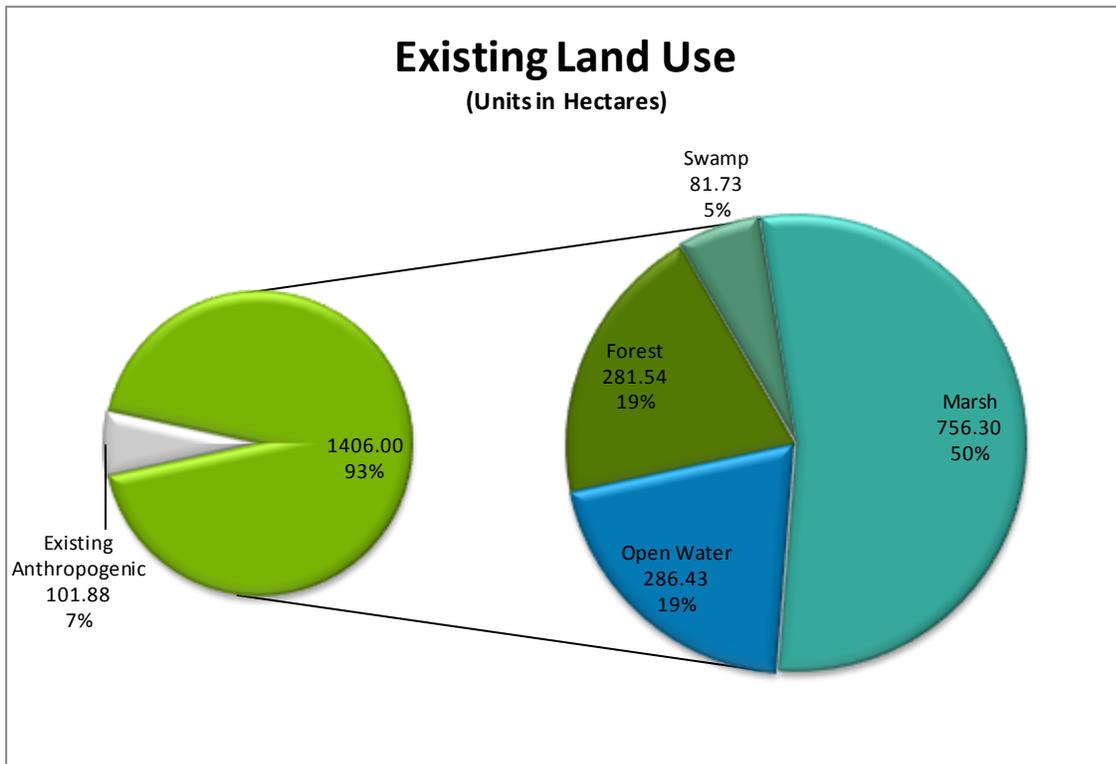


**3.1.9 Point Pelee National Park**

**3.1.9.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within Point Pelee National Park.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	281.54	695.71	18.67
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>281.54</b>	<b>695.71</b>	<b>18.67</b>
Wetland Habitat	Hectares	Acres	%
Swamp	81.73	201.96	5.42
Marsh	756.30	1868.85	50.16
Open Water	286.43	707.77	19.00
<b>Total Wetland Habitat</b>	<b>1124.45</b>	<b>2778.58</b>	<b>74.57</b>
<b>Existing Natural Area</b>	<b>1406.00</b>	<b>3474.28</b>	<b>93.24</b>
<b>Existing Anthropogenic</b>	<b>101.88</b>	<b>251.74</b>	<b>6.76</b>
<b>Total Land Area</b>	<b>1507.87</b>	<b>3726.02</b>	<b>100.00</b>



# Existing Natural Features

## Point Pelee National Park

### Legend

#### Wetland

-  Open Water
-  Marsh
-  Swamp

#### Terrestrial

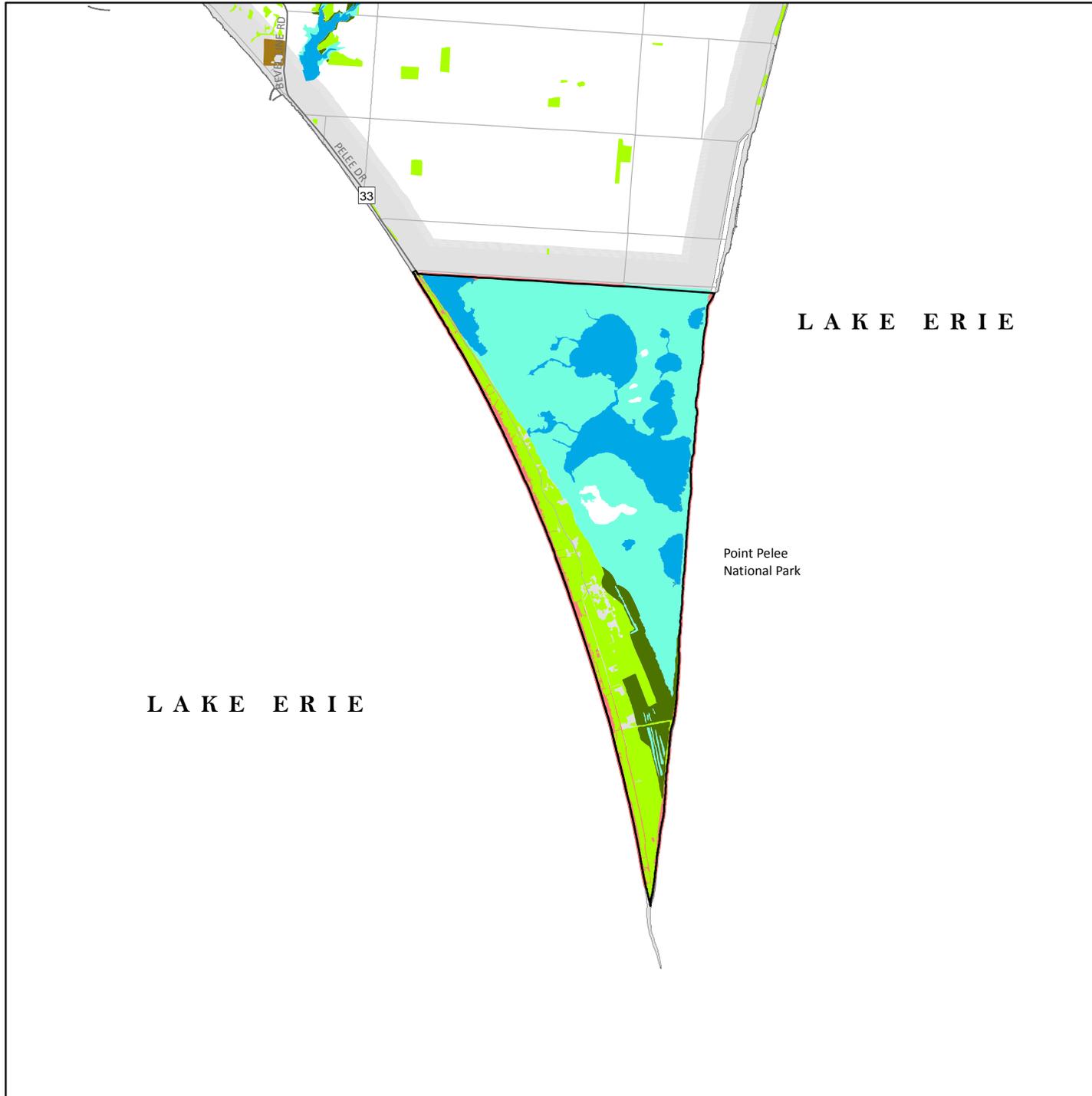
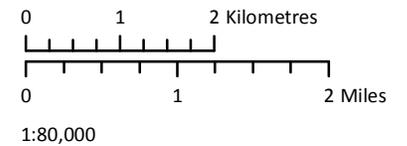
-  Forest
-  Other

#### Features of Interest

-  Tallgrass Prairie Community
-  Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



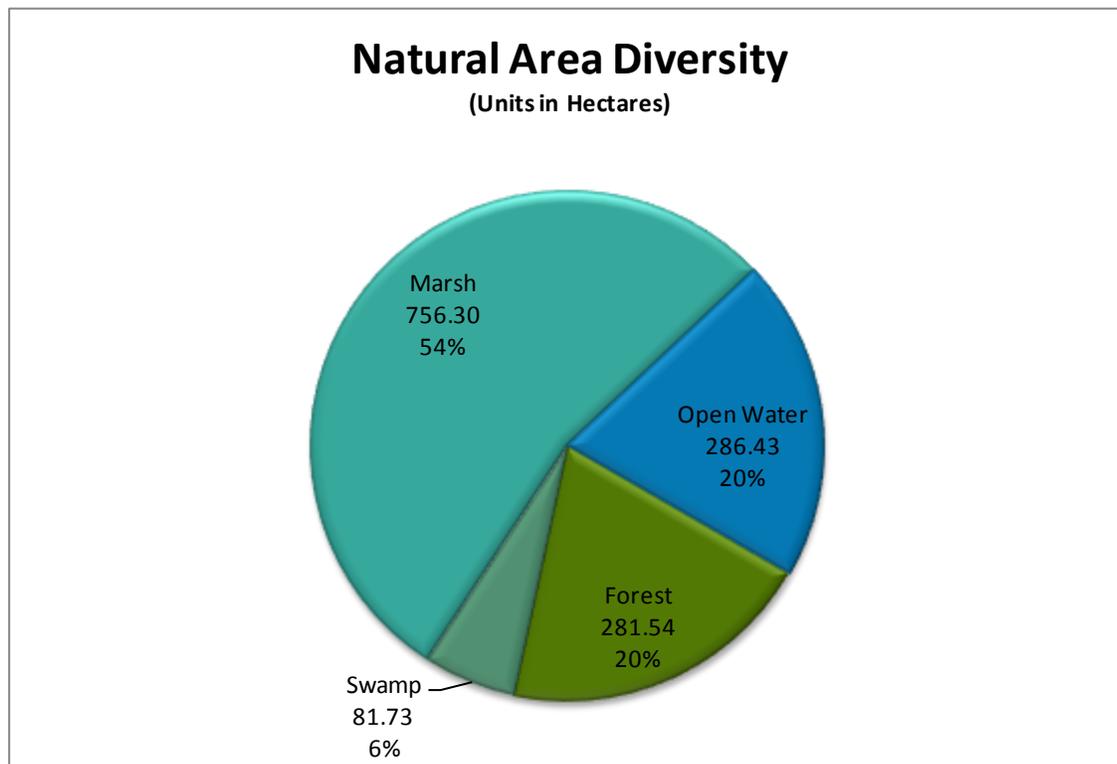
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - PPNP - 20131008.mxd  
TD 08/10/2013

Within the study area there is 1 forest patch greater than 100 ha in size and is 345.3 ha in size. In addition, 11 forest patches within the study area contain 100 m interior forest, of which 1 patch contains 200 m interior forest.

**3.1.9.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within Point Pelee National Park.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	281.54	695.71	20.02
Other Terrestrial	0.00	0.00	0.00
Swamp	81.73	201.96	5.81
Marsh	756.30	1868.85	53.79
Open Water	286.43	707.77	20.37
<b>Total Terrestrial Habitat</b>	<b>281.54</b>	<b>695.71</b>	<b>20.02</b>
<b>Total Wetland Habitat</b>	<b>1124.45</b>	<b>2778.58</b>	<b>79.98</b>
<b>Existing Natural Area</b>	<b>1406.00</b>	<b>3474.28</b>	<b>100.00</b>



This study area also contains patches of significant tallgrass prairie vegetation communities, however these have not yet been mapped.

### **3.1.9.3 Restoration Opportunities**

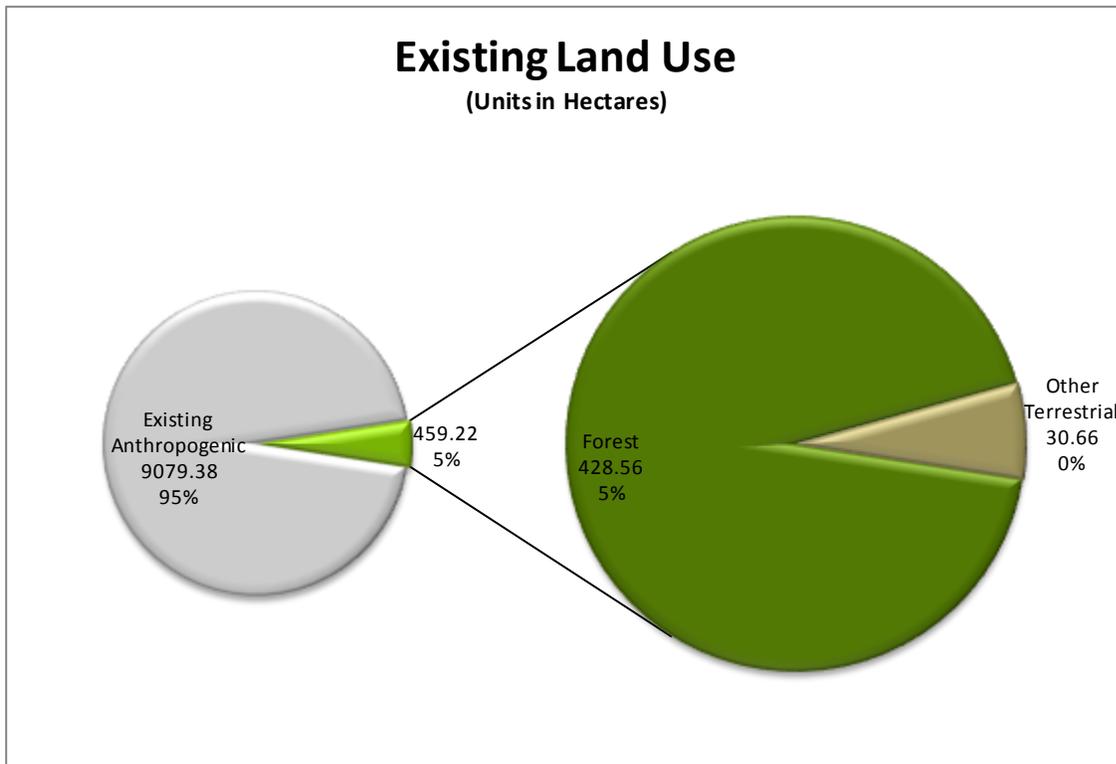
No restoration opportunities are proposed for this study area at this time.

**3.1.10 Town of Tecumseh**

**3.1.10.1 Existing Land Use**

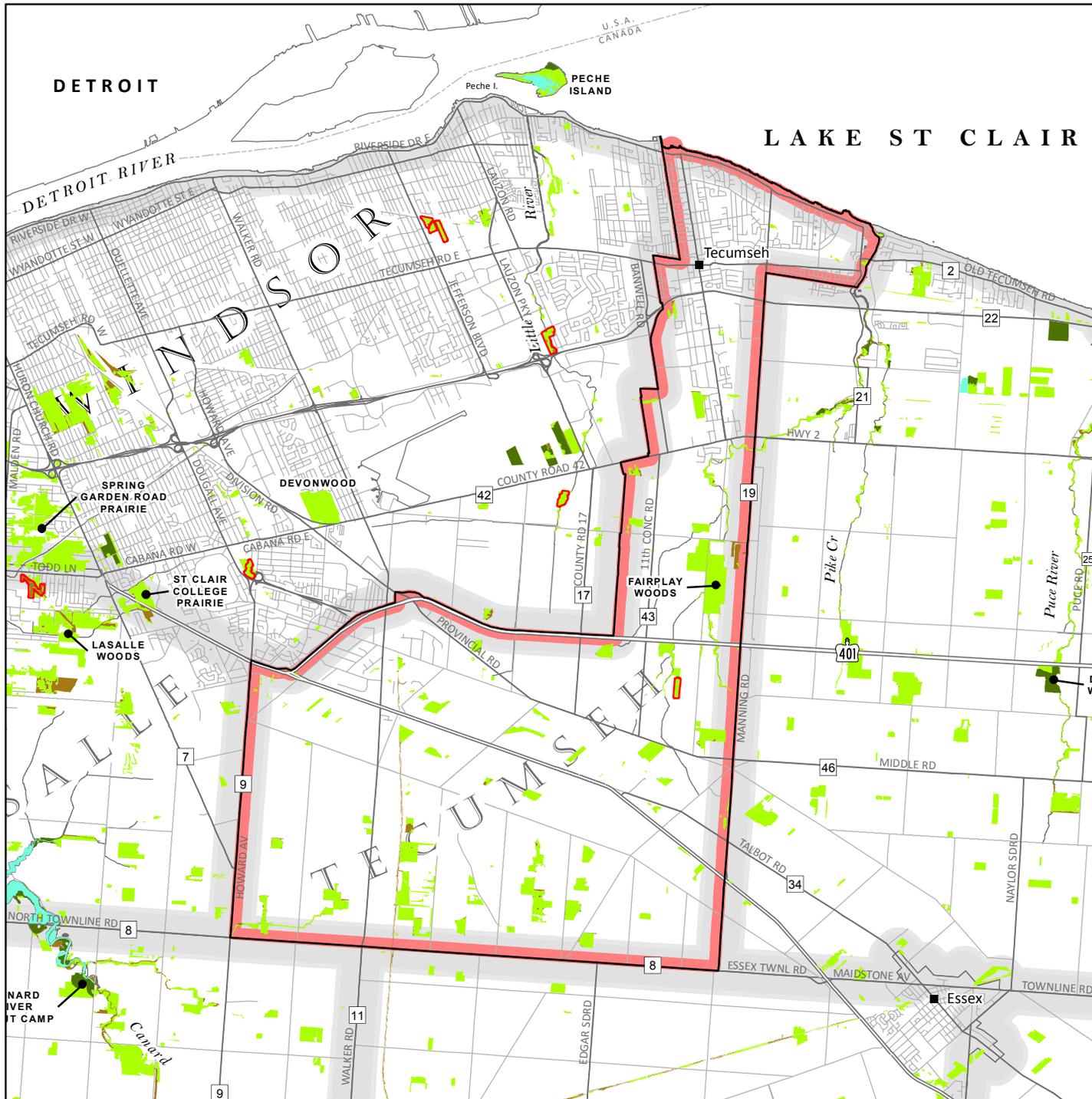
The following Table and Figure summarizes the findings for existing land use within the Town of Tecumseh.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	428.56	1059.00	4.49
Other Terrestrial	30.66	75.76	0.32
<b>Total Terrestrial Habitat</b>	<b>459.22</b>	<b>1134.76</b>	<b>4.81</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>459.22</b>	<b>1134.76</b>	<b>4.81</b>
<b>Existing Anthropogenic</b>	<b>9079.38</b>	<b>22435.54</b>	<b>95.19</b>
<b>Total Land Area</b>	<b>9538.60</b>	<b>23570.30</b>	<b>100.00</b>



# Existing Natural Features

Town of Tecumseh



## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

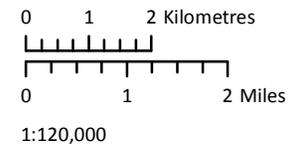
- Forest
- Other

### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



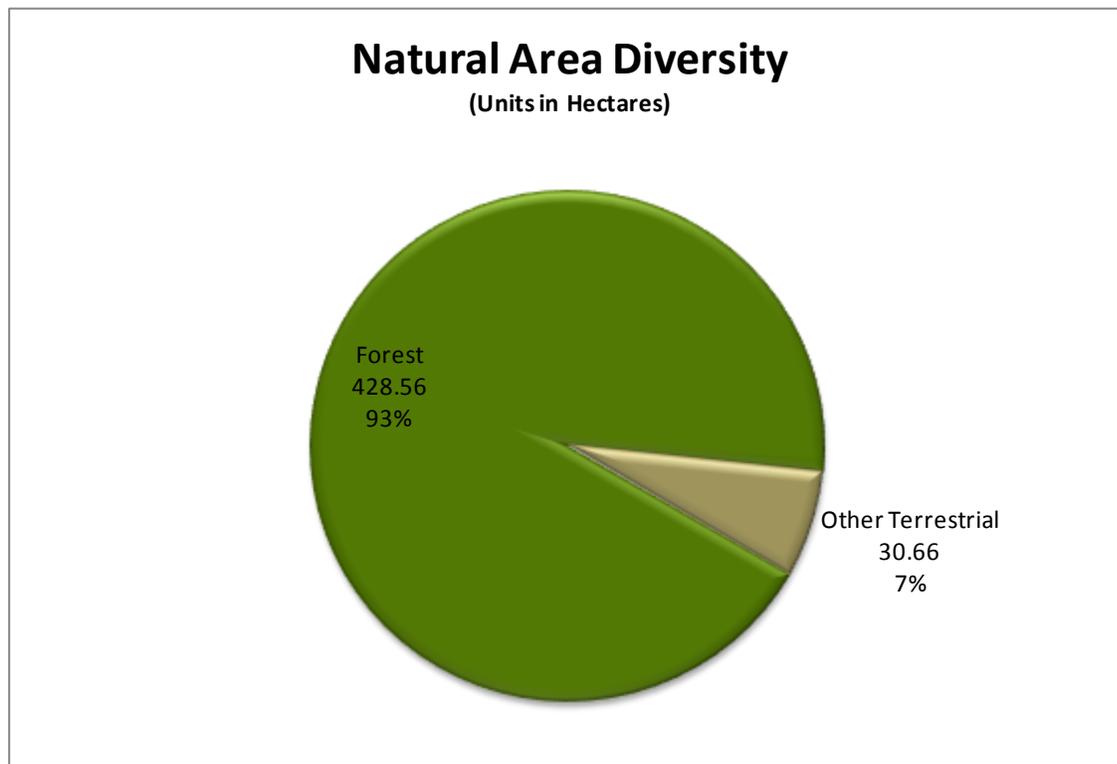
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Tecumseh - 20130424.mxd  
TD 25/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Fairplay Woods and is 52.9 ha in size. In addition, 18 forest patches within the study area contain 100 m interior forest, of which 2 patches contain 200 m interior forest.

**3.1.10.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Town of Tecumseh.

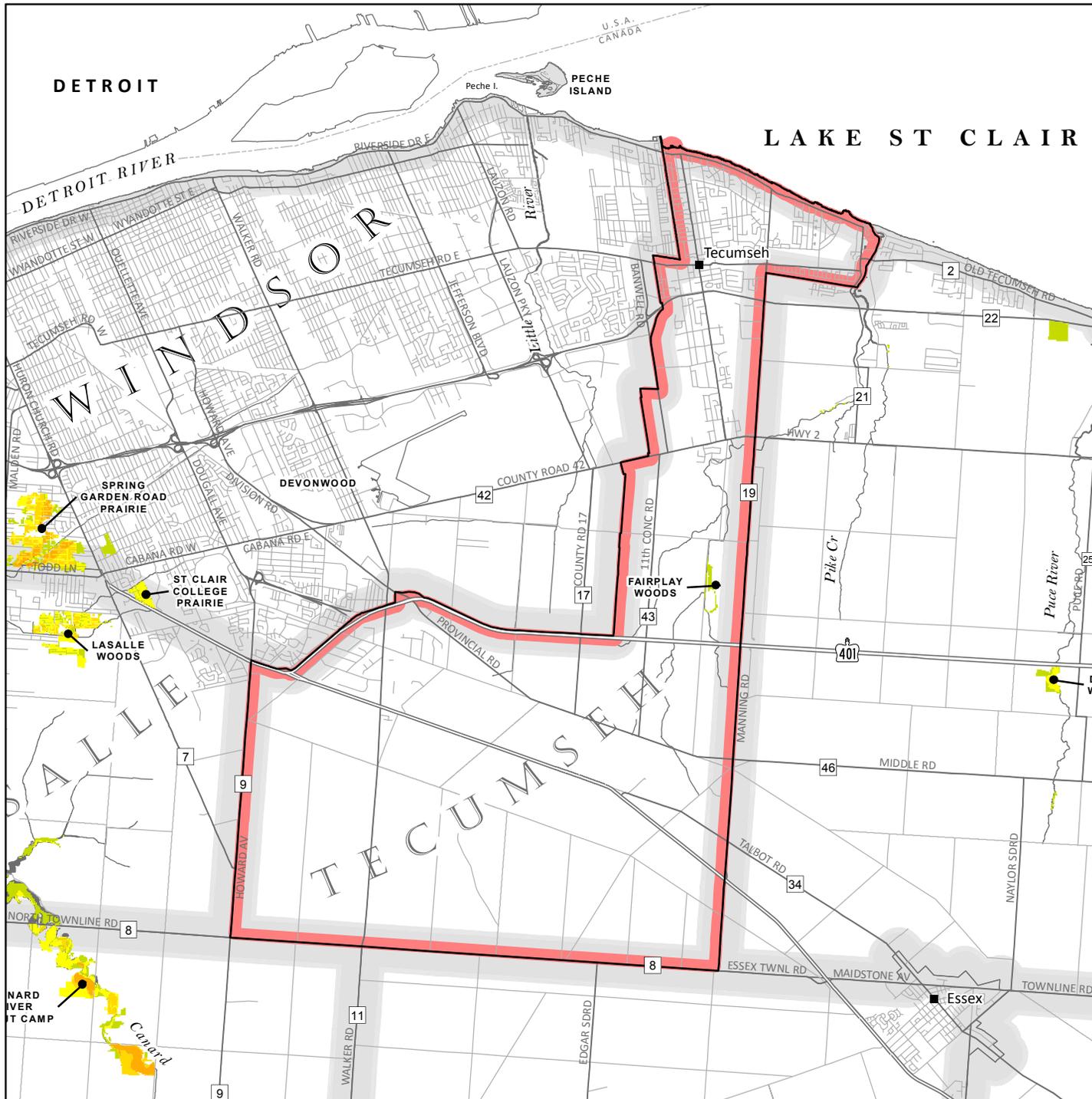
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	428.56	1059.00	93.32
Other Terrestrial	30.66	75.76	6.68
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>459.22</b>	<b>1134.76</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>459.22</b>	<b>1134.76</b>	<b>100.00</b>



This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

# Priority of Existing Natural Features

Town of Tecumseh



## Legend

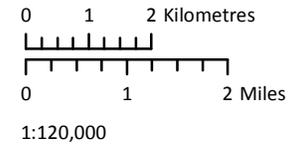
### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

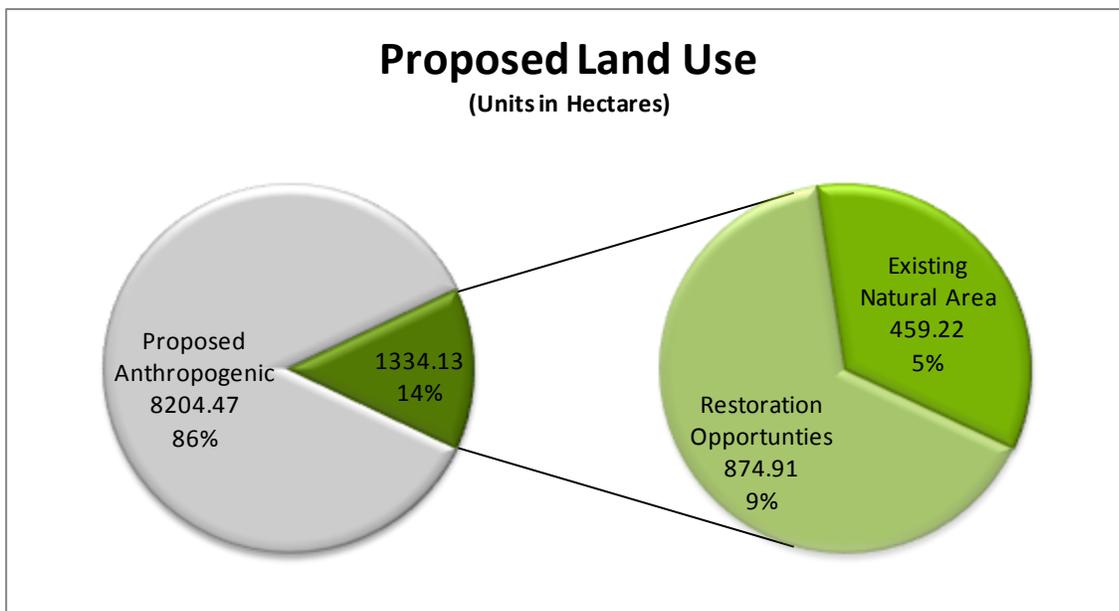


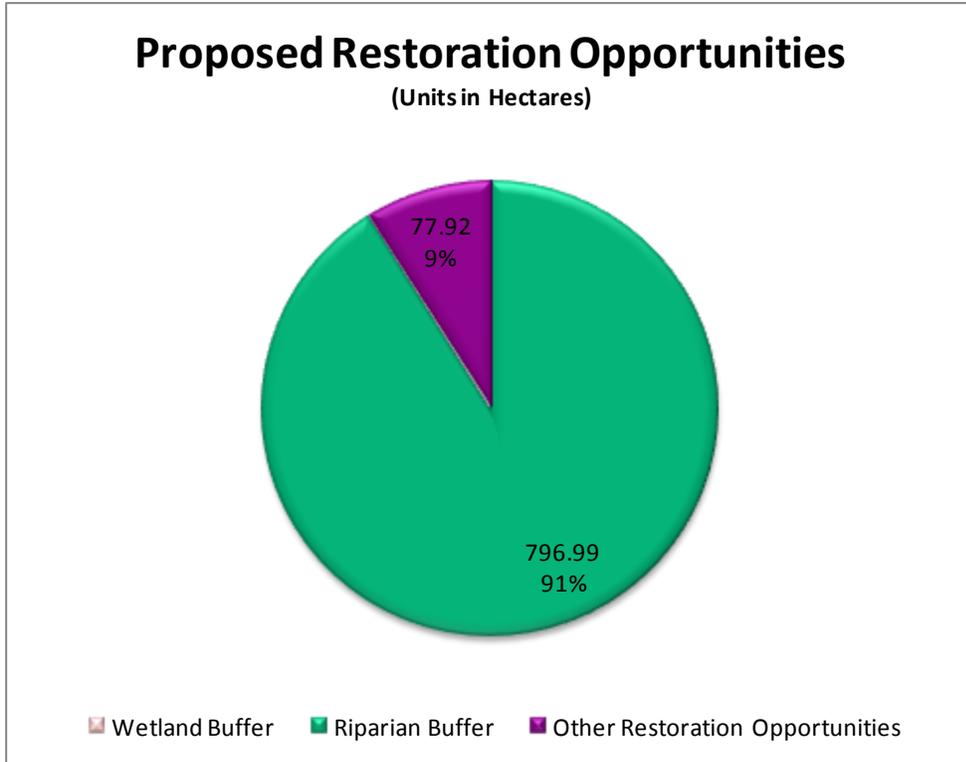
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - Tecumseh - 20130424.mxd  
TD 25/04/2013

**3.1.10.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Town of Tecumseh.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	796.99	1969.39	8.36
Other Restoration Opportunities	77.92	192.54	0.82
<b>Total Restoration Opportunities</b>	<b>874.91</b>	<b>2161.93</b>	<b>9.17</b>
<b>Status Quo Anthropogenic</b>	<b>8204.47</b>	<b>20273.60</b>	<b>86.01</b>
<b>Total Land Area</b>	<b>9538.60</b>	<b>23570.30</b>	<b>100.00</b>

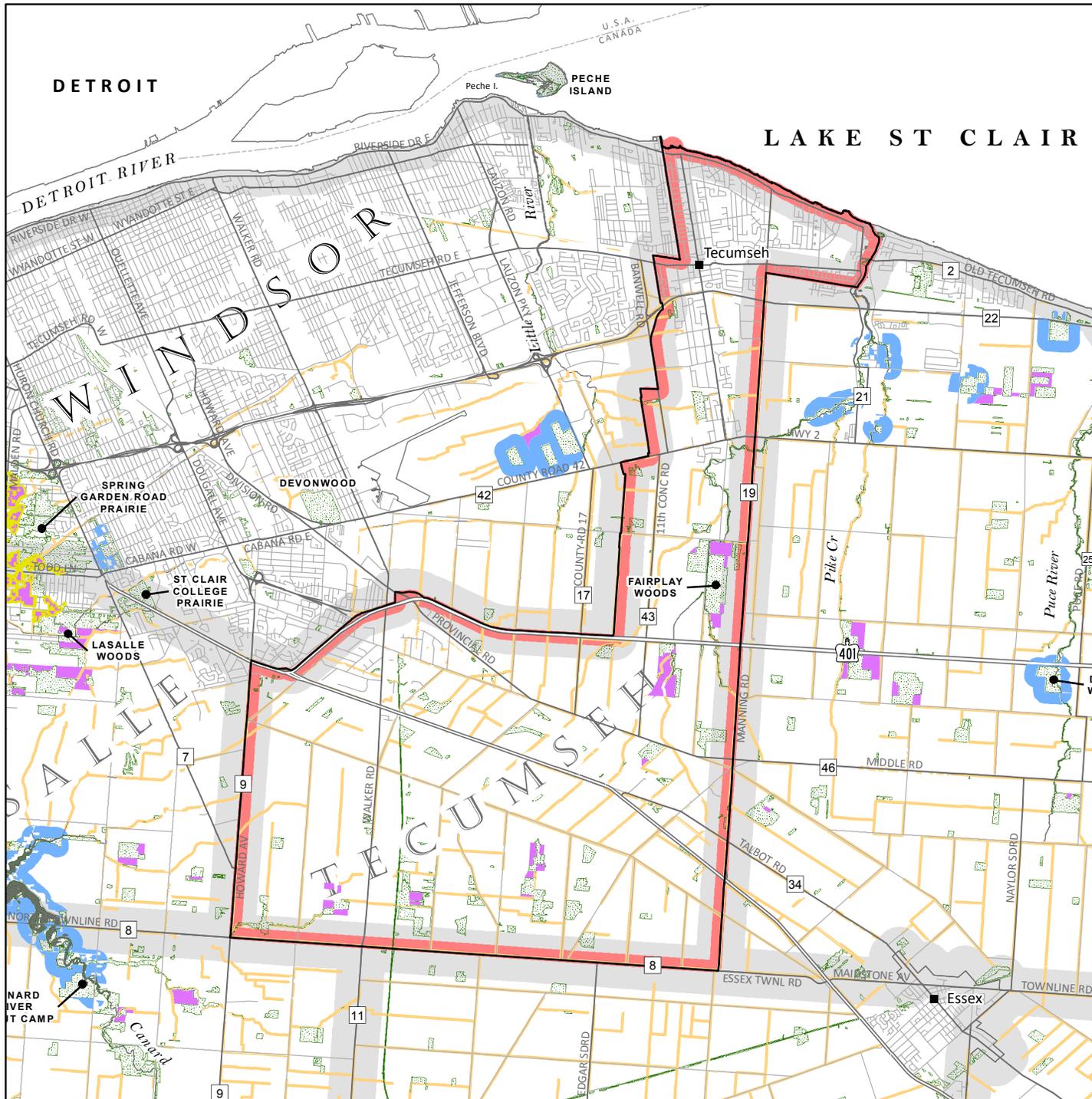




The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include reforestation associated with Fairplay Woods.

# Restoration Opportunity Concepts

Town of Tecumseh



## Legend

### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

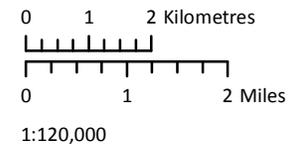
### Opportunity of Interest

- Tallgrass Prairie

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.



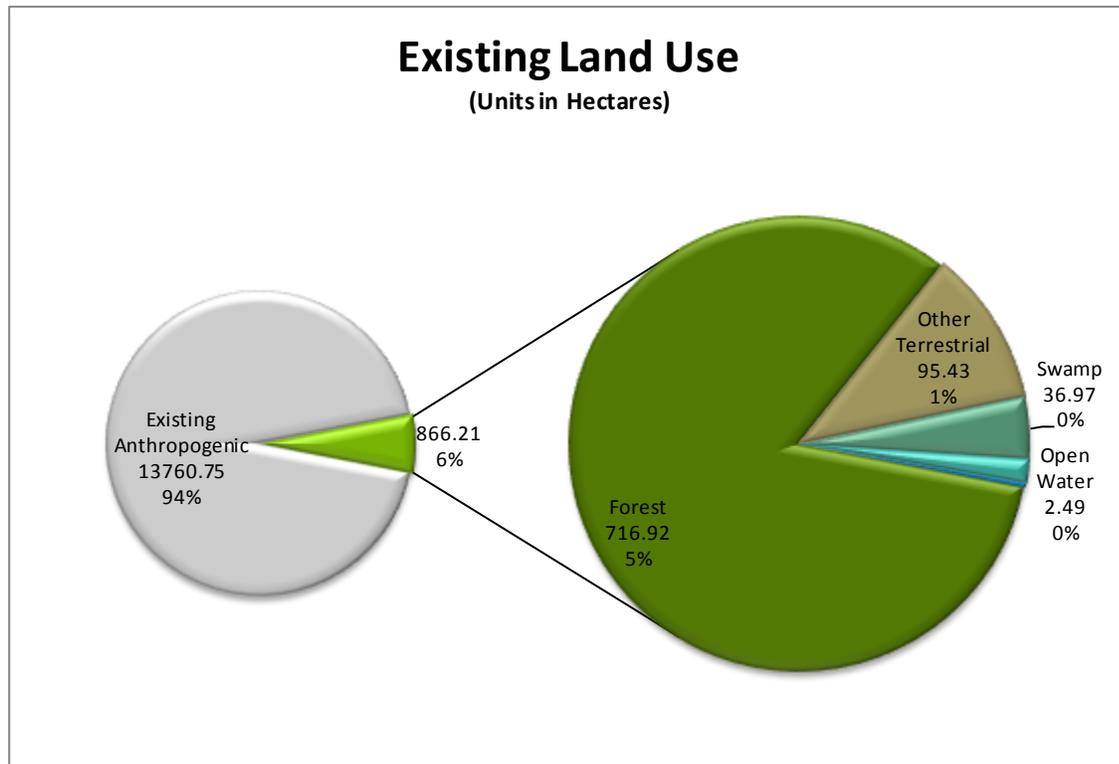
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Tecumseh - 20130424.mxd  
TD 25/04/2013

3.1.11 City of Windsor

3.1.11.1 Existing Land Use

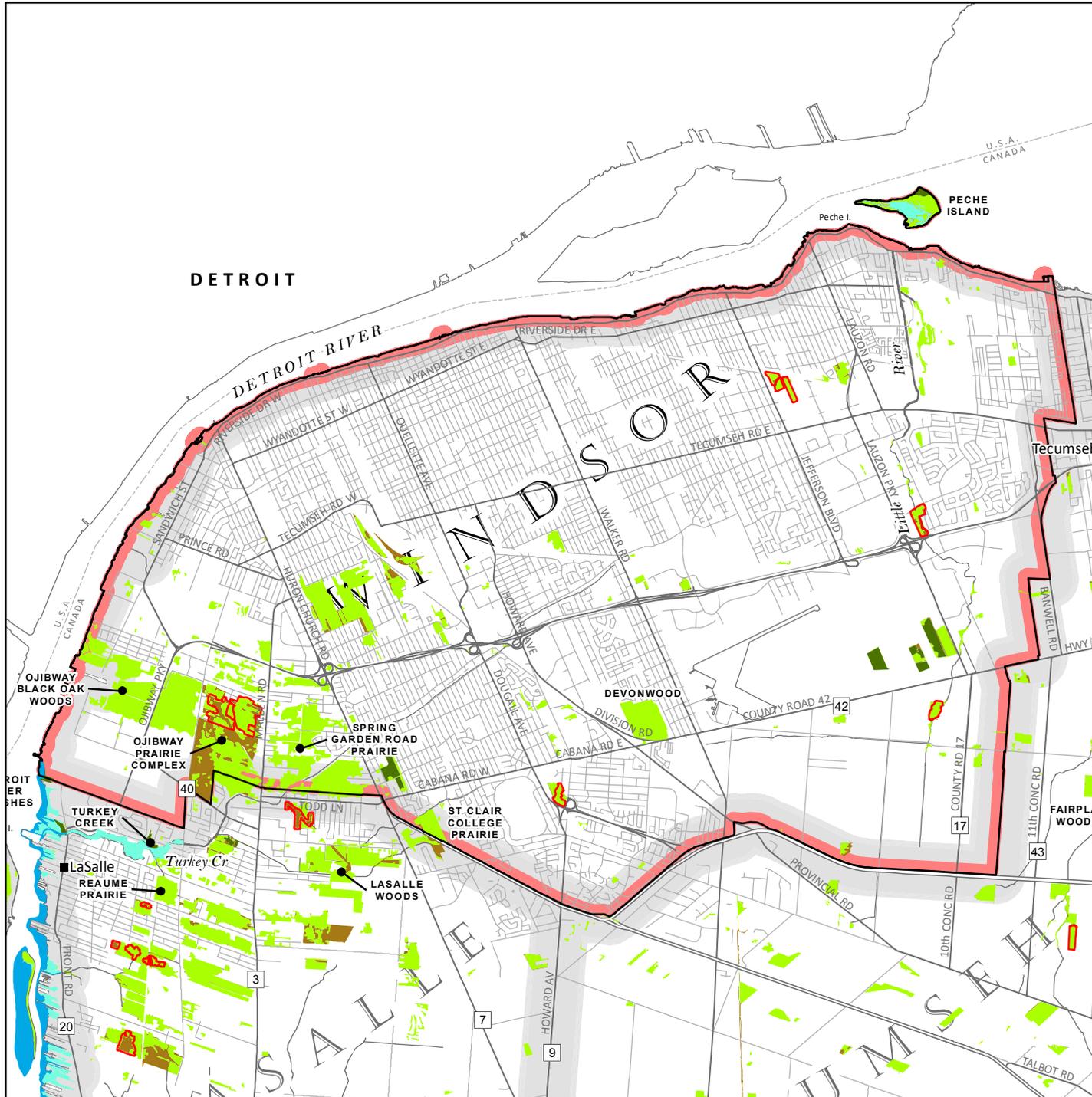
The following Table and Figure summarizes the findings for existing land use within the City of Windsor.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	716.92	1771.54	4.90
Other Terrestrial	95.43	235.82	0.65
<b>Total Terrestrial Habitat</b>	<b>812.35</b>	<b>2007.36</b>	<b>5.55</b>
Wetland Habitat	Hectares	Acres	%
Swamp	36.97	91.36	0.25
Marsh	14.40	35.58	0.10
Open Water	2.49	6.15	0.02
<b>Total Wetland Habitat</b>	<b>53.86</b>	<b>133.08</b>	<b>0.37</b>
<b>Existing Natural Area</b>	<b>866.21</b>	<b>2140.45</b>	<b>5.92</b>
<b>Existing Anthropogenic</b>	<b>13760.75</b>	<b>34003.41</b>	<b>94.08</b>
<b>Total Land Area</b>	<b>14626.96</b>	<b>36143.86</b>	<b>100.00</b>



# Existing Natural Features

City of Windsor



## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

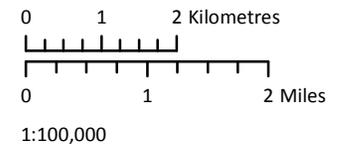
- Forest
- Other

### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source: ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



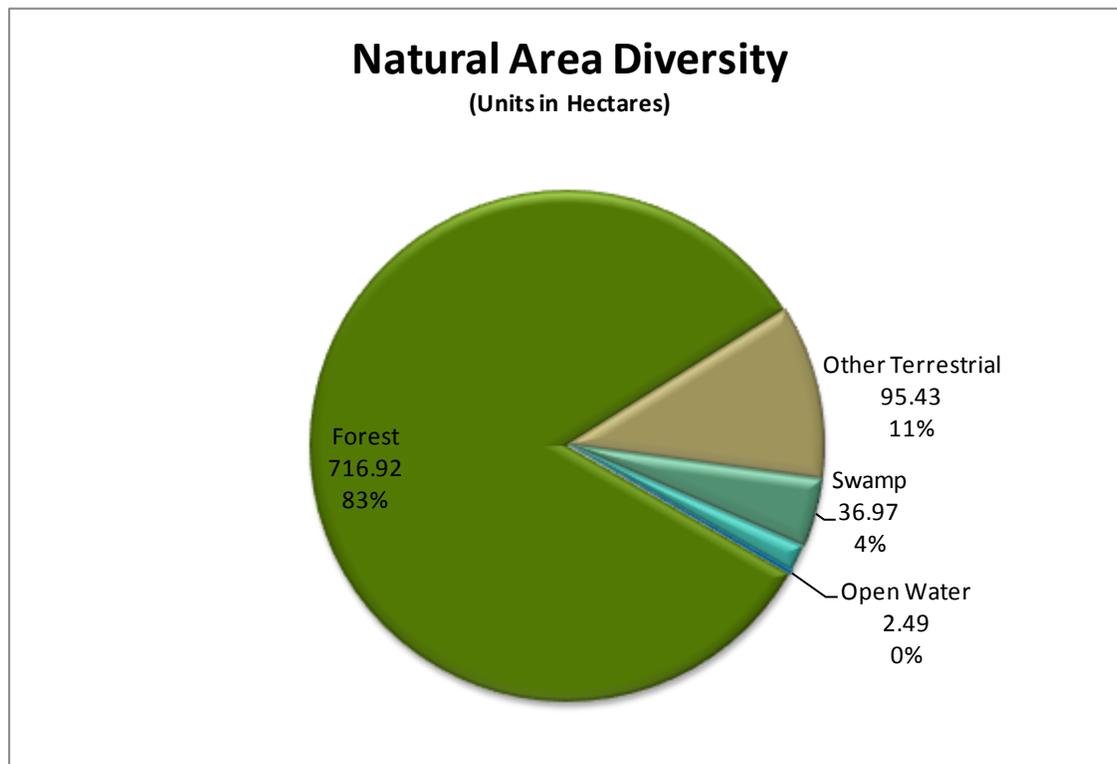
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - Windsor - 20130424.mxd  
TD 25/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Ojibway Park and is 63.3 ha in size. In addition, 22 forest patches within the study area contain 100 m interior forest, of which 4 patches contain 200 m interior forest.

**3.1.11.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the City of Windsor.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	716.92	1771.54	82.76
Other Terrestrial	95.43	235.82	11.02
Swamp	36.97	91.36	4.27
Marsh	14.40	35.58	1.66
Open Water	2.49	6.15	0.29
<b>Total Terrestrial Habitat</b>	<b>812.35</b>	<b>2007.36</b>	<b>93.78</b>
<b>Total Wetland Habitat</b>	<b>53.86</b>	<b>133.08</b>	<b>6.22</b>
<b>Existing Natural Area</b>	<b>866.21</b>	<b>2140.45</b>	<b>100.00</b>



This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

# Priority of Existing Natural Features

City of Windsor

## Legend

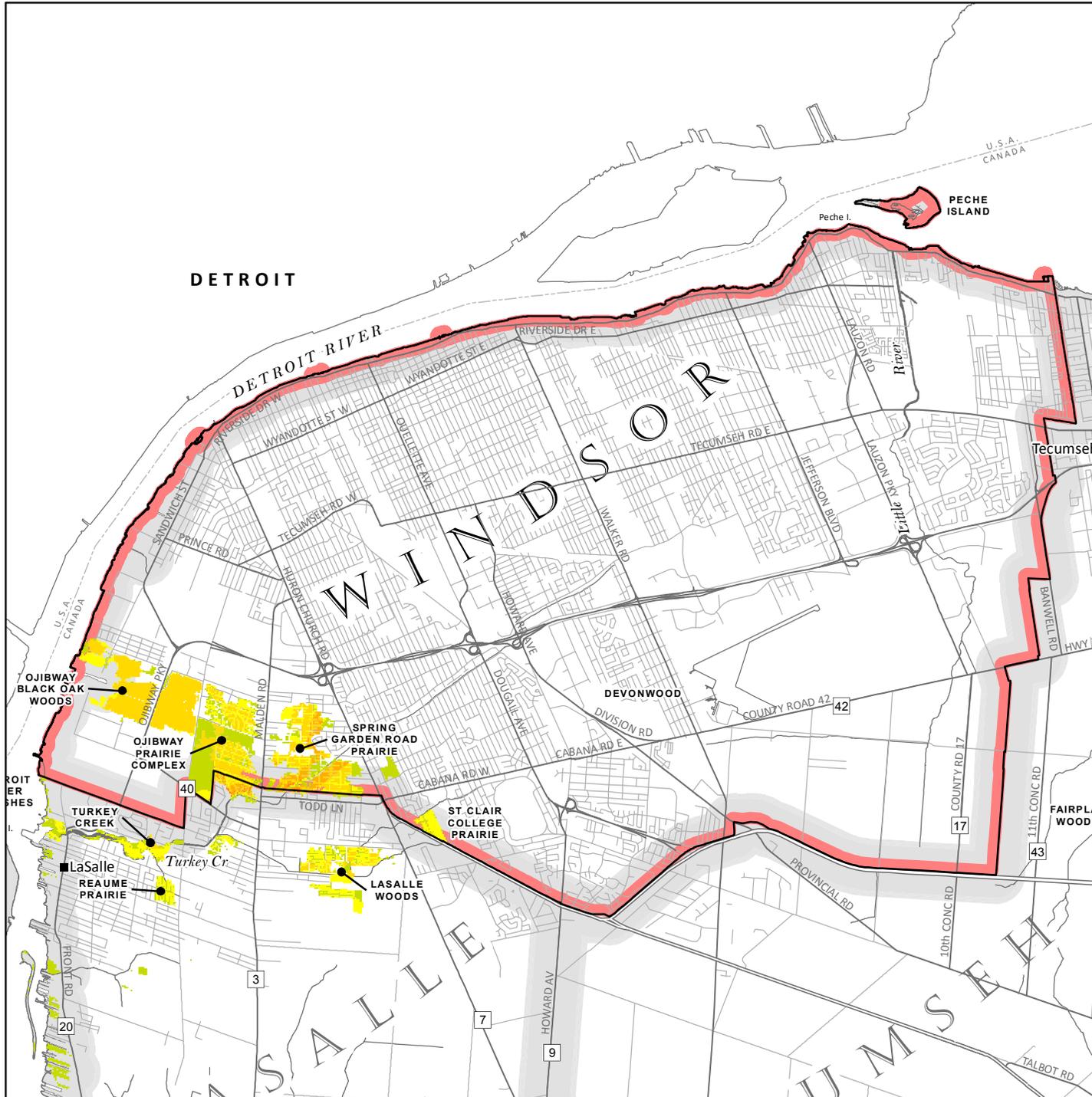
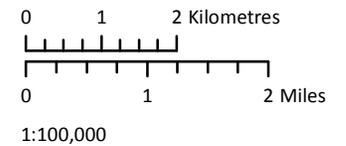
### Number of Criteria Met



Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

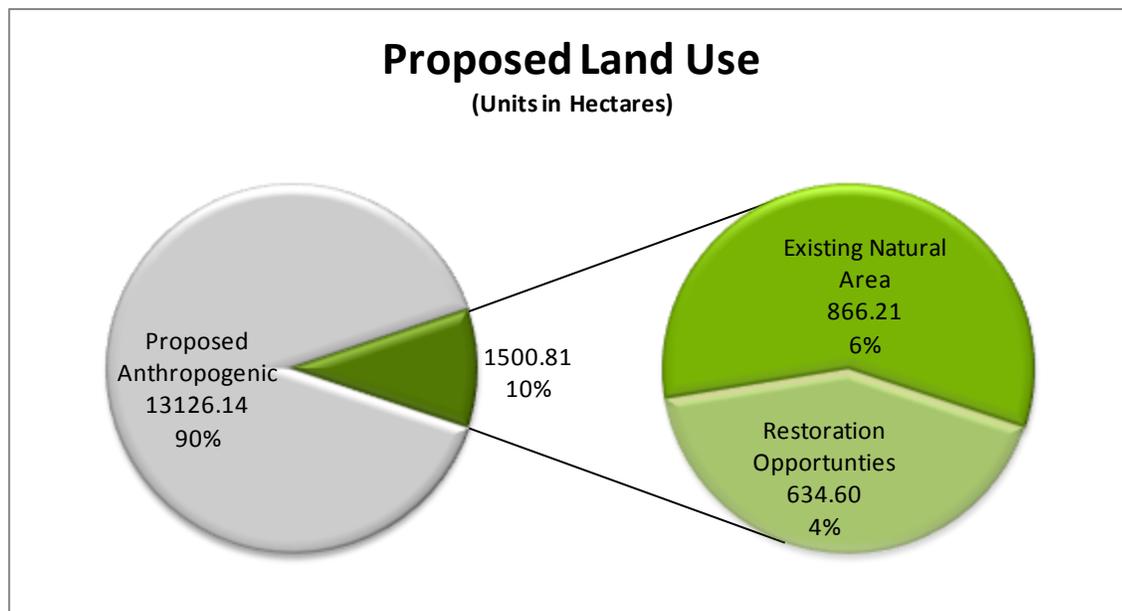


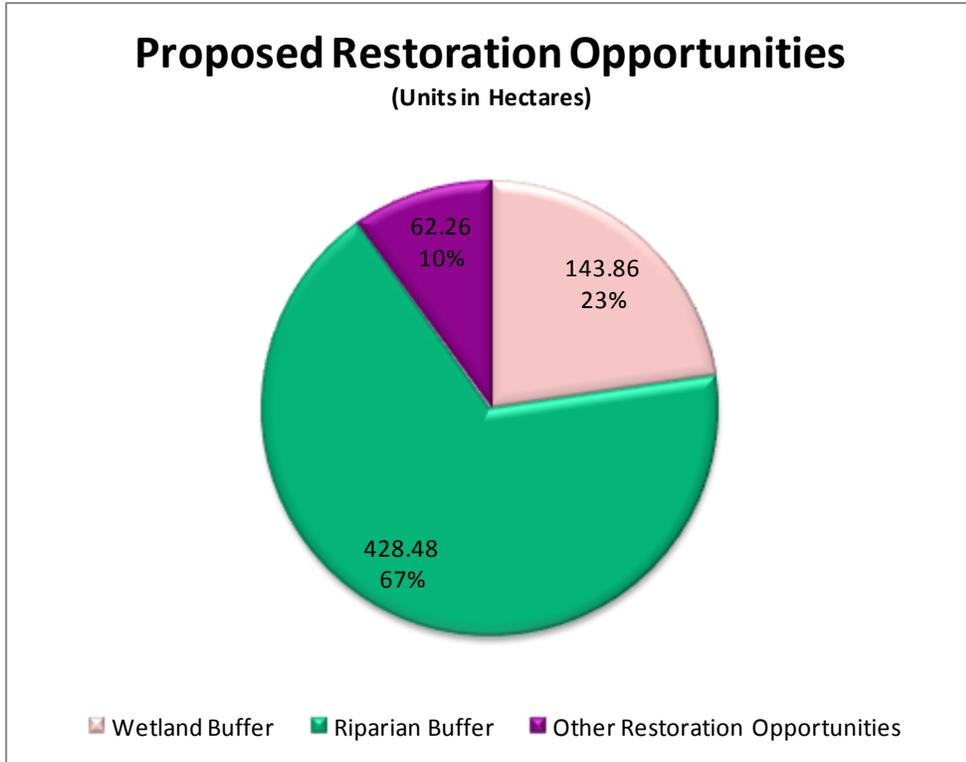
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Priority Map - Existing Natural Features - Windsor - 20130424.mxd  
TD 25/04/2013

**3.1.11.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the City of Windsor.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	143.86	355.49	0.98
Riparian Buffer	428.48	1058.79	2.93
Other Restoration Opportunities	62.26	153.85	0.43
<b>Total Restoration Opportunities</b>	<b>634.60</b>	<b>1568.13</b>	<b>4.34</b>
<b>Status Quo Anthropogenic</b>	<b>13126.14</b>	<b>32435.28</b>	<b>89.74</b>
<b>Total Land Area</b>	<b>14626.96</b>	<b>36143.86</b>	<b>100.00</b>





The location and type of proposed restoration opportunities are depicted in the following map. For information on the high priority restoration opportunities, please consult the individual chapters within Section 3.2 (Watershed Analysis) of this report. Highest priority restoration opportunities within the study area include tallgrass prairie community restoration associated with the Ojibway Prairie Complex, as well as riparian restoration along the Grand Marais Drain as shown in the following map.

# Restoration Opportunity Concepts

City of Windsor

## Legend

### Concept Type

- Wetland Buffer (240m)
- Riparian Buffer (30m)
- Other

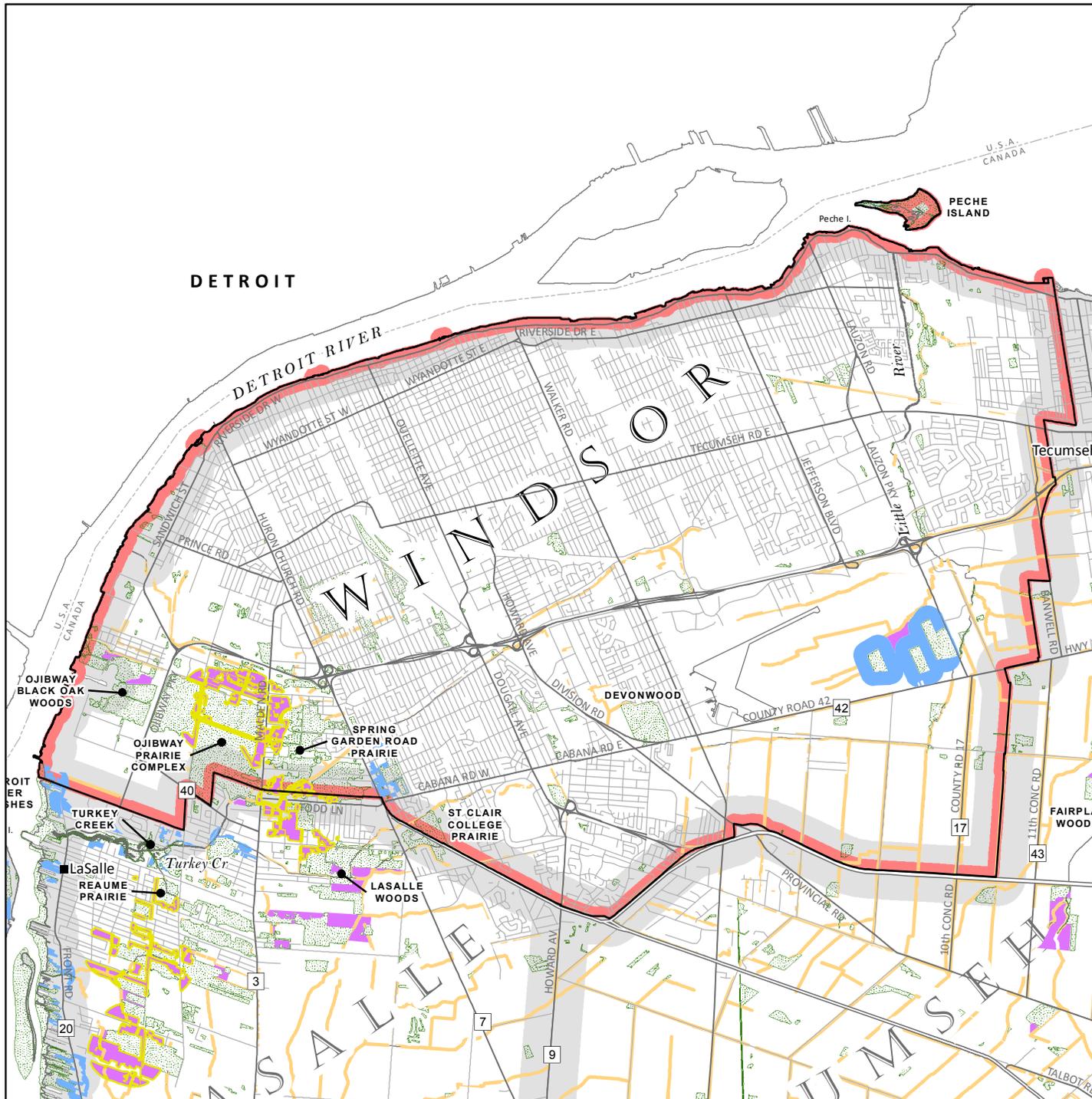
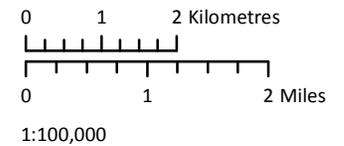
### Opportunity of Interest

- Tallgrass Prairie

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of restoration opportunities as shown on the map are approximate. The location and characterization of these sites are subject to change.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Restoration Opportunity Concepts - Windsor - 20130424.mxd  
TD 25/04/2013

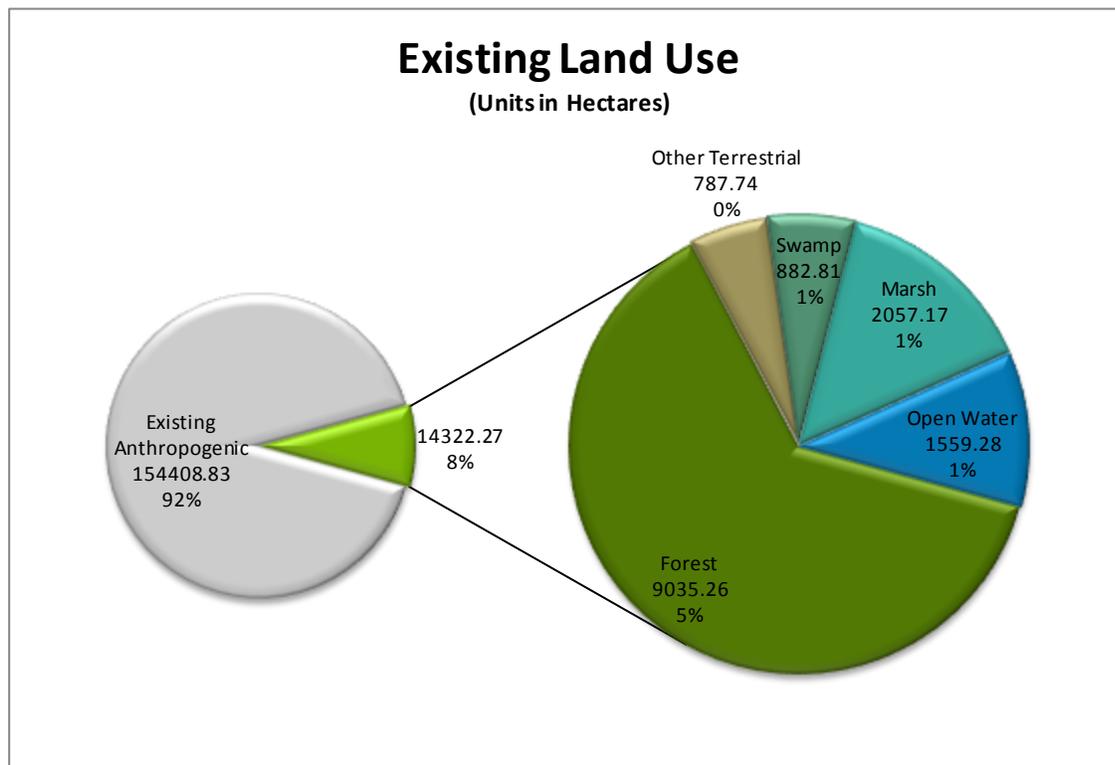
### 3.2 Watershed Analysis

#### 3.2.1 ERCA Watershed

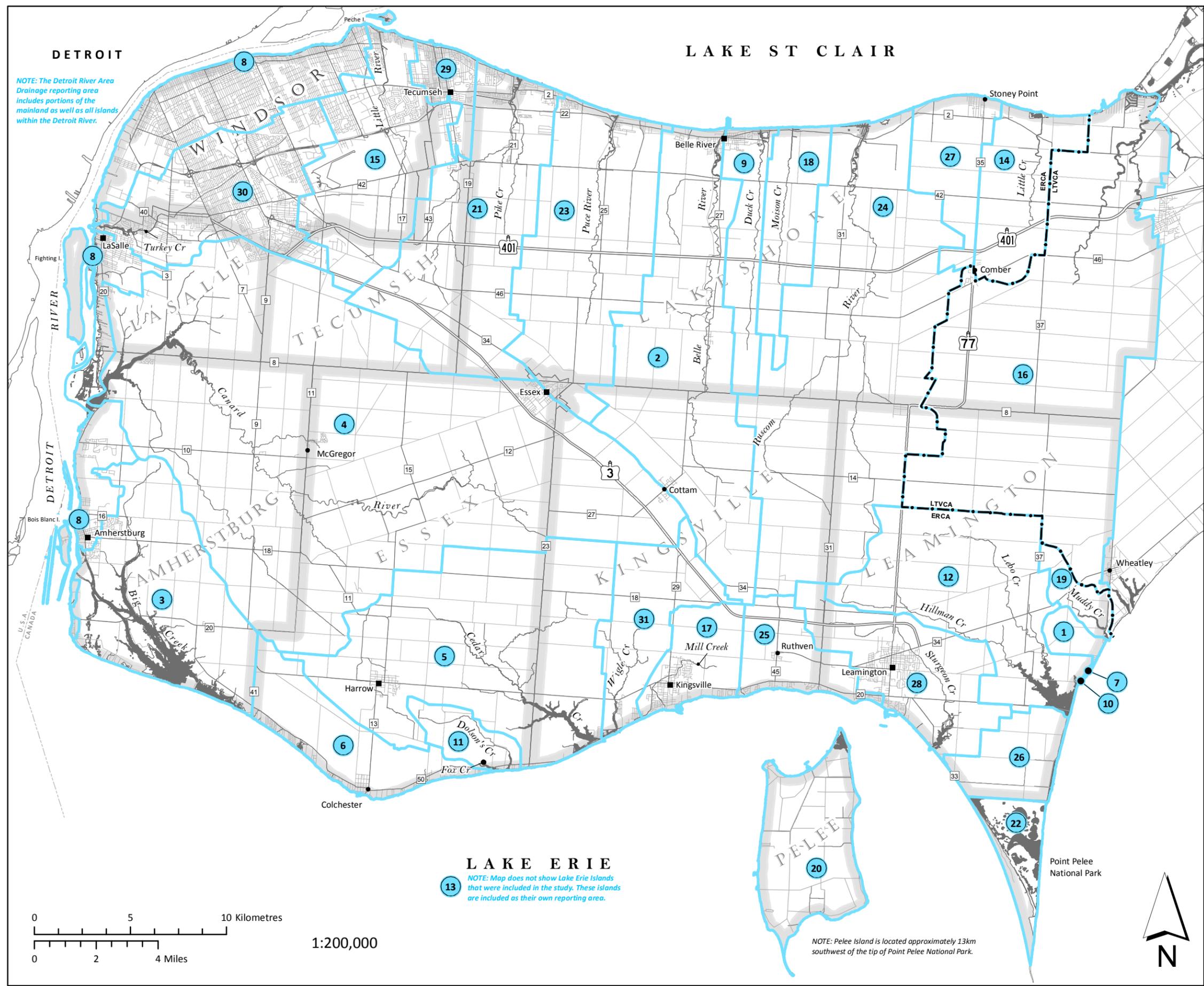
##### 3.2.1.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the entire ERCA watershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	9035.26	22326.53	5.35
Other Terrestrial	787.74	1946.54	0.47
<b>Total Terrestrial Habitat</b>	<b>9823.00</b>	<b>24273.07</b>	<b>5.82</b>
Wetland Habitat	Hectares	Acres	%
Swamp	882.81	2181.46	0.52
Marsh	2057.17	5083.36	1.22
Open Water	1559.28	3853.05	0.92
<b>Total Wetland Habitat</b>	<b>4499.26</b>	<b>11117.88</b>	<b>2.67</b>
<b>Existing Natural Area</b>	<b>14322.27</b>	<b>35390.95</b>	<b>8.49</b>
<b>Existing Anthropogenic</b>	<b>154408.83</b>	<b>381551.02</b>	<b>91.51</b>
<b>Total Land Area</b>	<b>168731.10</b>	<b>416941.96</b>	<b>100.00</b>



# Subwatershed Reporting Areas



**NOTE:** The Detroit River Area Drainage reporting area includes portions of the mainland as well as all islands within the Detroit River.

**NOTE:** Map does not show Lake Erie Islands that were included in the study. These islands are included as their own reporting area.

**NOTE:** Pelee Island is located approximately 13km southwest of the tip of Point Pelee National Park.

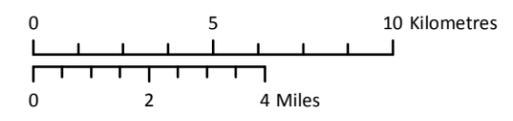
## Legend

- Extent of Subwatershed Reporting Area
  - Conservation Authority Boundary
- ERCA - Essex Region Conservation Authority  
LTVCA - Lower Thames Conservation Authority

## Subwatersheds

1. Atwell Drain
2. Belle River
3. Big Creek
4. Canard River
5. Cedar Creek
6. Colchester Area Drainage
7. Coterie Park Drainage System
8. Detroit River Area Drainage
9. Duck Creek
10. Elmdale Drainage System
11. Fox/Dolson's Creek
12. Hillman Creek
13. Lake Erie Islands
14. Little Creek
15. Little River
16. LTVCA\*
17. Mill Creek
18. Moison Creek
19. Muddy Creek
20. Pelee Island
21. Pike Creek
22. Point Pelee Marsh
23. Puce River
24. Ruscom River
25. Ruthven Area Drainage
26. Southeast Leamington Drainage Schemes
27. Stoney Point Area Drainage
28. Sturgeon Creek
29. Tecumseh Area Drainage
30. Turkey Creek
31. Wigle Creek

\*within County of Essex



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DETROIT

LAKE ST CLAIR

# Existing Natural Features

## Legend

### Wetland

- Open Water
- Marsh
- Swamp

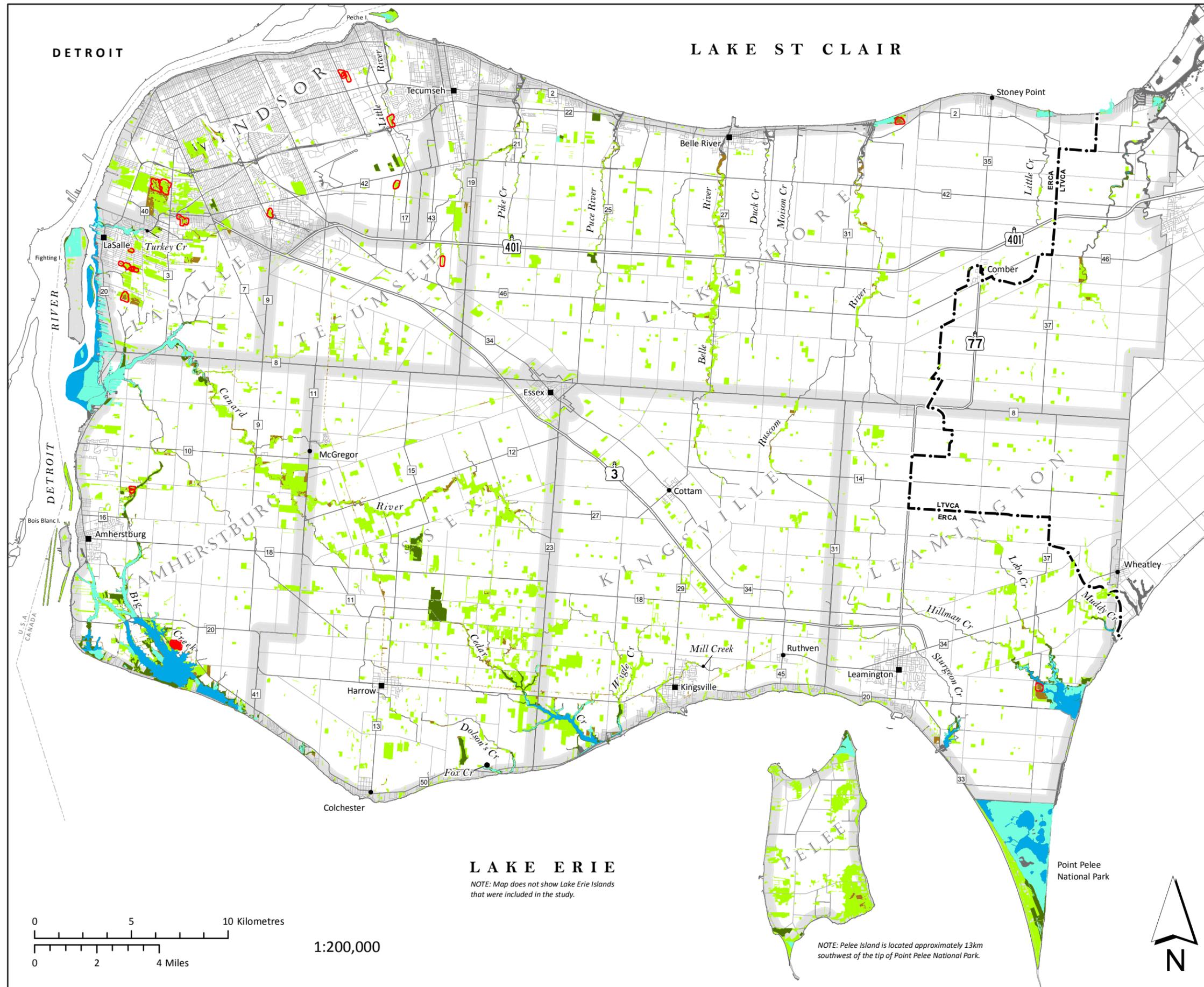
### Terrestrial

- Forest
- Other

### Features of Interest

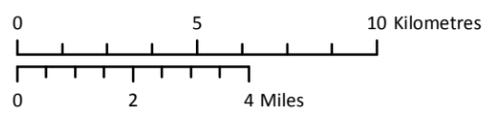
- Tallgrass Prairie Community

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



LAKE ERIE

NOTE: Map does not show Lake Erie Islands that were included in the study.



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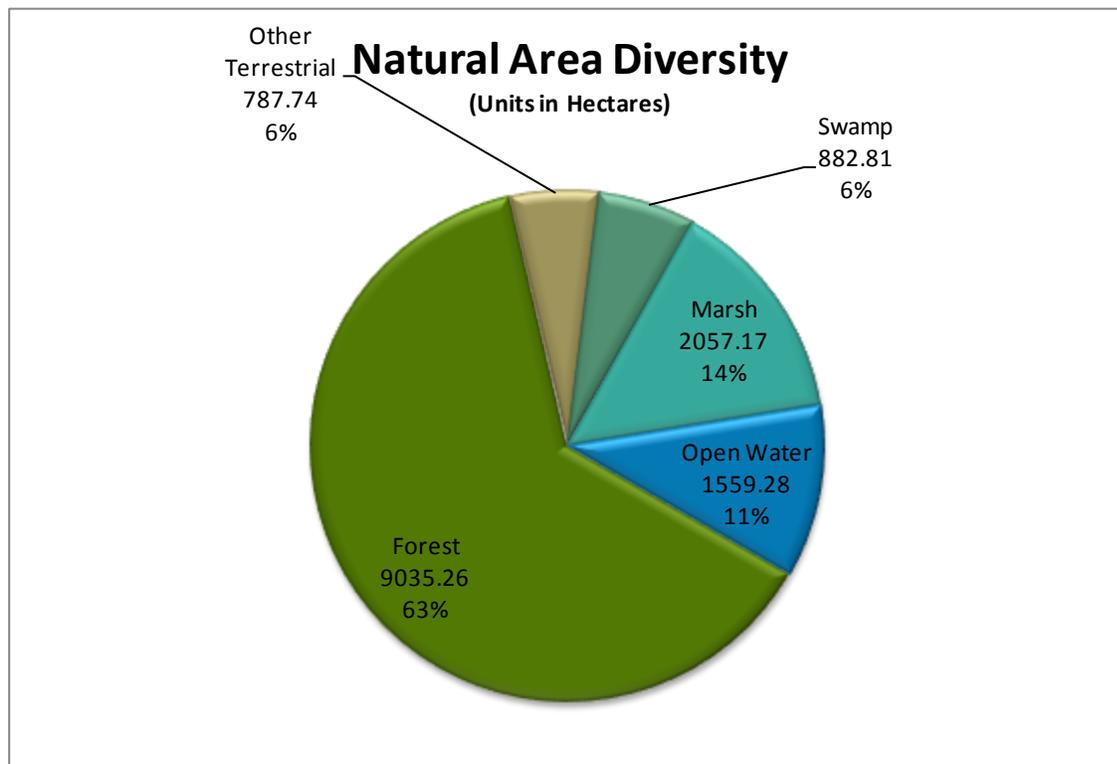


Within the study area there are 7 forest patches greater than 100 ha in size. These are associated with the Arner Pin Oak Woods, Canard River Kentucky Coffee Tree Woods, Cedar Creek, Marshfield Woods, Middle Point/Brown’s Road Savannah, Point Pelee National Park, and Stone Road Alvar. The largest forest patch is part of Point Pelee National Park and is 343.3 ha in size. In addition, 307 forest patches within the study area contain 100 m interior forest, of which 39 patches contain 200 m interior forest.

**3.2.1.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the entire ERCA watershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	9035.26	22326.53	63.09
Other Terrestrial	787.74	1946.54	5.50
Swamp	882.81	2181.46	6.16
Marsh	2057.17	5083.36	14.36
Open Water	1559.28	3853.05	10.89
<b>Total Terrestrial Habitat</b>	<b>9823.00</b>	<b>24273.07</b>	<b>68.59</b>
<b>Total Wetland Habitat</b>	<b>4499.26</b>	<b>11117.88</b>	<b>31.41</b>
<b>Existing Natural Area</b>	<b>14322.27</b>	<b>35390.95</b>	<b>100.00</b>

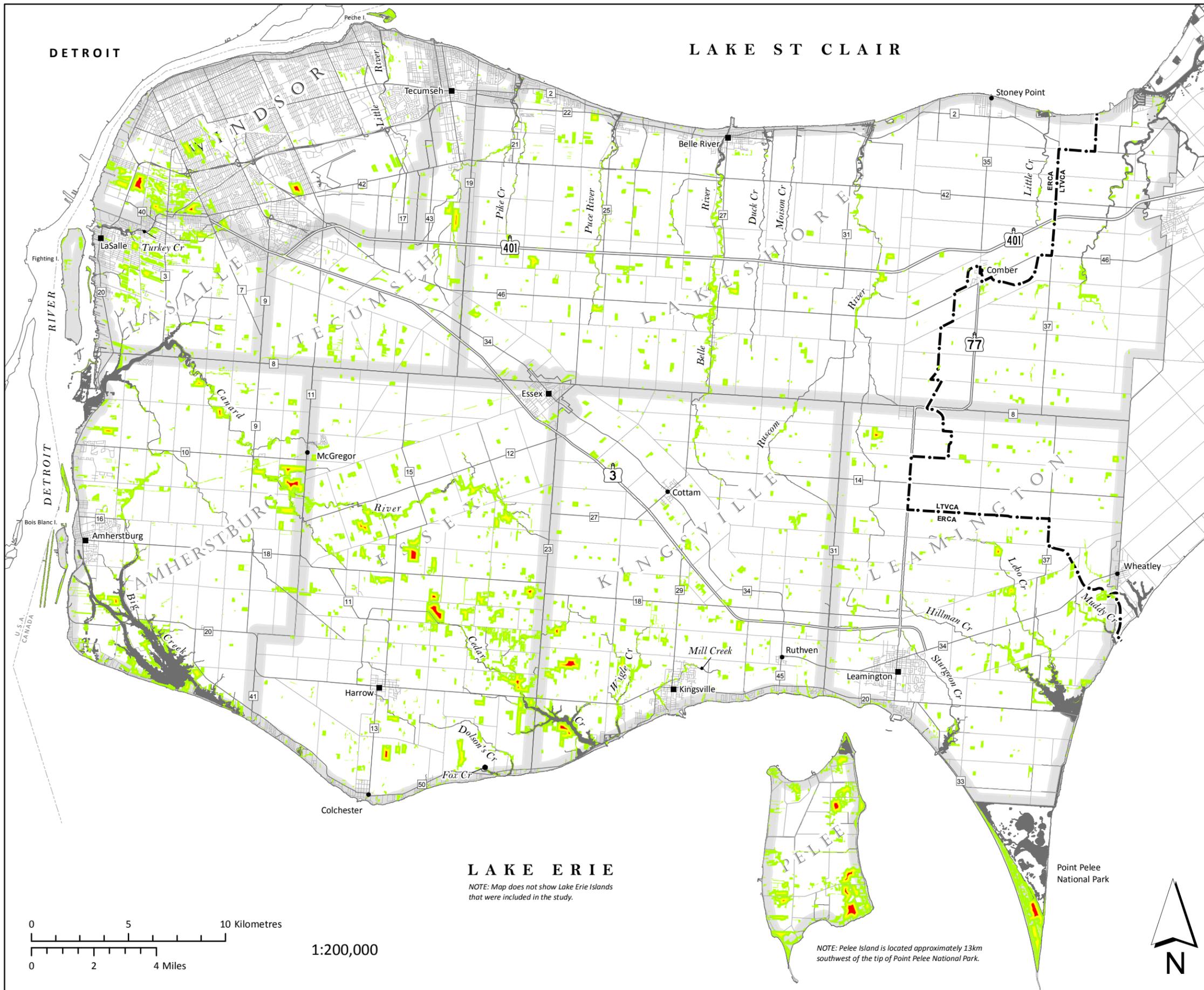


This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

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# Interior Forest Features



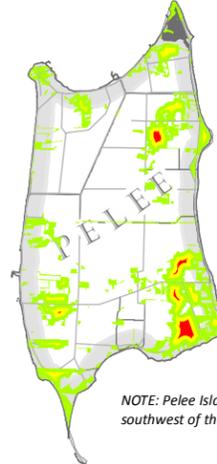
### Legend

- 200m Interior Forest
- 100m Interior Forest
- Forest

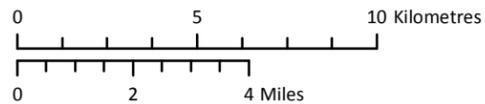
The extent of existing forest features as shown on the map are approximate. Analysis includes all wooded features (forest and swamp) mapped for this project regardless of size. Forest features were delineated from spring 2008 air photography. Swamp features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.

### LAKE ERIE

NOTE: Map does not show Lake Erie Islands that were included in the study.



NOTE: Pelee Island is located approximately 13km southwest of the tip of Point Pelee National Park.



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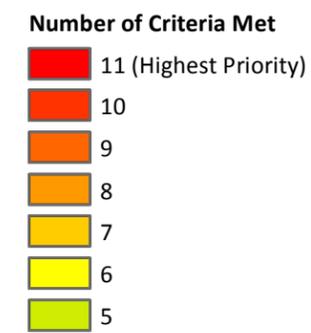


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# Priority of Existing Natural Features



## Legend

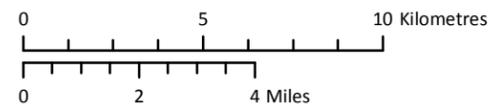


The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 5 criteria not shown. See report for full descriptions of input criteria.

### INPUT CRITERIA:\*

- Existing Natural Feature (Wetland or Terrestrial)
- Areas of Natural or Scientific Interest (ANSI)
- Environmentally Significant Area (ESA)
- Significant Valley Land
- Significant Woodland (> 2ha)
- Interior Forest (100m)
- Favourable Vegetation Index (NDVI)\*\*
- Favourable Physiography\*\*
- Flood Land\*\*
- Public Land\*\*
- Nature Conservancy of Canada (NCC) Priority Land\*\*

\* See report for full descriptions of input criteria  
 \*\* Only within an existing natural feature



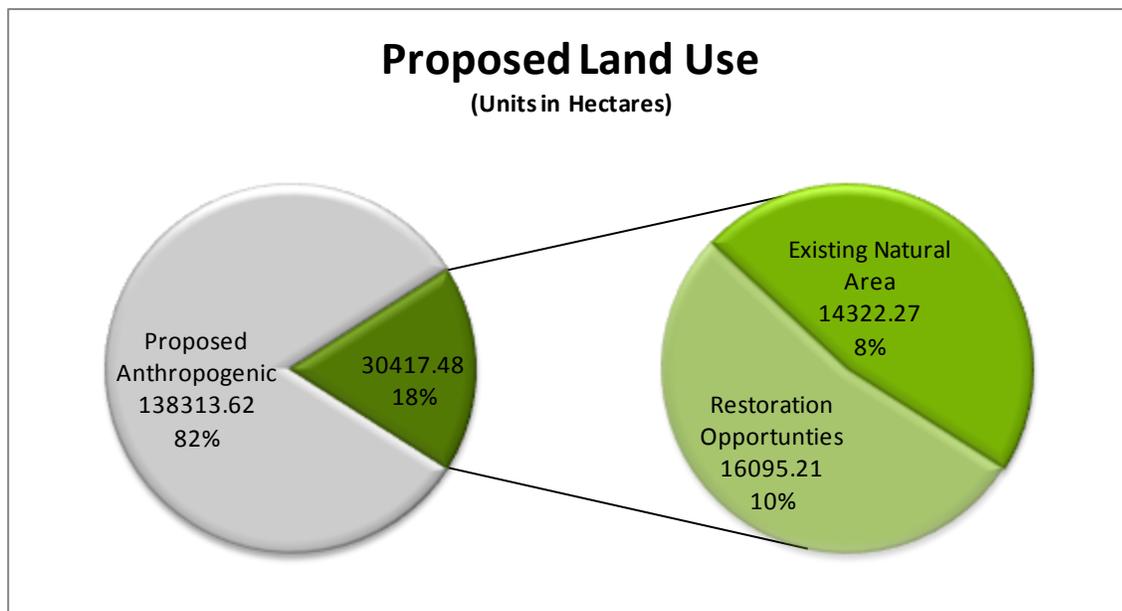
1:200,000

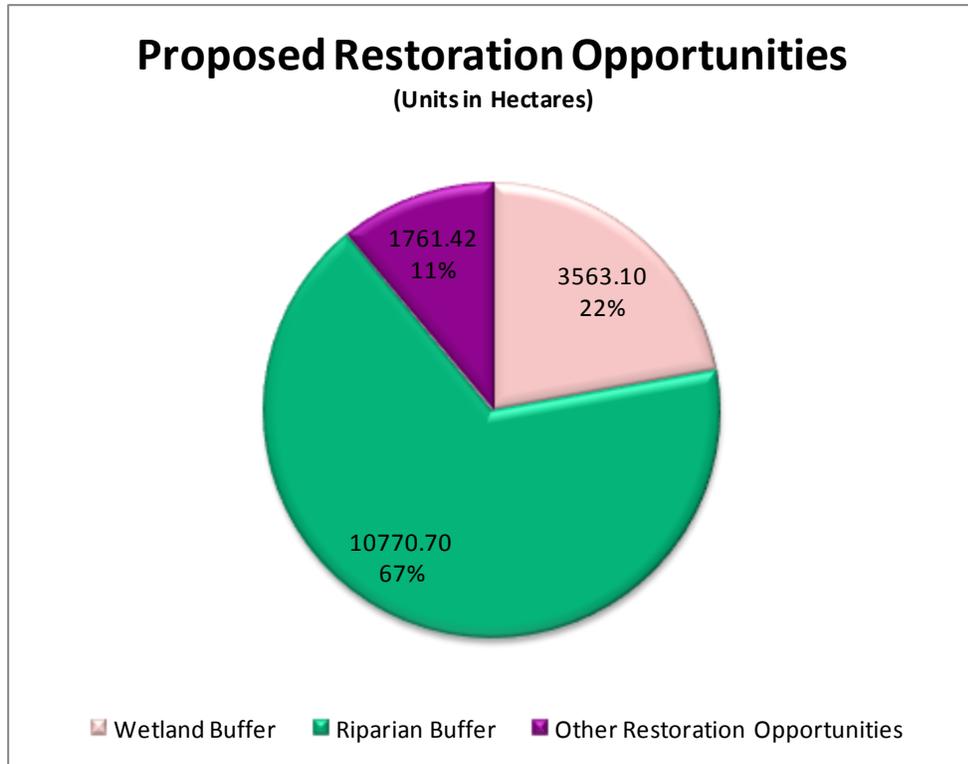


**3.2.1.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the entire ERCA watershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	3563.10	8804.57	2.11
Riparian Buffer	10770.70	26614.86	6.38
Other Restoration Opportunities	1761.42	4352.54	1.04
<b>Total Restoration Opportunities</b>	<b>16095.21</b>	<b>39771.97</b>	<b>9.54</b>
<b>Status Quo Anthropogenic</b>	<b>138313.62</b>	<b>341779.04</b>	<b>81.97</b>
<b>Total Land Area</b>	<b>168731.10</b>	<b>416941.96</b>	<b>100.00</b>





The location of the proposed restoration opportunities are depicted in the following maps.

Highest priority restoration opportunities within the study area include:

- Wetland buffers adjacent to Big Creek Marsh, Canard River Marshes, Cedar Creek, Detroit River Marshes, Fish Point, Fox/Dolson’s Creek, Hillman Marsh, Lypp’s Beach, Muddy Creek, Oxley Poison Sumac Swamp, Ruscom Shores, Sturgeon Creek, and Tremblay Beach Provincially Significant Wetlands;
- Restoration associated with the ERCA owned Arner Woods property (Cedar Creek), Fairplay Woods (Pike Creek), LaSalle Woods (Turkey Creek), New Settlement Woods (Colchester Area Drainage), and the Red Cedar Savannah (Pelee Island drainage area);
- Restoration associated with the Upper Hillman, Hillman Sand Hills and Hillman Three-Birds Woods Environmentally Significant Areas (Hillman Creek);
- Lands which have been identified as high priority opportunities for the restoration of tallgrass prairie vegetation communities in the Town of LaSalle and the City of Windsor; and,
- Riparian restoration along select first to third order streams throughout the Region (refer to individual reports for details).

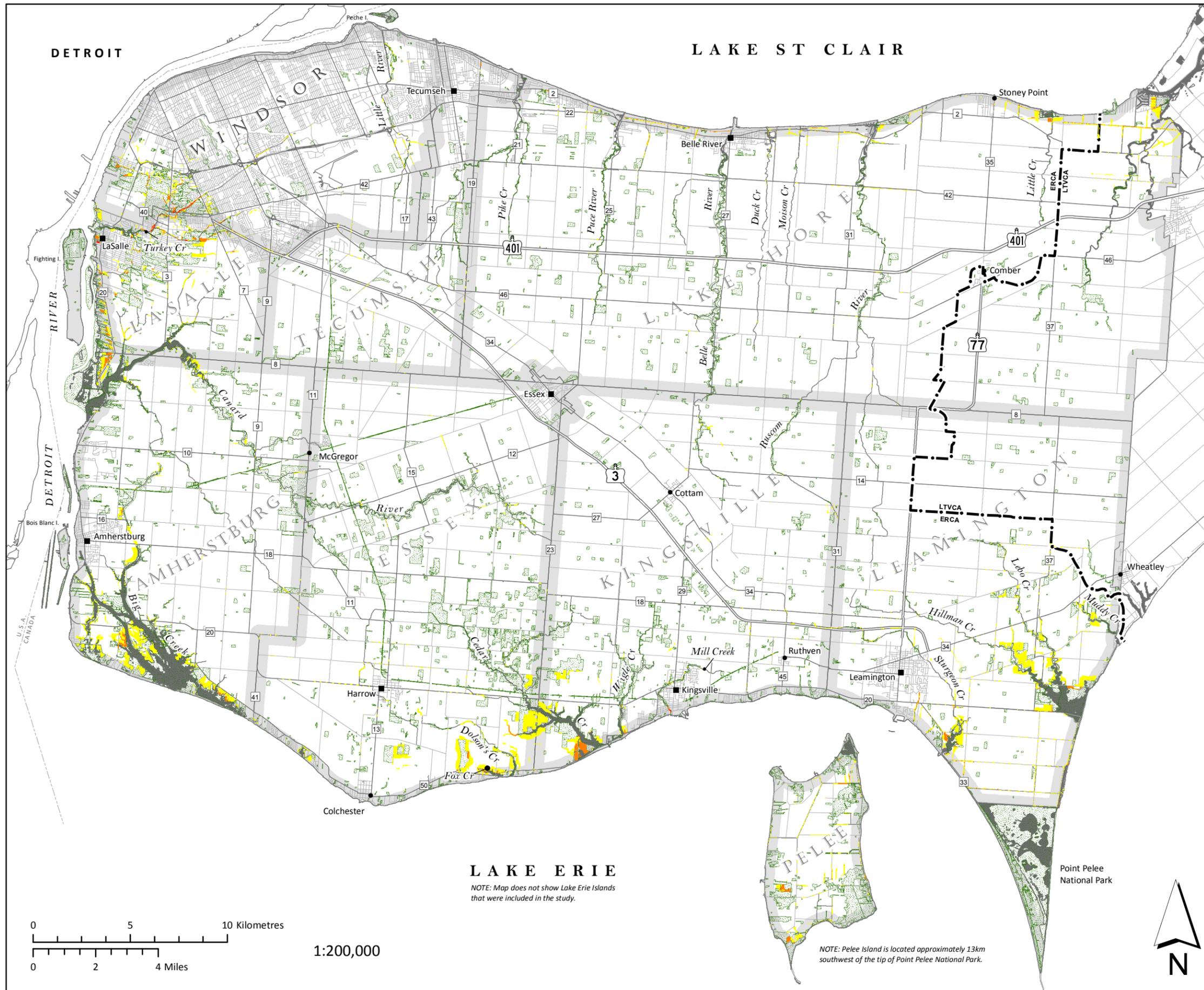


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# Priority of Restoration Opportunities



## Legend

### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

Existing Natural Feature

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

### INPUT CRITERIA:\*

- Identified Restoration Opportunity (Wetland Buffer/Riparian Buffer/Other)
- Favourable Physiography\*\*
- Flood Land\*\*
- Public Land\*\*
- Nature Conservancy of Canada (NCC) Priority Land\*\*

\* See report for full descriptions of input criteria

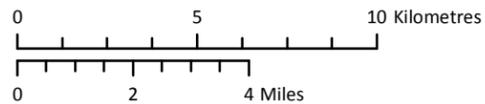
\*\* Only within an identified restoration opportunity feature

## LAKE ERIE

NOTE: Map does not show Lake Erie Islands that were included in the study.



NOTE: Pelee Island is located approximately 13km southwest of the tip of Point Pelee National Park.



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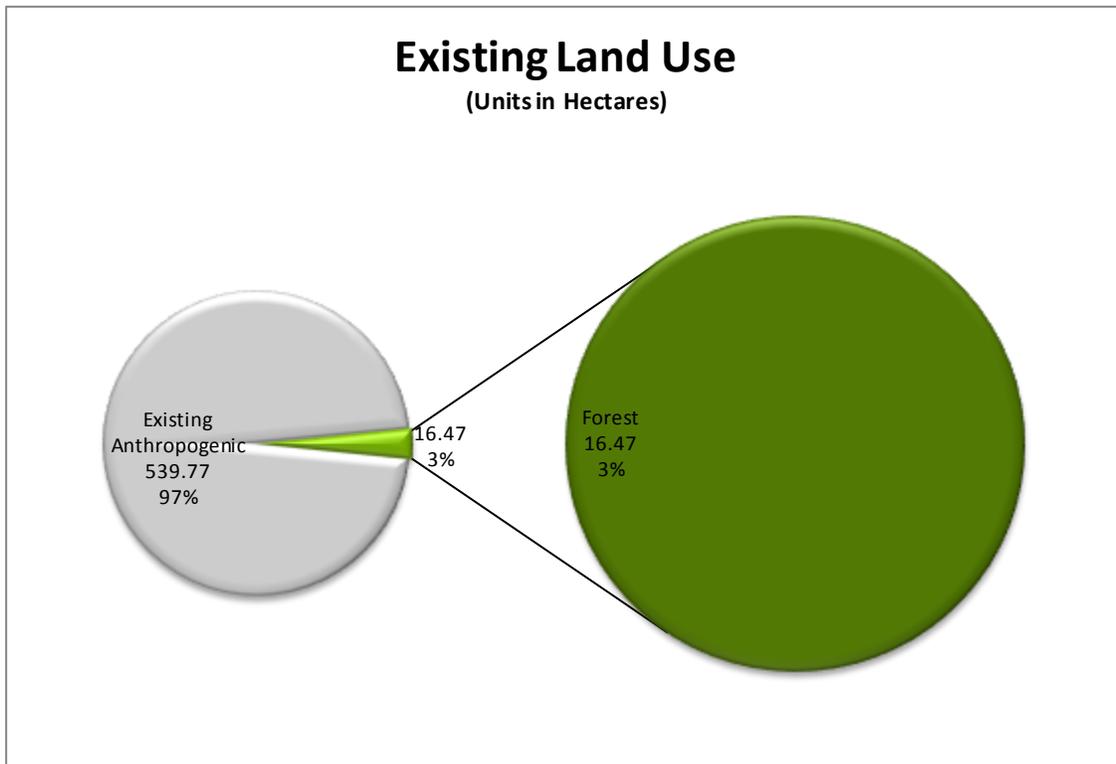


3.2.2 *Atwell Drain*

3.2.2.1 **Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Atwell Drain subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	16.47	40.70	2.96
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>16.47</b>	<b>40.70</b>	<b>2.96</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>16.47</b>	<b>40.70</b>	<b>2.96</b>
<b>Existing Anthropogenic</b>	<b>539.77</b>	<b>1333.80</b>	<b>97.04</b>
<b>Total Land Area</b>	<b>556.24</b>	<b>1374.50</b>	<b>100.00</b>



# Existing Natural Features

Atwell Drain                      Elmdale Drainage System  
 Coterie Park Drainage System      Muddy Creek

## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

- Forest
- Other

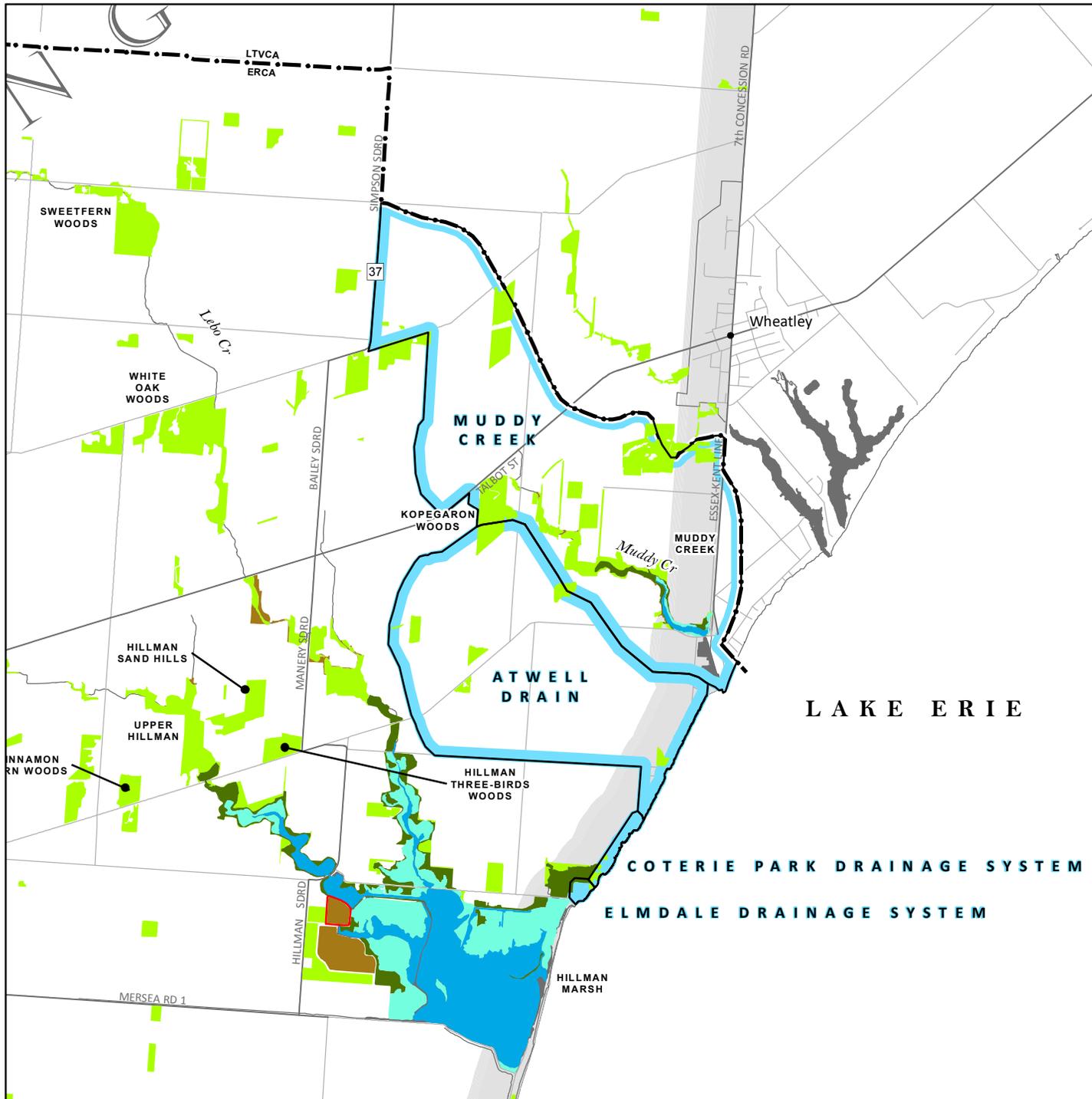
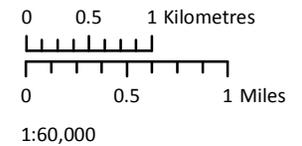
### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



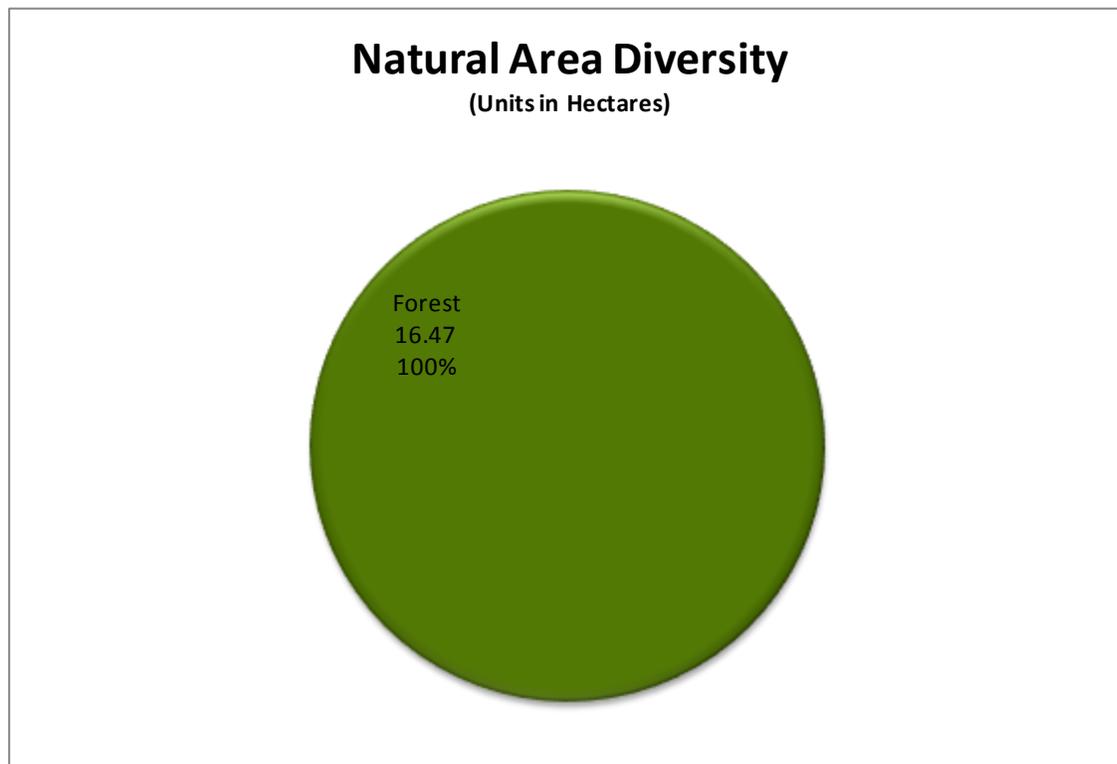
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - AtwellCoterieElmdaleMuddy - 20130424.mxd  
 TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Kopegaron Woods and is 20.0 ha in size. In addition, 1 forest patch within the study area contains 100 m interior forest, no patches contain 200 m interior forest.

**3.2.2.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Atwell Drain subwatershed.

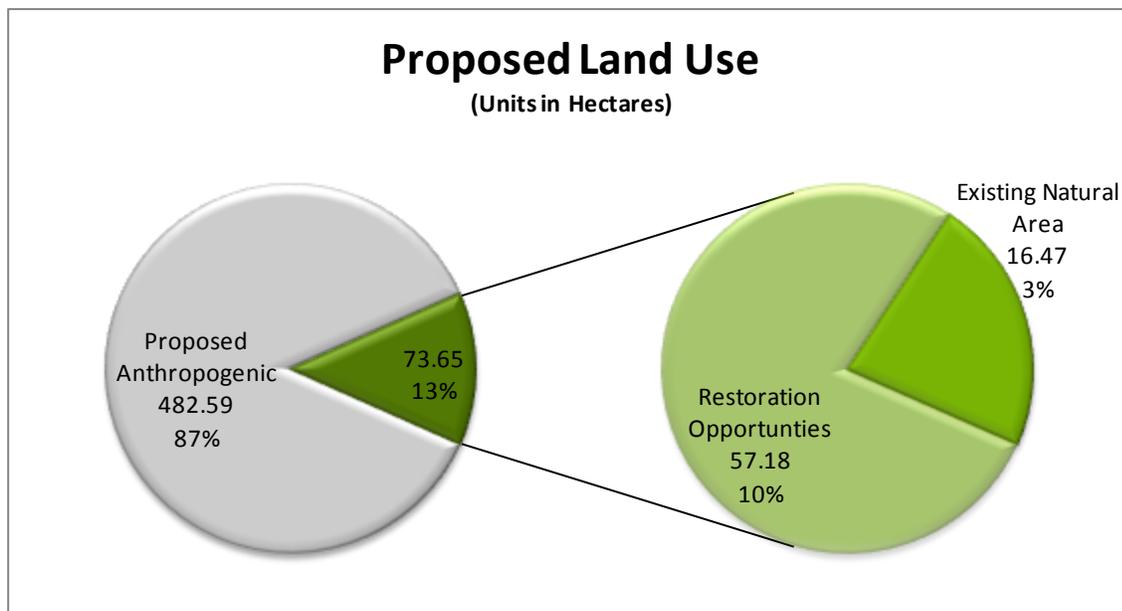
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	16.47	40.70	100.00
Other Terrestrial	0.00	0.00	0.00
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>16.47</b>	<b>40.70</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>16.47</b>	<b>40.70</b>	<b>100.00</b>

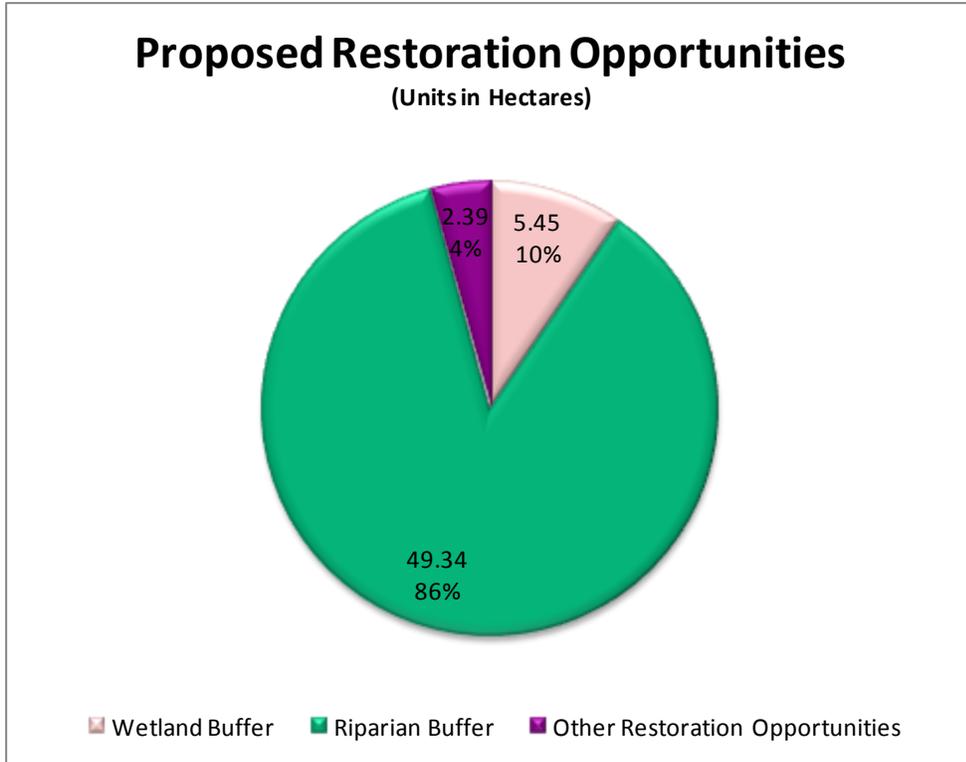


**3.2.2.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Atwell Drain subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	5.45	13.47	0.98
Riparian Buffer	49.34	121.92	8.87
Other Restoration Opportunities	2.39	5.91	0.43
<b>Total Restoration Opportunities</b>	<b>57.18</b>	<b>141.29</b>	<b>10.28</b>
<b>Status Quo Anthropogenic</b>	<b>482.59</b>	<b>1192.51</b>	<b>86.76</b>
<b>Total Land Area</b>	<b>556.24</b>	<b>1374.50</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering along the Atwell Drain.

# Priority of Restoration Opportunities

Atwell Drain  
 Coterie Park Drainage System  
 Elmdale Drainage System  
 Muddy Creek

### Legend

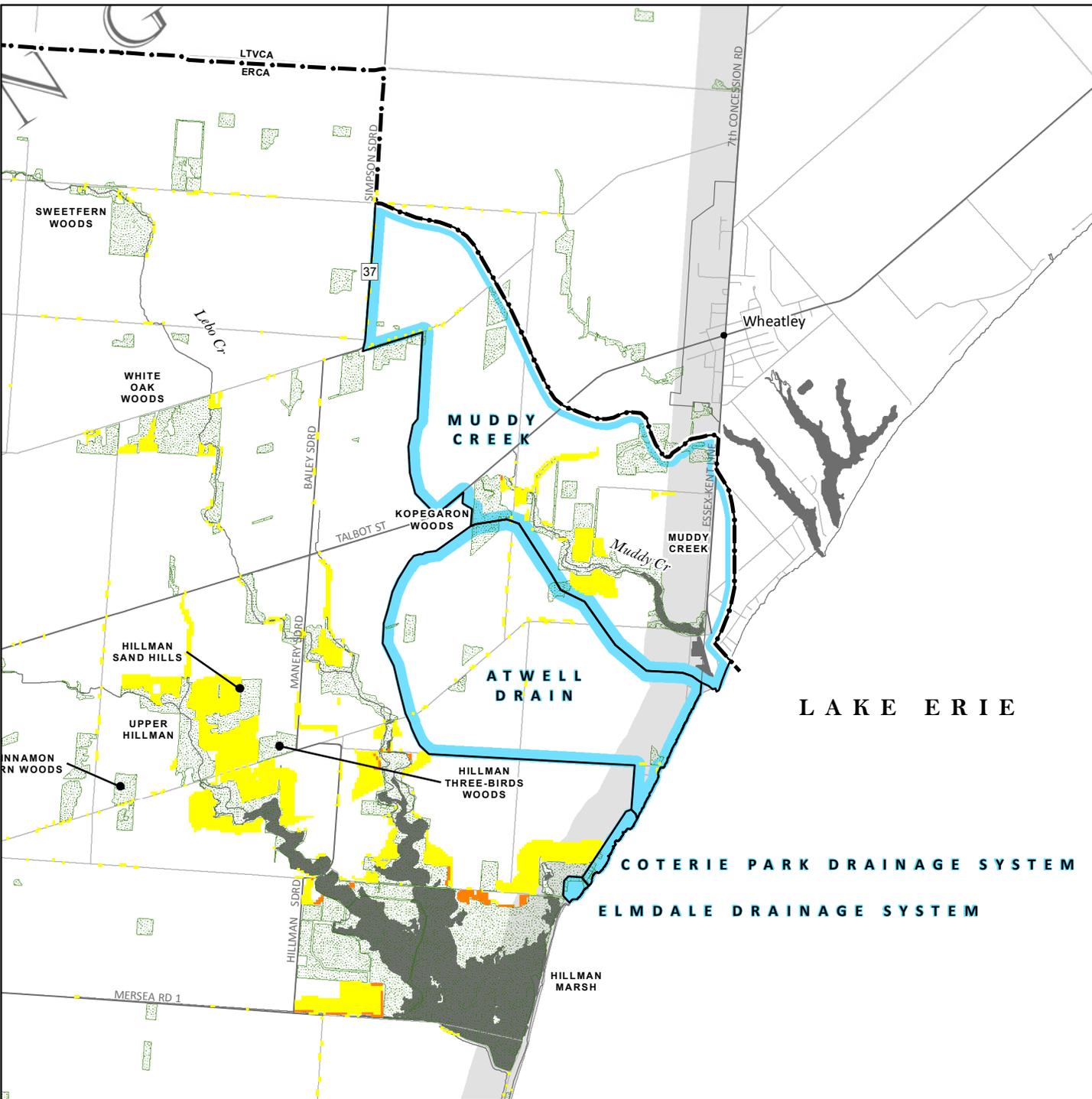
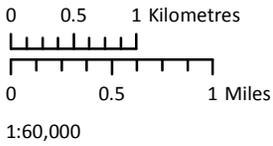
**Number of Criteria Met**

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

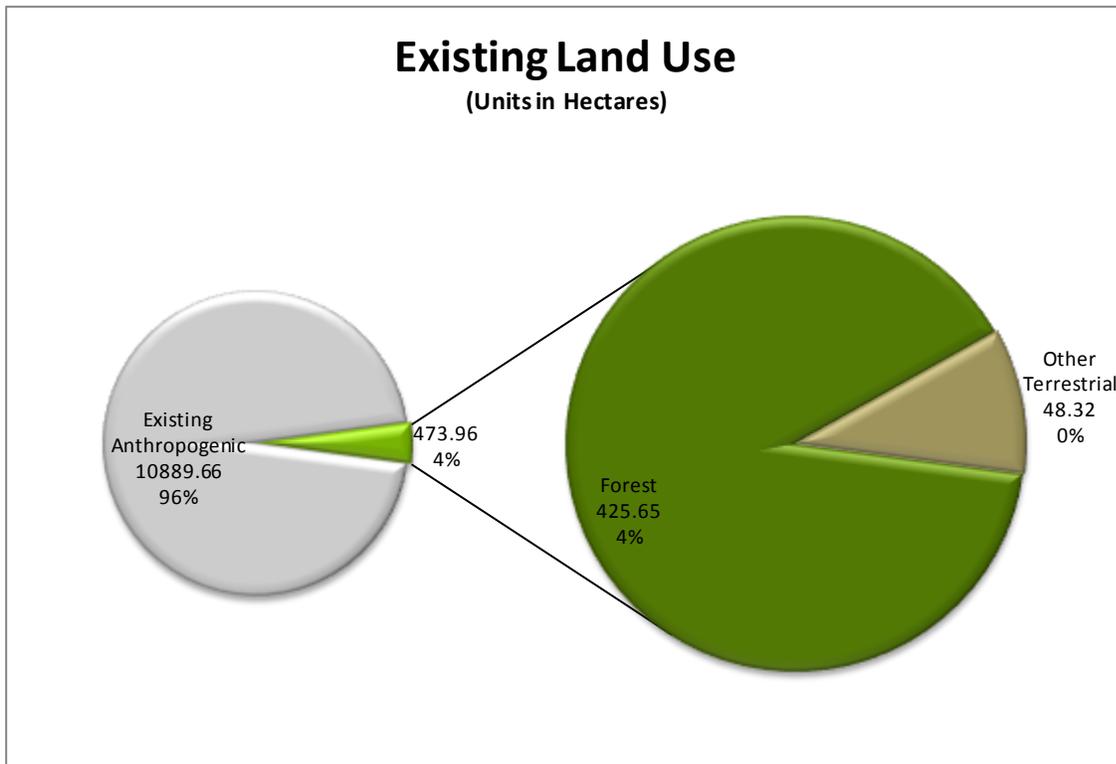


3.2.3 Belle River

3.2.3.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Belle River subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	425.65	1051.79	3.75
Other Terrestrial	48.32	119.39	0.43
<b>Total Terrestrial Habitat</b>	<b>473.96</b>	<b>1171.18</b>	<b>4.17</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>473.96</b>	<b>1171.18</b>	<b>4.17</b>
<b>Existing Anthropogenic</b>	<b>10889.66</b>	<b>26908.82</b>	<b>95.83</b>
<b>Total Land Area</b>	<b>11363.62</b>	<b>28080.00</b>	<b>100.00</b>





# Existing Natural Features

## Belle River (North)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

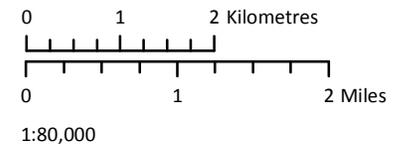
- Forest
- Other

#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

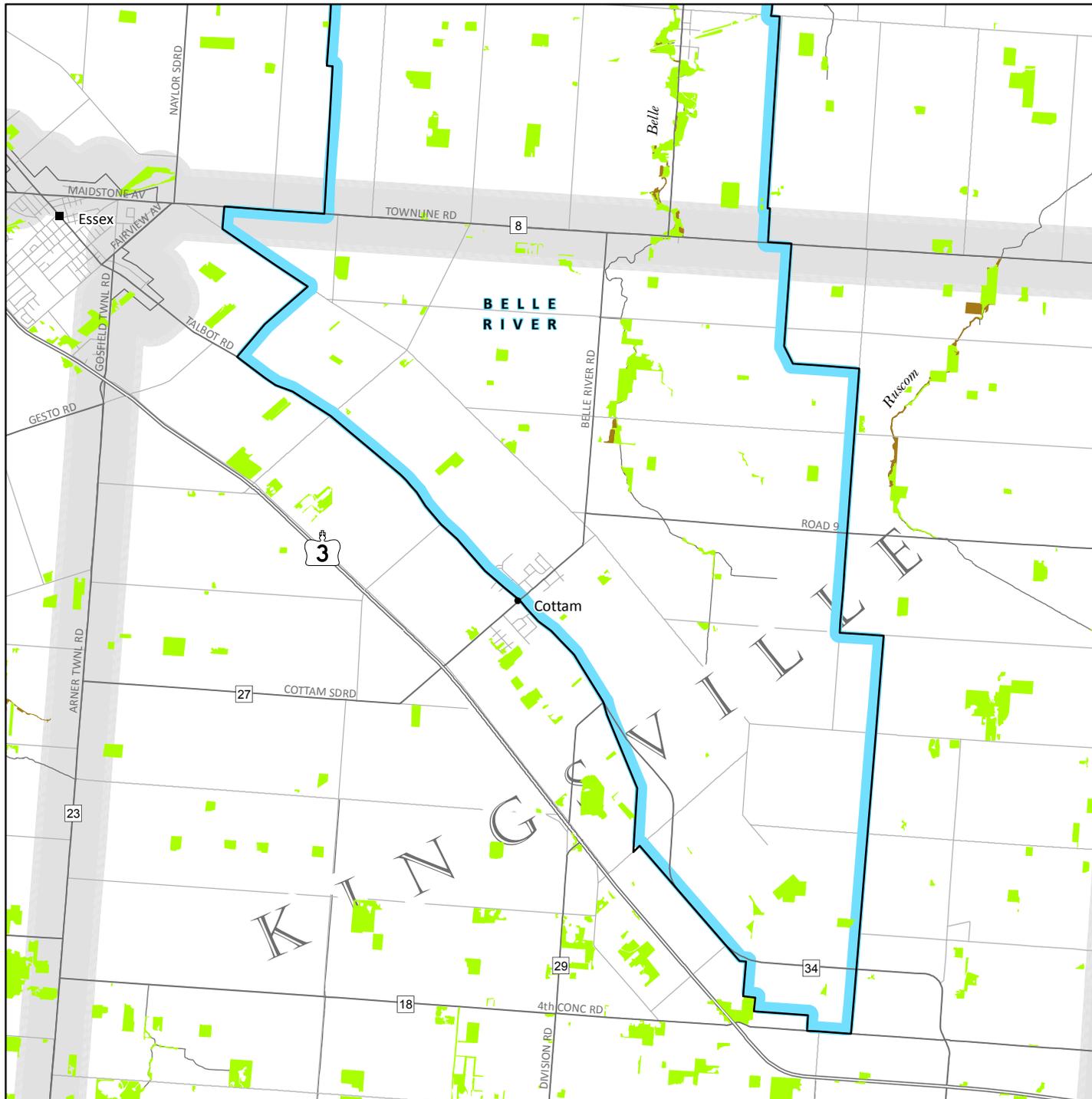
The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - BelleRiver North - 20130424.mxd  
TD 30/04/2013

# Existing Natural Features

## Belle River (South)



### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

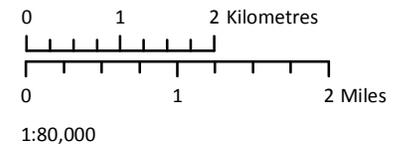
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



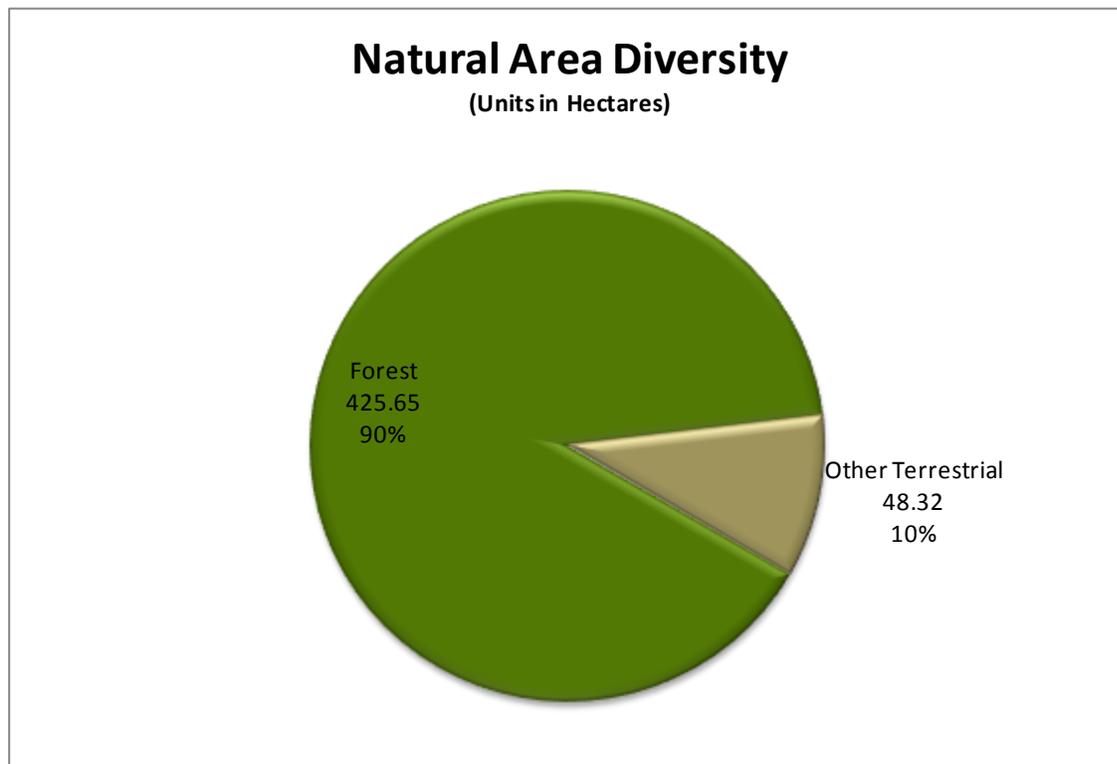
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - BelleRiver South - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of the Belle River and is 39.4 ha in size. In addition, 12 forest patches within the study area contain 100 m interior forest, no patches contain 200 m interior forest.

**3.2.3.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Belle River subwatershed.

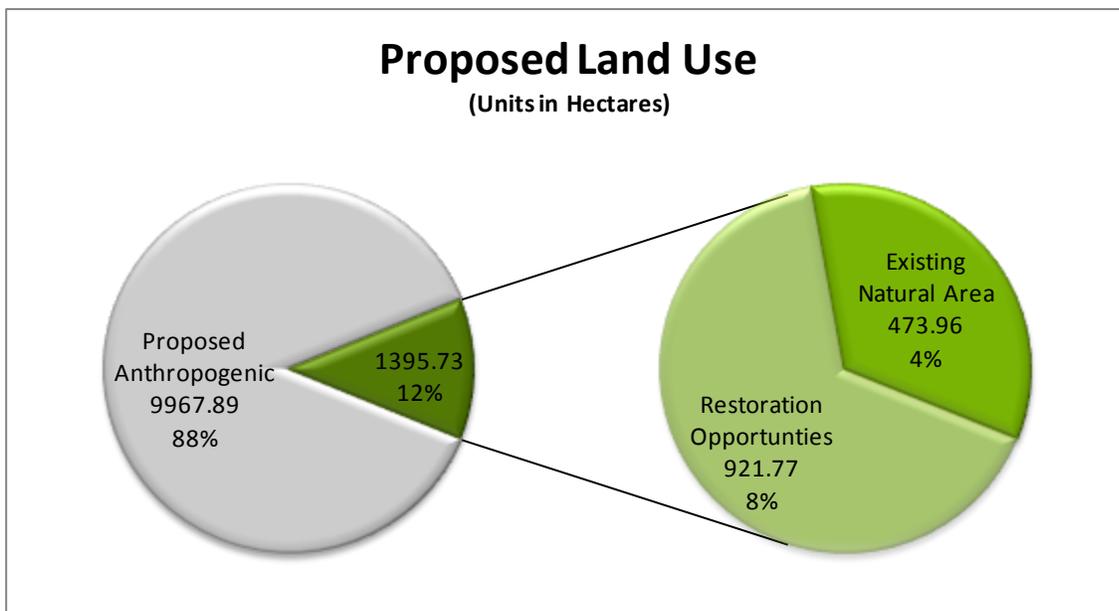
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	425.65	1051.79	89.81
Other Terrestrial	48.32	119.39	10.19
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>473.96</b>	<b>1171.18</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>473.96</b>	<b>1171.18</b>	<b>100.00</b>

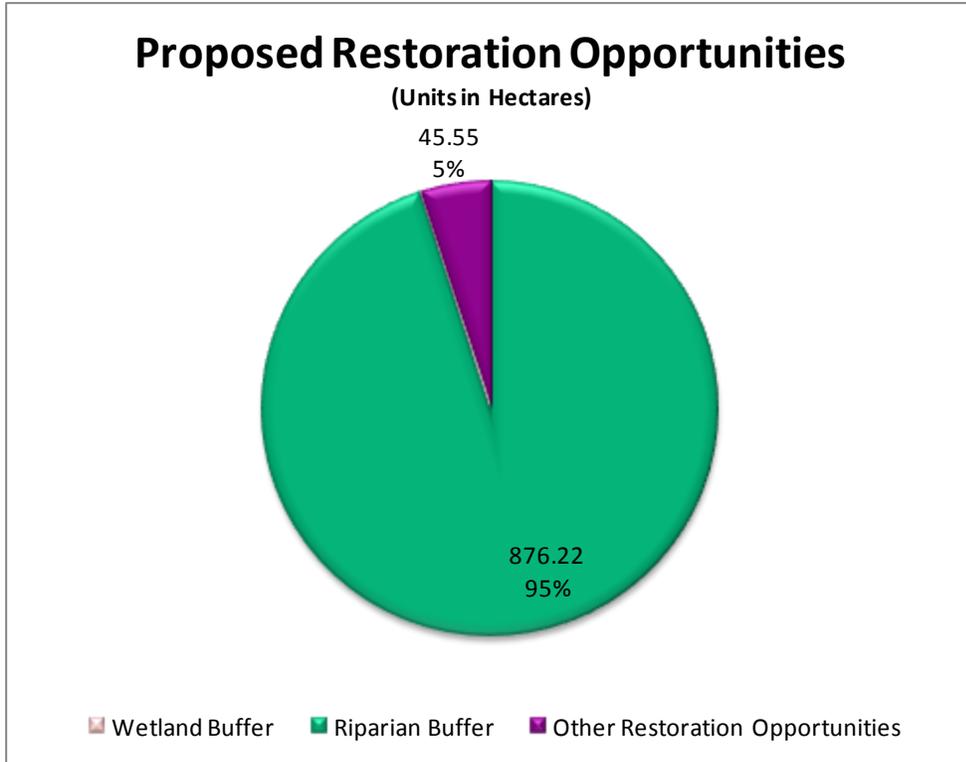


**3.2.3.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Belle River subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	876.22	2165.18	7.71
Other Restoration Opportunities	45.55	112.56	0.40
<b>Total Restoration Opportunities</b>	<b>921.77</b>	<b>2277.73</b>	<b>8.11</b>
<b>Status Quo Anthropogenic</b>	<b>9967.89</b>	<b>24631.09</b>	<b>87.72</b>
<b>Total Land Area</b>	<b>11363.62</b>	<b>28080.00</b>	<b>100.00</b>



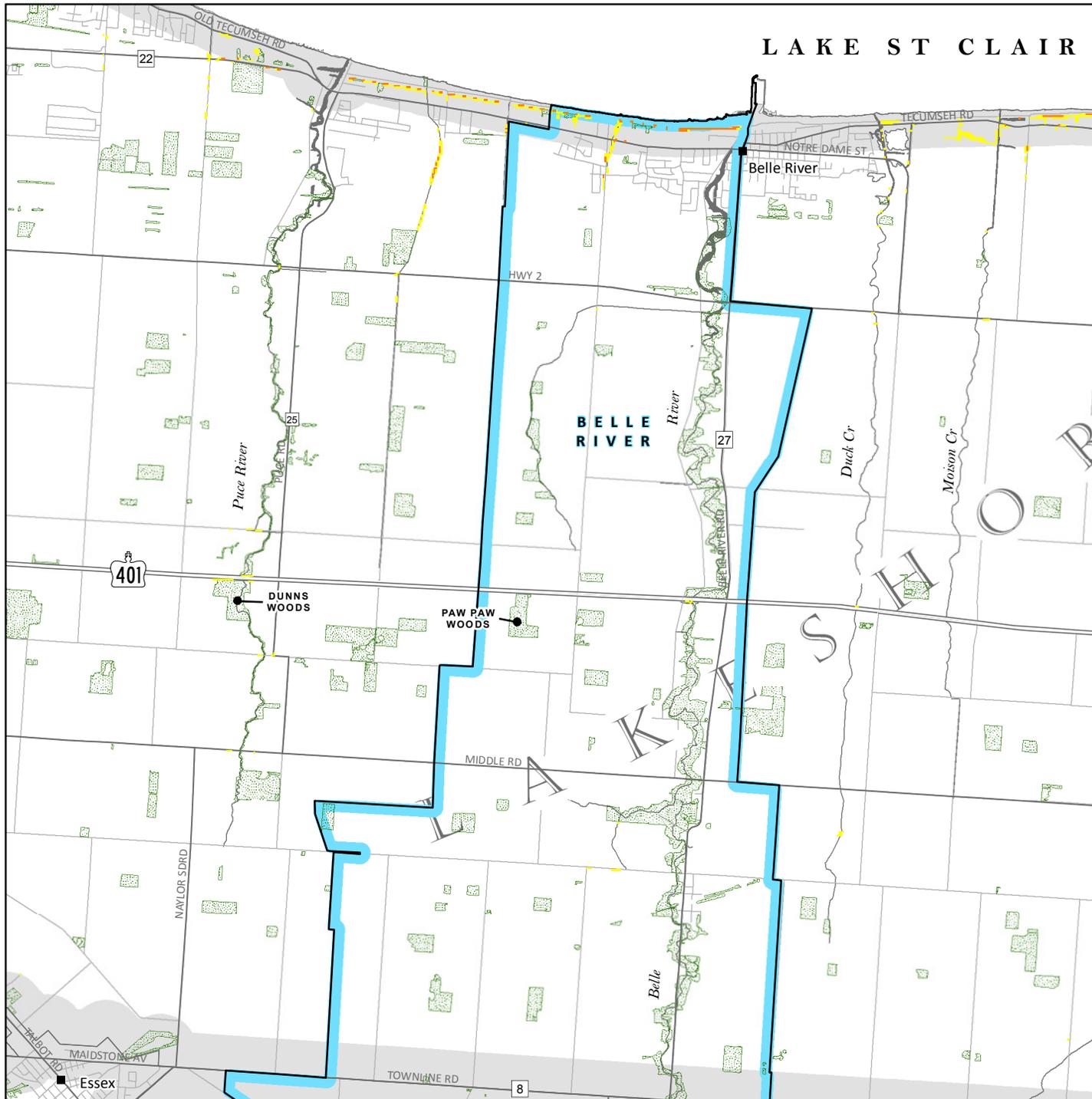


The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering along the upper tributaries of the Belle River.

# LAKE ST CLAIR

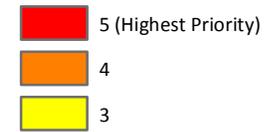
## Priority of Restoration Opportunities

### Belle River (North)



#### Legend

##### Number of Criteria Met

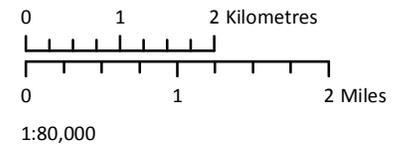


 Existing Natural Feature

 Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

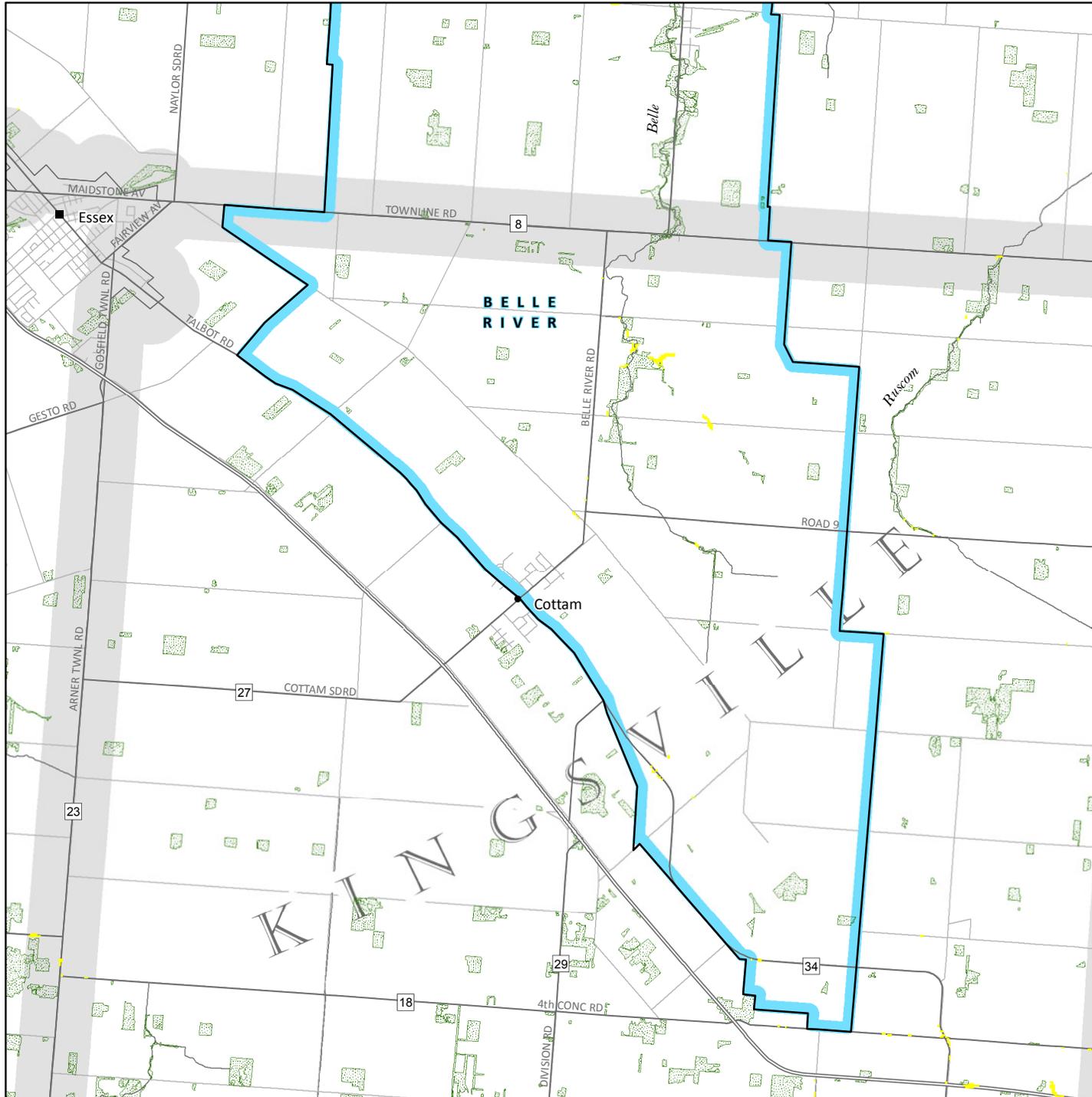
The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - BelleRiver North - 20130430.mxd  
TD 30/04/2013

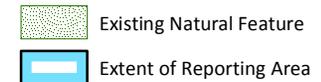
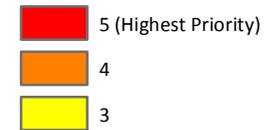
# Priority of Restoration Opportunities

## Belle River (South)



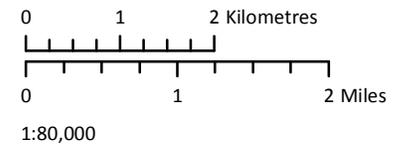
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



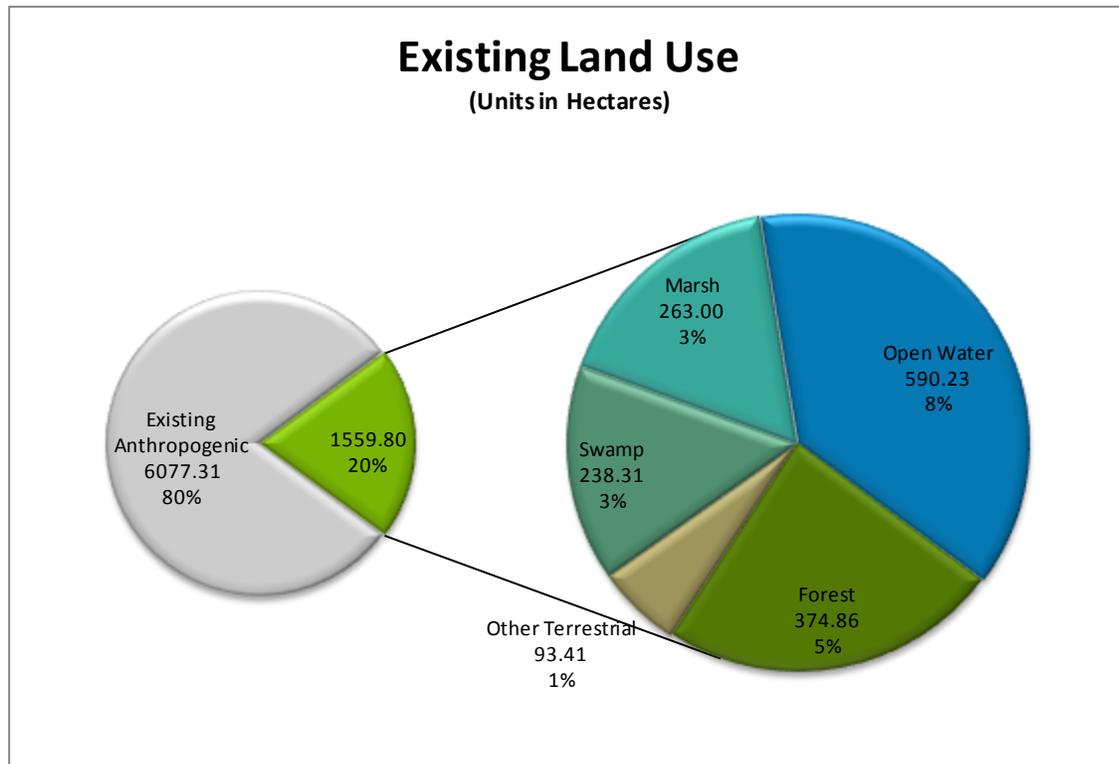
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - BelleRiver South - 20130430.mxd  
TD 30/04/2013

3.2.4 *Big Creek*

3.2.4.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Big Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	374.86	926.29	4.91
Other Terrestrial	93.41	230.82	1.22
<b>Total Terrestrial Habitat</b>	<b>468.27</b>	<b>1157.11</b>	<b>6.13</b>
Wetland Habitat	Hectares	Acres	%
Swamp	238.31	588.87	3.12
Marsh	263.00	649.87	3.44
Open Water	590.23	1458.48	7.73
<b>Total Wetland Habitat</b>	<b>1091.53</b>	<b>2697.22</b>	<b>14.29</b>
<b>Existing Natural Area</b>	<b>1559.80</b>	<b>3854.34</b>	<b>20.42</b>
<b>Existing Anthropogenic</b>	<b>6077.31</b>	<b>15017.29</b>	<b>79.58</b>
<b>Total Land Area</b>	<b>7637.11</b>	<b>18871.63</b>	<b>100.00</b>



# Existing Natural Features

## Big Creek

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

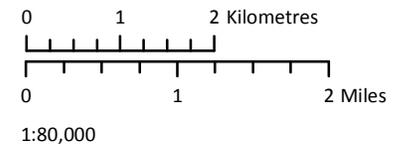
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



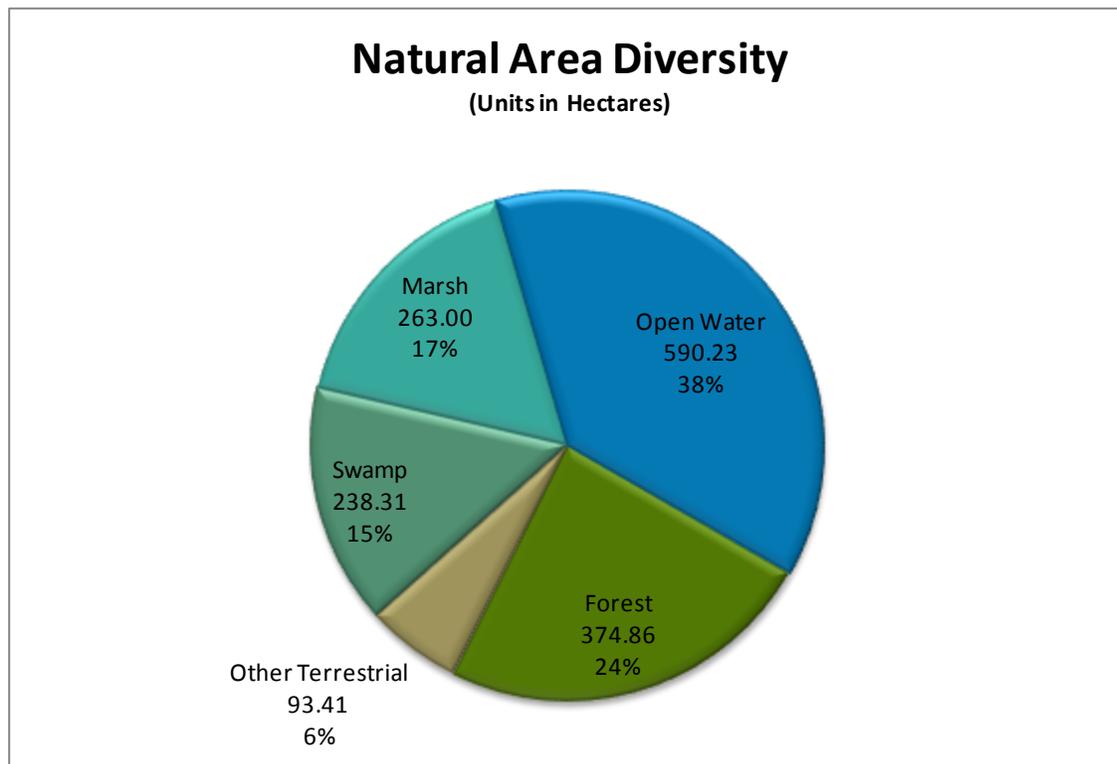
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - BigCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Upper Big Creek Woods and is 82.4 ha in size. In addition, 20 forest patches within the study area contain 100 m interior forest, of which 1 patch contains 200 m interior forest.

**3.2.4.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Big Creek subwatershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	374.86	926.29	24.03
Other Terrestrial	93.41	230.82	5.99
Swamp	238.31	588.87	15.28
Marsh	263.00	649.87	16.86
Open Water	590.23	1458.48	37.84
<b>Total Terrestrial Habitat</b>	<b>468.27</b>	<b>1157.11</b>	<b>30.02</b>
<b>Total Wetland Habitat</b>	<b>1091.53</b>	<b>2697.22</b>	<b>69.98</b>
<b>Existing Natural Area</b>	<b>1559.80</b>	<b>3854.34</b>	<b>100.00</b>

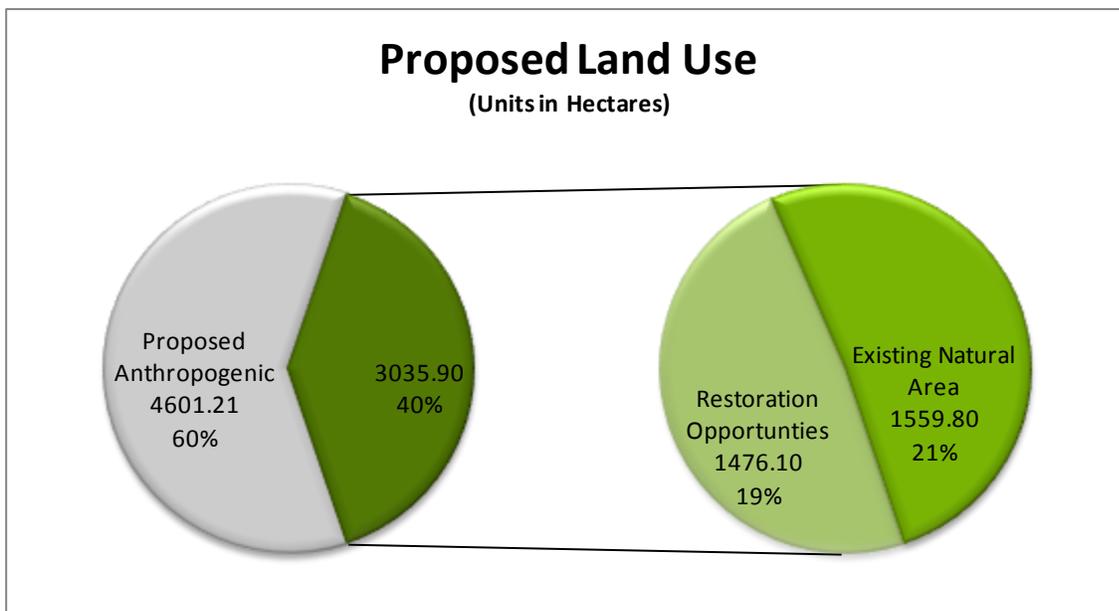


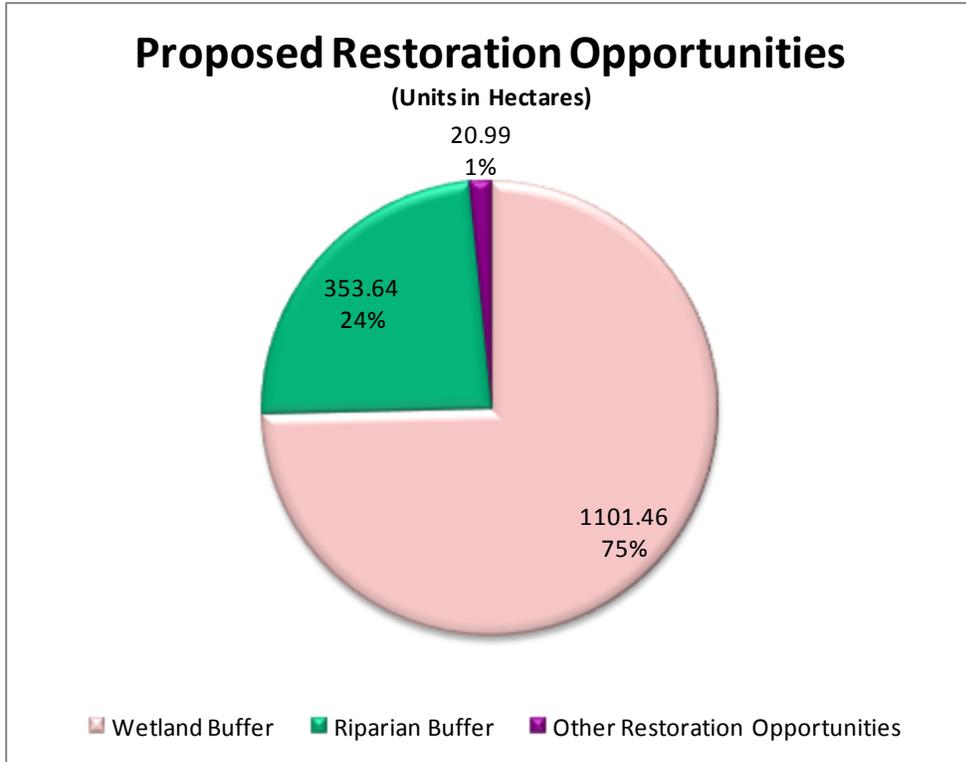
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.4.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Big Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	1101.46	2721.76	14.42
Riparian Buffer	353.64	873.87	4.63
Other Restoration Opportunities	20.99	51.87	0.27
<b>Total Restoration Opportunities</b>	<b>1476.10</b>	<b>3647.50</b>	<b>19.33</b>
<b>Status Quo Anthropogenic</b>	<b>4601.21</b>	<b>11369.79</b>	<b>60.25</b>
<b>Total Land Area</b>	<b>7637.11</b>	<b>18871.63</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to the Big Creek Provincially Significant Wetland.

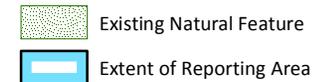
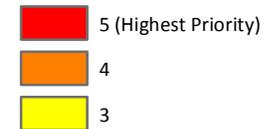
# Priority of Restoration Opportunities

## Big Creek



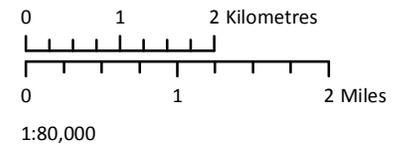
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



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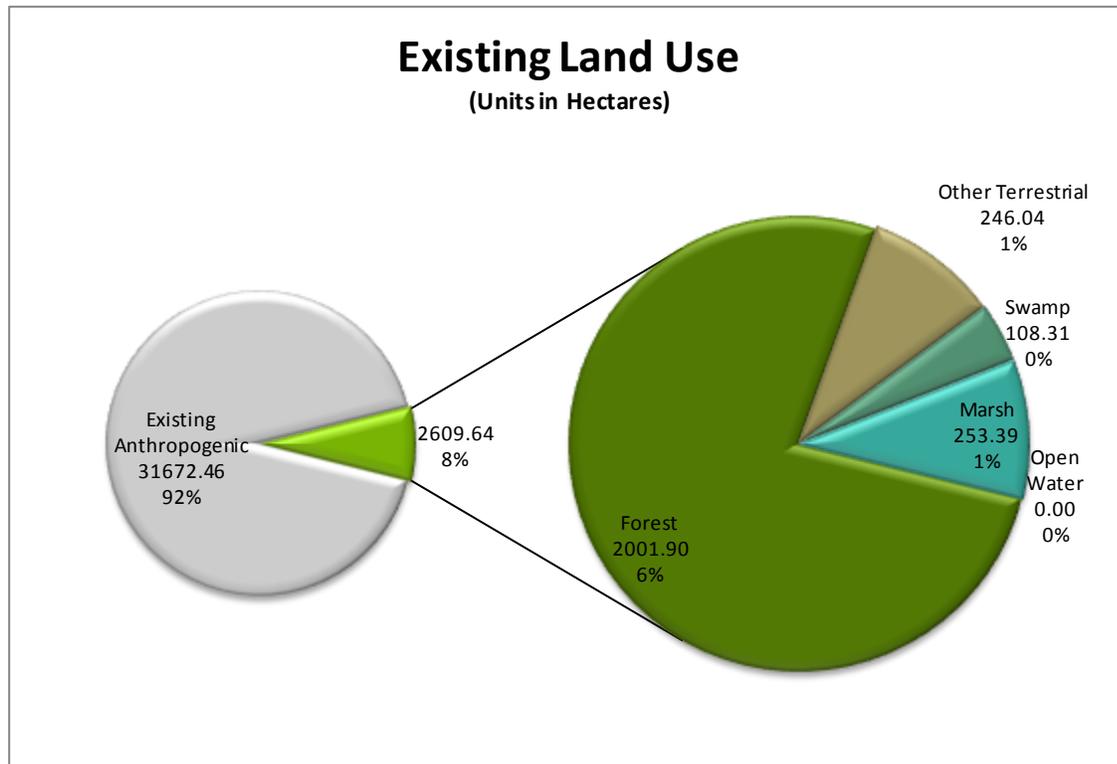
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - BigCreek - 20130430.mxd  
TD 30/04/2013

3.2.5 *Canard River*

3.2.5.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Canard River subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	2001.90	4946.78	5.84
Other Terrestrial	246.04	607.97	0.72
<b>Total Terrestrial Habitat</b>	<b>2247.94</b>	<b>5554.75</b>	<b>6.56</b>
Wetland Habitat	Hectares	Acres	%
Swamp	108.31	267.63	0.32
Marsh	253.39	626.14	0.74
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>361.70</b>	<b>893.78</b>	<b>1.06</b>
<b>Existing Natural Area</b>	<b>2609.64</b>	<b>6448.52</b>	<b>7.61</b>
<b>Existing Anthropogenic</b>	<b>31672.46</b>	<b>78264.03</b>	<b>92.39</b>
<b>Total Land Area</b>	<b>34282.09</b>	<b>84712.56</b>	<b>100.00</b>





# Existing Natural Features

## Canard River (East)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

#### Features of Interest

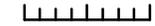
- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.

0 1 2 Kilometres



0 1 2 Miles

1:120,000



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - CanardRiver East - 20130424.mxd  
TD 01/05/2013

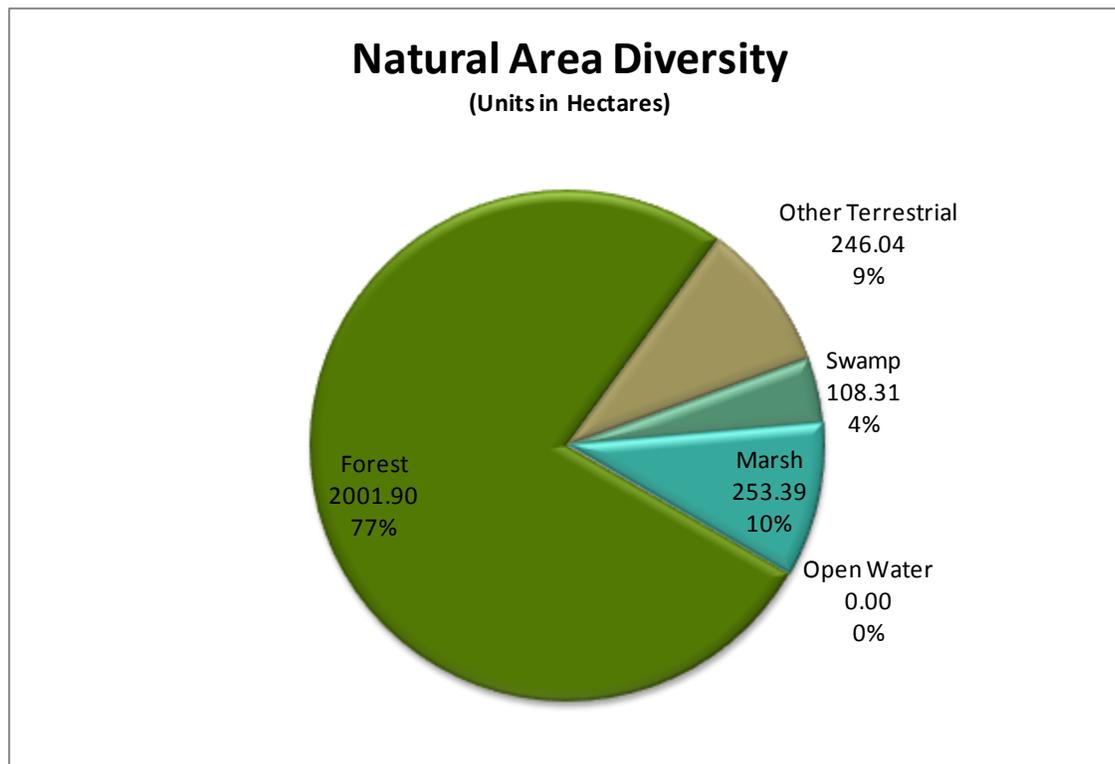


Within the study area there is 1 forest patch greater than 100 ha in size, associated with the Canard River Kentucky Coffee Tree Woods. The largest forest patch is part of Canard River Kentucky Coffee Tree Woods and is 259.9 ha in size. In addition, 72 forest patches within the study area contain 100 m interior forest, of which 10 patches contain 200 m interior forest.

**3.2.5.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Canard River subwatershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	2001.90	4946.78	76.71
Other Terrestrial	246.04	607.97	9.43
Swamp	108.31	267.63	4.15
Marsh	253.39	626.14	9.71
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>2247.94</b>	<b>5554.75</b>	<b>86.14</b>
<b>Total Wetland Habitat</b>	<b>361.70</b>	<b>893.78</b>	<b>13.86</b>
<b>Existing Natural Area</b>	<b>2609.64</b>	<b>6448.52</b>	<b>100.00</b>

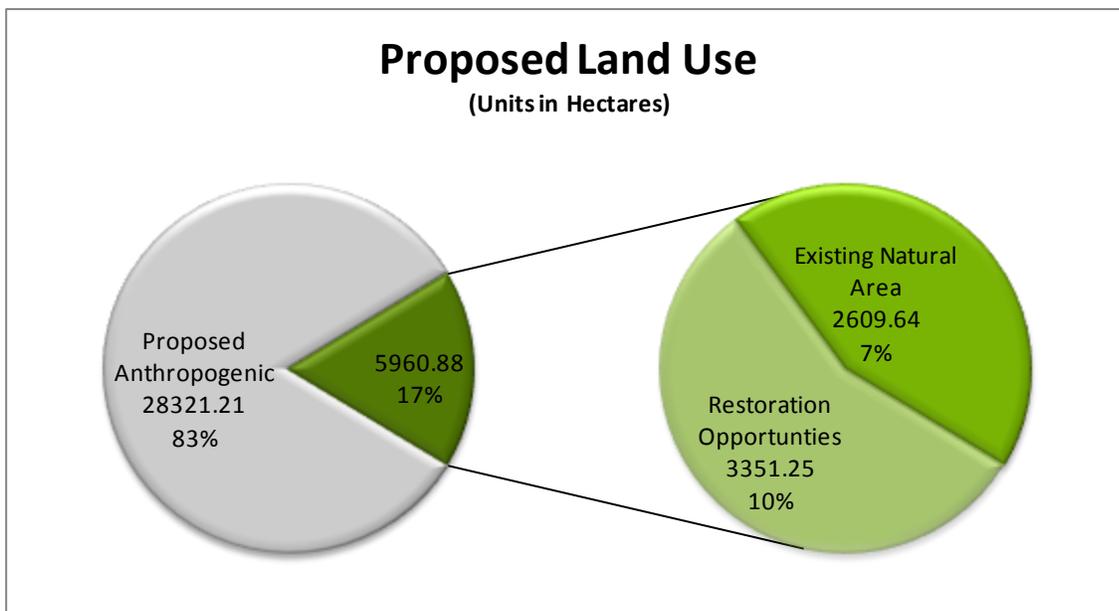


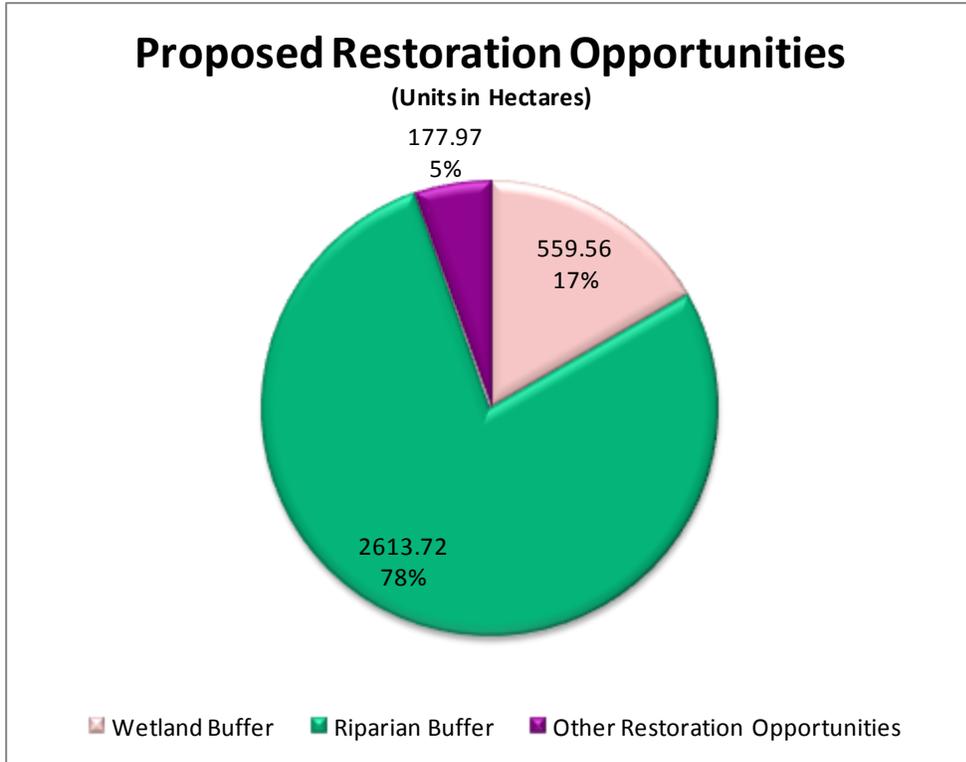
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.5.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Canard River subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	559.56	1382.69	1.63
Riparian Buffer	2613.72	6458.61	7.62
Other Restoration Opportunities	177.97	439.78	0.52
<b>Total Restoration Opportunities</b>	<b>3351.25</b>	<b>8281.08</b>	<b>9.78</b>
<b>Status Quo Anthropogenic</b>	<b>28321.21</b>	<b>69982.95</b>	<b>82.61</b>
<b>Total Land Area</b>	<b>34282.09</b>	<b>84712.56</b>	<b>100.00</b>



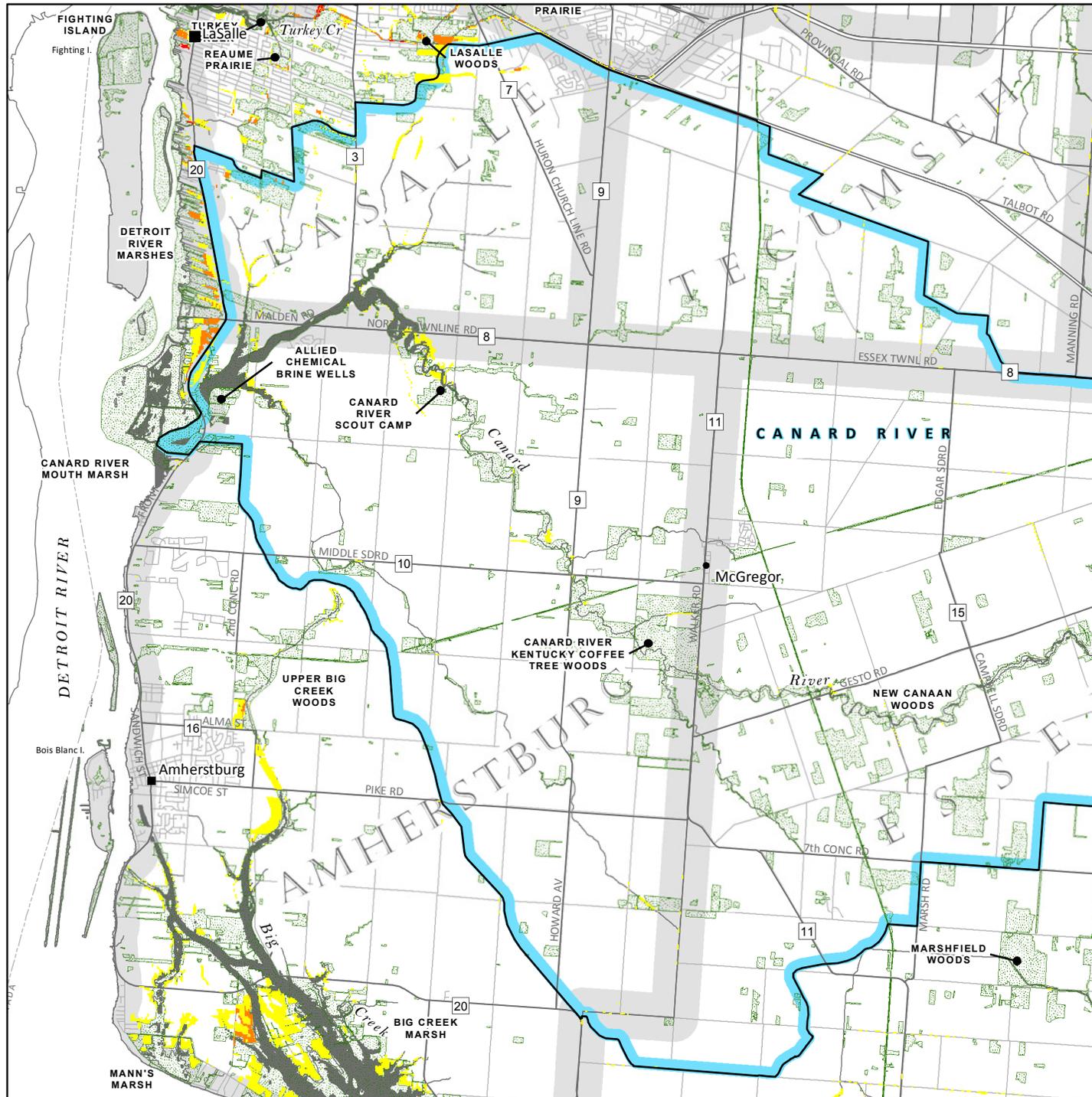


The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to the Canard River Mouth Marshes Provincially Significant Wetlands.

This study area also contains lands which have been identified as high priority opportunities for the restoration of tallgrass prairie vegetation communities adjacent to Town of LaSalle Candidate Natural Heritage Site CH3/M11, as shown in the following map.

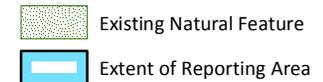
# Priority of Restoration Opportunities

## Canard River (West)



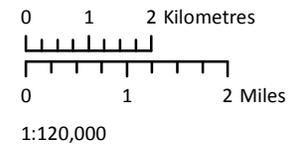
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

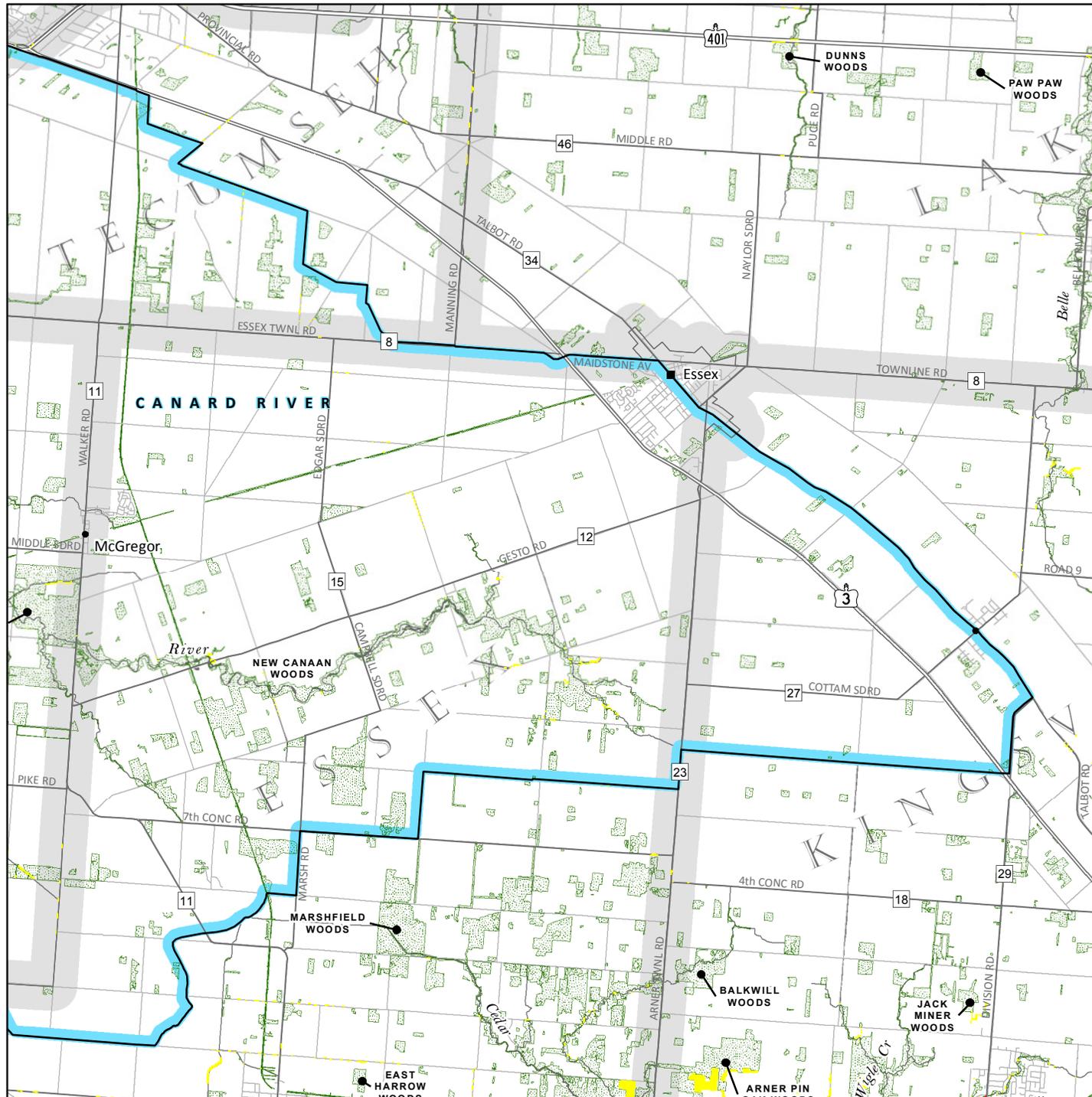
The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - CanardRiver West - 20130430.mxd  
TD 01/05/2013

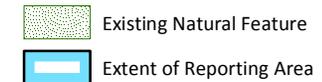
# Priority of Restoration Opportunities

## Canard River (East)



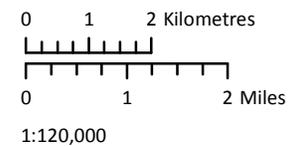
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



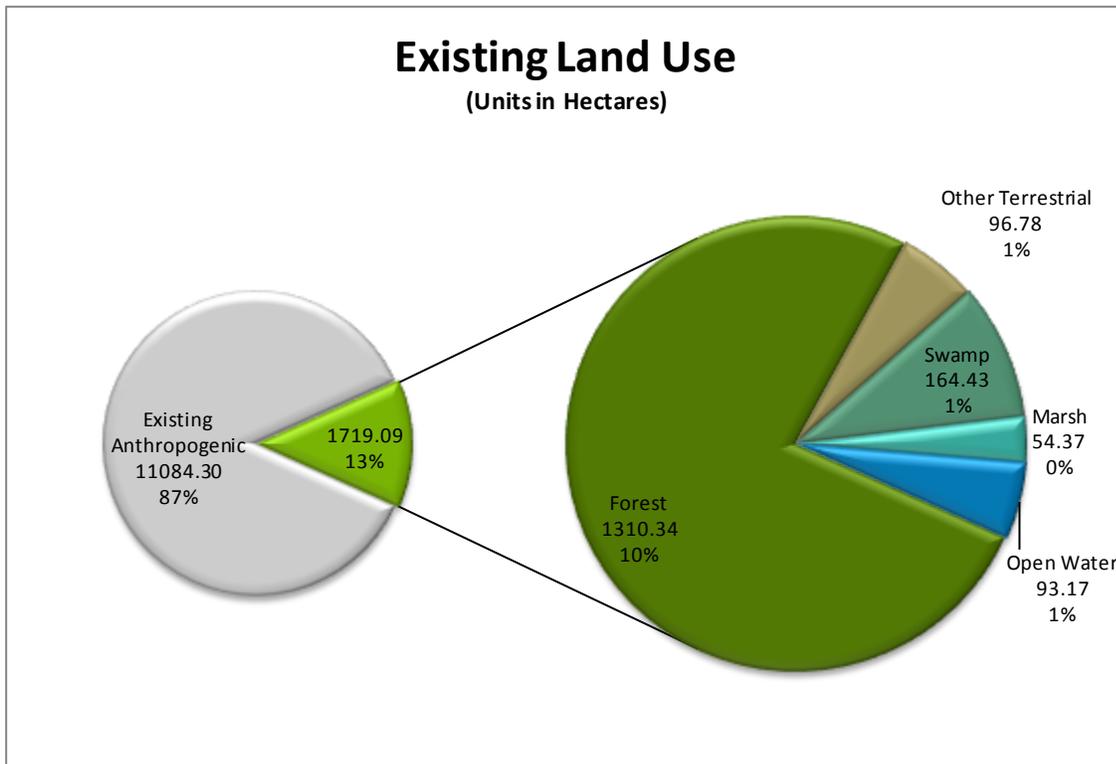
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - CanardRiver East - 20130430.mxd  
TD 01/05/2013

3.2.6 Cedar Creek

3.2.6.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Cedar Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	1310.34	3237.90	10.23
Other Terrestrial	96.78	239.15	0.76
<b>Total Terrestrial Habitat</b>	<b>1407.12</b>	<b>3477.05</b>	<b>10.99</b>
Wetland Habitat	Hectares	Acres	%
Swamp	164.43	406.31	1.28
Marsh	54.37	134.34	0.42
Open Water	93.17	230.24	0.73
<b>Total Wetland Habitat</b>	<b>311.97</b>	<b>770.88</b>	<b>2.44</b>
<b>Existing Natural Area</b>	<b>1719.09</b>	<b>4247.94</b>	<b>13.43</b>
<b>Existing Anthropogenic</b>	<b>11084.30</b>	<b>27389.80</b>	<b>86.57</b>
<b>Total Land Area</b>	<b>12803.39</b>	<b>31637.74</b>	<b>100.00</b>



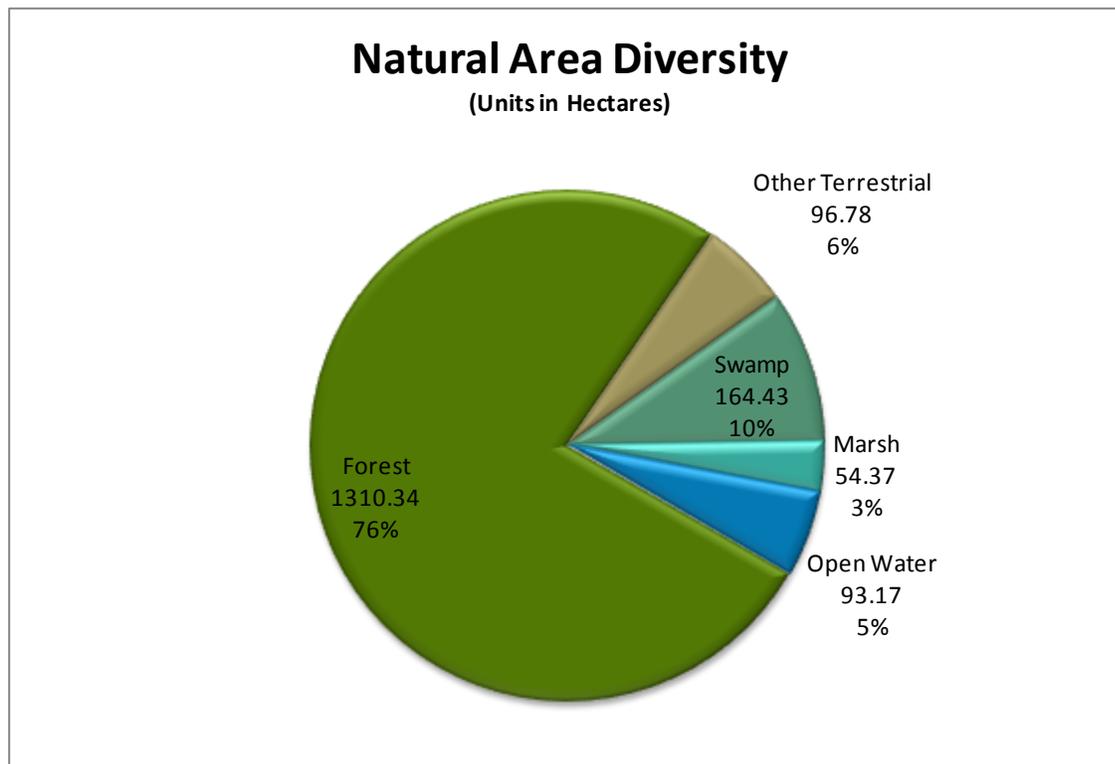


Within the study area there are 3 forest patches greater than 100 ha in size. These are associated with the Arner Pin Oak Woods, Cedar Creek and Marshfield Woods. The largest forest patch is part of Cedar Creek and is 186.2 ha in size. In addition, 43 forest patches within the study area contain 100 m interior forest, of which 9 patches contain 200 m interior forest.

**3.2.6.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Cedar Creek subwatershed.

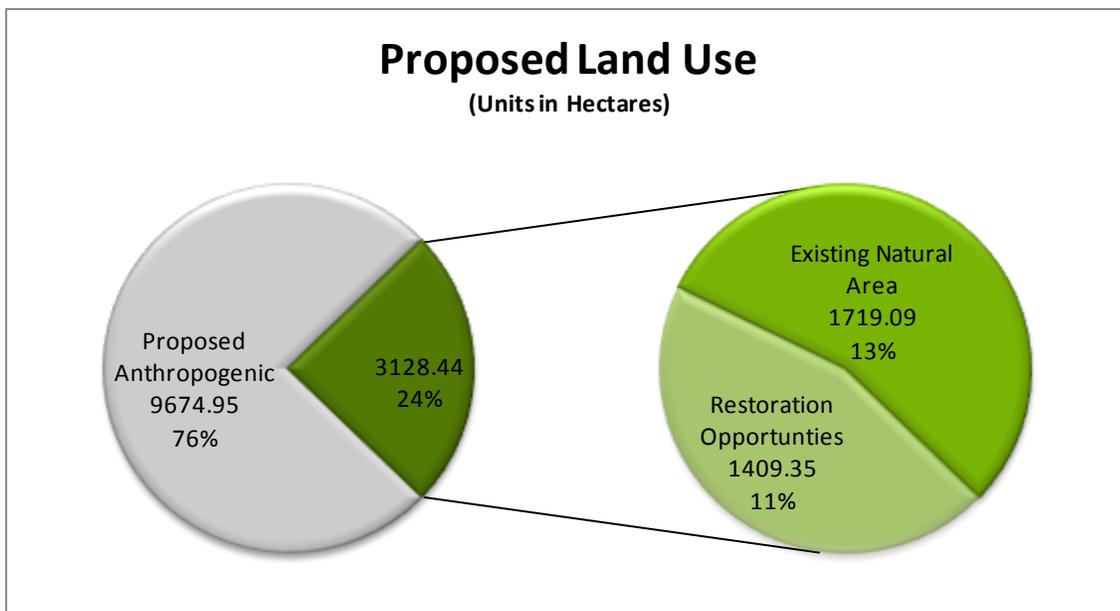
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	1310.34	3237.90	76.22
Other Terrestrial	96.78	239.15	5.63
Swamp	164.43	406.31	9.56
Marsh	54.37	134.34	3.16
Open Water	93.17	230.24	5.42
<b>Total Terrestrial Habitat</b>	<b>1407.12</b>	<b>3477.05</b>	<b>81.85</b>
<b>Total Wetland Habitat</b>	<b>311.97</b>	<b>770.88</b>	<b>18.15</b>
<b>Existing Natural Area</b>	<b>1719.09</b>	<b>4247.94</b>	<b>100.00</b>

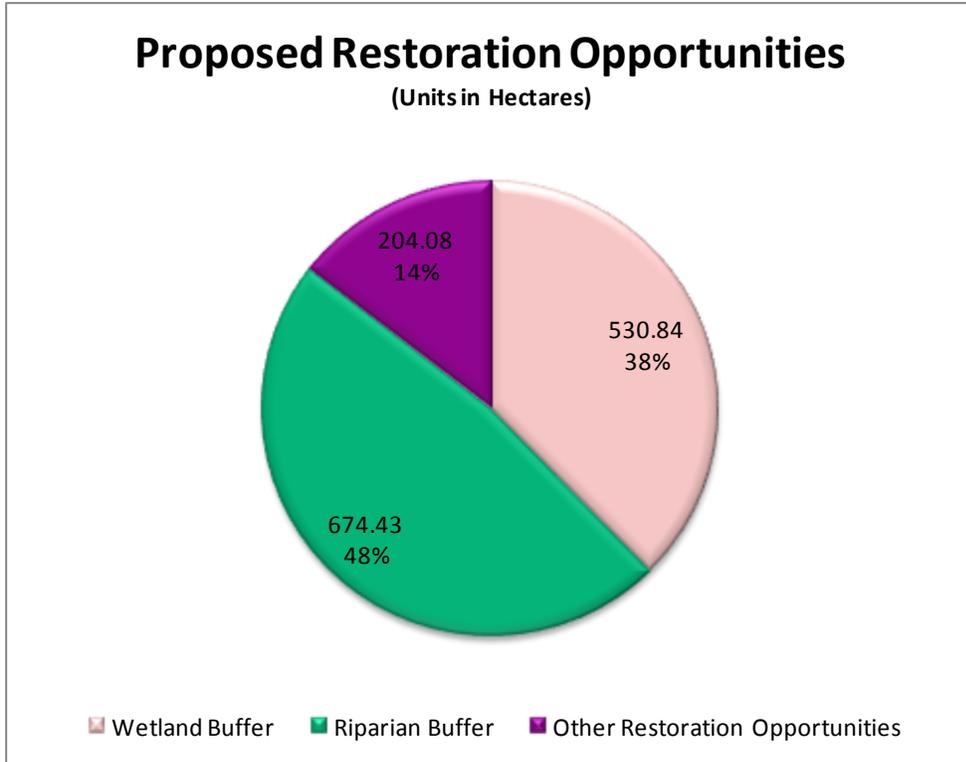


**3.2.6.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Cedar Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	530.84	1311.74	4.15
Riparian Buffer	674.43	1666.54	5.27
Other Restoration Opportunities	204.08	504.29	1.59
<b>Total Restoration Opportunities</b>	<b>1409.35</b>	<b>3482.56</b>	<b>11.01</b>
<b>Status Quo Anthropogenic</b>	<b>9674.95</b>	<b>23907.24</b>	<b>75.57</b>
<b>Total Land Area</b>	<b>12803.39</b>	<b>31637.74</b>	<b>100.00</b>

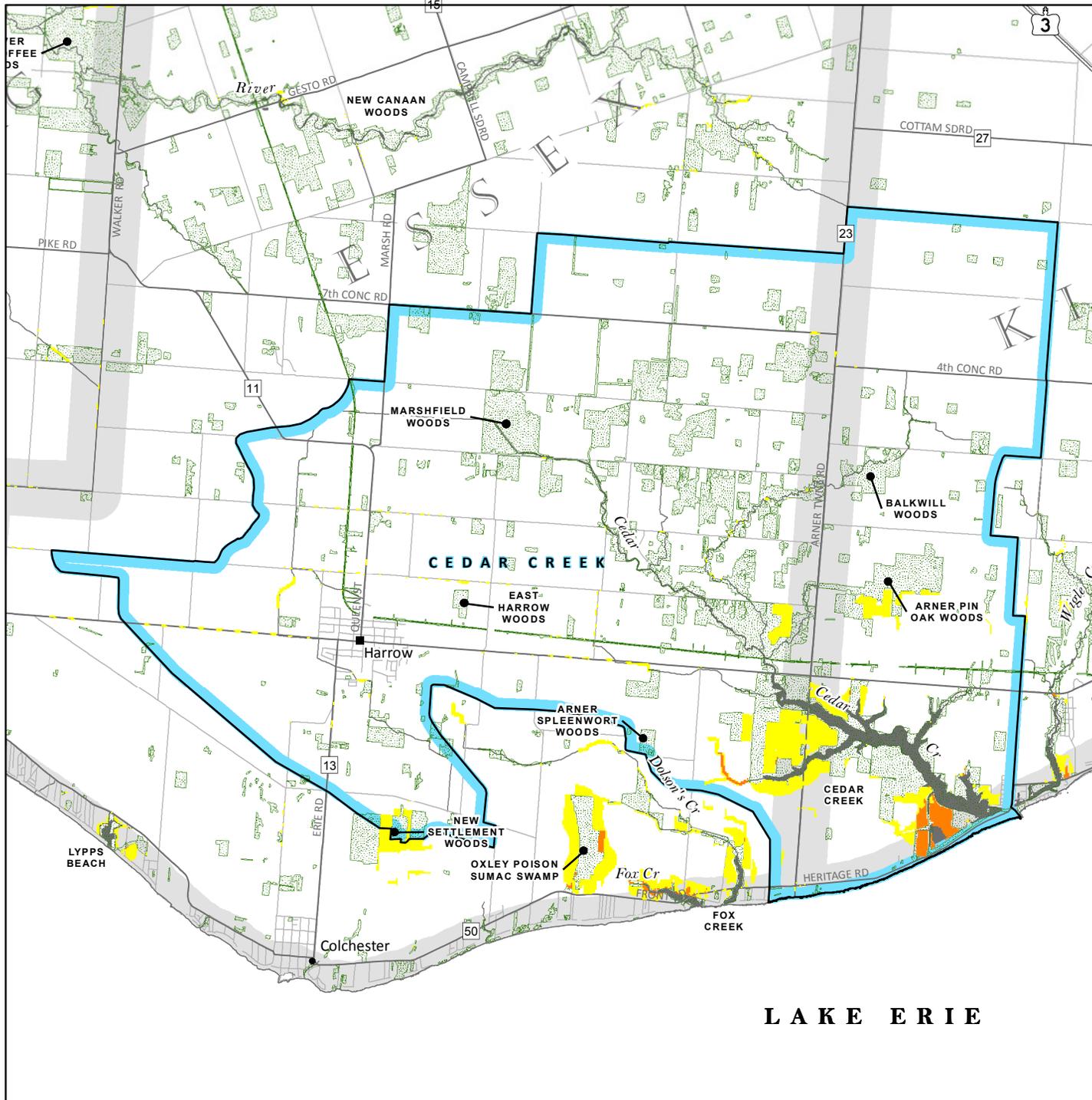




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Cedar Creek Provincially Significant Wetlands; as well as reforestation adjacent to the ERCA owned Arner Woods property.

# Priority of Restoration Opportunities

## Cedar Creek



### Legend

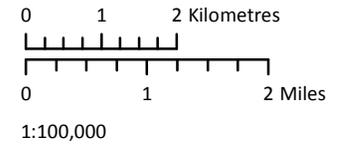
#### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



# LAKE ERIE



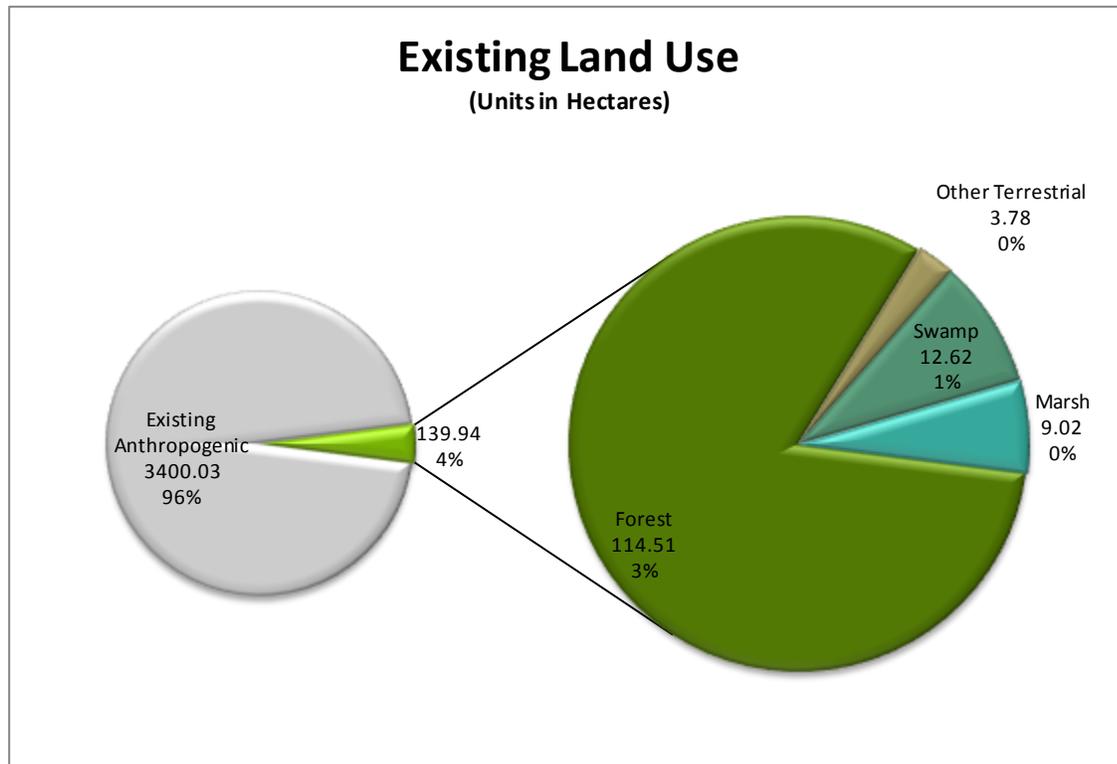
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - Cedar Creek - 20130430.mxd  
 TD 30/04/2013

3.2.7 Colchester Area Drainage System

3.2.7.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Colchester Area drainage system.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	114.51	282.97	3.23
Other Terrestrial	3.78	9.34	0.11
<b>Total Terrestrial Habitat</b>	<b>118.30</b>	<b>292.31</b>	<b>3.34</b>
Wetland Habitat	Hectares	Acres	%
Swamp	12.62	31.19	0.36
Marsh	9.02	22.29	0.25
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>21.64</b>	<b>53.48</b>	<b>0.61</b>
<b>Existing Natural Area</b>	<b>139.94</b>	<b>345.79</b>	<b>3.95</b>
<b>Existing Anthropogenic</b>	<b>3400.03</b>	<b>8401.62</b>	<b>96.05</b>
<b>Total Land Area</b>	<b>3539.97</b>	<b>8747.41</b>	<b>100.00</b>



# Existing Natural Features

## Colchester Area Drainage Fox/Dolson's Creek

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

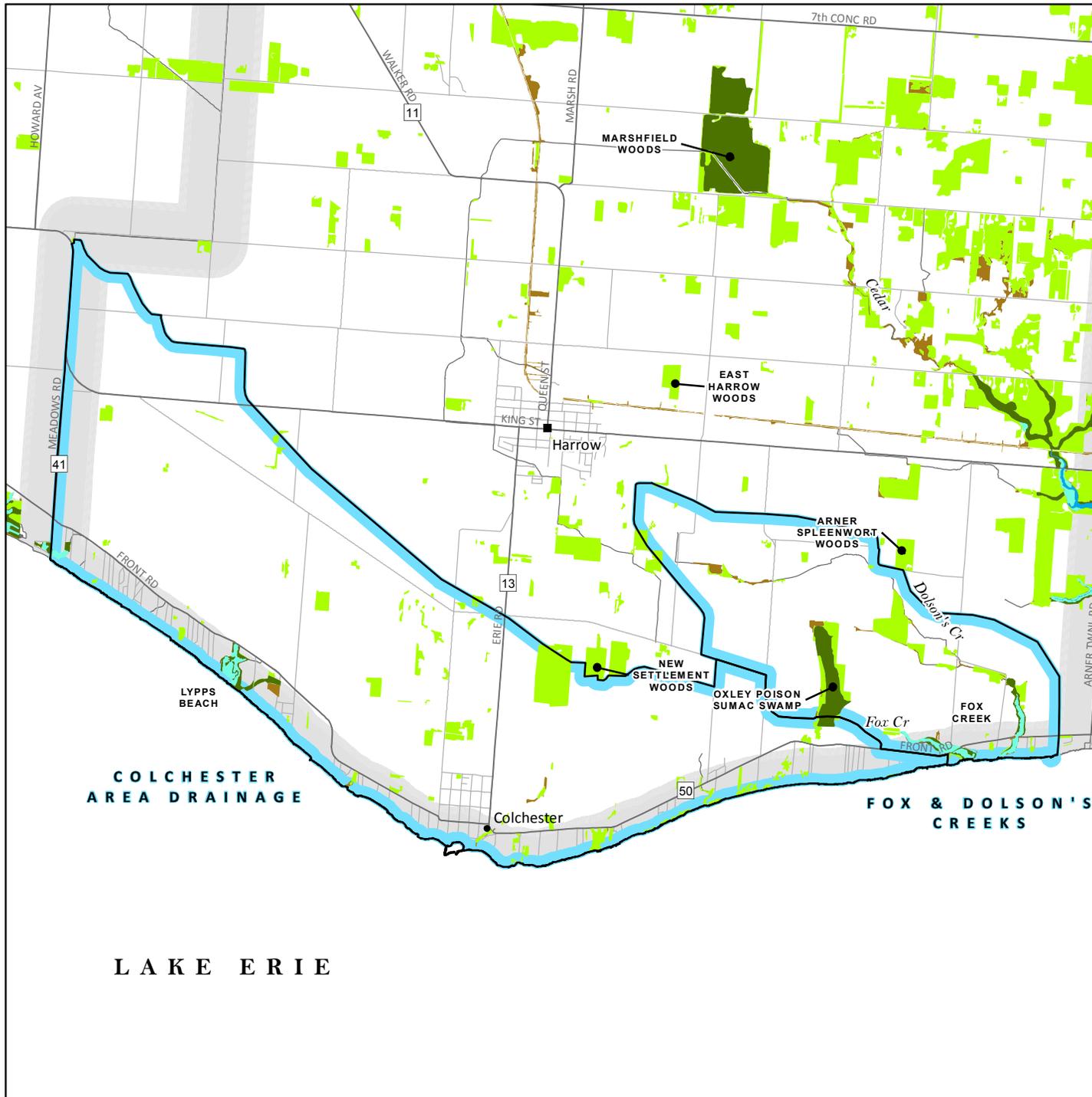
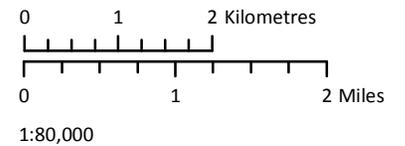
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



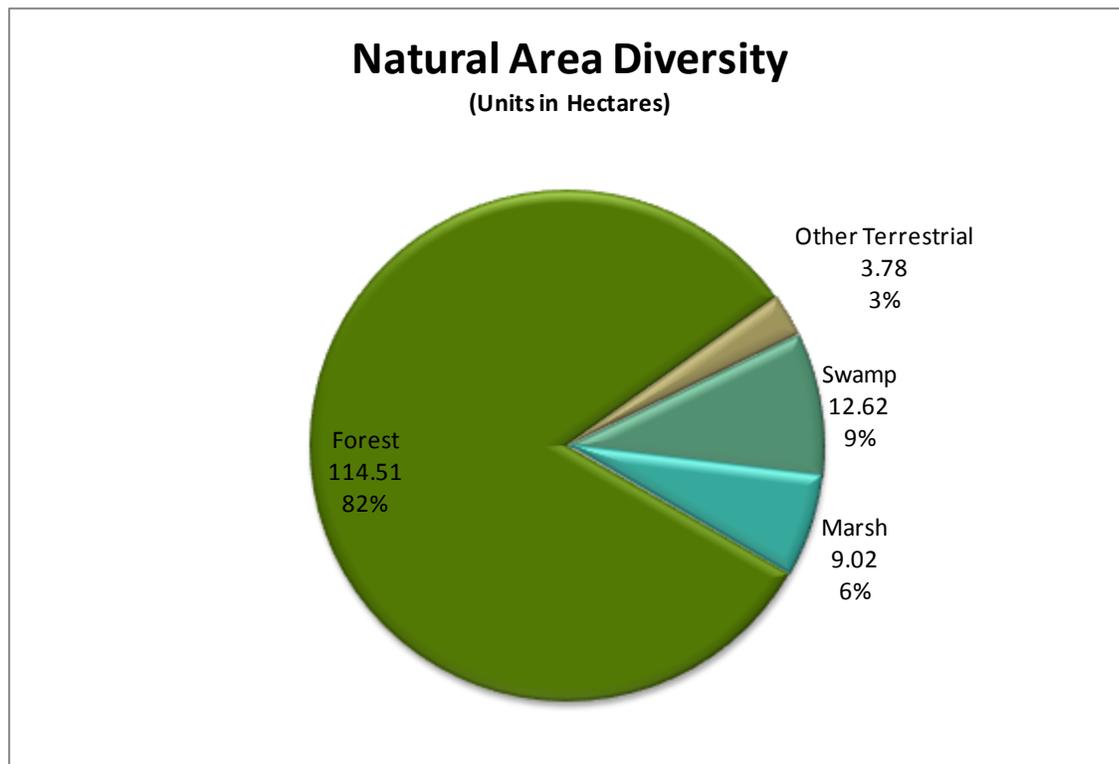
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - ColchesterFoxCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Oxley Poison Sumac Swamp and is 48.6 ha in size. In addition, 2 forest patches within the study area contain 100 m interior forest, of which 1 patch contains 200 m interior forest.

**3.2.7.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Colchester Area drainage system.

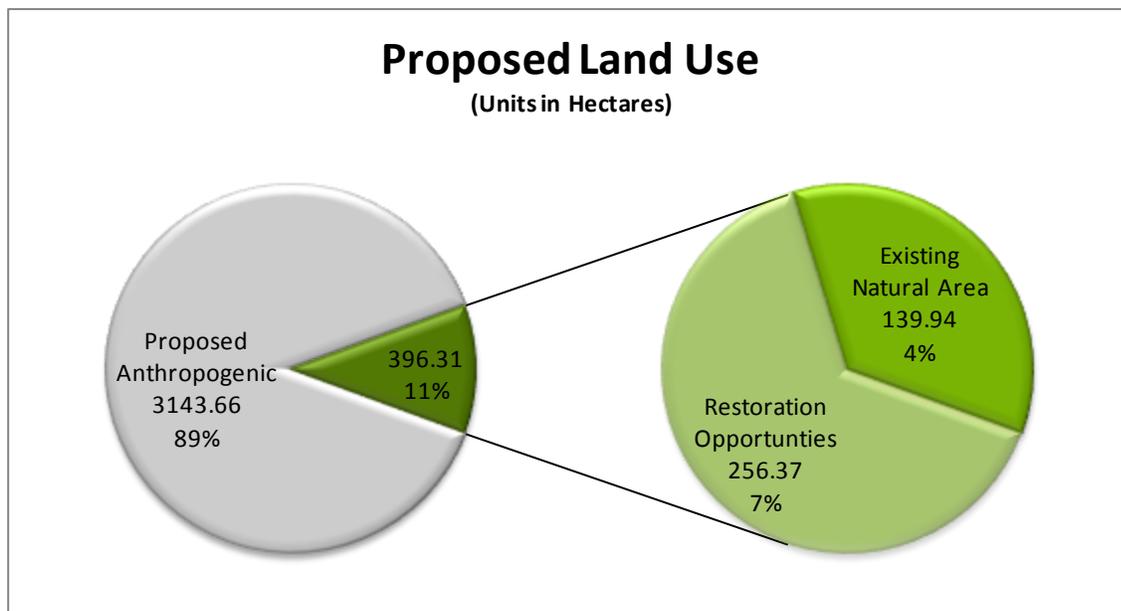
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	114.51	282.97	81.83
Other Terrestrial	3.78	9.34	2.70
Swamp	12.62	31.19	9.02
Marsh	9.02	22.29	6.45
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>118.30</b>	<b>292.31</b>	<b>84.53</b>
<b>Total Wetland Habitat</b>	<b>21.64</b>	<b>53.48</b>	<b>15.47</b>
<b>Existing Natural Area</b>	<b>139.94</b>	<b>345.79</b>	<b>100.00</b>

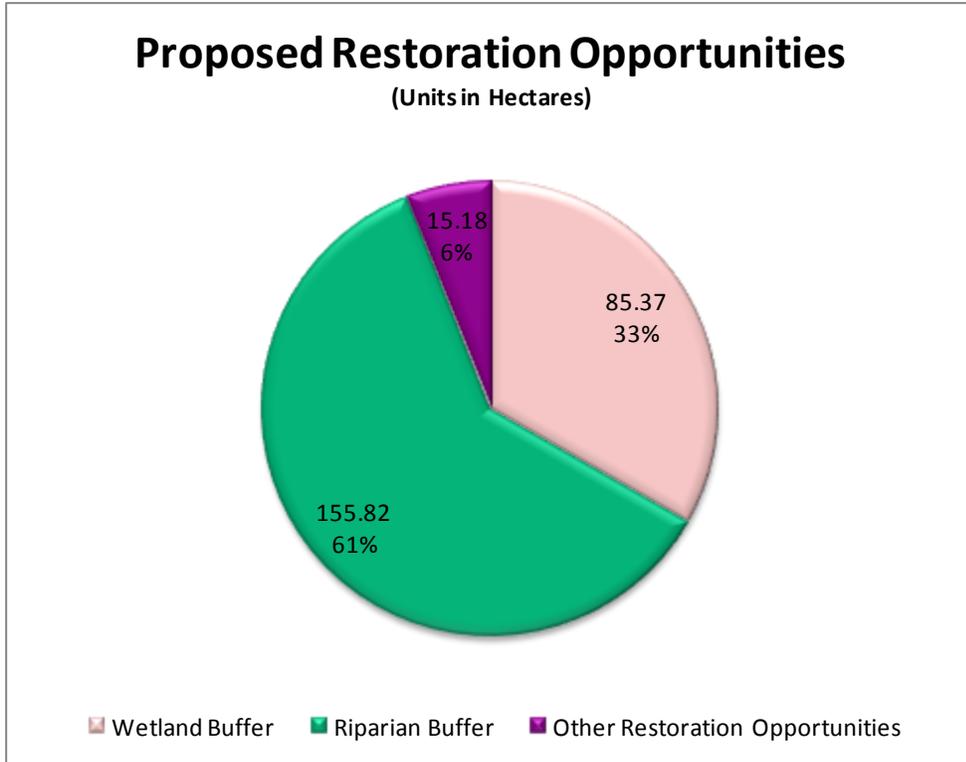


**3.2.7.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Colchester Area drainage system.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	85.37	210.95	2.41
Riparian Buffer	155.82	385.04	4.40
Other Restoration Opportunities	15.18	37.52	0.43
<b>Total Restoration Opportunities</b>	<b>256.37</b>	<b>633.51</b>	<b>7.24</b>
<b>Status Quo Anthropogenic</b>	<b>3143.66</b>	<b>7768.11</b>	<b>88.80</b>
<b>Total Land Area</b>	<b>3539.97</b>	<b>8747.41</b>	<b>100.00</b>

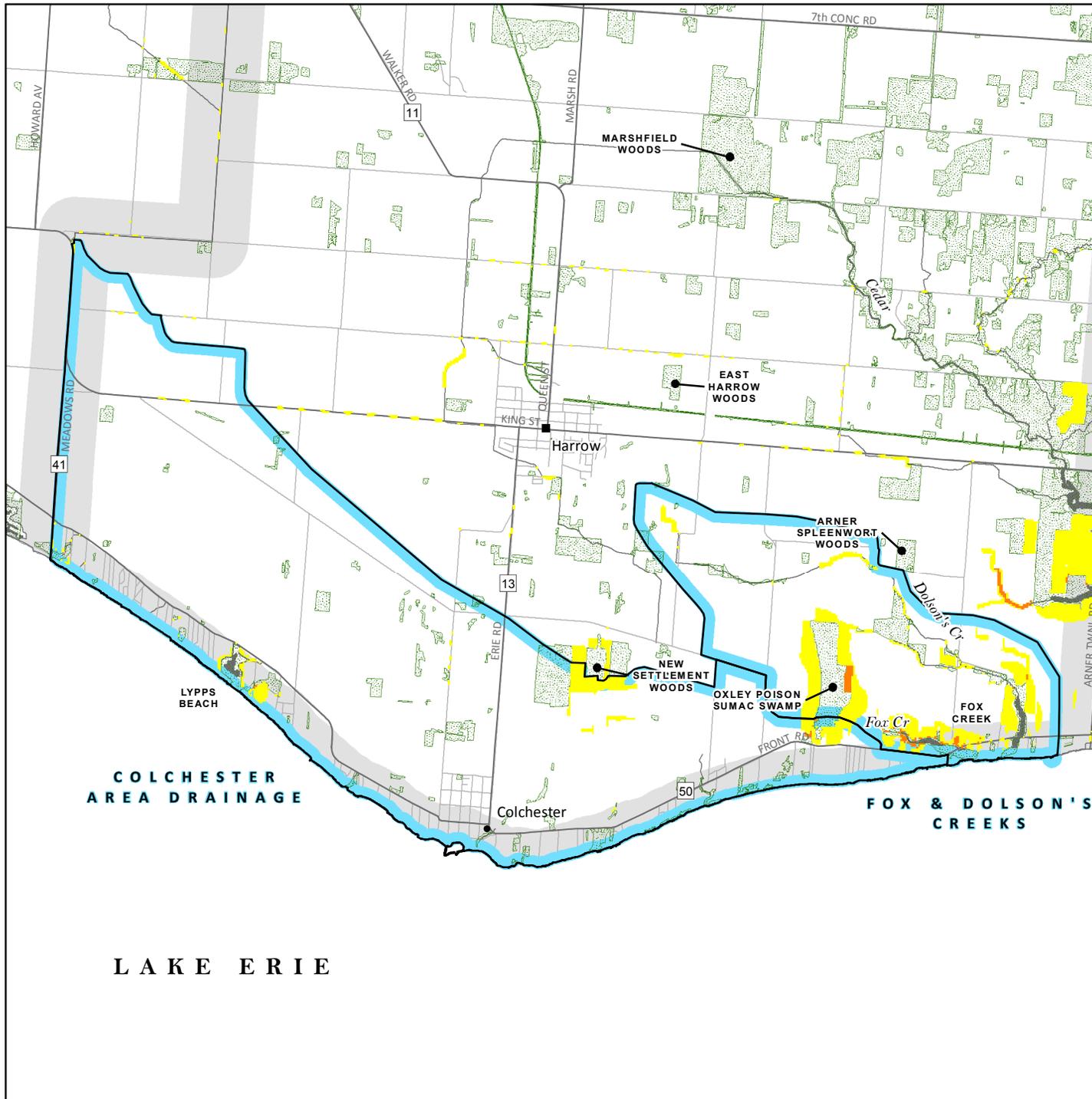




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Oxley Poison Sumac Swamp and Lypp’s Beach Provincially Significant Wetlands; as well as reforestation between the forest patches associated with New Settlement Woods.

# Priority of Restoration Opportunities

Colchester Area Drainage  
Fox/Dolson's Creek



## Legend

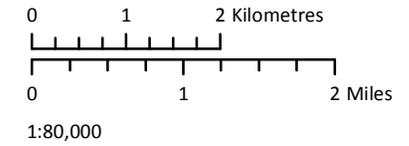
### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

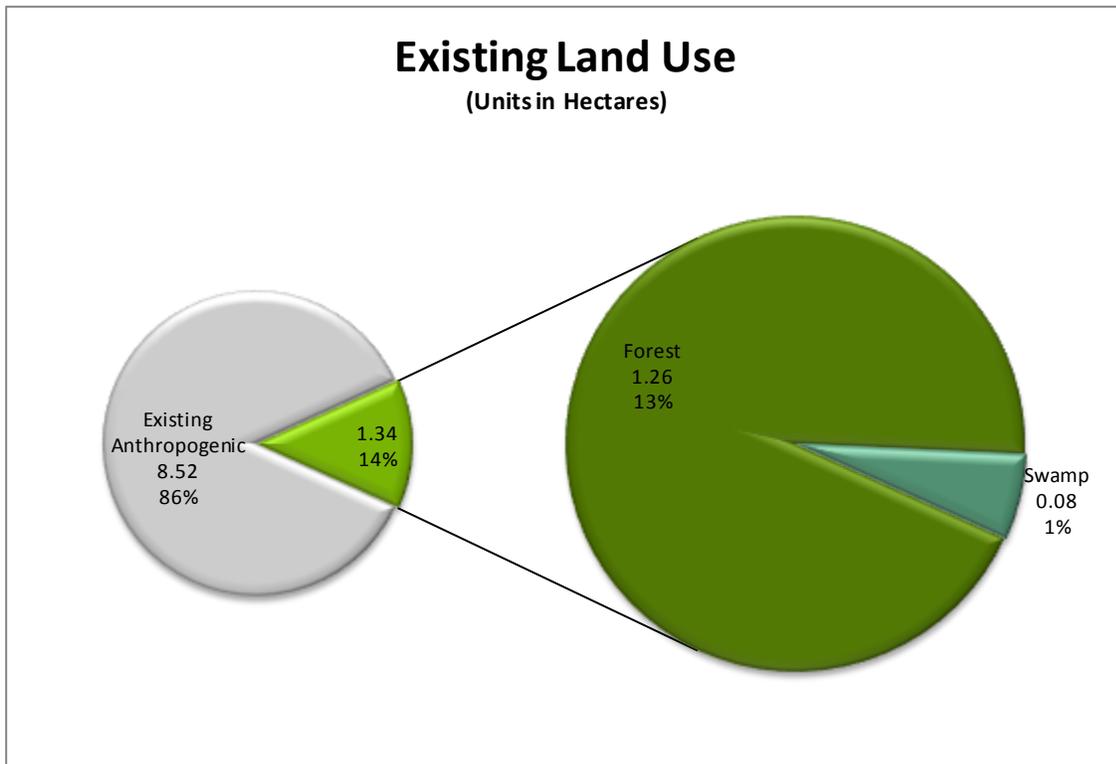


3.2.8 Coterie Park Drainage System

3.2.8.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Coterie Park drainage system.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	1.26	3.11	12.77
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>1.26</b>	<b>3.11</b>	<b>12.77</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.08	0.20	0.82
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.08</b>	<b>0.20</b>	<b>0.82</b>
<b>Existing Natural Area</b>	<b>1.34</b>	<b>3.31</b>	<b>13.59</b>
<b>Existing Anthropogenic</b>	<b>8.52</b>	<b>21.06</b>	<b>86.41</b>
<b>Total Land Area</b>	<b>9.86</b>	<b>24.37</b>	<b>100.00</b>



# Existing Natural Features

Atwell Drain                      Elmdale Drainage System  
 Coterie Park Drainage System      Muddy Creek

## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

- Forest
- Other

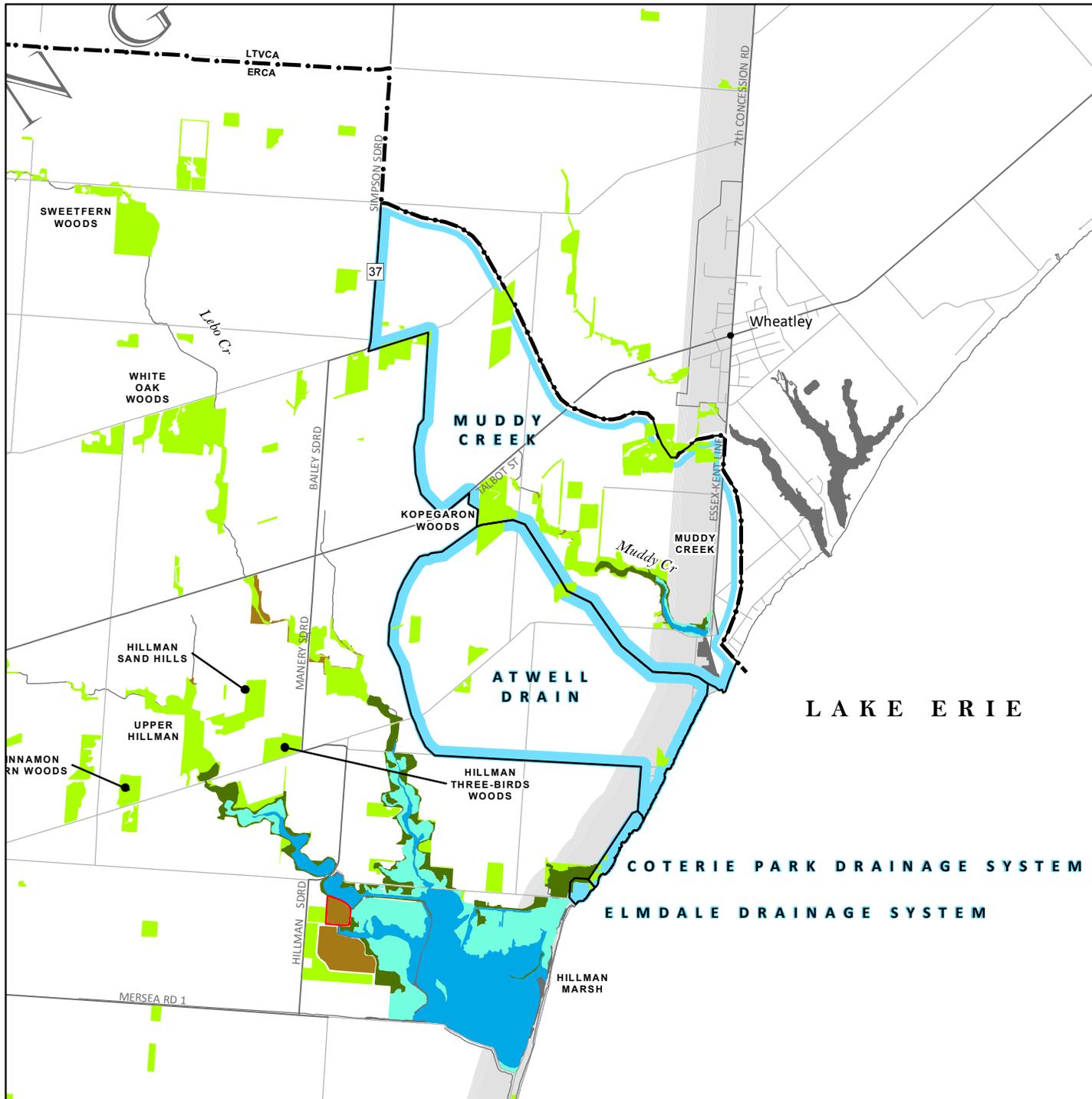
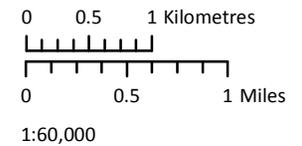
### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



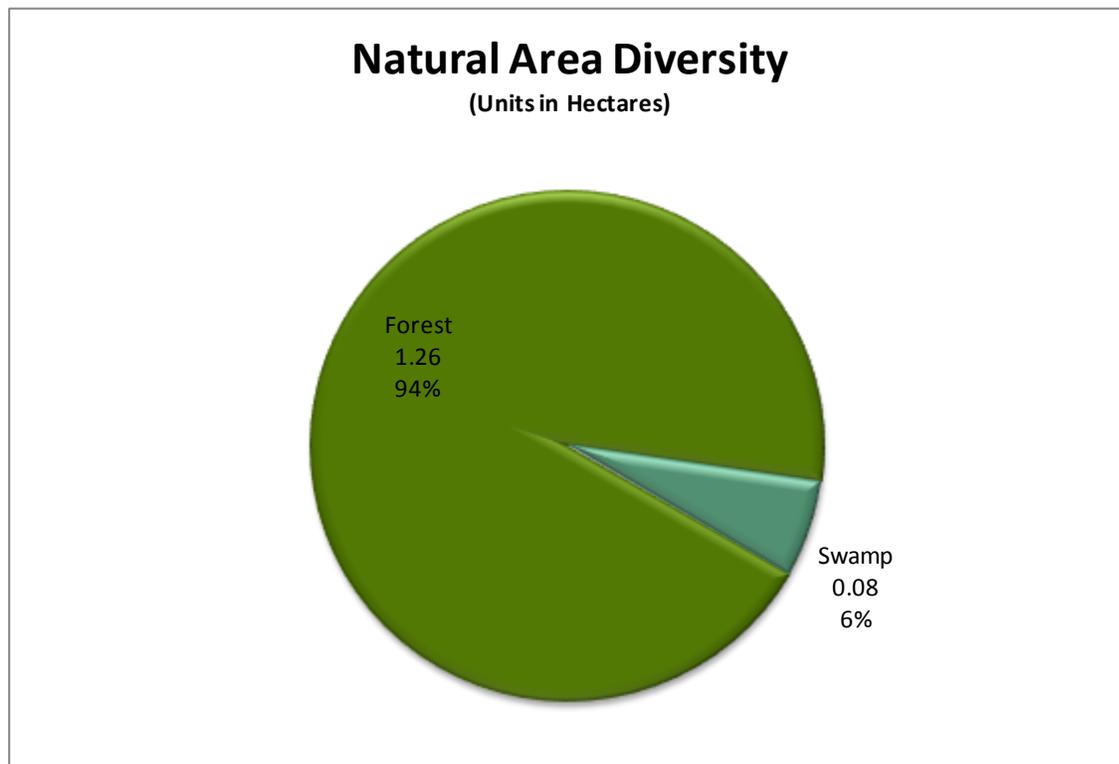
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - Atwell\CoterieElmdaleMuddy - 20130424.mxd  
 TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Hillman Marsh and is 14.2 ha in size. In addition, no forest patches within the study area contain 100 m interior forest or 200 m interior forest.

**3.2.8.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Coterie Park drainage system.

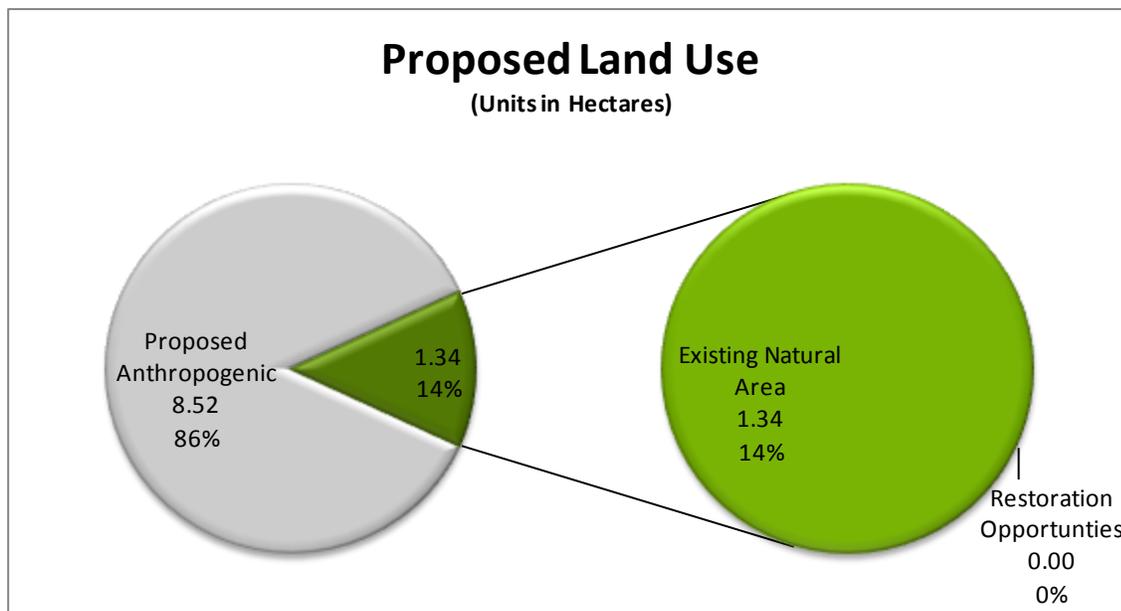
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	1.26	3.11	93.94
Other Terrestrial	0.00	0.00	0.00
Swamp	0.08	0.20	6.06
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>1.26</b>	<b>3.11</b>	<b>93.94</b>
<b>Total Wetland Habitat</b>	<b>0.08</b>	<b>0.20</b>	<b>6.06</b>
<b>Existing Natural Area</b>	<b>1.34</b>	<b>3.31</b>	<b>100.00</b>



**3.2.8.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Coterie Park drainage system.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	0.00	0.00	0.00
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Status Quo Anthropogenic</b>	<b>8.52</b>	<b>21.06</b>	<b>86.41</b>
<b>Total Land Area</b>	<b>9.86</b>	<b>24.37</b>	<b>100.00</b>



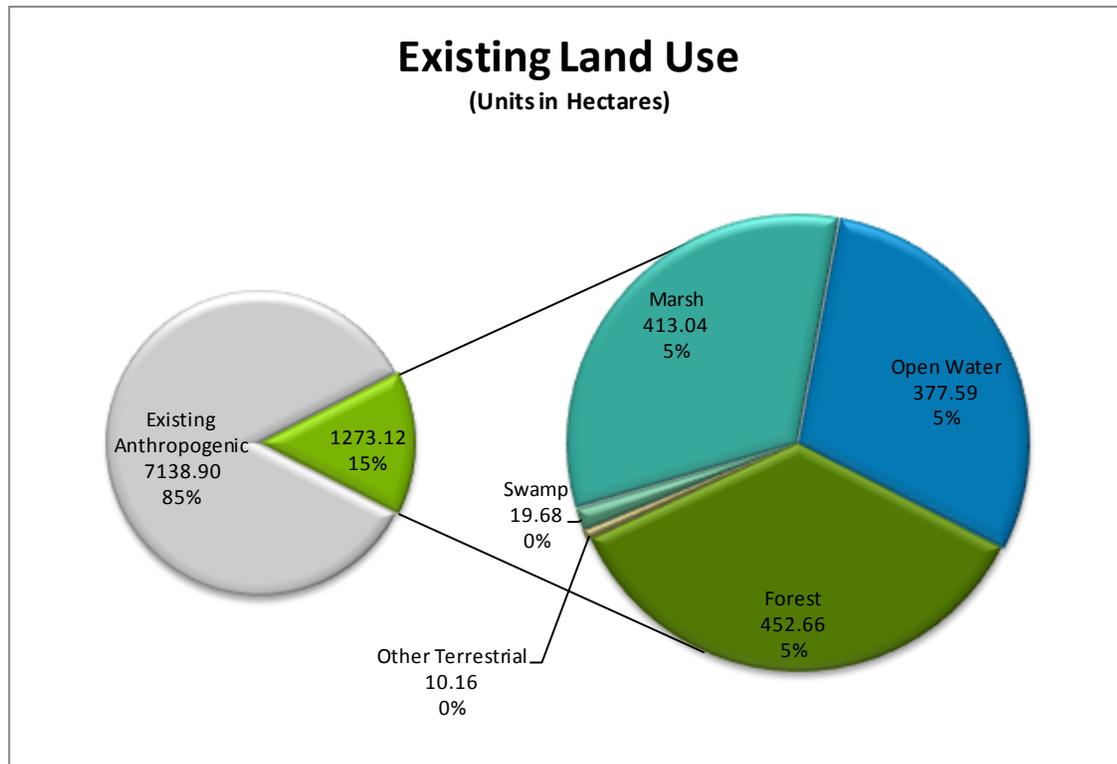
No restoration opportunities are proposed within this study area.

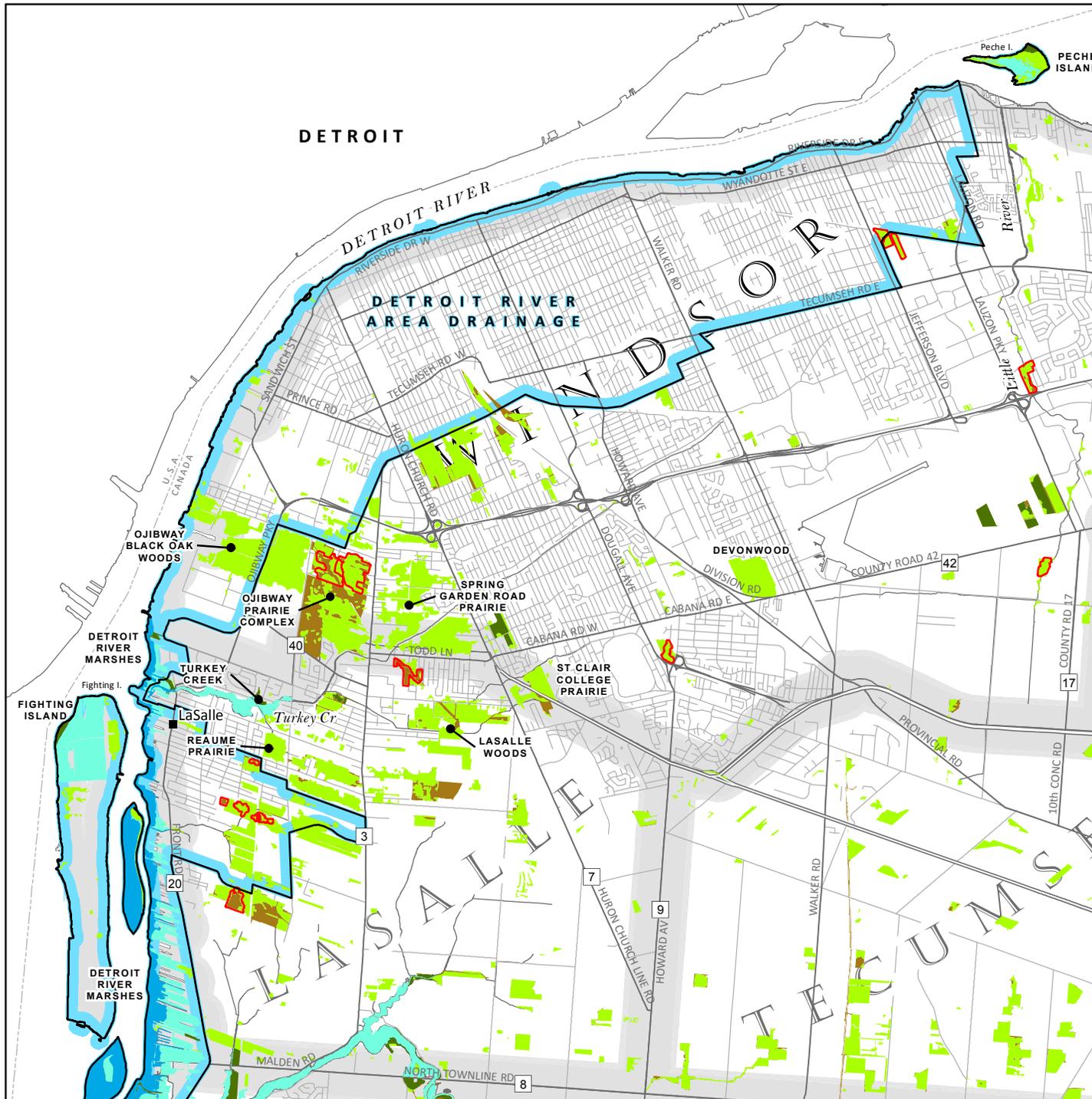
3.2.9 *Detroit River Drainage Area*

3.2.9.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Detroit River subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	452.66	1118.53	5.38
Other Terrestrial	10.16	25.11	0.12
<b>Total Terrestrial Habitat</b>	<b>462.82</b>	<b>1143.64</b>	<b>5.50</b>
Wetland Habitat	Hectares	Acres	%
Swamp	19.68	48.62	0.23
Marsh	413.04	1020.63	4.91
Open Water	377.59	933.04	4.49
<b>Total Wetland Habitat</b>	<b>810.31</b>	<b>2002.30</b>	<b>9.63</b>
<b>Existing Natural Area</b>	<b>1273.12</b>	<b>3145.94</b>	<b>15.13</b>
<b>Existing Anthropogenic</b>	<b>7138.90</b>	<b>17640.53</b>	<b>84.87</b>
<b>Total Land Area</b>	<b>8412.02</b>	<b>20786.48</b>	<b>100.00</b>





# Existing Natural Features

## Detroit River Drainage Area (North)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

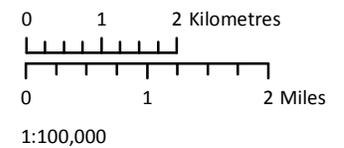
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - DetroitRiver North - 20130424.mxd  
 TD 29/04/2013

# Existing Natural Features

## Detroit River Drainage Area (South)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

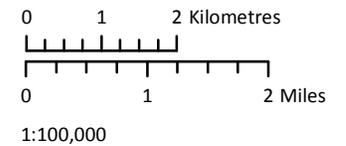
#### Features of Interest

- Tallgrass Prairie Community

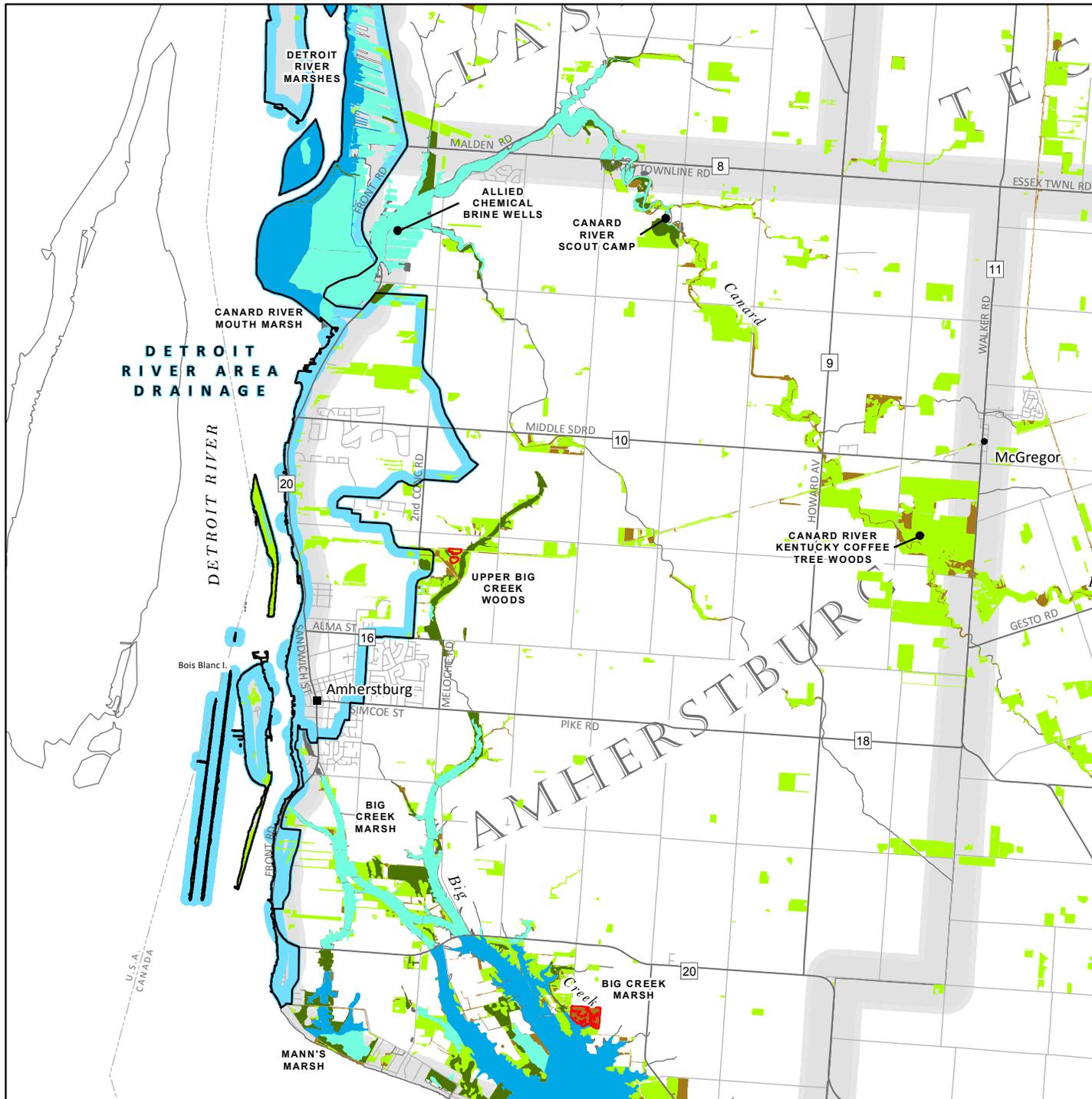
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - DetroitRiver South - 20130424.mxd  
TD 29/04/2013

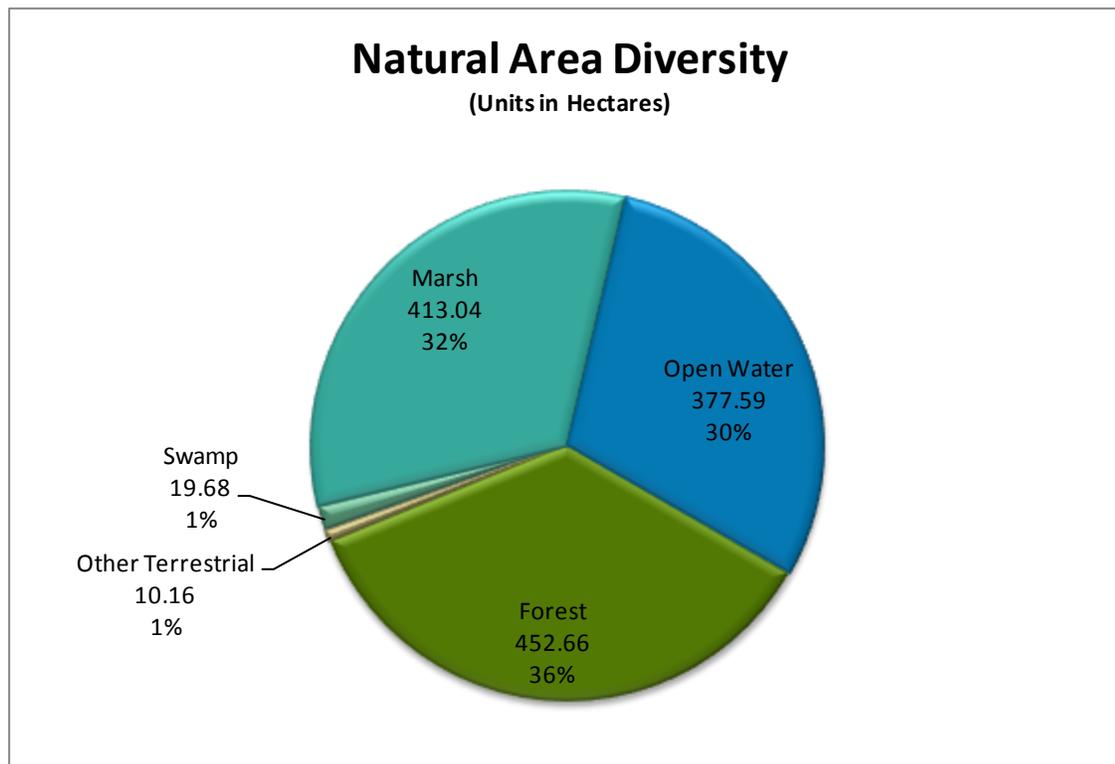


Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of LaSalle Candidate Natural Heritage Site M6/CH1 and is 37.3 ha in size. In addition, 13 forest patches within the study area contain 100 m interior forest, of which 1 patch contains 200 m interior forest.

**3.2.9.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Detroit River subwatershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	452.66	1118.53	35.55
Other Terrestrial	10.16	25.11	0.80
Swamp	19.68	48.62	1.55
Marsh	413.04	1020.63	32.44
Open Water	377.59	933.04	29.66
<b>Total Terrestrial Habitat</b>	<b>462.82</b>	<b>1143.64</b>	<b>36.35</b>
<b>Total Wetland Habitat</b>	<b>810.31</b>	<b>2002.30</b>	<b>63.65</b>
<b>Existing Natural Area</b>	<b>1273.12</b>	<b>3145.94</b>	<b>100.00</b>

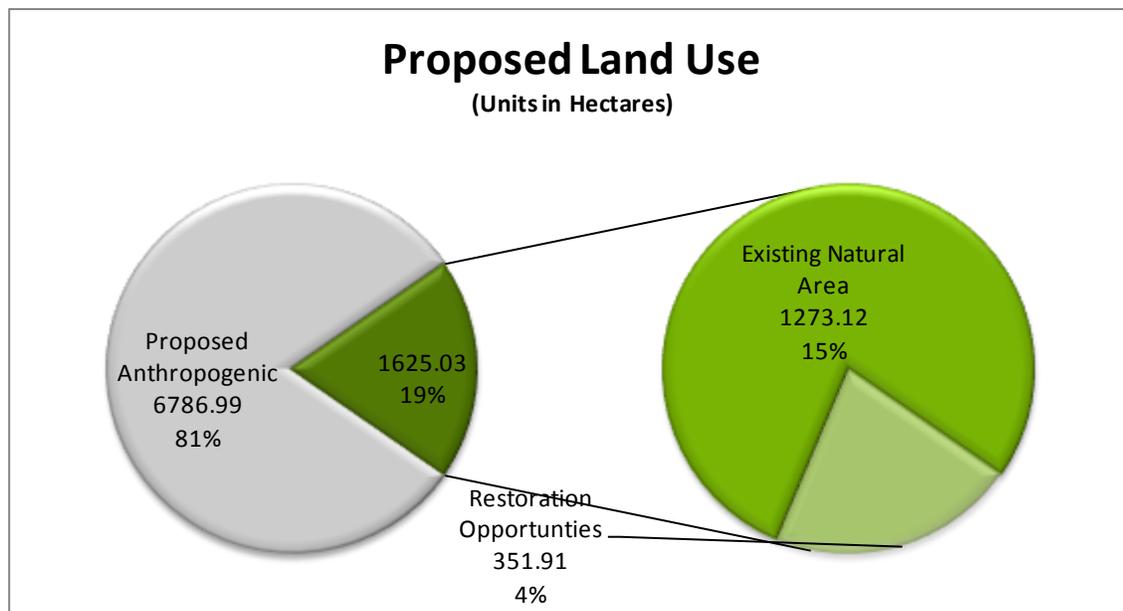


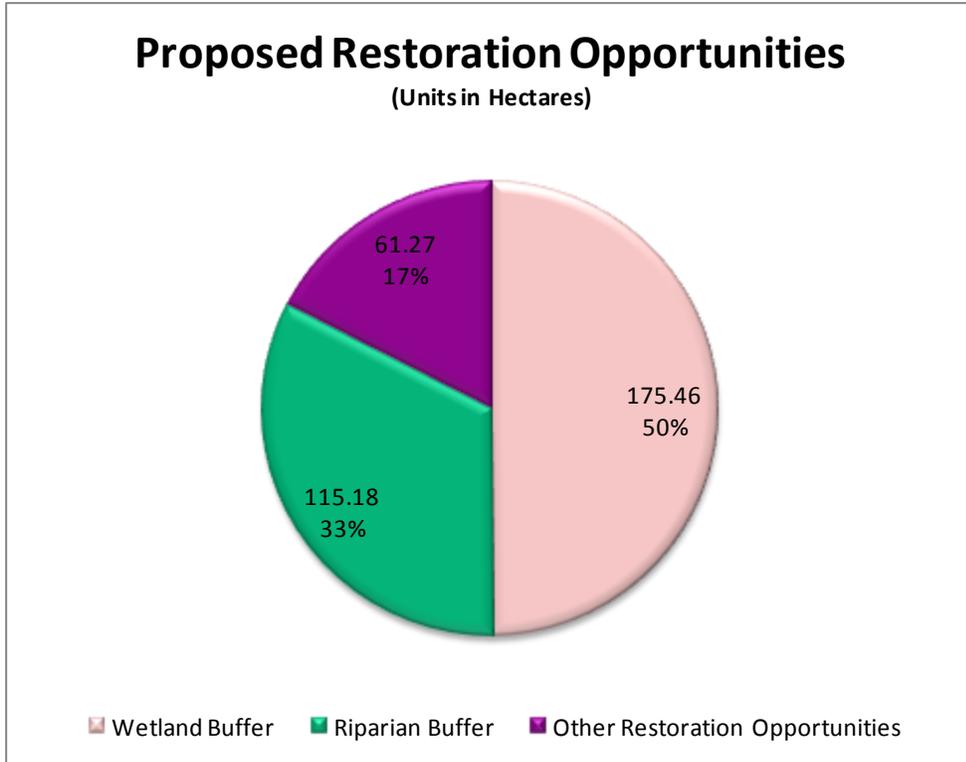
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.9.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Detroit River subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	175.46	433.57	2.09
Riparian Buffer	115.18	284.62	1.37
Other Restoration Opportunities	61.27	151.40	0.73
<b>Total Restoration Opportunities</b>	<b>351.91</b>	<b>869.58</b>	<b>4.18</b>
<b>Status Quo Anthropogenic</b>	<b>6786.99</b>	<b>16770.95</b>	<b>80.68</b>
<b>Total Land Area</b>	<b>8412.02</b>	<b>20786.48</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include tallgrass prairie community restoration associated with the Ojibway Prairie Complex and Town of LaSalle Candidate Natural Heritage Sites; as well as wetland buffers adjacent to the Detroit River Marshes Provincially Significant Wetlands.

# Priority of Restoration Opportunities

Detroit River Drainage Area  
(North)



### Legend

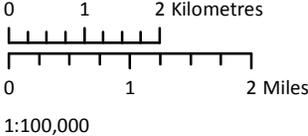
#### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

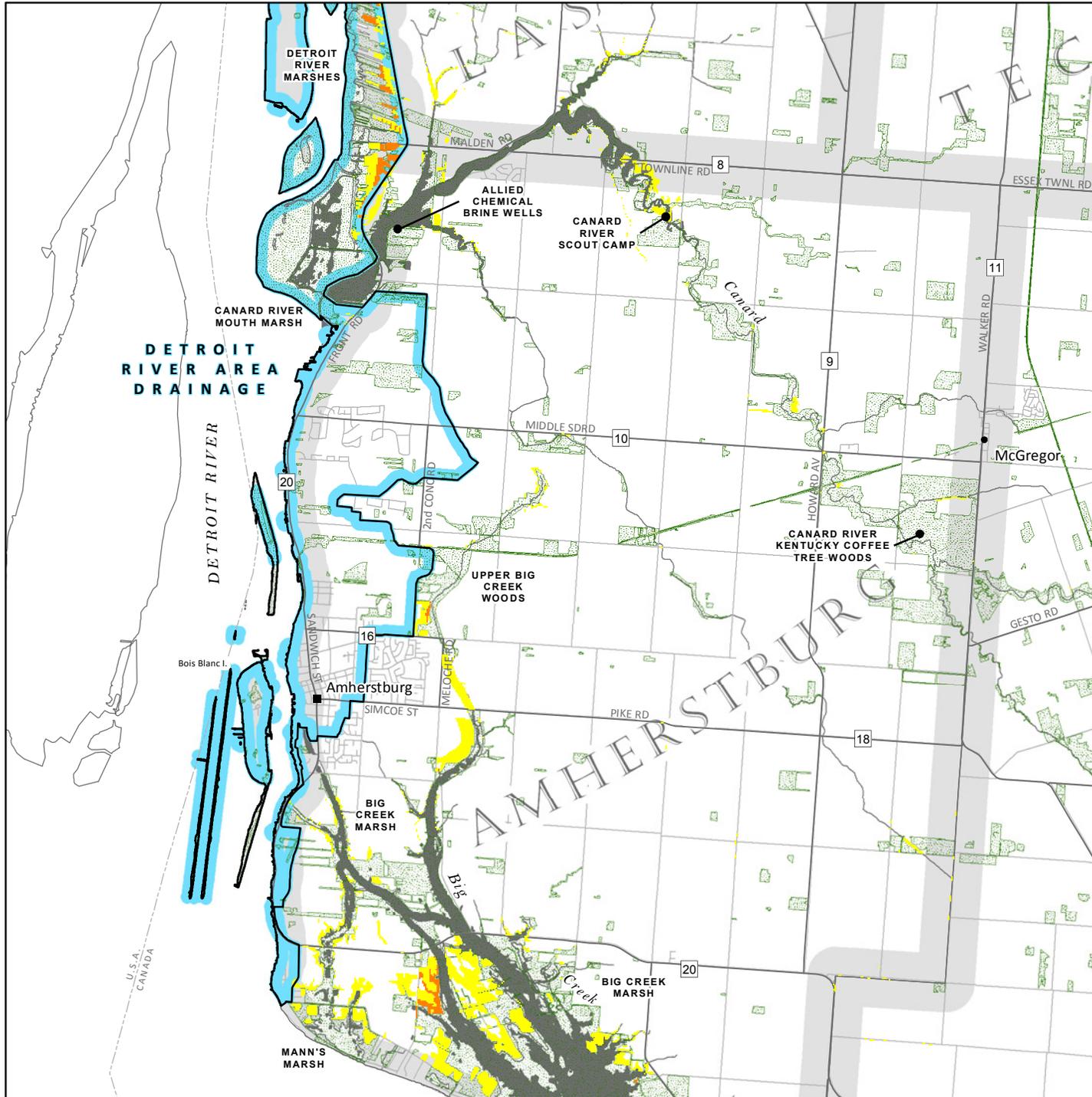
Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



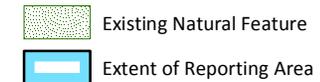
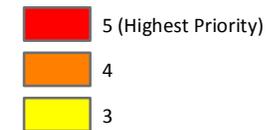
# Priority of Restoration Opportunities

## Detroit River Drainage Area (South)



### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



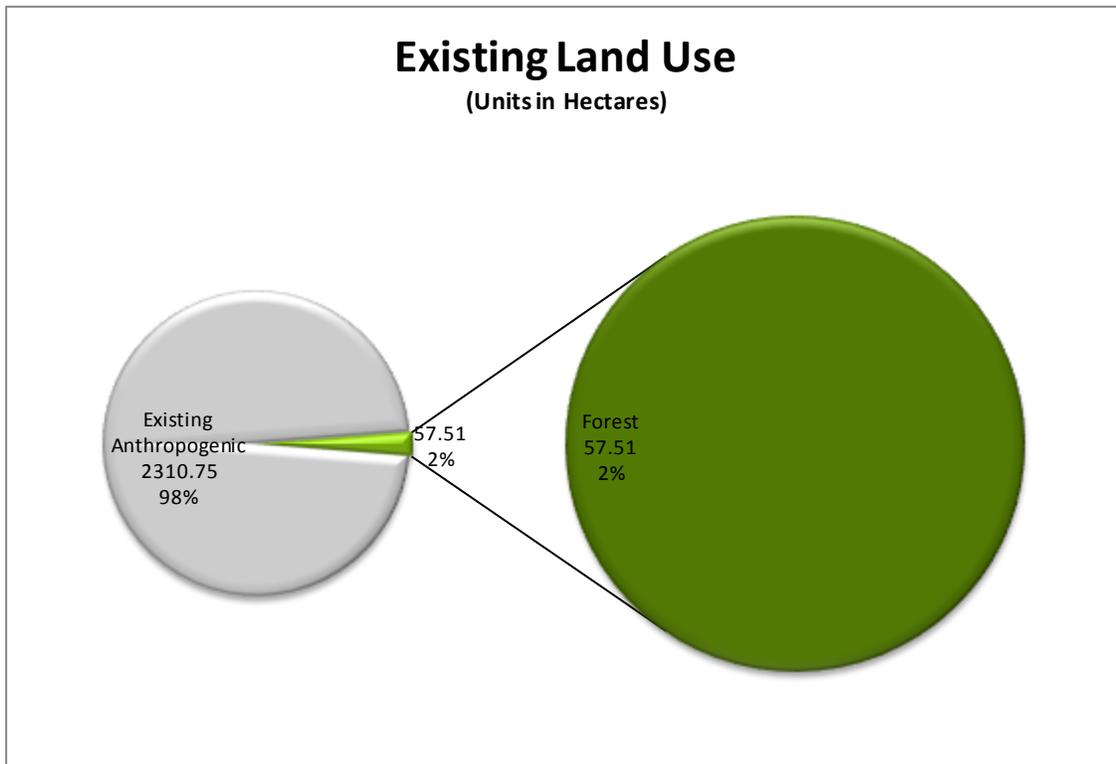
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - DetroitRiver South - 20130430.mxd  
TD 30/04/2013

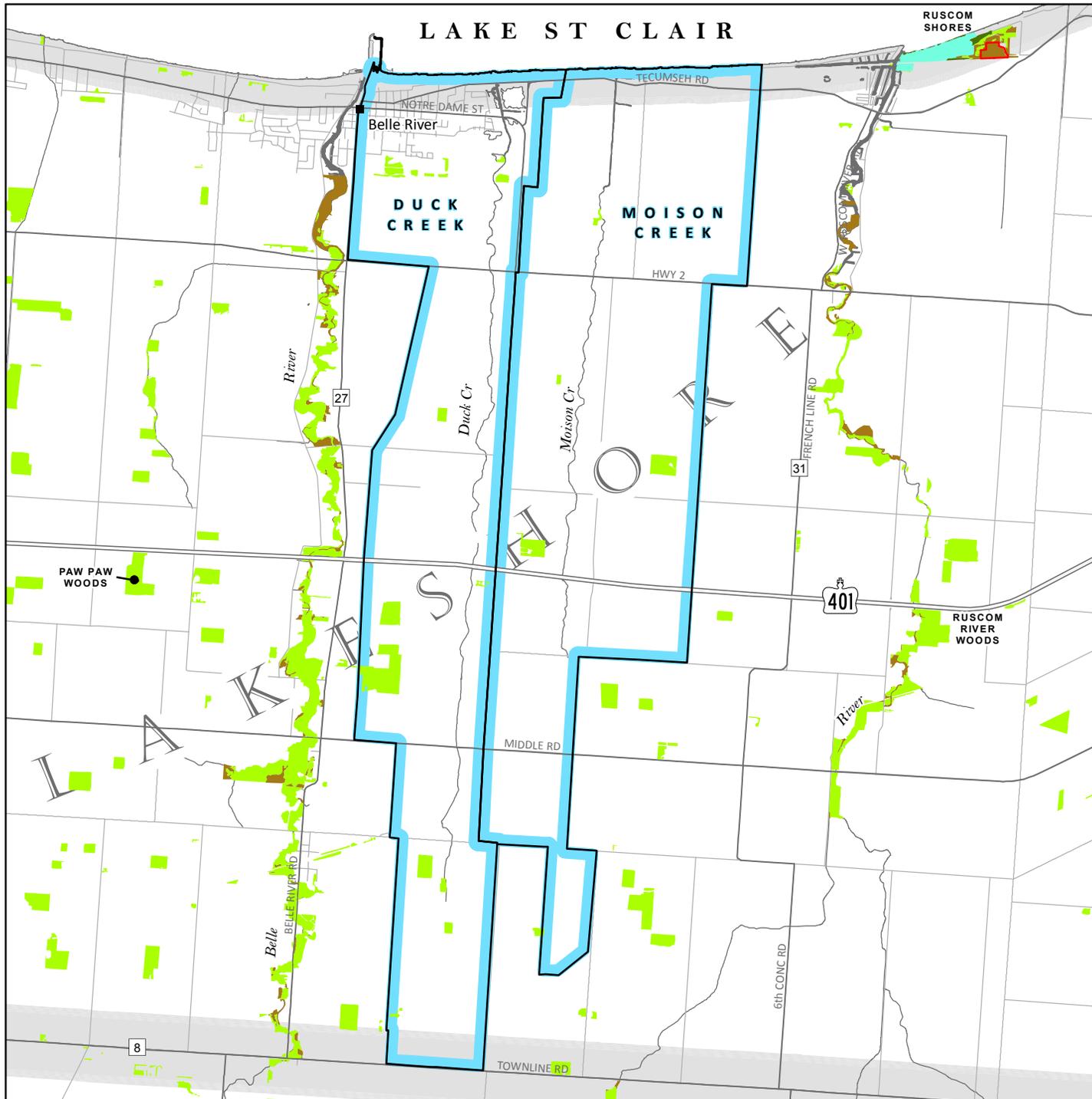
3.2.10 Duck Creek

3.2.10.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Duck Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	57.51	142.11	2.43
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>57.51</b>	<b>142.11</b>	<b>2.43</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>57.51</b>	<b>142.11</b>	<b>2.43</b>
<b>Existing Anthropogenic</b>	<b>2310.75</b>	<b>5709.96</b>	<b>97.57</b>
<b>Total Land Area</b>	<b>2368.26</b>	<b>5852.07</b>	<b>100.00</b>





# Existing Natural Features

Duck Creek  
Moison Creek

## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

- Forest
- Other

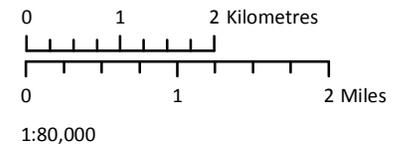
### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



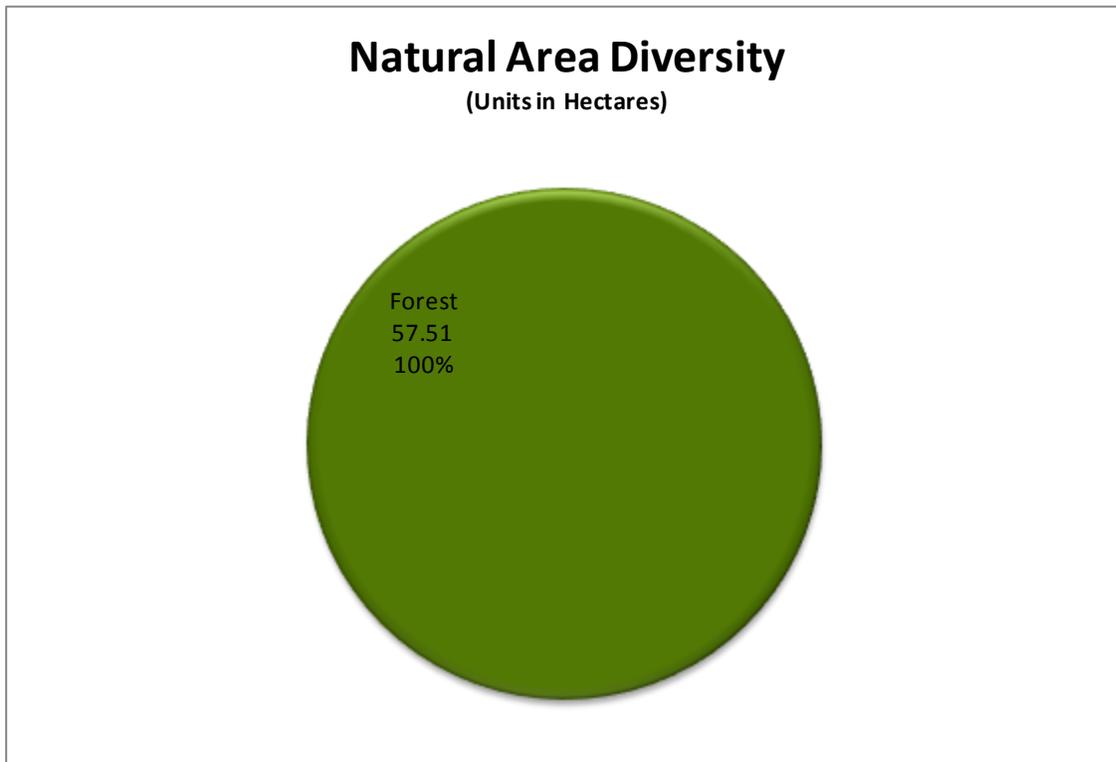
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - DuckMoisonCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 25.2 ha in size. In addition, 3 forest patches within the study area contain 100 m interior forest, none of which contain 200 m interior forest.

**3.2.10.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Duck Creek subwatershed.

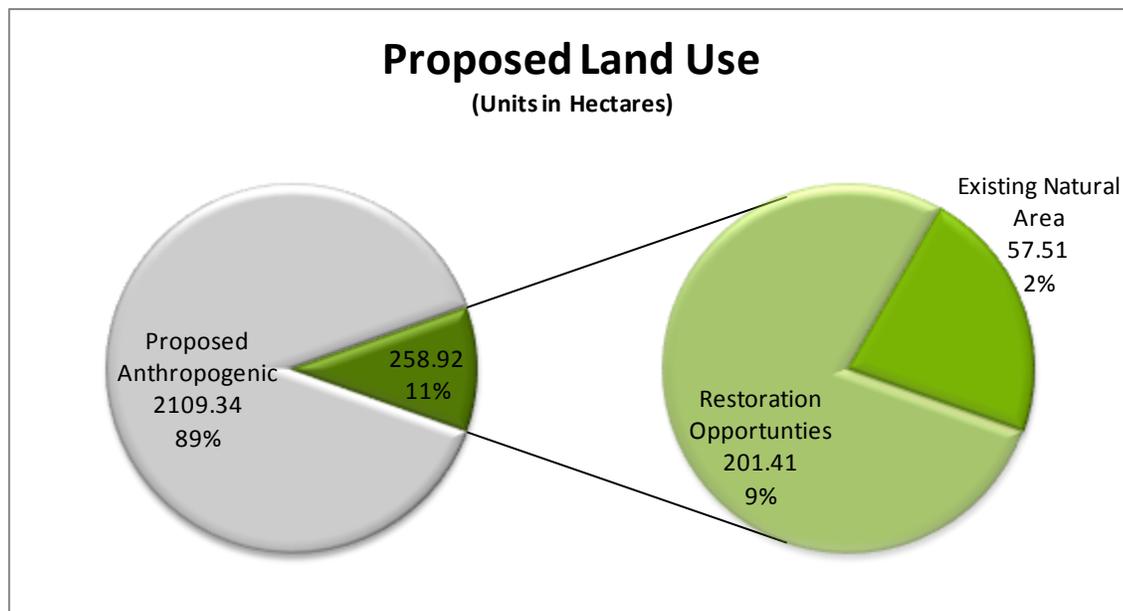
<b>Natural Area Composition</b>			
<b>Vegetation Community Type</b>	<b>Hectares</b>	<b>Acres</b>	<b>%</b>
Forest	57.51	142.11	100.00
Other Terrestrial	0.00	0.00	0.00
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>57.51</b>	<b>142.11</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>57.51</b>	<b>142.11</b>	<b>100.00</b>

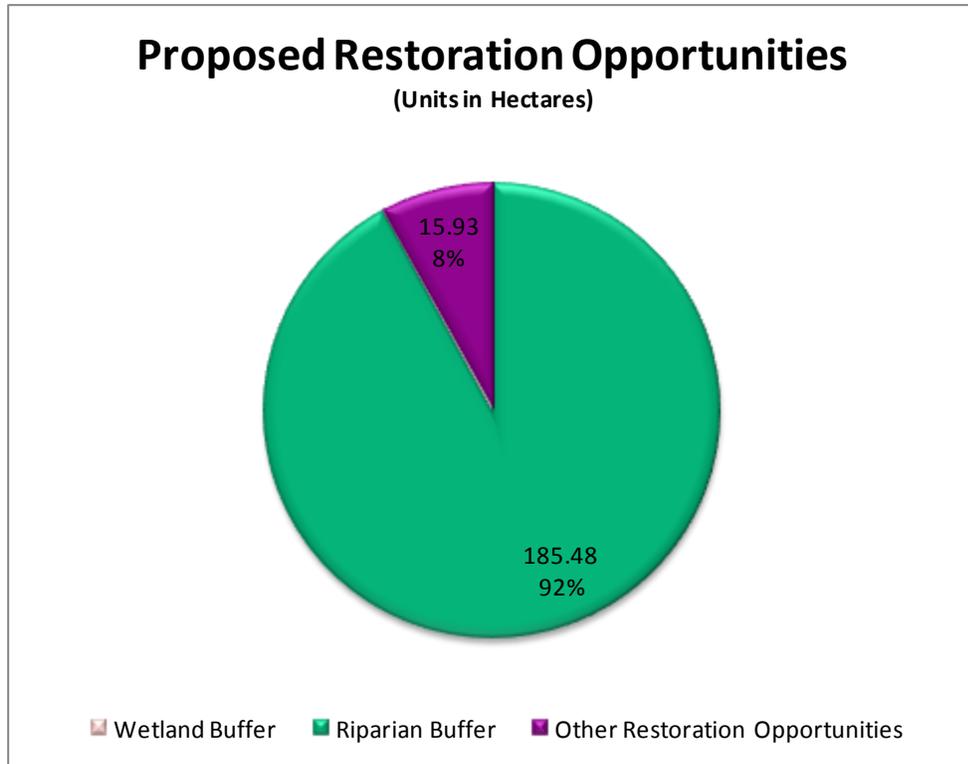


**3.2.10.3 Restoration Opportunities**

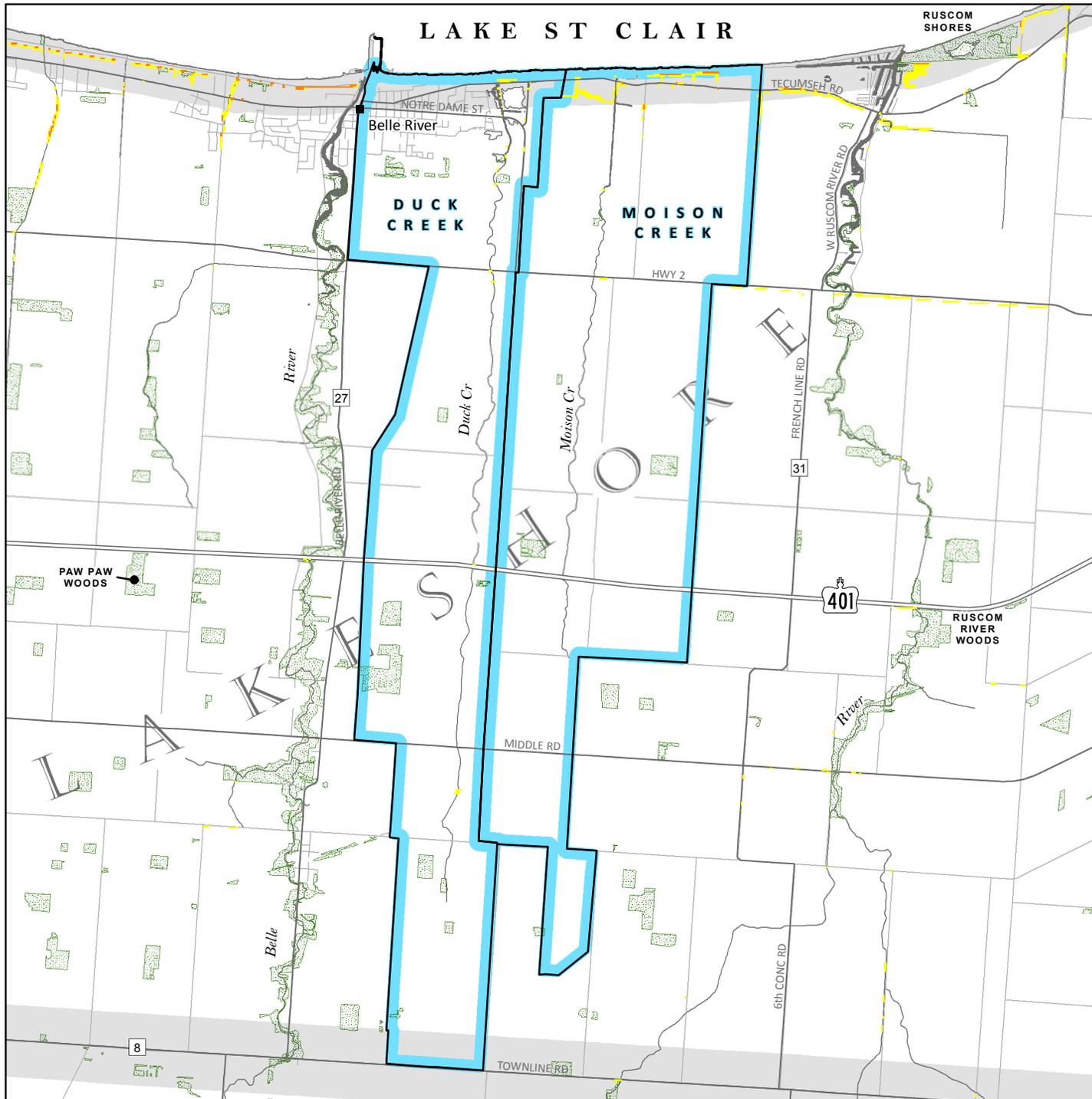
The following Table and Figures summarizes the proposed restoration opportunities within the Duck Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	185.48	458.32	7.83
Other Restoration Opportunities	15.93	39.36	0.67
<b>Total Restoration Opportunities</b>	<b>201.41</b>	<b>497.68</b>	<b>8.50</b>
<b>Status Quo Anthropogenic</b>	<b>2109.34</b>	<b>5212.28</b>	<b>89.07</b>
<b>Total Land Area</b>	<b>2368.26</b>	<b>5852.07</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering along Duck Creek.

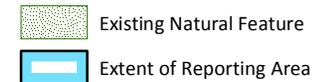
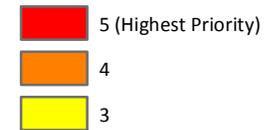


# Priority of Restoration Opportunities

Duck Creek  
Moison Creek

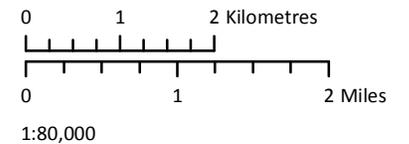
## Legend

### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



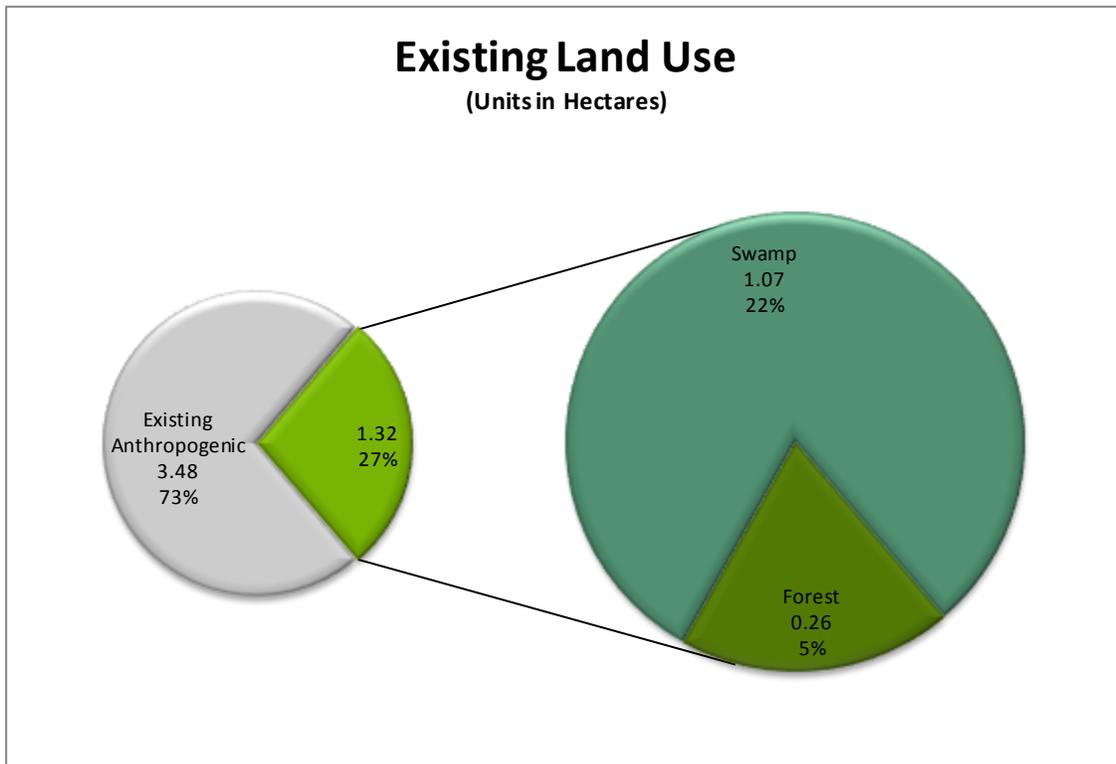
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - DuckMoisonCreek - 20130430.mxd  
TD 30/04/2013

**3.2.11 Elmdale Drainage System**

**3.2.11.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Elmdale drainage system.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	0.26	0.63	5.33
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>0.26</b>	<b>0.63</b>	<b>5.33</b>
Wetland Habitat	Hectares	Acres	%
Swamp	1.07	2.64	22.21
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>1.07</b>	<b>2.64</b>	<b>22.21</b>
<b>Existing Natural Area</b>	<b>1.32</b>	<b>3.27</b>	<b>27.54</b>
<b>Existing Anthropogenic</b>	<b>3.48</b>	<b>8.61</b>	<b>72.46</b>
<b>Total Land Area</b>	<b>4.81</b>	<b>11.88</b>	<b>100.00</b>



# Existing Natural Features

Atwell Drain                      Elmdale Drainage System  
 Coterie Park Drainage System      Muddy Creek

## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

- Forest
- Other

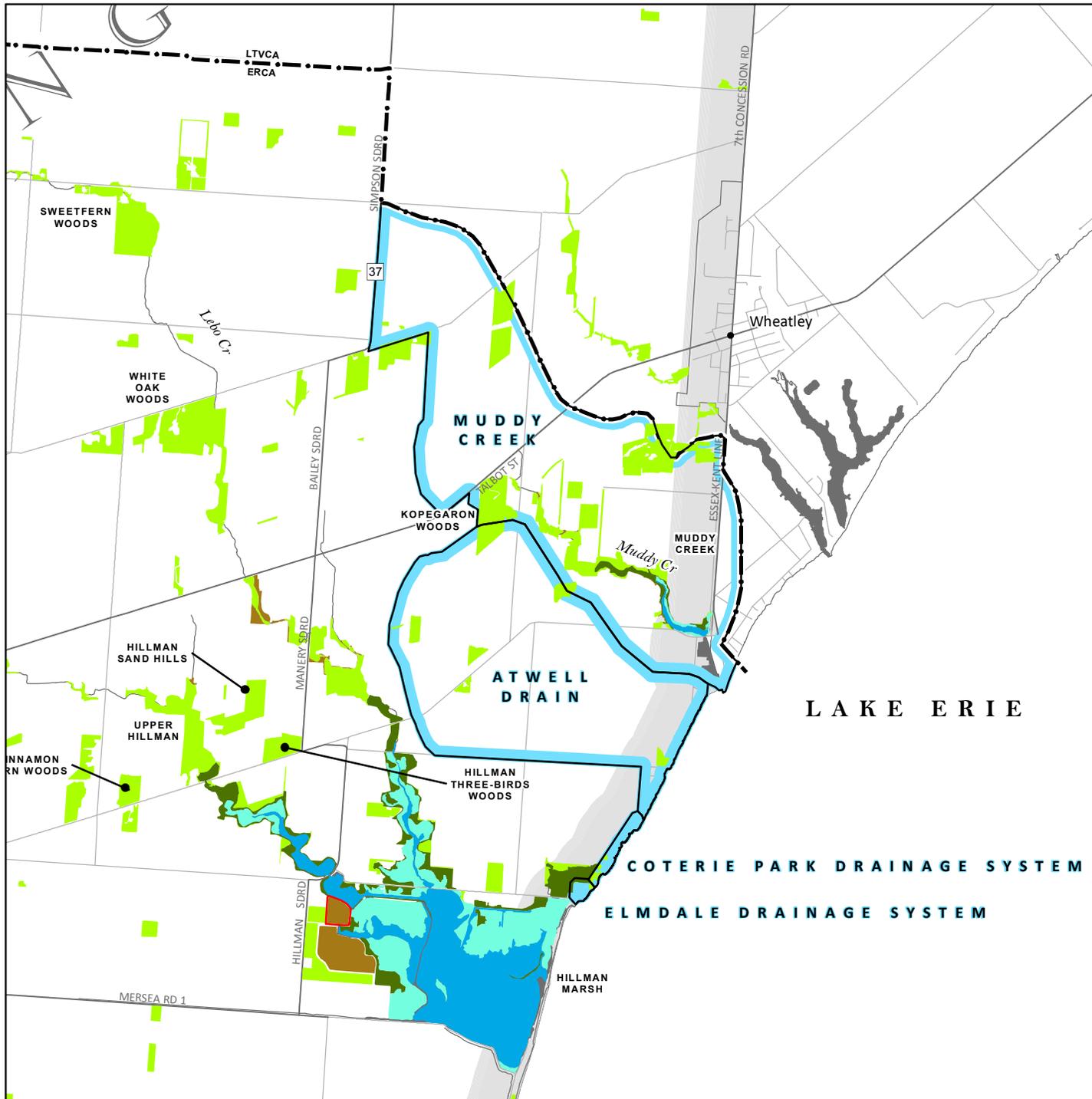
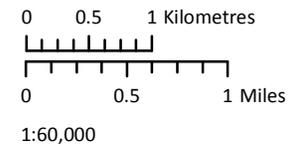
### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



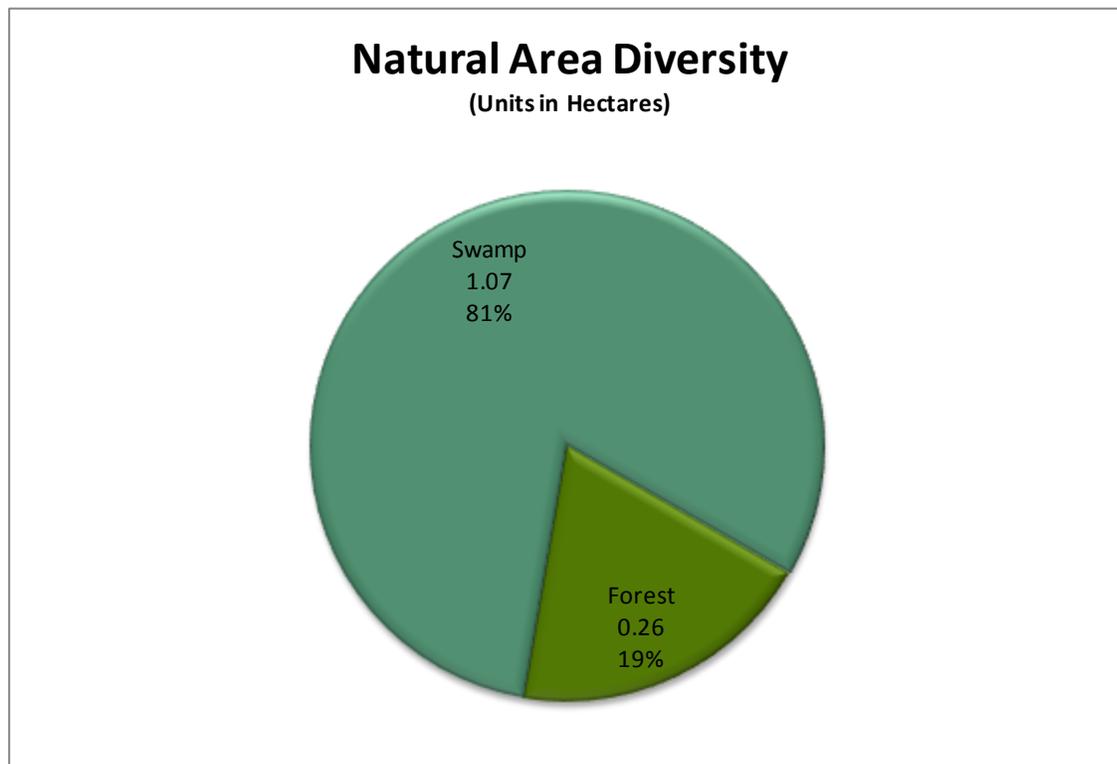
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - Atwell\CoterieElmdaleMuddy - 20130424.mxd  
 TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Hillman Marsh and is 14 ha in size. In addition, no forest patches within the study area contain 100 m interior forest or 200 m interior forest.

**3.2.11.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Elmdale drainage system.

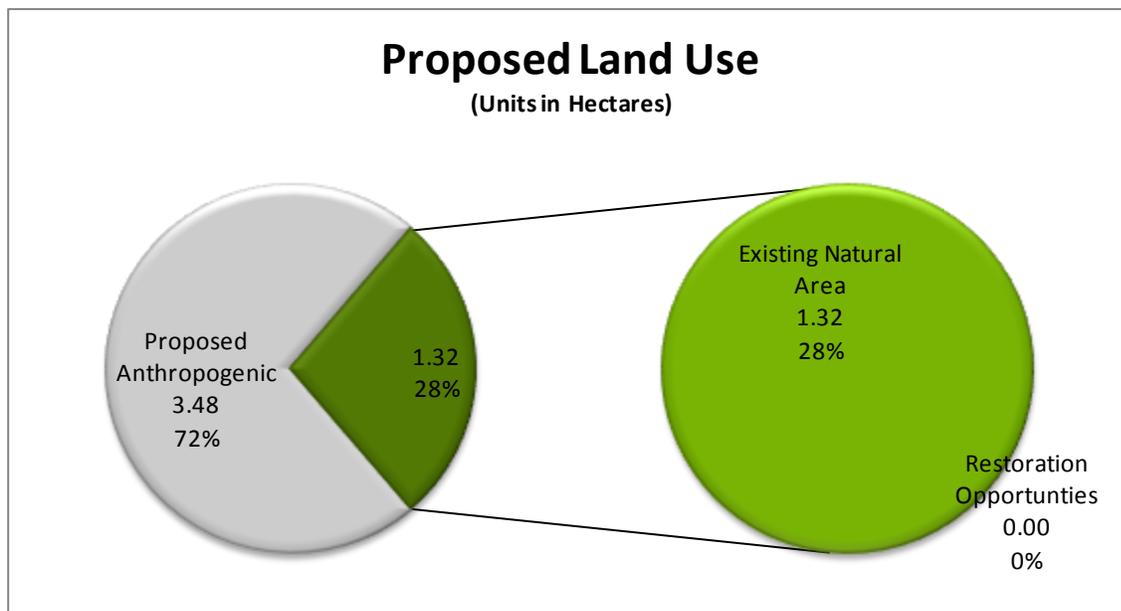
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	0.26	0.63	19.35
Other Terrestrial	0.00	0.00	0.00
Swamp	1.07	2.64	80.65
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>0.26</b>	<b>0.63</b>	<b>19.35</b>
<b>Total Wetland Habitat</b>	<b>1.07</b>	<b>2.64</b>	<b>80.65</b>
<b>Existing Natural Area</b>	<b>1.32</b>	<b>3.27</b>	<b>100.00</b>



**3.2.11.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Elmdale drainage system.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	0.00	0.00	0.00
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Status Quo Anthropogenic</b>	<b>3.48</b>	<b>8.61</b>	<b>72.46</b>
<b>Total Land Area</b>	<b>4.81</b>	<b>11.88</b>	<b>100.00</b>



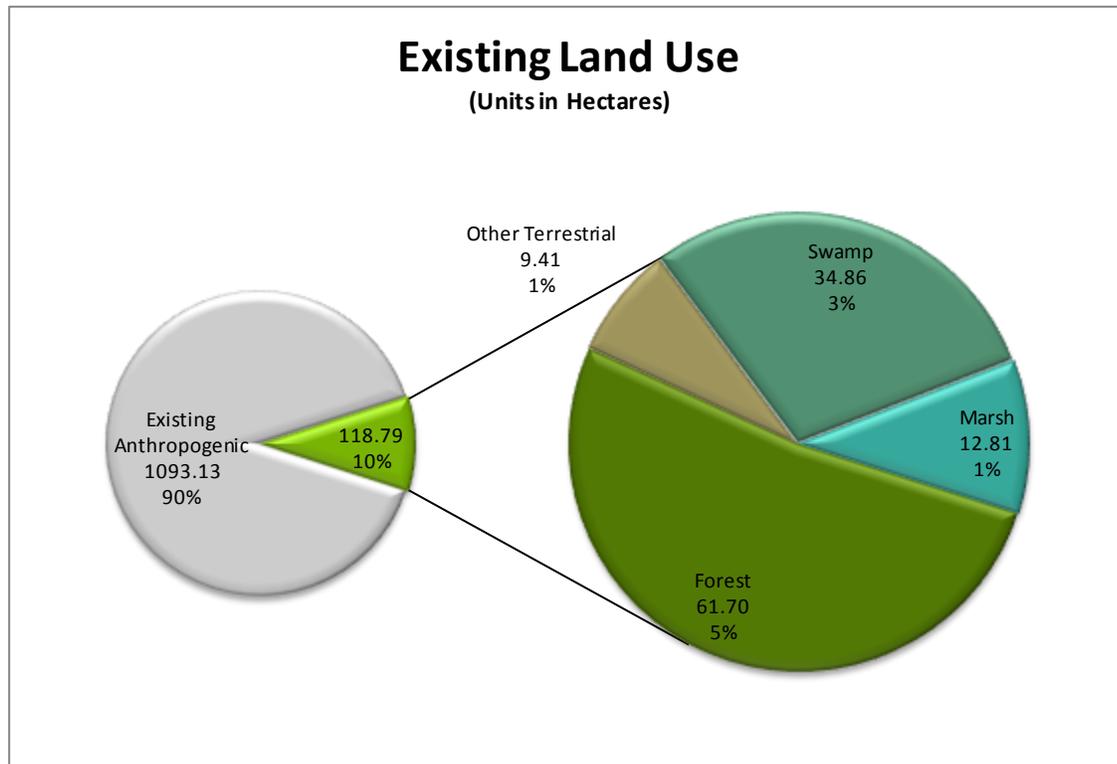
No restoration opportunities are proposed for this study area.

3.2.12 Fox/Dolson’s Creek

3.2.12.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Fox/Dolson’s Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	61.70	152.46	5.09
Other Terrestrial	9.41	23.26	0.78
<b>Total Terrestrial Habitat</b>	<b>71.11</b>	<b>175.73</b>	<b>5.87</b>
Wetland Habitat	Hectares	Acres	%
Swamp	34.86	86.15	2.88
Marsh	12.81	31.65	1.06
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>47.68</b>	<b>117.81</b>	<b>3.93</b>
<b>Existing Natural Area</b>	<b>118.79</b>	<b>293.53</b>	<b>9.80</b>
<b>Existing Anthropogenic</b>	<b>1093.13</b>	<b>2701.17</b>	<b>90.20</b>
<b>Total Land Area</b>	<b>1211.92</b>	<b>2994.70</b>	<b>100.00</b>



# Existing Natural Features

## Colchester Area Drainage Fox/Dolson's Creek

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

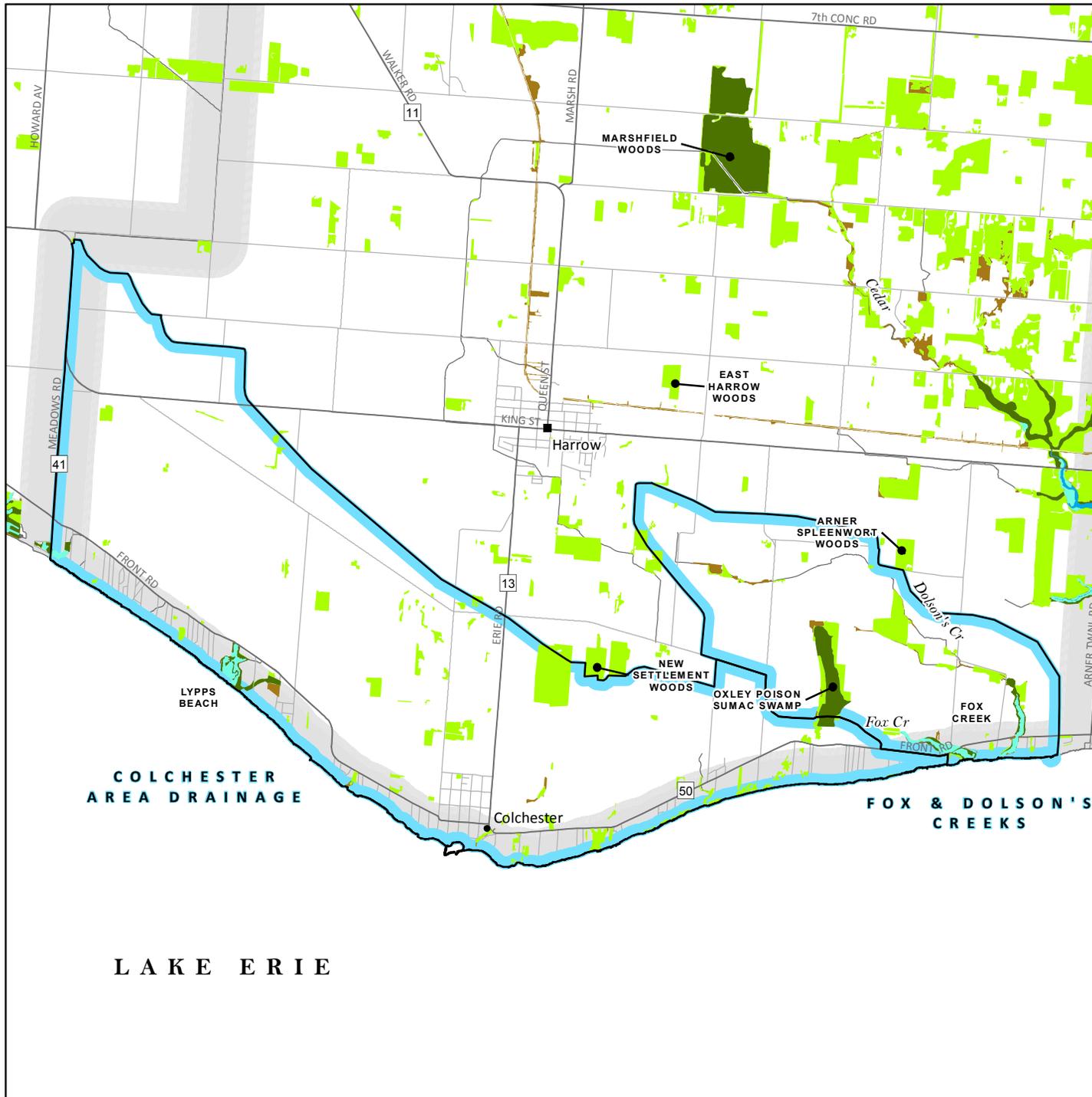
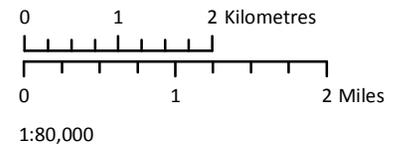
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only.  
Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



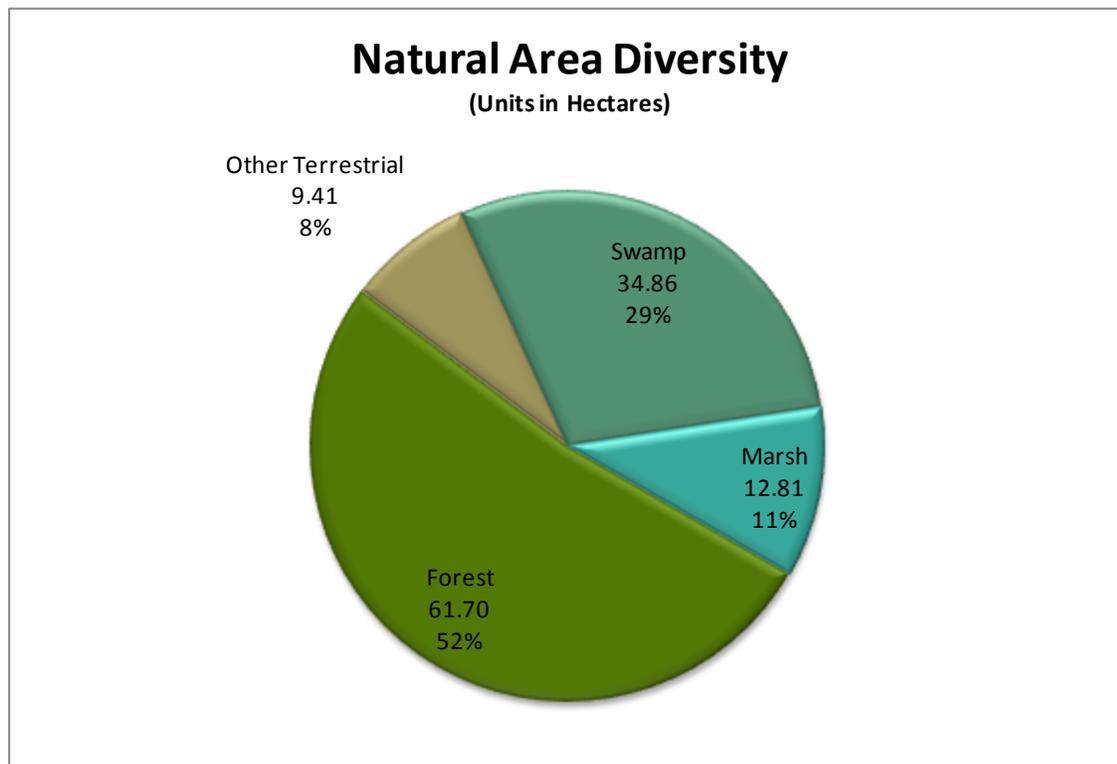
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - ColchesterFoxCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Oxley Poison Sumac Swamp and is 48.6 ha in size. In addition, 2 forest patches within the study area contain 100 m interior forest, none of which contain 200 m interior forest.

**3.2.12.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Fox/Dolson’s Creek subwatershed.

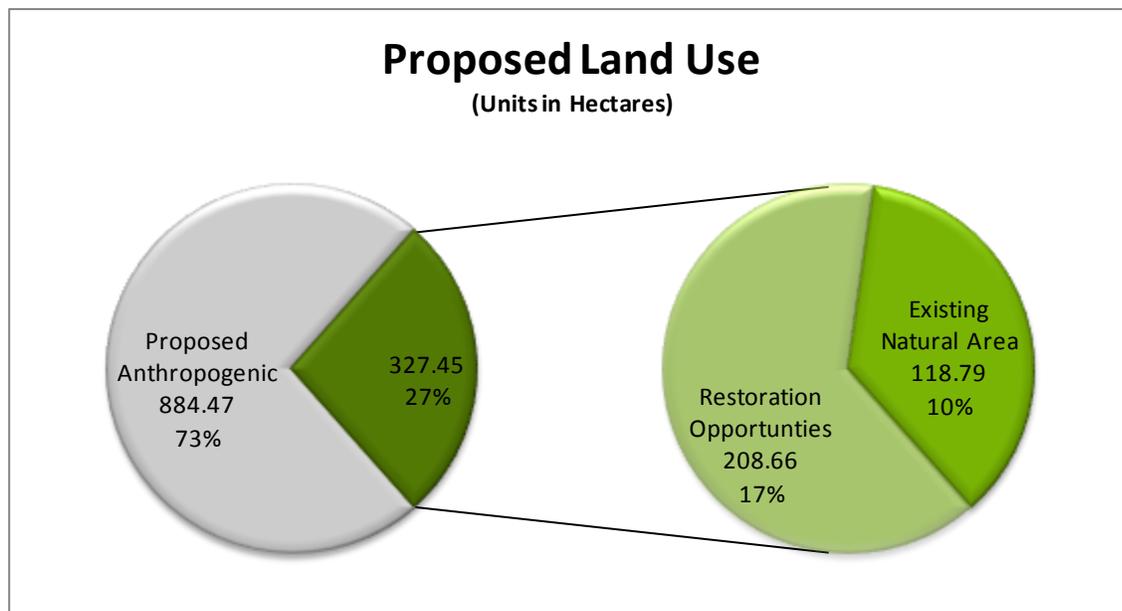
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	61.70	152.46	51.94
Other Terrestrial	9.41	23.26	7.93
Swamp	34.86	86.15	29.35
Marsh	12.81	31.65	10.78
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>71.11</b>	<b>175.73</b>	<b>59.87</b>
<b>Total Wetland Habitat</b>	<b>47.68</b>	<b>117.81</b>	<b>40.13</b>
<b>Existing Natural Area</b>	<b>118.79</b>	<b>293.53</b>	<b>100.00</b>

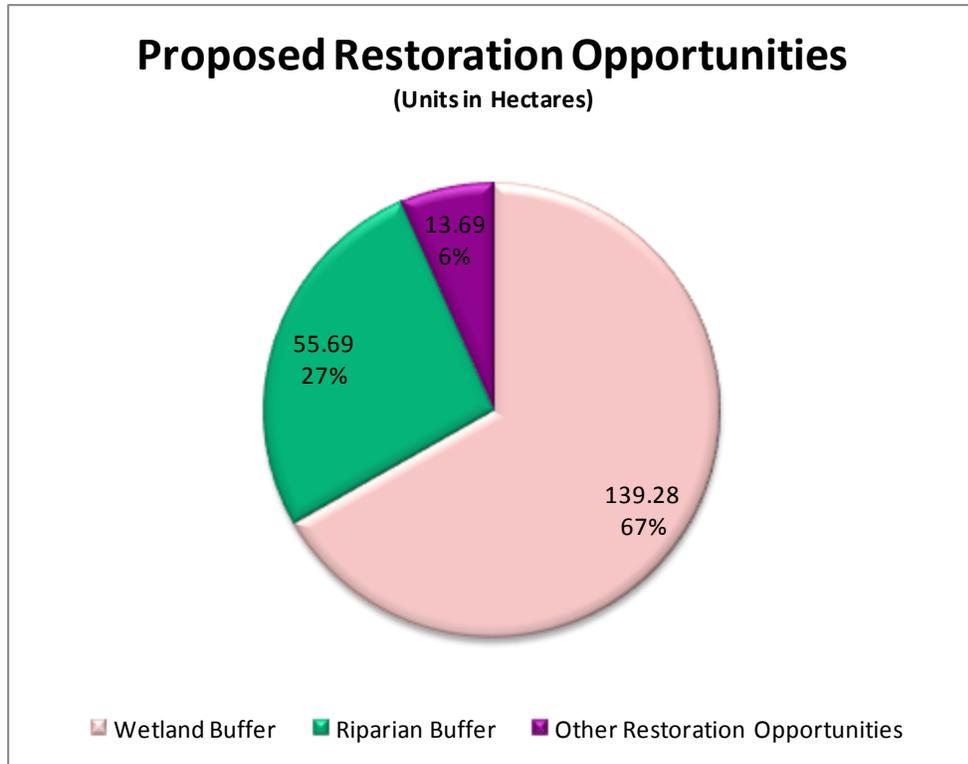


**3.2.12.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Fox/Dolson’s Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	139.28	344.16	11.49
Riparian Buffer	55.69	137.61	4.60
Other Restoration Opportunities	13.69	33.84	1.13
<b>Total Restoration Opportunities</b>	<b>208.66</b>	<b>515.61</b>	<b>17.22</b>
<b>Status Quo Anthropogenic</b>	<b>884.47</b>	<b>2185.56</b>	<b>72.98</b>
<b>Total Land Area</b>	<b>1211.92</b>	<b>2994.70</b>	<b>100.00</b>

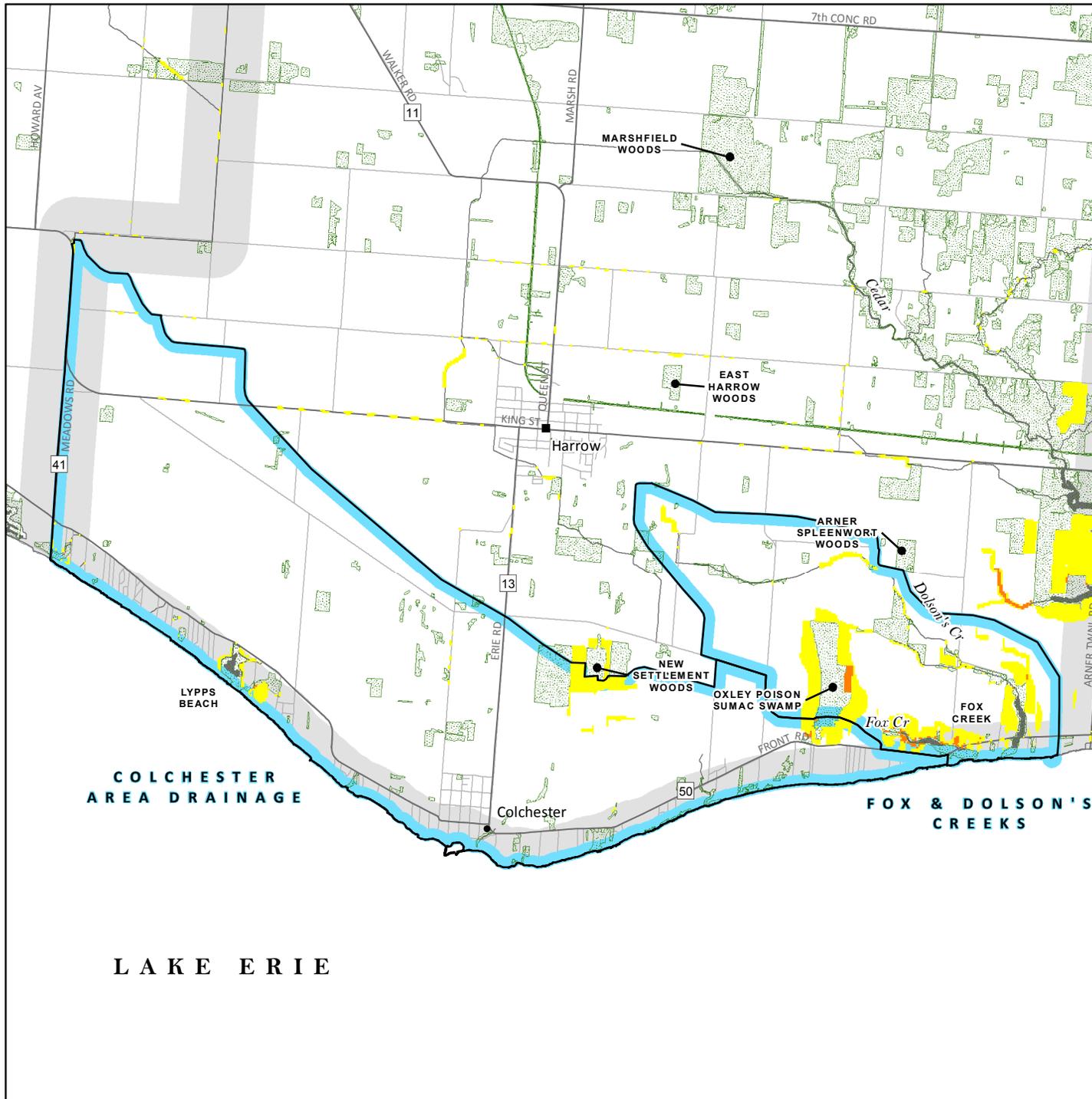




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Oxley Poison Sumac Swamp and Fox/Dolson’s Creek Provincially Significant Wetlands.

# Priority of Restoration Opportunities

Colchester Area Drainage  
Fox/Dolson's Creek



## Legend

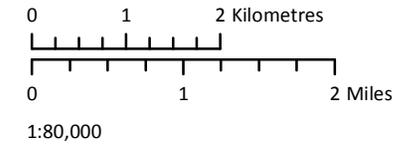
### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

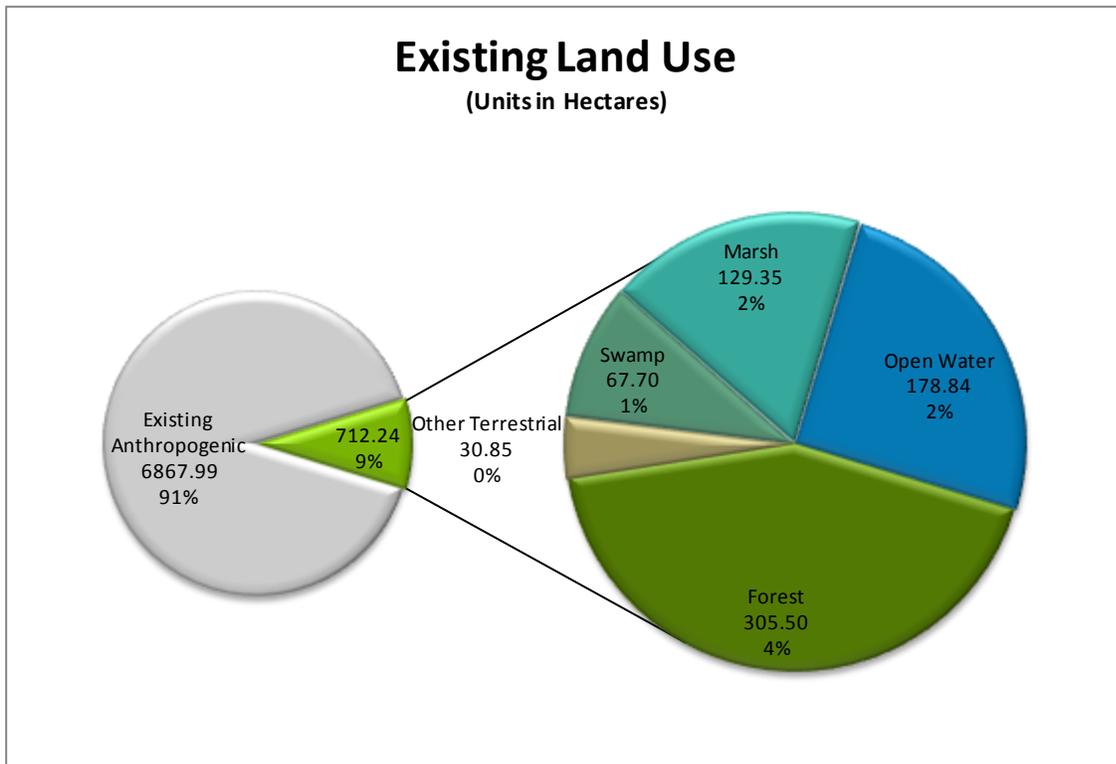


3.2.13 Hillman Creek

3.2.13.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Hillman Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	305.50	754.89	4.03
Other Terrestrial	30.85	76.23	0.41
<b>Total Terrestrial Habitat</b>	<b>336.34</b>	<b>831.12</b>	<b>4.44</b>
Wetland Habitat	Hectares	Acres	%
Swamp	67.70	167.29	0.89
Marsh	129.35	319.64	1.71
Open Water	178.84	441.92	2.36
<b>Total Wetland Habitat</b>	<b>375.89</b>	<b>928.84</b>	<b>4.96</b>
<b>Existing Natural Area</b>	<b>712.24</b>	<b>1759.97</b>	<b>9.40</b>
<b>Existing Anthropogenic</b>	<b>6867.99</b>	<b>16971.11</b>	<b>90.60</b>
<b>Total Land Area</b>	<b>7580.23</b>	<b>18731.08</b>	<b>100.00</b>



# Existing Natural Features

## Hillman Creek

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

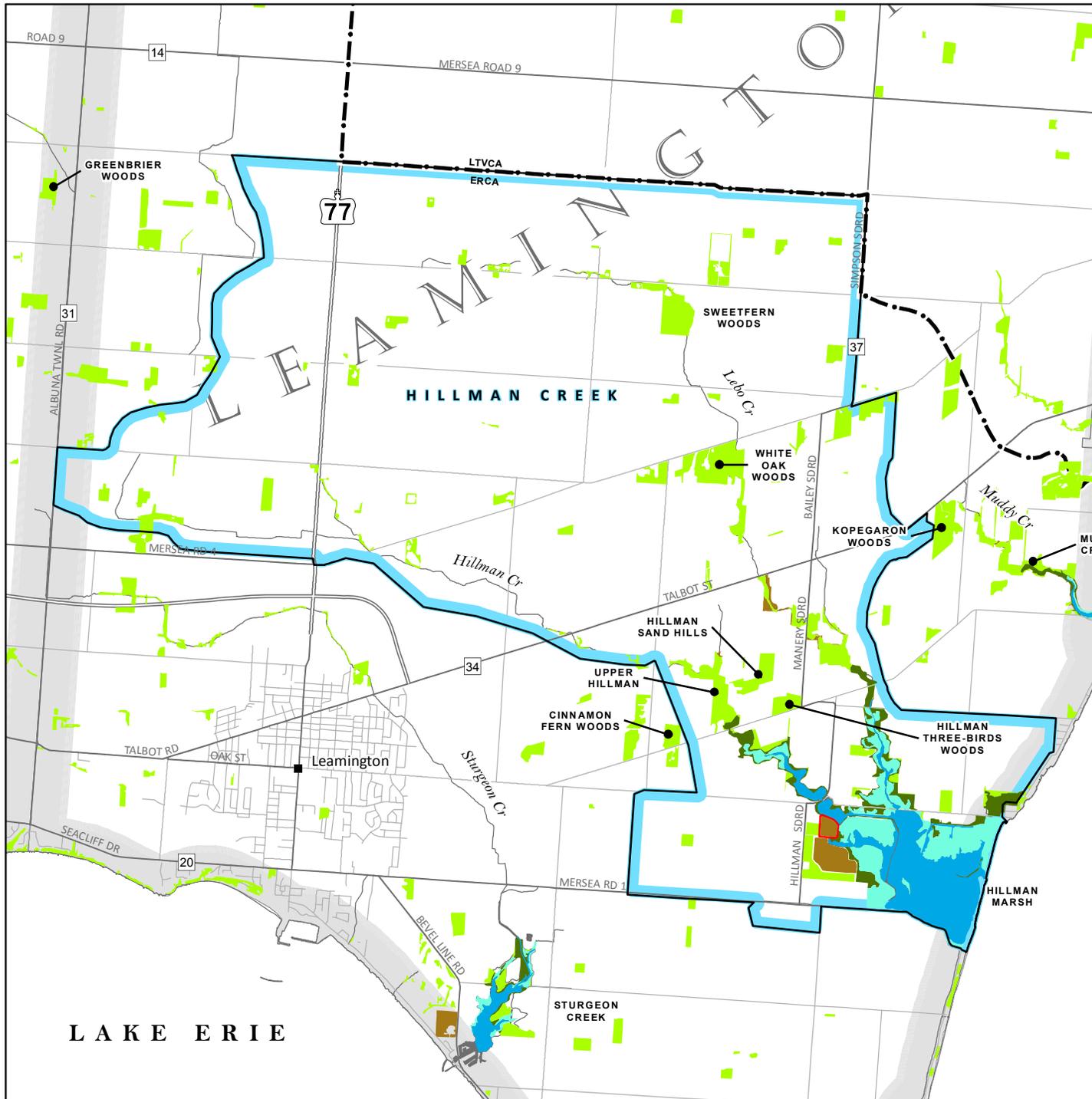
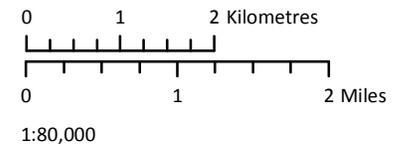
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



LAKE ERIE



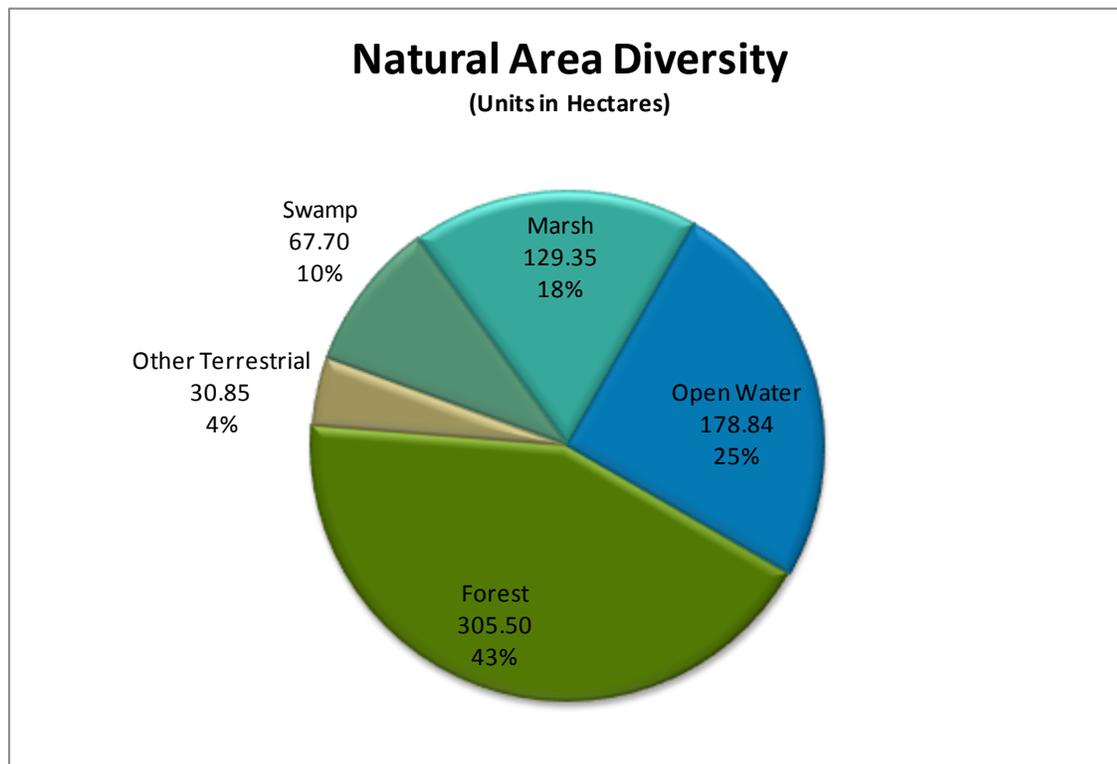
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - HillmanCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Hillman Creek and is 48.7 ha in size. In addition, 11 forest patches within the study area contain 100 m interior forest, of which 2 patches contain 200 m interior forest.

**3.2.13.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Hillman Creek subwatershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	305.50	754.89	42.89
Other Terrestrial	30.85	76.23	4.33
Swamp	67.70	167.29	9.51
Marsh	129.35	319.64	18.16
Open Water	178.84	441.92	25.11
<b>Total Terrestrial Habitat</b>	<b>336.34</b>	<b>831.12</b>	<b>47.22</b>
<b>Total Wetland Habitat</b>	<b>375.89</b>	<b>928.84</b>	<b>52.78</b>
<b>Existing Natural Area</b>	<b>712.24</b>	<b>1759.97</b>	<b>100.00</b>

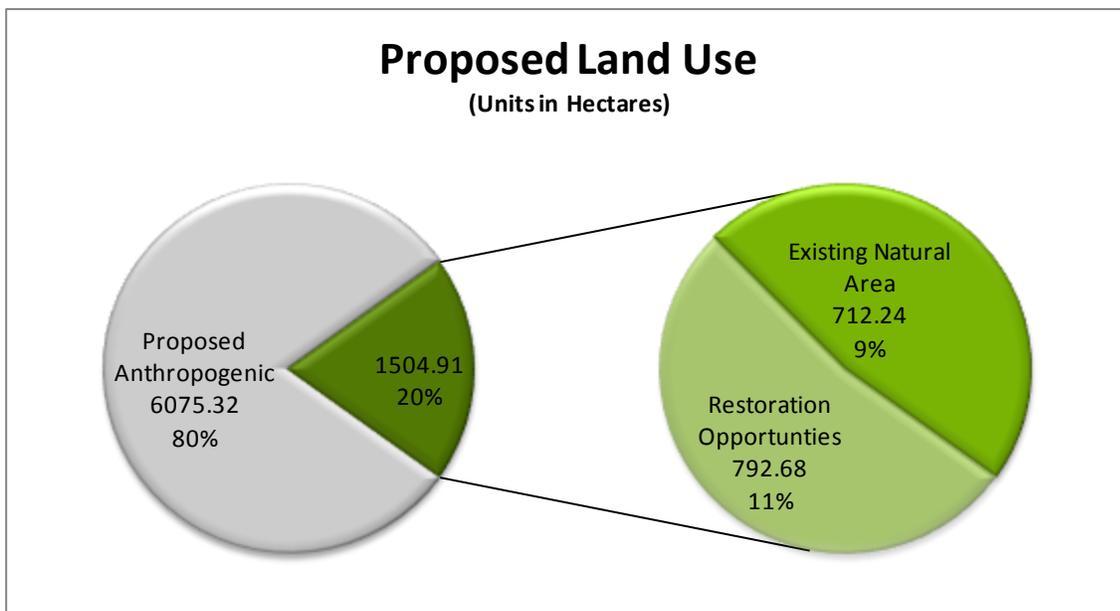


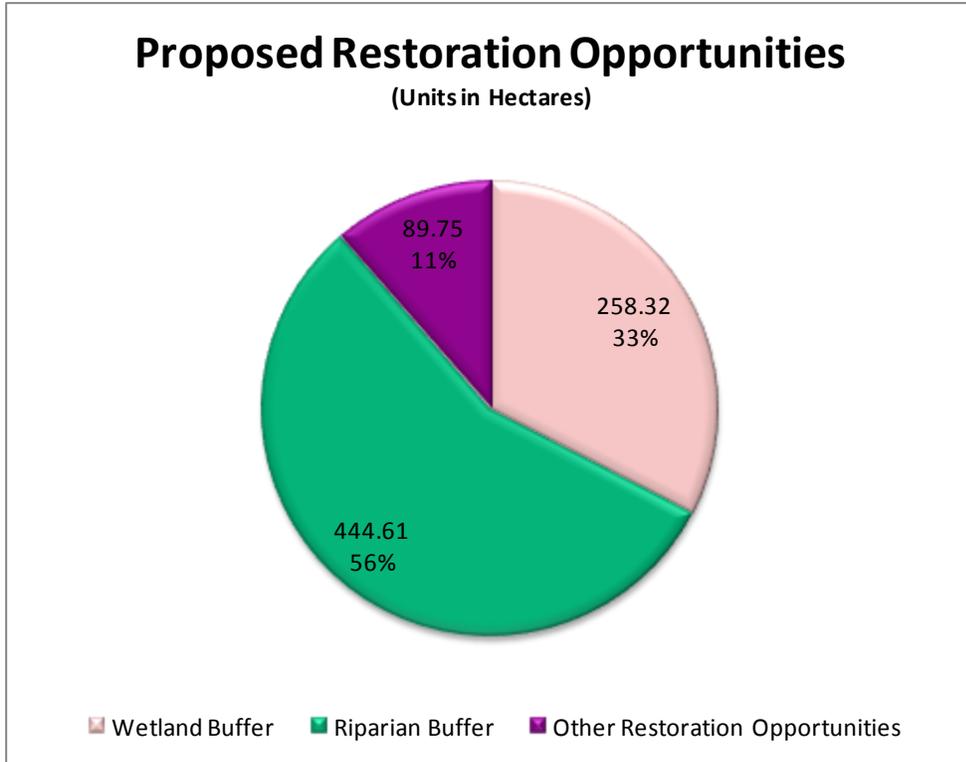
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.13.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Hillman Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	258.32	638.31	3.41
Riparian Buffer	444.61	1098.64	5.87
Other Restoration Opportunities	89.75	221.78	1.18
<b>Total Restoration Opportunities</b>	<b>792.68</b>	<b>1958.74</b>	<b>10.46</b>
<b>Status Quo Anthropogenic</b>	<b>6075.32</b>	<b>15012.37</b>	<b>80.15</b>
<b>Total Land Area</b>	<b>7580.23</b>	<b>18731.08</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to the Hillman Marsh Provincially Significant Wetlands; as well as reforestation associated with linking the Upper Hillman, Hillman Sand Hills and Hillman Three-Birds Woods Environmentally Significant Areas.

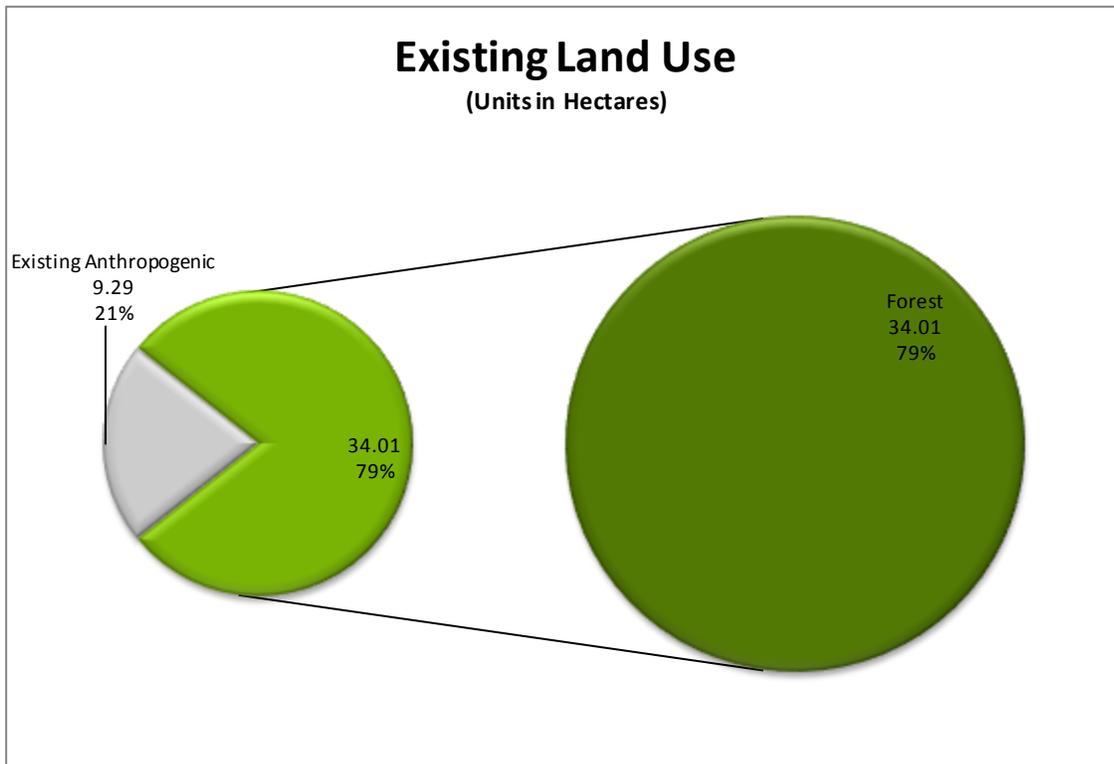


**3.2.14 Lake Erie Islands Drainage Area**

**3.2.14.1 Existing Land Use**

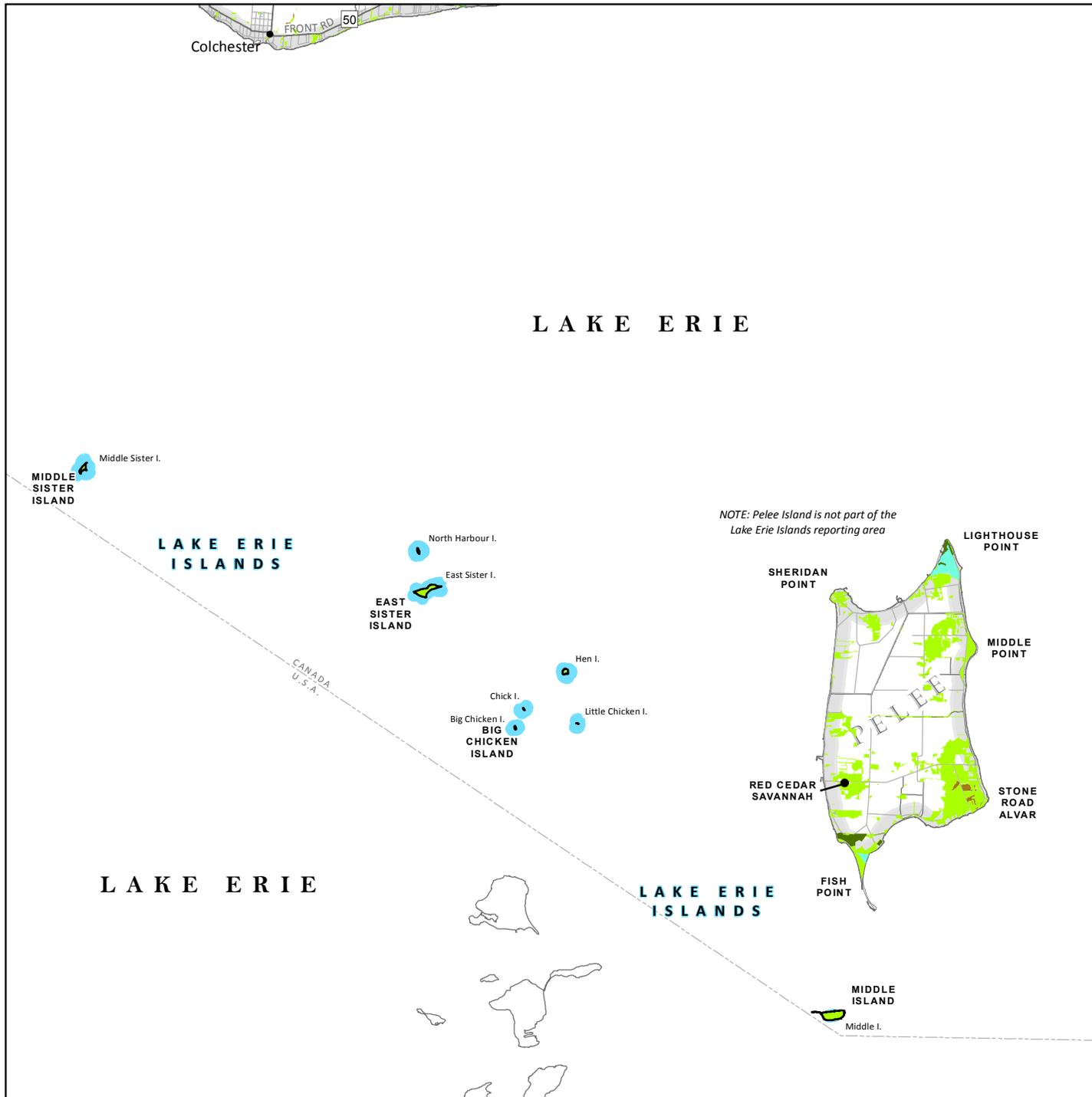
The following Table and Figure summarizes the findings for existing land use within the Lake Erie Islands drainage area.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	34.01	84.04	78.55
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>34.01</b>	<b>84.04</b>	<b>78.55</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>34.01</b>	<b>84.04</b>	<b>78.55</b>
<b>Existing Anthropogenic</b>	<b>9.29</b>	<b>22.95</b>	<b>21.45</b>
<b>Total Land Area</b>	<b>43.30</b>	<b>106.99</b>	<b>100.00</b>



# Existing Natural Features

## Lake Erie Islands



### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

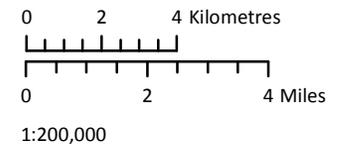
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



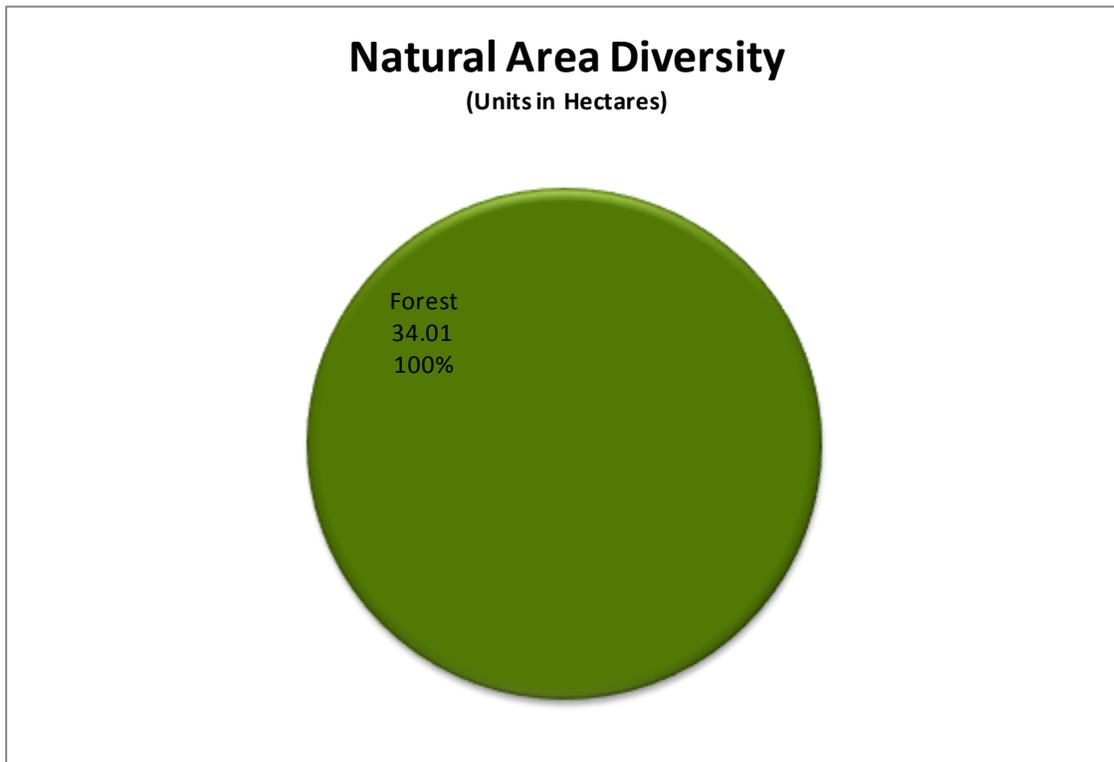
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - LakeErieIslands - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Middle Island and is 17.9 ha in size. In addition, 2 forest patches within the study area contain 100 m interior forest, none of which contain 200 m interior forest.

**3.2.14.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Lake Erie Islands drainage area.

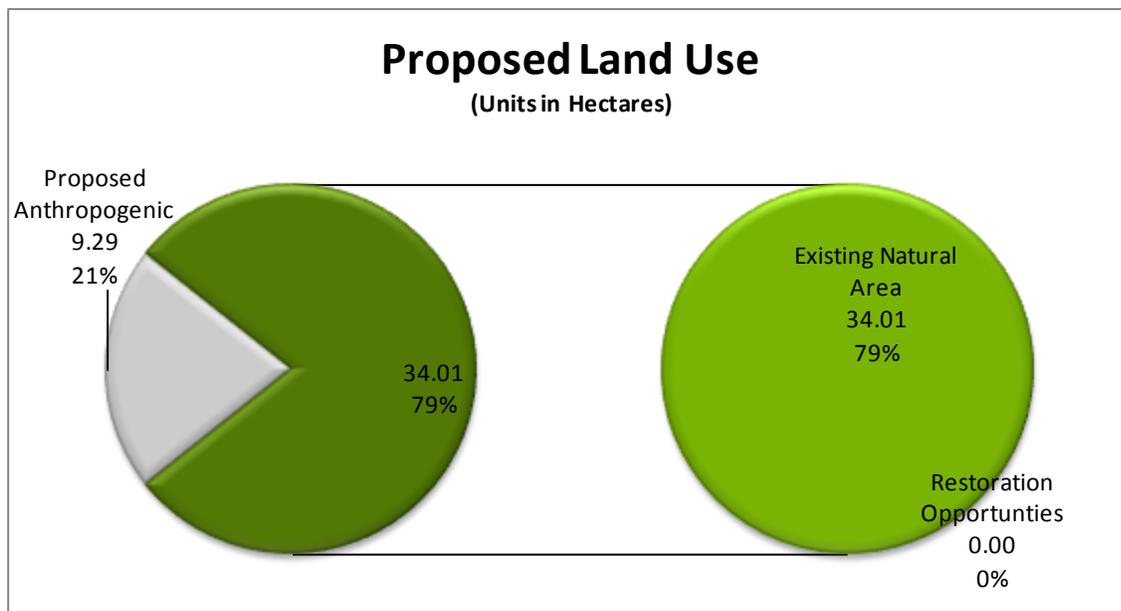
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	34.01	84.04	100.00
Other Terrestrial	0.00	0.00	0.00
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>34.01</b>	<b>84.04</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>34.01</b>	<b>84.04</b>	<b>100.00</b>



**3.2.14.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Lake Erie Islands drainage area.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	0.00	0.00	0.00
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Status Quo Anthropogenic</b>	<b>9.29</b>	<b>22.95</b>	<b>21.45</b>
<b>Total Land Area</b>	<b>43.30</b>	<b>106.99</b>	<b>100.00</b>



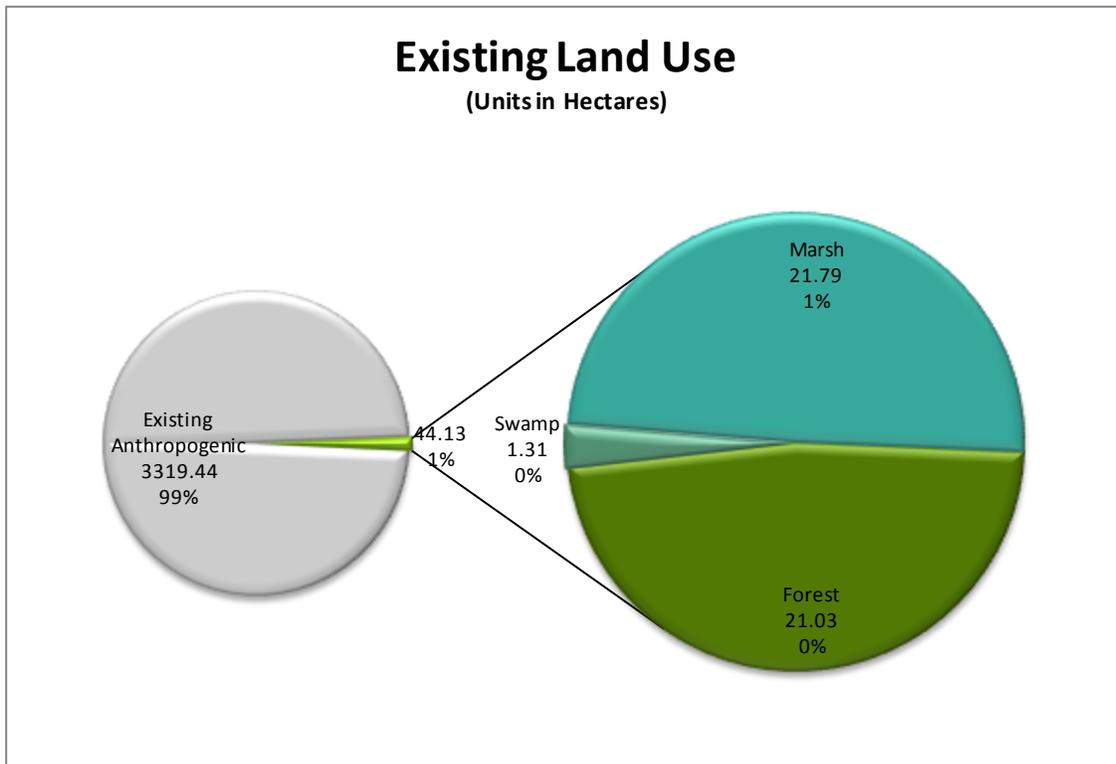
No restoration opportunities are proposed for this study area.

3.2.15 Little Creek

3.2.15.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Little Creek subwatershed.

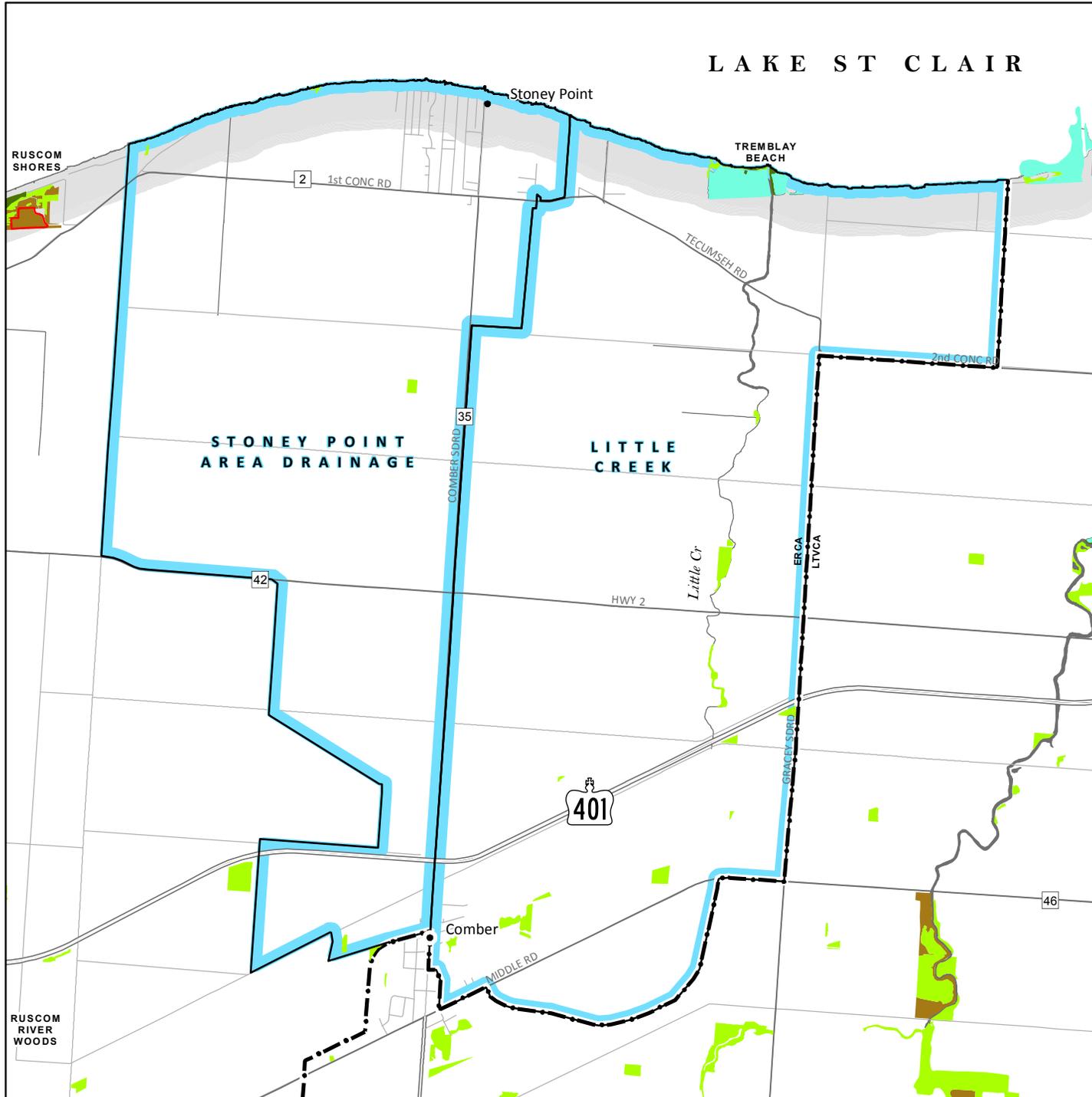
Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	21.03	51.96	0.63
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>21.03</b>	<b>51.96</b>	<b>0.63</b>
Wetland Habitat	Hectares	Acres	%
Swamp	1.31	3.25	0.04
Marsh	21.79	53.85	0.65
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>23.11</b>	<b>57.10</b>	<b>0.69</b>
<b>Existing Natural Area</b>	<b>44.13</b>	<b>109.05</b>	<b>1.31</b>
<b>Existing Anthropogenic</b>	<b>3319.44</b>	<b>8202.48</b>	<b>98.69</b>
<b>Total Land Area</b>	<b>3363.57</b>	<b>8311.54</b>	<b>100.00</b>



# LAKE ST CLAIR

## Existing Natural Features

### Stoney Point Area Drainage Little Creek



#### Legend

##### Wetland

- Open Water
- Marsh
- Swamp

##### Terrestrial

- Forest
- Other

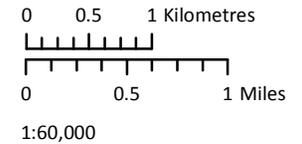
##### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



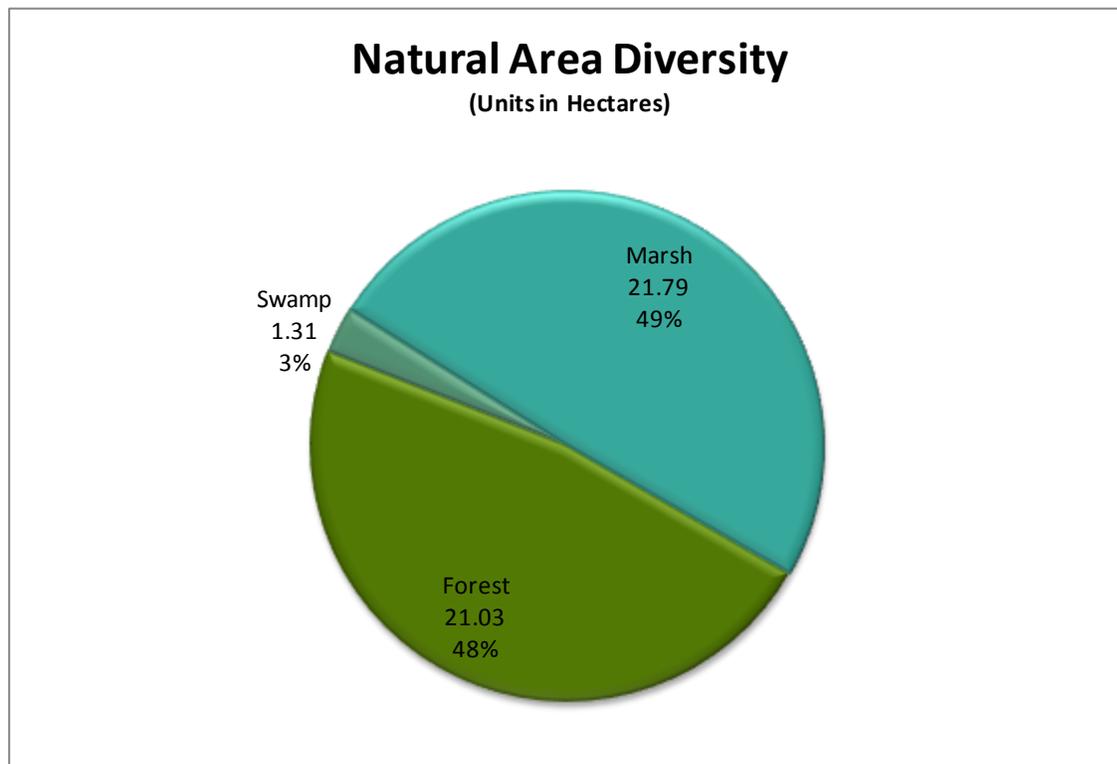
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - StoneyPt\LittleCreek - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 4.4 ha in size. In addition, no forest patches within the study area contain 100 m interior forest or 200 m interior forest.

**3.2.15.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Little Creek subwatershed.

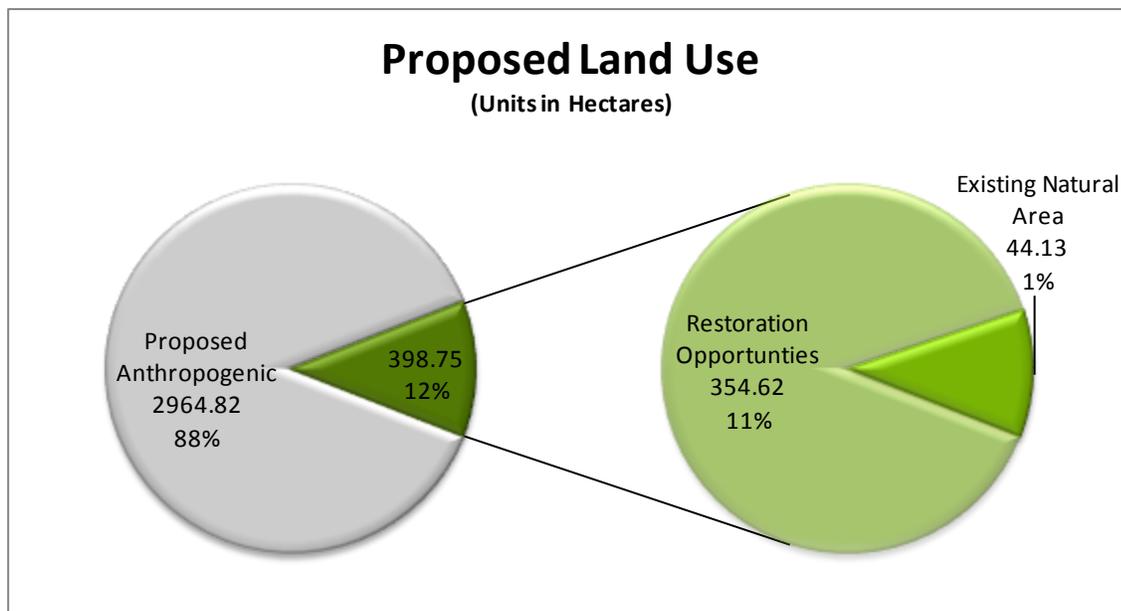
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	21.03	51.96	47.64
Other Terrestrial	0.00	0.00	0.00
Swamp	1.31	3.25	2.98
Marsh	21.79	53.85	49.38
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>21.03</b>	<b>51.96</b>	<b>47.64</b>
<b>Total Wetland Habitat</b>	<b>23.11</b>	<b>57.10</b>	<b>52.36</b>
<b>Existing Natural Area</b>	<b>44.13</b>	<b>109.05</b>	<b>100.00</b>

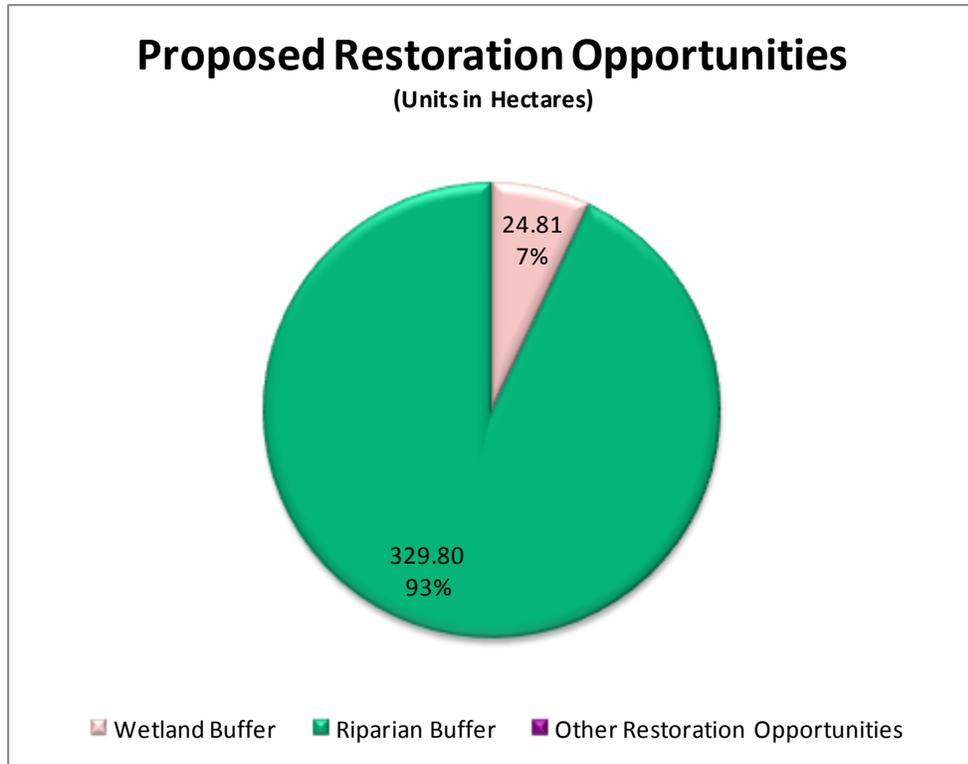


**3.2.15.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Little Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	24.81	61.32	0.74
Riparian Buffer	329.80	814.95	9.81
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>354.62</b>	<b>876.27</b>	<b>10.54</b>
<b>Status Quo Anthropogenic</b>	<b>2964.82</b>	<b>7326.21</b>	<b>88.15</b>
<b>Total Land Area</b>	<b>3363.57</b>	<b>8311.54</b>	<b>100.00</b>



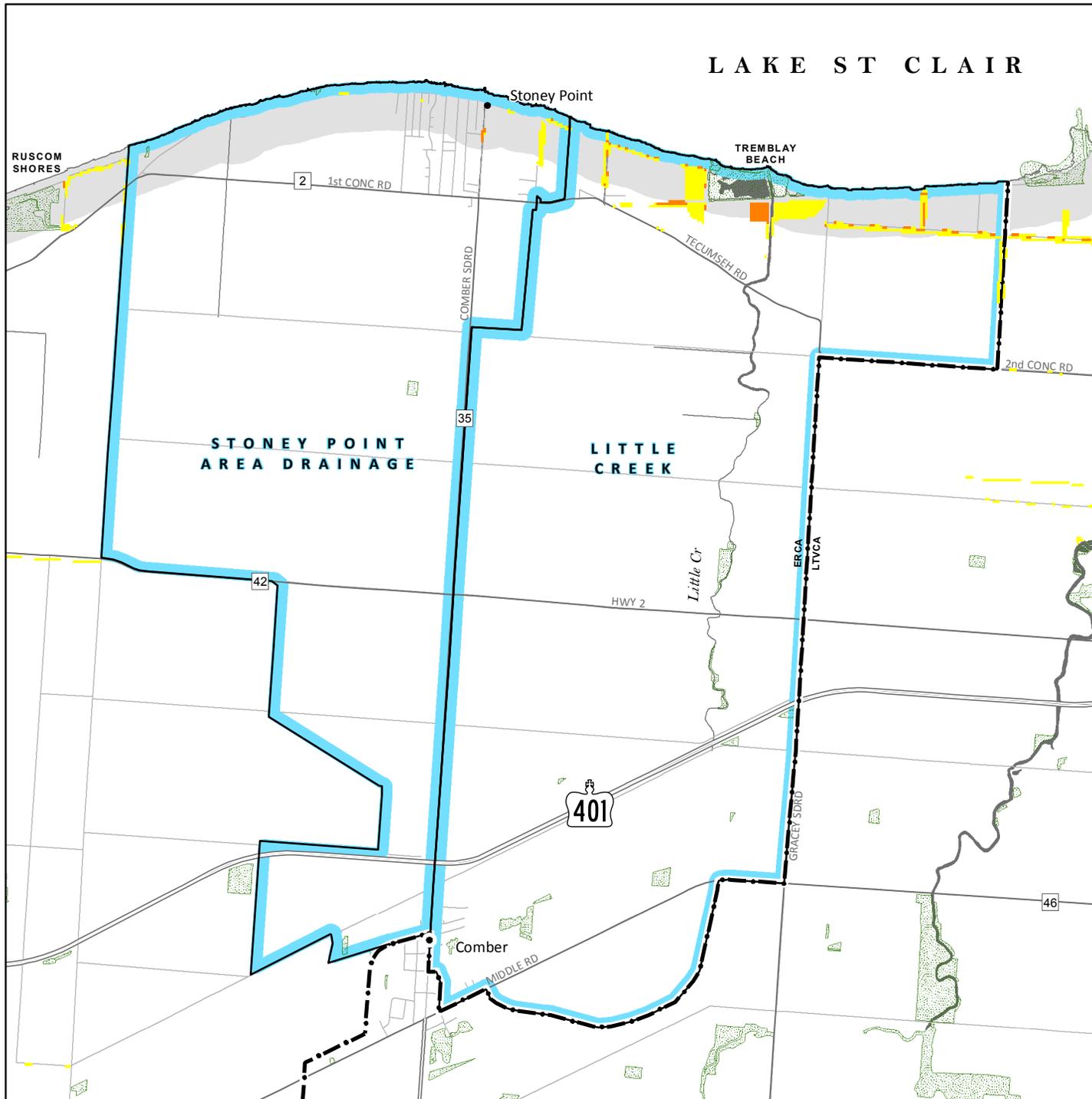


The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to Tremblay Beach Provincially Significant Wetland, as well as riparian restoration along first to third order streams in close proximity to the Lake St. Clair shoreline.

# LAKE ST CLAIR

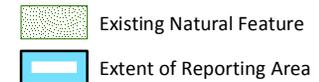
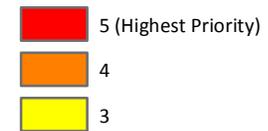
## Priority of Restoration Opportunities

### Stoney Point Area Drainage Little Creek



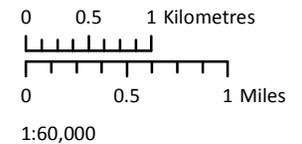
#### Legend

##### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



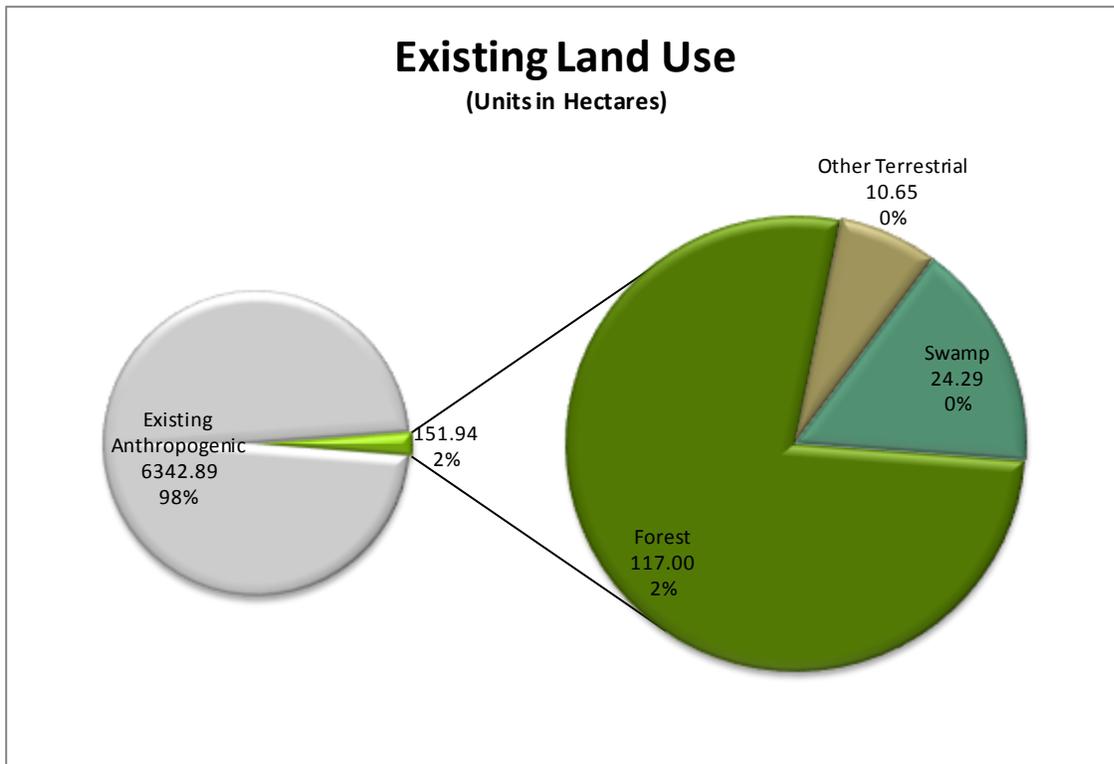
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - StoneyP\LittleCreek - 20130430.mxd  
TD 30/04/2013

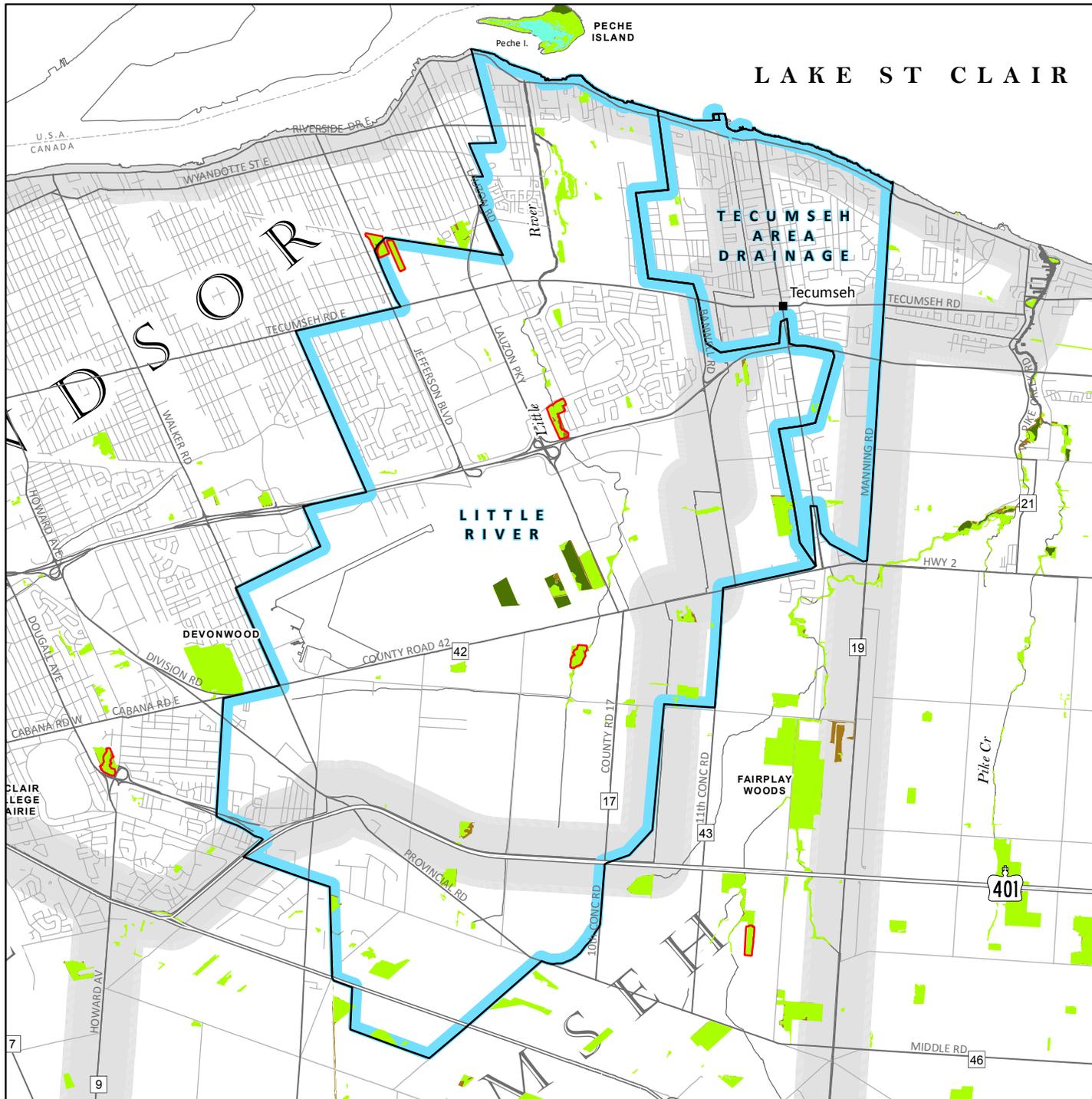
**3.2.16 Little River**

**3.2.16.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Little River subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	117.00	289.11	1.80
Other Terrestrial	10.65	26.32	0.16
<b>Total Terrestrial Habitat</b>	<b>127.65</b>	<b>315.43</b>	<b>1.97</b>
Wetland Habitat	Hectares	Acres	%
Swamp	24.29	60.03	0.37
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>24.29</b>	<b>60.03</b>	<b>0.37</b>
<b>Existing Natural Area</b>	<b>151.94</b>	<b>375.46</b>	<b>2.34</b>
<b>Existing Anthropogenic</b>	<b>6342.89</b>	<b>15673.55</b>	<b>97.66</b>
<b>Total Land Area</b>	<b>6494.83</b>	<b>16049.01</b>	<b>100.00</b>





# Existing Natural Features

## Little River Tecumseh Area Drainage

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

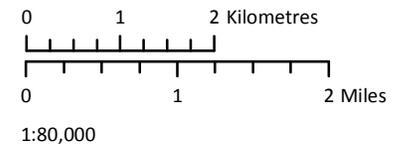
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only.  
Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



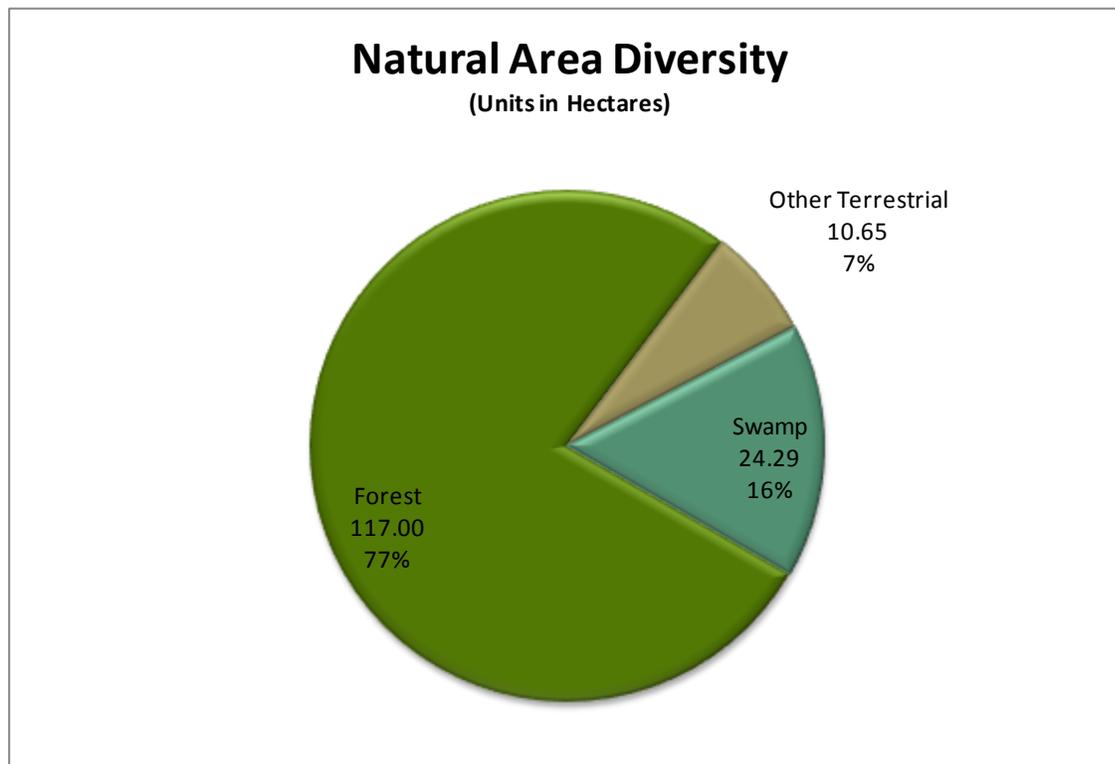
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - Little Tecumseh - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of the Airport Woodlots and is 12.3 ha in size. In addition, 2 forest patches within the study area contain 100 m interior forest, none of which contain 200 m interior forest.

**3.2.16.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	117.00	289.11	77.00
Other Terrestrial	10.65	26.32	7.01
Swamp	24.29	60.03	15.99
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>127.65</b>	<b>315.43</b>	<b>84.01</b>
<b>Total Wetland Habitat</b>	<b>24.29</b>	<b>60.03</b>	<b>15.99</b>
<b>Existing Natural Area</b>	<b>151.94</b>	<b>375.46</b>	<b>100.00</b>

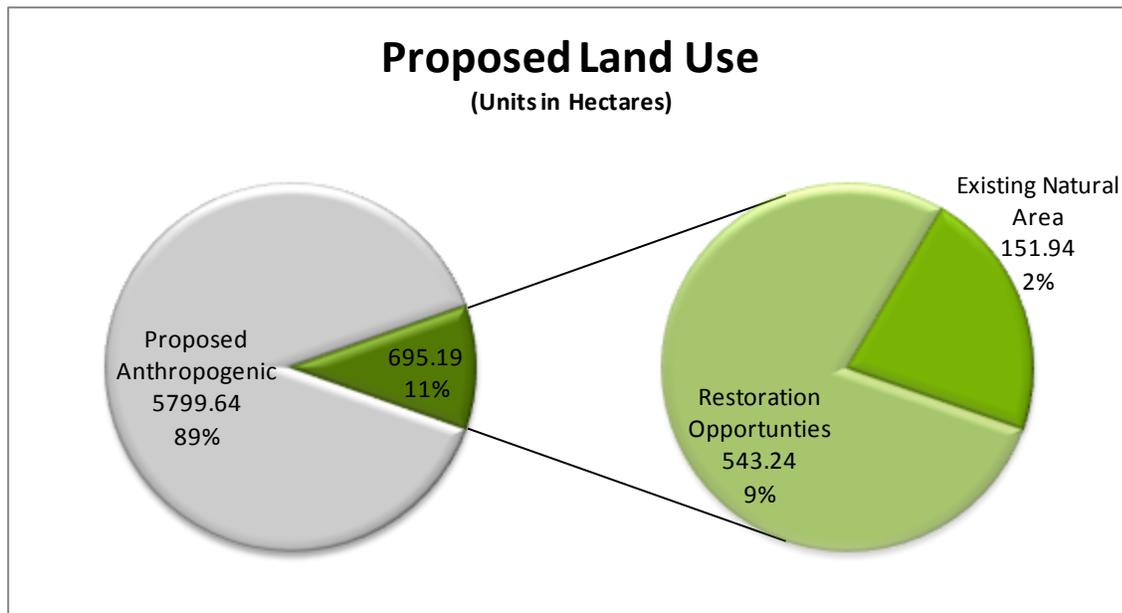


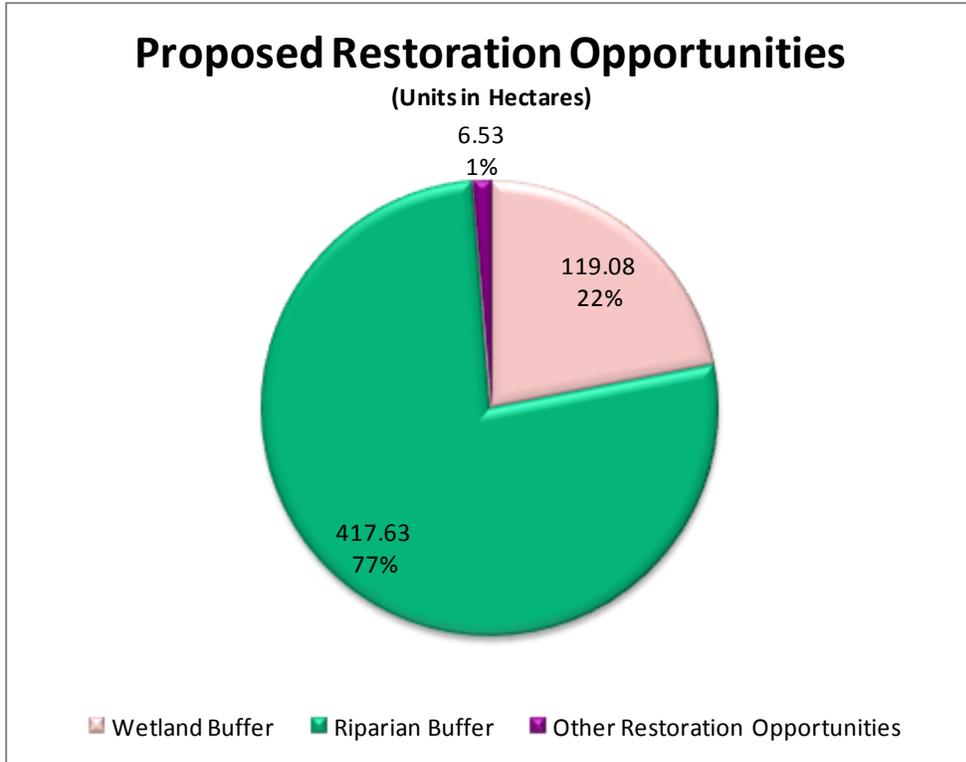
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.16.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	119.08	294.25	1.83
Riparian Buffer	417.63	1031.99	6.43
Other Restoration Opportunities	6.53	16.14	0.10
<b>Total Restoration Opportunities</b>	<b>543.24</b>	<b>1342.38</b>	<b>8.36</b>
<b>Status Quo Anthropogenic</b>	<b>5799.64</b>	<b>14331.17</b>	<b>89.30</b>
<b>Total Land Area</b>	<b>6494.83</b>	<b>16049.01</b>	<b>100.00</b>

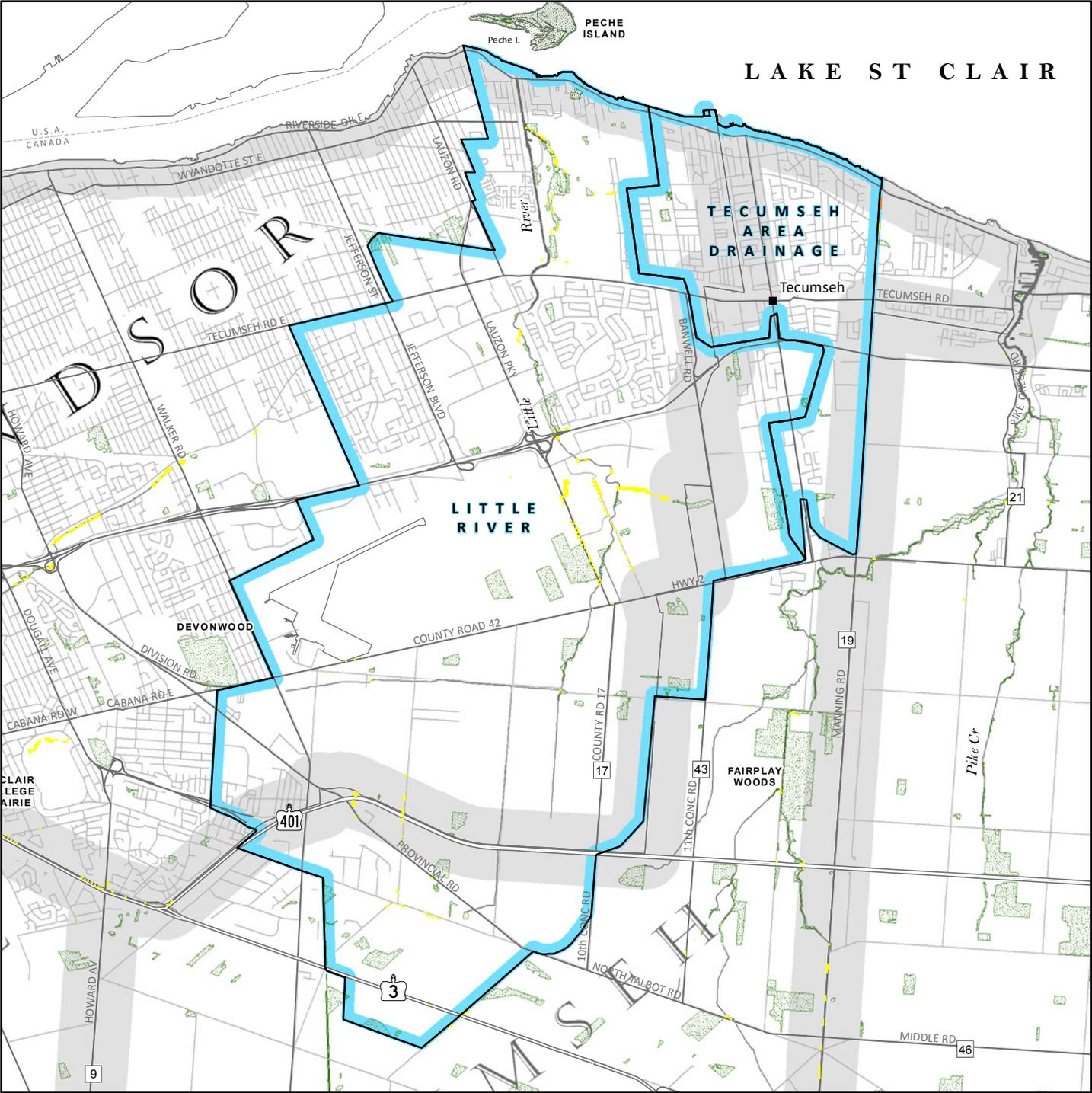




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering along the tributaries of Little River.

# Priority of Restoration Opportunities

## Little River Tecumseh Area Drainage



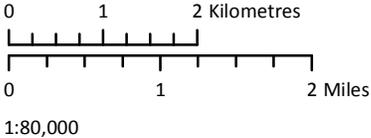
### Legend

- Number of Criteria Met**
- 5 (Highest Priority)
  - 4
  - 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



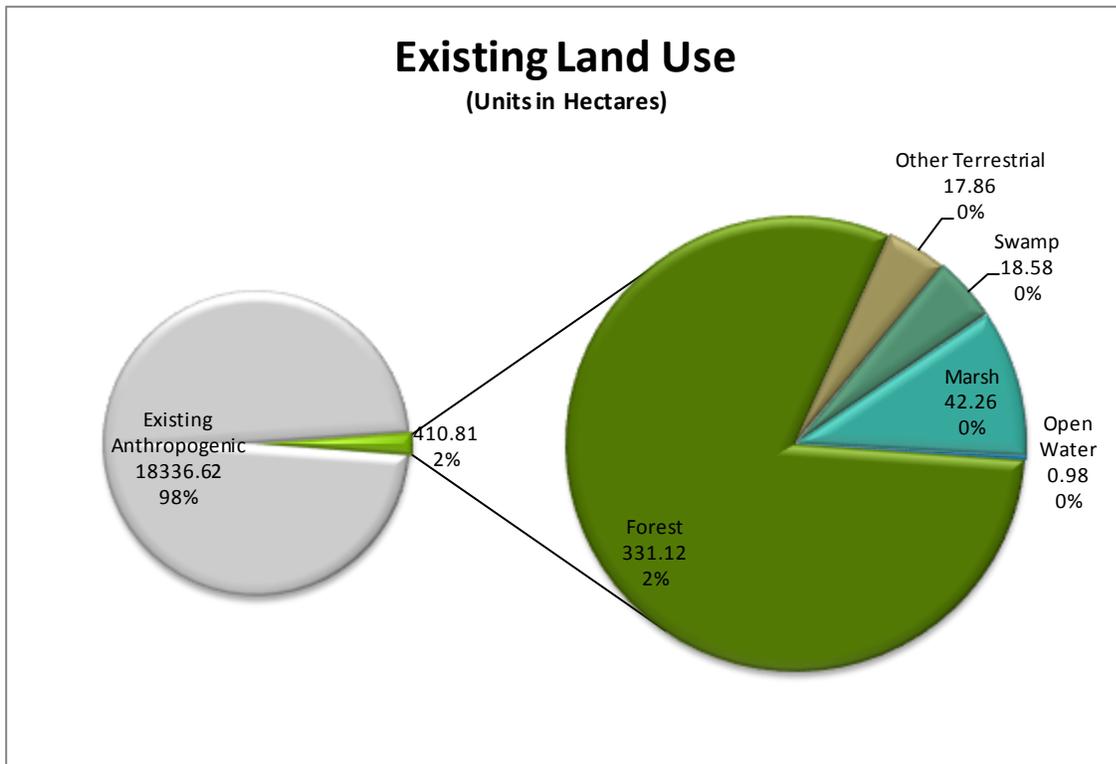
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - LittleTecumseh - 20130430.mxd  
 TD 30/04/2013

**3.2.17 Lower Thames Valley Conservation Authority within the County of Essex**

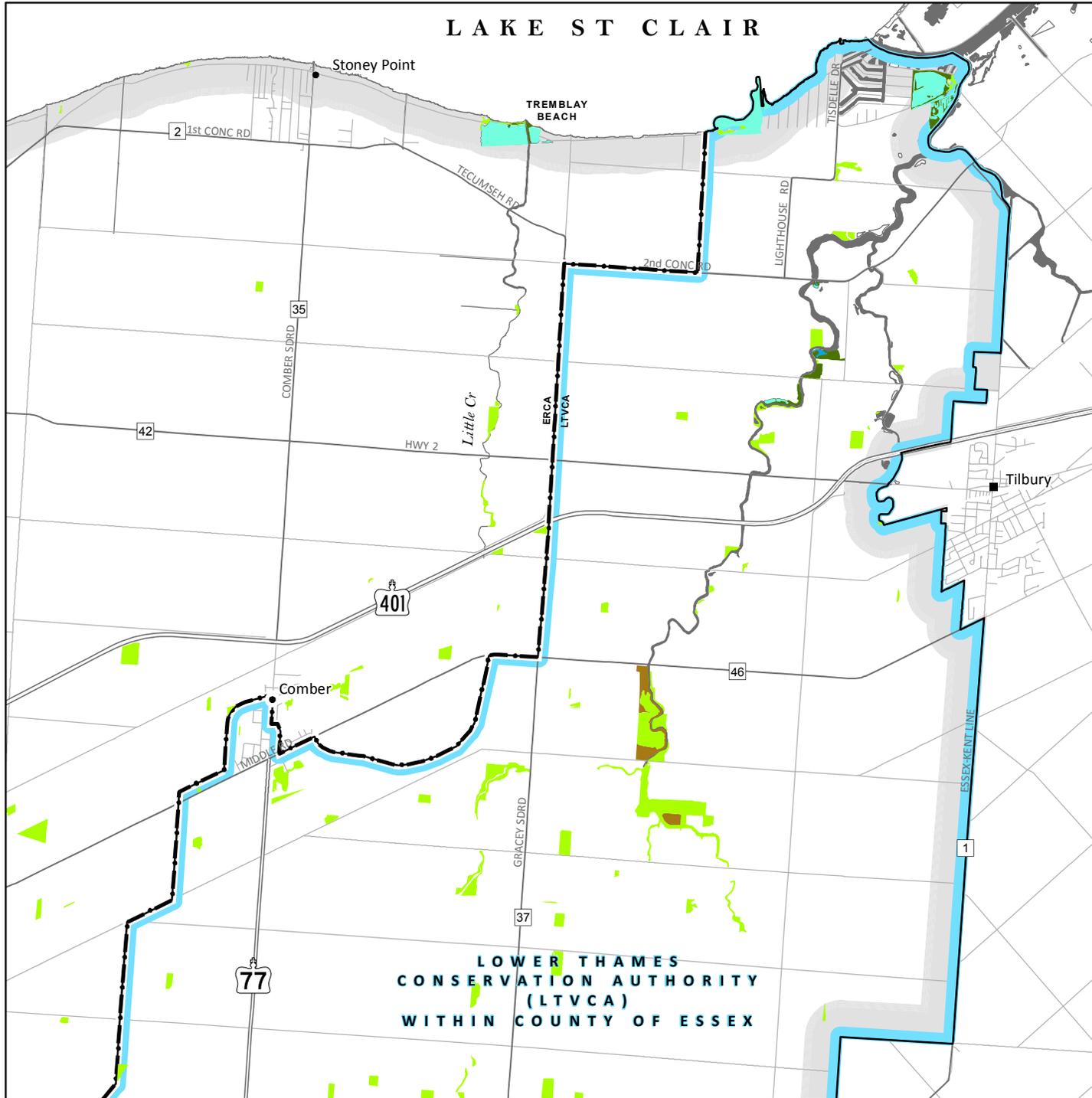
**3.2.17.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the LTVCA watershed within Essex County.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	331.12	818.22	1.77
Other Terrestrial	17.86	44.14	0.10
<b>Total Terrestrial Habitat</b>	<b>348.99</b>	<b>862.36</b>	<b>1.86</b>
Wetland Habitat	Hectares	Acres	%
Swamp	18.58	45.92	0.10
Marsh	42.26	104.42	0.23
Open Water	0.98	2.43	0.01
<b>Total Wetland Habitat</b>	<b>61.82</b>	<b>152.76</b>	<b>0.33</b>
<b>Existing Natural Area</b>	<b>410.81</b>	<b>1015.13</b>	<b>2.19</b>
<b>Existing Anthropogenic</b>	<b>18336.62</b>	<b>45310.59</b>	<b>97.81</b>
<b>Total Land Area</b>	<b>18747.43</b>	<b>46325.71</b>	<b>100.00</b>



# LAKE ST CLAIR



## Existing Natural Features

Lower Thames Valley  
Conservation Authority  
within the  
County of Essex (North)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

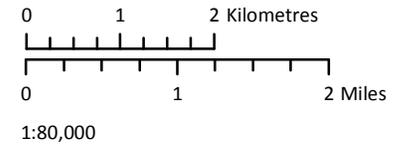
#### Features of Interest

- Tallgrass Prairie Community

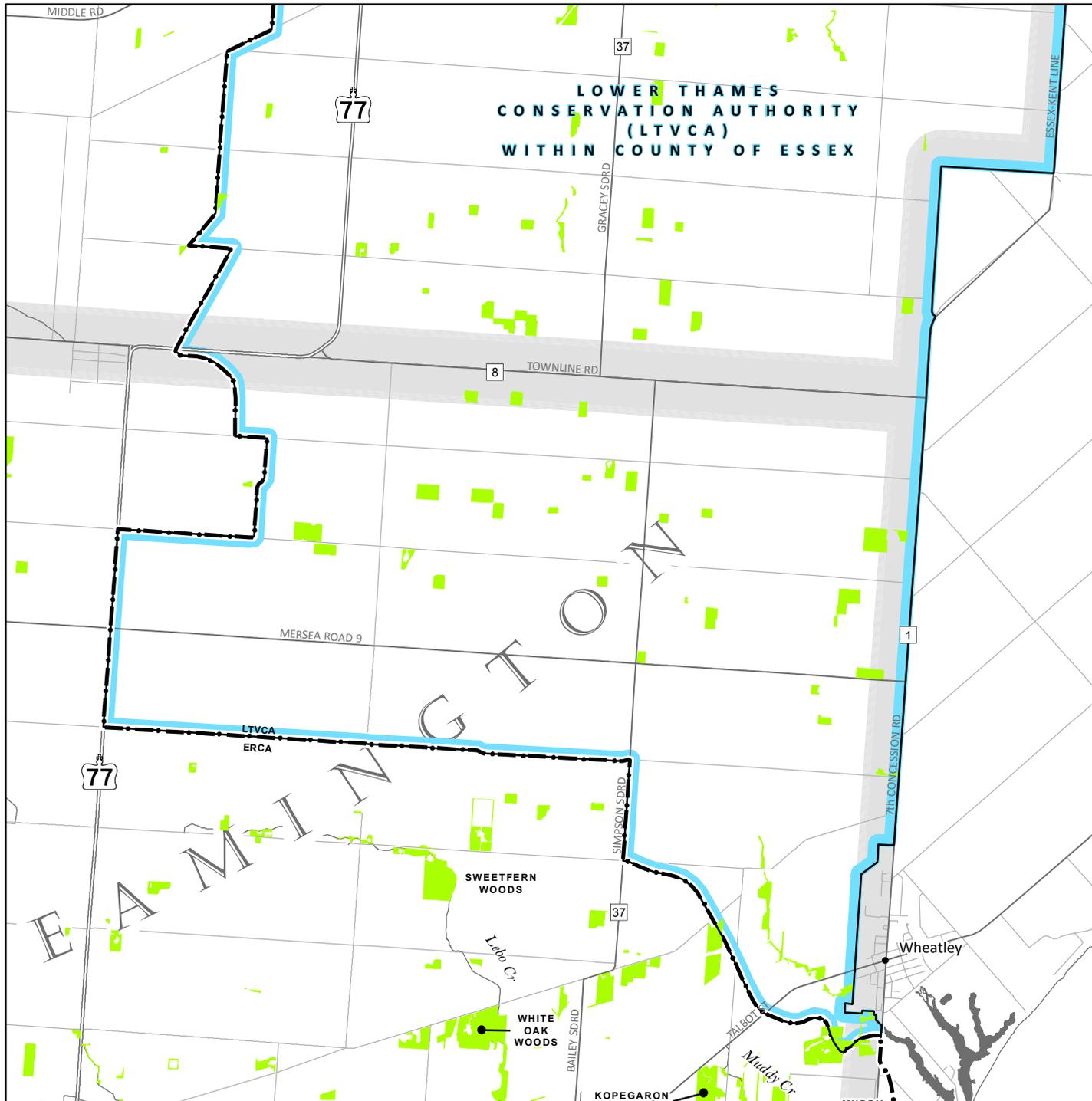
- Extent of Reporting Area

Significant natural heritage features labelled for reference only.  
Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



Source: D:\PROJECTS\County of Essex Natural Heritage  
Strategy Study (CENHSS)\Maps - Report\Reporting  
Areas\Subwatershed\Existing Natural Features - LTVCA North  
- 20130424.mxd  
TD 29/04/2013



## Existing Natural Features

Lower Thames Valley  
Conservation Authority  
within the  
County of Essex (South)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

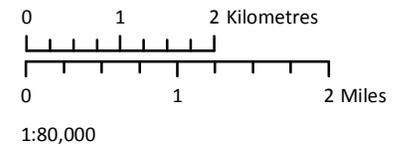
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only.  
Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



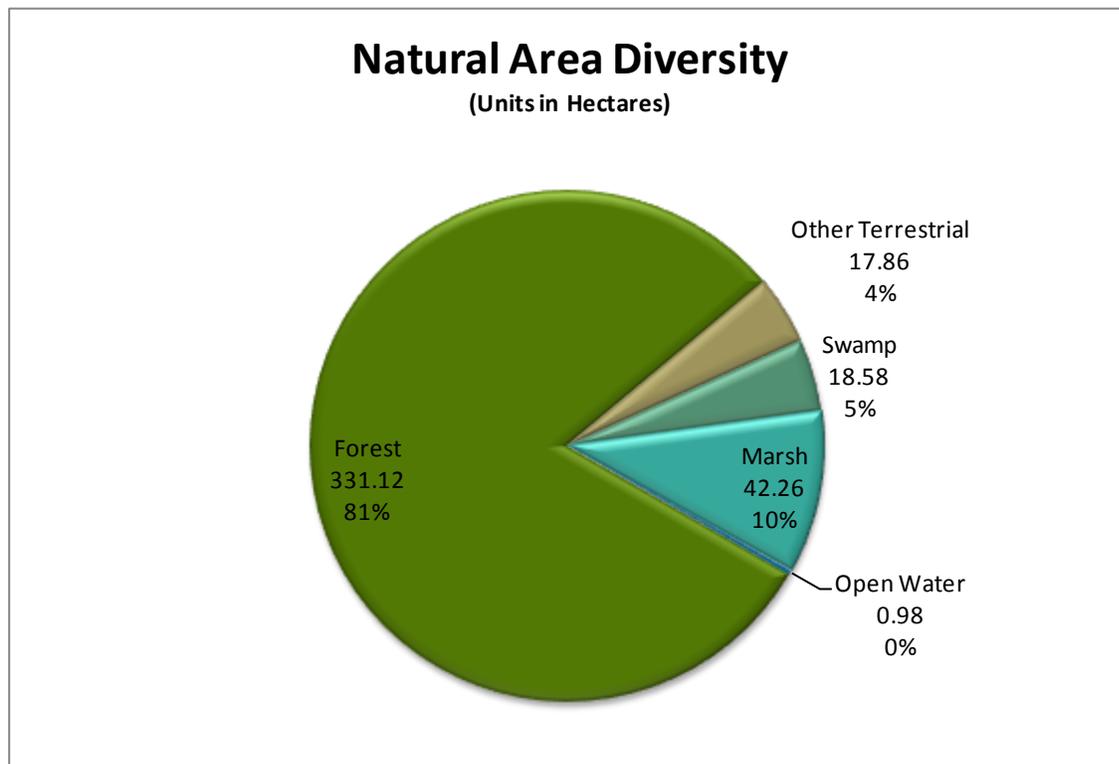
Source: D:\PROJECTS\County of Essex Natural Heritage  
Strategy Study (CENHSS)\Maps - Report\Reporting  
Areas\Subwatershed\Existing Natural Features - LTVCA  
South - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 38.3 ha in size. In addition, 8 forest patches within the study area contain 100 m interior forest, none of which contain 200 m interior forest.

**3.2.17.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the LTVCA watershed within Essex County.

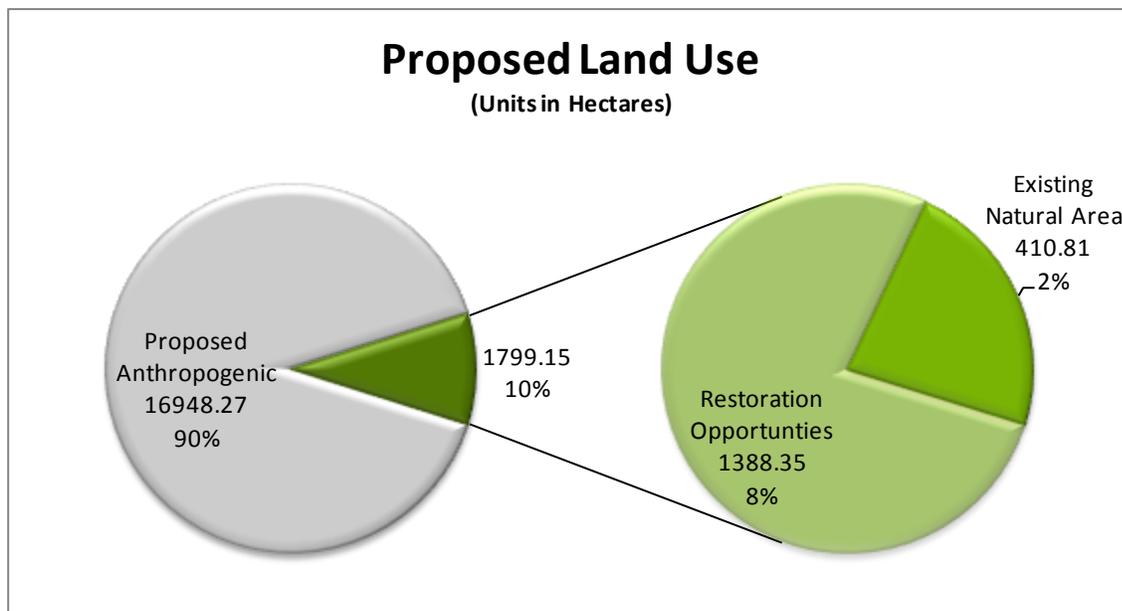
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	331.12	818.22	80.60
Other Terrestrial	17.86	44.14	4.35
Swamp	18.58	45.92	4.52
Marsh	42.26	104.42	10.29
Open Water	0.98	2.43	0.24
<b>Total Terrestrial Habitat</b>	<b>348.99</b>	<b>862.36</b>	<b>84.95</b>
<b>Total Wetland Habitat</b>	<b>61.82</b>	<b>152.76</b>	<b>15.05</b>
<b>Existing Natural Area</b>	<b>410.81</b>	<b>1015.13</b>	<b>100.00</b>

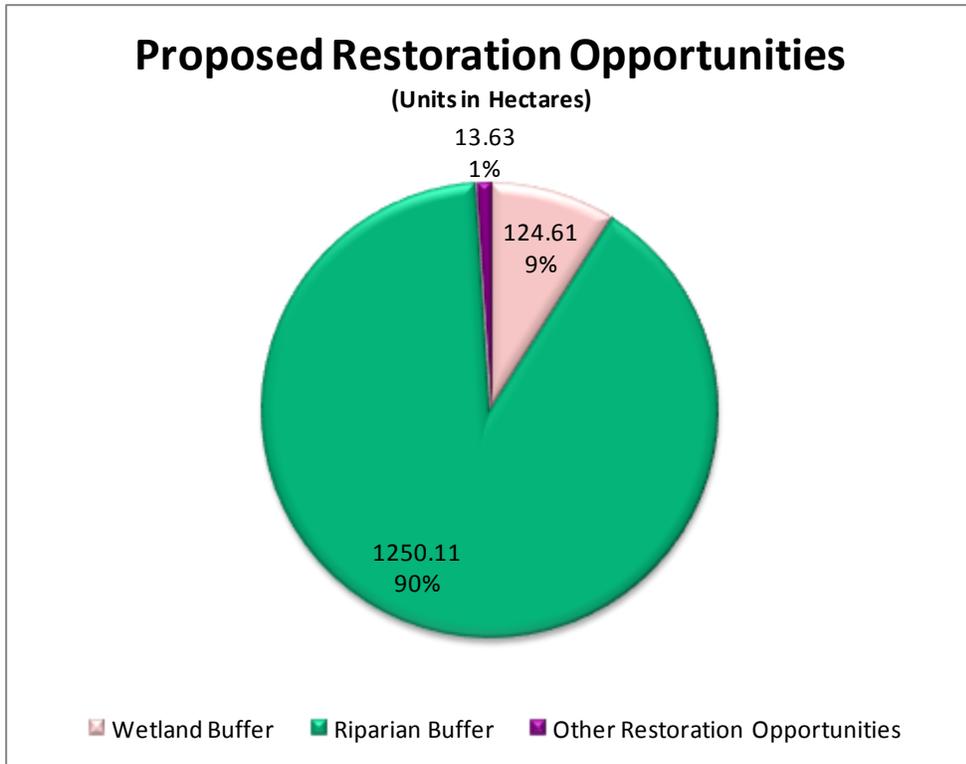


**3.2.17.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the LTVCA watershed within Essex County.

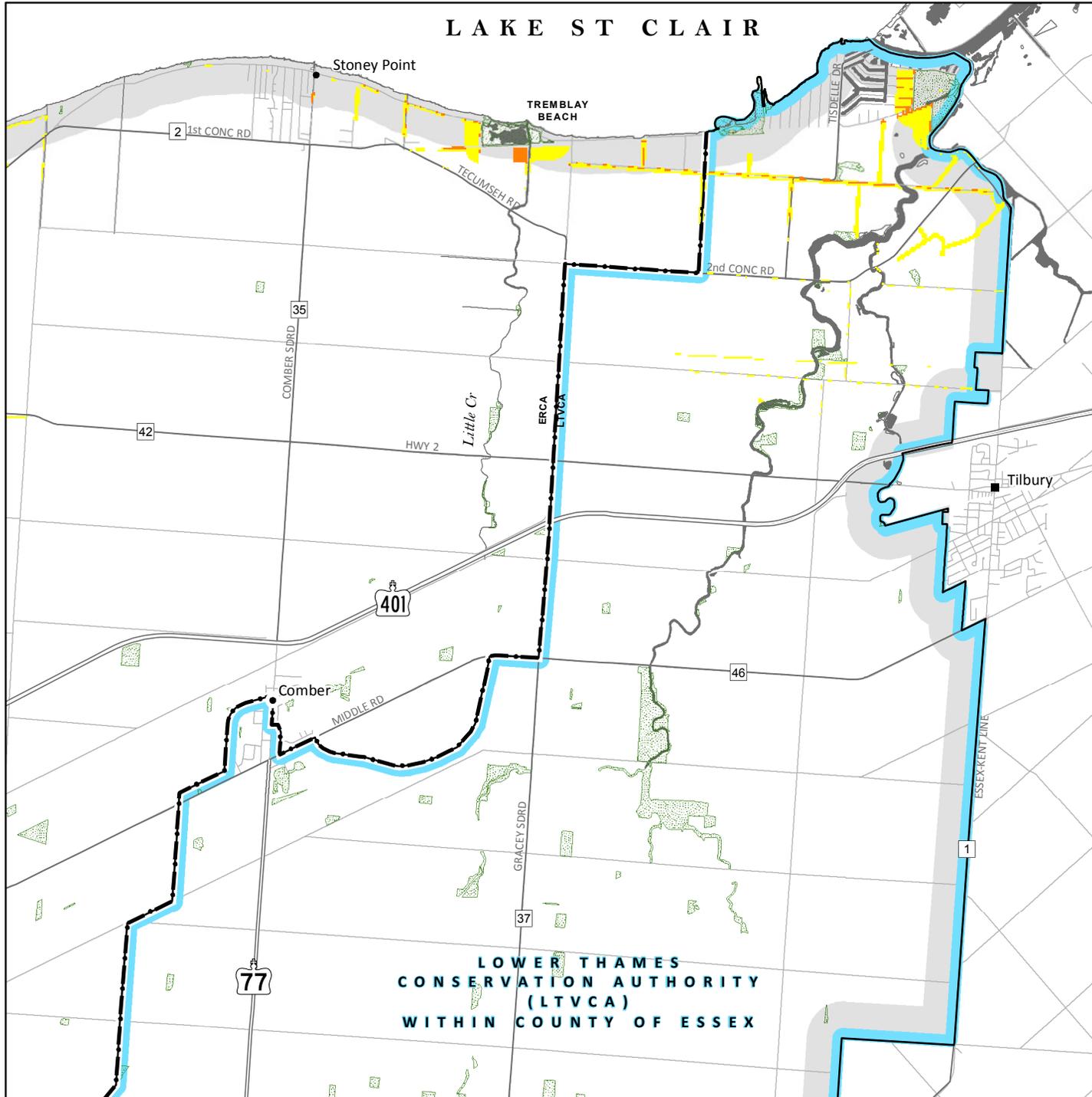
Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	124.61	307.91	0.66
Riparian Buffer	1250.11	3089.08	6.67
Other Restoration Opportunities	13.63	33.68	0.07
<b>Total Restoration Opportunities</b>	<b>1388.35</b>	<b>3430.66</b>	<b>7.41</b>
<b>Status Quo Anthropogenic</b>	<b>16948.27</b>	<b>41879.92</b>	<b>90.40</b>
<b>Total Land Area</b>	<b>18747.43</b>	<b>46325.71</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffers adjacent to the Thames River Mouth Complex Provincially Significant Wetland, as well as riparian buffering along first to third order streams in close proximity to the Lake St. Clair shoreline.

# LAKE ST CLAIR

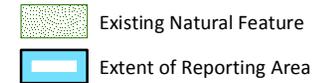


## Priority of Restoration Opportunities

Lower Thames Valley Conservation Authority within the County of Essex (North)

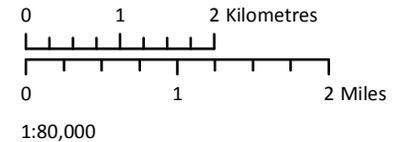
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



LOWER THAMES  
CONSERVATION AUTHORITY  
(LTVCA)  
WITHIN COUNTY OF ESSEX



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - LTVCA North - 20130430.mxd  
TD 30/04/2013

# Priority of Restoration Opportunities

Lower Thames Valley Conservation Authority within the County of Essex (South)

## Legend

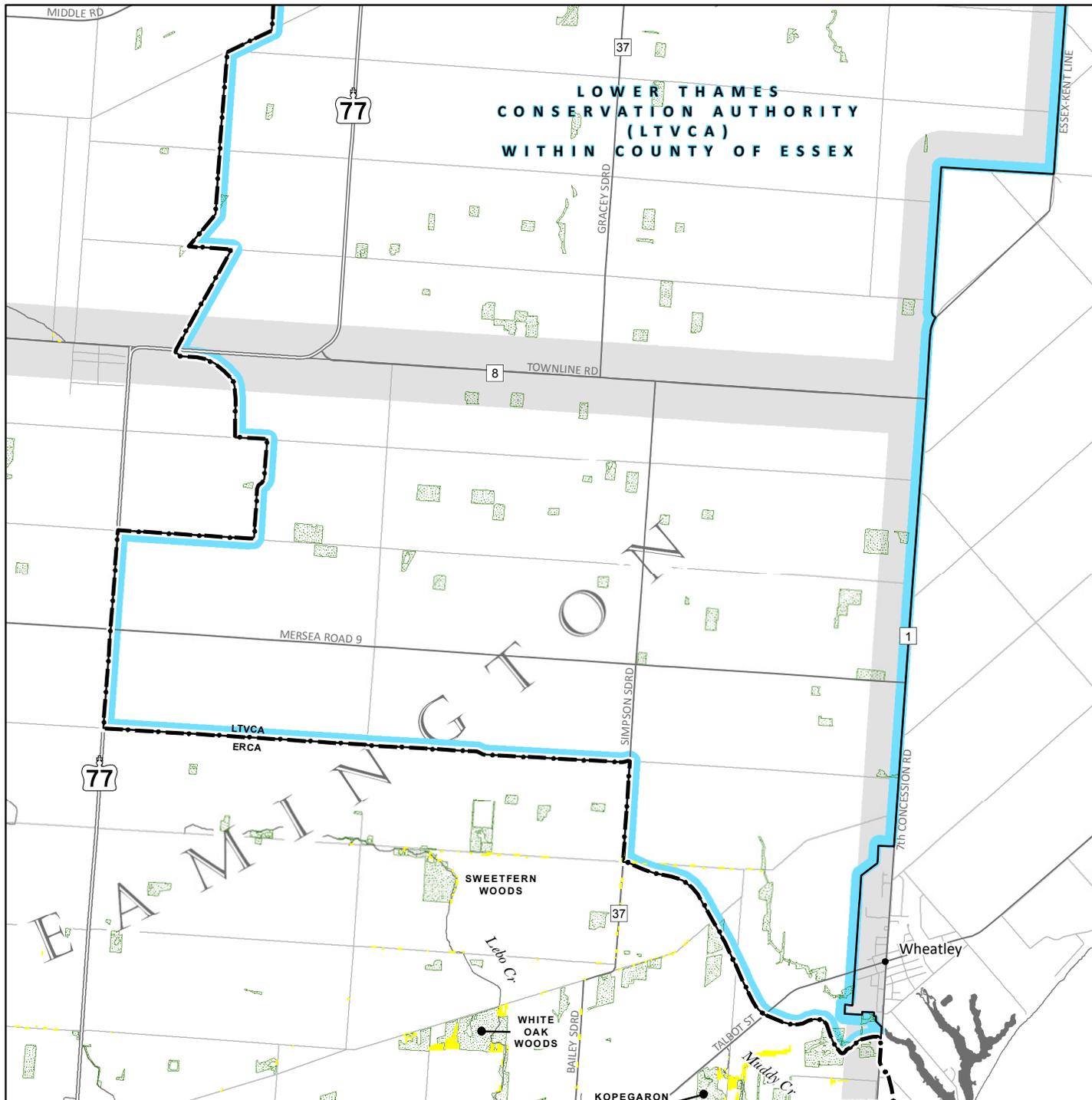
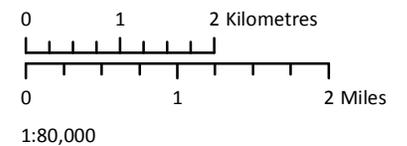
### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



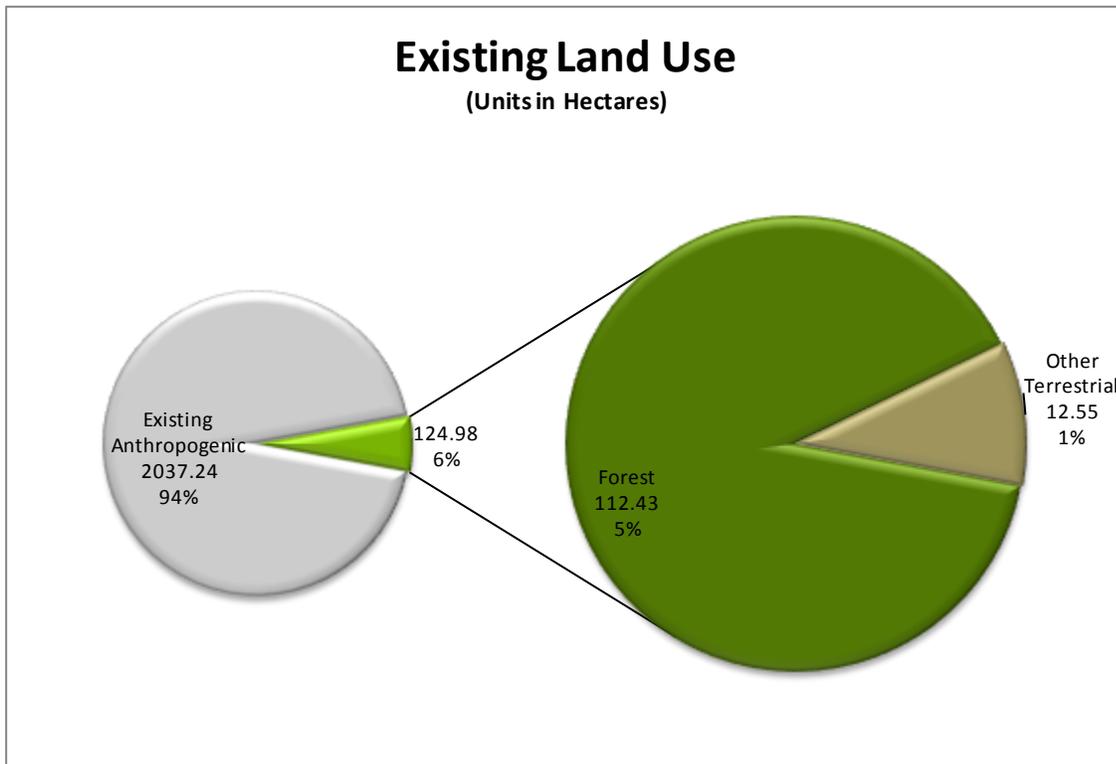
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - LTVCA South - 20130430.mxd  
TD 30/04/2013

3.2.18 Mill Creek

3.2.18.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Mill Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	112.43	277.83	5.20
Other Terrestrial	12.55	31.00	0.58
<b>Total Terrestrial Habitat</b>	<b>124.98</b>	<b>308.83</b>	<b>5.78</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>124.98</b>	<b>308.83</b>	<b>5.78</b>
<b>Existing Anthropogenic</b>	<b>2037.24</b>	<b>5034.10</b>	<b>94.22</b>
<b>Total Land Area</b>	<b>2162.22</b>	<b>5342.93</b>	<b>100.00</b>



# Existing Natural Features

## Mill Creek Wigle Creek

### Legend

#### Wetland

-  Open Water
-  Marsh
-  Swamp

#### Terrestrial

-  Forest
-  Other

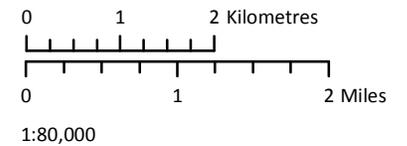
#### Features of Interest

-  Tallgrass Prairie Community

-  Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



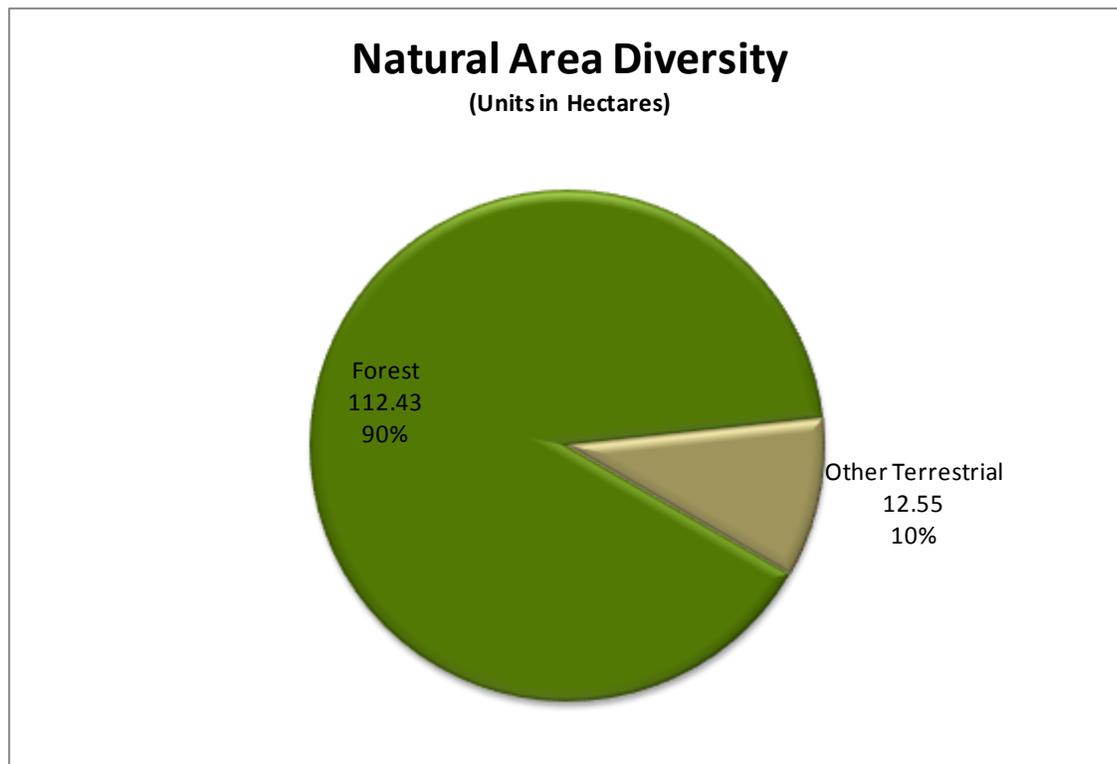
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - MillWigleCreek - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is located in the northeast corner of the subwatershed and is 18.1 ha in size. In addition, 3 forest patches within the study area contain 100 m interior forest; none of these contain 200 m interior forest.

**3.2.18.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Mill Creek subwatershed.

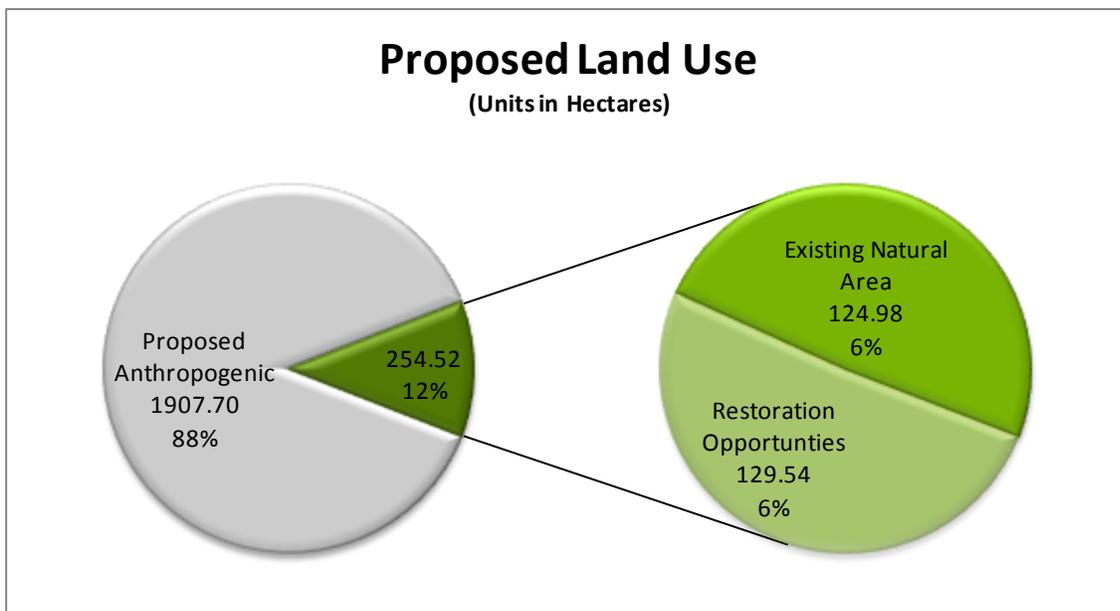
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	112.43	277.83	89.96
Other Terrestrial	12.55	31.00	10.04
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>124.98</b>	<b>308.83</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>124.98</b>	<b>308.83</b>	<b>100.00</b>

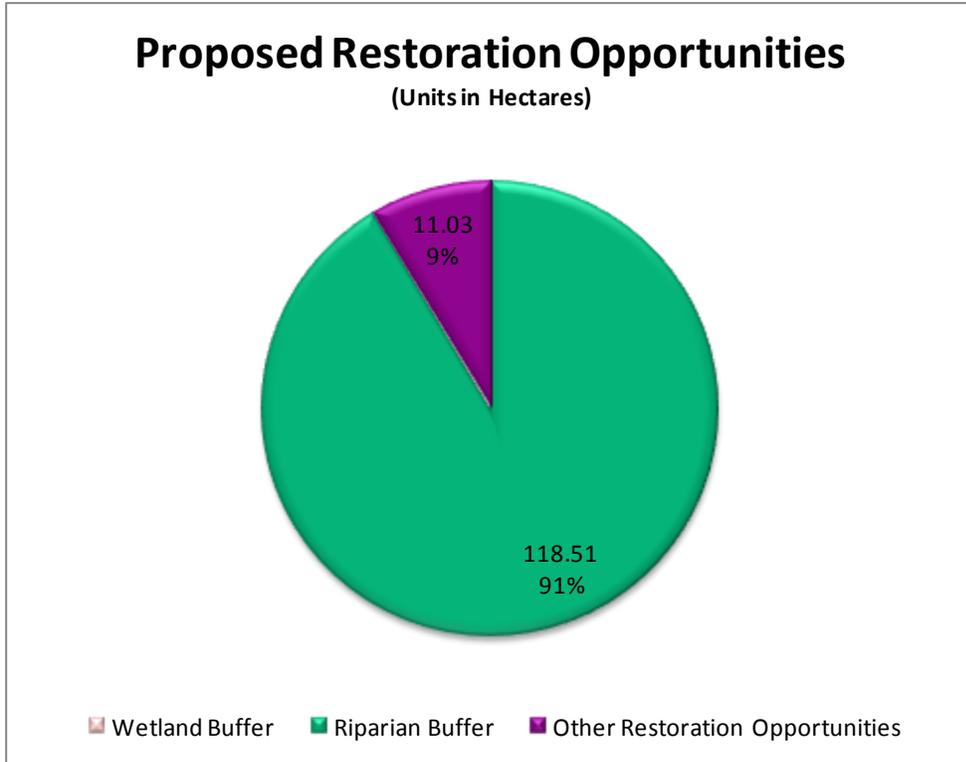


**3.2.18.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Mill Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	118.51	292.83	5.48
Other Restoration Opportunities	11.03	27.26	0.51
<b>Total Restoration Opportunities</b>	<b>129.54</b>	<b>320.10</b>	<b>5.99</b>
<b>Status Quo Anthropogenic</b>	<b>1907.70</b>	<b>4714.01</b>	<b>88.23</b>
<b>Total Land Area</b>	<b>2162.22</b>	<b>5342.93</b>	<b>100.00</b>

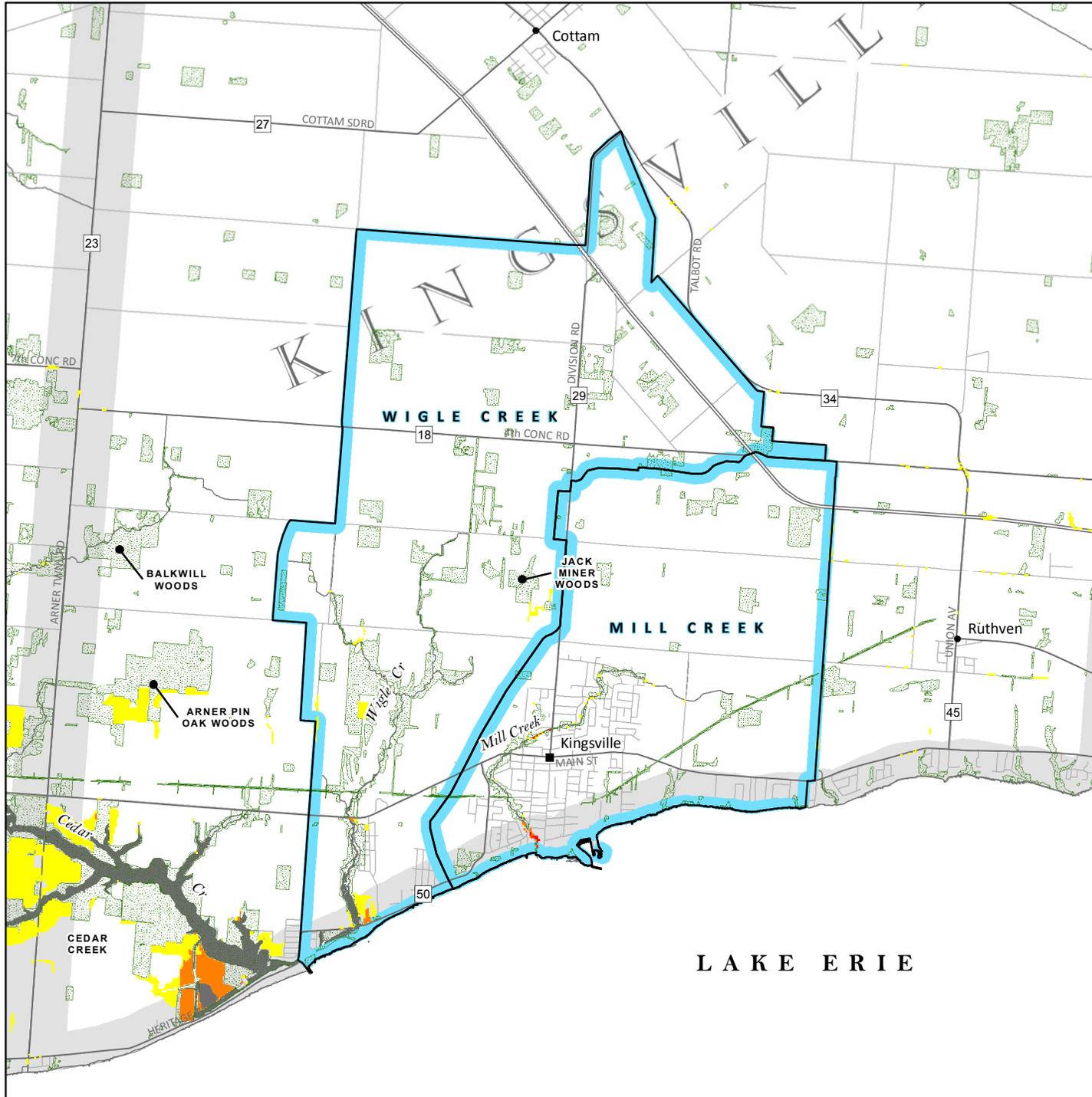




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering adjacent to the Mill Creek in Lakeside Park.

# Priority of Restoration Opportunities

Mill Creek  
Wigle Creek



## Legend

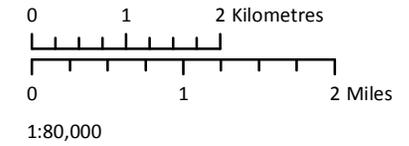
### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

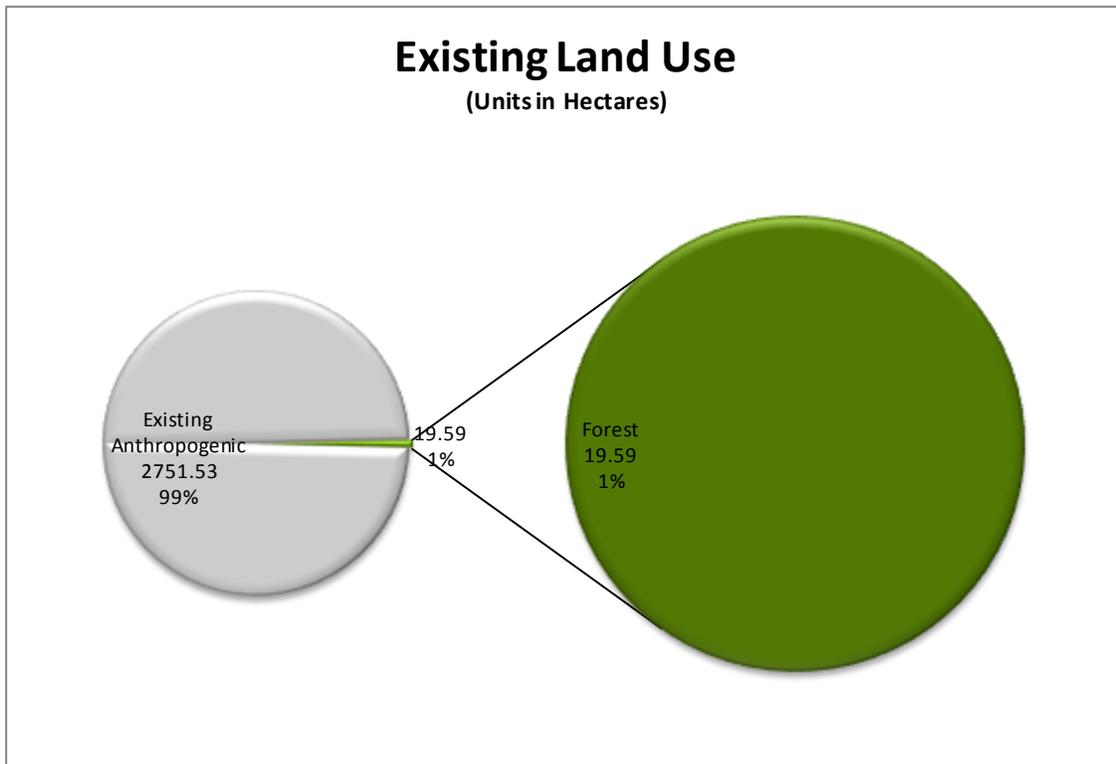


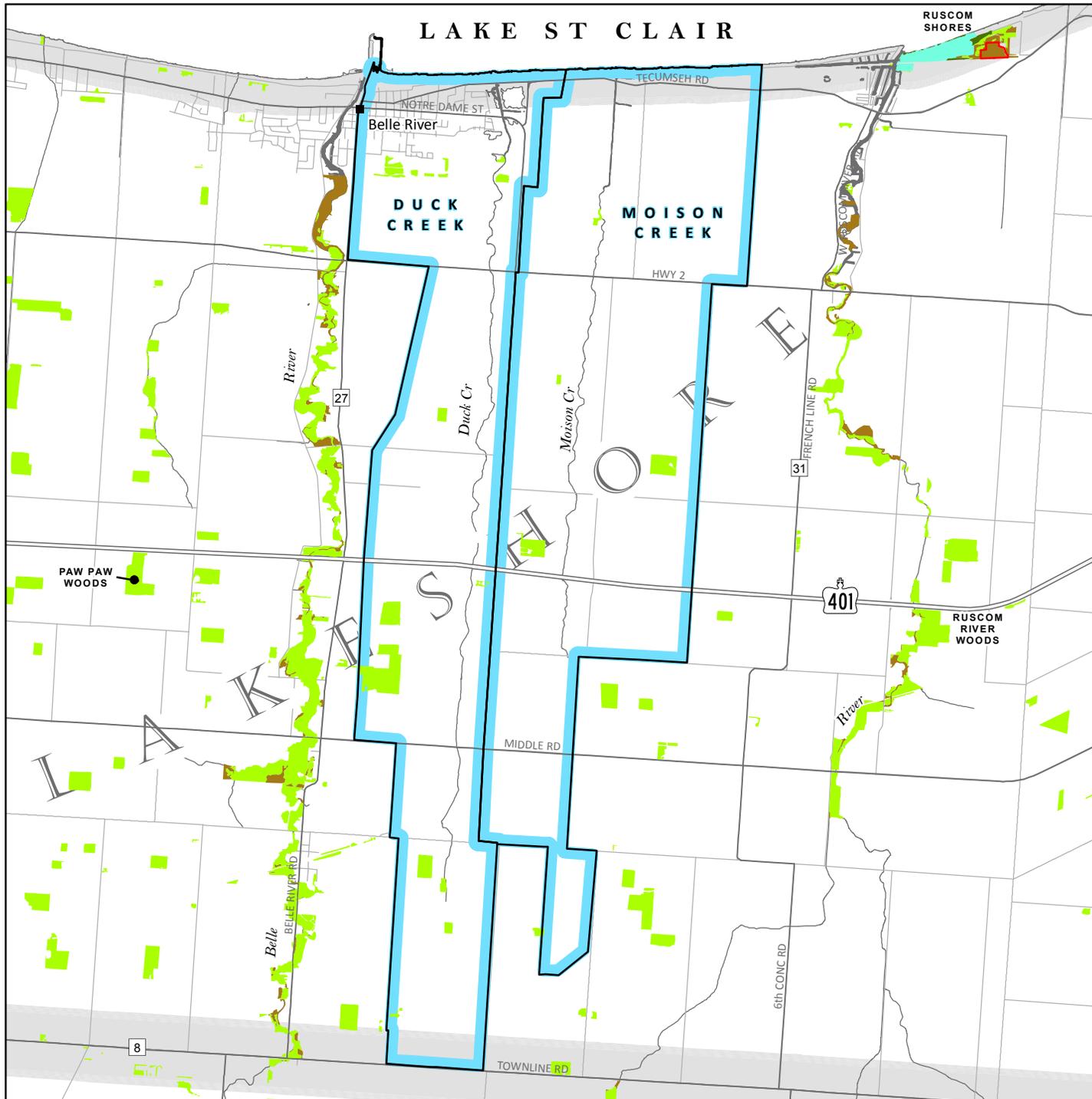
3.2.19 Moison Creek

3.2.19.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Moison Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	19.59	48.40	0.71
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>19.59</b>	<b>48.40</b>	<b>0.71</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>19.59</b>	<b>48.40</b>	<b>0.71</b>
<b>Existing Anthropogenic</b>	<b>2751.53</b>	<b>6799.15</b>	<b>99.29</b>
<b>Total Land Area</b>	<b>2771.12</b>	<b>6847.55</b>	<b>100.00</b>





# Existing Natural Features

Duck Creek  
Moison Creek

## Legend

### Wetland

- Open Water
- Marsh
- Swamp

### Terrestrial

- Forest
- Other

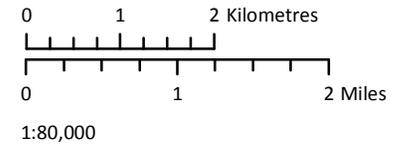
### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



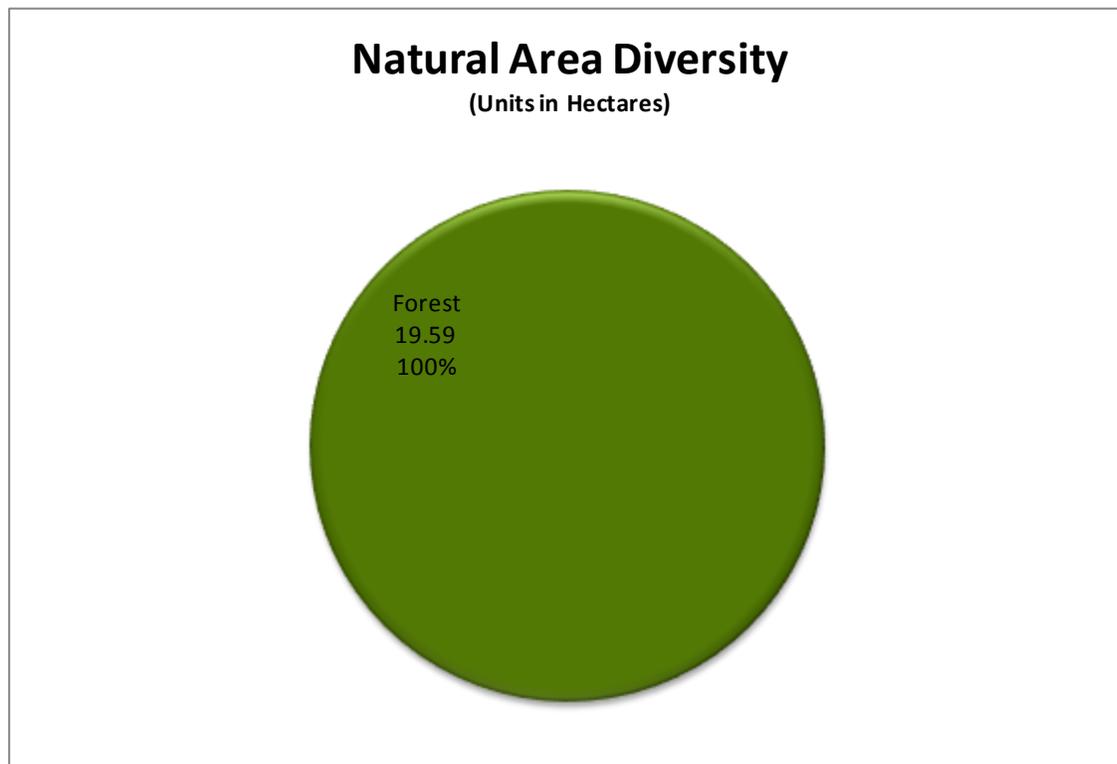
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - DuckMoisonCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 9.5 ha in size. In addition, 1 forest patch within the study area contain 100 m interior forest, no patches contain 200 m interior forest.

**3.2.19.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Moison Creek subwatershed.

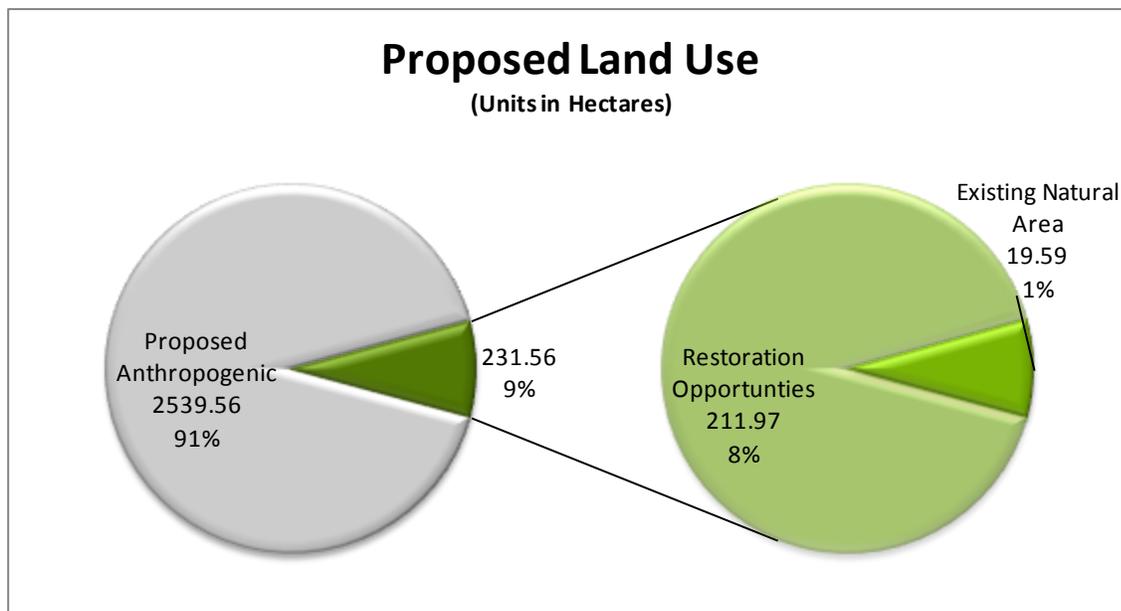
<b>Natural Area Composition</b>			
<b>Vegetation Community Type</b>	<b>Hectares</b>	<b>Acres</b>	<b>%</b>
Forest	19.59	48.40	100.00
Other Terrestrial	0.00	0.00	0.00
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>19.59</b>	<b>48.40</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>19.59</b>	<b>48.40</b>	<b>100.00</b>

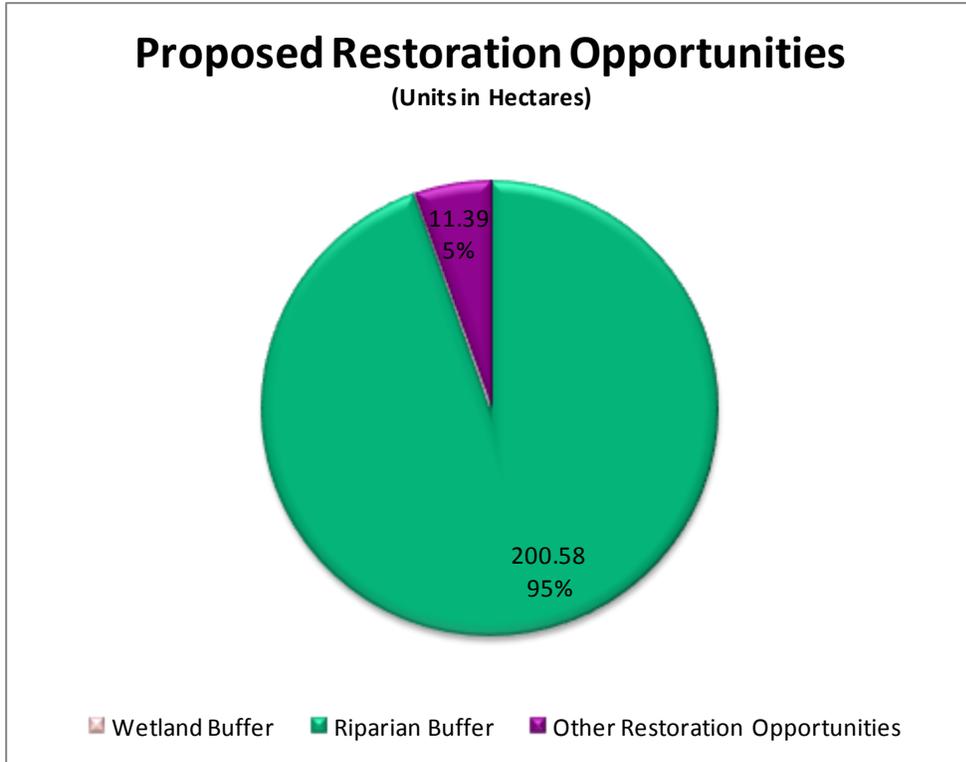


### 3.2.19.3 Restoration Opportunities

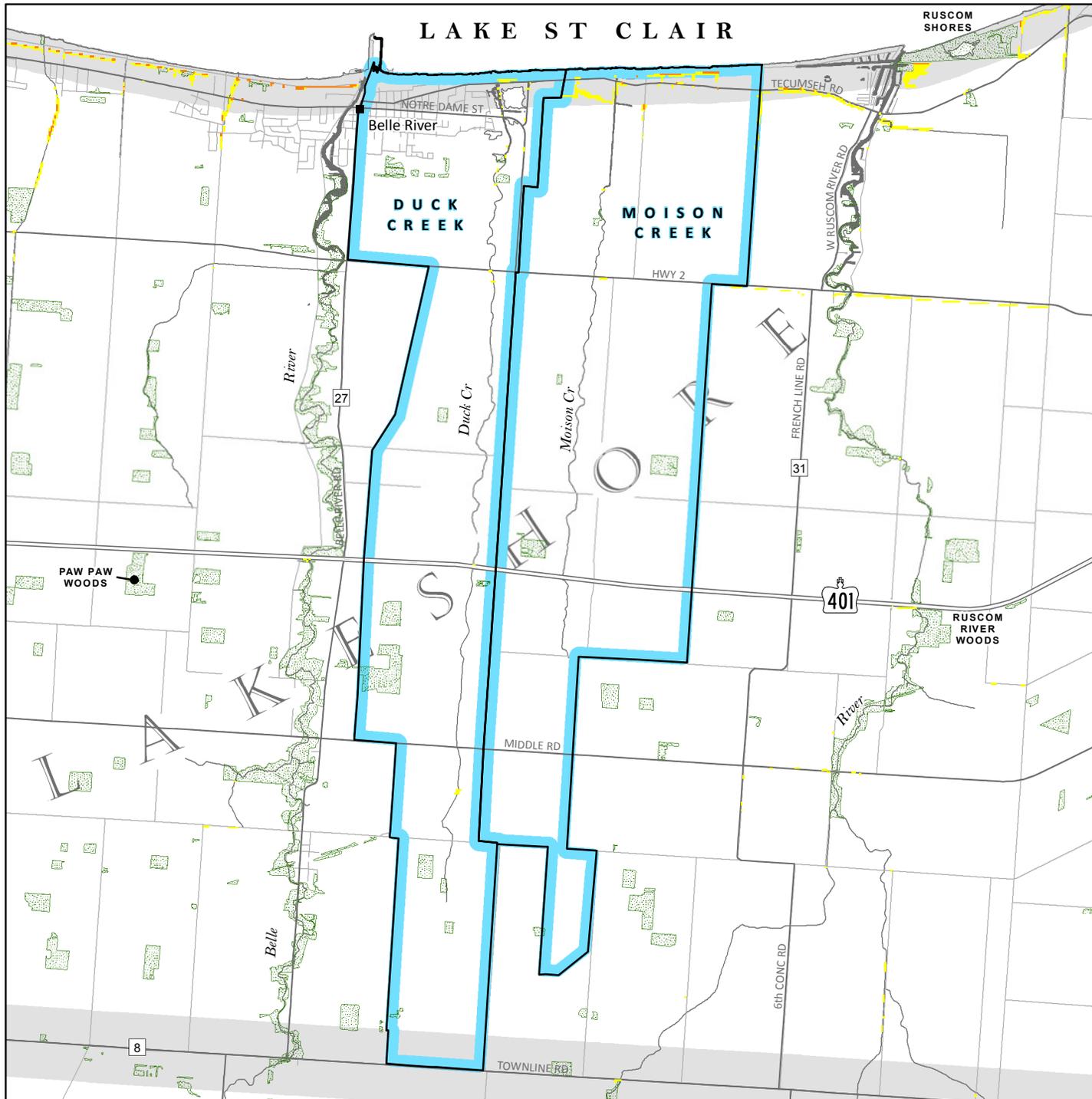
The following Table and Figures summarizes the proposed restoration opportunities within the Moison Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	200.58	495.65	7.24
Other Restoration Opportunities	11.39	28.13	0.41
<b>Total Restoration Opportunities</b>	<b>211.97</b>	<b>523.78</b>	<b>7.65</b>
<b>Status Quo Anthropogenic</b>	<b>2539.56</b>	<b>6275.37</b>	<b>91.64</b>
<b>Total Land Area</b>	<b>2771.12</b>	<b>6847.55</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering along first to third order streams in close proximity to the Lake St. Clair shoreline.

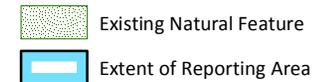


# Priority of Restoration Opportunities

Duck Creek  
Moison Creek

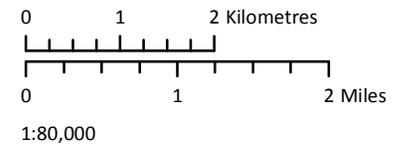
## Legend

### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



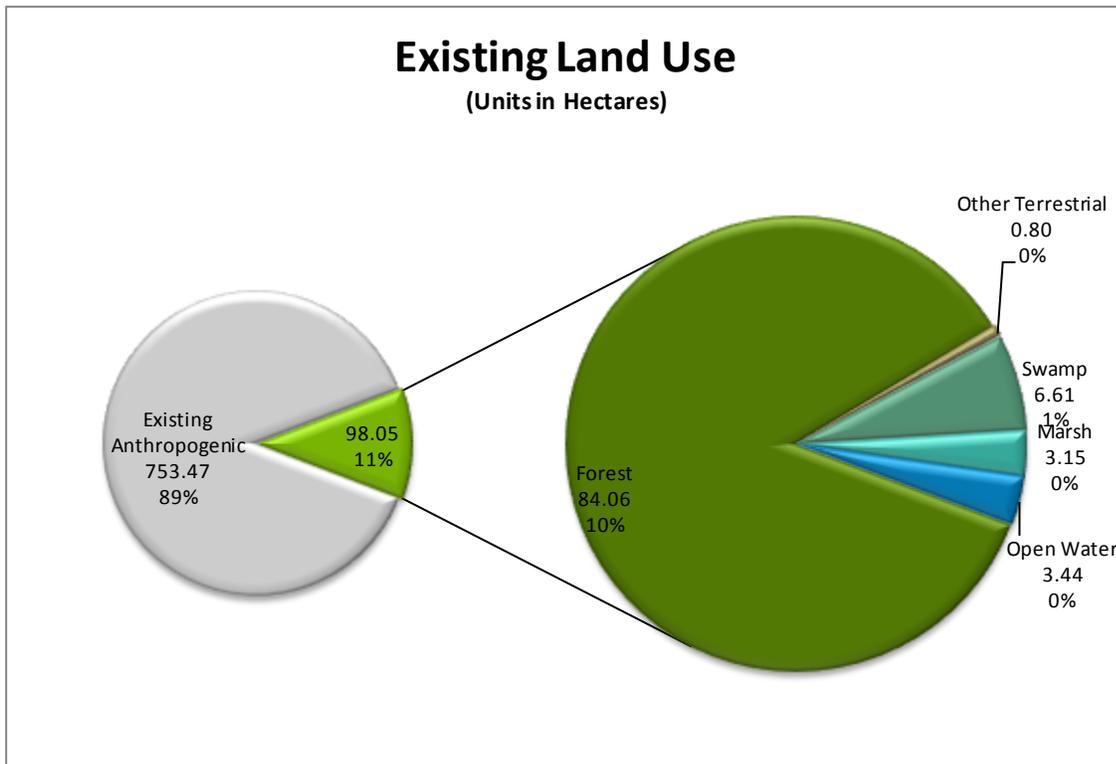
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - DuckMoisonCreek - 20130430.mxd  
TD 30/04/2013

3.2.20 Muddy Creek

3.2.20.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Muddy Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	84.06	207.71	9.87
Other Terrestrial	0.80	1.97	0.09
<b>Total Terrestrial Habitat</b>	<b>84.85</b>	<b>209.67</b>	<b>9.96</b>
Wetland Habitat	Hectares	Acres	%
Swamp	6.61	16.33	0.78
Marsh	3.15	7.77	0.37
Open Water	3.44	8.51	0.40
<b>Total Wetland Habitat</b>	<b>13.20</b>	<b>32.62</b>	<b>1.55</b>
<b>Existing Natural Area</b>	<b>98.05</b>	<b>242.29</b>	<b>11.51</b>
<b>Existing Anthropogenic</b>	<b>753.47</b>	<b>1861.85</b>	<b>88.49</b>
<b>Total Land Area</b>	<b>851.52</b>	<b>2104.15</b>	<b>100.00</b>



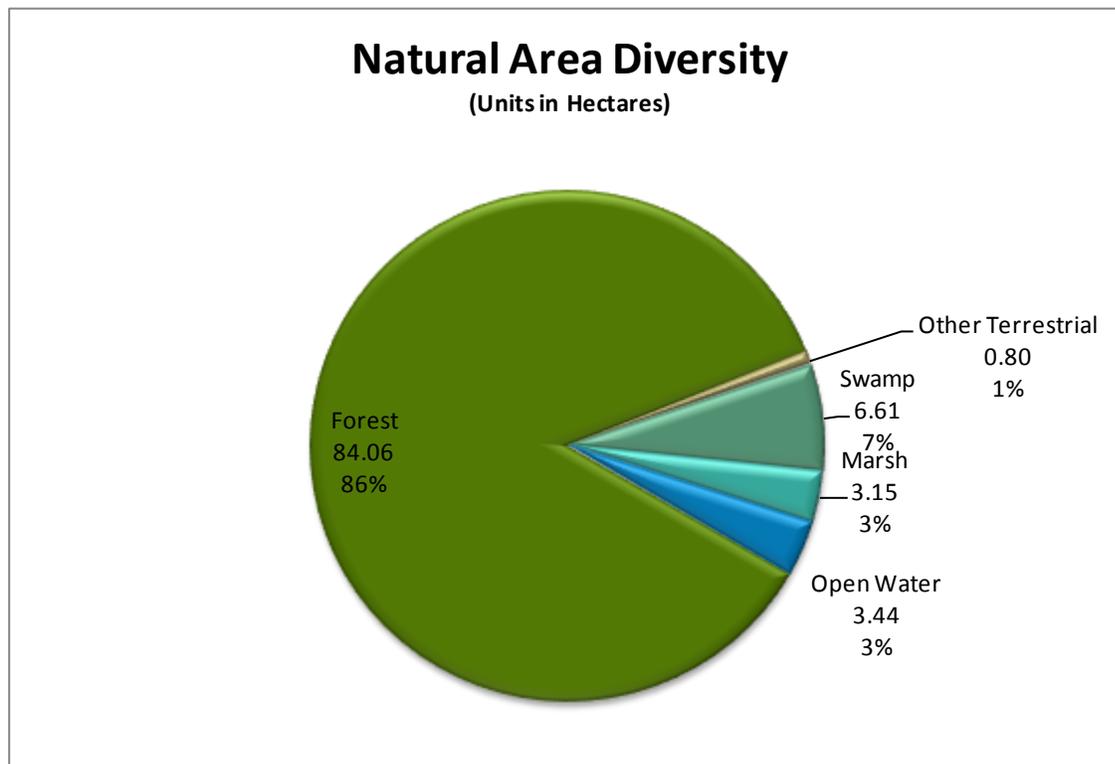


Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Muddy Creek and is 27.9 ha in size. In addition, 3 forest patches within the study area contain 100 m interior forest, none of these patches contain 200 m interior forest.

**3.2.20.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Muddy Creek subwatershed.

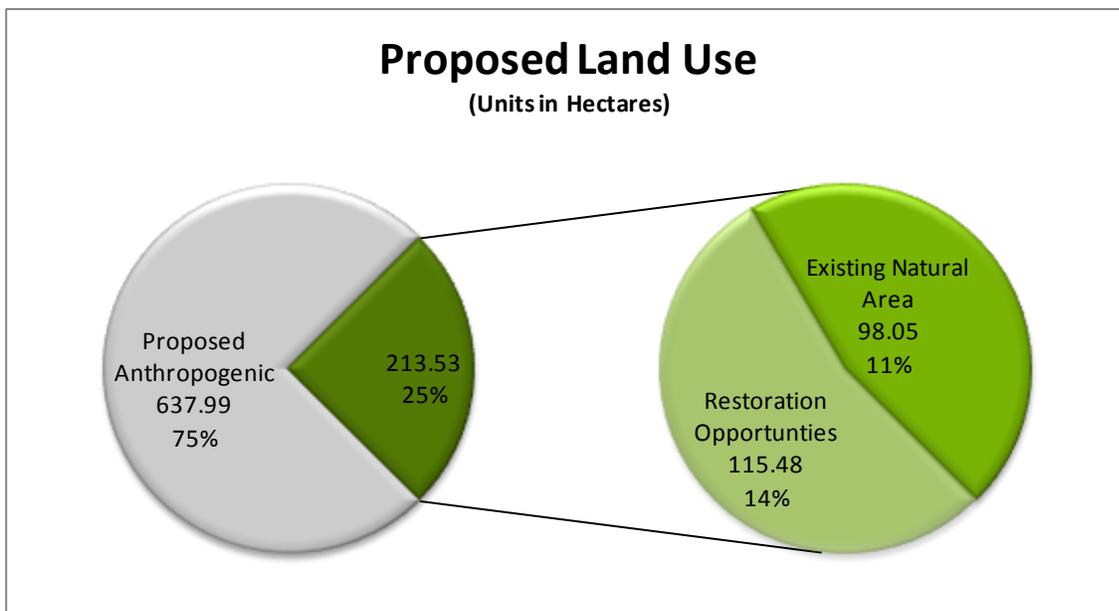
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	84.06	207.71	85.73
Other Terrestrial	0.80	1.97	0.81
Swamp	6.61	16.33	6.74
Marsh	3.15	7.77	3.21
Open Water	3.44	8.51	3.51
<b>Total Terrestrial Habitat</b>	<b>84.85</b>	<b>209.67</b>	<b>86.54</b>
<b>Total Wetland Habitat</b>	<b>13.20</b>	<b>32.62</b>	<b>13.46</b>
<b>Existing Natural Area</b>	<b>98.05</b>	<b>242.29</b>	<b>100.00</b>

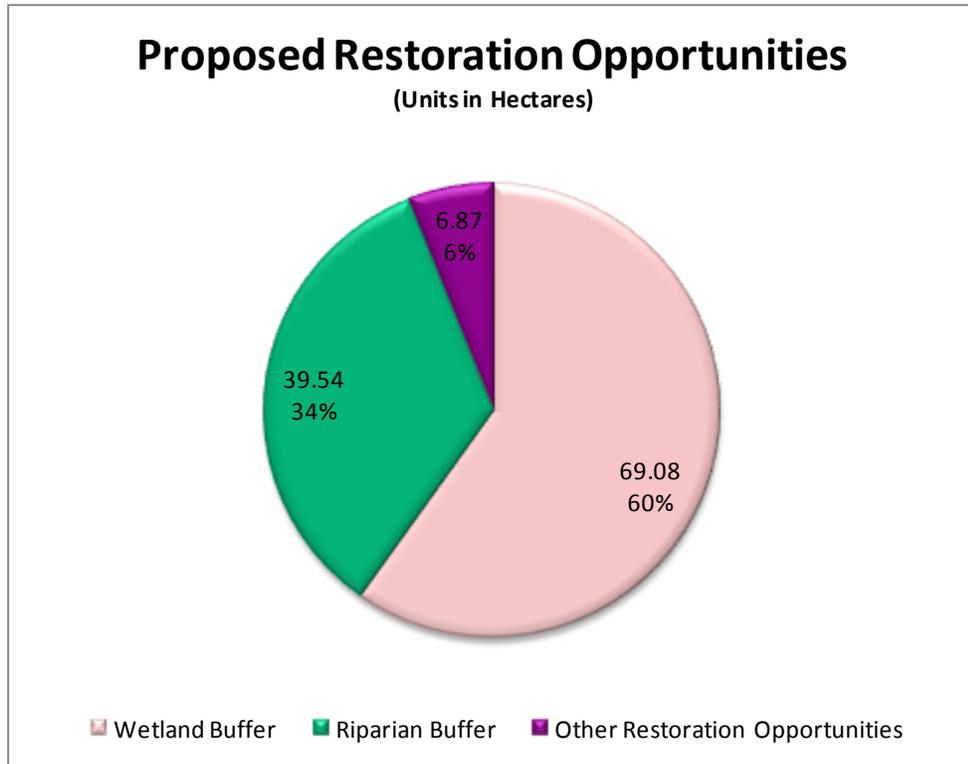


**3.2.20.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Muddy Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	69.08	170.69	8.11
Riparian Buffer	39.54	97.70	4.64
Other Restoration Opportunities	6.87	16.97	0.81
<b>Total Restoration Opportunities</b>	<b>115.48</b>	<b>285.36</b>	<b>13.56</b>
<b>Status Quo Anthropogenic</b>	<b>637.99</b>	<b>1576.50</b>	<b>74.92</b>
<b>Total Land Area</b>	<b>851.52</b>	<b>2104.15</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffer adjacent to the Muddy Creek Provincially Significant Wetland, as well as riparian buffering along the Muddy Creek.

# Priority of Restoration Opportunities

Atwell Drain  
 Coterie Park Drainage System  
 Elmdale Drainage System  
 Muddy Creek

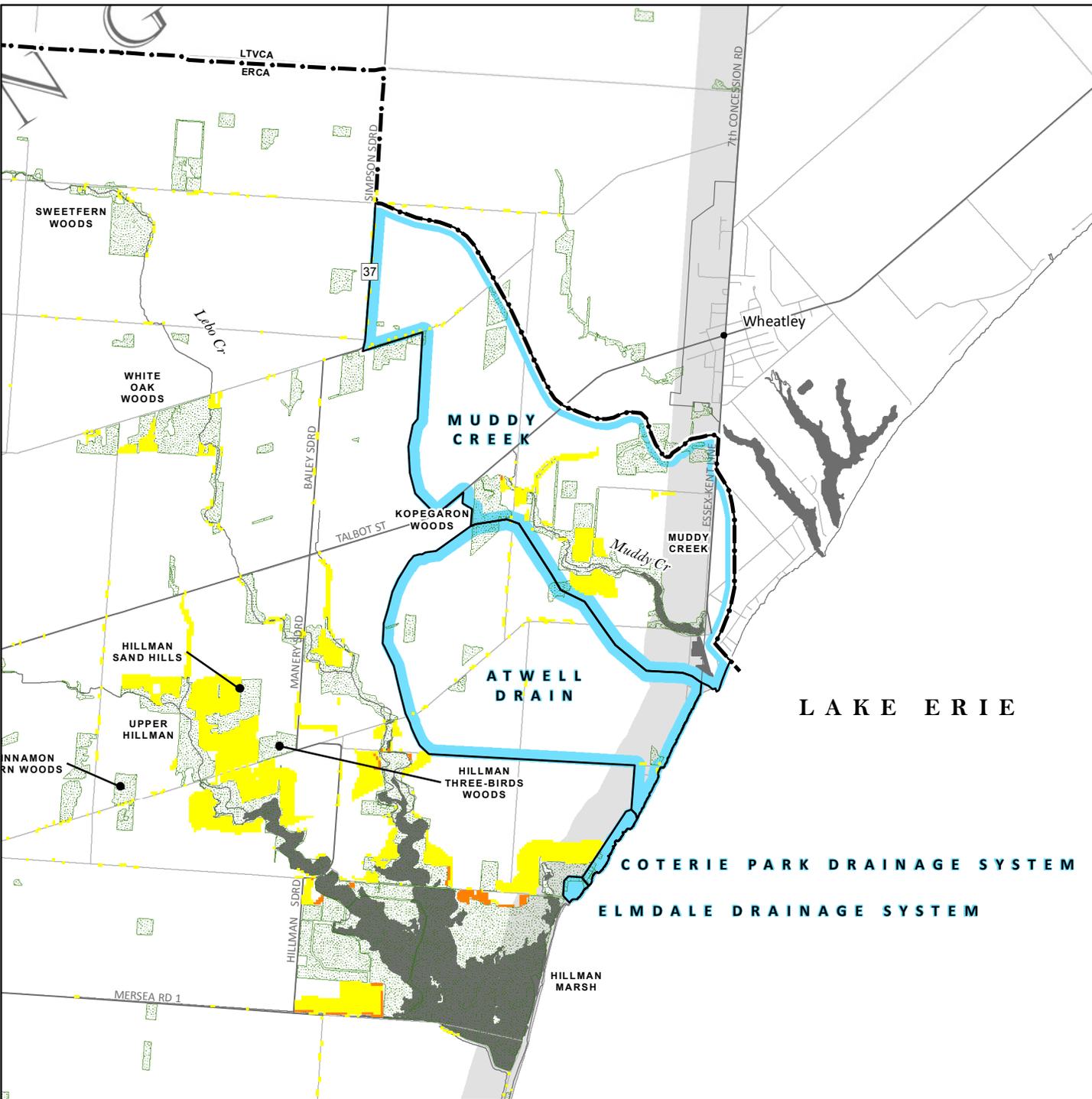
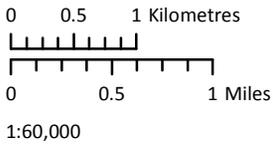
### Legend

- Number of Criteria Met**
- 5 (Highest Priority)
  - 4
  - 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

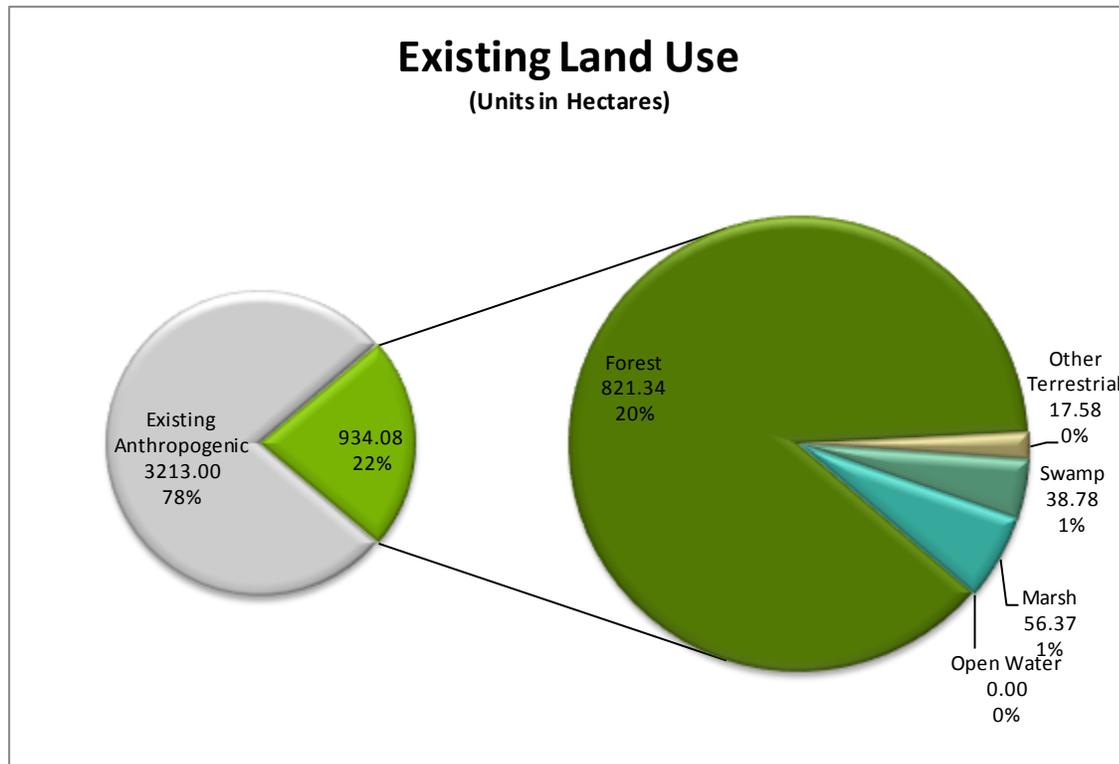


3.2.21 Pelee Island

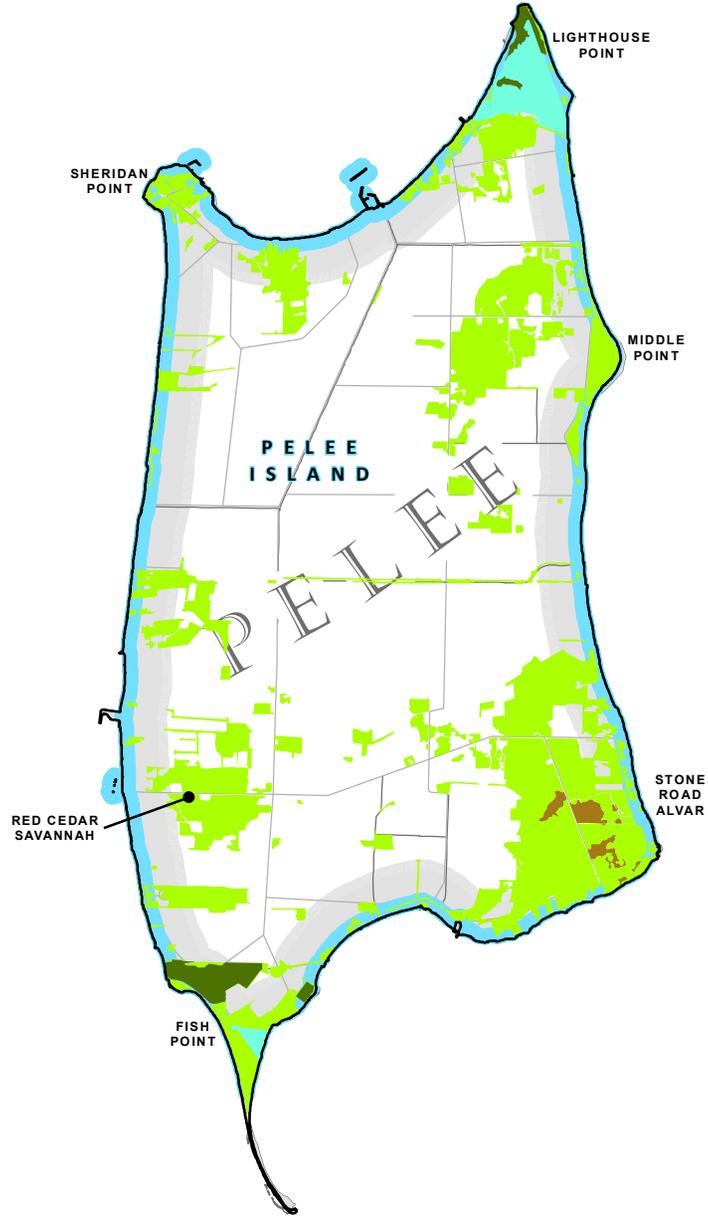
3.2.21.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Pelee Island drainage system.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	821.34	2029.57	19.81
Other Terrestrial	17.58	43.45	0.42
<b>Total Terrestrial Habitat</b>	<b>838.92</b>	<b>2073.02</b>	<b>20.23</b>
Wetland Habitat	Hectares	Acres	%
Swamp	38.78	95.84	0.94
Marsh	56.37	139.29	1.36
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>95.15</b>	<b>235.13</b>	<b>2.29</b>
<b>Existing Natural Area</b>	<b>934.08</b>	<b>2308.15</b>	<b>22.52</b>
<b>Existing Anthropogenic</b>	<b>3213.00</b>	<b>7939.46</b>	<b>77.48</b>
<b>Total Land Area</b>	<b>4147.07</b>	<b>10247.60</b>	<b>100.00</b>



# LAKE ERIE



## Existing Natural Features

### Pelee Island

#### Legend

##### Wetland

- Open Water
- Marsh
- Swamp

##### Terrestrial

- Forest
- Other

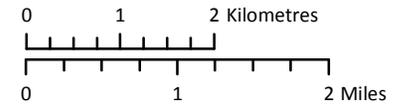
##### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



1:80,000



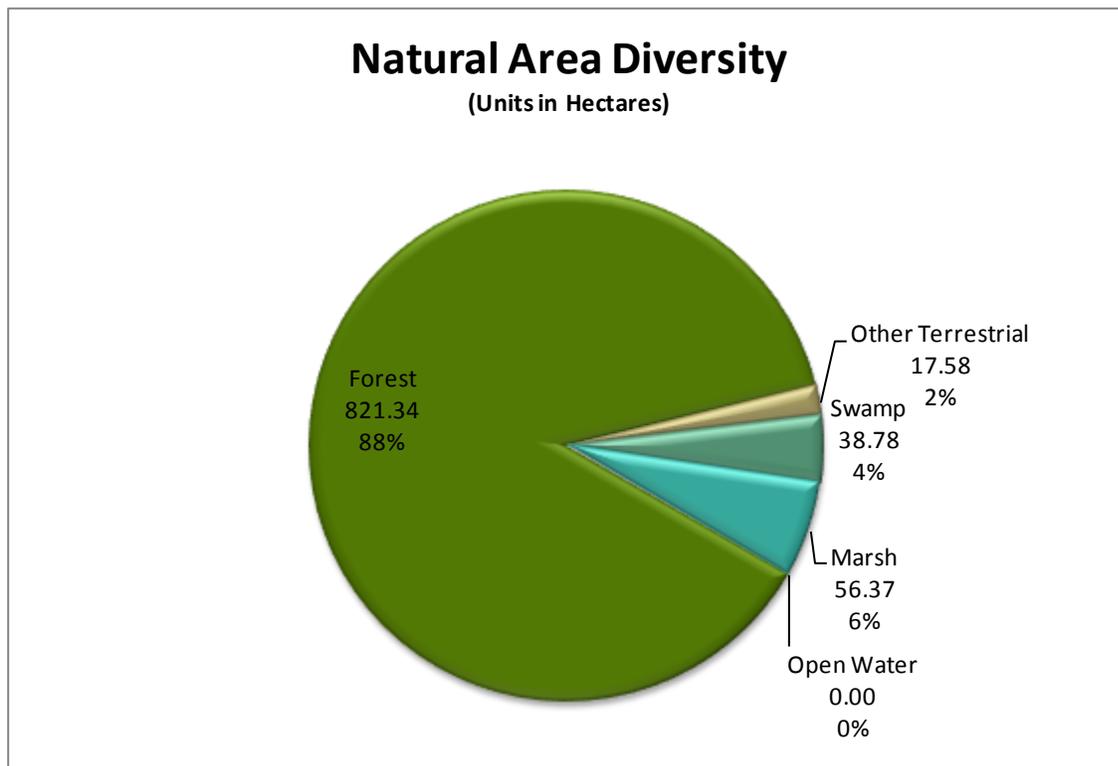
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - PeleeIsland - 20130424.mxd  
TD 29/04/2013

Within the study area there are 2 forest patches greater than 100 ha in size. These are associated with the Middle Point/Brown’s Road Savannah. The largest forest patch is part of Stone Road Alvar and is 300.6 ha in size. In addition, 23 forest patches within the study area contain 100 m interior forest, 5 of these patches contain 200 m interior forest.

**3.2.21.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Pelee Island drainage system.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	821.34	2029.57	87.93
Other Terrestrial	17.58	43.45	1.88
Swamp	38.78	95.84	4.15
Marsh	56.37	139.29	6.03
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>838.92</b>	<b>2073.02</b>	<b>89.81</b>
<b>Total Wetland Habitat</b>	<b>95.15</b>	<b>235.13</b>	<b>10.19</b>
<b>Existing Natural Area</b>	<b>934.08</b>	<b>2308.15</b>	<b>100.00</b>

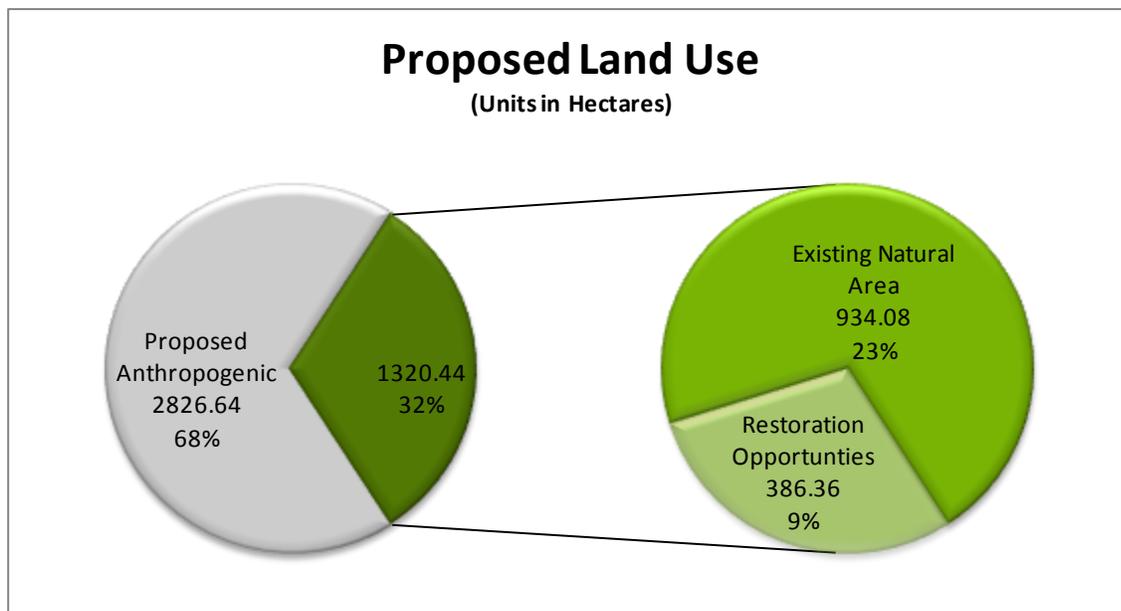


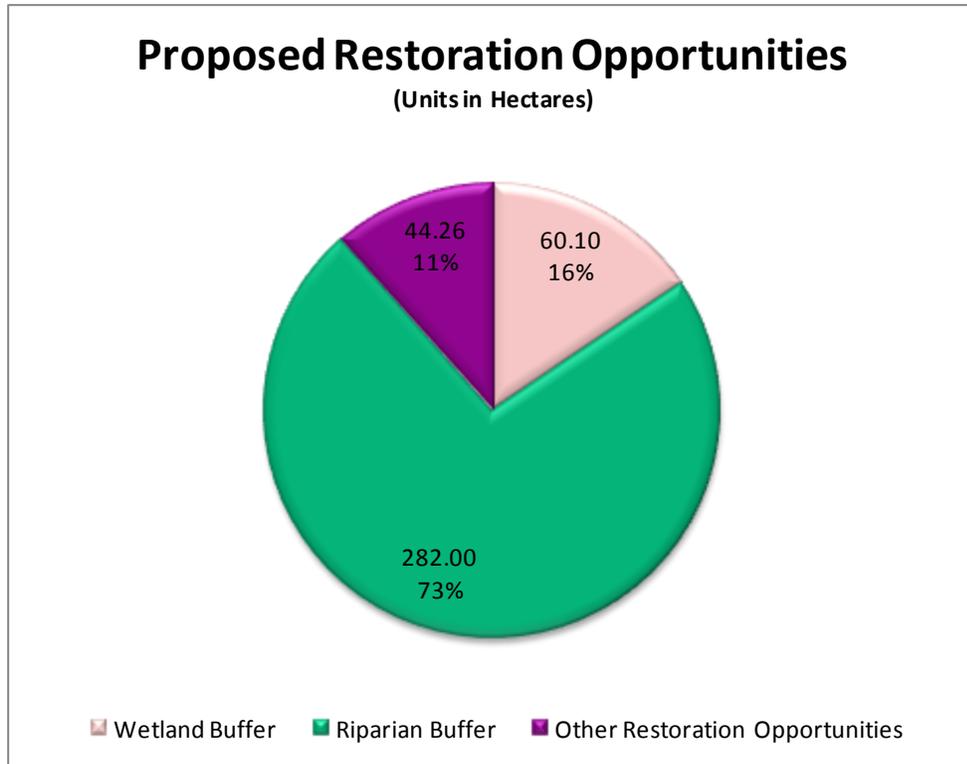
This study area also contains patches of significant tallgrass prairie vegetation communities, however these have not yet been mapped.

**3.2.21.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Pelee Island drainage system.

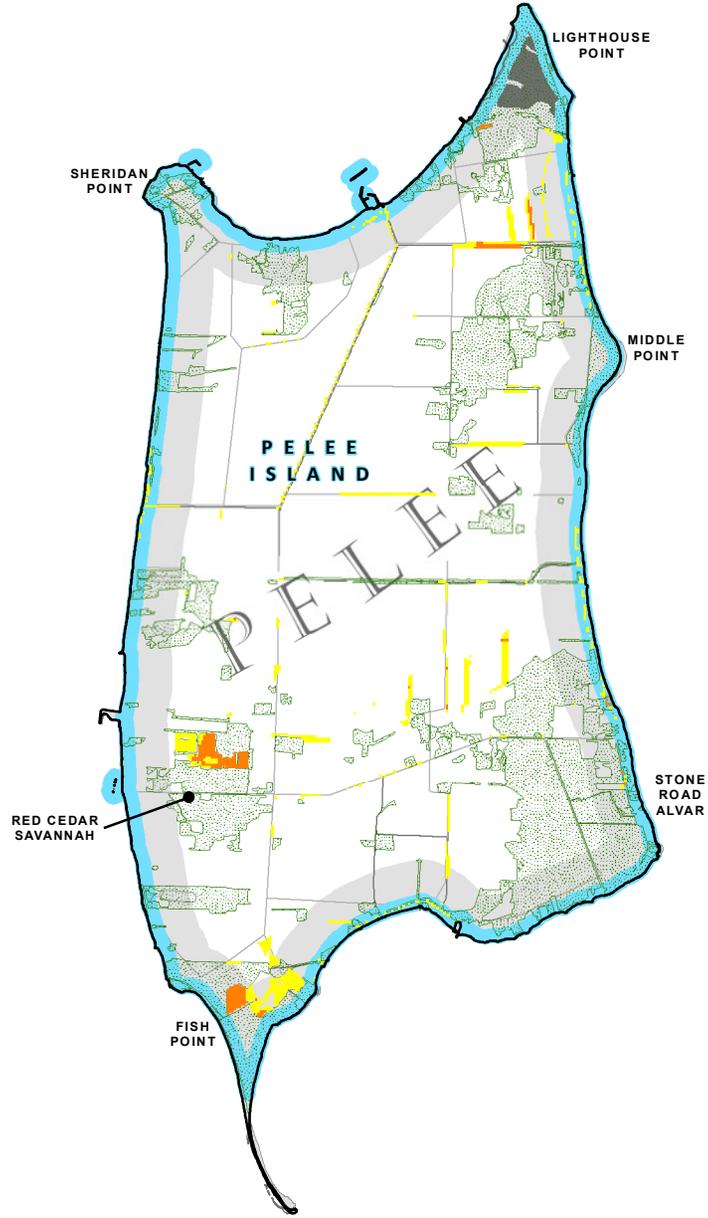
Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	60.10	148.50	1.45
Riparian Buffer	282.00	696.83	6.80
Other Restoration Opportunities	44.26	109.37	1.07
<b>Total Restoration Opportunities</b>	<b>386.36</b>	<b>954.71</b>	<b>9.32</b>
<b>Status Quo Anthropogenic</b>	<b>2826.64</b>	<b>6984.75</b>	<b>68.16</b>
<b>Total Land Area</b>	<b>4147.07</b>	<b>10247.60</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include restoration associated with the Red Cedar Savannah as well wetland buffers adjacent to Fish Point Provincially Significant Wetlands.

# LAKE ERIE

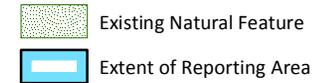
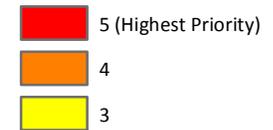


## Priority of Restoration Opportunities

### Pelee Island

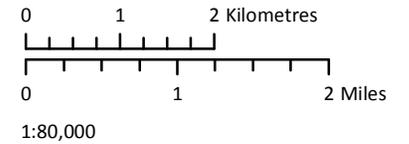
#### Legend

##### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



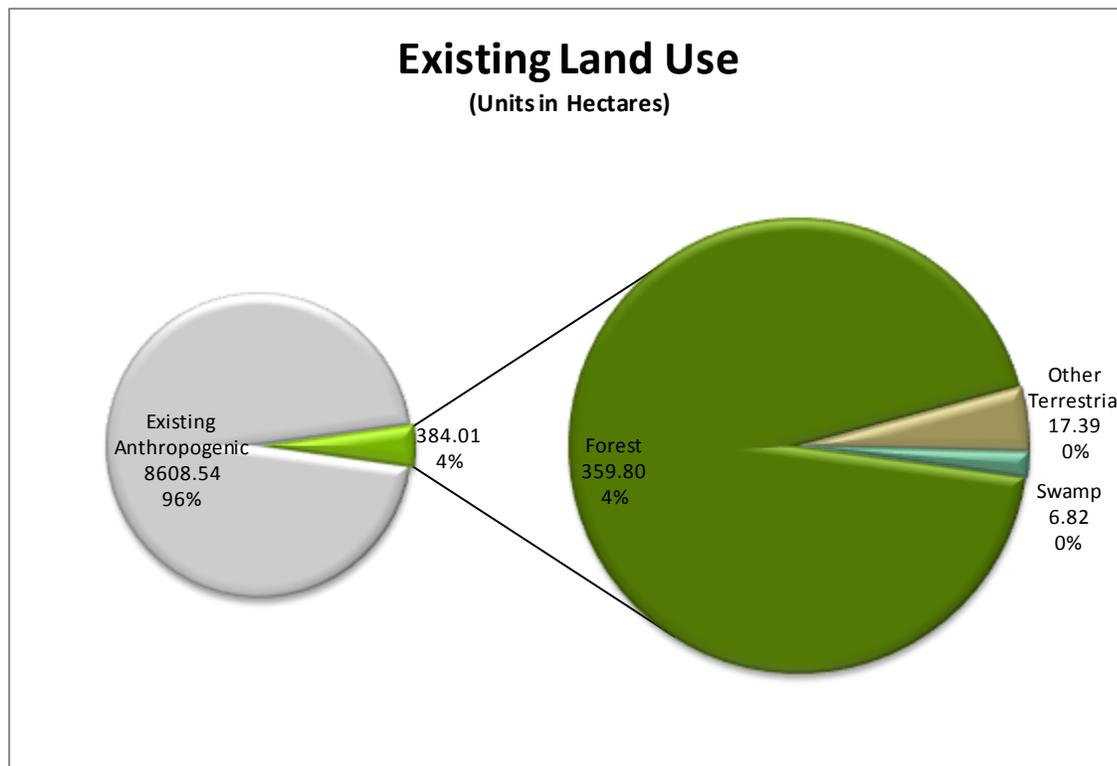
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - PeleeIsland - 20130430.mxd  
TD 30/04/2013

3.2.22 *Pike Creek*

3.2.22.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Pike Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	359.80	889.09	4.00
Other Terrestrial	17.39	42.97	0.19
<b>Total Terrestrial Habitat</b>	<b>377.19</b>	<b>932.06</b>	<b>4.19</b>
Wetland Habitat	Hectares	Acres	%
Swamp	6.82	16.86	0.08
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>6.82</b>	<b>16.86</b>	<b>0.08</b>
<b>Existing Natural Area</b>	<b>384.01</b>	<b>948.92</b>	<b>4.27</b>
<b>Existing Anthropogenic</b>	<b>8608.54</b>	<b>21272.08</b>	<b>95.73</b>
<b>Total Land Area</b>	<b>8992.55</b>	<b>22220.99</b>	<b>100.00</b>



# LAKE ST CLAIR

## Existing Natural Features

### Pike Creek



#### Legend

##### Wetland

- Open Water
- Marsh
- Swamp

##### Terrestrial

- Forest
- Other

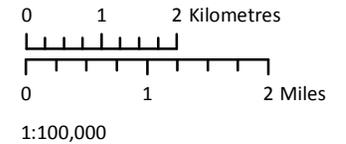
##### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



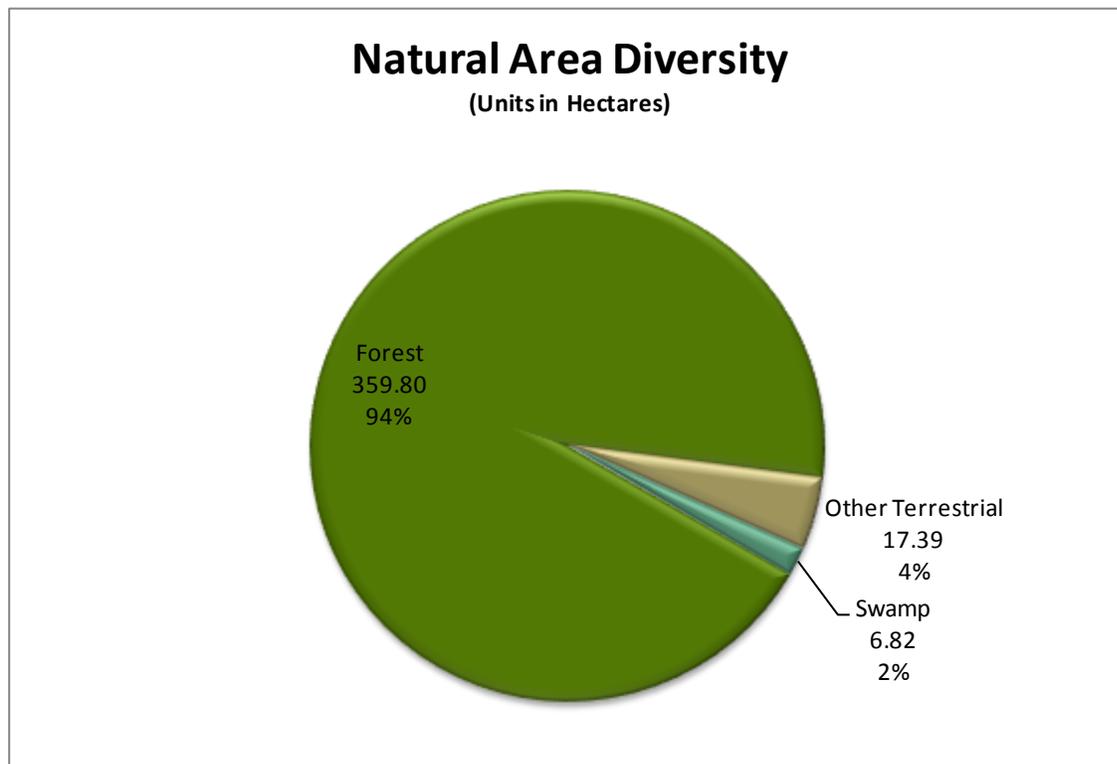
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - PikeCreek - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Fairplay Woods and is 52.9 ha in size. In addition, 15 forest patches within the study area contain 100 m interior forest, 2 of these patches contain 200 m interior forest.

**3.2.22.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Pike Creek subwatershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	359.80	889.09	93.69
Other Terrestrial	17.39	42.97	4.53
Swamp	6.82	16.86	1.78
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>377.19</b>	<b>932.06</b>	<b>98.22</b>
<b>Total Wetland Habitat</b>	<b>6.82</b>	<b>16.86</b>	<b>1.78</b>
<b>Existing Natural Area</b>	<b>384.01</b>	<b>948.92</b>	<b>100.00</b>

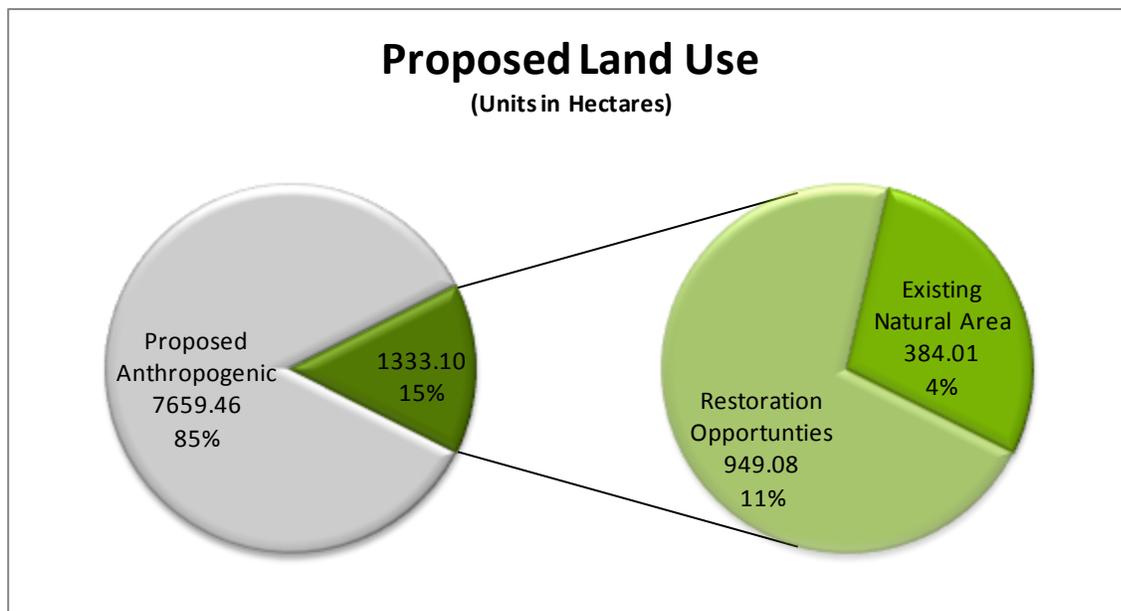


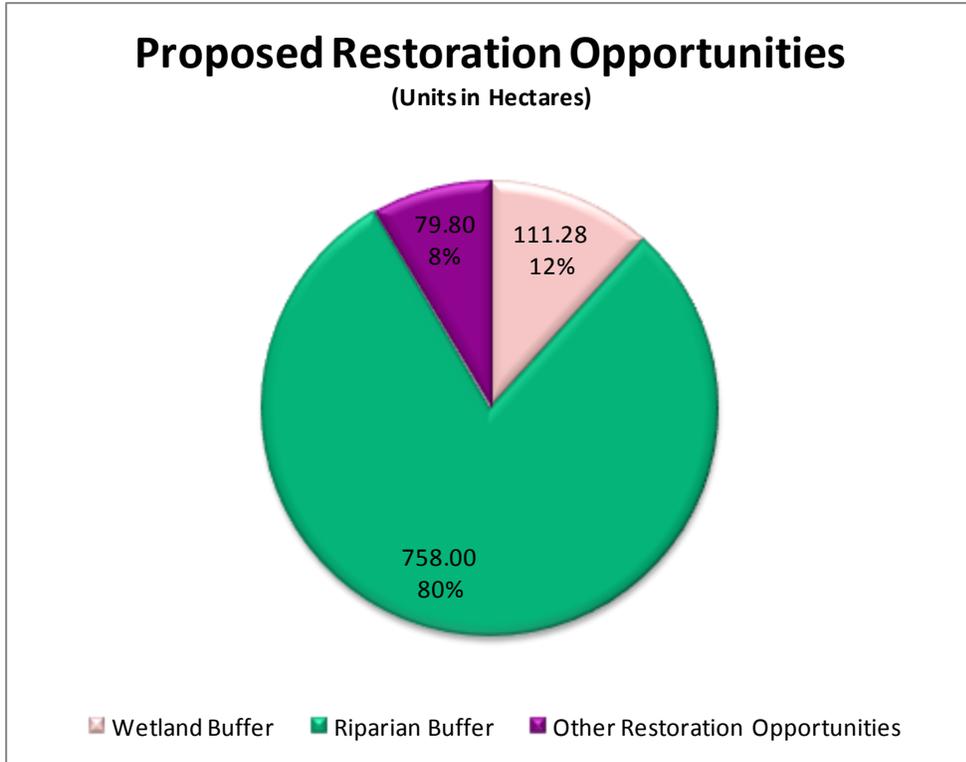
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.22.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Pike Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	111.28	274.98	1.24
Riparian Buffer	758.00	1873.05	8.43
Other Restoration Opportunities	79.80	197.20	0.89
<b>Total Restoration Opportunities</b>	<b>949.08</b>	<b>2345.22</b>	<b>10.55</b>
<b>Status Quo Anthropogenic</b>	<b>7659.46</b>	<b>18926.85</b>	<b>85.18</b>
<b>Total Land Area</b>	<b>8992.55</b>	<b>22220.99</b>	<b>100.00</b>



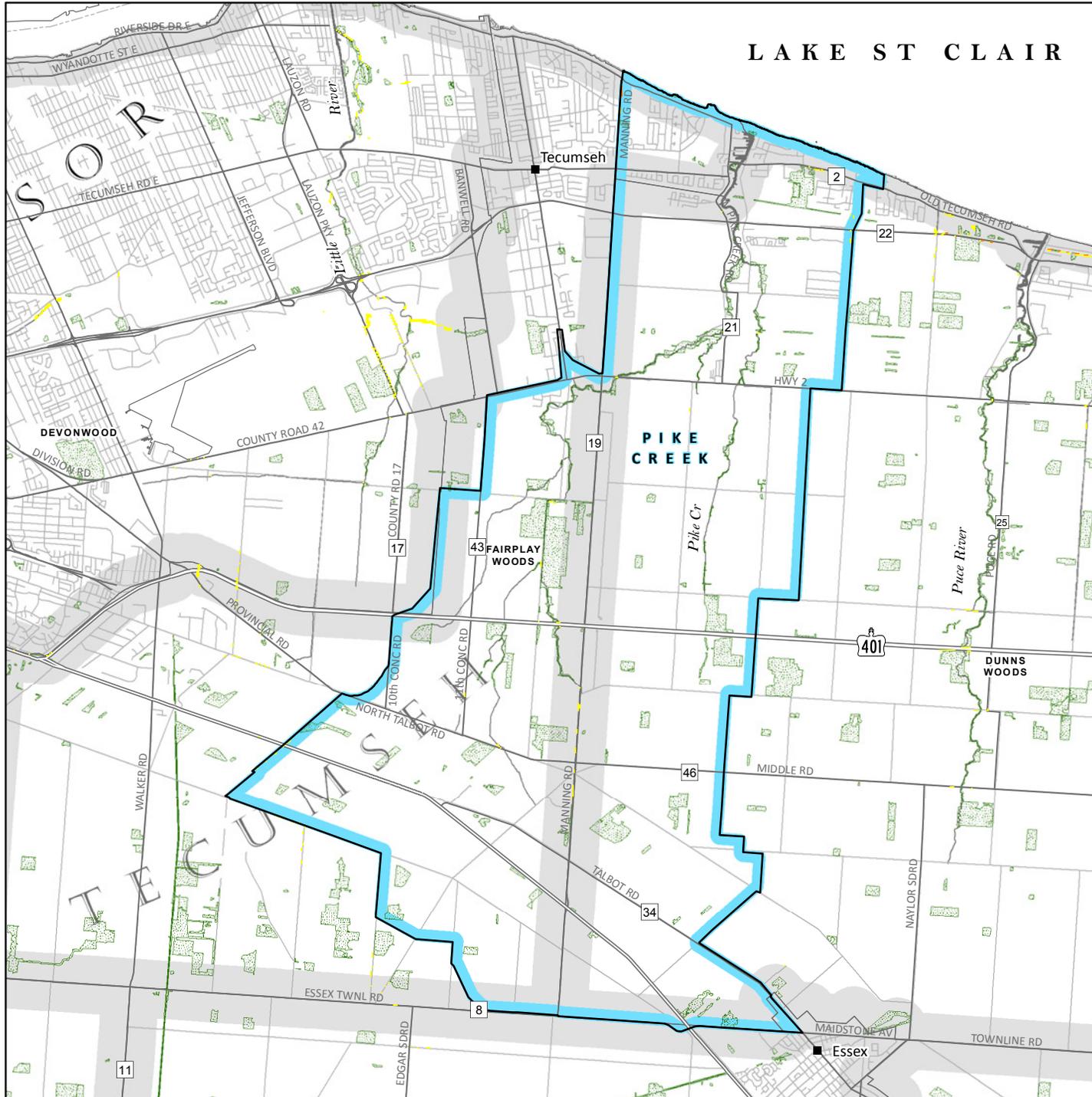


The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include reforestation associated with Fairplay Woods.

# LAKE ST CLAIR

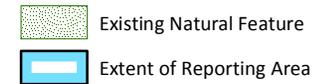
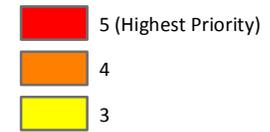
## Priority of Restoration Opportunities

### Pike Creek



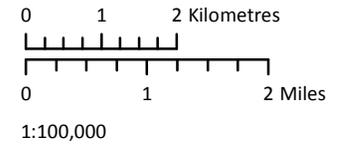
#### Legend

##### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



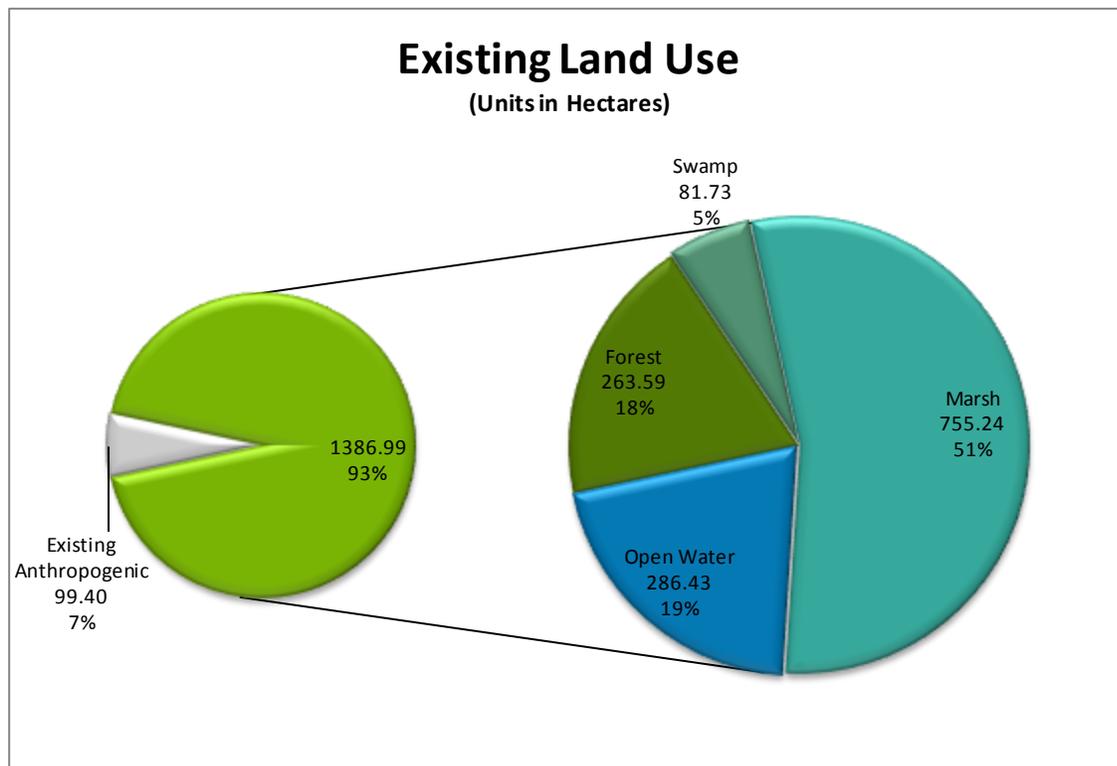
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - Pike Creek - 20130430.mxd  
TD 30/04/2013

3.2.23 Point Pelee Marsh

3.2.23.1 Existing Land Use

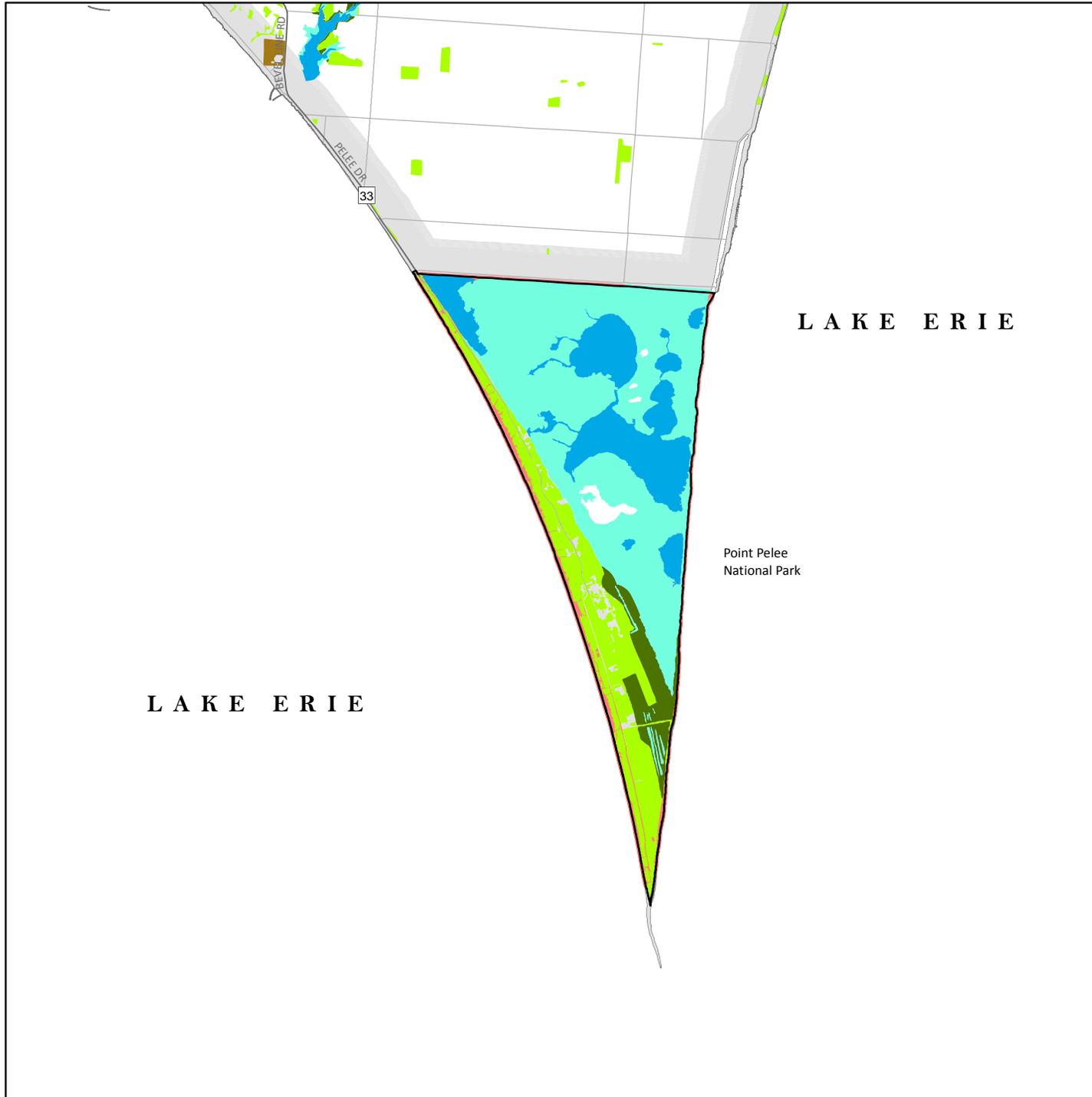
The following Table and Figure summarizes the findings for existing land use within the Point Pelee Marsh drainage area.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	263.59	651.34	17.73
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>263.59</b>	<b>651.34</b>	<b>17.73</b>
Wetland Habitat	Hectares	Acres	%
Swamp	81.73	201.96	5.50
Marsh	755.24	1866.24	50.81
Open Water	286.43	707.78	19.27
<b>Total Wetland Habitat</b>	<b>1123.40</b>	<b>2775.98</b>	<b>75.58</b>
<b>Existing Natural Area</b>	<b>1386.99</b>	<b>3427.31</b>	<b>93.31</b>
<b>Existing Anthropogenic</b>	<b>99.40</b>	<b>245.62</b>	<b>6.69</b>
<b>Total Land Area</b>	<b>1486.39</b>	<b>3672.93</b>	<b>100.00</b>



# Existing Natural Features

## Point Pelee National Park



### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

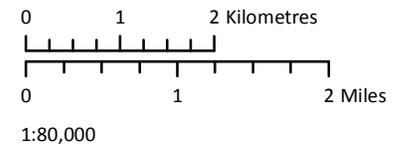
- Forest
- Other

#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



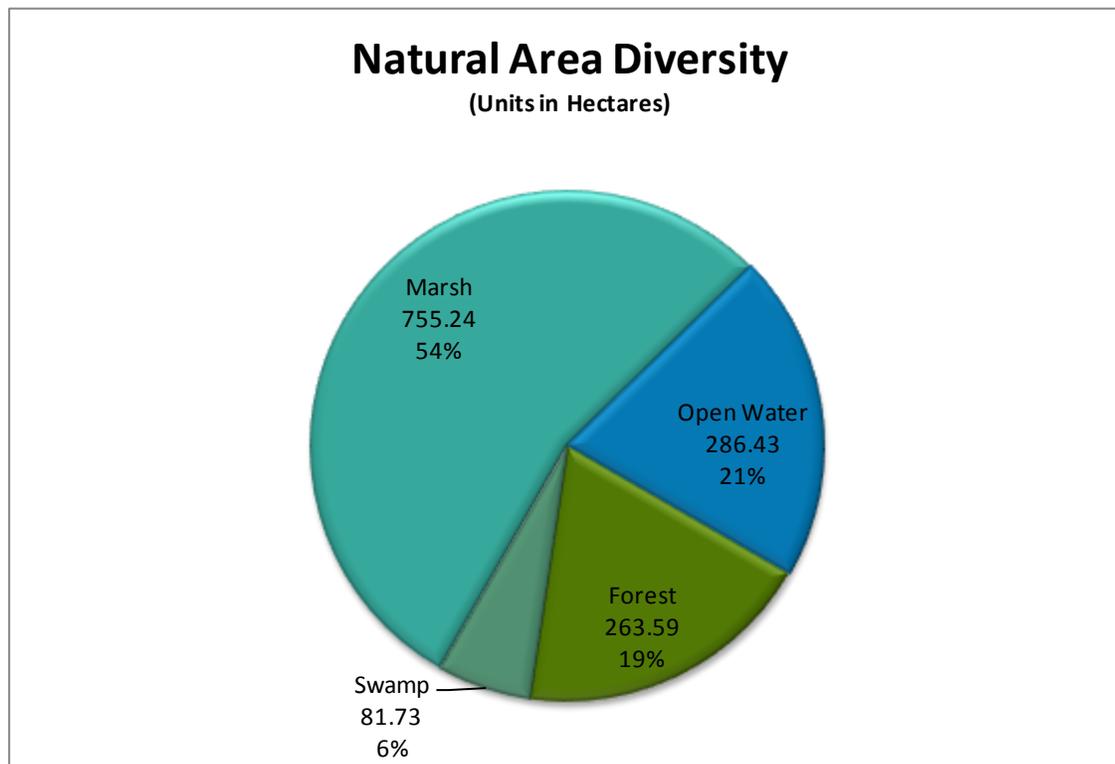
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Jurisdictional\Existing Natural Features - PPNP - 20131008.mxd  
TD 08/10/2013

Within the study area there is 1 forest patch greater than 100 ha in size and is 345.3 ha in size. In addition, 10 forest patches within the study area contain 100 m interior forest, 1 of these patches contains 200 m interior forest.

**3.2.23.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Point Pelee Marsh drainage area.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	263.59	651.34	19.00
Other Terrestrial	0.00	0.00	0.00
Swamp	81.73	201.96	5.89
Marsh	755.24	1866.24	54.45
Open Water	286.43	707.78	20.65
<b>Total Terrestrial Habitat</b>	<b>263.59</b>	<b>651.34</b>	<b>19.00</b>
<b>Total Wetland Habitat</b>	<b>1123.40</b>	<b>2775.98</b>	<b>81.00</b>
<b>Existing Natural Area</b>	<b>1386.99</b>	<b>3427.31</b>	<b>100.00</b>

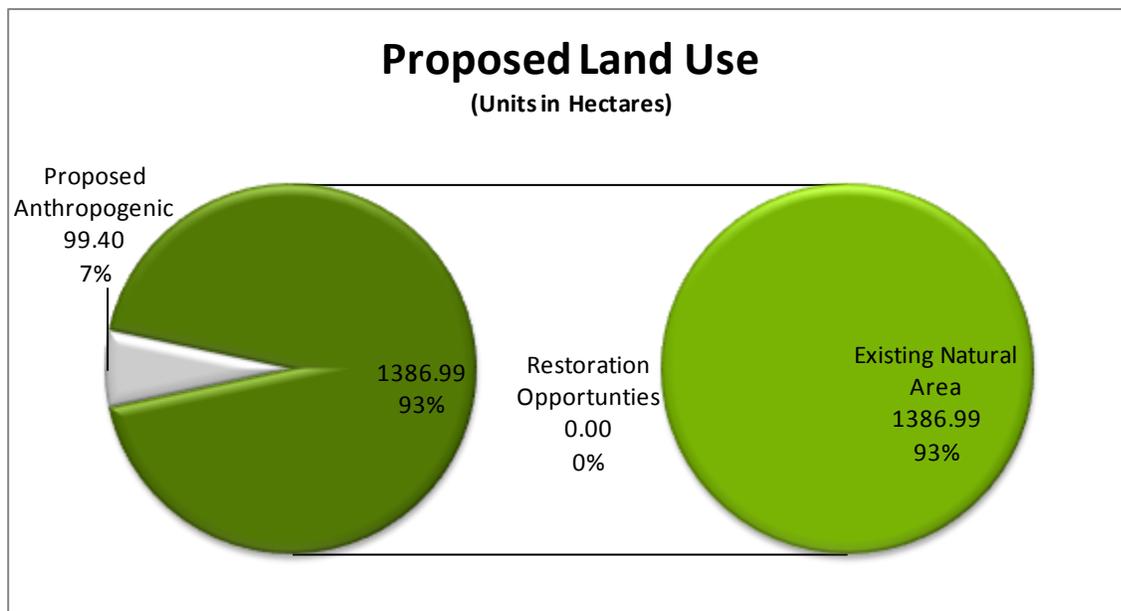


This study area also contains patches of significant tallgrass prairie vegetation communities, however these have not yet been mapped.

**3.2.23.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Point Pelee Marsh drainage area.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	0.00	0.00	0.00
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Status Quo Anthropogenic</b>	<b>99.40</b>	<b>245.62</b>	<b>6.69</b>
<b>Total Land Area</b>	<b>1486.39</b>	<b>3672.93</b>	<b>100.00</b>



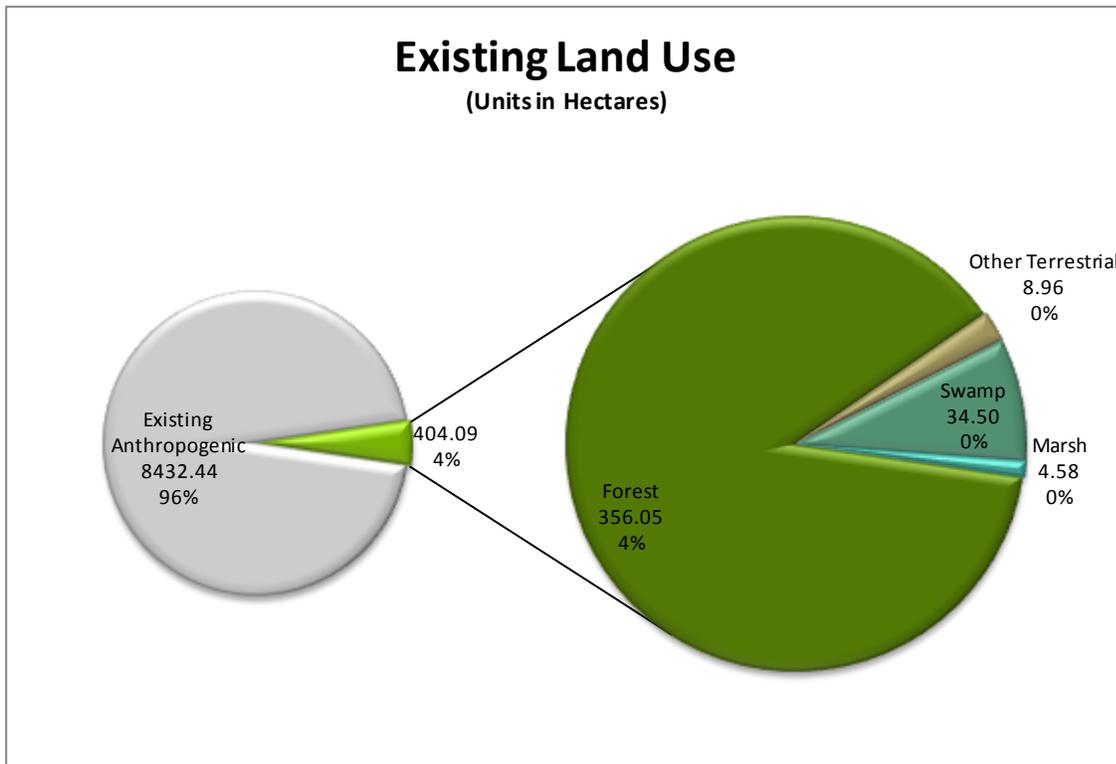
No restoration opportunities are proposed for this study area.

3.2.24 Puce River

3.2.24.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Puce River subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	356.05	879.82	4.03
Other Terrestrial	8.96	22.14	0.10
<b>Total Terrestrial Habitat</b>	<b>365.01</b>	<b>901.96</b>	<b>4.13</b>
Wetland Habitat	Hectares	Acres	%
Swamp	34.50	85.25	0.39
Marsh	4.58	11.31	0.05
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>39.08</b>	<b>96.56</b>	<b>0.44</b>
<b>Existing Natural Area</b>	<b>404.09</b>	<b>998.52</b>	<b>4.57</b>
<b>Existing Anthropogenic</b>	<b>8432.44</b>	<b>20836.93</b>	<b>95.43</b>
<b>Total Land Area</b>	<b>8836.53</b>	<b>21835.45</b>	<b>100.00</b>



# LAKE ST CLAIR

## Existing Natural Features

### Puce River



#### Legend

##### Wetland

- Open Water
- Marsh
- Swamp

##### Terrestrial

- Forest
- Other

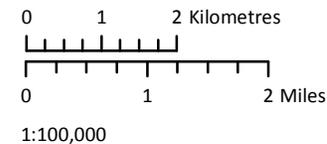
##### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



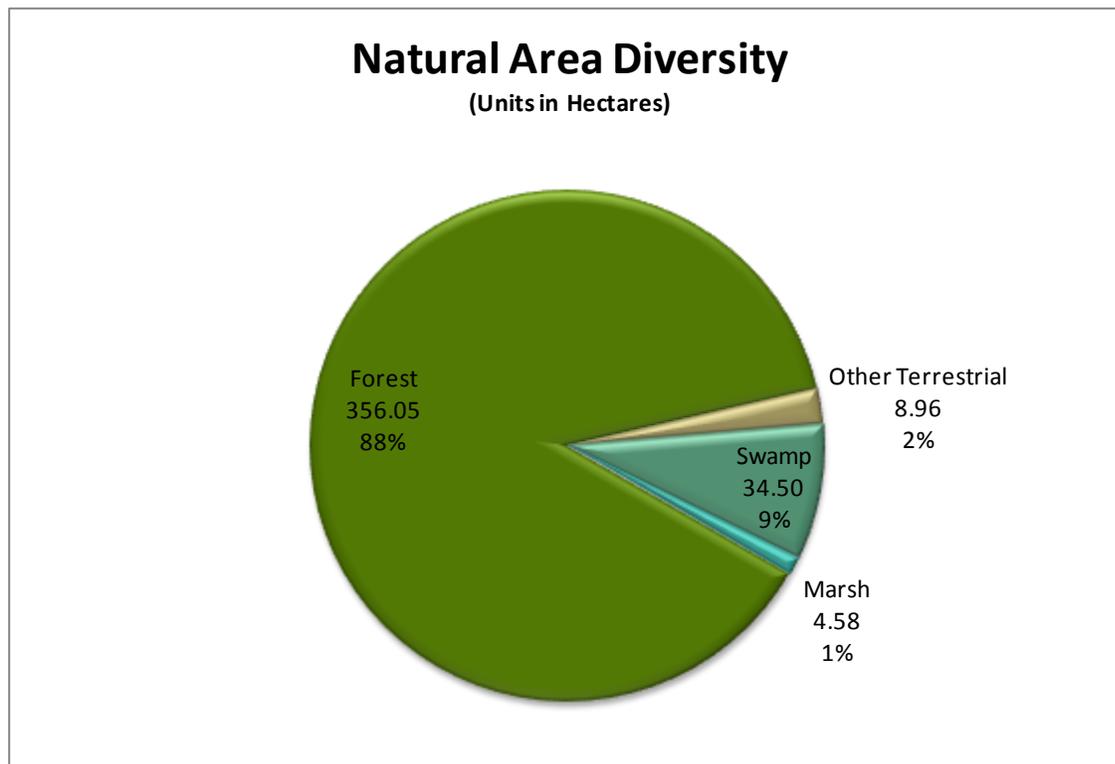
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - PuceRiver - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of the Town of Lakeshore Candidate Natural Heritage Site #9 and is 30.8 ha in size. In addition, 12 forest patches within the study area contain 100 m interior forest, 1 of these patches contains 200 m interior forest.

**3.2.24.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Puce River subwatershed.

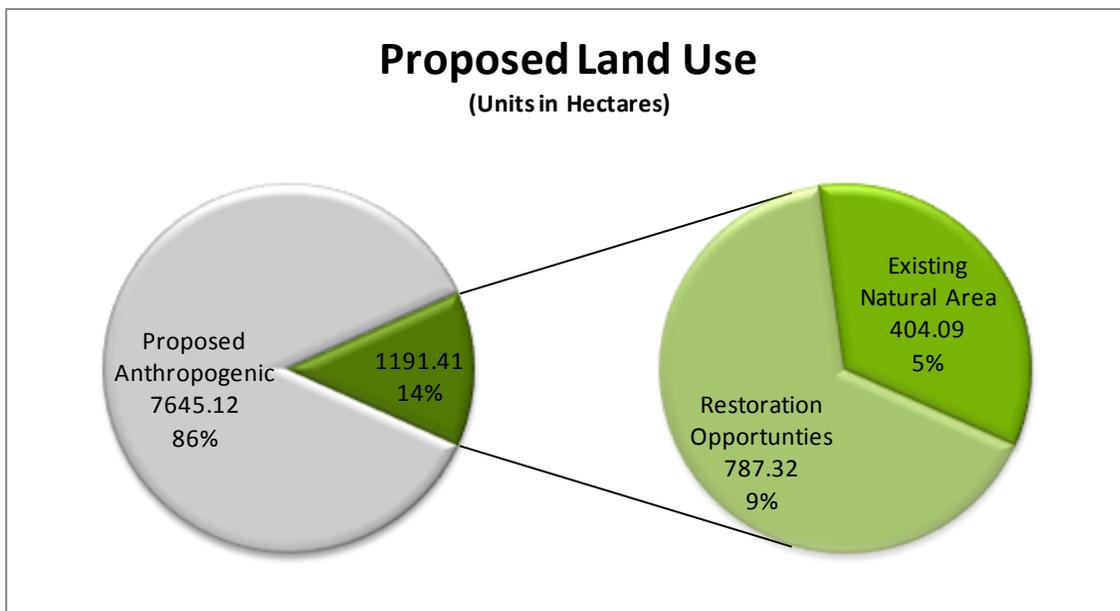
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	356.05	879.82	88.11
Other Terrestrial	8.96	22.14	2.22
Swamp	34.50	85.25	8.54
Marsh	4.58	11.31	1.13
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>365.01</b>	<b>901.96</b>	<b>90.33</b>
<b>Total Wetland Habitat</b>	<b>39.08</b>	<b>96.56</b>	<b>9.67</b>
<b>Existing Natural Area</b>	<b>404.09</b>	<b>998.52</b>	<b>100.00</b>

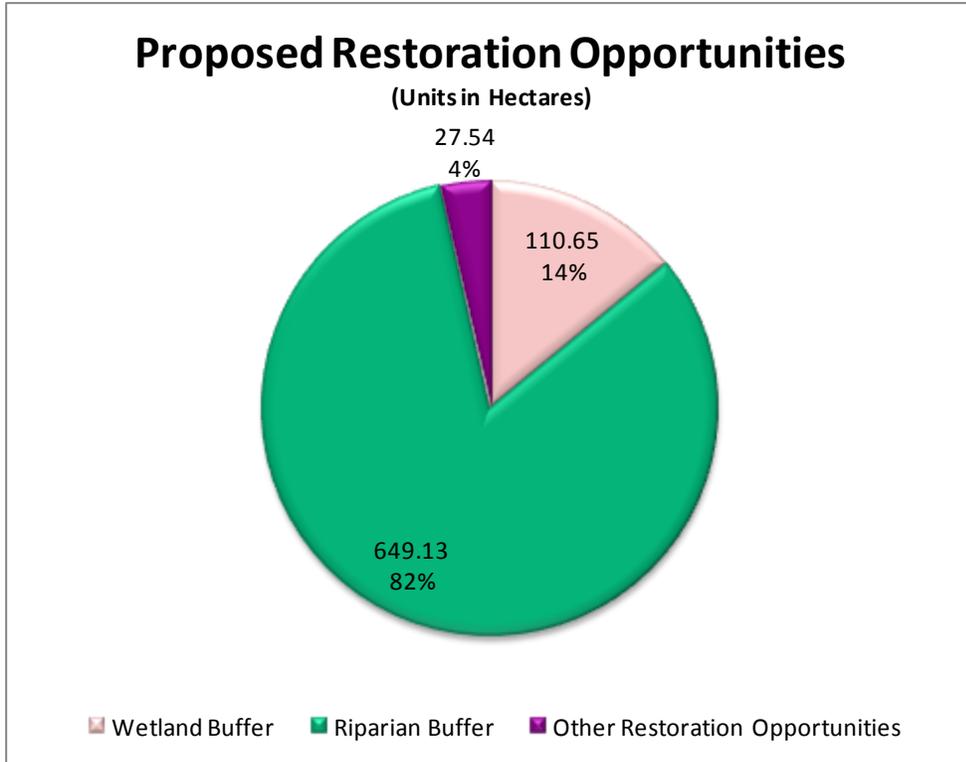


**3.2.24.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Puce River subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	110.65	273.43	1.25
Riparian Buffer	649.13	1604.03	7.35
Other Restoration Opportunities	27.54	68.05	0.31
<b>Total Restoration Opportunities</b>	<b>787.32</b>	<b>1945.51</b>	<b>8.91</b>
<b>Status Quo Anthropogenic</b>	<b>7645.12</b>	<b>18891.42</b>	<b>86.52</b>
<b>Total Land Area</b>	<b>8836.53</b>	<b>21835.45</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering along first to third order streams in close proximity to the Lake St. Clair shoreline.

# LAKE ST CLAIR

## Priority of Restoration Opportunities

### Puce River



#### Legend

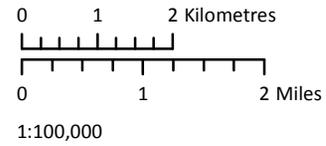
##### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



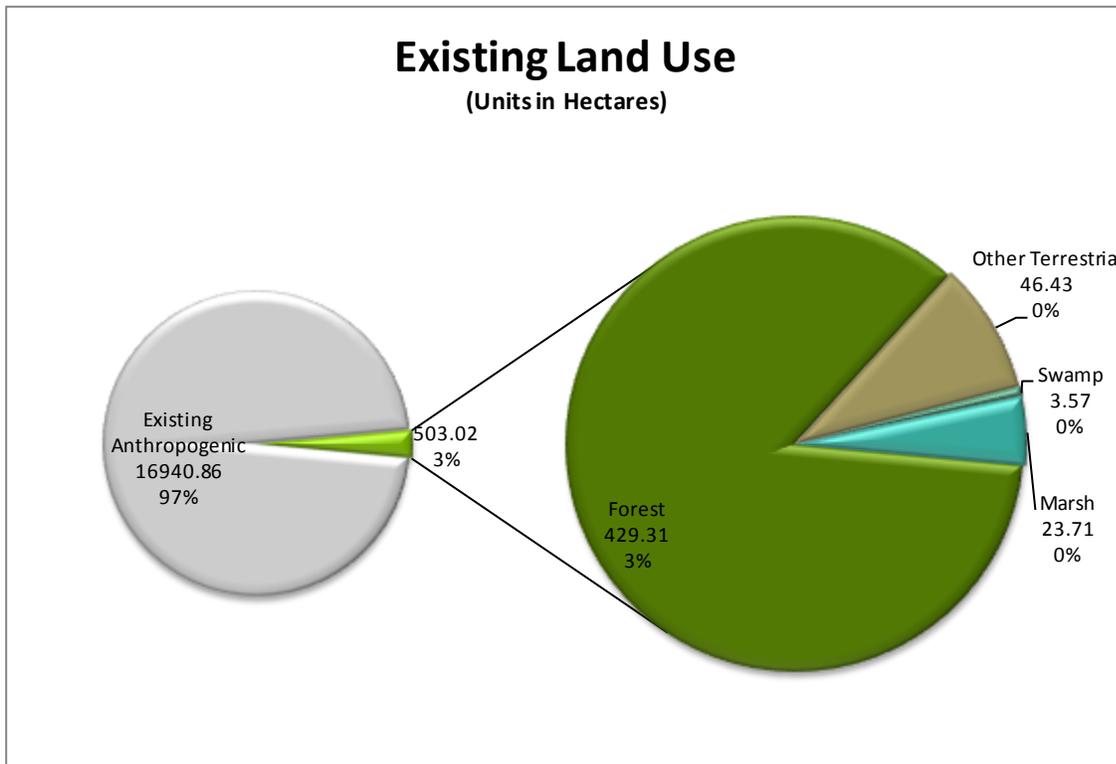
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - Puce River - 20130430.mxd  
 TD 30/04/2013

3.2.25 *Ruscom River*

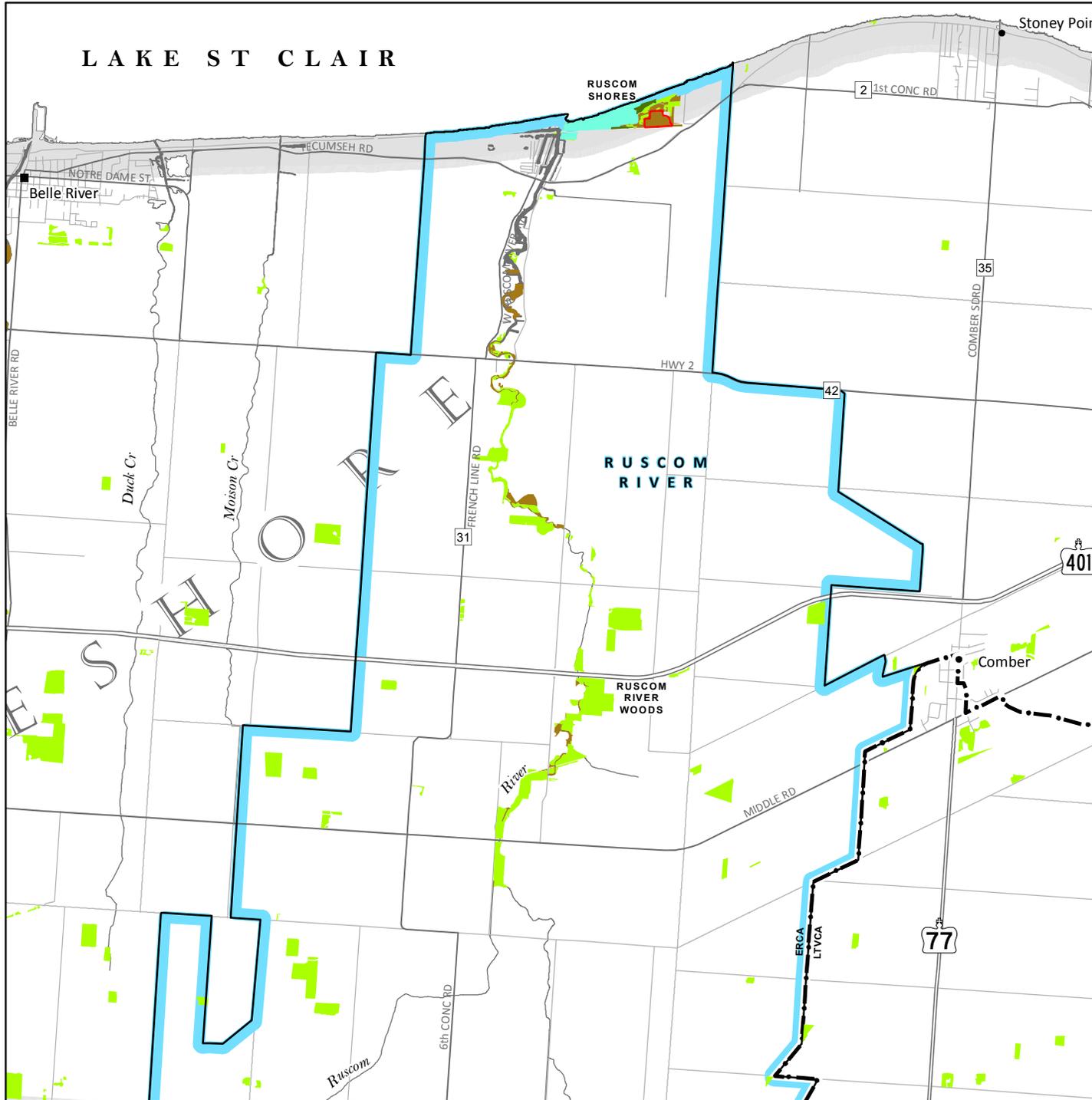
3.2.25.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Ruscom River subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	429.31	1060.84	2.46
Other Terrestrial	46.43	114.73	0.27
<b>Total Terrestrial Habitat</b>	<b>475.74</b>	<b>1175.57</b>	<b>2.73</b>
Wetland Habitat	Hectares	Acres	%
Swamp	3.57	8.82	0.02
Marsh	23.71	58.59	0.14
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>27.28</b>	<b>67.41</b>	<b>0.16</b>
<b>Existing Natural Area</b>	<b>503.02</b>	<b>1242.98</b>	<b>2.88</b>
<b>Existing Anthropogenic</b>	<b>16940.86</b>	<b>41861.61</b>	<b>97.12</b>
<b>Total Land Area</b>	<b>17443.88</b>	<b>43104.59</b>	<b>100.00</b>



# LAKE ST CLAIR



## Existing Natural Features Ruscom River (North)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

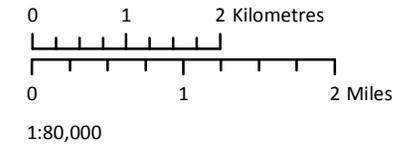
- Forest
- Other

#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



# Existing Natural Features

## Ruscom River (South)

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

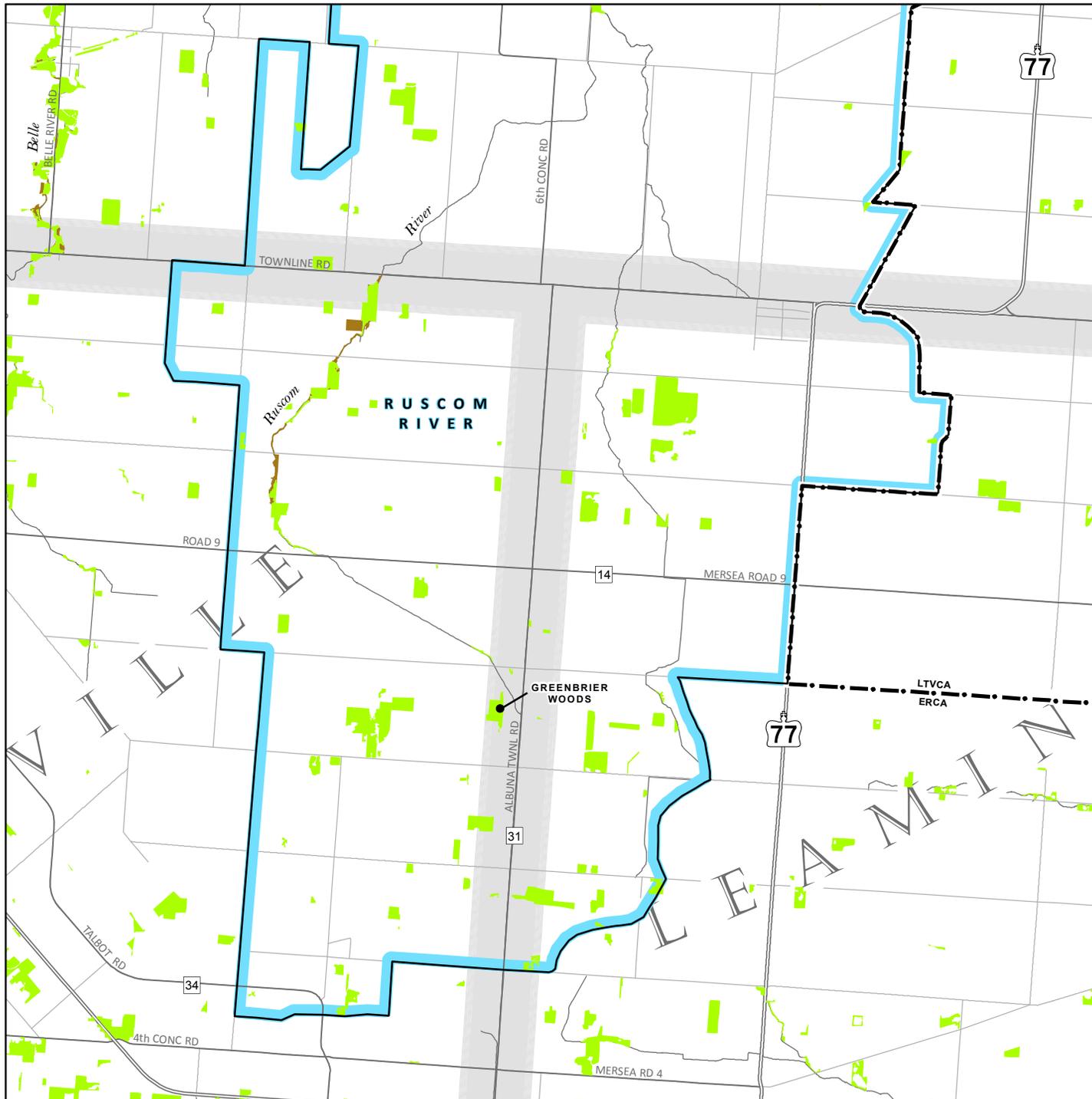
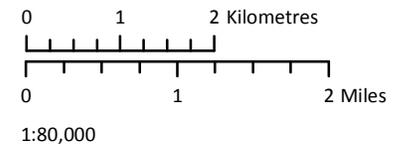
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



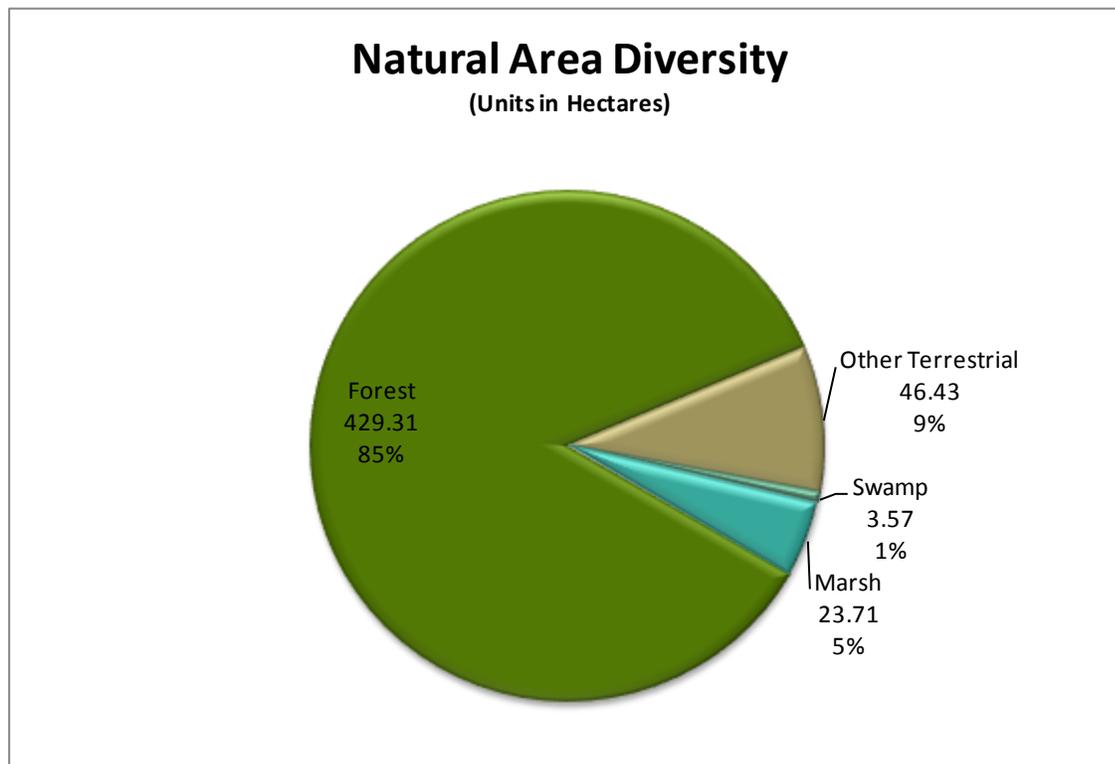
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - RuscomRiver South - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 32.8 ha in size. In addition, 17 forest patches within the study area contain 100 m interior forest, 1 of these patches contains 200 m interior forest.

**3.2.25.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Ruscom River subwatershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	429.31	1060.84	85.35
Other Terrestrial	46.43	114.73	9.23
Swamp	3.57	8.82	0.71
Marsh	23.71	58.59	4.71
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>475.74</b>	<b>1175.57</b>	<b>94.58</b>
<b>Total Wetland Habitat</b>	<b>27.28</b>	<b>67.41</b>	<b>5.42</b>
<b>Existing Natural Area</b>	<b>503.02</b>	<b>1242.98</b>	<b>100.00</b>

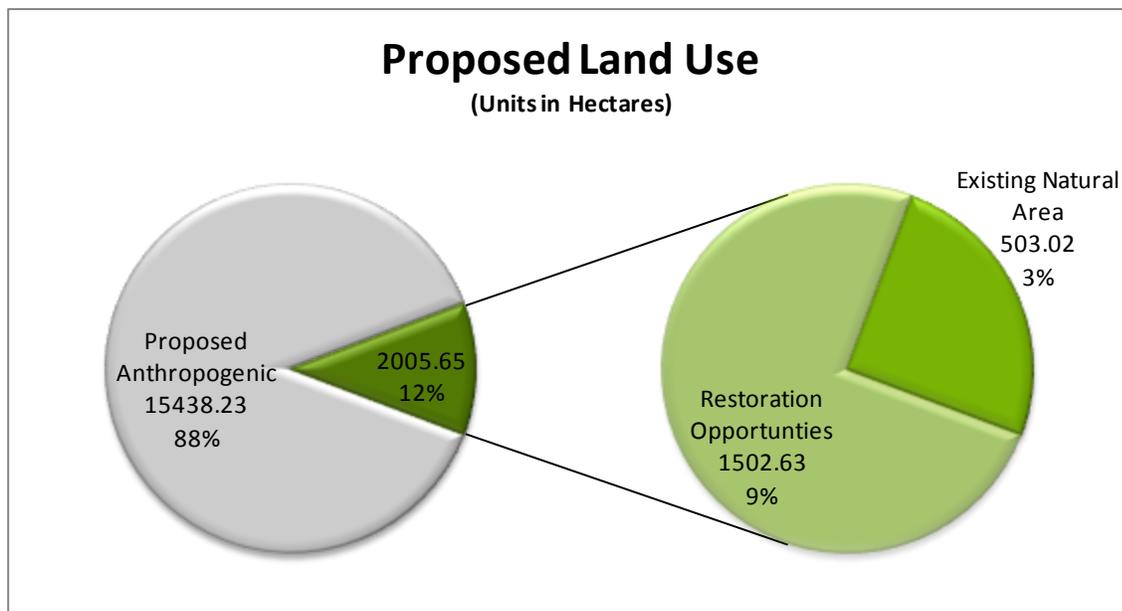


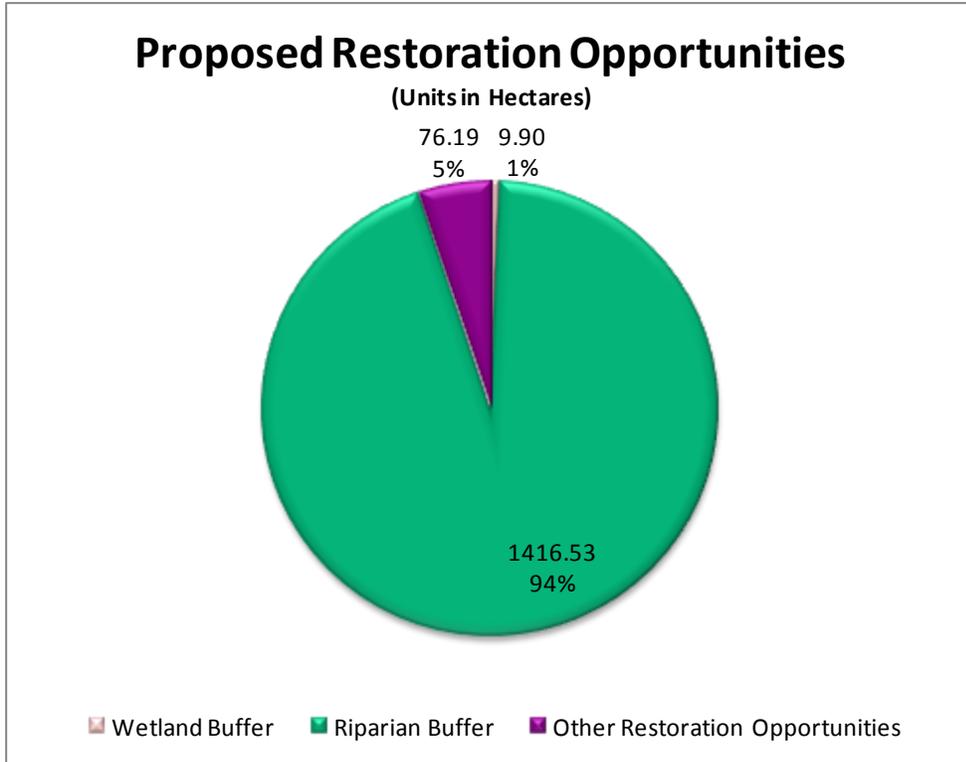
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.25.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Ruscom River subwatershed.

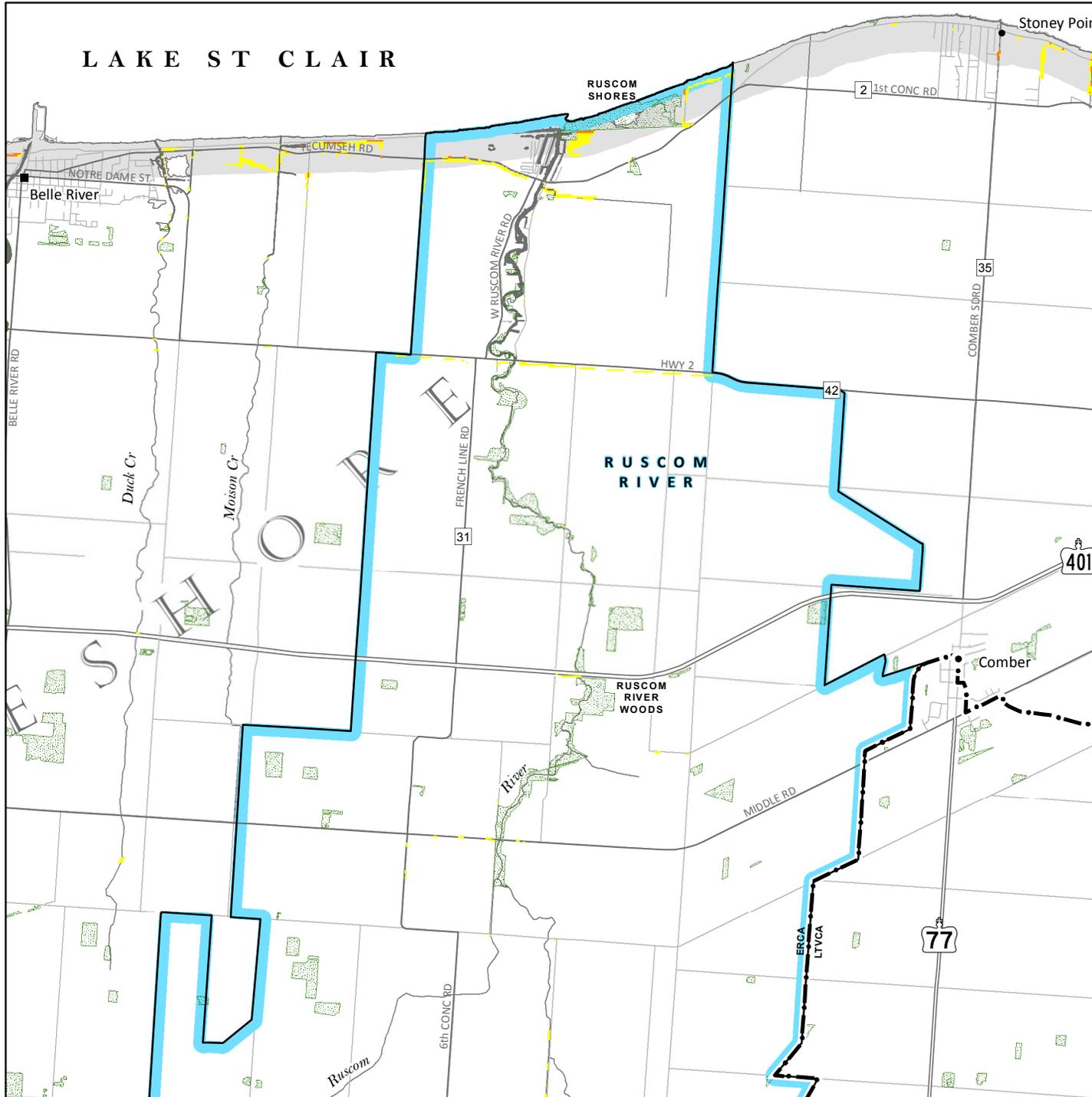
Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	9.90	24.47	0.06
Riparian Buffer	1416.53	3500.31	8.12
Other Restoration Opportunities	76.19	188.28	0.44
<b>Total Restoration Opportunities</b>	<b>1502.63</b>	<b>3713.06</b>	<b>8.61</b>
<b>Status Quo Anthropogenic</b>	<b>15438.23</b>	<b>38148.55</b>	<b>88.50</b>
<b>Total Land Area</b>	<b>17443.88</b>	<b>43104.59</b>	<b>100.00</b>





The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffer adjacent to the Ruscom Shores Provincially Significant Wetland.

# LAKE ST CLAIR

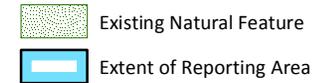
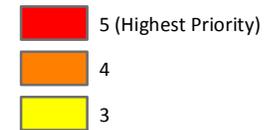


## Priority of Restoration Opportunities

### Ruscom River (North)

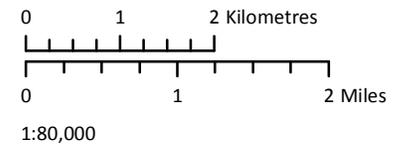
#### Legend

##### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

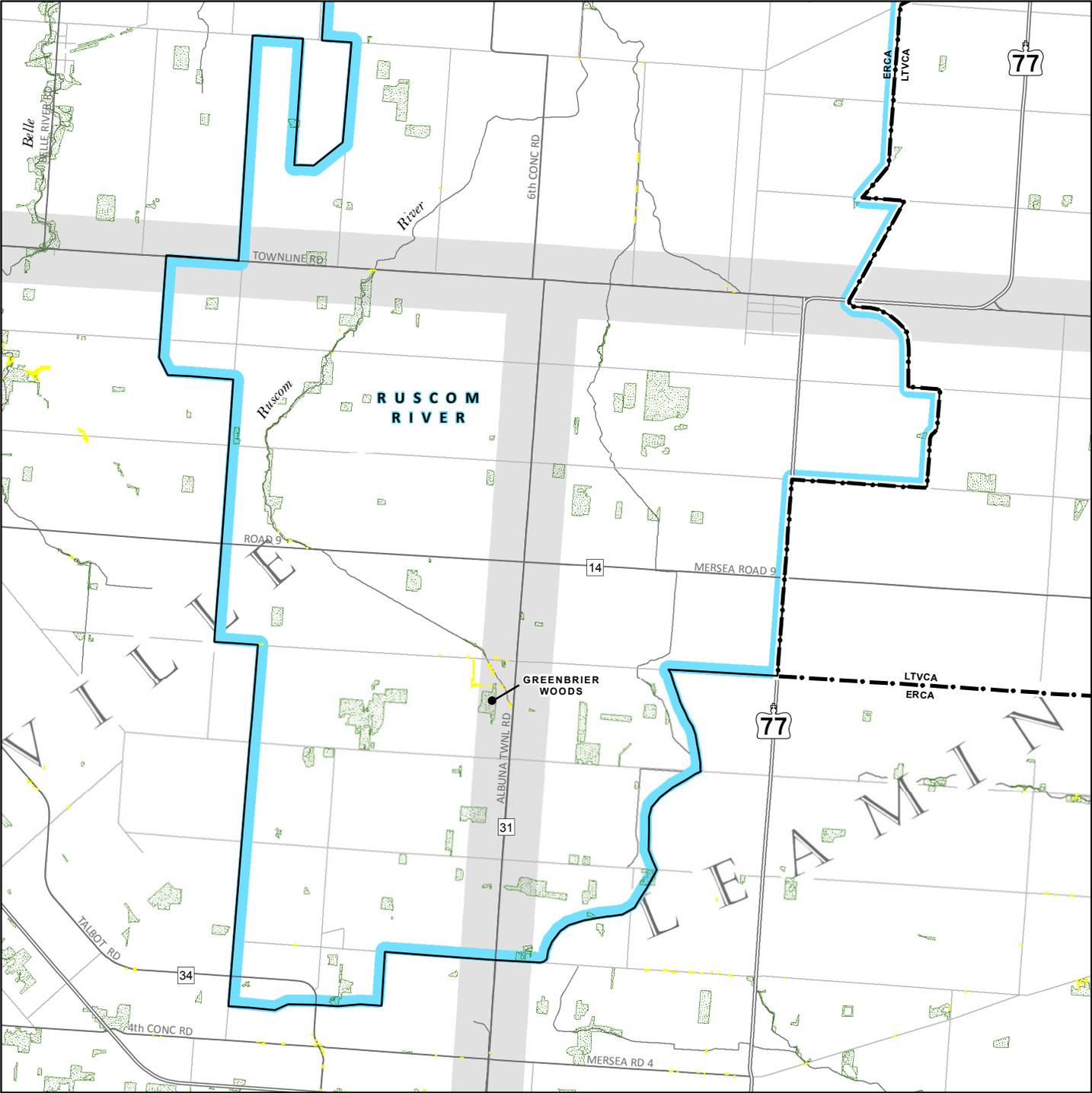
The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - RuscomRiver North - 20130430.mxd  
TD 30/04/2013

# Priority of Restoration Opportunities

## Ruscom River (South)



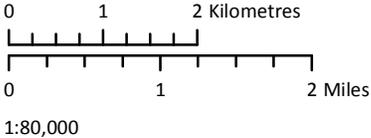
### Legend

- Number of Criteria Met**
- 5 (Highest Priority)
  - 4
  - 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

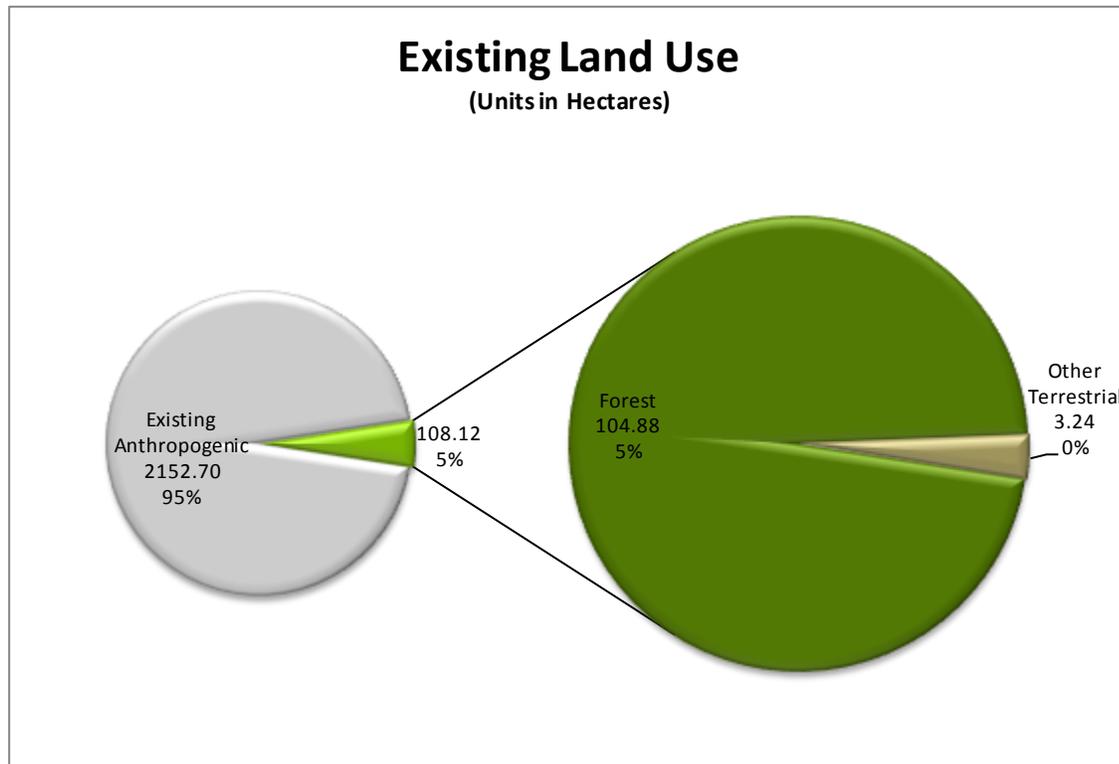


**3.2.26 Ruthven Area Drainage**

**3.2.26.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Ruthven area drainage system.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	104.88	259.15	4.64
Other Terrestrial	3.24	8.02	0.14
<b>Total Terrestrial Habitat</b>	<b>108.12</b>	<b>267.17</b>	<b>4.78</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>108.12</b>	<b>267.17</b>	<b>4.78</b>
<b>Existing Anthropogenic</b>	<b>2152.70</b>	<b>5319.43</b>	<b>95.22</b>
<b>Total Land Area</b>	<b>2260.83</b>	<b>5586.60</b>	<b>100.00</b>



# Existing Natural Features

## Ruthven Area Drainage Sturgeon Creek

### Legend

#### Wetland

-  Open Water
-  Marsh
-  Swamp

#### Terrestrial

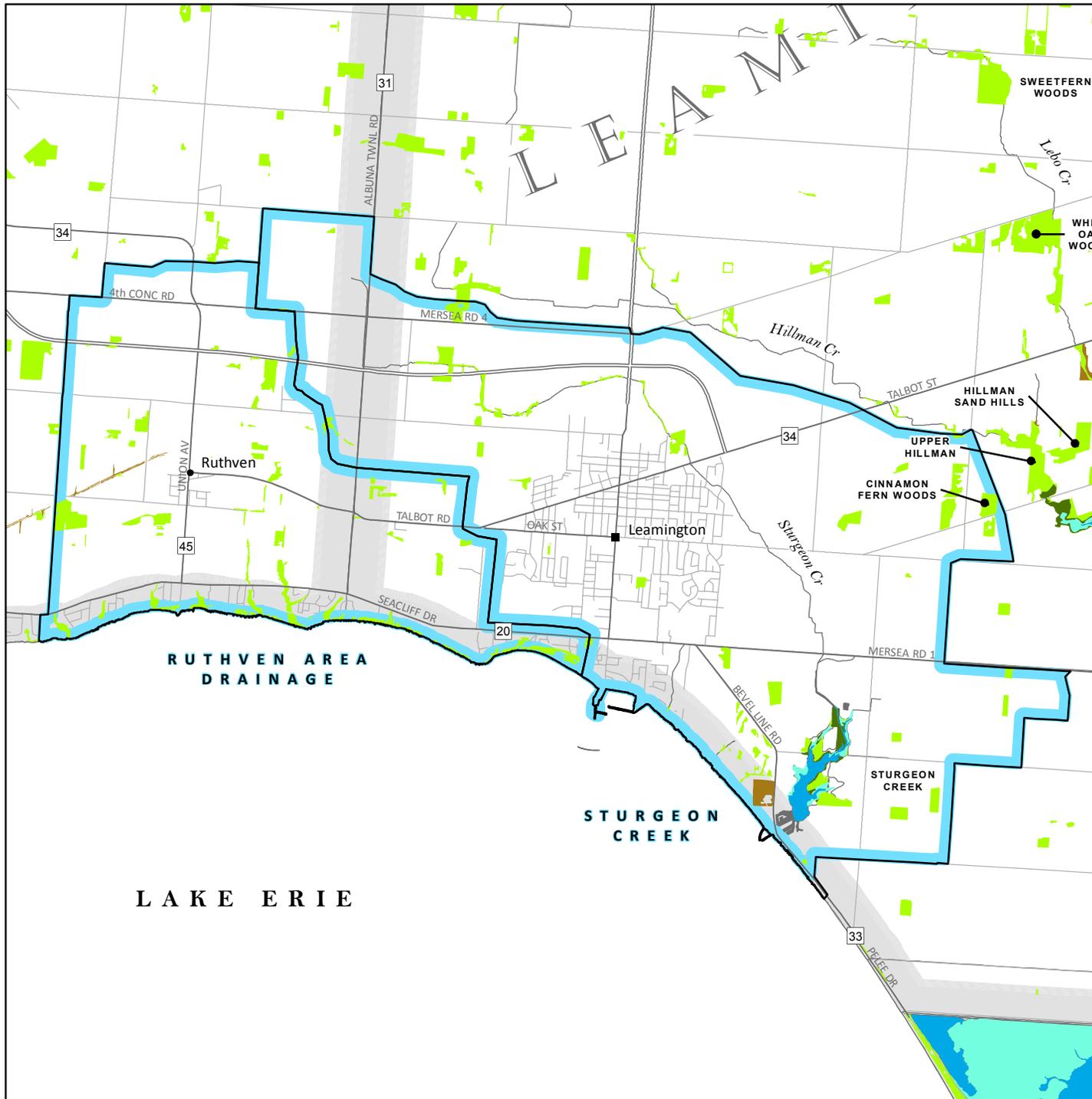
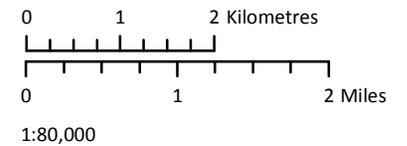
-  Forest
-  Other

#### Features of Interest

-  Tallgrass Prairie Community
-  Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



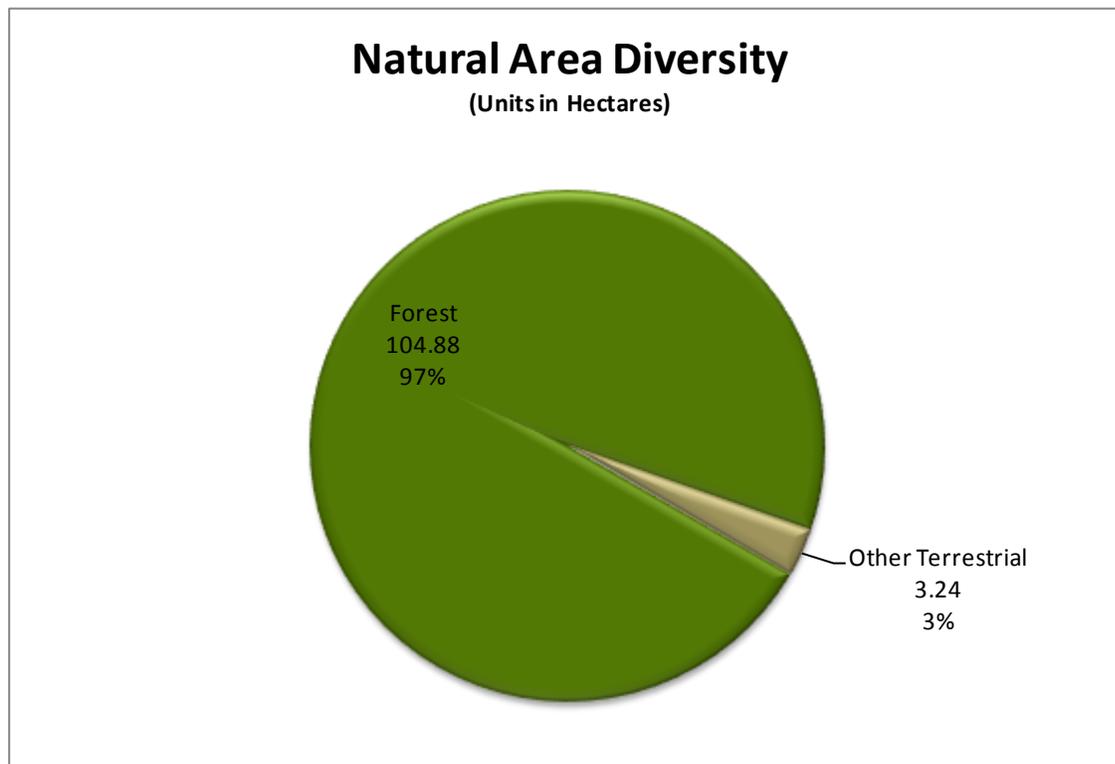
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - RuthvenSturgeonCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 13.0 ha in size. In addition, 3 forest patches within the study area contain 100 m interior forest; none of these patches contain 200 m interior forest.

**3.2.26.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Ruthven area drainage system.

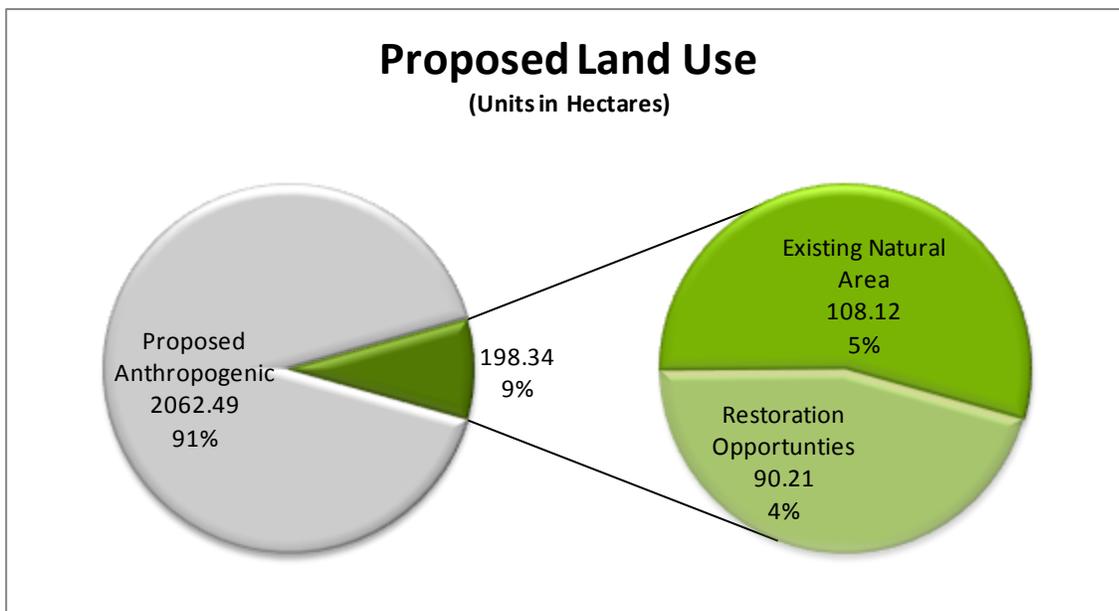
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	104.88	259.15	97.00
Other Terrestrial	3.24	8.02	3.00
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>108.12</b>	<b>267.17</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>108.12</b>	<b>267.17</b>	<b>100.00</b>

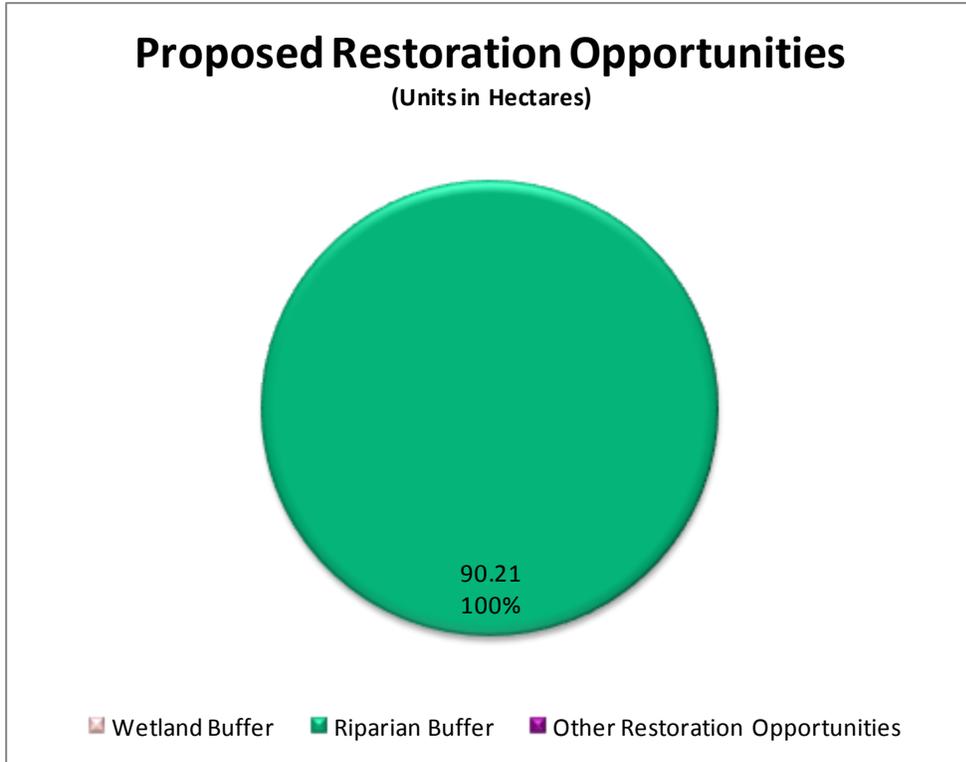


**3.2.26.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Ruthven area drainage system.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	90.21	222.92	3.99
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>90.21</b>	<b>222.92</b>	<b>3.99</b>
<b>Status Quo Anthropogenic</b>	<b>2062.49</b>	<b>5096.50</b>	<b>91.23</b>
<b>Total Land Area</b>	<b>2260.83</b>	<b>5586.60</b>	<b>100.00</b>

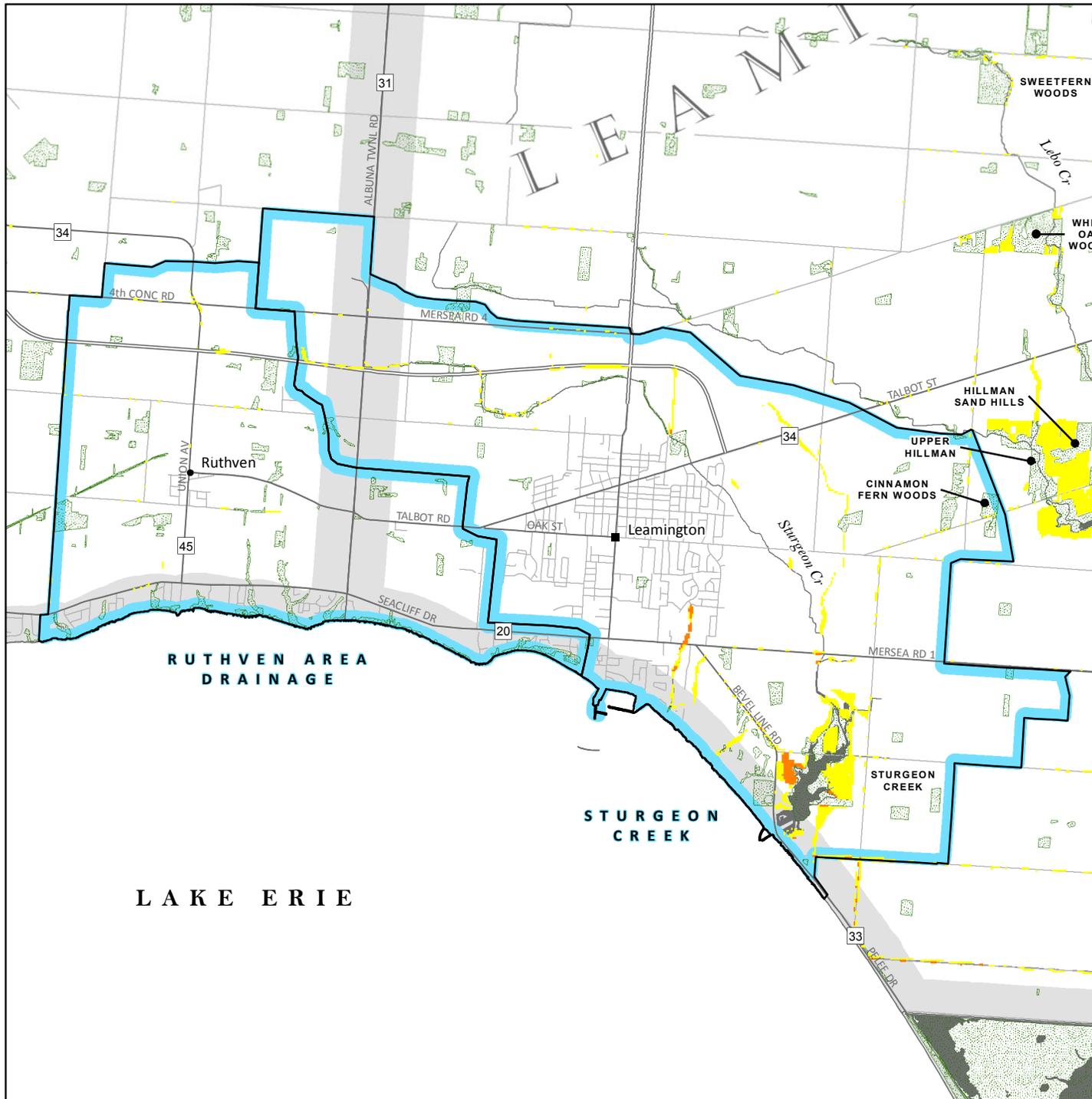




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report.

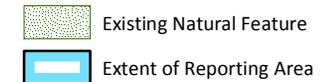
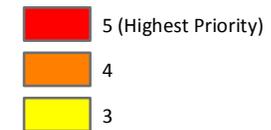
# Priority of Restoration Opportunities

## Ruthven Area Drainage Sturgeon Creek



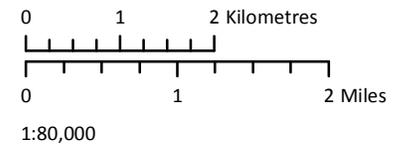
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



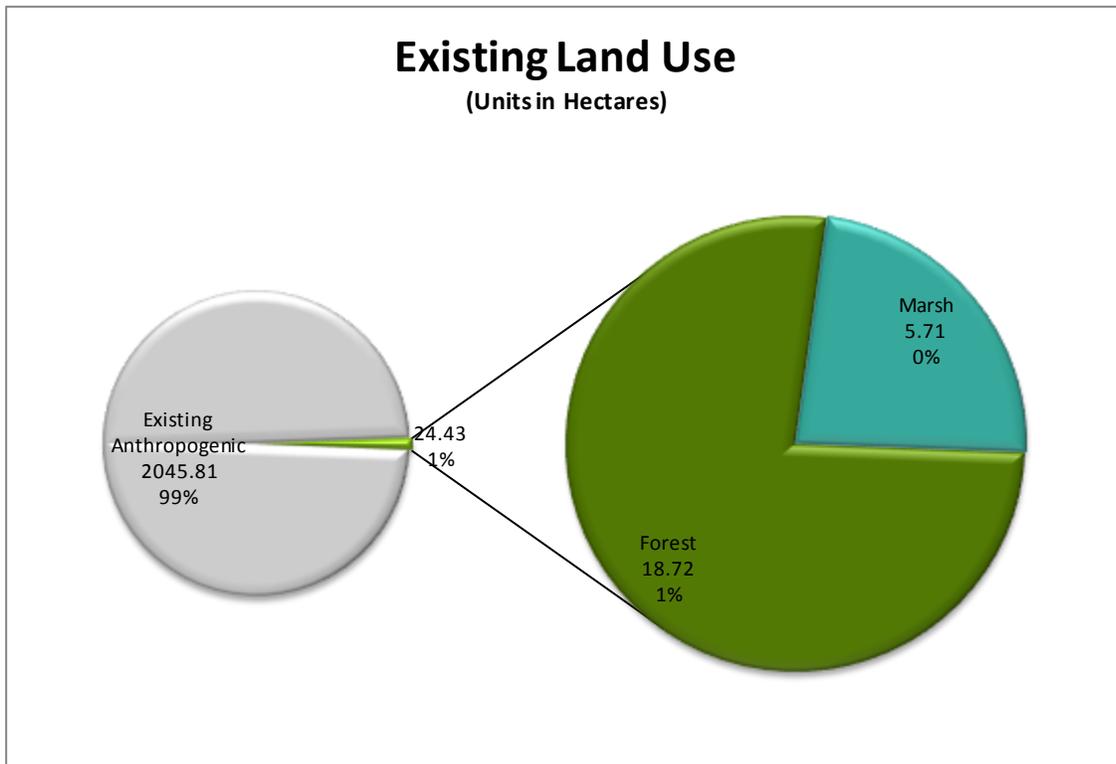
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - RuthvenSturgeonCreek - 20130430.mxd  
TD 30/04/2013

3.2.27 Southeast Leamington

3.2.27.1 Existing Land Use

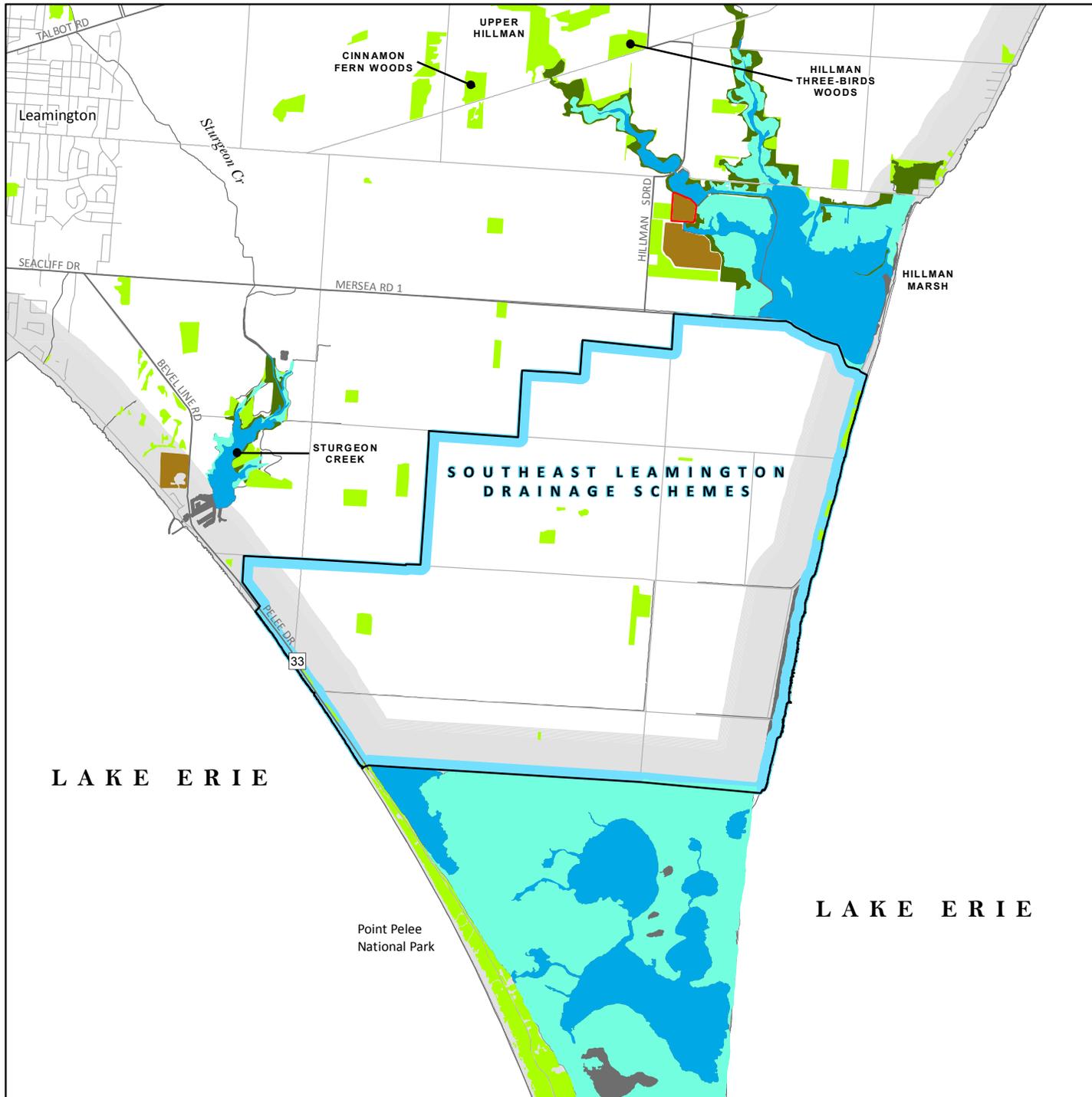
The following Table and Figure summarizes the findings for existing land use within the Southeast Leamington drainage schemes.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	18.72	46.25	0.90
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>18.72</b>	<b>46.25</b>	<b>0.90</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	5.71	14.12	0.28
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>5.71</b>	<b>14.12</b>	<b>0.28</b>
<b>Existing Natural Area</b>	<b>24.43</b>	<b>60.37</b>	<b>1.18</b>
<b>Existing Anthropogenic</b>	<b>2045.81</b>	<b>5055.30</b>	<b>98.82</b>
<b>Total Land Area</b>	<b>2070.25</b>	<b>5115.67</b>	<b>100.00</b>



# Existing Natural Features

## Southeast Leamington Drainage Schemes



### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

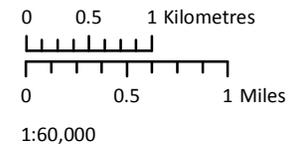
- Forest
- Other

#### Features of Interest

- Tallgrass Prairie Community
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



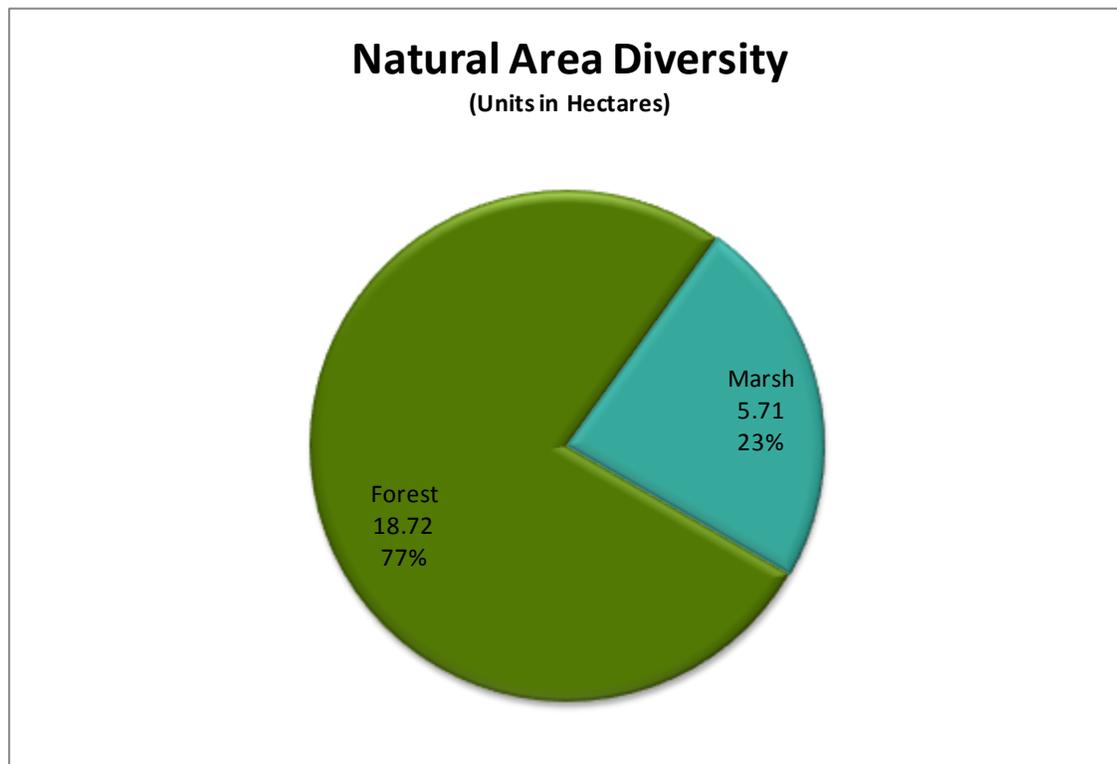
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - Creek - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 6.9 ha in size. In addition, no forest patches within the study area contain 100 m interior forest or 200 m interior forest.

**3.2.27.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Southeast Leamington drainage schemes.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	18.72	46.25	76.61
Other Terrestrial	0.00	0.00	0.00
Swamp	0.00	0.00	0.00
Marsh	5.71	14.12	23.39
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>18.72</b>	<b>46.25</b>	<b>76.61</b>
<b>Total Wetland Habitat</b>	<b>5.71</b>	<b>14.12</b>	<b>23.39</b>
<b>Existing Natural Area</b>	<b>24.43</b>	<b>60.37</b>	<b>100.00</b>

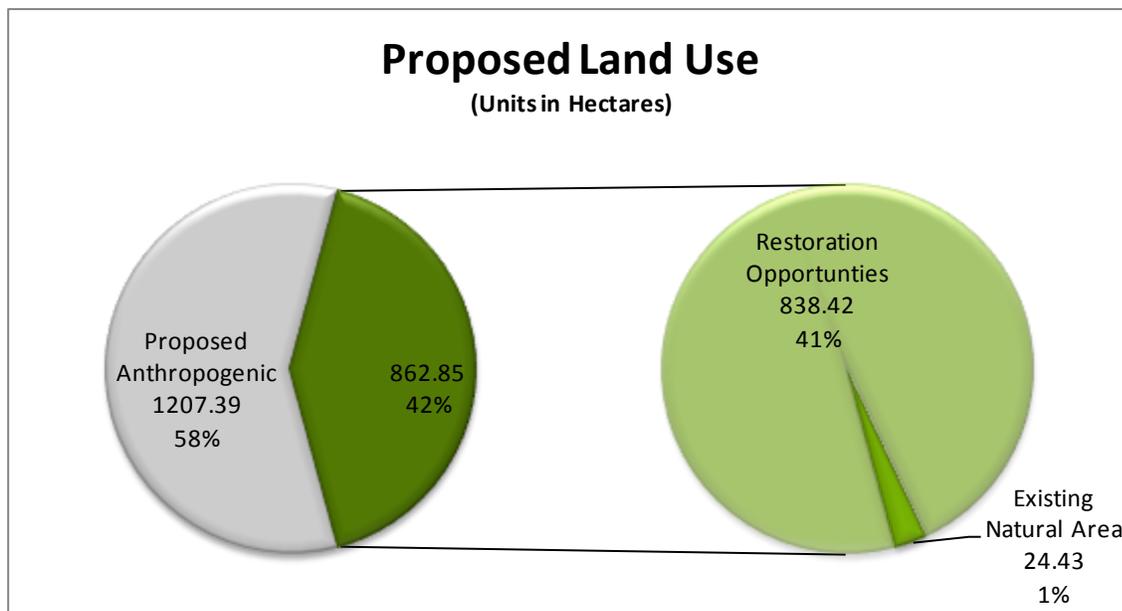


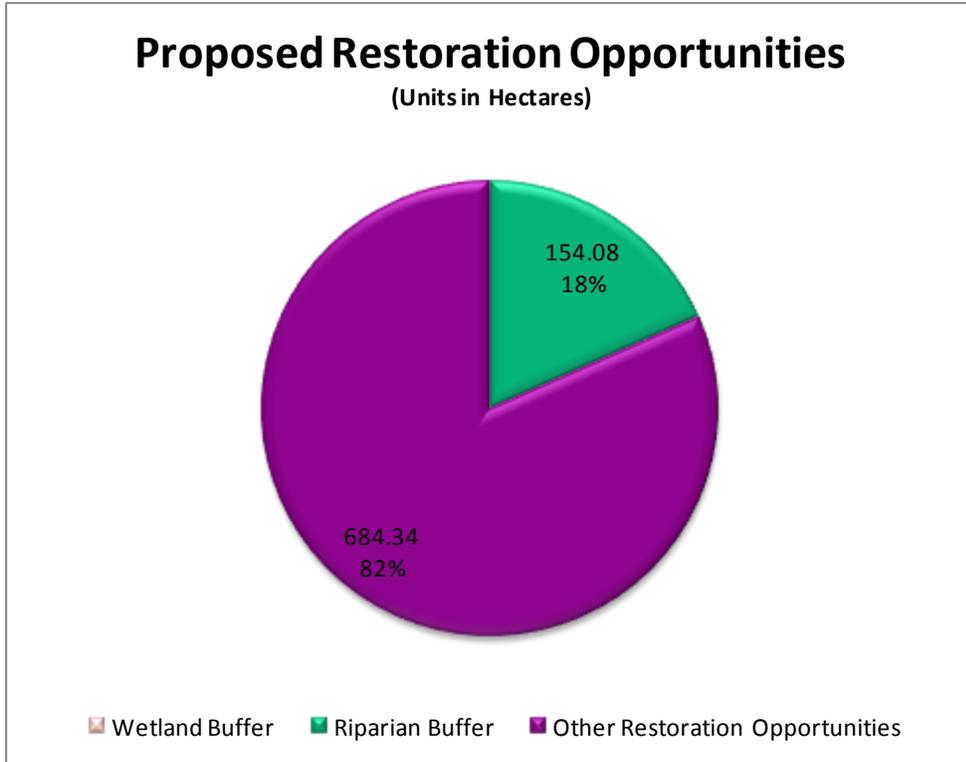
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.27.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Southeast Leamington drainage schemes.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	154.08	380.75	7.44
Other Restoration Opportunities	684.34	1691.03	33.06
<b>Total Restoration Opportunities</b>	<b>838.42</b>	<b>2071.78</b>	<b>40.50</b>
<b>Status Quo Anthropogenic</b>	<b>1207.39</b>	<b>2983.52</b>	<b>58.32</b>
<b>Total Land Area</b>	<b>2070.25</b>	<b>5115.67</b>	<b>100.00</b>

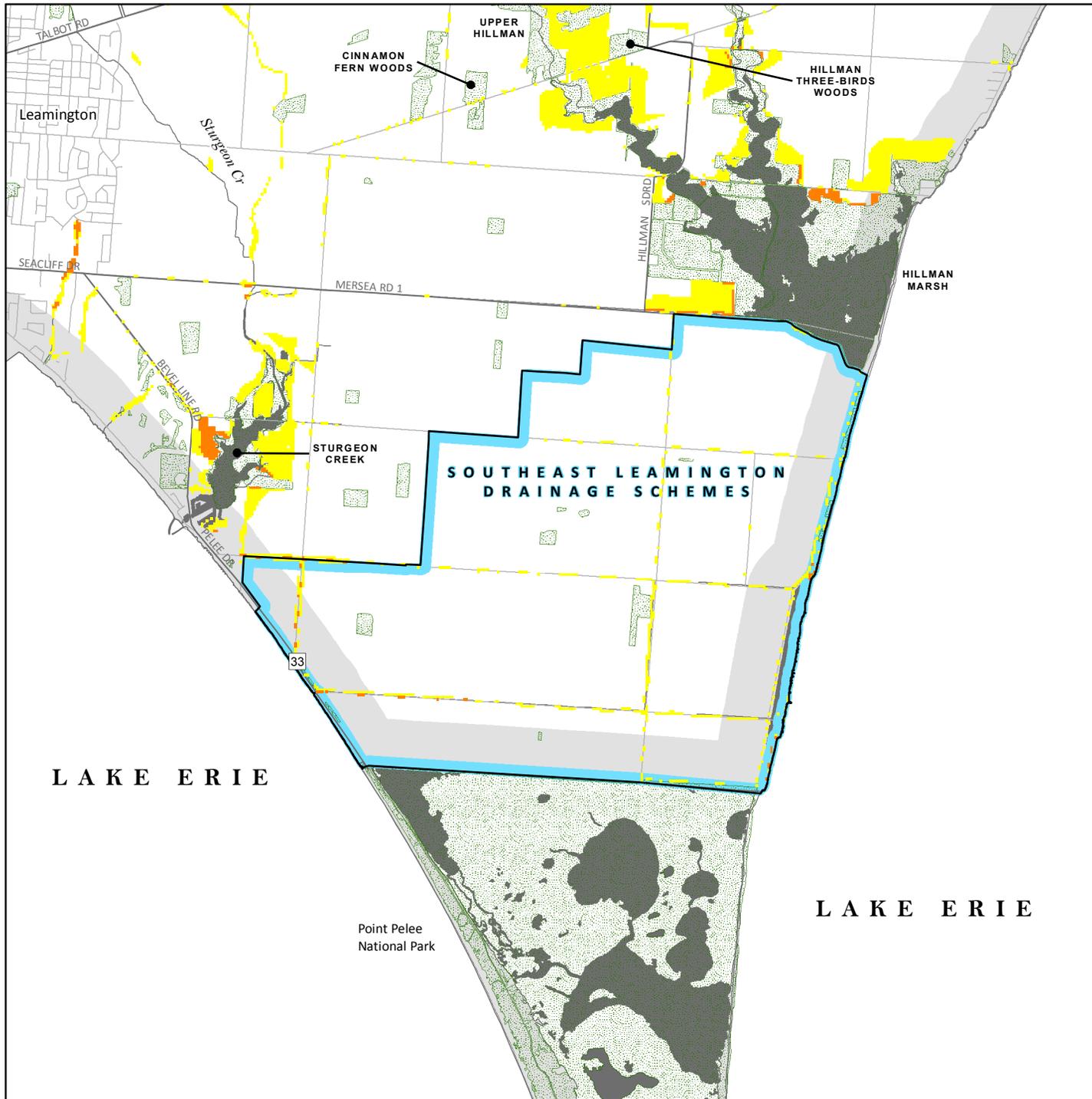




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland restoration between Hillman Marsh and Point Pelee.

# Priority of Restoration Opportunities

## Southeast Leamington Drainage Schemes



### Legend

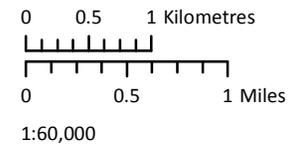
#### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



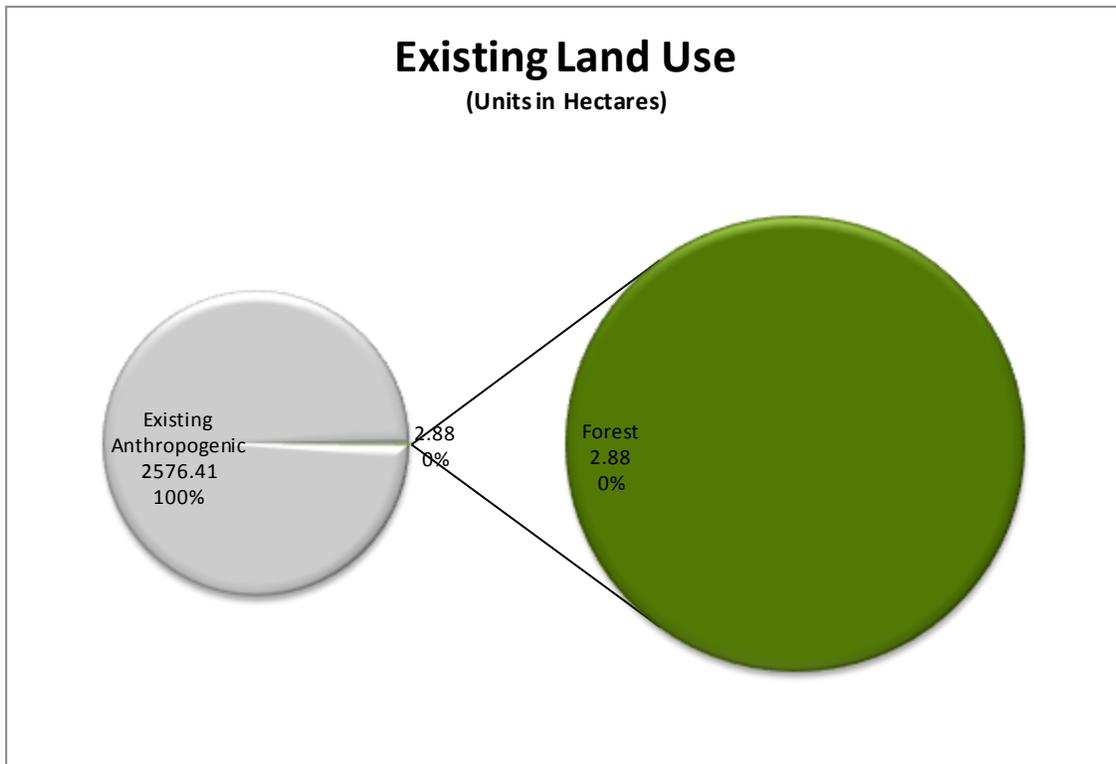
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - SE Leamington - 20130430.mxd  
TD 30/04/2013

**3.2.28 Stoney Point Area Drainage**

**3.2.28.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Stoney Point area drainage system.

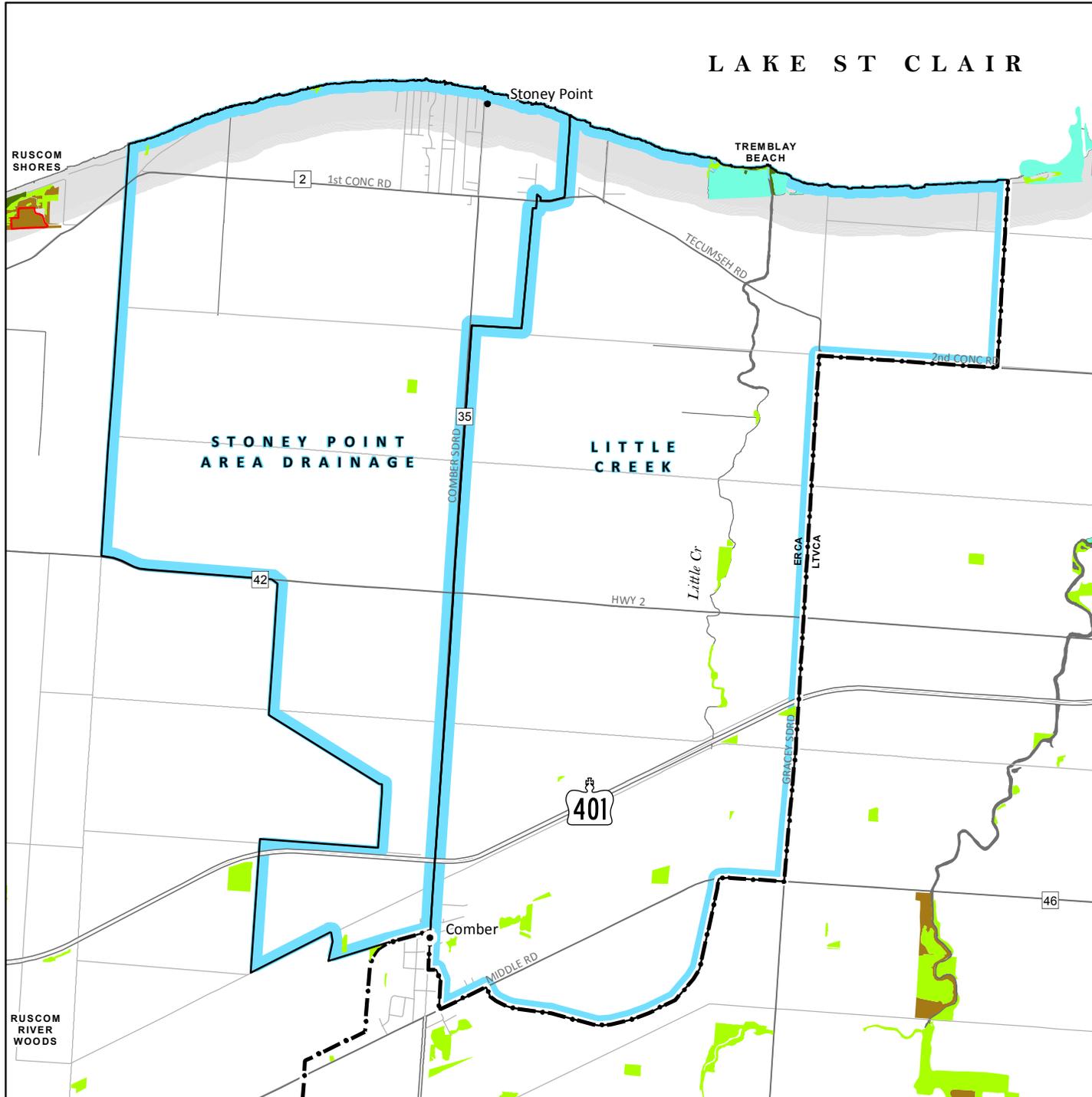
Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	2.88	7.12	0.11
Other Terrestrial	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>2.88</b>	<b>7.12</b>	<b>0.11</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>2.88</b>	<b>7.12</b>	<b>0.11</b>
<b>Existing Anthropogenic</b>	<b>2576.41</b>	<b>6366.42</b>	<b>99.89</b>
<b>Total Land Area</b>	<b>2579.29</b>	<b>6373.53</b>	<b>100.00</b>



# LAKE ST CLAIR

## Existing Natural Features

### Stoney Point Area Drainage Little Creek



#### Legend

##### Wetland

- Open Water
- Marsh
- Swamp

##### Terrestrial

- Forest
- Other

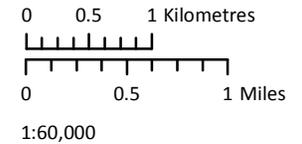
##### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



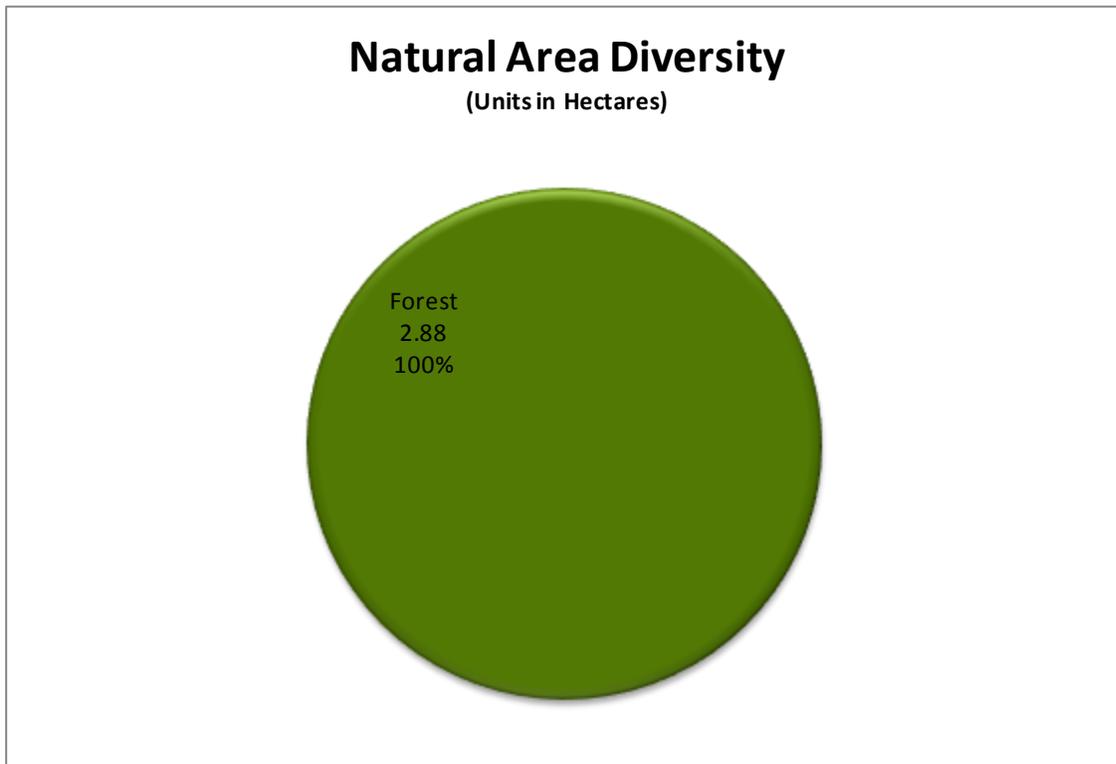
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - StoneyPt\LittleCreek - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 1.4 ha in size. In addition, no forest patches within the study area contain 100 m interior forest or 200 m interior forest.

**3.2.28.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Stoney Point area drainage system.

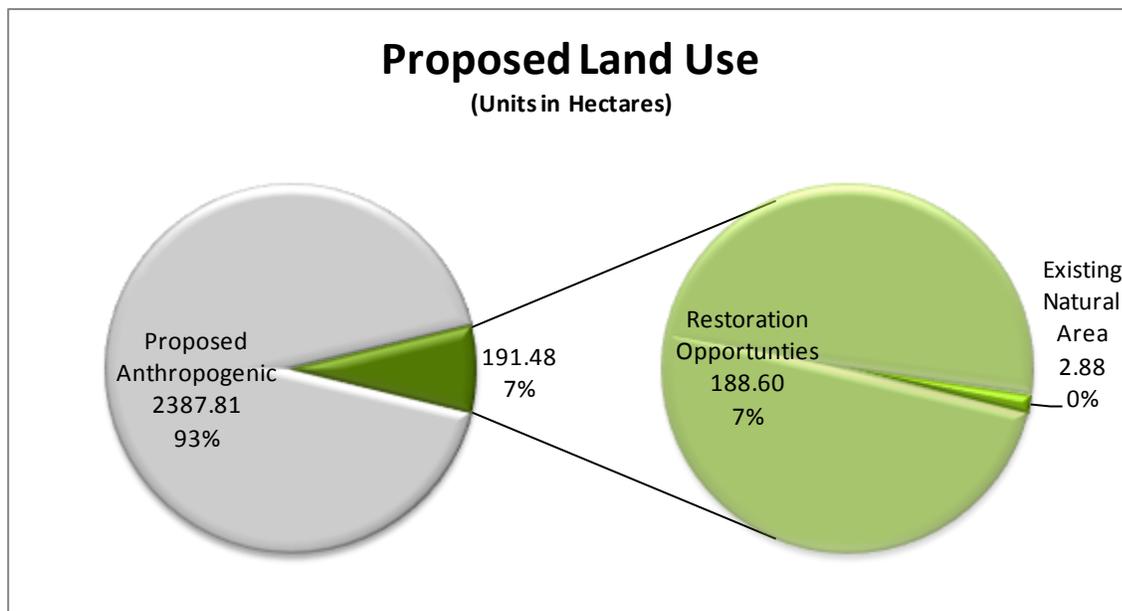
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	2.88	7.12	100.00
Other Terrestrial	0.00	0.00	0.00
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>2.88</b>	<b>7.12</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>2.88</b>	<b>7.12</b>	<b>100.00</b>

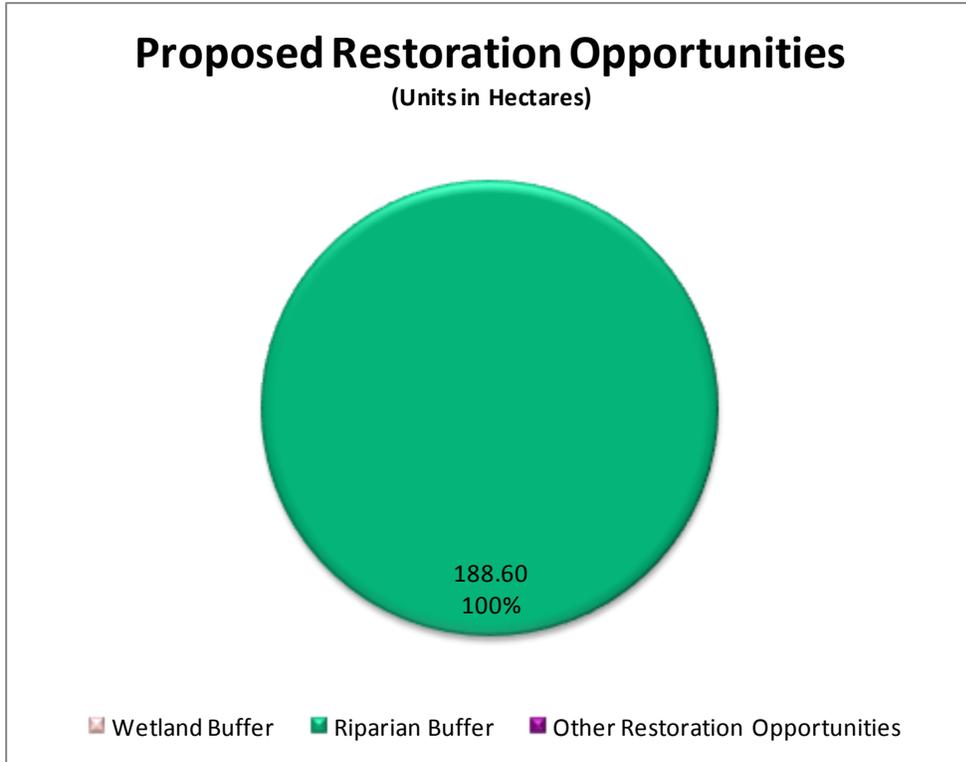


**3.2.28.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Stoney Point area drainage system.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	188.60	466.03	7.31
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>188.60</b>	<b>466.03</b>	<b>7.31</b>
<b>Status Quo Anthropogenic</b>	<b>2387.81</b>	<b>5900.39</b>	<b>92.58</b>
<b>Total Land Area</b>	<b>2579.29</b>	<b>6373.53</b>	<b>100.00</b>



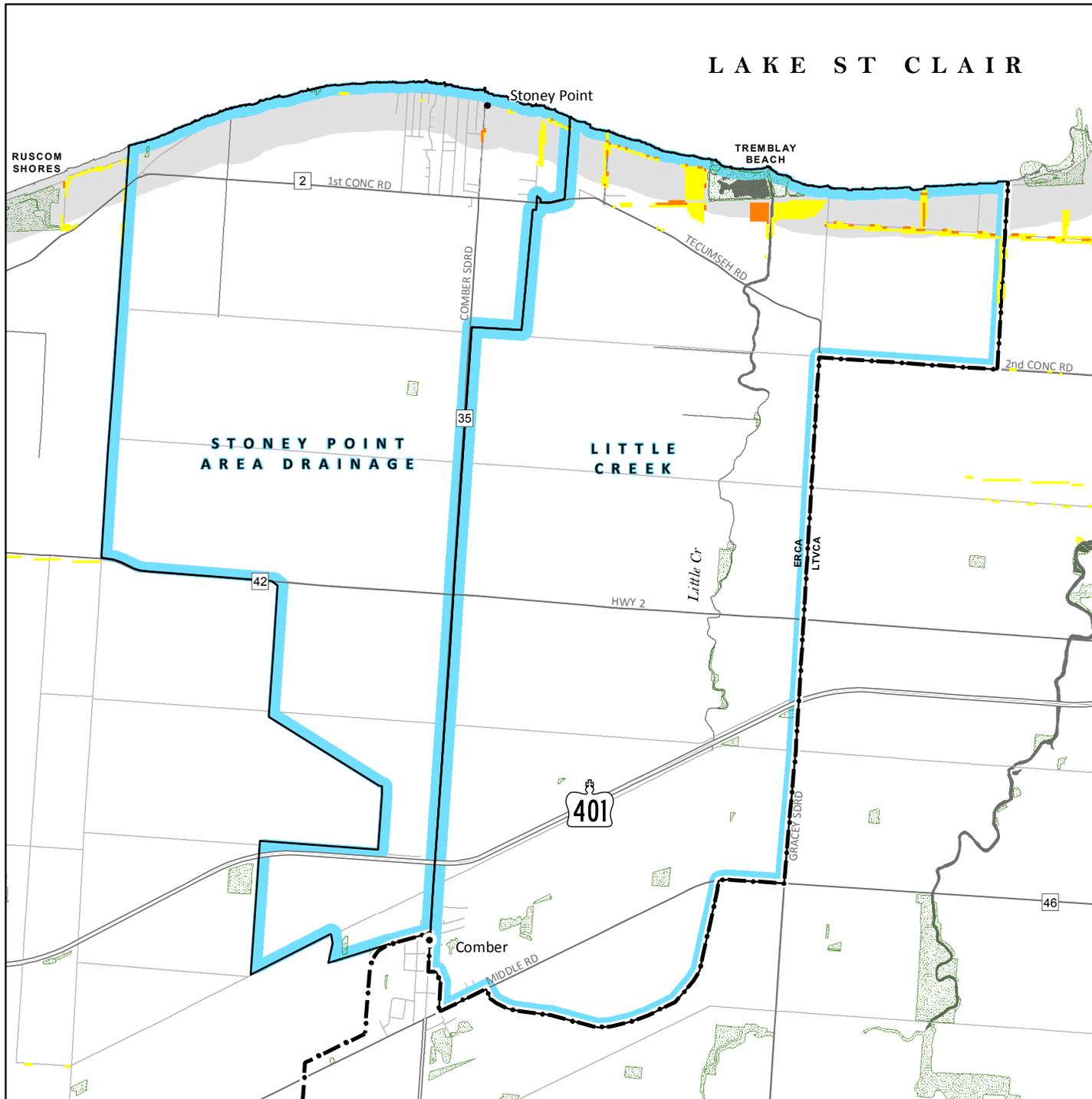


The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include riparian buffering along first to third order streams in close proximity to the Lake St. Clair shoreline.

# LAKE ST CLAIR

## Priority of Restoration Opportunities

### Stoney Point Area Drainage Little Creek



#### Legend

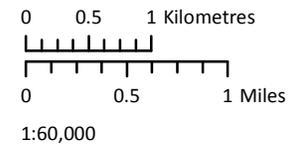
##### Number of Criteria Met

- 5 (Highest Priority)
- 4
- 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



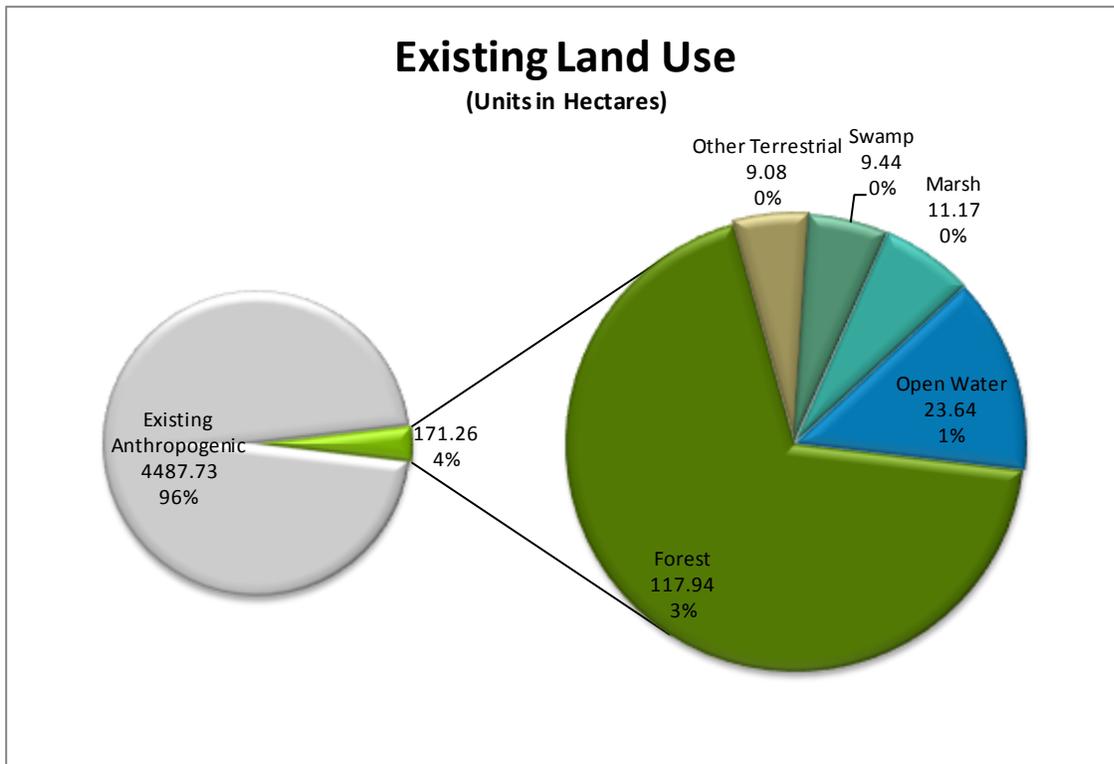
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - StoneyP\LittleCreek - 20130430.mxd  
TD 30/04/2013

3.2.29 Sturgeon Creek

3.2.29.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Sturgeon Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	117.94	291.43	2.53
Other Terrestrial	9.08	22.43	0.19
<b>Total Terrestrial Habitat</b>	<b>127.02</b>	<b>313.86</b>	<b>2.73</b>
Wetland Habitat	Hectares	Acres	%
Swamp	9.44	23.33	0.20
Marsh	11.17	27.59	0.24
Open Water	23.64	58.40	0.51
<b>Total Wetland Habitat</b>	<b>44.24</b>	<b>109.33</b>	<b>0.95</b>
<b>Existing Natural Area</b>	<b>171.26</b>	<b>423.19</b>	<b>3.68</b>
<b>Existing Anthropogenic</b>	<b>4487.73</b>	<b>11089.37</b>	<b>96.32</b>
<b>Total Land Area</b>	<b>4658.99</b>	<b>11512.56</b>	<b>100.00</b>



# Existing Natural Features

## Ruthven Area Drainage Sturgeon Creek

### Legend

#### Wetland

-  Open Water
-  Marsh
-  Swamp

#### Terrestrial

-  Forest
-  Other

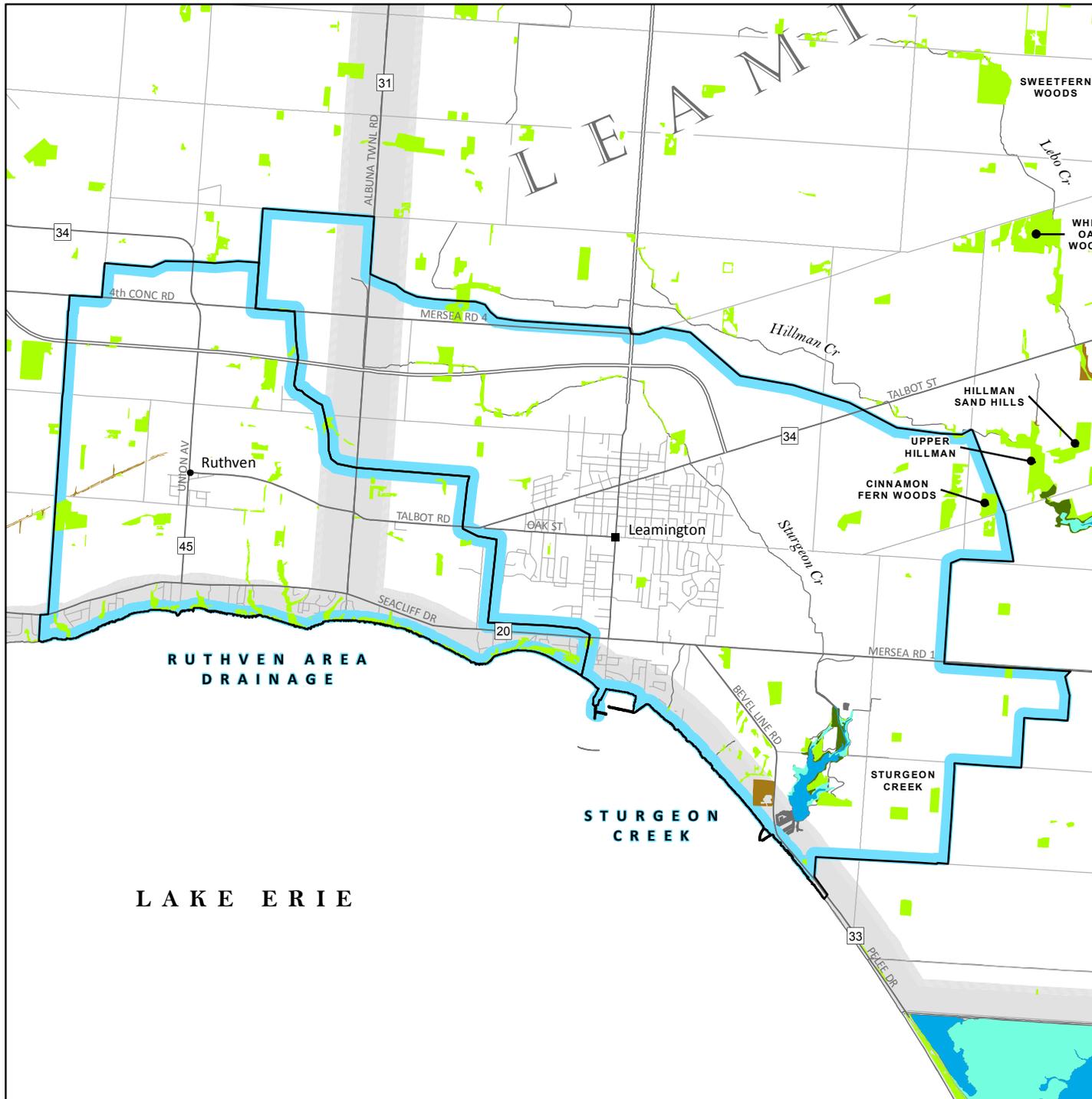
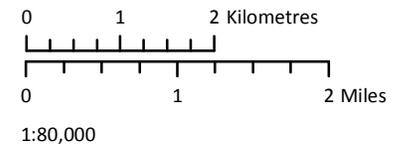
#### Features of Interest

-  Tallgrass Prairie Community

-  Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



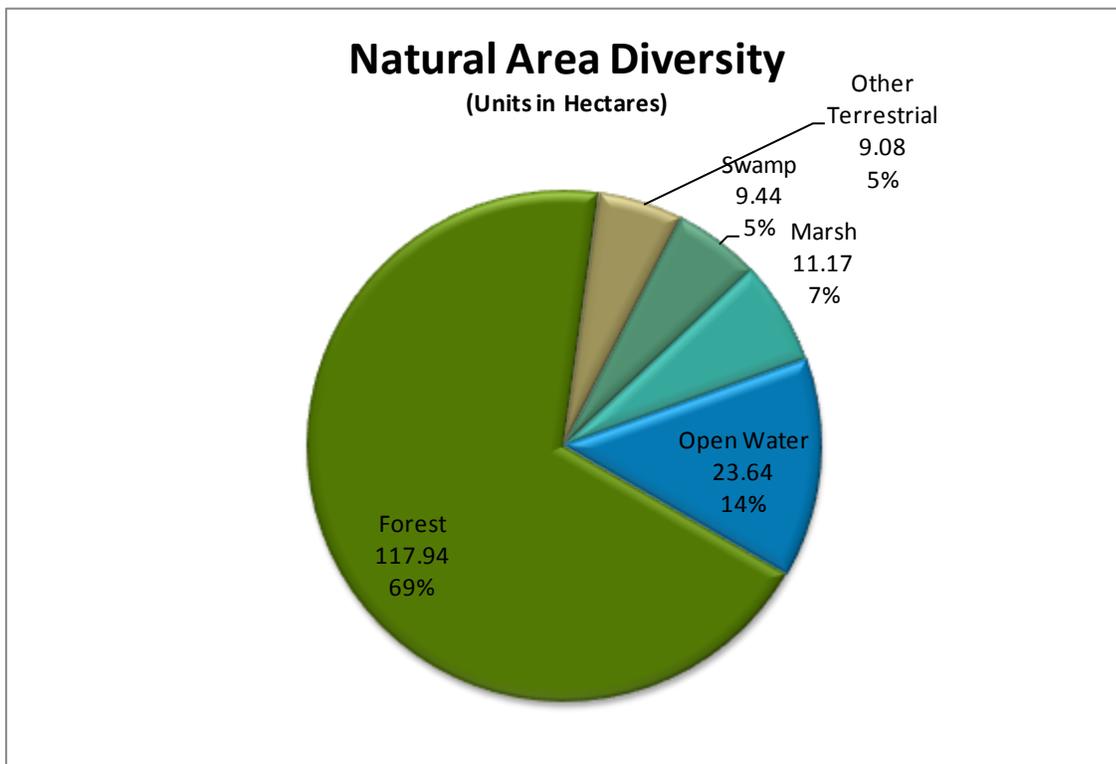
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - RuthvenSturgeonCreek - 20130424.mxd  
TD 30/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 14.7 ha in size. In addition, 1 forest patch within the study area contains 100 m interior forest, no patches contain 200 m interior forest.

**3.2.29.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Sturgeon Creek subwatershed.

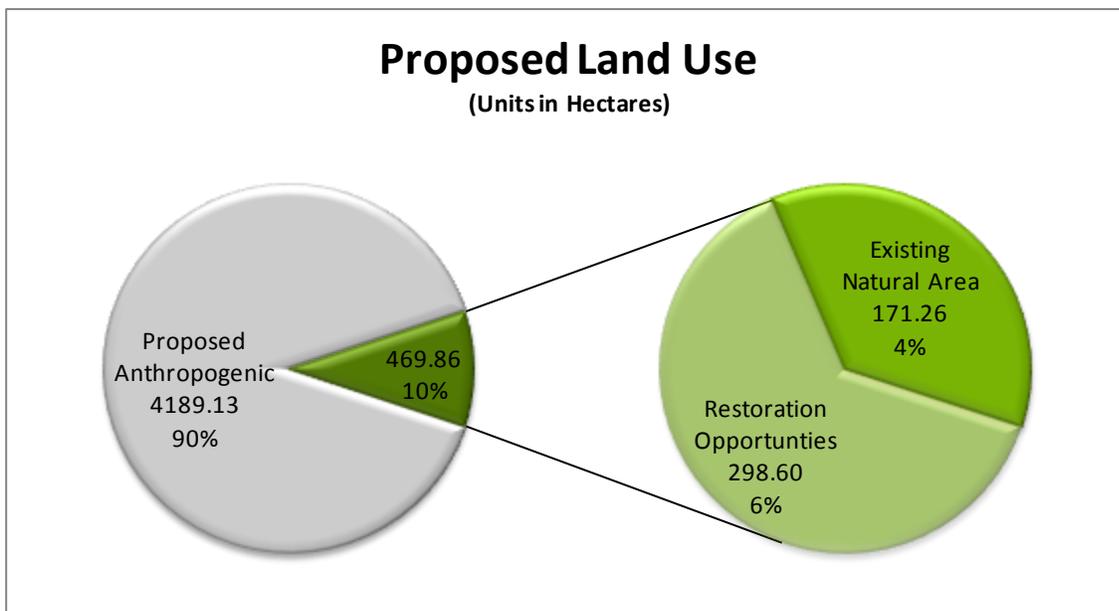
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	117.94	291.43	68.87
Other Terrestrial	9.08	22.43	5.30
Swamp	9.44	23.33	5.51
Marsh	11.17	27.59	6.52
Open Water	23.64	58.40	13.80
<b>Total Terrestrial Habitat</b>	<b>127.02</b>	<b>313.86</b>	<b>74.17</b>
<b>Total Wetland Habitat</b>	<b>44.24</b>	<b>109.33</b>	<b>25.83</b>
<b>Existing Natural Area</b>	<b>171.26</b>	<b>423.19</b>	<b>100.00</b>

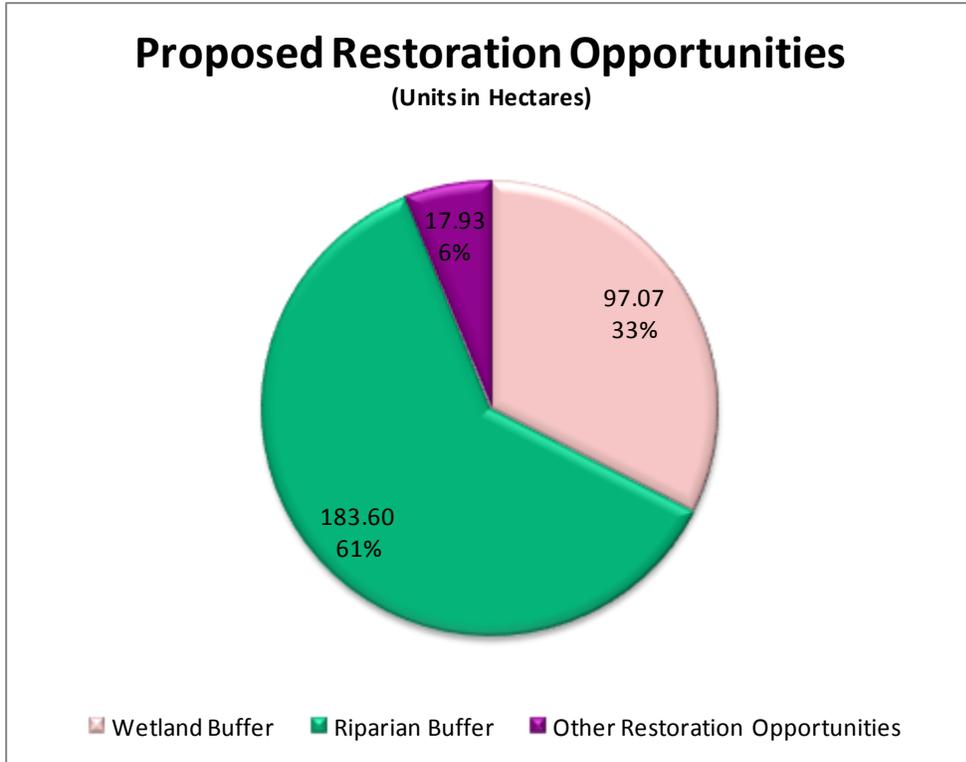


**3.2.29.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Sturgeon Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	97.07	239.86	2.08
Riparian Buffer	183.60	453.69	3.94
Other Restoration Opportunities	17.93	44.31	0.38
<b>Total Restoration Opportunities</b>	<b>298.60</b>	<b>737.85</b>	<b>6.41</b>
<b>Status Quo Anthropogenic</b>	<b>4189.13</b>	<b>10351.52</b>	<b>89.92</b>
<b>Total Land Area</b>	<b>4658.99</b>	<b>11512.56</b>	<b>100.00</b>

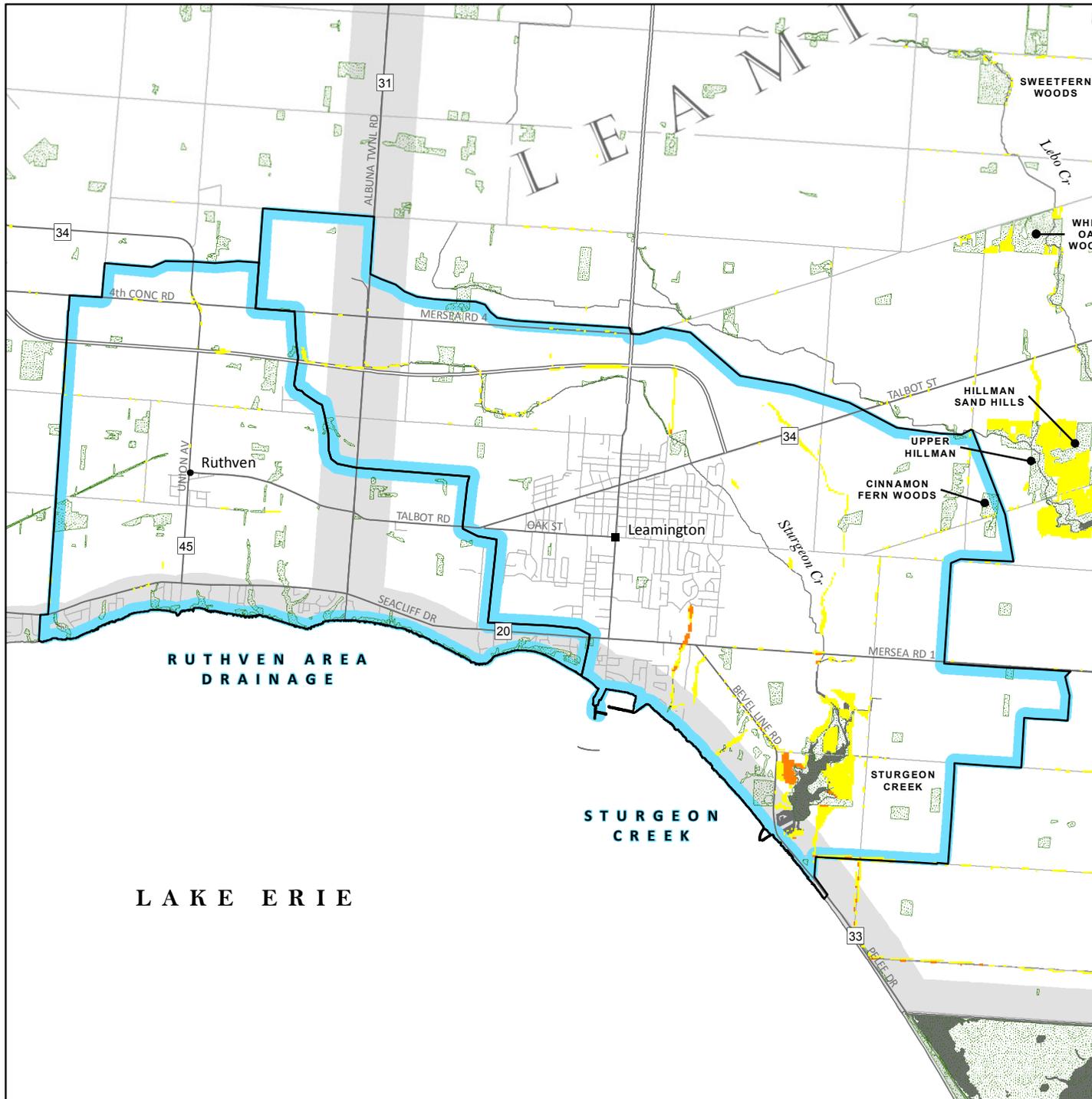




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffer adjacent to the Sturgeon Creek Provincially Significant Wetland as well as riparian buffering along the Selkirk Drain.

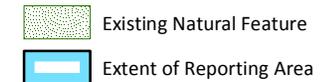
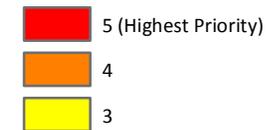
# Priority of Restoration Opportunities

## Ruthven Area Drainage Sturgeon Creek



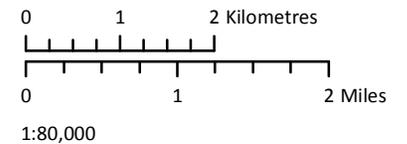
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



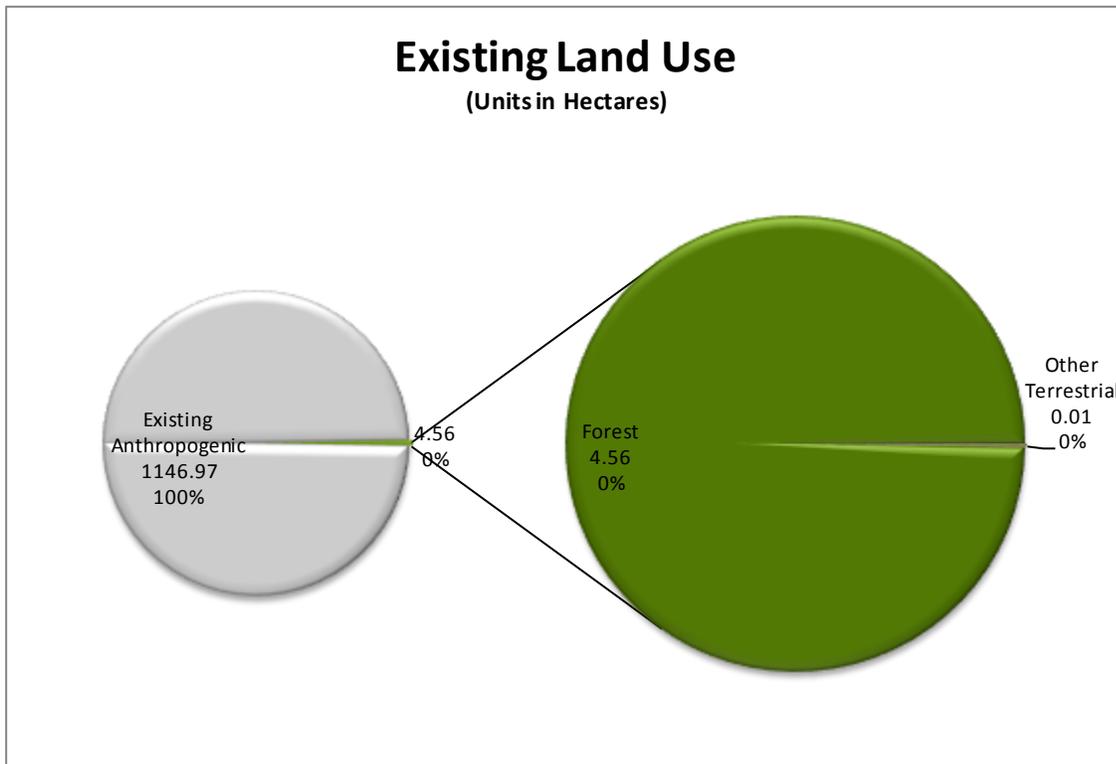
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - RuthvenSturgeonCreek - 20130430.mxd  
TD 30/04/2013

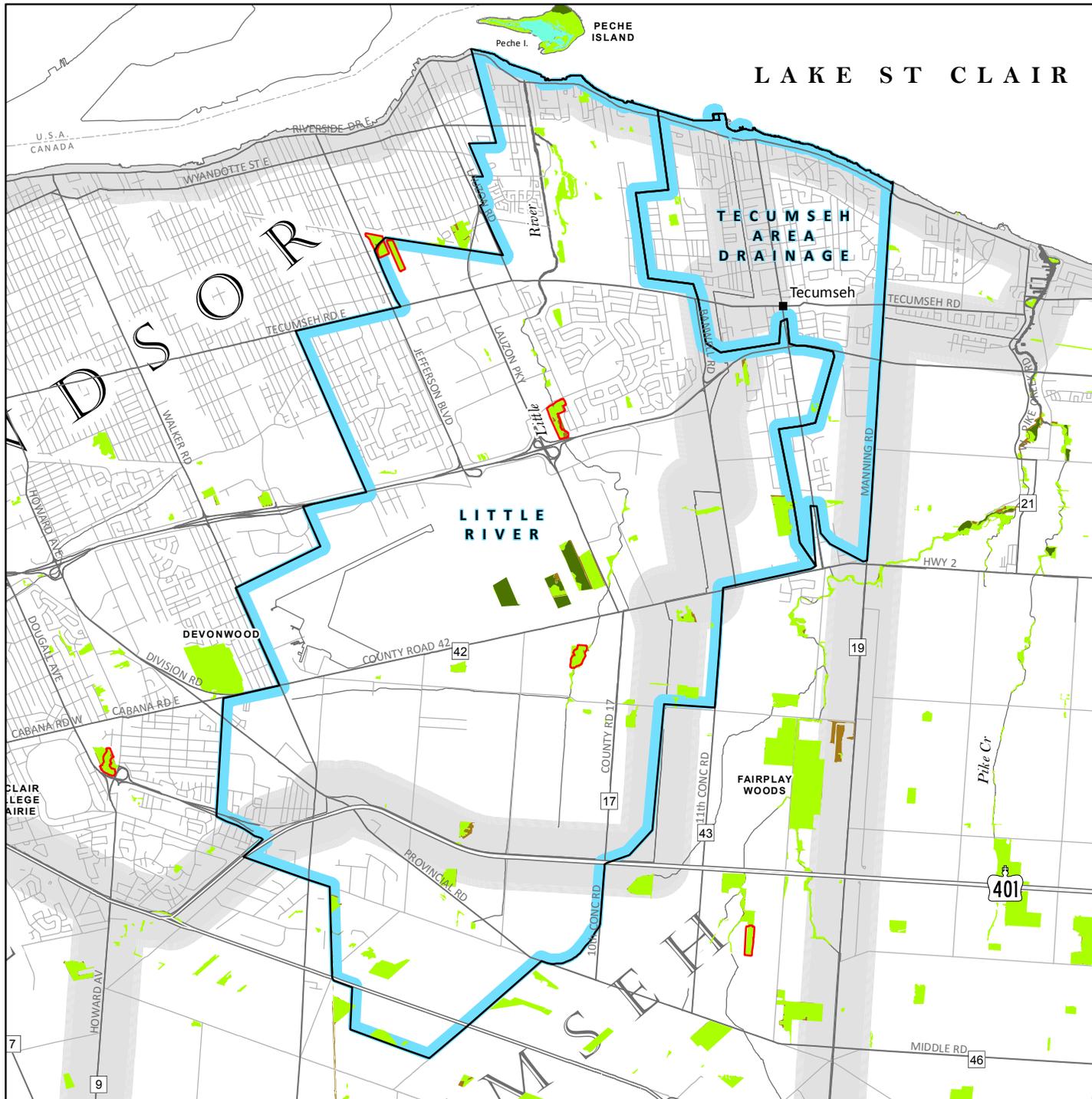
**3.2.30 Tecumseh Area Drainage**

**3.2.30.1 Existing Land Use**

The following Table and Figure summarizes the findings for existing land use within the Tecumseh area drainage system.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	4.56	11.26	0.40
Other Terrestrial	0.01	0.02	0.00
<b>Total Terrestrial Habitat</b>	<b>4.56</b>	<b>11.28</b>	<b>0.40</b>
Wetland Habitat	Hectares	Acres	%
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>4.56</b>	<b>11.28</b>	<b>0.40</b>
<b>Existing Anthropogenic</b>	<b>1146.97</b>	<b>2834.21</b>	<b>99.60</b>
<b>Total Land Area</b>	<b>1151.53</b>	<b>2845.49</b>	<b>100.00</b>





# Existing Natural Features

## Little River Tecumseh Area Drainage

### Legend

#### Wetland

- Open Water
- Marsh
- Swamp

#### Terrestrial

- Forest
- Other

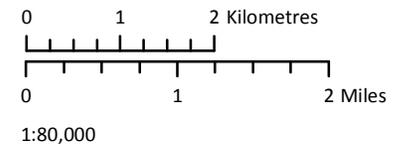
#### Features of Interest

- Tallgrass Prairie Community

- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



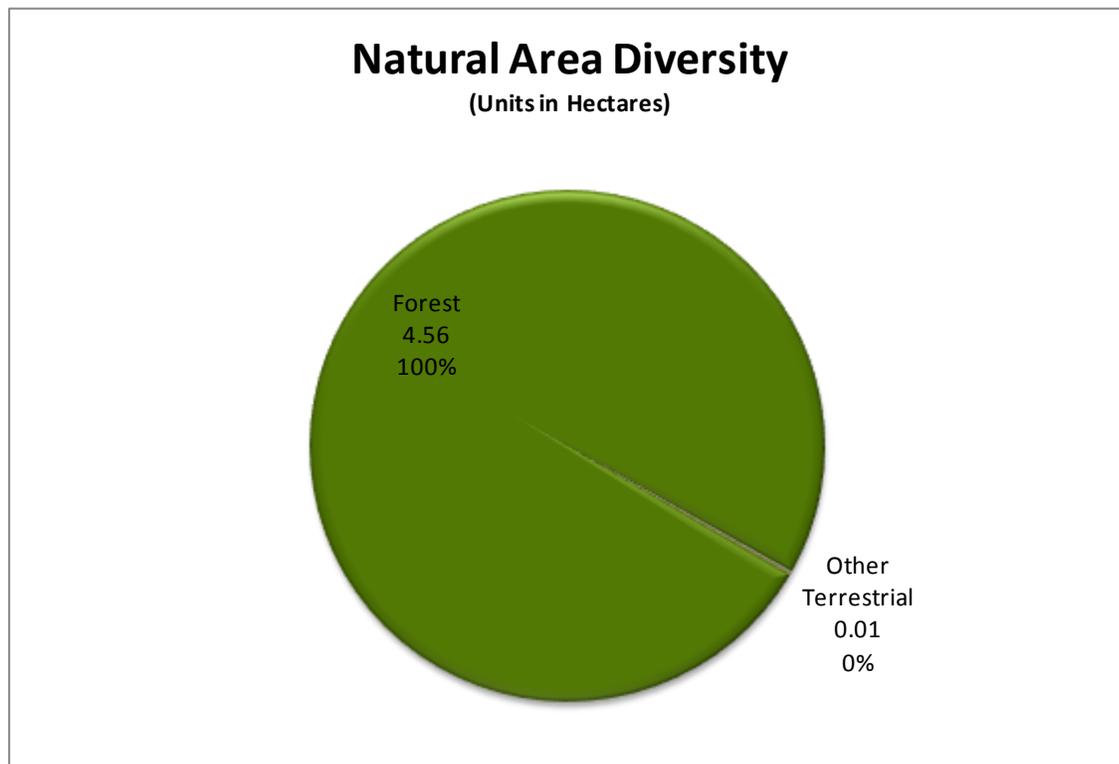
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - Little Tecumseh - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is 1.8 ha in size. In addition, no forest patches within the study area contain 100 m interior forest or 200 m interior forest.

**3.2.30.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Tecumseh area drainage system.

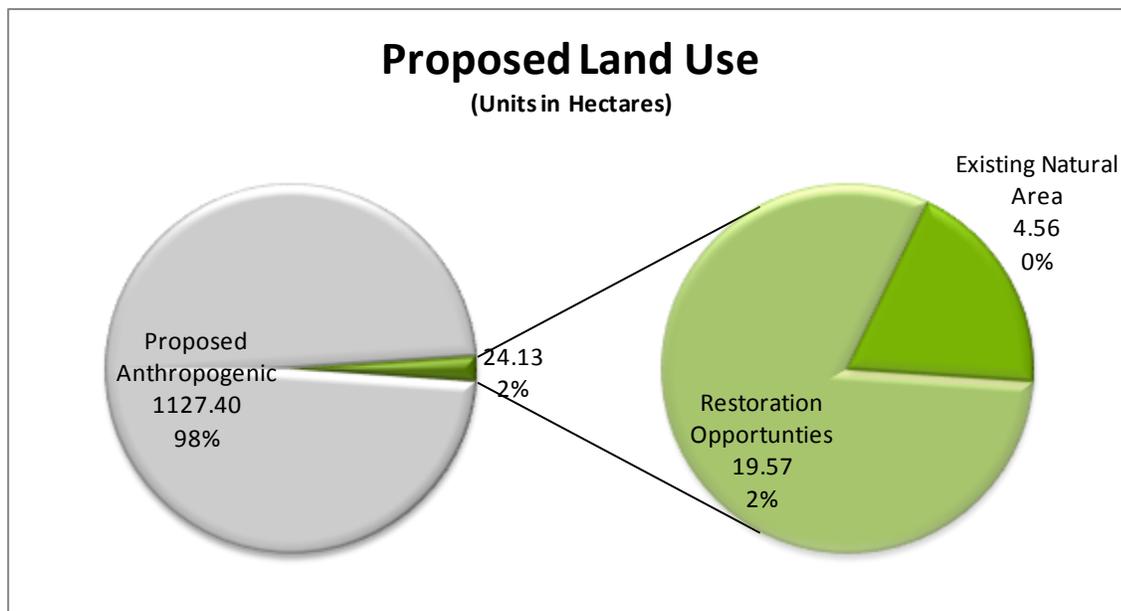
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	4.56	11.26	99.85
Other Terrestrial	0.01	0.02	0.15
Swamp	0.00	0.00	0.00
Marsh	0.00	0.00	0.00
Open Water	0.00	0.00	0.00
<b>Total Terrestrial Habitat</b>	<b>4.56</b>	<b>11.28</b>	<b>100.00</b>
<b>Total Wetland Habitat</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Existing Natural Area</b>	<b>4.56</b>	<b>11.28</b>	<b>100.00</b>

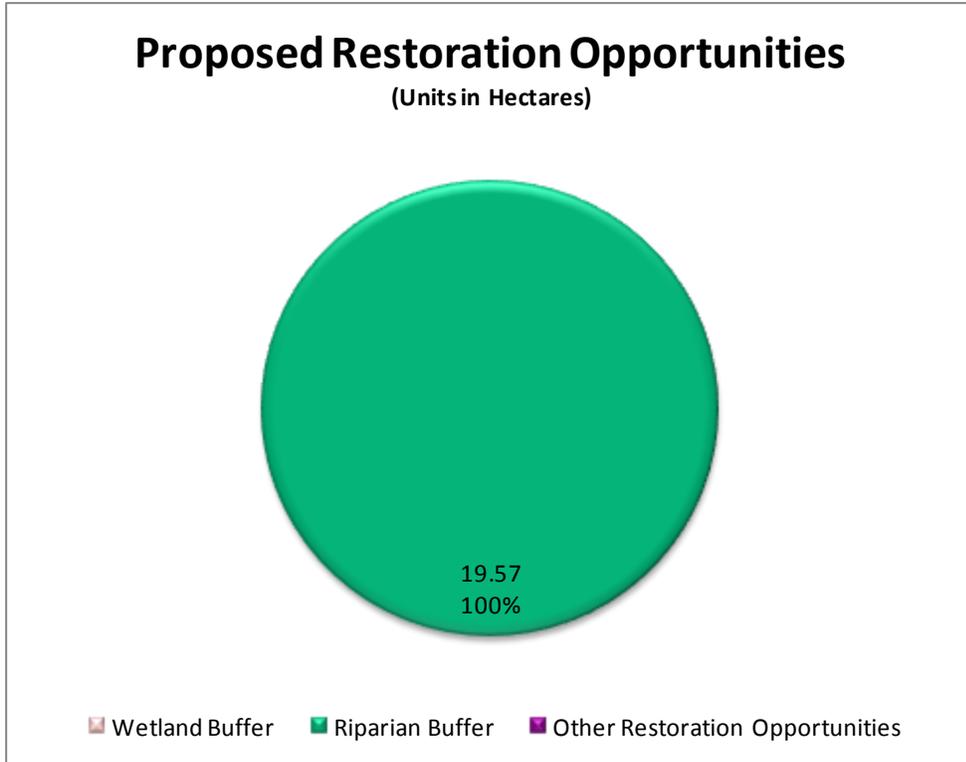


**3.2.30.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Tecumseh area drainage system.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	0.00	0.00	0.00
Riparian Buffer	19.57	48.35	1.70
Other Restoration Opportunities	0.00	0.00	0.00
<b>Total Restoration Opportunities</b>	<b>19.57</b>	<b>48.35</b>	<b>1.70</b>
<b>Status Quo Anthropogenic</b>	<b>1127.40</b>	<b>2785.86</b>	<b>97.90</b>
<b>Total Land Area</b>	<b>1151.53</b>	<b>2845.49</b>	<b>100.00</b>

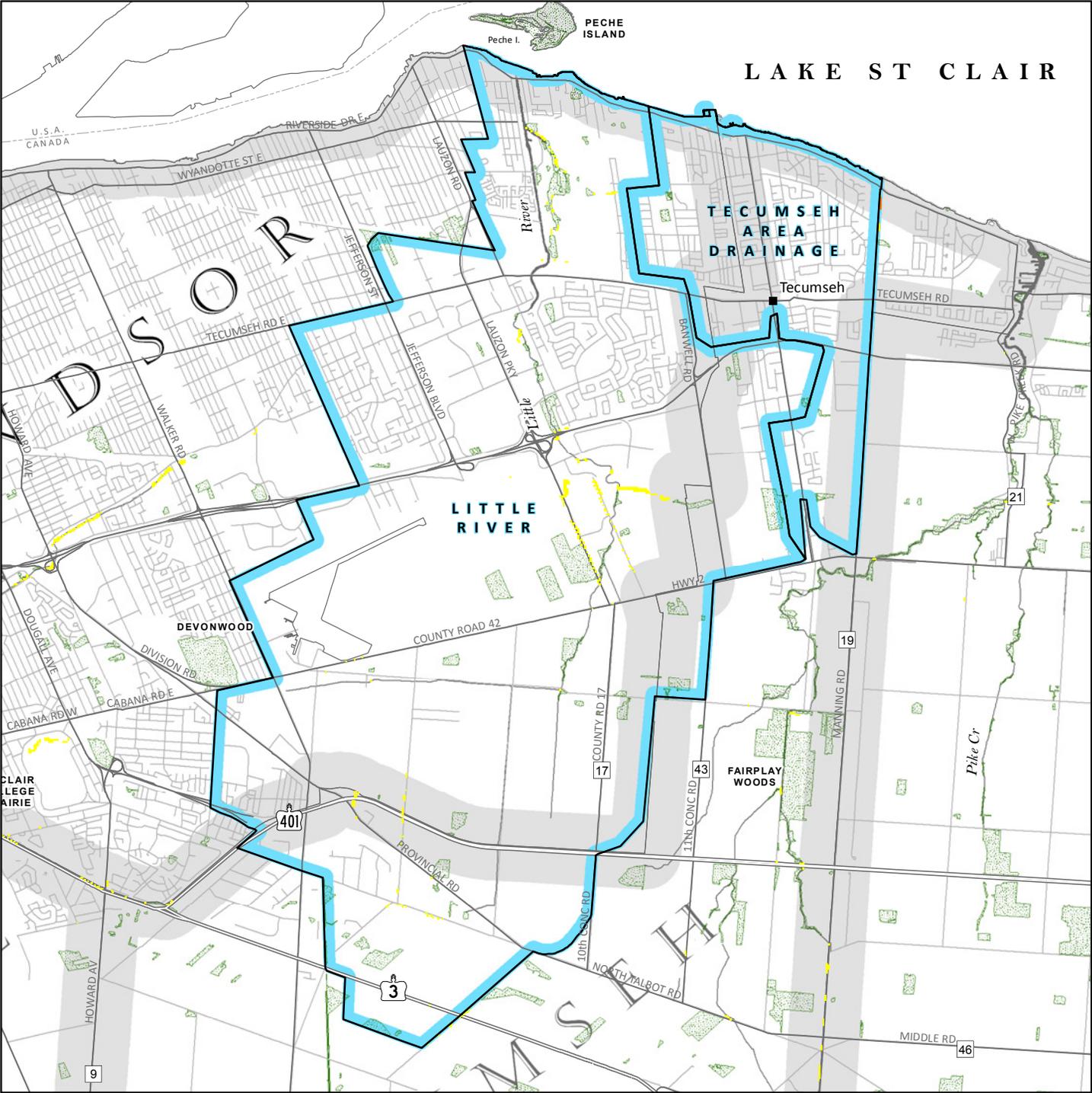




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report.

# Priority of Restoration Opportunities

## Little River Tecumseh Area Drainage

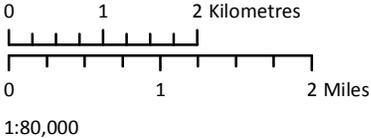


### Legend

- Number of Criteria Met**
- 5 (Highest Priority)
  - 4
  - 3
- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.

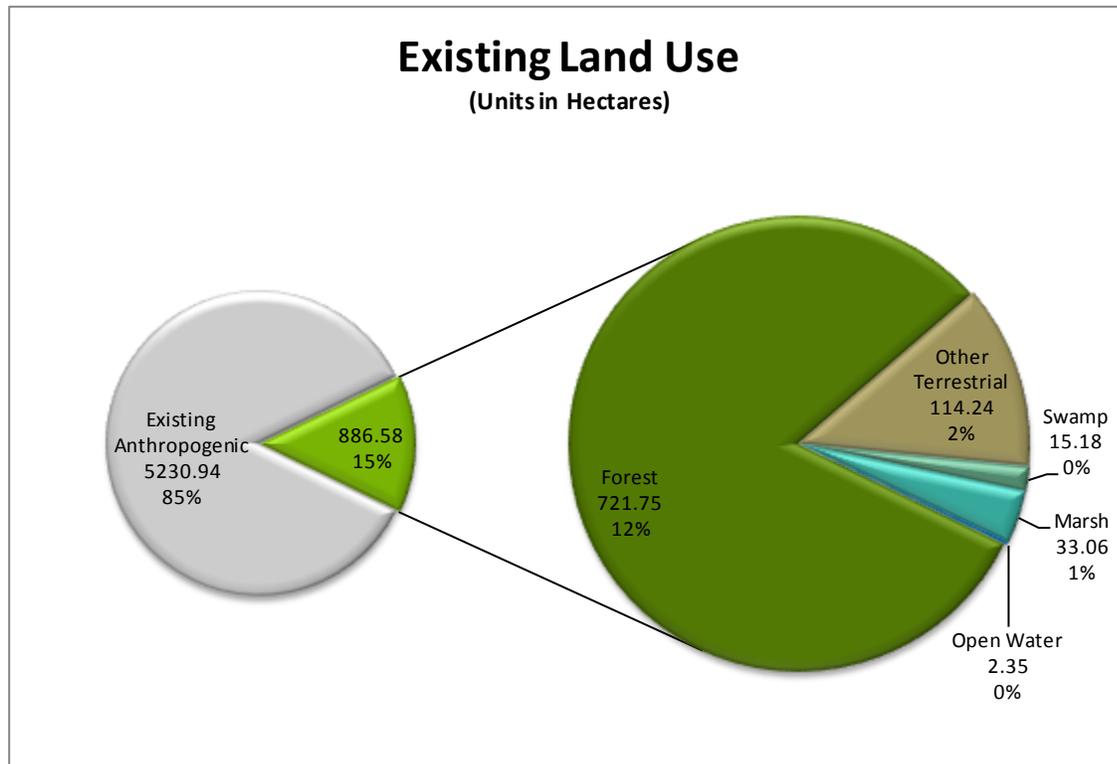


3.2.31 Turkey Creek

3.2.31.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Turkey Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	721.75	1783.47	11.80
Other Terrestrial	114.24	282.29	1.87
<b>Total Terrestrial Habitat</b>	<b>835.99</b>	<b>2065.76</b>	<b>13.67</b>
Wetland Habitat	Hectares	Acres	%
Swamp	15.18	37.51	0.25
Marsh	33.06	81.70	0.54
Open Water	2.35	5.80	0.04
<b>Total Wetland Habitat</b>	<b>50.59</b>	<b>125.01</b>	<b>0.83</b>
<b>Existing Natural Area</b>	<b>886.58</b>	<b>2190.77</b>	<b>14.49</b>
<b>Existing Anthropogenic</b>	<b>5230.94</b>	<b>12925.87</b>	<b>85.51</b>
<b>Total Land Area</b>	<b>6117.51</b>	<b>15116.65</b>	<b>100.00</b>



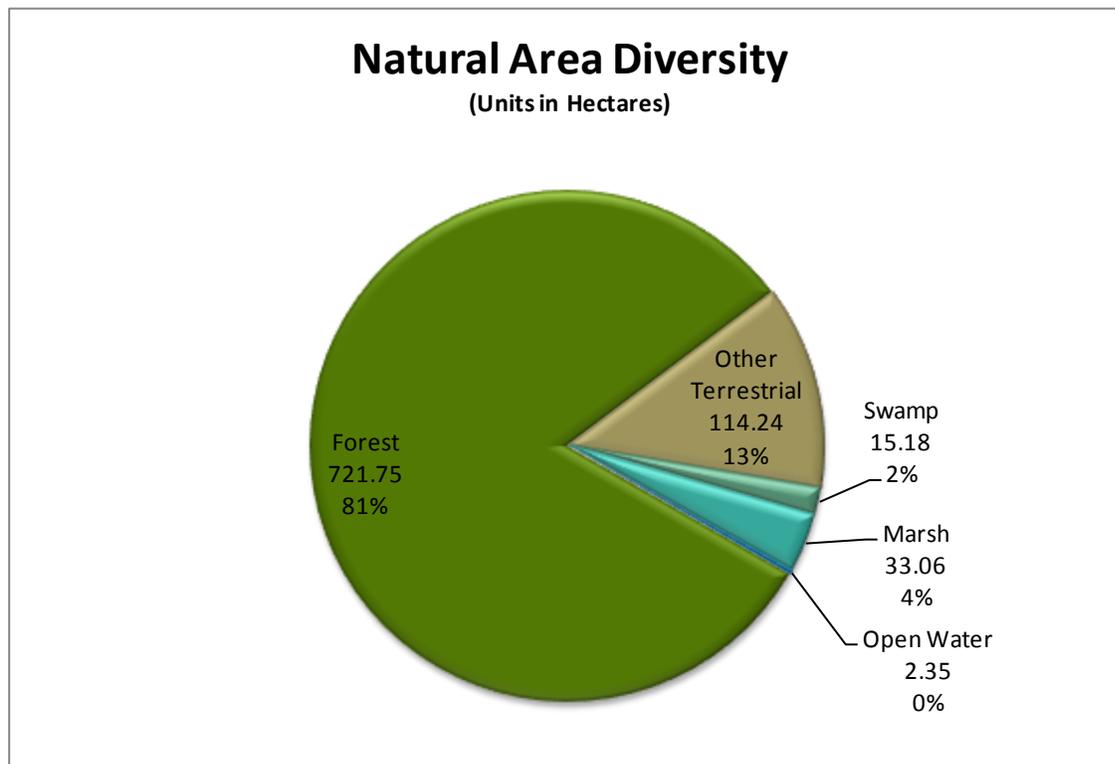


Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of Ojibway Park and is 63.3 ha in size. In addition, 27 forest patches within the study area contain 100 m interior forest, 4 of these patches contain 200 m interior forest.

**3.2.31.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Turkey Creek subwatershed.

Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	721.75	1783.47	81.41
Other Terrestrial	114.24	282.29	12.89
Swamp	15.18	37.51	1.71
Marsh	33.06	81.70	3.73
Open Water	2.35	5.80	0.26
<b>Total Terrestrial Habitat</b>	<b>835.99</b>	<b>2065.76</b>	<b>94.29</b>
<b>Total Wetland Habitat</b>	<b>50.59</b>	<b>125.01</b>	<b>5.71</b>
<b>Existing Natural Area</b>	<b>886.58</b>	<b>2190.77</b>	<b>100.00</b>

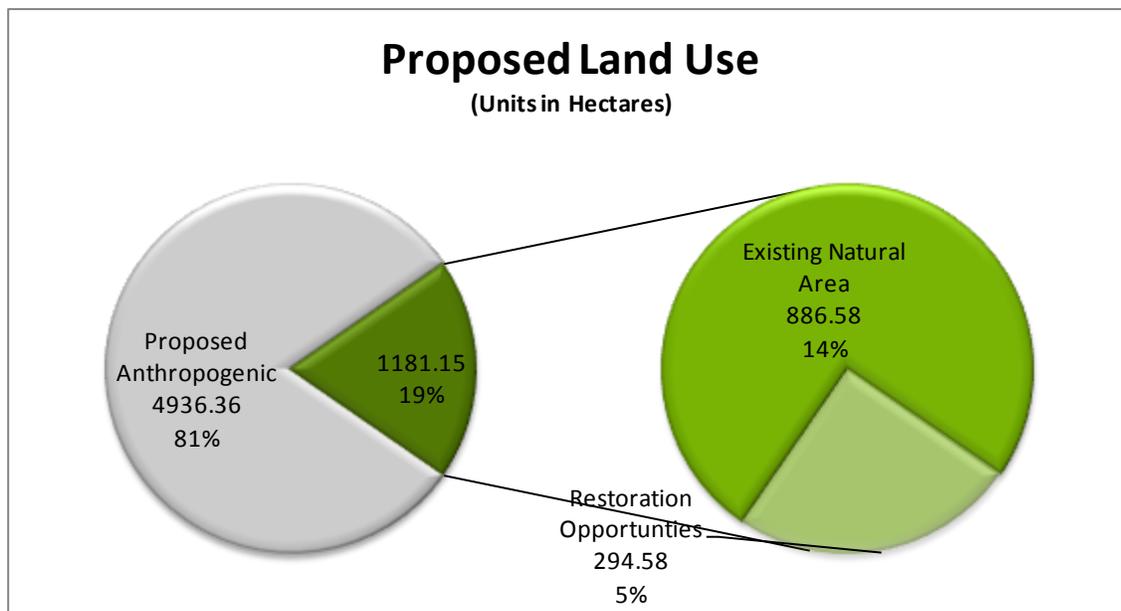


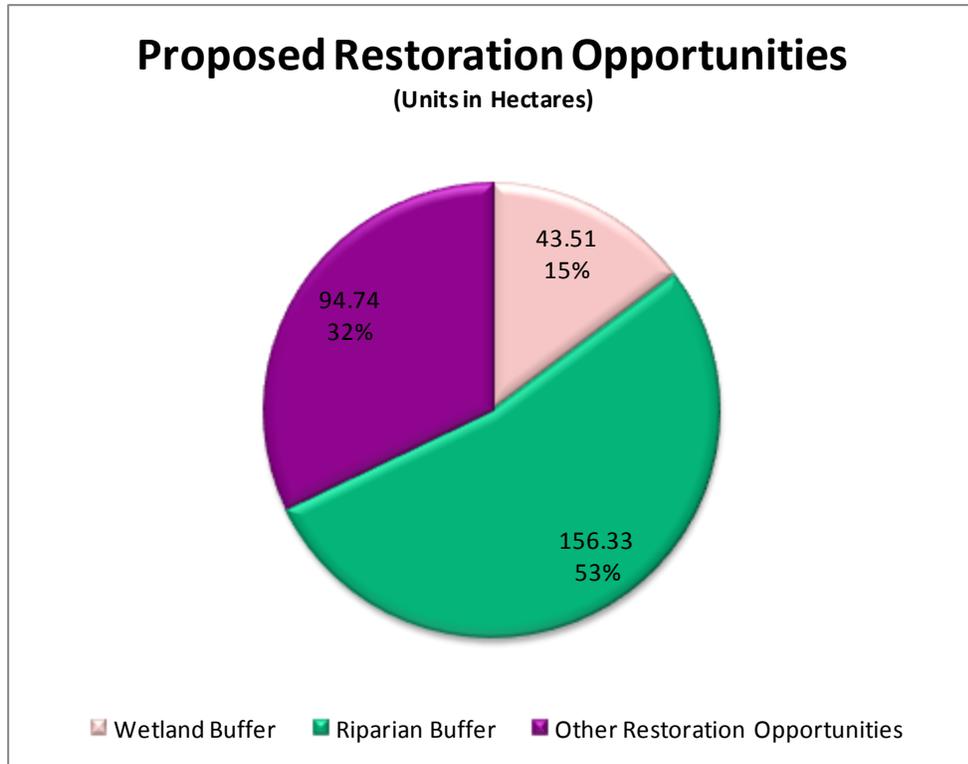
This study area also contains patches of significant tallgrass prairie vegetation communities, which are depicted in the previous map.

**3.2.31.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Turkey Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	43.51	107.52	0.71
Riparian Buffer	156.33	386.29	2.56
Other Restoration Opportunities	94.74	234.11	1.55
<b>Total Restoration Opportunities</b>	<b>294.58</b>	<b>727.91</b>	<b>4.82</b>
<b>Status Quo Anthropogenic</b>	<b>4936.36</b>	<b>12197.96</b>	<b>80.69</b>
<b>Total Land Area</b>	<b>6117.51</b>	<b>15116.65</b>	<b>100.00</b>

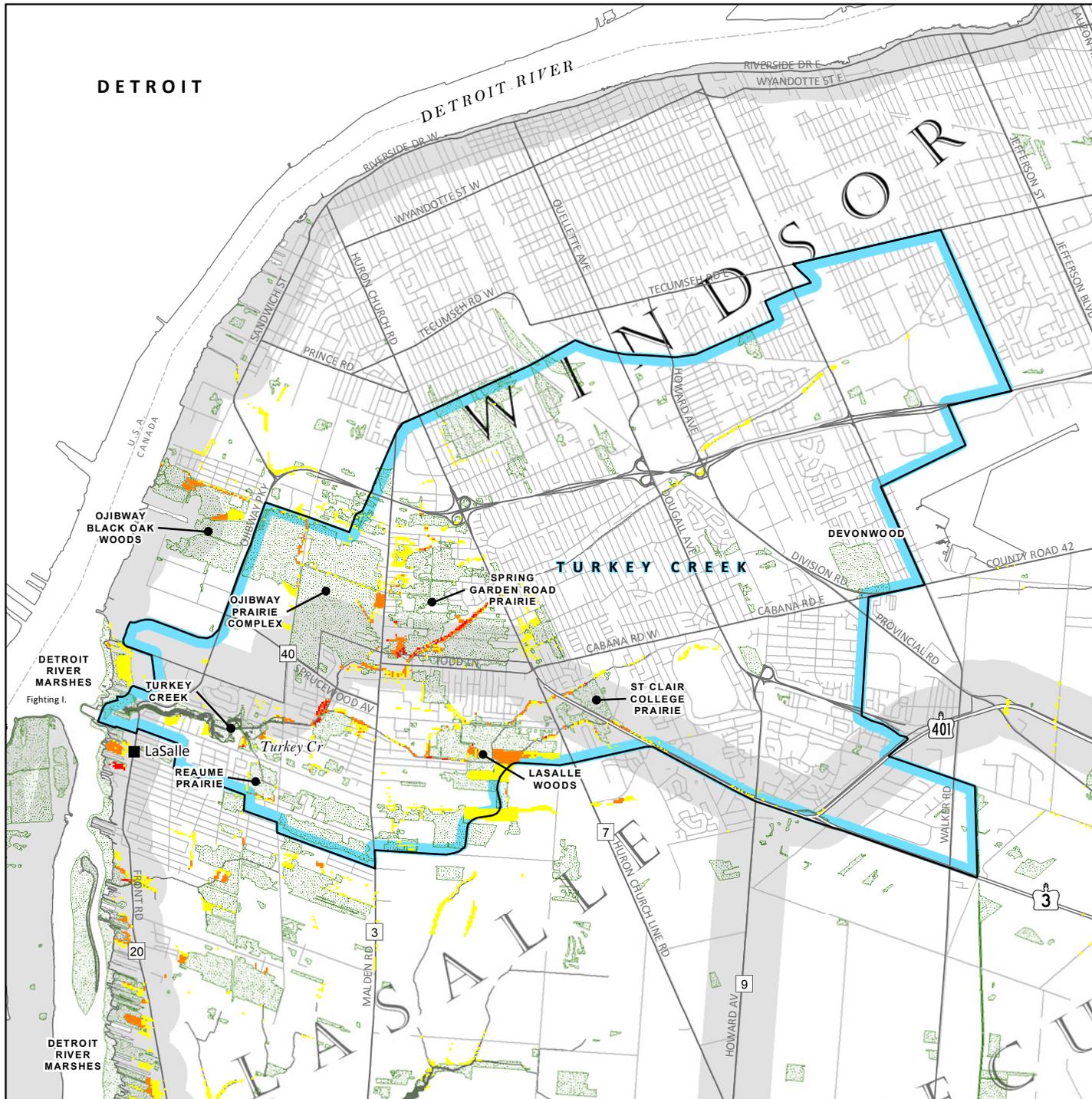




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include tallgrass prairie community restoration associated with the Ojibway Prairie Complex, reforestation associated with LaSalle Woods, as well as riparian restoration along the Grand Marais Drain as shown in the following map.

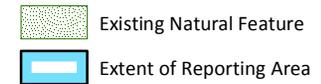
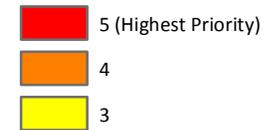
# Priority of Restoration Opportunities

## Turkey Creek



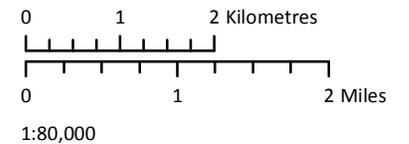
### Legend

#### Number of Criteria Met



Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



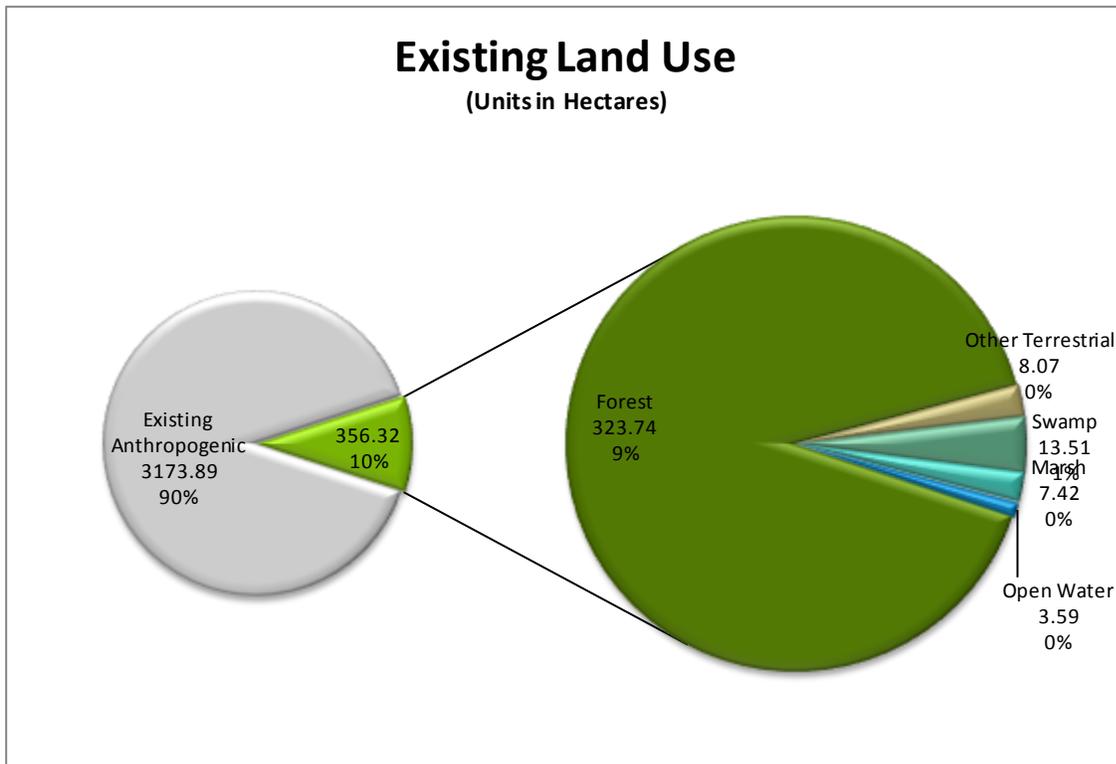
Source: \\Swpsrver\projects\ERCA  
Projects\DEPARTMENTS\Source Water Protection\Lake Erie  
Tribes Elevations - April 2013\Priority Map - Restoration  
Opportunities - Master - 20130430.mxd  
TD 30/04/2013

3.2.32 *Wigle Creek*

3.2.32.1 Existing Land Use

The following Table and Figure summarizes the findings for existing land use within the Wigle Creek subwatershed.

Existing Land Use			
Terrestrial Habitat	Hectares	Acres	%
Forest	323.74	799.97	9.17
Other Terrestrial	8.07	19.93	0.23
<b>Total Terrestrial Habitat</b>	<b>331.80</b>	<b>819.90</b>	<b>9.40</b>
Wetland Habitat	Hectares	Acres	%
Swamp	13.51	33.39	0.38
Marsh	7.42	18.33	0.21
Open Water	3.59	8.87	0.10
<b>Total Wetland Habitat</b>	<b>24.52</b>	<b>60.59</b>	<b>0.69</b>
<b>Existing Natural Area</b>	<b>356.32</b>	<b>880.49</b>	<b>10.09</b>
<b>Existing Anthropogenic</b>	<b>3173.89</b>	<b>7842.83</b>	<b>89.91</b>
<b>Total Land Area</b>	<b>3530.22</b>	<b>8723.32</b>	<b>100.00</b>



# Existing Natural Features

## Mill Creek Wigle Creek

### Legend

#### Wetland

-  Open Water
-  Marsh
-  Swamp

#### Terrestrial

-  Forest
-  Other

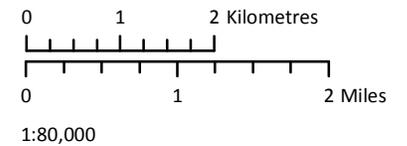
#### Features of Interest

-  Tallgrass Prairie Community

-  Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of existing natural features as shown on the map are approximate. Terrestrial features were delineated from spring 2008 air photography. Wetland features are identified by the OMNR, Queen's Printer 2012. The location and characterization of these sites are subject to change.



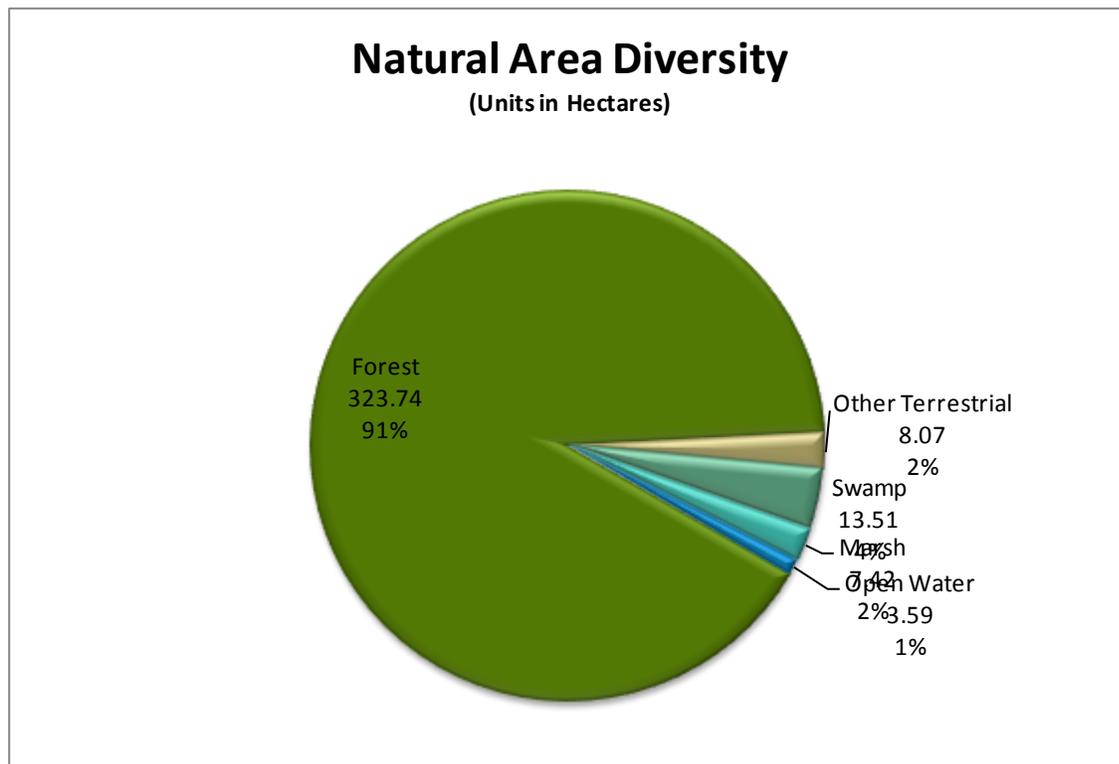
Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Existing Natural Features - MillWigleCreek - 20130424.mxd  
TD 29/04/2013

Within the study area there are no forest patches greater than 100 ha in size. The largest forest patch is part of the Kingsville Golf Course and is 83.7 ha in size. In addition, 12 forest patches within the study area contain 100 m interior forest, 1 of these patches contains 200 m interior forest.

**3.2.32.2 Natural Area Composition**

The following Table and Figures summarizes the findings for the composition of existing natural areas within the Wigle Creek subwatershed.

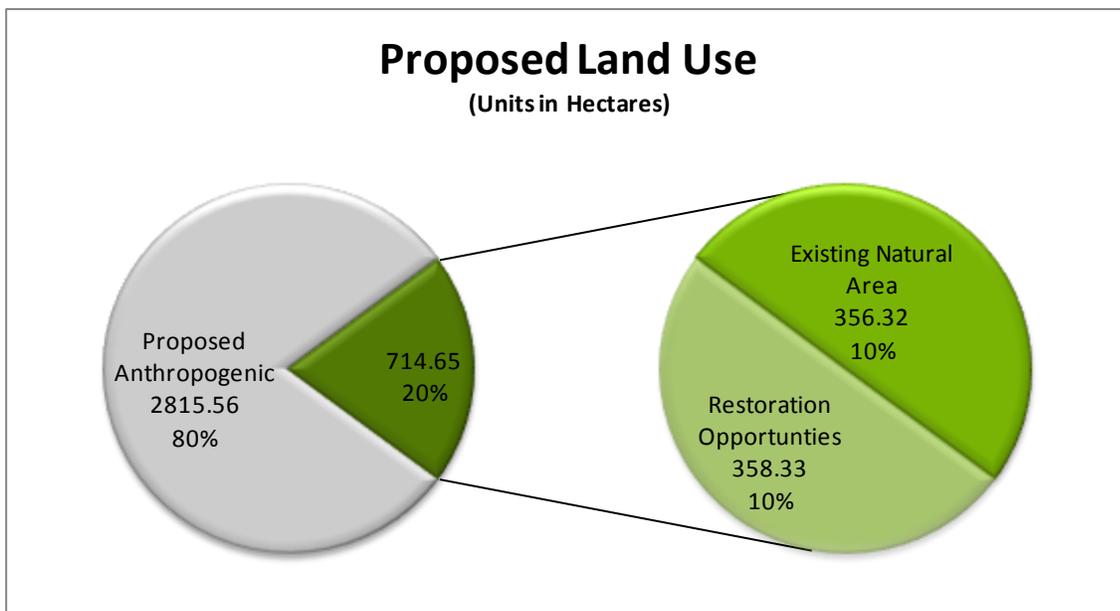
Natural Area Composition			
Vegetation Community Type	Hectares	Acres	%
Forest	323.74	799.97	90.85
Other Terrestrial	8.07	19.93	2.26
Swamp	13.51	33.39	3.79
Marsh	7.42	18.33	2.08
Open Water	3.59	8.87	1.01
<b>Total Terrestrial Habitat</b>	<b>331.80</b>	<b>819.90</b>	<b>93.12</b>
<b>Total Wetland Habitat</b>	<b>24.52</b>	<b>60.59</b>	<b>6.88</b>
<b>Existing Natural Area</b>	<b>356.32</b>	<b>880.49</b>	<b>100.00</b>

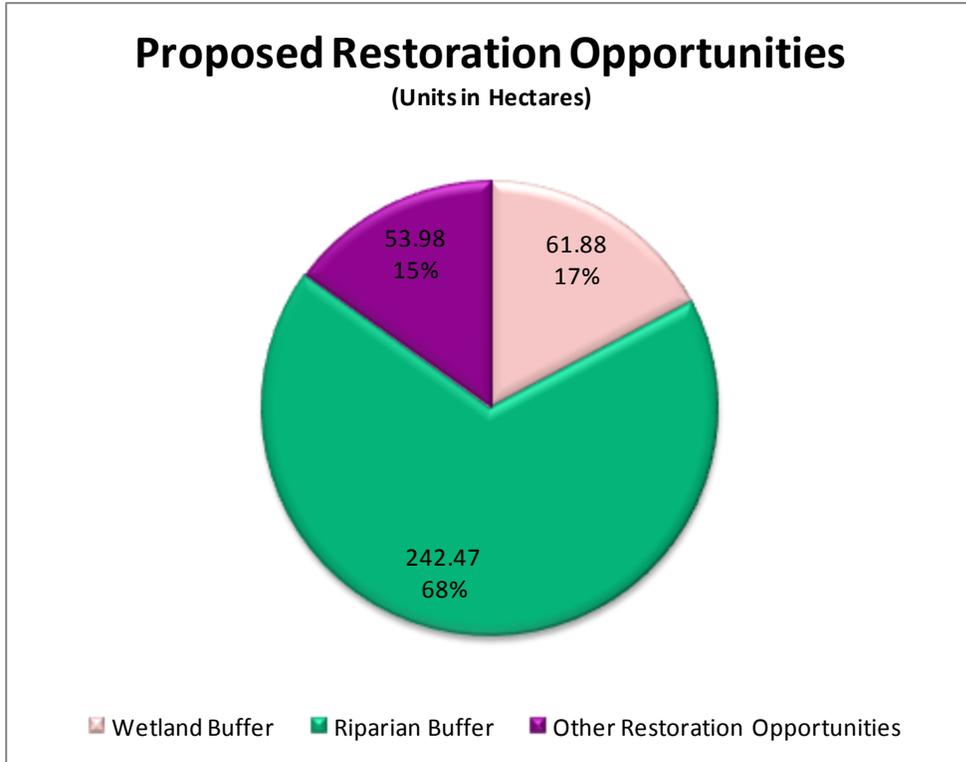


**3.2.32.3 Restoration Opportunities**

The following Table and Figures summarizes the proposed restoration opportunities within the Wigle Creek subwatershed.

Restoration Opportunities			
Proposed Restoration	Hectares	Acres	%
Wetland Buffer	61.88	152.92	1.75
Riparian Buffer	242.47	599.14	6.87
Other Restoration Opportunities	53.98	133.38	1.53
<b>Total Restoration Opportunities</b>	<b>358.33</b>	<b>885.45</b>	<b>10.15</b>
<b>Status Quo Anthropogenic</b>	<b>2815.56</b>	<b>6957.38</b>	<b>79.76</b>
<b>Total Land Area</b>	<b>3530.22</b>	<b>8723.32</b>	<b>100.00</b>

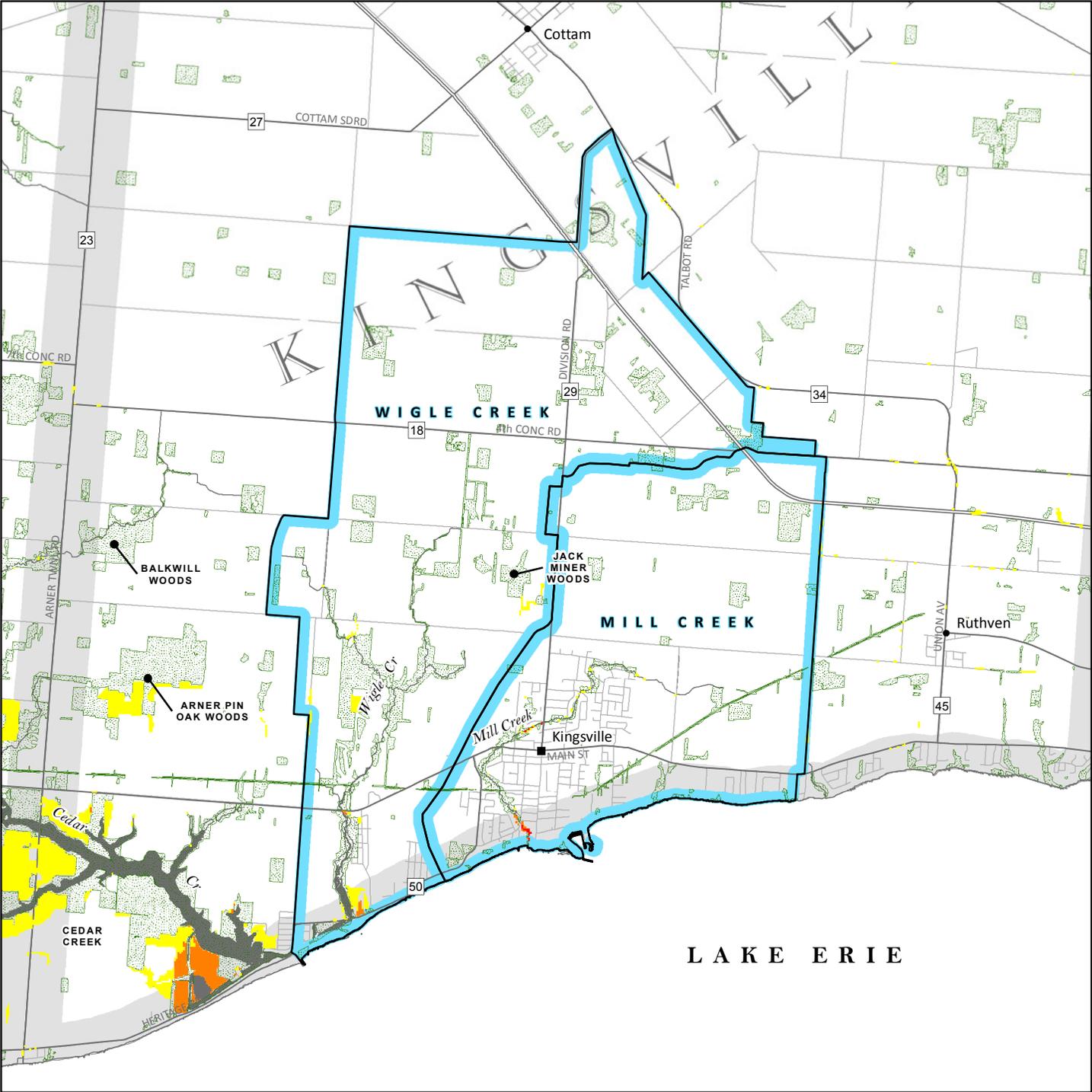




The location of the prioritized restoration opportunities are depicted in the following map. For information on the type of restoration opportunities proposed in a particular location, please consult the individual chapters within Section 3.1 (Jurisdictional Analysis) of this report. Highest priority restoration opportunities within the study area include wetland buffer adjacent to Wigle Creek.

# Priority of Restoration Opportunities

Mill Creek  
Wigle Creek



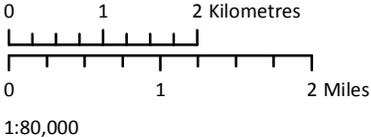
### Legend

- Number of Criteria Met**
- 5 (Highest Priority)
  - 4
  - 3

- Existing Natural Feature
- Extent of Reporting Area

Significant natural heritage features labelled for reference only. Source ERCA's Environmentally Significant Area (ESA) database.

The extent of features as shown on the map are approximate. The location and characterization of these sites are subject to change. Features meeting less than 3 criteria not shown. See report for full descriptions of input criteria.



Source: D:\PROJECTS\County of Essex Natural Heritage Strategy Study (CENHSS)\Maps - Report\Reporting Areas\Subwatershed\Priority Map - Restoration Opportunities - MillWigleCreek - 20130430.mxd  
TD 30/04/2013

## 4 RECOMMENDATIONS

This report contains a number of recommendations for establishing, protecting and enhancing the natural heritage system including individual sites and restoration areas which have been prioritized through the analysis conducted during the course of this study. Commonly utilized methods to ensure long term protection of significant natural heritage features includes appropriate Official Plan designation and securement. The use of policies including dual designation and/or an overlay approach, conservation easements, grants and stewardship agreements may serve to create linkages and enhancements between natural features and add to the natural heritage system.

These recommendations are intended to be a comprehensive set of overarching strategies for the protection of natural areas:

1. Planning jurisdictions should adopt policies to protect natural features which meets or exceeds the standards of the Provincial Policy Statement.
2. Planning jurisdictions are encouraged to continue supporting and to further strategize the securement of significant natural features through land use designations, public acquisition or by other means in conjunction with the work undertaken by the Essex Region Conservation Authority and the Lower Thames Valley Conservation Authority.
3. It is recommended that municipalities, with the assistance of ERCA and LTVCA, develop subwatershed plans and property management plans to appropriately manage ecologically significant lands that are in public ownership, to discourage the introduction and spread of invasive species and to promote a high level of biodiversity.
4. Private individuals and businesses should be strongly encouraged to participate in tree planting, restoration and stewardship programs and opportunities.
5. Strategic planning for restoration and conservation of biodiversity is based on the premise that all existing natural areas remain intact and that there is no further loss.

### 4.1 Policy Development and Implementation Concepts

#### 4.1.1 Policy Recommendations

One purpose of this undertaking is to provide information for planning jurisdictions to develop a scientifically defensible planning approach to protecting significant natural heritage features for their Official Plan. It is important to note that aside from natural heritage policies proposed for Official Plans, additional environmental practices by planning jurisdictions will form an important component in the creation and protection of the natural heritage system. In the Essex region the level of urbanization is continuing and pressures on the remaining natural heritage features not designated for protection endures. The intent by planning jurisdictions to focus on Smart Growth types of development patterns through carefully assessing where urban boundaries and infrastructure should be extended, crossing municipal boundaries, will assist with protecting natural heritage and agricultural areas. The specific focus of this study has been to assess fundamental components that makeup the natural system in this region's landscape, determine deficiencies, and apply policy concepts and practices to improve its ecological function and biodiversity.

The Natural Heritage Reference Manual provides the meaning of “Significant” as determined by the MNR for significant wetlands, significant Areas of Natural and Scientific Interest, significant wildlife habitat, significant woodlands, significant valleylands, and the habitat of threatened and endangered species. Other natural heritage features are to be evaluated by the approval authority and placed in an appropriate land use designation based on a precautionary approach to planning.

Although significant wetlands receive protection by the PPS, other natural heritage features such as significant woodlands, significant valleylands and significant wildlife habitat do not receive the same level of protection. For these features that do not receive protection under the PPS a common consideration when reviewing an Environmental Impact Assessment proposing on-going development in and around a natural heritage feature is the level of development that can be approved while ensuring that long term sustainability of a natural heritage feature and the importance of creating ecological linkages. It is important to apply an overall holistic approach to preparing and reviewing EIAs to understand the overall intention for any development in and adjacent to natural heritage features in the long term. The preparation of watershed and sub-watershed plans assist with achieving this level of long range planning. In addition, policies should be established that support the PPS for requiring EIAs on planning applications within and adjacent to natural heritage features and components of the natural heritage system.

The outcome of this study has made it possible to make the following recommendations on how the important natural features and functions in the Essex region can be protected for future generations. All new development should be directed away from significant natural heritage features and high priorities linkages and restoration sites to more appropriate locations. For those existing natural heritage features that met or exceeded four of the study criteria, these sites should be placed into a designation which does not allow any development or site alteration. The map on the following page depicts these areas. The prioritization of existing natural features map provides a visual representation from a regional analysis where long term protection mechanisms such as designation and securement would provide the greatest benefit based on scientific criteria. The results on this map highlight the importance of hydrologic connectivity and the benefit of clustered natural features for their ecological function.

The actual implications of this recommendation are virtually non-existent as the majority of these sites are already in a similar type of natural heritage designation in existing Official Plans. Natural heritage features such as Big Creek PSW/ ANSI, Cedar Creek PSW/ANSI, Canard River Environmentally Significant Area, Ojibway Prairie and portions of Black Oak Woods ANSIs all have been designated for protection in previous official plans. A large number of these sites have been secured under public ownership as well including Hillman Marsh, large portions of Cedar Creek, Fairplay Woods, Tremblay Beach, Ruscom Shores, LaSalle Woods and Holiday Beach Conservation Area. Further, many of these significant natural heritage features recommended for long term designation are within areas of natural hazards such as floodplains and floodways where development would be restricted, and the mapping provided does not exclude water features. Other significant natural heritage features which have been identified and found to contain significant features should also be considered for appropriate designation within Official Plans.

This study has not attempted to define and map the habitat for threatened and endangered as defining significant habitat specific requirements is under the jurisdiction of the OMNR. Specific locations of endangered or threatened species or mapping of their significant habitat are not available in a form or to the level of detail to add value, and therefore are not specifically included in the prioritization analysis. Therefore, additional natural heritage features beyond those identified in this study may require a protection designation based on the presence and definition of the habitat for threatened and endangered species in consultation with the OMNR.

#### 4.1.2 Restoration Recommendations

The existing Provincial Policy Statement came into effect on March 1, 2005. The PPS provides additional protection for significant natural features and their adjacent lands. Section 2.1.2 of the PPS provides the following policy regarding the protection of biodiversity and importance of the functioning natural heritage system *“the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features”*.

Typically, the goal of natural habitat restoration is to attain a more fully-functioning natural heritage system through the enlargement of core natural areas and connection of these core features utilizing naturally vegetated corridors. Any habitat restoration initiatives should apply the following general guidelines:

- consideration of the landscape as an interconnected system;
- preservation and reestablishment of streamside vegetation;
- enhancement of species and habitat diversity;
- ensuring good genetic diversity;
- utilization of native species;
- working with the site’s natural vegetation and capabilities; and,
- creation of low maintenance, ecologically self-sustaining solutions.

(Catawaqui Region Conservation Authority, 2006, pages 39 and 40)

Restoration projects may also accommodate passive recreational and educational uses such as trails, boardwalks and interpretive panels.

All planning jurisdictions should, in order to meet the intent of the above policy, put in place appropriate policies and zoning to protect high priority restoration opportunities. These high priority restoration opportunities could be defined utilizing an overlay or dual designation type of approach which recognizes existing land use however identifies the long term intention of natural heritage restoration on those sites.

There is recognition of the vast amount of productive agricultural land in the Essex region. These lands are considered to be Class 1 through 3 quality lands as defined by the PPS throughout the entire region. The Natural Heritage Reference Manual recommends an overlay approach to address a continuation of existing agricultural practices along with the identification of those priority areas for natural heritage system restoration. *“It is a common and often appropriate municipal practice to use an overlay approach in the official plan to identify natural heritage*

*systems, features and areas within Ontario’s agricultural system designated as prime agricultural lands.”*

The Natural Heritage Reference Manual also recommends the dual designation approach for implementing the high priority restoration opportunities/agricultural uses designation and policies. Under this type of approach, some permitted uses may be restricted in areas where the natural heritage component of the designation applies.

Implementation of the natural heritage system can also be accomplished during the *Planning Act* application pre-consultation and review/response phases of proposed development processes. Should there be a *Planning Act* application proposed for those lands identified as high priority restoration area, planning jurisdictions should require the proponent to demonstrate how they have achieved the intent of PPS 2.1.2 and the Essex Region Natural Heritage System Strategy. In many cases these high priority restoration areas are adjacent lands to significant natural heritage features defined by the PPS and would require the preparation of an Environmental Impact Assessment (EIA) and ultimately the dedication lands for buffering the natural feature as mitigation in order to receive planning approvals. This requirement for buffering may also fulfill the intent of PPS 2.1.2 and this Strategy.

#### **4.1.3 Mitigation Techniques**

The intent of mitigation techniques is to avoid negative impacts on natural heritage features resulting from a proposed development. The implementation of mitigation techniques as a result of the approval of a planning application rests with the proponent. The impacts associated with different types of development are quite varied, however some common mitigation techniques include fencing, naturalized buffering and the use of stormwater swales to redirect run-off away from natural features. The Natural Heritage Reference Manual, prepared by the Ontario Ministry of Natural Resources, provides substantial detail on potential impacts due to development and guidelines for mitigation in page 129, Section 13.5.4.

#### **4.1.4 Monitoring**

Monitoring is an effective tool to let Administration, Council and the public know in a credible manner, if and how the established goals and objectives of a particular undertaking have been met. The successful monitoring of different objectives will require the tracking of information for each objective separately as indicated in the below concepts.

All planning jurisdictions and ERCA could utilize the following concepts for monitoring, which include:

1. maintain a region wide database to monitor the status (designation and ownership) of all natural areas within the municipal limits;
2. establish a region wide database to monitor the implementation of those areas targeted for restoration and protection which are part of the “natural heritage system” and are viable linkages and corridors;

3. maintain a database (information about stewardship activities) throughout the region in order to document activities which change the landscape of the natural environment. (World Wildlife Fund, 2000, page 2)

#### ***4.1.5 Rehabilitation of Core Natural Heritage Features***

In areas such as the Essex region with a limited amount of natural cover, protecting existing core natural features through appropriate designations is a priority. In addition to this, rehabilitation priorities and policies may be necessary in Official Plans to recognize and encourage the rehabilitation of degraded features which may be impacted by natural or anthropogenic influences however, are still in prime areas to contribute to the natural heritage system once functioning at a greater natural heritage capacity.

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## 6 APPENDIX – GIS TECHNICAL INFORMATION

Table 1 – Natural Heritage System GIS Input Datasets				
Dataset	Description	Geographic Extent	Source	Vintage
<b>Aerial Photography</b>				
2008 Mainland	10cm colour digital aerial photography of the City of Windsor and the County of Essex. Used as the base to which data was corrected within its extent unless otherwise noted.	Windsor, Essex County	City of Windsor/ County of Essex	2008
2006 Pelee	30cm colour digital aerial photo of the Township of Pelee. SWOOP product. Used as the base to which data was corrected within its extent unless otherwise noted.	Township of Pelee	OMNR/ Township of Pelee	2006
<b>Floodplain Mapping</b>				
Limit of Regulated Area	Limit of regulated area boundary as defined by ERCA.	ERCA Watershed	ERCA	2010
1:100 year Flood Line	1:100 year flood line within ERCA watershed.	ERCA Watershed	ERCA	2000
Maximum Observed Flooding	Maximum observed flooding.	Study Area (Windsor, Essex County, Pelee Island)	ERCA/LTVCA	2000
<b>Watercourses</b>				
ERCA Drains	Represents stream centrelines in the ERCA watershed.	ERCA Watershed	ERCA, based on 2004 aerial photos	2005
LTVCA Drains	Represents stream centrelines in the Lower Thames Region within the County of Essex.	LTVCA watershed within Essex County	Leamington, Lakeshore, ERCA	2009
<b>Natural Areas</b>				
Wetlands	Provincially Significant Wetland (PSW, aka Wetland Unit) boundaries	Study Area (Windsor, Essex County, Pelee Island)	OMNR	2012
Woodlands	Represents woodlands (and other types of natural areas in limited areas)	Study Area (Windsor, Essex County, Pelee Island)	ERCA	2008
Plantations	Best available data for plantations. Generally ERCA plantations over 5 ac in size (2000-2010 inclusive). Also some tallgrass prairie plantations and MNR plantations.	ERCA Watershed	ERCA	2010
<b>Natural Heritage Designations</b>				
Areas of Natural and Scientific Interest	Areas of Natural and Scientific Interest (ANSI) boundaries.	Study Area (Windsor, Essex County, Pelee Island)	OMNR	2010
Significant Valleyland	Significant Valleyland (SVL) boundaries.	ERCA Watershed	ERCA	2004
Environmentally Significant Area	Environmentally Significant Area (ESA) boundaries.	ERCA Watershed	ERCA	2006
<b>Original BCS Data</b>				
Plantations	Plantation data from 2002 study that was verified and updated with airphotography.	ERCA Watershed	ERCA	2002/2008
Restoration Opps	Restoration opportunities data from 2002 study that was verified and updated with airphotography.	ERCA Watershed	ERCA	2002/2008

Table 1 – Natural Heritage System GIS Input Datasets				
Dataset	Description	Geographic Extent	Source	Vintage
<b>Other</b>				
NCC Priority Areas	Priority areas as identified by the Nature Conservancy of Canada (NCC).	ERCA Watershed	NCC	2009
Public Lands	Land identified as held in public ownership. Derivative product compiled by ERCA.	Study Area (Windsor, Essex County, Pelee Island)	ERCA	2010
Normalized Difference Vegetation Index	Normalized Difference Vegetation Index (NDVI) data and analysis was produced from 2006 satellite imagery and compiled by ERCA.	ERCA Watershed	ERCA	2006
Physiography	Major physiographic landforms of southern Ontario. The mapping is at a scale of 1:600,000.	Study Area (Windsor, Essex County, Pelee Island)	OGS (Chapman & Putnam, 1984)	1984
<b>Reporting Areas</b>				
Subwatersheds	Used to define subwatershed reporting areas.	Study Area (Windsor, Essex County, Pelee Island)	ERCA	2008
Municipal Boundaries	Used to define municipal reporting areas.	Study Area (Windsor, Essex County, Pelee Island)	ERCA/County of Essex	2008
<b>Exclusion Areas</b>				
Urban Areas	Built-up areas to be excluded from existing natural areas or potential restoration opportunities. SOLRIS product based on 2000 aerial photography.	Study Area (Windsor, Essex County, Pelee Island)	OMNR	2000
Transportation	Buffer of transportation centerlines including streets, railways, and trails which would act as an exclusion area for existing natural areas or potential restoration opportunities.	Study Area (Windsor, Essex County, Pelee Island)	ERCA/various local municipal sources	2008
<b>Data Sources:</b> ERCA - Essex Region Conservation Authority LTVCA - Lower Thames Valley Conservation Authority NCC - Nature Conservancy of Canada OGS - Ontario Geological Survey OMNR - Ontario Ministry of Natural Resources SOLRIS – Southern Ontario Land Resource Information System				

Table 2 – Criteria for Prioritization of Existing Natural Features				
Criteria Group	Feature	Criteria Type	Definition	
Existing Natural Features	1	Wetland	Presence/absence	Select (as per Dan Lebedyk) PSW features.
	1	Terrestrial Natural Feature	Presence/absence	The greatest extent of woodlands/prairies/thickets, CHNS sites, valley lands, or plantations. Includes all features, despite size or type. Excludes wetland areas.
Natural Heritage Designations	2	ANSI	Presence/absence	Areas of Natural and Scientific Interest as defined by the OMNR
	3	ESA <sup>1</sup>	Presence/absence	Environmentally Significant Areas as defined by ERCA
	4	Valleyland <sup>1</sup>	Presence/absence	ERCA significant valley lands
Quantitative Significance	5	Significant Woodland	Presence/absence	Woodlands > 2ha in size. Includes swamps
	6	Interior Forest	Presence/absence	Woodlands containing a 100m interior buffer feature, no matter the size. Includes swamps
	7	NDVI	Presence/absence	200m riparian buffers over a benchmark NDVI value. Clipped to existing natural areas.
Supplemental Criteria within Existing Natural Areas	8	Favourable Physiography	Presence/absence	Select physiography (Sand Plains, Beaches and Shorecliffs, Limestone Plains) as identified by OGS. Clipped to existing natural areas
	9	Floodplain <sup>2</sup>	Presence/absence	Greatest extent of 1:100yr Flood Line OR Max Observed Flood Line. Clipped to existing natural areas.
	10	Public Land	Presence/absence	Parcels that are publically owned (Federal, Provincial, or Local). Clipped to existing natural areas.
	11	NCC Priority Area	Presence/absence	Select NCC priority parcels (any level including already protected areas). Clipped to existing natural areas.
<sup>1</sup> ERCA Region only. Do not have data for LTVCA Region				
<sup>2</sup> Using Max Observed Flood Line for LTVCA as they do not have 1:100yr Flood Line data				

Table 3 – Criteria for Prioritization of Restoration Opportunities				
Criteria Group	Feature	Criteria Type	Buffer Distance (m)	Definition
Restoration Opportunities	Riparian Buffer	Proximity	30	30m buffer of 1st to 3rd order streams. Excludes anthropogenic areas, existing natural areas, and proposed wetland buffers.
	Wetland Buffer	Proximity	240	240m buffer of wetland features. Excludes anthropogenic areas and existing natural areas
	Other Restoration Opportunity	Presence/absence		Areas of restoration opportunities as delineated manually by technician. Excludes anthropogenic areas, existing natural areas, proposed wetland buffers, and proposed riparian buffers
Supplemental Criteria within Restoration Opportunities	Favourable Physiography	Presence/absence		Select physiography (Sand Plains, Beaches and Shorecliffs, Limestone Plains) as identified by OGS. Clipped to restoration opportunities buffer/areas
	Floodplain <sup>1</sup>	Presence/absence		Greatest extent of 1:100yr Flood Line OR Max Observed Flood Line. Clipped to restoration opportunities buffer/areas
	Public Land	Presence/absence		Parcels that are publically owned (Federal, Provincial, or Local). Clipped to restoration opportunities buffer/areas
	NCC Priority Area	Presence/absence		Select NCC priority parcels (any level including already protected areas). Clipped to restoration opportunities buffer/areas

<sup>1</sup> Using Max Observed Flood Line for LTVCA as they do not have 1:100yr Flood Line data

Table 4 – Natural Heritage System GIS Output Datasets				
Output	Feature	Description	Vintage	Source
<b>Primary Outputs</b>				
Existing Natural Feature	Wetland - Open Water	Select <sup>1</sup> PSW wetland features defined as "Open Water"	2010	OMNR
	Wetland - Marsh	Select <sup>1</sup> PSW wetland features defined as "Marsh"	2010	OMNR
	Wetland - Swamp	Select <sub>1</sub> PSW wetland features defined as "Swamp"	2010	OMNR
	Terrestrial – Forest	Upland Woodland <sup>2</sup> of any size. Does not include swamps	2008	ERCA
	Terrestrial - Other	Other natural terrestrial feature of any size (eg thicket or prairie). Includes the greatest extent of Natural Areas, Valleylands, Plantations (all types), and CHNS datasets. Excludes features within wetland and woodland datasets.	2008	ERCA
Restoration Opportunity	Wetland Buffer	Area of restoration opportunity as delineated by a 240m buffer of wetland features. Excludes anthropogenic areas and existing natural areas	2010	ERCA
	Riparian Buffer	Area of restoration opportunity as delineated by a 30m buffer of 1st to 3rd order streams <sup>3</sup> . Excludes anthropogenic areas, existing natural areas, and proposed wetland buffers.	2005	ERCA
	Other	Area of restoration opportunity as delineated manually by aerial photography interpretation. Excludes anthropogenic areas, existing natural areas, proposed wetland buffers, and proposed riparian buffers.	2008	ERCA
<b>Supplementary Outputs</b>				
Supplementary Existing Natural Feature	Plantation	Best available data for plantation projects. These are generally, but not exclusively, ERCA plantations over 5 ac in size (2000-2010 inclusive). Includes older data from 2002 study that was verified by 2008 airphotos. For the purposes of this project, all treed plantations were considered, and included as, woodlands. Plantations identified as tallgrass prairie by Dan Lebedyk (ERCA) were included here, but not included or considered as woodlands.	2010	ERCA
	Tallgrass Prairie	Existing communities of tallgrass prairie. Includes both remnant communities from CNHS data and plantations.	2010	ERCA
	Stream	Natural watercourse centerline or open municipal drain centerline	2005	ERCA
	100ha Woodland Complex	Complex of woodland <sup>4</sup> features whose total area equals or is greater than 100ha. Individual features in the complex must be within 20m of each other (ie gaps allowed) and any portion of a feature within the complex must be 500m in width (ie 250m interior forest present).	various	ERCA/OMNR
	100m Interior Woodland	Area of interior woodland identified as greater than 100m from any edge of an individual woodland feature. No allowance for gaps.	various	ERCA/OMNR
	200m Interior Woodland	Area of interior woodland identified as greater than 200m from any edge of an individual woodland feature. No allowance for gaps.	various	ERCA/OMNR

Table 4 – Natural Heritage System GIS Output Datasets				
Output	Feature	Description	Vintage	Source
<b>Intermediate Outputs</b>				
Exclusion Mask	Anthropogenic	Merge of defined Transportation and Urban Masks		
	Existing Natural Area	The greatest extent of Open Water (as defined by the OMNR Waterbody Segment dataset), Natural Areas, Plantations (all types), Valleylands, Wetland or CHNS datasets.		
	Special Exclusion Mask - Riparian	Riparian Buffer areas identified as not suitable for restoration by aerial photo interpretation		
	Special Exclusion Mask - Wetland	Wetland Buffer areas identified as not suitable for restoration by aerial photo interpretation		
	Special Exclusion Mask - Tallgrass Prairie	Tallgrass Prairie Buffer areas identified as not suitable for restoration by aerial photo interpretation		
	Transportation	Buffered Trails, Roads, and Railways data.	various	Municipalities/ ERCA
	Urban	SOLRIS features identified as "Built-Up Impervious" (vector) or "Extraction" (raster).	2000	OMNR
<sup>1</sup> Select PSW as per Dan Lebedyk (ERCA) <sup>2</sup> Natural areas with tree cover as delineated by aerial photography interpretation. <sup>3</sup> A stream is defined as a natural watercourse centerline or open municipal drain centerline. <sup>4</sup> A woodland is defined as a feature identified as a forest, swamp or treed plantation.				