Essex Region Conservation

the place for life

Holiday Beach Conservation Area

Management Plan

Essex Region Conservation Authority

sustaining the place for life

Copies of this report may be obtained from:

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Holiday Beach Conservation Area Management Plan

1.0 Introduction

In the heart of Carolinian Canada, surrounded by lush wetlands and sandy beach, lies Holiday Beach Conservation Area (HBCA). This Conservation Area offers both serviced and un-serviced campsites, new accessible showers and washrooms, large shady picnic areas, a playground, nature trails, a boardwalk, and a three storey observation tower. This park is world renowned for its fall bird watching opportunities and has received international recognition as a Global Important Bird Area. The potential recreational and educational opportunities associated with Holiday Beach are exceptional given the natural features this park also protects. The intent of this management plan is to balance these assets through the implementation of the goals and recommendations set out in this document.

1.1 Context: Conservation Area Land Management Framework

The Essex Region Conservation Authority (ERCA) uses the Conservation Lands Management Framework as the guiding document when conducting management planning activities. The goal of this document is to enhance ecological values and the amount and quality of natural habitat in this region while, at the same time, meeting our community's recreational, social and cultural needs. With this in mind, the overarching values that are incorporated into this management plan are as follows:

- Protect and conserve ecological values
- Provide opportunities for high quality visitor experiences
- Provide opportunities for residents and visitors to increase their knowledge and appreciation of Essex Region's natural and cultural heritage

These statements form the foundation or purpose of our Conservation Areas and are used to define the goals for this management plan.

1.2 Plan Purpose and Goals

The purpose of the Holiday Beach Management Plan is to protect an outstanding natural landscape while providing compatible recreational and educational opportunities.

Goal 1: Protect and conserve ecological values

ERCA will protect, maintain and enhance significant natural heritage features within Holiday Beach. Using innovative science, ERCA will create opportunities to demonstrate Holiday Beach as a showcase conservation area.

Goal 2: Provide visitor opportunities for high quality recreational experiences

HBCA recreational opportunities will be linked to the natural environment, based on the environment's ability to sustain the activity and demand for the program.

Goal 3: Provide opportunities to increase knowledge and appreciation of Essex Region's natural and cultural values

ERCA will provide environmentally based educational opportunities that would lead to a more informed and eco-conscious public that values our natural environment.

1.3 Strategic Direction

In 2011, the Conservation Authority initiated a review of its strategic direction and hence developed a new strategic plan that expires in 2016. From this document, there were a number of important corporate goals identified. Applicable goals associated with this management plan would include:

- **Revitalize Conservation Areas** - To enhance appreciation of natural and cultural heritage, promote eco-tourism and education, and the protection of nature.
- **Increasing Natural Area Coverage** - To protect and increase natural areas through property purchase, management, land use planning, habitat restoration, and other initiatives.
- **Linking People** - To create a regional trail system in partnership with municipalities and others for a healthier environment and healthier lifestyles.
- **Rejuvenate Environmental Education** - Deliver innovative curriculum-linked outdoor education programs and experiences that promote lifelong learning and a never-ending appreciation of our natural and cultural heritage.
- **Promote a 'Green' Culture** - Demonstrate green energy and water conservation alternatives through building design and innovative community planning towards sustainable communities.
- **Improving Water Quality** - Increase resources for water quality monitoring, plans and projects to improve and protect our region's water quality, near shores, and watersheds.

2.0 Holiday Beach Conservation Area Context

2.1 Physical Conditions

2.1.1 Climate

The Windsor-Essex climate is the warmest in all of Ontario. This region has the most frost free days (170-190 days) and a shorter duration of snow cover. This has an effect upon the type of vegetation and corresponding wildlife found in Holiday Beach. Because of its location adjacent to Lake Erie, temperatures in spring and fall are moderated. In spring, the lake cools air temperatures, while in fall; temperatures are warmer than further inland. This lake effect has an influence on park vegetation by delaying the growing season in spring and extending it in fall.

Table 1: Climate norms for the Windsor-Essex Region.

Month	Daily Average (°C)	Daily Maximum (°C)	Daily Minimum (°C)	Rainfall (mm)	Snowfall (cm)	Total Precipitation (mm)
January	-4.5	-0.9	-8.1	28.7	35	57.6
February	-3.2	0.6	-7	33.3	27.5	57.3
March	2	6.4	-2.4	55.6	20.6	75
April	8.2	13.4	3	80.7	4.3	85.1
May	14.9	20.5	9.3	80.7	0	80.7
June	20.1	25.4	14.7	89.9	0	89.9
July	22.7	27.9	17.4	81.8	0	81.8
August	21.6	26.6	16.6	79.7	0	79.7
September	17.4	22.5	12.3	96.2	0	96.2
October	11	15.6	6.2	64.1	0.7	64.8
November	4.6	8.3	0.9	67.3	8.3	75.5
December	-1.5	1.9	-4.8	47.3	30.1	74.7

2.1.2 Geology

The bedrock of the Essex Region and Holiday Beach area is composed of limestone from the Devonian age within the Paleozoic era. The Paleozoic era began 570 000 000 years

ago. It consists of six periods which, from oldest to most recent are: Cambrian, Ordovician, Silurian, Devonian, Carboniferous and Permian.

This Devonian limestone bedrock was created about 416.0 ± 2.8 million years ago. Limestone is a sedimentary rock that was formed by the deposition of material at the Earth's surface and within bodies of water. Most types of limestone are formed from the calcareous skeletons of marine organisms such as corals, mollusks, and foraminifera.

The bedrock in this area is between 10 – 20 metres under soils. The only occurrences of exposed or near exposed bedrock in the Essex Region are further inland towards the centre of the Town of Amherstburg and on Pelee Island.

2.1.3 Soils

The Essex Region is predominantly smooth clay plain with the occasional glacial feature. Glacial lakes that used to dominate this area, as the glaciers retreated had influenced the soils of this area. The last of these lakes to form was Lake Warren, which existed about 12, 000 and 13,000 years ago. It was deeper than the current Lake Erie, so its shoreline existed about eight miles (13 km) inland from the modern one. As a result, the current clay plains that dominate this area are lake bottom deposits from this same lake.

Holiday Beach Conservation Area has a number of distinct pre-settlement soil types that have since had anthropologic influences. Dominant soil types at Holiday Beach include Perth Clay, Brookston Clay, Eastport Sand, Marsh/Bottom Land, and imported fill.

- **Perth Clay** has imperfect natural drainage. The top 6 inches of soil are dark grey clay loam followed by 10 inches of mottled yellow brown clay loam. The two soil horizons below are brown and then heavy grey clay, both with a plastic consistency.
- **Brookston Clay** has high organic surface material but has poor drainage characteristics. These soils begin as a dark grey brown clay and transition into more ridged or plastic grey clay as you transition through the soil horizons.
- **Eastport Sand** was formed as a beach dune along the shores of Lake Erie is a very droughty soil with little fertility. The soil is a mix of course grey and fine gravel along with course yellowish brown sand.
- **Marsh/Bottom Land soils** are water covered with a large organic layer typically ranging from 15-30 inches followed by the same bluish grey plastic clay that is the parent material underlying the entire park.

When Holiday Beach was converted from a farm field and wetland into a provincial park in the 1950's it underwent large changes – including the formation of "new" land. Between

1959 and 1962, approximately 10 acres of marsh was filled in to create a large parking lot and fishing pond.

Figure 1: Holiday Beach wetland in-filling (1959-1962).

2.1.4 Topography

Holiday Beach has a flat terrain with a gradual slope towards Big Creek Marsh or Lake Erie. The highest points in the park include the park entrance and the northern end of the picnic area. The difference in height from bodies of water to high points is dependent upon fluctuating water levels, but would be less than 2 metres.

2.1.5 Hydrology

Because of the elevated sand ridge at the shoreline of Lake Erie, the majority of Holiday Beach drains into the Big Creek Watershed, which outlets into Lake Erie approximately 350 metres from the park property line. The area of Big Creek watershed is 76.39 km2, draining the southern half of the Town of Amherstburg. A private hunt club manages water levels in lower Big Creek watershed area by controlling the outlet of Big Creek.

Holiday Beach's total land holdings are 526.6 acres. Of this area, 223.2 acres (42.2 %) are considered wetland and are either seasonally or permanently under water.

2.2 Natural Heritage Inventory and Evaluation

Since Holiday Beach is over 500 acres and has a variety of habitats and vegetation patterns the site was divided into 5 sections for inventorying. The natural heritage inventory completed includes a site description, an evaluation of natural heritage features (i.e. Provincial Significant Wetland, Diversity, etc.), a floral inventory and faunal inventory are included. A map of the sites and a general site description is provided below. The complete inventory for each site is provided in Appendix A: Holiday Beach Natural Heritage Inventory.

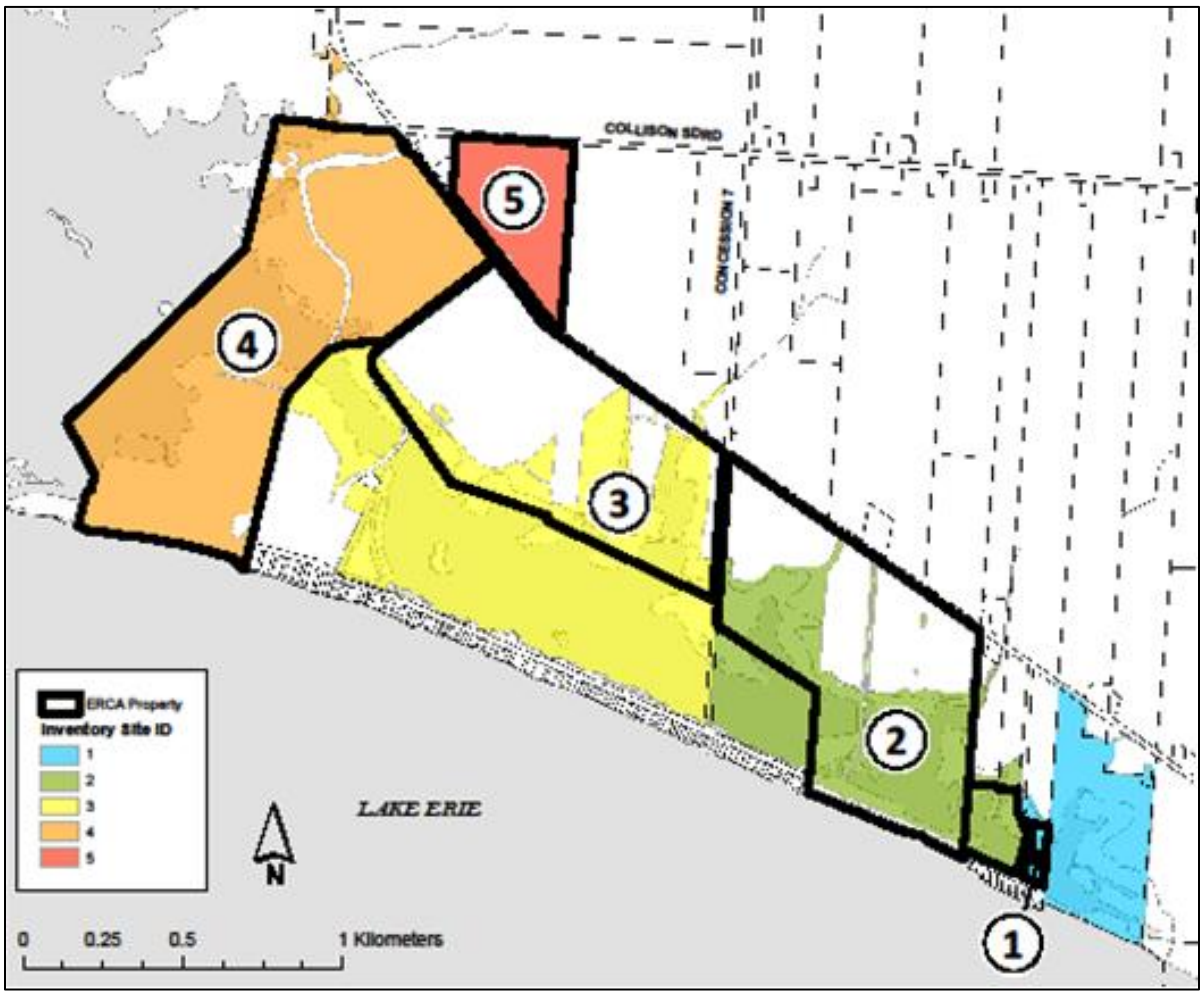


Figure 2: Holiday Beach natural heritage inventory areas.

2.2.1 Natural Heritage Evaluation - Site #1

Study Site #1 is the easternmost portion of the Big Creek Marsh wetlands. It is bounded on the south by Lake Erie, on the east by a vineyard, on the north by County Road 50 and home grounds, and on the west by a mix of farmland, home grounds and Levergood Road.

The site is generally low with a slight rise to the north. The shoreline is a sandy barrier beach (more correctly a tombolo) with a low wooded dune. Wetlands lie to the north of the beach. A small watercourse carries water from agricultural fields north of County Road 50 into the wetlands through a broad shallow channel.

Vegetation community composition is 64% terrestrial and 36% wetland/aquatic with a total of 11 vegetation types documented for the site. The uplands support 4 woody plant communities. The wetlands support 7 herbaceous and 2 woody plant communities. Not all of these communities are well defined. Ash swamp was formerly an important component.

Open water is confined to the areas closest to the lake and to two constructed canals located in the southeast of the site. The sidecast from these two canals has been placed on a peninsula between them.

Former agricultural land on the higher ground now supports thickets of hawthorn and dogwood with emergent trees of Eastern Cottonwood, Manitoba Maple and Black Walnut. A mature forest dominated by Hackberry occupies the centre of the site. Ash was until recently a codominant of this forest. There is little understorey; the herbaceous layer is composed of a dense growth of Clustered Snakeroot.

Soils are classified as Perth Clay with a small portion classified as Marsh in the extreme western portion of the site. The beach is classified as Eastport Sand

2.2.2 Natural Heritage Evaluation - Site #2

Site #2 is part of the eastern portion of the Big Creek Marsh wetlands and is known as the Holiday Beach Conservation Area East Beach property. It is bounded on the south by Lake Erie and residential shoreline development associated with the Lake Erie Country Club. On the east it is bounded by Levergood Road and Site #1 and by agricultural lands on the north. Finally, the Lake Erie Country Club portion of the Big Creek Marsh establishes the west portion of this area.

The shoreline is a sandy barrier beach with a treed shoreline. Wetlands lie to the north of the beach. Water flows into Site #2 from the French Drain and the Jerome Degryse Drain from the north and from Site #1 from the east. Water flows from Site #2 to Site #3 to the west through the marsh wetlands.

Vegetation community composition is 79% wetland/aquatic and 21% terrestrial with a total of 23 vegetation types documented for the site. The uplands support 6 woody and 1 herbaceous plant communities. The wetlands support 11 herbaceous and 5 woody plant communities.

Wetland communities are generally composed of shallow aquatic Duckweed and Water Lilies with emergent cattail and Phragmites marshes, as well as large areas of Reed-canary Grass meadow marsh.

Upland communities are generally composed of shrub thicket in the northern part of the site and treed shoreline along the barrier beach in the southern portion of the site.

Soils are classified as Perth Clay in the northern portion of the site, Marsh in the southern portion of the site, and Eastport Sand along the beach in the southern portion of the site.

2.2.3 Natural Heritage Evaluation - Site #3

Site #3 is part of the eastern portion of the Big Creek Marsh wetlands, and is also known as the Lake Erie Country Club and the Holiday Beach Conservation Area waterfowl sanctuary properties. It is bounded on the south by residential shoreline development associated with the Lake Erie Country Club and on the east by marshes associated with Site #2. The north limits are set by the Essex County Demonstration Farm and County Road 50, and the west by site #4 (HBCA).

The shoreline is almost entirely developed by residential properties associated with the Lake Erie Country Club. Wetlands lie to the north of this development. Water flows into Site #3 from the Collison Sideroad Drain from the north and from Site #2 from the east. Water flows from Site #3 to Site #4 (Holiday Beach Conservation Area) to the west through the marsh wetlands.

Vegetation community composition is 77% wetland/aquatic and 23% terrestrial with a total of 29 vegetation types documented for the site. The uplands support 8 woody and 1 herbaceous plant communities. The wetlands support 15 herbaceous and 5 woody plant communities.

Wetland communities are generally composed of shallow aquatic Duckweed and Water Lilies, with emergent cattail and Phragmites marsh, and several large stands of water willow. Upland communities are generally composed of shrub thicket in the northern part of the site and oak-hickory-hackberry forest in the western portion of the site.

Soils are classified as Perth Clay and Marsh in the northern portion of the site, Bottom Land and Brookston Clay in the extreme western portion of the site, and Eastport Sand (Es) along the beach in the southern portion of the site.

2.2.4 Natural Heritage Evaluation - Site #4

Site #4 is known as Holiday Beach Conservation Area. It is bounded on the south by Lake Erie, on the east by Site #3 (Lake Erie Country Club) and the Essex County Demonstration Farm, on the north by County Road 50, and on the west by Site #6 (the main Big Creek Marsh basin).

The shoreline is a sand beach with a tree and shrub shoreline. A large successional thicket/forest contains an extensive walking trail. The site also consists of large areas utilized for public camping and picnicking. Water flows into Site #4 from Site #3 on the east side of the site, through the marsh wetlands.

Vegetation community composition is 68% terrestrial and 32% wetland/aquatic with a total of 28 vegetation types documented for the site. The uplands support 15 woody and 2 herbaceous plant communities. The wetlands support 10 herbaceous and 1 woody plant communities.

Wetland communities are generally composed of emergent cattail and Phragmites marsh and portions of the American Lotus open aquatic community, in the western portion of the site.

Upland communities are generally composed of shrub thickets and Carolinian forests in the central portion of the site and shrub and treed shoreline along the beach in the southern part of the site.

Soils are classified as Perth Clay and Bottom Land in the northern portion of the site, Marsh in the southern portion of the site, and Eastport Sand along the beach also in the southern portion of the site.

2.2.5 Natural Heritage Evaluation - Site #5

Site #5 is part of the Holiday Beach Conservation Area and features a coniferous plantation as well as a Heritage Forest, which is planted in native deciduous trees. It is bounded on the south side by County Road 50, on the north side by Collison Sideroad, on the east side by agricultural land and on the west side by a single-family residential lot.

Vegetation community composition is 100% terrestrial with a total of 7 vegetation types documented for the site (6 woody and 1 herbaceous plant communities).

Upland communities generally consist of mature white pine and white spruce plantations, with little understory vegetation, and a deciduous forest plantation in the eastern part of the site.

2.3 Operational Inventory and Evaluation

2.3.1 Infrastructure

Holiday Beach Conservation Area was acquired and constructed by the Province of Ontario in the mid-1950s and operated as a provincial park for approximately 30 years. In 1985, operations of the park were handed over to ERCA. The initial lease with the Ministry of Natural Resources (MNR) began in 1987. However, in 2001 the lease was renewed for an additional 30 years and is scheduled for renewal in 2031. In the mid-1990s, the Conservation Authority recognized that much of the infrastructure at Holiday Beach was dated and in need of replacement. Since this time some infrastructure items have been replaced, but it has not been until recently that an emphasis on infrastructure upgrades has taken place due to the severe deterioration of items not yet replaced. A numbered list of infrastructure items is provided below and corresponds to Figure 3.

Table 2: Holiday Beach key infrastructure (corresponds with Figure 3).

Number in Figure 3	Infrastructure	Year Built
1	Gatehouse	1955
2	Paved Roads A	2011
3	Paved Roads B	1955
4	Gravel Roads and Parking lots	1955
5	Marshview Campground accessible washroom and showering facilities	2006

6	Marshview Campground - 15 amp electrical service and municipal drinking water for 42 campsites	1988
7	Marshview Campground – 50 amp electrical service and municipal drinking water for 35 campsites	2007
8	Sanitary sewer system connected to municipal waste treatment plant	2002
9	Parkview Campground accessible washroom and showering facilities	2008
10	Parkview Campground – 34 un-serviced tent sites	1955
11	Play ground	Unknown
12	Beach Washroom #1 – closed to public, not functioning	1955
13	Beach Washroom #2– closed to public, not functioning	1955
14	Beach Washroom #3– closed to public, not functioning	1955
15	Small Rental House	1955
16	Equipment workshop	1955
17	Storage Shed	1955
18	Concrete Slab (former Pavilion)	1955
19	HBMO Building (former park store)	1955
20	Portable Classroom	1995
21	Viewing Tower	1988
22	Trail system - gravel	1990
23	Trail system – boardwalk	2000
24	Municipal Water System (water taps shown)	2003
25	Electrical Transmission System	2003

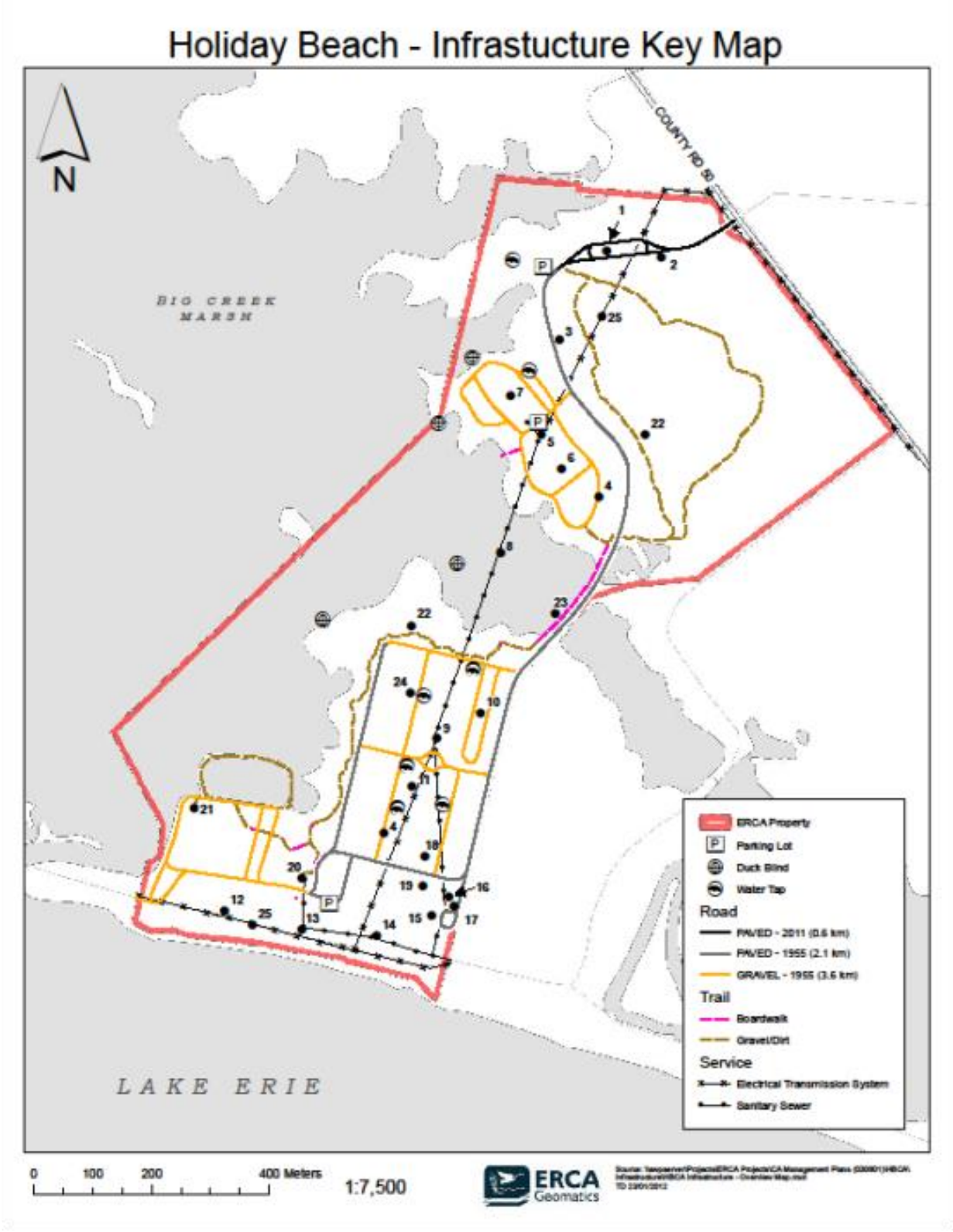


Figure 3: Holiday Beach Key Infrastructure Map (corresponds with Table 2).

2.3.2 Productivity and/or Capacity Issues

While both campgrounds at Holiday Beach were opened, they had a large proportion of both serviced and basic campsite vacancies both mid-week and on weekends. The campground was only full on popular camping weekends –typically long weekends mid-summer. Similarly, the majority of our day-use visitation is summer weekend related. In 2010, Parkview campground was closed until the management plan was developed and option presented to the Board of Directors as the costs to operate Parkview Campground were escalating while the use of this campground was continually decreasing.

While both campgrounds were operating, Holiday Beach's camping visitation capacity has not reached 50 % during seasonal summer peak and had room to accommodate far more visitation than it currently did.

Holiday Beach was underutilized for a number of reasons including a lack of modern, well thought out infrastructure that meets the needs of the public, Lake Erie water quality issues, little or no advertising, no structured programming, poor public perception, a change in public recreational interests and competition.

2.3.3 Comparison/benchmarks to Industry

The closest comparison to Holiday Beach would be Wheatley Provincial Park. They both reside on Lake Erie and are operated by government organizations. The two critical differences between these two sites are that Wheatley Provincial Park is well financed, has functional infrastructure, a relatively clean beach and features superior campground design. Wheatley Provincial Park has large, well laid-out campsites that meet today's expectations for camping and can accommodate most types of equipment.

To try to understand our decline in attendance, camping and day-use statistics were obtained from every Lake Erie Provincial Park for the past 12 years to see if other campgrounds were experiencing similar attendance trends (Figure 4.1). Of these nine Provincial Parks, three have shown increases, two are static and four have lower attendance. It should also be noted that it is Wheatley Provincial Park that showed the greatest decrease (11%) and is also the park that would draw from the same local population. This suggests that external factors may be part of the reason that Holiday Beach camping numbers were so low.

Table 3: Lake Erie Provincial Park visitor statistics.

PARK	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
John E Pearce												
Total Visitors	13,717	10,460	12,223	9,452	9,083	13,948	11,467	17,431	8,577	16,580	17,428	15,380
Day Use Visitors	13,717	10,460	12,223	9,452	9,083	13,948	11,467	17,431	8,577	16,580	17,428	15,380
Campers	-	-	-	-	-	-	-	-	-	-	-	-
Summer Occupancy	-	-	-	-	-	-	-	-	-	-	-	-
Long Point												
Total Visitors	104,740	117,839	125,161	110,949	114,514	126,926	121,391	132,014	123,639	123,718	131,152	133,204
Day Use Visitors	34,916	46,785	54,443	41,397	42,546	51,394	47,007	54,870	48,711	45,322	52,480	53,260
Campers	21,039	21,039	21,039	21,039	21,039	23,604	23,245	24,108	23,415	24,499	24,585	24,983
Summer Occupancy	82%	83%	85%	83%	83%	87%	88%	89%	89%	87%	88%	89%
Port Bruce												
Total Visitors	12,335	17,194	17,431	12,688	8,944	14,935	15,499	14,415	10,156	7,848	9,833	10,873
Day Use Visitors	12,335	17,194	17,431	12,688	8,944	14,935	15,499	14,415	10,156	7,848	9,833	10,873
Campers	-	-	-	-	-	-	-	-	-	-	-	-
Summer Occupancy	-	-	-	-	-	-	-	-	-	-	-	-
Port Burwell												
Total Visitors	85,530	104,318	110,584	104,526	106,399	117,888	113,775	120,909	113,970	112,901	116,470	115,421
Day Use Visitors	21,514	36,608	40,311	33,731	32,756	40,882	36,802	41,113	36,122	36,261	41,954	41,242
Campers	14,887	19,346	15,971	16,090	16,737	9,951	16,475	17,225	16,793	16,551	16,173	16,125
Summer Occupancy	79%	83%	83%	84%	80%	84%	85%	84%	85%	81%	82%	81%
Rock Point												
Total Visitors	65,392	75,054	74,178	70,035	73,700	77,297	72,073	74,406	71,013	72,431	66,238	69,681
Day Use Visitors	13,342	18,680	19,798	12,197	12,010	14,213	12,541	13,298	11,710	11,310	11,561	12,157
Campers	13,924	13,924	13,924	13,924	13,924	13,924	13,924	13,924	13,924	19,303	17,395	18,286
Summer Occupancy	83%	86%	83%	78%	80%	81%	80%	78%	81%	80%	73%	76%
Rondeau												
Total Visitors	159,453	169,944	162,688	163,362	153,685	160,724	150,520	177,717	163,275	168,652	168,758	159,311
Day Use Visitors	95,583	104,999	102,122	94,078	85,216	88,719	80,162	107,393	95,115	95,396	96,687	91,069
Campers	18,249	25,978	16,369	18,725	18,505	19,461	18,527	18,499	18,351	19,755	19,444	18,429
Summer Occupancy	68%	69%	68%	67%	63%	64%	64%	65%	65%	65%	66%	66%
Selkirk												
Total Visitors	33,657	37,378	36,208	53,327	49,062	56,568	57,831	54,454	50,466	48,578	36,989	32,640
Day Use Visitors	2,700	3,103	3,955	3,029	2,924	4,144	3,688	3,338	2,434	3,326	2,577	2,782
Campers	14,071	9,793	10,079	15,718	14,418	16,383	16,725	15,722	14,653	13,658	10,427	9,090
Summer Occupancy	60%	65%	61%	64%	60%	65%	67%	67%	62%	59%	54%	54%
Turkey Point												
Total Visitors	101,478	120,596	118,530	111,496	105,427	122,231	106,394	125,789	109,548	116,687	123,794	118,486
Day Use Visitors	56,026	69,936	67,470	52,004	45,142	60,978	48,667	65,463	53,608	57,053	65,071	59,116
Campers	16,834	21,108	13,092	15,254	15,458	15,706	14,015	14,687	13,555	14,330	14,085	14,392
Summer Occupancy	62%	66%	67%	65%	63%	62%	64%	64%	61%	61%	62%	62%
Wheatley												
Total Visitors	70,667	75,419	73,187	90,569	91,815	91,297	91,190	93,841	90,424	94,337	81,456	79,289
Day Use Visitors	13,711	15,487	16,220	13,596	12,934	13,977	13,599	14,226	13,005	14,511	11,397	12,060
Campers	24,763	23,973	16,276	21,992	22,537	22,091	21,790	22,245	21,744	22,211	19,667	18,924
Summer Occupancy	60%	63%	62%	58%	58%	58%	57%	57%	59%	54%	48%	49%

The second closest comparison to Holiday Beach is privately run campgrounds that typically focus on Recreational Vehicles (RV's). These campgrounds tend to be less focused on camping and the enjoyment of the outdoors and invest in activities and services for campsite users. As a result, Holiday Beach does not compare to the variety of services and activities often encountered at privately run campgrounds. When compared to campground services provided at other campgrounds in the region, Holiday Beach only had 51% of potential services (such as swimming pools, internet service, direct sanitation service for RV's etc.) able to be provided. Other privately run campgrounds ranged between 73% to 84% of services.

As a campsite and day-use facility, Holiday Beach Conservation Area does not have the same design and space rustic campers are accustomed to at Provincial parks. Additionally, our campground does not have the activities and amenities that most of the private campgrounds have – leaving Holiday Beach in a competitive disadvantage to both Provincial and Private campgrounds.

Water Quality in the western basin of Lake Erie is also a compounding factor of use. The western basin shown in Figure 4.2 is shallower and smaller than the rest of Lake Erie. As a result, the water quality in the western basin as it relates to recreational swimming is considered poor when compared to Lake Erie campgrounds located in the eastern basin of Lake Erie. This has a serious detrimental effect on recreational swimming and day-use. One of the primary reasons for visitation is the Beach and swimming and if our beach is closed or posted due to water related health concerns it has an impact on visitation. A three year analysis of public beach water quality data was collected from 2009 to 2011 along beaches in both the western and eastern basin of Lake Erie. Appendix B demonstrates that on average public beaches are posted or closed in the eastern basin of Lake Erie 17% of swimming season, while beaches in the western basin of Lake Erie have been posted closed 51% of the swimming season.

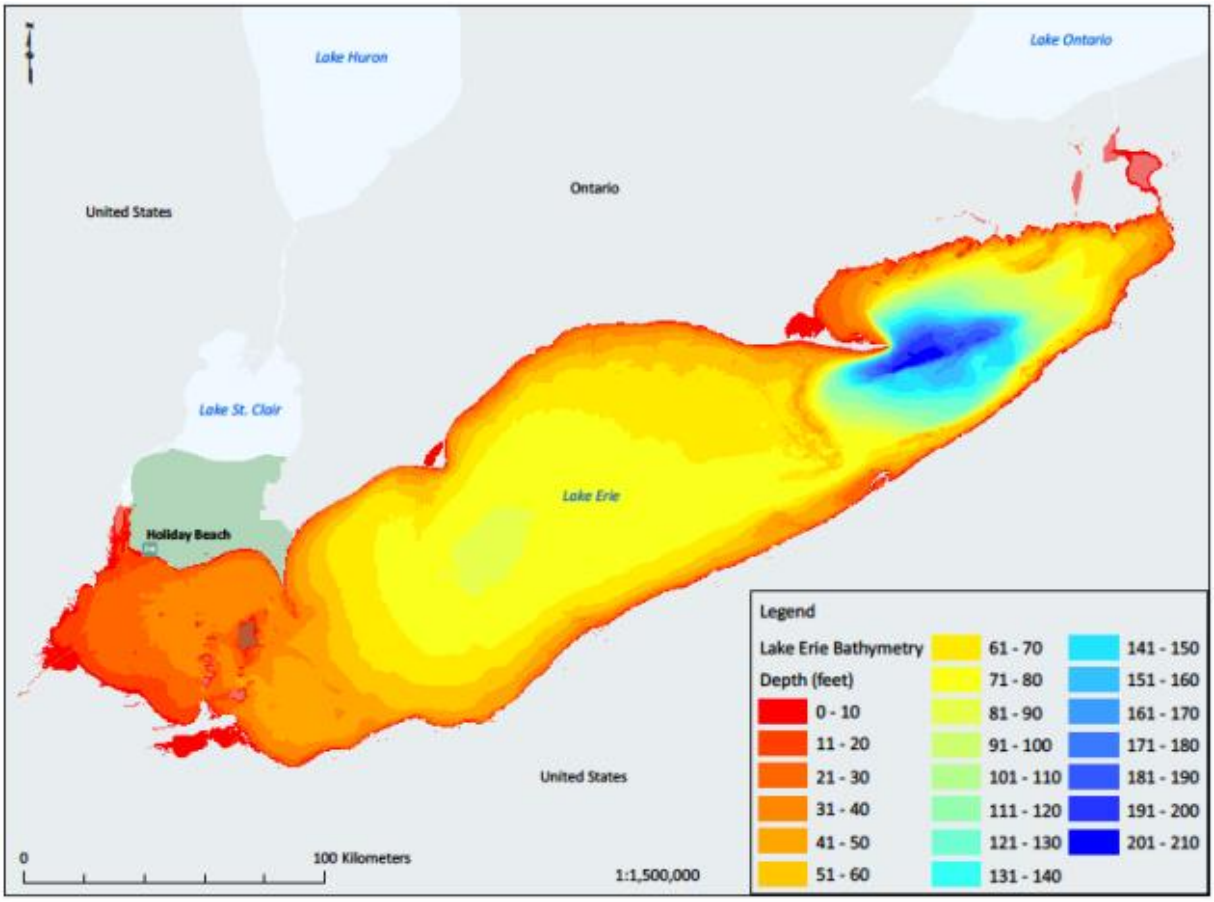


Figure 4: Lake Erie bathymetry.

The difference between Holiday Beach and its competition is the potential associated with this site. Holiday Beach total land holdings are approximately 500 acres. 200 acres of this property is what the public sees as Holiday Beach. The remaining 300 acres consist of farmland, wetland, old fields and a second beach. The developed site is full of mature trees, forest and large day-use picnic areas. The main beach is half a kilometre long and can accommodate large crowds. If fully developed, Holiday Beach could have more natural habitat, waterfront access, trails, and site amenities in the region than any other campground. The natural features and location of Holiday Beach are very well suited for camping, swimming, outdoor recreation and appreciation. In addition to the advantageous size, location and natural features on site, Holiday Beach is designated at as a globally significant important bird area due to the annual migration of thousands of raptors over this site. With this in mind, Holiday Beach could also capitalize upon these natural phenomena as other provincial parks and Conservation Authorities do across the province.

2.3.4 Competition

A comprehensive table was created to compare all of the campsites in the Windsor Essex area. As seen in Table 2.3, Holiday Beach has the least number of amenities and services of all the campgrounds. In addition to this, Holiday Beach also lacks RV services such as direct sewer hookups and appropriate electrical service at many of its campsites. Current acceptable RV electrical service is only available at 35 campsites, while most of our competitors have over 100 fully serviced sites.

Beyond services and park amenities, much of the basic infrastructure such as roads and washrooms are well beyond their serviceable lifespan. The process of updating and replacing this infrastructure has begun but there is much that still needs to occur for Holiday Beach to compete with other local campgrounds.

Beyond comparisons with other campgrounds Holiday Beach is also in competition with a variety of local day-use attractions as well as large scale Canadian and American tourist draws.

Examples of Local attractions and tourism draws would include:

- Point Pelee National Park
- Fort Malden National Historic Park
- 30-40 local festivals, fairs, and special events
- Adventure Bay Water Park
- Mini putt/ Go-kart facilities
- Colasanti's Tropical Gardens
- Numerous municipal splash pad/playground facilities (i.e. Colchester Harbour)

Examples of tourism attractions outside the Essex Region would include:

- Storybook Gardens
- Parks Canada sites
- Indoor water parks (Kalahari, Great Wolf Lodge, etc.)
- Detroit Zoo
- Parks Ontario sites
- Michigan State Park

Table 4: Comparison of Campsite Services in Windsor/Essex County.

Services	Campers Cove	Pleasant Valley	Holiday Harbour	Sturgeon Woods	Lakeside Village	Wheatley Provincial park	Yogi bear	Wild-wood RV	Windsor campgro-und	Holiday Beach
Rent Cabins/trailers	yes	yes	no	yes	yes	yes	yes	yes	yes	no
Tenting	yes	yes	yes	yes	yes	yes	yes	no	yes	yes
Group Camping	no	yes	yes	yes	yes	yes	no	yes	yes	yes
Wi-Fi	yes	no	no	yes	yes	no	no	no	no	no
Telephone (paid)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Laundromat	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Planned Events	yes	yes	yes	yes	no	yes	yes	yes	yes	no
Children Activities	yes	yes	yes	yes	no	yes	yes	yes	yes	no
Toilets	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Picnic Tables (with or without shed)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Snack bar/rest.	yes	no	no	yes	yes	no	yes	yes	yes	no
Beach	yes	no	yes	no	yes	yes	no	no	no	yes
Showers	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pool	no	yes	no	yes	no	no	yes	yes	yes	no
Recreation Hall	yes	yes	yes	yes	no	no	yes	yes	yes	no
Dumping Station	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Fishing	yes	no	yes	yes	yes	yes	no	no	yes	yes
Playgrounds	yes	yes	yes	yes	no	yes	yes	yes	yes	yes
Basketball	yes	no	no	yes	no	no	yes	no	yes	no
Volleyball	yes	yes	no	yes	yes	no	yes	no	yes	no
Walking Trails	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

Services	Campers Cove	Pleasant Valley	Holiday Harbour	Sturgeon Woods	Lakeside Village	Wheatley Provincial park	Yogi bear	Wild-wood RV	Windsor campgro-und	Holiday Beach
Firewood	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Horseshoes	yes	yes	yes	yes	yes	no	yes	no	yes	no
Credit and Debit cards	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Reservation	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Pets (on leash)	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Dog Beach(off leash)	yes	no	no	no	no	no	no	no	no	no
Cycling	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Dances	yes	yes	yes	yes	no	no	yes	yes	yes	no
Handicap Facilities	yes	yes	yes	no	yes	yes	yes	yes	yes	yes
Drinking water	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Cable TV	no	yes	yes	no	yes	no	no	yes	no	no
Badminton	no	yes	yes	no	no	no	no	no	no	no
Boat launch	no	no	no	yes	yes	no	no	no	no	no
Golf	no	no	no	no	no	no	yes	yes	yes	no
Controlled access	yes	yes	yes	yes	yes	no	yes	yes	yes	yes
number of site amenities available	31	29	27	30	27	22	28	27	31	20
% of site amenities available	84%	78%	73%	81%	73%	59%	76%	73%	84%	51%

Table 5: Comparison of Campsite Essential Services in Windsor/Essex County.

RV Critical Criteria	Campers Cove	Pleasant Valley	Holiday Harbour	Sturgeon Woods	Lakeside Village	Wheatley Provincial park	Yogi bear	Wildwood RV	Windsor Campground	Holiday Beach
Total Sites	324	120	100	375	71	220	330	385	208	111
With Water	324	90	97	300	71	yes - at least 96	330	385	Unknown	72
With Sewer	311	68	0	200	yes - unknown quantity	0	330	385	Unknown	0
With Electric	324	120	97	300	yes - unknown quantity	96	330	385	Unknown	72
Amperage (highest)	50	30	30	30	30	30	50	50	50	50
No Service	0	0	3	75	yes - unknown quantity	124	0	0	0	39

2.4 Customer Analysis

2.4.1 Market Survey comment: more information please regarding the survey; define the priorities?

Situated in the southern part of southwestern Ontario, the market is more segmented around the Windsor and Essex county region. Key customers are all from different age groups and are mostly from the City of Windsor and Essex County. According to the survey by HBCA (n<100), the customers who visit the campground, about 64 % of them are from Windsor, 25 % are from Essex County, 5 % are from United States and 6 % are visiting from other places (elsewhere Ontario, Canada and Europe). Around 62% are there for day-use only, and 38% are for the camping and RV users, and 20% of all customers are first time visitors.

As day-use and transient camping continues to erode, seasonal camping has increased due to an investment in infrastructure. The majority of seasonal campers are over 50 years of age, have some level of disposal income and enjoy the quiet nature of Holiday Beach.

Based on survey results, some of the basic customer needs are access to staff, availability of information, cleanliness in general, clean bathrooms, clean campsites, clean beaches, well maintained picnic areas, and safe water quality as it pertains to beach use. RV users and campers look for services such as sewer, electric and water supply. Customers also wanted to ensure that the natural environment is protected, there is access to nature trails, and that Holiday Beach is relaxing and uncrowded.

Customers are always looking for some exciting activities so that they can enjoy their trip. Around 73 % of people want swimming, 23 % want hiking, and 20 % of all customers look for playgrounds, hawk tower and fishing. Some other common activities that customers want are bird watching and sunbathing activities. Other activities that top the table of customers want: 48% want picnicking and 38% want camping. Most of the customers are also interested in day-to-day activities for their children and themselves.

Initial public consultation with the seasonal campers in January 2012 resulted in the following consistent requests:

- Improved Drainage
- Internet access
- Upgraded utilities in areas
- Sewage disposal services

- Well maintained washroom facilities
- Continued tree trimming
- Family programming
- Park store
- Splash pad
- Playground equipment
- Boat launch
- Separation on hunting & camping in fall
- Improved road maintenance
- Enhanced communications

2.4.2 Buying Decision

Camping customers tend to do research prior to making the decision of which campground to visit.

RV and tent trailer clients look at campsite amenities such as the actual campsite size and distance from other campsites. They also look for basic services like water supply, sewer, and the electricity with available amperage. For tent camping clients and day-use visitors, the decision to visit Holiday Beach depends upon standard public services such as availability of clean modern washrooms, general cleanliness of the site, quiet areas for picnicking and natural area protection. They also look for activities, such as guided nature tours, bird watching, activities for all ages, swimming, fishing and picnicking.

2.4.3 Trends

Camping clients continue to want improved conveniences and experiences, similar to any other service or public sector industry. Trends for camping and park day-use visitors are as follows:

- New/Updated Facilities
- Protection of natural environment
- Access to natural environment for appreciation
- Ease of booking and accessing campground & day-use facilities
- Family activities e.g. guided hikes
- Internet connectivity
- Access to water activities e.g. beach, splash pad etc.
- Campsite privacy

3.0 Classifications and Zoning

3.1 Classification

In keeping with the Essex Region Land Management Framework, Holiday Beach Conservation Area has been designated a Recreation Site. Recreation Sites are Conservation Areas that support a variety of outdoor recreational opportunities for larger numbers of people, offer a variety of activities and related infrastructure for public enjoyment, education, and outdoor recreation within natural settings. These sites would involve larger infrastructure features such as campgrounds, trails, picnic areas, and buildings. These sites must be managed and planned to ensure that development and use of these sites does not negatively impact on species at risk, or any other site significance.

Table 6: Weighted priorities of Conservation Area classifications (H: High, M: Medium, L: Low).

Purpose/ Classification	Protected Natural Sites	Natural Heritage Sites	Cultural Heritage Sites	Recreation Sites
Conservation & Protection	H	M	H	L
Visitor Experience	-	L	H	H
Heritage Appreciation & Education	H	M	H	M

Certain parts of a conservation area may lend themselves well to a campground or trails, while other areas may be ecologically or culturally sensitive and should be protected from development – even in conservation areas designed for recreation.

Defining these different areas and describing appropriate uses for these areas within a conservation area is accomplished through Zoning. Zoning is a useful tool that allows for the protection of natural values or the development of recreational activities in specific areas within a conservation area. The occurrence of sensitive or rare habitats or species would in some cases dictate the zoning of certain areas to limit or exclude any type of activity while the existence of a campground would preclude this same zone.

3.2 Site Specific Zoning

There are five zones for ERCA's Conservation Areas: Ecological Protection, Natural Heritage, Access, Development, and Cultural Heritage. Each are described below except for the Cultural Heritage Zone, which is not applicable at Holiday Beach. In addition to

our internal land management zoning requirements that assign appropriate uses to areas of Holiday Beach, there are other legislative requirements such as the endangered species act, building code or the municipal act which ERCA complies with.

3.2.1 Ecological Protection Zone

The purpose of an Ecological Protection Zone would be to ensure the protection of species and their habitats. These features are protected to ensure their continued persistence in our region and as a result, public access and disturbance is discouraged. Areas of the park that would be included under this zoning would include our Provincially Significant Wetland areas and locations where known species at risk populations exist.

3.2.2 Natural Heritage Zone

Natural Heritage Zones protect significant natural features that represent the various forms of flora and fauna found in the Essex Region. Where appropriate, these sites are able to facilitate passive day-use activity that allows for nature appreciation and enjoyment such as walking trails through the woods.

3.2.3 Access Zone

Access Zones within Natural Heritage Sites, Cultural Heritage Sites and Recreational Sites would usually involve a public parking lot and signage. However, in Protected Natural Sites an access point may not be signed or suitable for the general public. It could simply be a gravel path for staff access or access for the limited permitted uses found within Protected Natural Sites.

3.2.4 Development Zone

Within Recreational Sites, development zones are able to allow for access to natural settings for larger numbers of people. These sites include parking areas, campgrounds, trails, beaches, large picnic areas, buildings and other structures that facilitate both day-use and overnight activities.

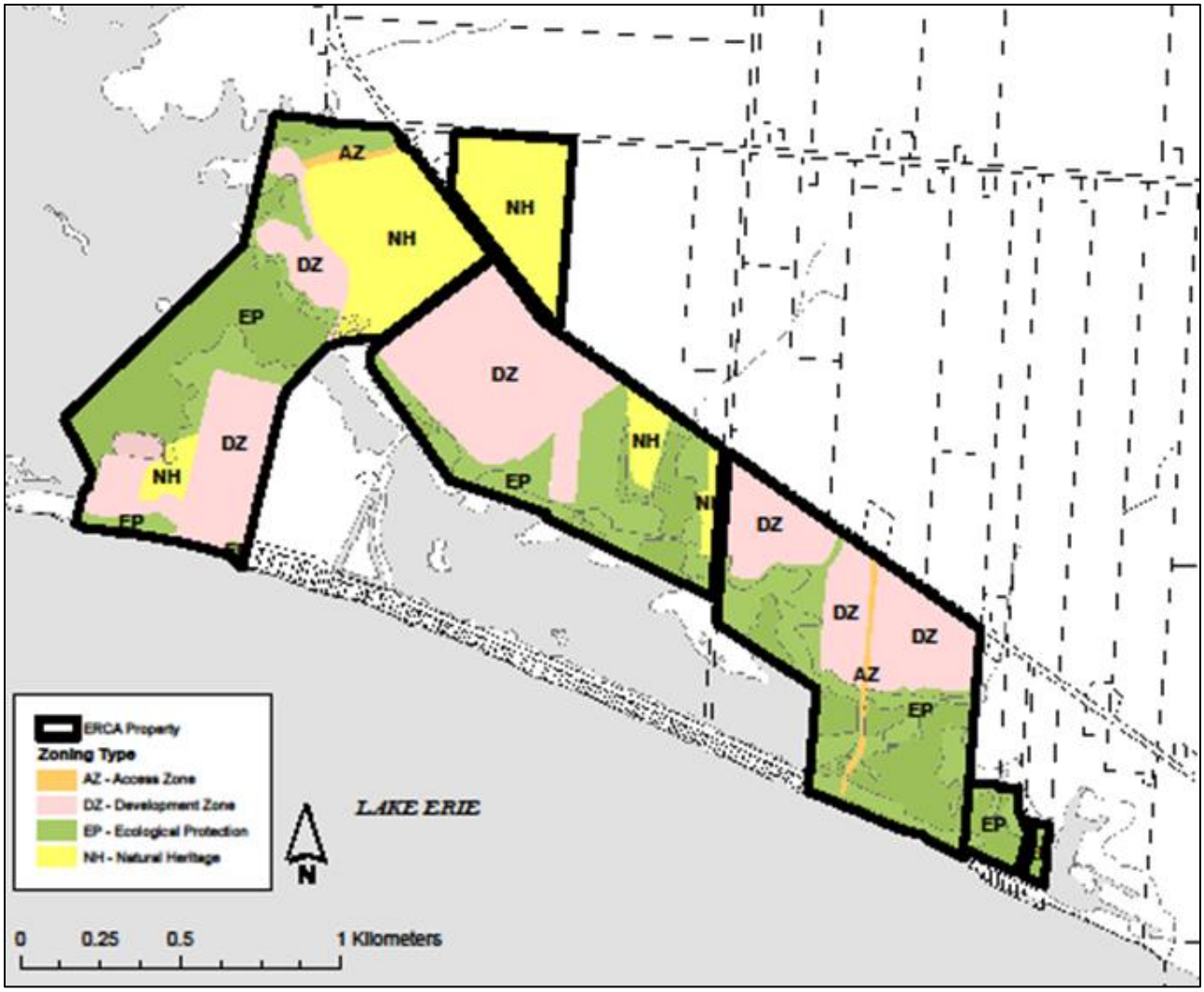


Figure 5: Holiday Beach Conservation Area site-specific zoning.

4.0 Recommendations

4.1 Protect and Conserve Ecological values

ERCA will protect, maintain and enhance significant natural heritage features within Holiday Beach. Using innovative science, ERCA will create opportunities to demonstrate Holiday Beach as a showcase conservation area.

Table 7: Actions and deliverables recommended to achieve "Protect and Conserve" goal.

	Action	Deliverable
4.1.1	Develop a survey to understand visitor usage and the level of visitor knowledge of ecological values as it relates to Holiday Beach	Monitor number of surveys being returned and share tabulated results with the advisory committee
4.1.2	Orientate all staff and visitors regarding the location and the significance of Species at Risk and their habitat located in high traffic areas. Provide staff with on-going training	Development of a staff training manual related to species at risk Develop literature and/or signage for visitors
4.1.3	Seek out partnership opportunities with research organizations	Work with universities, government agencies, private industry, etc, to enable research within Holiday Beach
4.1.4	Invasive Species Management	Incorporate Invasive Species management within other Natural Heritage Planning documents
4.1.5	Continue to responsibly manage Holiday Beach's natural resources	Develop a managed forest plan for Holiday Beach Develop a wildlife management plan for Holiday Beach, which includes continue participation in hunting programs, migratory banding & survey projects, and other partnerships that may benefit the park
4.1.6	Increased use of new infrastructure, products, equipment and methods that reduce waste generation and energy and water consumption	Reduce energy and water usage by 20%
4.1.7	Species inventory	Survey & GIS based mapping of all species within parameters of ELC mapping, managed forest plans and wildlife management plans

4.2 Provide visitor opportunities for high quality recreational experiences

HBCA recreational opportunities will be linked to the natural environment, based on the environment's ability to sustain the activity and demand for the program.

Table 8: Actions and deliverables recommended to achieve "Visitor Opportunities" goal.

	Action	Deliverable
4.2.1	That new infrastructure investments be considered to increase park use and or revenues that could be invested into Holiday Beach	ERCA will undertake a study to review existing facilities and recommend new facilities that are consistent with this management plan and ERCA's strategic plan. This study would include consideration of many items including: Install a new innovative/unique structure such as a pavilion, single family screened huts/cabanas for day rental, zip lines and yurts Development of a multiuse recreational trail adjacent to property holdings along County Rd #50 A new campground within the recreational zoned lands Solar development within the recreational zoned lands Build and rent cottages in the southeast corner of the park
4.2.2	Seek out opportunities for private/public partnerships to expand appropriate recreational uses	Explore opportunities for sport fishing, equestrian use, paddling groups, etc. in partnership with local established groups
4.2.3	Facilitate private and public third-party events in the park to increase attendance and revenue	Facilitate an increase of private and public events in park; attendance numbers to be increased by 10% over normal non-event days
4.2.4	Increase beach and day-use attendance	Target the upstream communities with outreach awareness through partnerships such as the Detroit River Canadian Cleanup Invest in a beach cleaning device to remove nuisance aquatic and other debris that washes onto the beach Install a communications board for day-use visitors Work with partners to undertake water quality projects to improve water quality in the region
4.2.5	Promote recreational opportunities to increase park use	Develop marketing strategies in partnership with other organizations Streamline and improve the marketing and sales of daily and annual passes
4.2.6	Continued implementation of ERCA's existing capital facility replacement strategy	Improve campground and day-use drainage Remove workshop facilities and build a new workshop closer to the park entrance Modify the location and use of the dump station; and upgrade Marshview campsites 1-42 to 50 amp service, with water

		Upgrade the road network throughout the park. Low impact developments will be explored Replace the gatehouse with a modern facility including enhanced store/concessions Replace the existing underground water services Replace the existing hawk tower with a new structure

4.3 Provide opportunities to increase knowledge and appreciation of Essex Region's natural and cultural values

ERCA will provide environmentally based educational opportunities that would lead to a more informed and eco-conscious public that appreciates our natural environment.

Table 9: Actions and deliverables recommended to achieve "Increase Knowledge and Appreciation" goal.

	Action	Deliverable
4.3.1	Begin offering staff run activities	5 special events per year, topic-specific. E.g. edible plant species, owl prowls, etc
4.3.2	Develop a new raptor facility in conjunction with appropriate partners	Facility for rescue, rehabilitation, public viewing/learning opportunity
4.3.3	Develop a yearly visitor guide to educate visitors about the significance of our local natural heritage	Presentations, literature, etc – topic specific on subjects such as ticks, poison ivy, sunlight, biodiversity, migration and wildlife found at Holiday Beach
4.3.4	Citizen Science opportunities	Marsh Monitoring Program (MMP); Install PhotoMonitor posts for pictures to be captured & submitted by visitors throughout seasons; field camps etc.....

5.0 Plan Implementation

5.1 Community Benefits & Regional Economic Impact

Some of the more obvious impacts of the implementation of this management plan would include the creation of new jobs at Holiday Beach, the strengthening of the regional tourism sector and increased revenue at the park. Beyond the immediate financial impact this project would bring to the region is the less obvious community based societal items that cannot be easily measured. Some of these benefits and impacts that may come from the implementation of a management plan are as follows:

- Increased tree cover
- Improved air quality
- Increased nature-based education
- Increased community engagement
- Reduced energy footprint
- Healthier population due to more physical exercise using park trails/ beach/ playground equipment
- Improved customer service

5.2 Impacts on Competition

This project is not designed to take business away from competitors, but rather to engage a greater proportion of the public. The only privately-operated local businesses that compete with Holiday Beach are private campgrounds with seasonal lots (RV's parked for the entire season). Our current vacancy rate for seasonal lots is under 10. This means that if we maximize our seasonal capacity we could potentially be pulling away 10 clients from 8 campgrounds whose combined RV trailer capacity is almost 2000 campsites. This equates to 0.5% of the market share. If our campgrounds are redeveloped and the availability of seasonal campsites expands, our market share and impact on competition would still be under 2%.

5.3 Implementation Priorities and Budgeting

Many of the recommendations noted in section 4 are achievable as they are not associated with large investments. However, the more expensive infrastructure-related items which would in some cases, make Holiday Beach far more attractive, would need greater consideration. In some cases, the infrastructure recommendations noted could be more easily justified, such as the redevelopment of Parkview Campground. A project

such as this has an initial investment with the assumption that this investment will be recouped within a certain amount of time and then begin to make profit for the park. However, other items such as roads, water lines and workshops are more challenging as they do not have direct revenue returns. As the park realizes returns on investment for items such as redeveloped campgrounds, establishing reserves will become critical.

Administration will focus on recommendations that do not require significant resources within 3 years while also presenting infrastructure-based projects to the Board of Directors for review and consideration each year.

As part of these infrastructure recommendations, administration would be seeking grants and donations in conjunction with the Essex Region Conservation Foundation and its many partners to offset direct costs to the authority as much as possible.

5.4 Summary of Public Consultation

The draft Holiday Beach Management Plan was placed on ERCA's website for one year for public comment and two public consultation sessions were held, one in Essex and one in Amherstburg. In total, there were approximately 70 members of the public who were part of the public consultation exercise.

All members of the public consultation sessions were encouraged to complete a survey and provide written comments regarding the plan. Generally, the comments provided are supportive. Survey results provided strong support for the following three recommendations when weighed equally or when higher ranking preferences received greater weight:

- 4.2.6: Continued implementation of ERCA's existing capital facility replacement strategy
- 4.1.5: Continue to responsibly manage Holiday Beach's natural resources
- 4.1.4: Invasive Species Management

There were no overwhelming dislikes or recommendations that were viewed negatively. The recommendation with the most dislikes was recommendation 4.2.1 -That new infrastructure investments be considered to increase park use and or revenues. In all instances, the vast majority of recommendations were supported and liked by the public who responded to the survey.

Table 10: Summary of public consultation.

	Recommendation	Top 3 weighted equally	Weighed - all responses	Like	Neutral	Dislike	No answer
4.1.4	Invasive Species Management	15	62	31	2	3	2
4.1.5	Continue to responsibly manage Holiday Beach's natural resources	14	63	25	8	4	1
4.1.6	Increased use of new infrastructure, products, equipment and methods that reduce waste generation and energy and water consumption	2	14	27	10	1	0
4.2.1	That new infrastructure investments be considered to increase park use and or revenues that could be invested into Holiday Beach	6	35	23	7	6	2
4.2.2	Seek out opportunities for private/public partnerships to expand appropriate recreational uses	6	31	22	10	5	1
4.2.3	Facilitate private and public third-party events in the park to increase attendance and revenue	3	16	22	12	3	1
4.2.4	Increase beach and day-use attendance	6	25	28	8	1	1
4.2.5	Promote recreational opportunities to increase park use	1	6	27	8	3	0
4.2.6	Continued implementation of ERCA's existing capital facility replacement strategy	20	108	35	3	0	0
4.3.1	Begin offering staff run activities	7	32	33	3	0	2
4.3.2	Develop a new raptor facility in conjunction with appropriate partners	2	24	25	8	2	3
4.3.3	Develop a yearly visitor guide to educate visitors about the significance of our local natural heritage	3	19	27	9	0	2
4.3.4	Citizen Science opportunities	2	9	20	12	4	2

APPENDICES

Appendix A: Natural Heritage Evaluations

A.1 Site #1

A.1.1 Site Location

Municipality: Town of Amherstburg

Legal Description: Pt. Lot 60, Conc. 7 Malden Township

ARN: 372951000007200, 372951000007800, 372951000007500, 372951000007700, 372951000007300, 372951000007400, 372951000006750, 372951000007600

PIN: 705730376, 705730352, 705730388, 705730351, 705730108, 705730109, 705730107, 705730389, 705730391, 705730387, 705730411, 705730720

UTM: Zone 17N 333741 4654335

A.1.2 Size

20.2 hectares (50.0 acres)

A.1.3 General Description

Study Site #1 is the easternmost portion of the Big Creek Marsh wetlands. It is bounded on the south by Lake Erie, on the east by a vineyard, on the north by County Road 50 and home grounds, and on the west by a mix of farmland, home grounds and Levergood Road.

The site is generally low with a slight rise to the north. The shoreline is a sandy barrier beach (more correctly a tombolo) with a low wooded dune. Wetlands lie to the north of the beach. A small watercourse carries water from agricultural fields north of County Road 50 into the wetlands in a broad shallow channel.

Vegetation community composition is 64% terrestrial and 36% wetland/aquatic with a total of 11 vegetation types documented for the site. The uplands support 4 woody plant communities. The wetlands support 7 herbaceous and 2 woody plant communities. Not all of these communities are well defined. Ash swamp was formerly an important component.

Open water is confined to the areas closest to the lake and to two constructed canals located in the southeast of the site. The sidecast from these two canals has been placed on a peninsula between them.

Former agricultural land on the higher ground now supports thickets of hawthorn and dogwood with emergent trees of Eastern Cottonwood, Manitoba Maple and Black Walnut. A mature forest dominated by Hackberry occupies the centre of the site. Ash was until recently a codominant of this forest. There is little understorey; the herbaceous layer is composed of a dense growth of Clustered Snakeroot.

Soils are classified as Perth Clay (Pc) with a small portion classified as Marsh (Ma) in the extreme western portion of the site. The beach is classified as Eastport Sand (Es).

A.1.4 Evaluation of 10 Standard Natural Heritage Features

Significant Wetland

The site contains lands which are within the boundary of the Big Creek Marsh Provincially Significant Wetland (PSW), as a result of evaluation and mapping conducted by staff of the Ontario Ministry of Natural Resources (OMNR) during the 2009 field season.

Significant Habitat of Endangered/Threatened Species

The site contains species which are listed as either Endangered or Threatened under the *Ontario Endangered Species Act*. Details regarding the species are considered confidential information. For further information, consult with the Ontario Ministry of Natural Resources.

Significant Woodland

The site contains a Dry - Fresh Hackberry Deciduous Forest (FODM4-3) patch greater than 2 hectares in size. This vegetation type is also ranked as provincially rare (S2). The site also contains patches of Cottonwood Deciduous Swamp (SWDM4-6) and Cottonwood Mineral Treed Shoreline (SHTM1-1) greater than 0.5 hectares in size located within 30 metres of fish habitat likely receiving ecological benefit.

Significant Wildlife Habitat

The site most likely contains colonial bird nesting sites of Marsh wren, Red-winged Blackbird and Common Grackle. The open water wetlands on the site are also known to be significant as a waterfowl stopover and staging area. Waterfowl also nest here. The diverse upland areas of the site provide landbird migratory stopover areas. A Wild Turkey was observed nesting in the shrub thicket community. The site also provides adequate stopover habitat for the Monarch butterfly. The site contains Provincially rare (S1 to S3)

vegetation communities (see Criterion No. 9 – Significant Communities for further information). The faunal inventory recorded the presence of area-sensitive bird species. The forested areas contain amphibian woodland breeding ponds. The beach shoreline provides significant opportunities for turtle nesting. Finally, the site contains habitats of species of conservation concern (see Criterion No. 8 – Significant Species for further information).

Significant Valleyland

Not fulfilled.

Ecological Function

The site performs the ecological functions of hydrological flow, water retention and purification, receiving water from upstream agricultural lands and purifying it within the site before flowing west towards the main Big Creek marsh basin or filtering through the barrier beach into Lake Erie.

Diversity

The site exhibits very high diversity containing 11 ELC vegetation types (ecoelements) in 7 Community Series. The following is a summary of the ELC vegetation communities documented for the site.

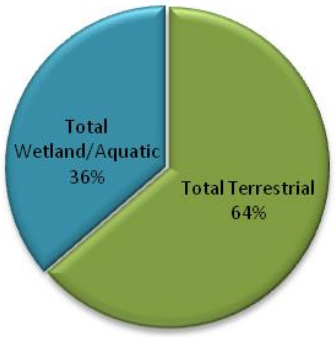
Table 11: ELC vegetation communities documented at Site #1.

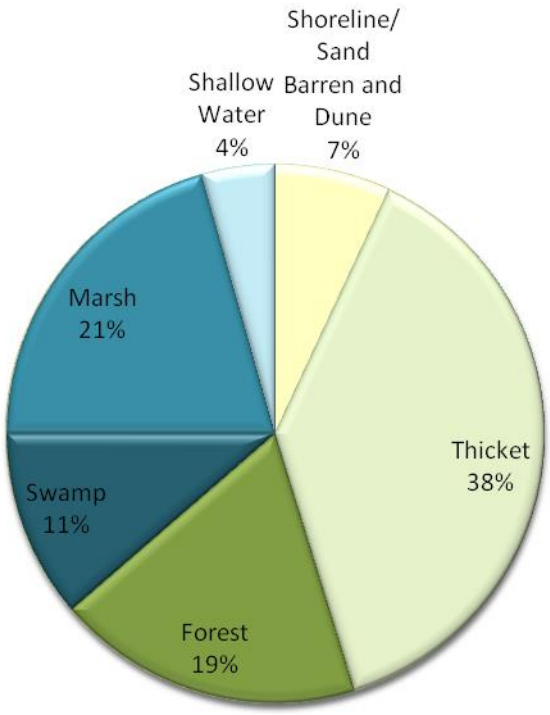
Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Treed Shoreline	Cottonwood Mineral Treed Shoreline	SHTM1-1
Deciduous Thicket	Hawthorn Deciduous Shrub Thicket	THDM2-11
	Gray Dogwood Deciduous Thicket	THDM5-1
Deciduous Forest	Dry - Fresh Hackberry Deciduous Forest	FODM4-3
Deciduous Swamp	White Birch - Cottonwood Deciduous Swamp	SWDM4-6
Thicket Swamp	Buttonbush Mineral Deciduous Thicket Swamp	SWTM5-1
Shallow Marsh	Cattail Mineral Shallow Marsh	MASM1-1
	Rice Cut-grass Mineral Shallow Marsh	MASM1-10

Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
	Common Reed Mineral Shallow Marsh	MASM1-12
	Forb Mineral Shallow Marsh	MASM2-1
Floating-leaved Shallow Aquatic	Duckweed Floating-leaved Shallow Aquatic	SAF_1-3

Table 12: ELC community class coverage at Site #1.

Community Class	Hectares	Acres
Shoreline/Sand Barren and Dune	1.40	3.46
Meadows	0.00	0.00
Thicket	7.73	19.09
Woodland	0.00	0.00
Forest	3.74	9.24
Plantations/Parks	0.00	0.00
Swamp	2.28	5.63
Marsh	4.16	10.27
Open Water	0.00	0.00
Shallow Water	0.89	2.20
Total Terrestrial	12.87	31.79
Total Wetland/Aquatic	7.33	18.11
Total Habitat	20.19	49.90





Although a small site, the vegetation is diverse due to past management and variously aged successional vegetation. The resulting upland communities vary from young open shrub thicket to mature forest. The aquatic communities are equally diverse. Within the aquatic communities are ephemeral streams, shallow ponds and former canals. The Great Lakes littoral zone and barrier beach provide additional and uncommon diversity.

Significant Species

The following 5 significant floral species were observed:

Table 13: Significant floral species identified at Site #1.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Carex frankii	Frank's Sedge	G5			S2	N
Gleditsia triacanthos	Honey Locust	G5			S2	N
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N
Rosa setigera	Climbing Prairie Rose	G5	SC	SC	S3	N
Vernonia gigantea ssp. gigantea	Giant Ironweed	G5			S1?	N

The Honeylocust (*Gleditsia triacanthos*) trees appear to be located in an old fencerow and may have been planted.

The following significant faunal species observed include breeding species and the species that use the site in large numbers for an extended period of time. Migrants and occasional visitors are not included as significant fauna.

Table 14: Significant faunal species identified at Site #1.

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Chimney Swift	S4	THR THR	Common Local	Management interest	-
Northern Flicker	S4	-	Common Widespread	Regional Concern	-
Eastern Wood-Pewee	S4	-	Common Widespread	Regional Concern	-
Blue-gray Gnatcatcher	S4	-	Uncommon Widespread	-	Area Sensitive

Eastern Foxsnake and Spiny Softshell Turtle have been reported for the adjacent property to the east of the site.

Significant Communities

The following significant communities were identified and mapped according to the Ecological Land Classification (ELC) System for Southern Ontario. Global (GRank) and Provincial (SRank) rarity ranks for these vegetation communities are provided by the Ontario Ministry of Natural Resources' (OMNR) Natural Heritage Information Centre (NHIC).

Table 15: Significant ELC communities identified at Site #1.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)	GRank	SRank	Ha	Ac
Dry – Fresh Hackberry Deciduous Forest Type	FODM4-3	G?	S2	3.74	9.24
Buttonbush Mineral Deciduous Thicket Swamp Type	SWTM5-1	G4	S3	1.36	3.36
Total Area:				5.10	12.60

Condition

Floristically, the site's flora has a mean Coefficient of Conservatism (CC) of 3.96 and a Floristic Quality Index (FQI) value of 44.99. This indicates that the site's flora is of sufficient quality to be of remnant natural quality and possess sufficient conservatism and richness to be floristically important from a Provincial perspective.

In the past the site appears to have been cut over, grazed and cultivated. Canals with sidecast were also constructed on the east side near the lake. A channel was cut through the beach to the lake. When the canals were abandoned, the channel filled. With agricultural activities at an end, succession is returning the site to a natural state. At present, there are some trails and clearing and placement of fill in the northwest corner. Deer and waterfowl hunting are conducted on the site; otherwise, the site has been undisturbed in recent years.

A.1.5 Floral Inventory

Table 16: Floristic quality data at Site #1.

Floristic Quality Data	Native		Introduced		All Species	
Species Type	Number	% of Total	Number	% of Total	Number	% of Total
Trees	11	6.40	3	1.74	14	8.14
Shrubs	22	12.79	6	3.49	28	16.28
Woody Vines	4	2.33	2	1.16	6	3.49
Total Woody	37	21.51	11	6.40	48	27.91
Herbaceous Vines	3	1.74	2	1.16	5	2.91
Forbs	66	38.37	26	15.12	92	53.49
Ferns	1	0.58	0	0.00	1	0.58
Total Herbaceous Non-Graminoids	70	40.70	28	16.28	98	56.98
Grasses	10	5.81	4	2.33	14	8.14
Rushes	2	1.16	0	0.00	2	1.16
Sedges	10	5.81	0	0.00	10	5.81
Total Graminoids	22	12.79	4	2.33	26	15.12
Total Non-Woody	92	53.49	32	18.60	124	72.09
Total All Species	129	75.00	43	25.00	172	100.00

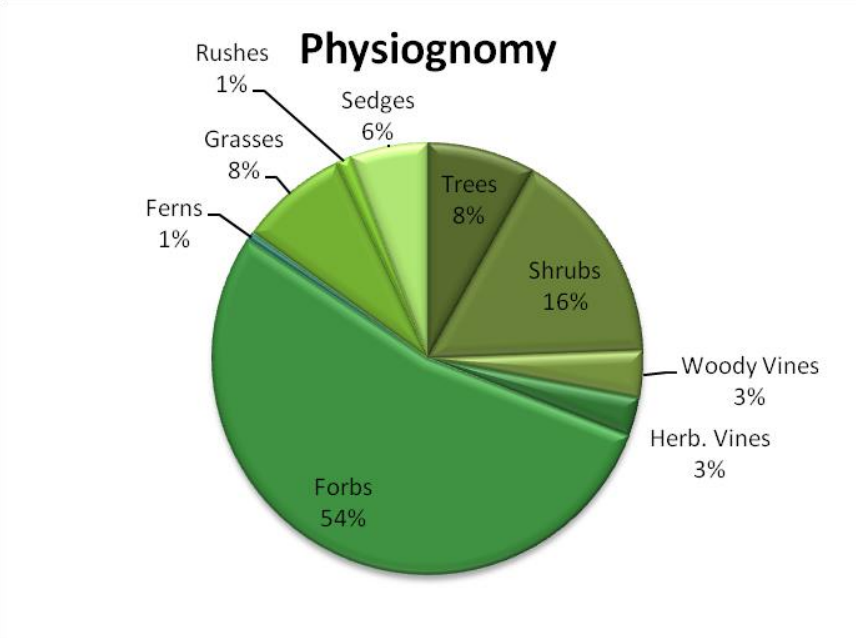


Figure 6: Overall physiognomy at Site #1.

The Wetness Index for the site, calculated from the mean Coefficient of Wetness (CW) of all native taxa recorded from the site inventory, is -1.16 indicating that the site has a predominance of wetland species. A total of 172 plant species were recorded for the site.

Table 17: Full inventory of plant species identified at Site #1.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Acalypha virginica var. rhomboidea	Three-seeded Mercury	G5TE			S5	N
Acer negundo	Manitoba Maple	G5			S5	N
Acer saccharinum	Silver Maple	G5			S5	N
Agalinis tenuifolia var. tenuifolia	Slender-leaved Agalinis	G5T?			SU	N
Agastache nepetoides	Yellow Giant Hyssop	G5			S4	N
Agrimonia gryposepala	Tall Hairy Agrimony	G5			S5	N
Agrimonia parviflora	Small-flower Agrimony	G5			S4	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Agrostis gigantea	Redtop	G4G5			SE5	I
Agrostis stolonifera	Spreading Bentgrass	G5			S5	N
Alliaria petiolata	Garlic Mustard	G?			SE5	I
Ambrosia artemisiifolia	Annual Ragweed	G5			S5	N
Ambrosia trifida	Great Ragweed	G5			S5	N
Anemone canadensis	Canada Anemone	G5			S5	N
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane	G5T			S5	N
Asclepias incarnata ssp. incarnata	Swamp Milkweed	G5T5			S5	N
Asclepias syriaca	Common Milkweed	G5			S5	N
Aster lanceolatus ssp. lanceolatus	Panicled Aster	G5T?			S5	N
Aster lateriflorus var. lateriflorus	Calico Aster	G5T5			S5	N
Aster pilosus var. pilosus	Hairy Aster	G5T?			S5	N
Aster urophyllus	Arrow-leaved Aster	G4			S4	N
Barbarea verna	Early Yellow Rocket					I
Berberis thunbergii	Japanese Barberry	G?			SE5	I
Bidens cernua	Nodding Beggar's Ticks	G5			S5	N
Bidens frondosa	Devil's Beggar's Ticks	G5			S5	N
Boehmeria cylindrica	False Nettle	G5			S5	N
Butomus umbellatus	Flowering-rush	G5			SE5	I
Calamagrostis canadensis	Blue-joint Reedgrass	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Calystegia sepium ssp. americanum	Hedge Bindweed	G4G5T?			SU	N
Carex alopecoidea	Foxtail Sedge	G5			S5	N
Carex bebbii	Bebb's Sedge	G5			S5	N
Carex blanda	Woodland Sedge	G5?			S5	N
Carex cristatella	Crested Sedge	G5			S5	N
Carex frankii	Frank's Sedge	G5			S2	N
Carex lupulina	Hop Sedge	G5			S5	N
Carex radiata	Stellate Sedge	G4			S5	N
Carex tribuloides	Blunt Broom Sedge	G5			S4S5	N
Carex vulpinoidea	Fox Sedge	G5			S5	N
Carya ovata var. ovata	Shagbark Hickory	G5			S5	N
Celastrus scandens	Climbing Bittersweet	G5			S5	N
Celtis occidentalis	Common Hackberry	G5			S4	N
Cephalanthus occidentalis	Buttonbush	G5			S5	N
Cerastium fontanum	Common Mouse-ear Chickweed	G?			SE5	I
Chamaesyce polygonifolia	Seaside Spurge	G5?			S4	N
Chrysanthemum leucanthemum	Oxeye Daisy	G?			SE5	I
Cinna arundinacea	Stout Wood Reedgrass	G5			S4	N
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	G5T5			S5	N
Cirsium arvense	Crepping Thistle	G?			SE5	I
Convolvulus arvensis	Field Bindweed	G?			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Cornus amomum ssp. obliqua	Silky Dogwood	G5T?			S5	N
Cornus drummondii	Rough-leaved Dogwood	G5			S4	N
Cornus foemina ssp. racemosa	Gray Dogwood	G5			S5	N
Coronilla varia	Crown-vetch	G?			SE5	I
Crataegus crus-galli	Cockspur Hawthorn	G5			S5	N
Crataegus mollis	Downy Hawthorn	G5			S5	N
Crataegus punctata	Dotted Hawthorn	G5			S5	N
Crataegus succulenta	Fleshy Hawthorn	G5			S4S5	N
Cryptotaenia canadensis	Canada Honewort	G5			S5	N
Cuscuta gronovii	Gronovius Dodder	G5			S5	N
Daucus carota	Queen Anne's Lace	G?			SE5	
Decodon verticillatus	Hairy Swamp Loosestrife	G5			S5	N
Echinocystis lobata	Wild Mock-cucumber	G5			S5	N
Elaeagnus umbellata	Autumn Olive	G?			SE3	I
Elymus repens	Quack Grass	G?			SE5	I
Elymus villosus	Slender Wild-rye	G5			S4	N
Epilobium coloratum	Purple-leaf Willow-herb	G5			S5	N
Equisetum arvense	Field Horsetail	G5			S5	N
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	G5T?			S5	N
Eupatorium perfoliatum	Common Boneset	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Floerkea proserpinacoides	False Mermaid-weed	G5	NAR		S4	N
Fraxinus pennsylvanica	Green Ash	G5			S5	N
Galium aparine	Cleavers	G5			S5	N
Geranium robertianum	Herb-robert	G5			SE5	I
Geum canadense	White Avens	G5			S5	N
Geum vernum	Spring Avens	G5			S4	N
Glechoma hederacea	Ground Ivy	G?			SE5	I
Gleditsia triacanthos	Honey Locust	G5			S2	N
Glyceria striata	Fowl Manna Grass	G5			S5	N
Hackelia virginiana	Virginia Stickseed	G5			S5	N
Helianthus tuberosus	Jerusalem Artichoke	G5			SE5	I
Hesperis matronalis	Dame's Rocket	G4G5			SE5	I
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N
Impatiens capensis	Spotted Jewel-weed	G5			S5	N
Iris virginica	Virginia Blue Flag	G5			S5	N
Juglans nigra	Black Walnut	G5			S4	N
Juncus tenuis	Slender Rush	G5			S5	N
Juncus torreyi	Torrey's Rush	G5			S5	N
Juniperus virginiana	Eastern Red Cedar	G5			S5	N
Leersia oryzoides	Rice Cutgrass	G5			S5	N
Lemna minor	Lesser Duckweed	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Leonurus cardiaca ssp. cardiaca	Common Motherwort	G?T?			SE5	I
Lobelia siphilitica	Great Blue Lobelia	G5			S5	N
Lonicera japonica	Japanese Honeysuckle	G?			SE2	I
Lycopus americanus	American Bugleweed	G5			S5	N
Lycopus europaeus	European Bugleweed	G?			SE5	I
Lysimachia ciliata	Fringed Loosestrife	G5			S5	N
Lysimachia nummularia	Moneywort	G?			SE5	I
Lythrum salicaria	Slender-spike Loosestrife	G5			SE5	I
Malus pumila	Common Apple	G5			SE5	I
Mirabilis nyctaginea	Wild Four-o'clock	G5			S4	N
Miscanthus sinensis	Chinese Silver Grass	G?			SE1	I
Morus alba	White Mulberry	G?			SE5	I
Myosotis sylvatica	Woodland Forget-me-not	G5			SE4	I
Oenothera biennis	Common Evening-primrose	G5			S5	N
Oxalis stricta	Upright Yellow Wood Sorrel	G5			S5	N
Parthenocissus quinquefolia	Virginia Creeper	G5			S4?	N
Penthorum sedoides	Ditch-stonecrop	G5			S5	N
Phalaris arundinacea	Reed Canary Grass	G5			S5	N
Phragmites australis	Common Reed	G5			S5	N
Phytolacca americana	Common Pokeweed	G5			S4	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Polygonum amphibium	Water Smartweed	G5			S5	N
Polygonum convolvulus	Black Bindweed	G?			SE5	I
Polygonum pensylvanicum	Pennsylvania Smartweed	G5			S5	N
Polygonum virginianum	Virginia Knotweed	G5			S4	N
Populus deltoides ssp. deltoides	Eastern Cottonwood	G5T5			SU	N
Potentilla anserina ssp. anserina	Silverweed	G5			S5	N
Prunus americana	American Plum	G5			S4	N
Prunus serotina	Wild Black Cherry	G5			S5	N
Prunus virginiana ssp. virginiana	Choke Cherry	G5T?			S5	N
Ranunculus abortivus	Kidney-leaved Buttercup	G5			S5	N
Rhus radicans ssp. negundo	Poison Ivy	G5T			S5	N
Rhus typhina	Staghorn Sumac	G5			S5	N
Ribes americanum	Wild Black Currant	G5			S5	N
Robinia pseudo-acacia	Black Locust	G5			SE5	I
Rosa multiflora	Rambler Rose	G?			SE4	I
Rosa palustris	Swamp Rose	G5			S5	N
Rosa setigera	Climbing Prairie Rose	G5	SC	SC	S3	N
Rubus allegheniensis	Allegheny Blackberry	G5			S5	N
Rubus occidentalis	Black Raspberry	G5			S5	N
Rumex crispus	Curly Dock	G?			SE5	I
Rumex orbiculatus	Water Dock	G5			S4S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Salix alba	White Willow	G5			SE4	I
Salix amygdaloides	Peach-leaved Willow	G5			S5	N
Salix eriocephala	Heart-leaved Willow	G5			S5	N
Salix exigua	Sandbar Willow	G5			S5	N
Salix purpurea	Basket Willow	G5			SE4	I
Sambucus canadensis	Common Elderberry	G5			S5	N
Sanicula odorata	Clustered Snakeroot	G5			S5	N
Saponaria officinalis	Bouncing-bet	G?			SE5	I
Scirpus atrovirens	Woolgrass Bulrush	G5?			S5	N
Scutellaria galericulata	Hooded Skullcap	G5			S5	N
Scutellaria lateriflora	Mad Dog Skullcap	G5			S5	N
Setaria pumila	Yellow Foxtail	G?			SE5	I
Sicyos angulatus	One-seed Bur-cucumber	G5			S5	N
Sium suave	Hemlock Water-parsnip	G5			S5	N
Smilax lasioneura	Herbaceous Greenbrier	G5			S4	N
Solanum dulcamara	Climbing Nightshade	G?			SE5	I
Solidago altissima var. altissima	Tall Goldenrod	G?			S5	N
Solidago canadensis	Canada Goldenrod	G5			S5	N
Sonchus arvensis ssp. arvensis	Field Sowthistle	G?T?			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Sphenopholis intermedia	Slender Wedge Grass	G5			S4S5	N
Stachys hispida	Hispid Hedge-nettle	G4Q			S4S5	N
Symphytum officinale ssp. officinale	Common Comfrey	G?			SE5	I
Taraxacum officinale	Common Dandelion	G5			SE5	I
Thalictrum dasycarpum	Purple Meadowrue	G5			S4?	N
Triplasis purpurea	Purple Sandgrass	G4G5			S4?	N
Tussilago farfara	Colt's Foot	G?			SE5	I
Typha angustifolia	Narrow-leaved Cattail	G5			S5	N
Typha x glauca	Blue Cattail	HYB			S4?	N
Urtica dioica ssp. dioica	Stinging Nettle	G5T?			SE2	I
Verbena urticifolia	White Vervain	G5			S5	N
Vernonia gigantea ssp. gigantea	Giant Ironweed	G5			S1?	N
Veronica serpyllifolia ssp. serpyllifolia	Thyme-leaved Speedwell	G?T?			SE5	N
Viburnum lentago	Nannyberry	G5			S5	N
Viburnum opulus	Guelder-rose Viburnum	G5			SE4	I
Viola affinis	Lecontes Violet	G5			S4?	N
Viola sororia	Woolly Blue Violet	G5			S5	N
Vitis riparia	Riverbank Grape	G5			S5	N
Wolffia columbiana	Columbia Watermeal	G5			S4S5	N
Xanthium strumarium	Rough Cockle-bur	G?			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Yucca filamentosa	Adam's Needle					?
Zanthoxylum americanum	Northern Prickly Ash	G5			S5	N

A.1.6 Faunal Inventory

Surveyors: Dean Ware

Field Dates: May 16, 2009

Birds

Table 18: Full inventory of bird species identified at Site #1.

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Wild Turkey	1 SH	S5	-	Uncommon Widespread 59%	-	-
Mourning Dove	1 SH	S5	-	Common Widespread 86%	-	-
Chimney Swift	1 visitor	S4	THR THR	Common Local 75%	Management interest	-
Red-bellied Woodpecker	1 N	S4	-	Common Widespread 67%	-	-
Downy Woodpecker	1 SH	S5	-	Common Widespread 89%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Northern Flicker	1 SM	S4	-	Common Widespread 89%	Regional Concern	-
Eastern Wood-Pewee	1 SM	S4	-	Common Widespread 81%	Regional Concern	-
Blue-headed Vireo	1 migrant on May 16	S5	-	Not a breeder	-	-
Red-eyed Vireo	1 SM	S5	-	Common Widespread 86%	-	-
Blue Jay	1 SM	S5	-	Common Widespread 83%	-	-
Tree Swallow	10 AE	S4	-	Common Widespread 94%	-	-
Black-capped Chickadee	1 N	S5	-	Common Widespread 67%	-	-
Carolina Wren	1 SM	S4	-	Common Widespread 86%	-	-
House Wren	5 SM	S5	-	Common Widespread 86%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Ruby-crowned Kinglet	1 migrant on May 16	S4	-	Not a breeder	-	-
Blue-gray Gnatcatcher	4 A	S4	-	Uncommon Widespread 45%	-	Area Sensitive
Swainson's Thrush	1 migrant on May 16	S4	-	Not a breeder	-	-
American Robin	3 NE	S5	-	Common Widespread 89%	-	-
Gray Catbird	1 SH	S4	-	Common Widespread 81%	-	-
Cedar Waxwing	4 migrants on May 16	S5	-	Common Widespread 89%	-	-
Nashville Warbler	2 migrants on May 16	S5	-	Not a breeder	-	-
Yellow Warbler	11 NE	S5	-	Common Widespread 86%	-	-
Chestnut-sided Warbler	1 migrant on May 16	S5	-	Rare Local 10%	-	-
Magnolia Warbler	3 migrants on May 16	S5	-	Not a breeder	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Black-throated Green Warbler	1 migrant on May 16	S5	-	Not a breeder	-	-
Blackburnian Warbler	2 migrants on May 16	S5	-	Not a breeder	-	-
Palm Warbler	1 migrant on May 16	S5	-	Not a breeder	-	-
Bay-breasted Warbler	2 migrants on May 16	S5	-	Not a breeder	-	-
American Redstart	1 migrant on May 16	S5	-	Uncommon Widespread 29%	-	Area Sensitive
Wilson's Warbler	1 migrant on May 16	S4	-	Not a breeder	-	-
Canada Warbler	1 migrant on May 16	S4	THR SC	Not a breeder	-	-
White-throated Sparrow	2 migrants on May 16	S5	-	Very rare 2%	-	-
Northern Cardinal	2 SH	S5	-	Common Widespread 94%	-	-
Rose-breasted Grosbeak	5 migrants on May 16	S4	-	Uncommon Widespread 51%	Regional Stewardship	-
Indigo Bunting	3 SM	S4	-	Common Widespread 78%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Red-winged Blackbird	10 SM	S5	-	Abundant Widespread 94%	-	-
Brown-headed Cowbird	1 NE	S4	-	Common Widespread 83%	-	-
House Finch	3 SH	SNA	-	Common Widespread 83%	-	-
American Goldfinch	3 SH	S5	-	Common Widespread 86%	-	-

Mammals

Table 19: Full inventory of mammal species identified at Site #1.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Eastern Cottontail	1	S5	-	Common Widespread	-
Eastern Gray Squirrel	1	S5	-	Common Widespread	-
White-tailed Deer	Adult tracks	S5	-	Common Widespread	-

Reptiles

No reptiles were found at this site.

Amphibians

Table 20: Full inventory of amphibian species identified at Site #1.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Green Frog	10 adults / juveniles	S5	-	Common Widespread	-

Butterflies

No butterflies were found at this site.

Odonata

No odonata were found at this site.

A.2 Site #2

A.2.1 Site Location

Municipality: Town of Amherstburg

Legal Description: Pt. Lot 59 & 60, Conc. 7 Malden Township

ARN: 372951000009000, 372951000009400, 372951000009600, 372951000009100, 372951000009200

PIN: 705730395, 705730378, 705730110, 705730370, 705730276, 705730359, 705730388, 705730307, 705730314, 705730387, 705730365, 705730411

UTM: Zone 17N 332997 4654697

A.2.2 Size

45.3 hectares (112.0 acres)

A.2.3 General Description

Site #2 is part of the eastern portion of the Big Creek Marsh wetlands, and is also known as the Holiday Beach Conservation Area East Beach property. It is bounded on the south by Lake Erie and shoreline residential development associated with the Lake Erie Country Club, on the east by Levergood Road and Site #1, on the north by agricultural lands, and on the west by the Lake Erie Country Club portion of the Big Creek Marsh.

The shoreline is a sandy barrier beach with a treed shoreline. Wetlands lie to the north of the beach. Water flows into Site #2 from the French Drain, Degrys Drain and the Jerome Degryse Drain from the north and from Site #1 from the east. Water flows from Site #2 to Site #3 to the west through the marsh wetlands.

Vegetation community composition is 79% wetland/aquatic and 21% terrestrial with a total of 23 vegetation types documented for the site. The uplands support 6 woody and 1 herbaceous plant communities. The wetlands support 11 herbaceous and 5 woody plant communities.

Wetland communities are generally composed of shallow aquatic Duckweed and Water Lilies with emergent cattail and Phragmites marshes, as well as large areas of Reed-canary Grass meadow marsh.

Upland communities are generally composed of shrub thicket in the northern part of the site and treed shoreline along the barrier beach in the southern portion of the site.

Soils are classified as Perth Clay (Pc) in the northern portion of the site, Marsh (Ma) in the southern portion of the site, and Eastport Sand (Es) along the beach in the southern portion of the site.

A.2.4 Evaluation of 10 Standard Natural Heritage Features

Significant Wetland

The site contains lands which are within the boundary of the Big Creek Marsh Provincially Significant Wetland (PSW), as a result of evaluation and mapping conducted by staff of the Ontario Ministry of Natural Resources (OMNR) during the 2009 field season.

Significant Habitat of Endangered/Threatened Species

Hop Tree (*Ptelea trifoliata*), a Threatened species, was found growing within the Mineral Treed Shoreline [BBT1 (SHTM1)] vegetation communities along the beach, in several locations.

Three sightings of the Eastern Foxsnake (*Pantherophis gloydi*), an Endangered species, were documented for the site, with the habitat generally described as "field" and "grassland under plywood cover".

Seven sightings (totaling 22 individuals) of Blanding's Turtle (*Emydoidea blandingii*), a Threatened species, were documented for the site with the habitat generally described as "marsh". Vegetation communities associated with these sightings include:

Table 21: Vegetation communities associated with Blanding's Turtle sightings at Site #2.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Reed-canary Grass Graminoid Mineral Meadow Marsh Type	MAMM1-3
Duckweed Floating-leaved Shallow Aquatic Type	SAF_1-3
Forb Mineral Shallow Marsh Type	MASM2-1
Cattail Mineral Shallow Marsh Type	MASM1-1
Silver Maple Mineral Deciduous Swamp Type	SWDM3-2
Willow Mineral Deciduous Swamp Type	SWDM4-1

In addition, one sighting of a Stinkpot or Eastern Musk Turtle (*Sternotherus odoratus*), a Threatened species, was documented for the site with the habitat generally being described as "on land near marsh".

Significant Woodland

The site contains patches of Cottonwood Mineral Treed Shoreline (SHTM1-1), Silver Maple Mineral Deciduous Swamp (SWDM3-2) and Willow Mineral Deciduous Swamp (SWDM4-1) which are greater than 0.5 hectares in size and within 30 metres of fish habitat likely receiving ecological benefit.

Significant Wildlife Habitat

The site contains colonial bird nesting sites of Forster's Tern and most likely Marsh wren, Red-winged Blackbird and Common Grackle. The open water wetlands on the site are also known to be significant as a waterfowl stopover and staging area. The diverse upland areas of the site provide landbird migratory stopover areas. Based on sightings recorded, the site provides suitable areas of reptile hibernacula for the following species: Eastern Foxsnake, Snapping Turtle, Midland Painted Turtle, Blanding's Turtle, Common Map Turtle, and the Common Musk Turtle. The wetland is of sufficient quality to support a population of Bullfrogs, which were recorded from this site during the faunal inventories. The site also provides adequate stopover habitat for the Monarch butterfly. The site contains Provincially rare (S1 to S3) vegetation communities (see Criterion No. 9 – Significant Communities for further information). The faunal inventory recorded the presence of area-sensitive bird species. The forested areas contain amphibian woodland breeding ponds. The beach shoreline provides significant opportunities for turtle nesting. Finally, the site contains habitats of species of conservation concern (see Criterion No. 8 – Significant Species for further information).

Significant Valleyland

Not fulfilled.

Ecological Function

The site performs the ecological functions of hydrological flow, water retention and purification, receiving water from upstream agricultural lands as well as from wetlands to the east, and purifying it within the site before flowing west towards the main Big Creek marsh basin or filtering through the barrier beach into Lake Erie. The site also provides east-west linkage of habitats located near Lake Erie.

Diversity

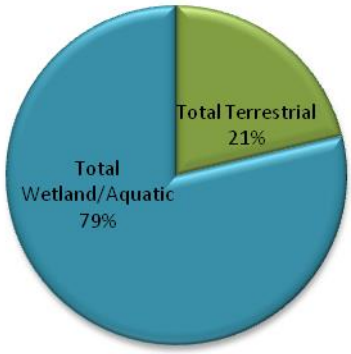
The site exhibits very high diversity containing 23 ELC vegetation types (ecoelements) in 11 Community Series. The following is a summary of the ELC vegetation communities documented for the site.

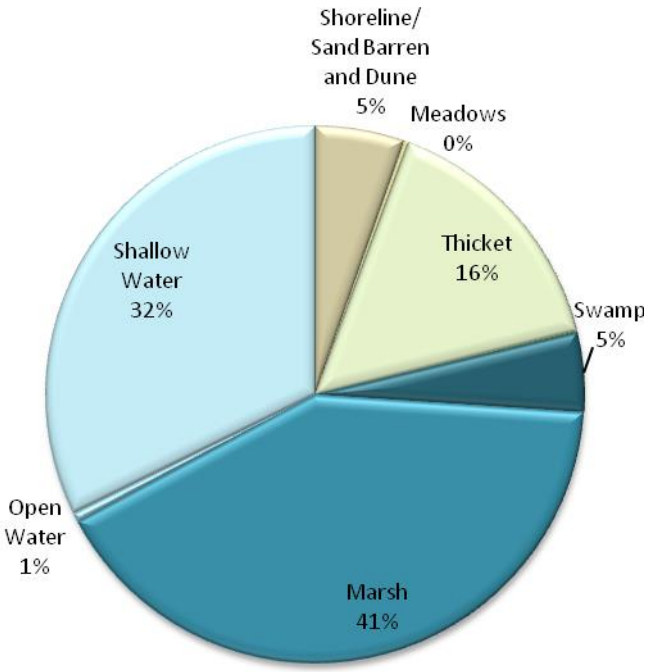
Table 22: ELC vegetation communities documented at Site #2.

Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Shrub Shoreline	Willow Mineral Shrub Shoreline	SHSM1-3
Treed Shoreline	Mineral Treed Shoreline	SHTM1
	Cottonwood Mineral Treed Shoreline	SHTM1-1
Forb Meadow	Fresh - Moist Forb Meadow	MEFM4
Deciduous Thicket	Hawthorn Deciduous Shrub Thicket	THDM2-11
	Gray Dogwood Deciduous Thicket	THDM5-1
Deciduous Forest	Fresh - Moist Lowland Deciduous Forest	FODM7
Deciduous Swamp	Silver Maple Mineral Deciduous Swamp	SWDM3-2
	Mineral Deciduous Swamp	SWDM4
	Willow Mineral Deciduous Swamp	SWDM4-1
	White Birch - Cottonwood Deciduous Swamp	SWDM4-6
Thicket Swamp	Buttonbush Mineral Deciduous Thicket Swamp	SWTM5-1
Meadow Marsh	Canada Blue-joint Graminoid Mineral Meadow Marsh	MAMM1-1
	Reed-canary Grass Graminoid Mineral Meadow Marsh	MAMM1-3
	Common Reed Graminoid Mineral Meadow Marsh	MAMM1-12
	Mixed Graminoid Mineral Meadow Marsh	MAMM1-16
Shallow Marsh	Cattail Mineral Shallow Marsh	MASM1-1
	Common Reed Mineral Shallow Marsh	MASM1-12
	Forb Mineral Shallow Marsh	MASM2-1
	Purple Loosestrife Mineral Shallow Marsh	MASM2-4
Open Aquatic	Open Aquatic	OAO
Floating-leaved Shallow Aquatic	Water Lily - Bullhead Lily Floating-leaved Shallow Aquatic	SAF_1-1
	Duckweed Floating-leaved Shallow Aquatic	SAF_1-3

Table 23: ELC community class coverage at Site #2.

Community Class	Hectares	Acres
Shoreline/Sand Barren and Dune	2.43	6.00
Meadows	0.13	0.33
Thicket	7.03	17.36
Woodland	0.00	0.00
Forest	0.04	0.10
Plantations/Parks	0.00	0.00
Swamp	2.17	5.37
Marsh	18.63	46.04
Open Water	0.25	0.62
Shallow Water	14.62	36.14
Total Terrestrial	9.63	23.80
Total Wetland/Aquatic	35.68	88.17
Total Habitat	45.31	111.96





Significant Species

The following 4 significant floral species were observed:

Table 24: Significant floral species identified at Site #2.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Cirsium discolor	Field Thistle	G5			S3	N
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N
Nelumbo lutea	American Lotus	G4			S2	N
Ptelea trifoliata	Hop Tree	G5	THR	THR	S3	N

The following significant faunal species observed include breeding species and the species that use the site in large numbers for an extended period of time. Migrants and occasional visitors are not included as significant fauna.

Table 25: Significant faunal species identified at Site #2.

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Great Egret	S2	- 	Rare Local	-	Large numbers summer in Essex County
Black-crowned Night-Heron	S3	- 	Uncommon Local	-	Large numbers summer in Essex County
Bald Eagle	S4	NAR SC	Uncommon Widespread	-	Area Sensitive
Cooper's Hawk	S4	NAR NAR	Common Widespread	-	Area Sensitive
Common Moorhen	S4	- 	Rare Local	-	-
American Coot	S4	NAR NAR	Rare Local	-	Area Sensitive
Caspian Tern	S3	NAR NAR	Very Rare Local	-	-
Forster's Tern	S2	DD DD	Rare Local	-	Area Sensitive
Belted Kingfisher	S4	- 	Uncommon Widespread	Regional Concern	-
Northern Flicker	S4	- 	Common Widespread	Regional Concern	-

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Willow Flycatcher	S5	- 	Uncommon Widespread	Continental Concern	-
Eastern Kingbird	S4	-	Common Widespread	Regional Concern	-
Bank Swallow	S4	-	Uncommon Widespread	Regional Stewardship	-
Blue-gray Gnatcatcher	S4	-	Uncommon Widespread	-	Area Sensitive
Brown Thrasher	S4	-	Uncommon Widespread	Regional Concern	-
Baltimore Oriole	S4	-	Common Widespread	Regional Concern Regional Stewardship	-
Beaver	S5	-	Rare Local	-	-
Snapping Turtle	S3	SC SC	Common Widespread	-	-
Blanding's Turtle	G4 S3	THR THR	Uncommon Local	-	-
Northern Map Turtle	S3	SC SC	Common Local	-	Area Sensitive
Stinkpot	S3	THR THR	Rare Local	-	-
Eastern Foxsnake	G3 S3	END END	Locally common Widespread	-	Essex County has the bulk of the world population of this snake
American Bullfrog	S4	-	Common Widespread	-	Area Sensitive

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Monarch	S4	SC SC	Common Widespread	-	-

Significant Communities

The following significant communities were identified and mapped according to the Ecological Land Classification (ELC) System for Southern Ontario. Global (GRank) and Provincial (SRank) rarity ranks for these vegetation communities are provided by the Ontario Ministry of Natural Resources' (OMNR) Natural Heritage Information Centre (NHIC).

Table 26: Significant ELC communities identified at Site #2.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)	GRank	SRank	Ha	Ac
Buttonbush Mineral Deciduous Thicket Swamp Type	SWTM5-1	G4	S3	0.12	0.29

Condition

Floristically, the site's flora has a mean Coefficient of Conservatism (CC) of 3.95 and a Floristic Quality Index (FQI) value of 38.89. This indicates that the site's flora is of sufficient quality to be of remnant natural quality and possess sufficient conservatism and richness to be floristically important from a Provincial perspective.

A.2.5 Floral Inventory

Table 27: Floristic quality data at Site #2.

Floristic Quality Data	Native		Introduced		All Species	
Species Type	Number	% of Total	Number	% of Total	Number	% of Total
Trees	10	7.41	4	2.96	14	10.37
Shrubs	20	14.81	5	3.70	25	18.52

Floristic Quality Data	Native		Introduced		All Species	
Species Type	Number	% of Total	Number	% of Total	Number	% of Total
Woody Vines	3	2.22	2	1.48	5	3.70
Total Woody	33	24.44	11	8.15	44	32.59
Herbaceous Vines	3	2.22	1	0.74	4	2.96
Forbs	51	37.78	24	17.78	75	55.56
Ferns	1	0.74	0	0.00	1	0.74
Total Herbaceous Non-Graminoids	55	40.74	25	18.52	80	59.26
Grasses	6	4.44	2	1.48	8	5.93
Rushes	0	0.00	0	0.00	0	0.00
Sedges	3	2.22	0	0.00	3	2.22
Total Graminoids	9	6.67	2	1.48	11	8.15
Total Non-Woody	64	47.41	27	20.00	91	67.41
Total All Species	97	71.85	38	28.15	135	100.00

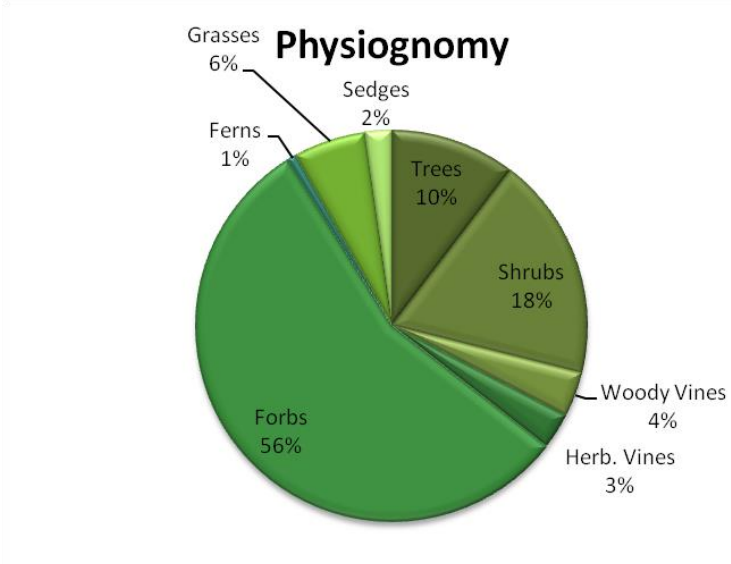


Figure 7: Overall physiognomy at Site #2.

The Wetness Index for the site, calculated from the mean Coefficient of Wetness (CW) of all native taxa recorded from the site inventory, is -1.07 indicating that the site has a predominance of wetland species.

A total of 135 plant species were recorded for the site.

Table 28: Full inventory of plant species identified at Site #2.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Acer negundo	Manitoba Maple	G5			S5	N
Acer saccharinum	Silver Maple	G5			S5	N
Acer x freemanii	Freeman's Maple	G?			S5	N
Agrostis gigantea	Redtop	G4G5			SE5	I
Ailanthus altissima	Tree-of-heaven	G?			SE5	I
Alliaria petiolata	Garlic Mustard	G?			SE5	I
Ambrosia artemisiifolia	Annual Ragweed	G5			S5	N
Ambrosia trifida	Great Ragweed	G5			S5	N
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane	G5T			S5	N
Arctium lappa	Greater Burdock	G?			SE5	I
Asclepias incarnata ssp. incarnata	Swamp Milkweed	G5T5			S5	N
Asclepias syriaca	Common Milkweed	G5			S5	N
Asparagus officinalis	Asparagus	G5?			SE5	I
Aster lanceolatus ssp. lanceolatus	Panicled Aster	G5T?			S5	N
Aster lateriflorus var. lateriflorus	Calico Aster	G5T5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Aster novae-angliae	New England Aster	G5			S5	N
Berberis thunbergii	Japanese Barberry	G?			SE5	I
Bidens frondosa	Devil's Beggar's Ticks	G5			S5	N
Boehmeria cylindrica	False Nettle	G5			S5	N
Cakile edentula	American Sea-rocket	G5T			S4	N
Calamagrostis canadensis	Blue-joint Reedgrass	G5			S5	N
Carex blanda	Woodland Sedge	G5?			S5	N
Carex lacustris	Lake-bank Sedge	G5			S5	N
Celtis occidentalis	Common Hackberry	G5			S4	N
Centaurea maculosa	Spotted Knapweed	G?			SE5	I
Cephalanthus occidentalis	Buttonbush	G5			S5	N
Cicuta bulbifera	Bulb-bearing Water-hemlock	G5			S5	N
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	G5T5			S5	N
Cirsium arvense	Crepping Thistle	G?			SE5	I
Cirsium discolor	Field Thistle	G5			S3	N
Cirsium vulgare	Bull Thistle	G5			SE5	I
Convolvulus arvensis	Field Bindweed	G?			SE5	I
Cornus amomum ssp. obliqua	Silky Dogwood	G5T?			S5	N
Cornus drummondii	Rough-leaved Dogwood	G5			S4	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Cornus foemina ssp. racemosa	Gray Dogwood	G5			S5	N
Cornus stolonifera	Red-osier Dogwood	G5			S5	N
Crataegus crus-galli	Cockspur Hawthorn	G5			S5	N
Crataegus mollis	Downy Hawthorn	G5			S5	N
Crataegus punctata	Dotted Hawthorn	G5			S5	N
Cyperus strigosus	Straw-colored Umbrella Sedge	G5			S5	N
Daucus carota	Queen Anne's Lace	G?			SE5	I
Decodon verticillatus	Hairy Swamp Loosestrife	G5			S5	N
Echinochloa crusgalli	Barnyard Grass	G?			SE5	I
Elaeagnus umbellata	Autumn Olive	G?			SE3	I
Equisetum arvense	Field Horsetail	G5			S5	N
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	G5T?			S5	N
Fraxinus pennsylvanica	Green Ash	G5			S5	N
Galium aparine	Cleavers	G5			S5	N
Geranium robertianum	Herb-robert	G5			SE5	I
Geum canadense	White Avens	G5			S5	N
Geum vernum	Spring Avens	G5			S4	N
Glyceria striata	Fowl Manna Grass	G5			S5	N
Helianthus tuberosus	Jerusalem Artichoke	G5			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N
Impatiens capensis	Spotted Jewel-weed	G5			S5	N
Iris virginica	Virginia Blue Flag	G5			S5	N
Juglans nigra	Black Walnut	G5			S4	N
Lactuca biennis	Tall Blue Lettuce	G5			S5	N
Lemna minor	Lesser Duckweed	G5			S5	N
Leonurus cardiaca ssp. cardiaca	Common Motherwort	G?T?			SE5	I
Lepidium campestre	Field Pepper-grass	G?			SE5	I
Lobelia siphilitica	Great Blue Lobelia	G5			S5	N
Lonicera japonica	Japanese Honeysuckle	G?			SE2	I
Lonicera tatarica	Tartarian Honeysuckle	G?			SE5	I
Ludwigia palustris	Marsh Seedbox	G5			S5	N
Lycopus americanus	American Bugleweed	G5			S5	N
Lysimachia ciliata	Fringed Loosestrife	G5			S5	N
Lysimachia nummularia	Moneywort	G?			SE5	I
Lythrum salicaria	Slender-spike Loosestrife	G5			SE5	I
Menispermum canadense	Canada Moonseed	G5			S4	N
Mentha arvensis ssp. borealis	Corn Mint	G5			S5	N
Mirabilis nyctaginea	Wild Four-o'clock	G5			S4	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Morus alba	White Mulberry	G?			SE5	I
Nelumbo lutea	American Lotus	G4			S2	N
Nymphaea odorata	Fragrant White Water-lily	G5			S5	N
Oenothera biennis	Common Evening-primrose	G5			S5	N
Osmorhiza longistylis	Smooth Sweet-cicely	G5			S5	N
Oxalis stricta	Upright Yellow Wood Sorrel	G5			S5	N
Parthenocissus quinquefolia	Virginia Creeper	G5			S4?	N
Pastinaca sativa	Wild Parsnip	G?			SE5	I
Phalaris arundinacea	Reed Canary Grass	G5			S5	N
Phragmites australis	Common Reed	G5			S5	N
Phryma leptostachya	Lopseed	G5			S4S5	N
Physalis heterophylla	Clammy Ground-cherry	G5			S4	N
Physostegia virginiana ssp. virginiana	False Dragon-head	G5T?			S4	N
Poa compressa	Canada Bluegrass	G?			S5	N
Poa pratensis ssp. pratensis	Kentucky Bluegrass	G5T			S5	N
Polygonum amphibium	Water Smartweed	G5			S5	N
Polygonum persicaria	Lady's Thumb	G?			SE5	I
Polygonum scandens	Climbing False-buckwheat	G5			S4S5	N
Polygonum virginianum	Virginia Knotweed	G5			S4	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Populus deltoides ssp. deltoides	Eastern Cottonwood	G5T5			SU	
Potentilla anserina ssp. anserina	Silverweed	G5			S5	N
Potentilla recta	Sulphur Cinquefoil	G?			SE5	I
Prunus americana	American Plum	G5			S4	N
Prunus serotina	Wild Black Cherry	G5			S5	N
Prunus virginiana ssp. virginiana	Choke Cherry	G5T?			S5	N
Ptelea trifoliata	Hop Tree	G5	THR	THR	S3	N
Rhus radicans ssp. rydbergii	Western Poison Ivy	G5T			S5	N
Rhus typhina	Staghorn Sumac	G5			S5	N
Ribes americanum	Wild Black Currant	G5			S5	N
Robinia pseudo-acacia	Black Locust	G5			SE5	I
Rosa multiflora	Rambler Rose	G?			SE4	I
Rosa palustris	Swamp Rose	G5			S5	N
Rubus allegheniensis	Allegheny Blackberry	G5			S5	N
Rubus occidentalis	Black Raspberry	G5			S5	N
Rumex crispus	Curly Dock	G?			SE5	I
Salix alba	White Willow	G5			SE4	I
Salix amygdaloides	Peach-leaved Willow	G5			S5	N
Salix exigua	Sandbar Willow	G5			S5	N
Sambucus canadensis	Common Elderberry	G5			S5	N
Sanicula odorata	Clustered Snakeroot	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Saponaria officinalis	Bouncing-bet	G?			SE5	I
Sicyos angulatus	One-seed Bur-cucumber	G5			S5	N
Smilax hispida	Hispid Greenbrier	G5Q			S4	N
Solanum dulcamara	Climbing Nightshade	G?			SE5	I
Solidago canadensis	Canada Goldenrod	G5			S5	N
Solidago gigantea	Smooth Goldenrod	G5			S5	N
Sonchus arvensis ssp. arvensis	Field Sowthistle	G?T?			SE5	I
Taraxacum officinale	Common Dandelion	G5			SE5	I
Teucrium canadense ssp. viscidum	Wood Germander	G5T4			SU	N
Trifolium pratense	Red Clover	G?			SE5	I
Trifolium repens	White Clover	G?			SE5	I
Triosteum aurantiacum	Horse Gentian	G5			S5	N
Typha angustifolia	Narrow-leaved Cattail	G5			S5	N
Typha x glauca	Blue Cattail	HYB			S4?	N
Ulmus americana	American Elm	G5?			S5	N
Urtica dioica ssp. gracilis	Slender Stinging Nettle	G5T?			S5	N
Verbascum thapsus	Common Mullein	G?			SE5	I
Verbena urticifolia	White Vervain	G5			S5	N
Viburnum opulus	Guelder-rose Viburnum	G5			SE4	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Viburnum trilobum	Highbush Cranberry	G5T5			S5	N
Viola sororia	Woolly Blue Violet	G5			S5	N
Vitis riparia	Riverbank Grape	G5			S5	N
Xanthium strumarium	Rough Cockle-bur	G?			S5	N

A.2.6 Faunal Inventory

Surveyors: Dean Ware, Gary Custer, Jeff Pillon and Jonathan Choquette

Field Dates: May 3, May 17, May 29, June 8, June 11, June 28, July 26 and August 2, 2009

Birds

Table 29: Full inventory of bird species identified at Site #2.

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Pied-billed Grebe	4 FY	S4	- 	Uncommon Local 21%	-	-
Double-crested Cormorant	1 visitor	S5	NAR NAR	Common Local 32%	-	-
Great Blue Heron	10 visitors various dates	S5	-	Uncommon Widespread 35%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Great Egret	29 visitors various dates	S2	-	Rare Local 13%	-	-
Green Heron	11 SH	S4	-	Uncommon Widespread 67%	-	-
Black-crowned Night-Heron	20 visitors various dates	S3	-	Uncommon Local 21%	-	-
Canada Goose	24 FY	S5	-	Common Widespread 83%	-	-
Wood Duck	20 NE	S5	-	Common Widespread 70%	-	-
Mallard	14 FY	S5	-	Common Widespread 91%	-	-
Blue-winged Teal	7 SH	S4	-	Uncommon Local 35%	-	-
Bald Eagle	1 visitor	S4	NAR SC	Uncommon Widespread 37%	-	Area Sensitive

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Cooper's Hawk	1 CF	S4	NAR NAR	Common Widespread 78%	-	Area Sensitive
Red-tailed Hawk	1 visitor	S5	NAR NAR	Common Widespread 75%	-	-
Wild Turkey	1 SH	S5	-	Uncommon Widespread 59%	-	-
Sora	8 SH	S4	-	Uncommon Widespread 40%	-	
Common Moorhen	13 NE	S4	-	Rare Local 18%	-	-
American Coot	4 T	S4	NAR NAR	Rare Local 10%	-	Area Sensitive
Killdeer	31 FY	S5	-	Common Widespread 88%	-	-
Lesser Yellowlegs	1 migrant on July 26	S4	-	Not a breeder	-	-
Solitary Sandpiper	3 migrants on July 26	S4	-	Not a breeder	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Spotted Sandpiper		S5	- -	Common Widespread 83%	-	-
Least Sandpiper	2 migrants on July 26	S4	- -	Not a breeder	-	-
Wilson's Snipe	5 migrants on May 3	S5	- -	Not a breeder	-	-
Ring-billed Gull	5 visitors on July 26	S5	- -	Common Local 13%	-	-
Herring Gull	5 visitors on July 26	S5	- -	Uncommon Local 32%	-	-
Caspian Tern	1 visitor on July 26	S3	NAR NAR	Very Rare Local 5%	-	Area Sensitive
Common Tern	3 visitors on May 29	S4	NAR NAR	Rare Local 10%	-	-
Black Tern	2 SH	G4S3	NAR SC	Rare Local 10%	-	Area Sensitive
Mourning Dove	5 FY	S5	- -	Common Widespread 86%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Ruby-throated Hummingbird	1 SH	S5	-	Common Widespread 67%	-	-
Belted Kingfisher	1 visitor on June 11	S4	-	Uncommon Widespread 75%	Regional Concern	-
Downy Woodpecker	1 SH	S5	-	Common Widespread 89%	-	-
Northern Flicker	1 A	S4	-	Common Widespread 89%	Regional Concern	-
Willow Flycatcher	4 A	S5	-	Uncommon Widespread 67%	Continental Concern	-
Least Flycatcher	1 migrant May 17	S4	-	Rare Local 13%	-	Area Sensitive
Eastern Kingbird	5 FY	S4	-	Common Widespread 91%	Regional Concern	-
Warbling Vireo	6 T	S5	-	Common Widespread 81%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Purple Martin	15 AE	S4	-	Common Widespread 78%	-	-
Tree Swallow	100 AE	S4	-	Common Widespread 94%	-	-
Northern Rough-winged Swallow	10 T	S4	-	Common Widespread 78%	-	-
Bank Swallow	10 visitors	S4	-	Uncommon Widespread 54%	Regional Stewardship	-
Barn Swallow	30 visitors	S4	-	Common Widespread 89%	-	-
Black-capped Chickadee	4 A	S5	-	Common Widespread 67%	-	-
Carolina Wren	1 A	S4	-	Common Widespread 86%	-	-
House Wren	4 AE	S5	-	Common Widespread 86%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Marsh Wren	7 NU	S4	-	Uncommon Local 35%	-	-
Blue-gray Gnatcatcher	4 SH	S4	-	Uncommon Widespread 45%	-	Area Sensitive
American Robin	10 CF	S5	-	Common Widespread 89%	-	-
Gray Catbird	6 A	S4	-	Common Widespread 81%	-	-
Brown Thrasher	1 FY	S4	-	Uncommon Widespread 64%	Regional Concern	-
Cedar Waxwing	3 SH	S5	-	Common Widespread 89%	-	-
Yellow Warbler	16 T	S5	-	Common Widespread 86%	-	-
Yellow-rumped Warbler	3 migrants on May 17	S5	-	Not a breeder	-	-
Common Yellowthroat	6 T	S5	-	Common Widespread 75%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Song Sparrow	6 DD	S5	-	Common Widespread 83%	-	-
Swamp Sparrow	4 T	S5	-	Uncommon Widespread 48%	-	-
Northern Cardinal	7 T	S5	-	Common Widespread 94%	-	-
Red-winged Blackbird	100 NE	S5	-	Abundant Widespread 94%	-	-
Common Grackle	50 NE	S5	-	Abundant Widespread 94%	-	-
Orchard Oriole	1 A	S4	-	Common Widespread 72%	-	-
Baltimore Oriole	3 FY	S4	-	Common Widespread 94%	Regional Concern Regional Stewardship	-
American Goldfinch	6 T	S5	-	Common Widespread 86%	-	-

Breeding evidence codes: SH = suitable habitat, SM = singing male, T = territory, P = pair, A = agitated behaviour, N = nest building or excavation of nest hole, AE = adult entering presumed active nest hole, NU = used nest, DD = distraction display, FY = fledged young, CF = carrying food, NE = nest with eggs, NY = Nest with young. SE = Exotic, non-native species.

Mammals

Table 30: Full inventory of mammal species identified at Site #2.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Northern Short-tailed Shrew	2	S5	- 	Common Widespread	-
Eastern Cottontail	5	S5	-	Common Widespread	-
Eastern Gray Squirrel	3	S5	-	Common Widespread	-
Beaver	1 adult	S5	-	Rare Local	-
Meadow Vole	2	S5	-	Common Widespread	-
Muskrat	10	S5	-	Common Widespread	-
Coyote	Tracks	S5	-	Common Widespread	-
Northern Raccoon	1 adult Tracks	S5	-	Common Widespread	-
White-tailed Deer	3 adults / juveniles Tracks	S5	-	Common Widespread	-

Reptiles

Table 31: Full inventory of reptile species identified at Site #2.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Snapping Turtle	3	S3	SC SC	Common Widespread	-
Midland Painted Turtle	30	S5	-	Common Widespread	-
Blanding's Turtle	15 May 3 6 June 8 1 July 26	G4 S3	THR THR	Uncommon Local	-
Northern Map Turtle	1 carcass	S3	SC SC	Common Local	Area Sensitive
Stinkpot	1	S3	THR THR	Rare Local	-
Eastern Foxsnake	1 May 29 1 June 8 1 June 11 1 Aug 2	G3 S3	END END	Locally common Widespread	Essex County has the bulk of the world population of this snake
Eastern Gartersnake	2	S5		Common Widespread	-

Amphibians

Table 32: Full inventory of amphibian species identified at Site #2.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
American Toad	8 adults	S5	-	Common Widespread	-
American Bullfrog	4 adults	S4	-	Common Widespread	Area Sensitive
Green Frog	10 adults / juveniles	S5	-	Common Widespread	-
Northern Leopard Frog	15 + adults	S5	-	Common Widespread	-

Butterflies

Table 33: Full inventory of butterfly species identified at Site #2

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Broad-winged Skipper	2	S4	-	Increasingly common	
Black Swallowtail	1	S5	-	Common Widespread	-
Spicebush Swallowtail	1	S4	-	Common Widespread	-
Cabbage White	8	SNA	-	Common Widespread	-
Summer Azure	19	S5	-	Common Widespread	-
Question Mark	1	S5	-	Common Widespread	

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Mourning Cloak	2	S5	- 	Common Widespread	-
Monarch	16	S4	SC SC	Common Widespread	-

Odonata

Table 34: Full inventory of odonata species identified at Site #2

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Fragile Forktail	1	S4	-	Common	-
Eastern Forktail	29	S5	-	Common	-
Common Green Darner	1	S5	-	Common	-
Halloween Pennant	2	S4	-	Uncommon	-
Twelve-spotted Skimmer	11	S5	-	Common	-
Blue Dasher	10	S5	-	Common	-
Black Saddlebags	1	S4	-	Common	-

A.3 Site #3

A.3.1 Site Location

Municipality: Town of Amherstburg

Legal Description: Pt. Lot 57 & 58, Conc. 6 Malden Township

ARN: 372953000000100, 372951000009650, 372951000009500, 372951000005200, 372951000009600

PIN: 705720420, 705730381, 705730345, 705730284, 705730402, 705730307, 705730314, 705730411

UTM: Zone 17N 331983 4655270

A.3.2 Size

81.0 hectares (200.0 acres)

A.3.3 General Description

Site #3 is part of the eastern portion of the Big Creek Marsh wetlands, and is also known as the Lake Erie Country Club and the Holiday Beach Conservation Area waterfowl sanctuary properties. It is bounded on the south by shoreline residential development associated with the Lake Erie Country Club, on the east by marshes associated with Site #2, on the north by the Essex County Demonstration Farm and County Road 50, and on the west by Holiday Beach Conservation Area.

The shoreline is almost entirely developed by residential properties associated with the Lake Erie Country Club. Wetlands lie to the north of this development. Water flows into Site #3 from the Collison Sideroad Drain from the north and from Site #2 from the east. Water flows from Site #3 to Site #4 (Holiday Beach Conservation Area) to the west through the marsh wetlands.

Vegetation community composition is 77% wetland/aquatic and 23% terrestrial with a total of 29 vegetation types documented for the site. The uplands support 8 woody and 1 herbaceous plant communities. The wetlands support 15 herbaceous and 5 woody plant communities.

Wetland communities are generally composed of shallow aquatic Duckweed and Water Lilies with emergent cattail marsh and several large stands of water willow.

Upland communities are generally composed of shrub thicket in the northern part of the site and oak-hickory-hackberry forest in the western portion of the site.

Soils are classified as Perth Clay (Pc) and Marsh (Ma) in the northern portion of the site, Bottom Land (B.L.) and Brookston Clay (Bc) in the extreme western portion of the site, and Eastport Sand (Es) along the beach in the southern portion of the site.

A.3.4 Evaluation of 10 Standard Natural Heritage Features

Significant Wetland

The site contains lands which are within the boundary of the Big Creek Marsh Provincially Significant Wetland (PSW), as a result of evaluation and mapping conducted by staff of the Ontario Ministry of Natural Resources (OMNR) during the 2009 field season.

Significant Habitat of Endangered/Threatened Species

One sighting of the Eastern Foxsnake (*Pantherophis gloydi*), an Endangered species, was documented for the site, with the habitat generally described as "marsh edge". Vegetation communities associated with this sighting include:

Table 35: Vegetation communities associated with Eastern Foxsnake sightings at Site #3.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Forb Mineral Shallow Marsh Type	MASM2-1

Four sightings (totaling more than 7 individuals) of Blanding's Turtle (*Emydoidea blandingii*), a Threatened species, were documented for the site with the habitat generally described as "marsh". Vegetation communities associated with these sightings include:

Table 36: Vegetation communities associated with Blanding's Turtle sightings at Site #3.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Reed-canary Grass Graminoid Mineral Meadow Marsh Type	MAMM1-3
Gray Dogwood Deciduous Thicket Type	THDM5-1
Common Reed Mineral Shallow Marsh Type	MASM1-12

In addition, one sighting of a Least Bittern (*Ixobrychus exilis*), a Threatened species, was documented for the site with the habitat generally described as "cattail marsh".

Significant Woodland

Not fulfilled.

Significant Wildlife Habitat

The site contains colonial bird nesting sites of Least Bittern and Black Tern, and most likely Marsh wren, Red-winged Blackbird and Common Grackle. The open water wetlands on the site are also known to be significant as a waterfowl stopover and staging area. The diverse upland areas of the site provide landbird migratory stopover areas. This site was noted to provide Turkey Vulture summer roosting areas. Based on sightings recorded, the site provides suitable areas of reptile hibernacula for the following species: Eastern Foxsnake, Snapping Turtle, and the Midland Painted Turtle. The site also provides adequate stopover habitat for the Monarch butterfly. The site contains Provincially rare (S1 to S3) vegetation communities (see Criterion No. 9 – Significant Communities for further information). The faunal inventory recorded the presence of area-sensitive bird species. The forested areas contain amphibian woodland breeding ponds. Finally, the site contains habitats of species of conservation concern (see Criterion No. 8 – Significant Species for further information).

Significant Valleyland

Not fulfilled.

Ecological Function

The site performs the ecological functions of hydrological flow, water retention and purification, receiving water from upstream agricultural lands as well as from wetlands to the east, and purifying it within the site before flowing west towards the main Big Creek marsh basin. The site also provides east-west linkage of habitats located near Lake Erie.

Diversity

The site exhibits very high diversity containing 29 ELC vegetation types (ecoelements) in 12 Community Series. The following is a summary of the ELC vegetation communities documented for the site.

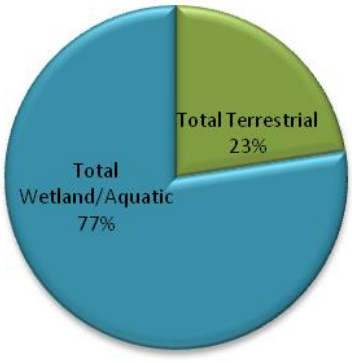
Table 37: ELC vegetation communities documented at Site #3.

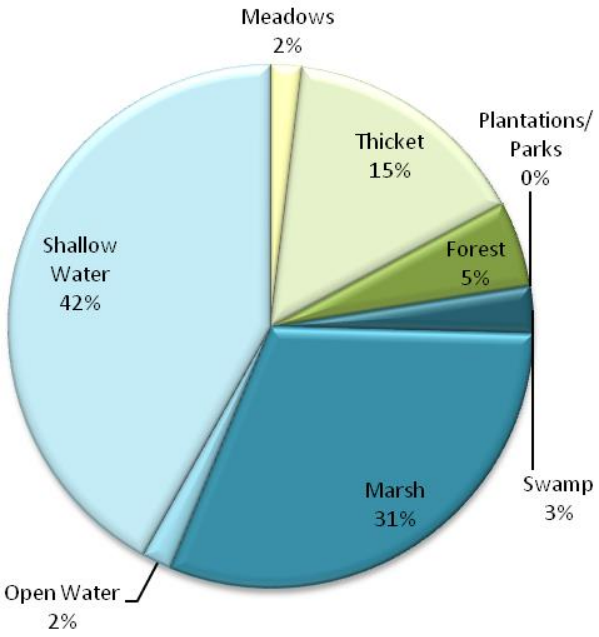
Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Treed Shoreline	Mineral Treed Shoreline	SHTM1
Forb Meadow	Fresh - Moist Forb Meadow	MEFM4
Deciduous Thicket	Fresh - Moist Deciduous Thicket	THDM5
	Gray Dogwood Deciduous Thicket	THDM5-1
Deciduous Forest	Fresh - Moist Black Walnut Lowland Deciduous Forest	FODM7-4
	Fresh - Moist Cottonwood Deciduous Forest	FODM8-3
	Fresh - Moist Oak - Maple - Hickory Deciduous Forest	FODM9
	Fresh - Moist Carolinian Deciduous Forest	FODM10
Treed Agriculture	Managed White Cedar Coniferous Plantation	CUT_1-16
Deciduous Swamp	Green Ash Mineral Deciduous Swamp	SWDM2-2
	Willow Mineral Deciduous Swamp	SWDM4-1
	White Birch - Cottonwood Deciduous Swamp	SWDM4-6
Thicket Swamp	Gray Dogwood Mineral Deciduous Thicket Swamp	SWTM2-3
	Willow Mineral Deciduous Thicket Swamp	SWTM3
Meadow Marsh	Canada Blue-joint Graminoid Mineral Meadow Marsh	MAMM1-1
	Reed-canary Grass Graminoid Mineral Meadow Marsh	MAMM1-3
	Common Reed Graminoid Mineral Meadow Marsh	MAMM1-12
	Mixed Graminoid Mineral Meadow Marsh	MAMM1-16
Shallow Marsh	Cattail Mineral Shallow Marsh	MASM1-1
	Broad-leaved Sedge Mineral Shallow Marsh	MASM1-5
	Bur-reed Mineral Shallow Marsh	MASM1-8
	Common Reed Mineral Shallow Marsh	MASM1-12
	Forb Mineral Shallow Marsh	MASM2-1
	Water Willow Organic Shallow Marsh	MASO2-3

Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Open Aquatic	Open Aquatic	OAO
Mixed Shallow Aquatic	Duckweed Mixed Shallow Aquatic	SAM_1-2
	Pondweed Mixed Shallow Aquatic	SAM_1-4
Floating-leaved Shallow Aquatic	Water Lily - Bullhead Lily Floating-leaved Shallow Aquatic	SAF_1-1
	Duckweed Floating-leaved Shallow Aquatic	SAF_1-3

Table 38: ELC community class coverage at Site #3.

Community Class	Hectares	Acres
Shoreline/Sand Barren and Dune	0.00	0.01
Meadows	1.55	3.83
Thicket	12.40	30.65
Woodland	0.00	0.00
Forest	4.27	10.56
Plantations/Parks	0.03	0.07
Swamp	2.33	5.75
Marsh	24.97	61.69
Open Water	1.49	3.69
Shallow Water	33.91	83.80
Total Terrestrial	18.26	45.11
Total Wetland/Aquatic	62.70	154.94
Total Habitat	80.96	200.05





Significant Species

The following 5 significant floral species were observed:

Table 39: Significant floral species identified at Site #3.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Carya laciniosa	Big Shellbark Hickory	G5			S3	N
Cirsium discolor	Field Thistle	G5			S3	N
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N
Smilax ecirrhata	Upright Greenbrier	G5?			S3?	N
Vernonica missurica	Ironweed	G4G5			S3?	N

The following significant faunal species observed include breeding species and the species that use the site in large numbers for an extended period of time. Migrants and occasional visitors are not included as significant fauna.

Table 40: Significant faunal species identified at Site #3.

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Least Bittern	S4	THR THR	Rare Local	-	Area Sensitive
Great Egret	S2	-	Rare Local	-	Large numbers summer in Essex County
Black-crowned Night-Heron	S3	-	Uncommon Local	-	Large numbers summer in Essex County

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Cooper's Hawk	S4	NAR NAR	Common Widespread	-	Area Sensitive
Common Moorhen	S4	-	Rare Local	-	-
American Coot	S4	NAR NAR	Rare Local	-	Area Sensitive
Black Tern	G4S3	NAR SC	Rare Local	-	Area Sensitive
Northern Flicker	S4	-	Common Widespread	Regional Concern	-
Willow Flycatcher	S5	-	Uncommon Widespread	Continental Concern	-
Eastern Kingbird	S4	-	Common Widespread	Regional Concern	-
Baltimore Oriole	S4	-	Common Widespread	Regional Concern Regional Stewardship	-
Blanding's Turtle	G4 S3	THR THR	Uncommon Local	-	-
Eastern Foxsnake	G3 S3	END END	Locally common Widespread	-	Essex County has the bulk of the world population of this snake
American Bullfrog	S4	-	Common Widespread	-	Area Sensitive
Hackberry Emperor	S2	-	Uncommon Local	-	-

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Monarch	S4	SC SC	Common Widespread	-	-

Significant Communities

The following significant communities were identified and mapped according to the Ecological Land Classification (ELC) System for Southern Ontario. Global (GRank) and Provincial (SRank) rarity ranks for these vegetation communities are provided by the Ontario Ministry of Natural Resources' (OMNR) Natural Heritage Information Centre (NHIC).

Table 41: Significant vegetation communities identified at Site #3.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)	GRank	SRank	Ha	Ac
Fresh – Moist Black Walnut Lowland Deciduous Forest Type	FODM7-4	G4?	S2S3	0.28	0.69
Gray Dogwood Mineral Deciduous Thicket Swamp Type	SWTM2-3	G5	S3S4	0.37	0.91
Total Area:				0.65	1.60

Condition

Floristically, the site's flora has a mean Coefficient of Conservatism (CC) of 4.02 and a Floristic Quality Index (FQI) value of 42.71. This indicates that the site's flora is of sufficient quality to be of remnant natural quality and possess sufficient conservatism and richness to be floristically important from a Provincial perspective.

A.3.5 Floral Inventory

Table 42: Floristic quality data at Site #3.

Floristic Quality Data	Native		Introduced		All Species	
Species Type	Number	% of Total	Number	% of Total	Number	% of Total
Trees	20	13.61	3	2.04	23	15.65
Shrubs	21	14.29	4	2.72	25	17.01
Woody Vines	3	2.04	1	0.68	4	2.72
Total Woody	44	29.93	8	5.44	52	35.37
Herbaceous Vines	1	0.68	1	0.68	2	1.36
Forbs	58	39.46	22	14.97	80	54.42
Ferns	0	0.00	0	0.00	0	0.00
Total Herbaceous Non-Graminoids	59	40.14	23	15.65	82	55.78
Grasses	7	4.76	3	2.04	10	6.80
Rushes	0	0.00	0	0.00	0	0.00
Sedges	3	2.04	0	0.00	3	2.04
Total Graminoids	10	6.80	3	2.04	13	8.84
Total Non-Woody	69	46.94	26	17.69	95	64.63
Total All Species	113	76.87	34	23.13	147	100.00

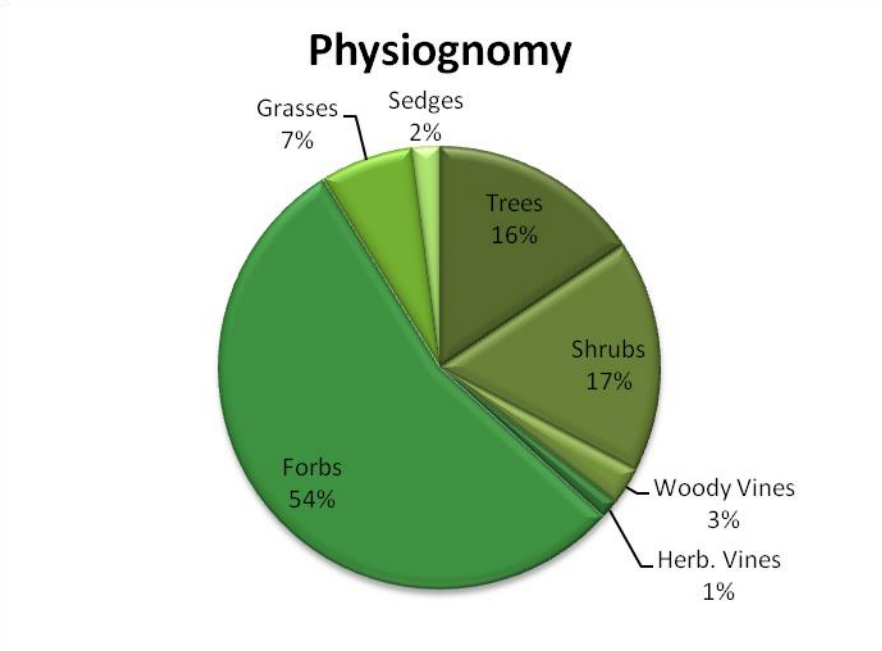


Figure 8: Overall physiognomy at Site #3.

The Wetness Index for the site, calculated from the mean Coefficient of Wetness (CW) of all native taxa recorded from the site inventory, is -0.70 indicating that the site has a predominance of wetland species.

A total of 147 plant species were recorded for the site.

Table 43: Full inventory of plant species identified at Site #3.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Abutilon theophrasti	Velvet-leaf	G?			SE5	I
Acer negundo	Manitoba Maple	G5			S5	N
Acer saccharinum	Silver Maple	G5			S5	N
Acer x freemanii	Freeman's Maple	G?			S5	N
Agrimonia gryposepala	Tall Hairy Agrimony	G5			S5	N
Agrimonia parviflora	Small-flower Agrimony	G5			S4	N
Agrostis gigantea	Redtop	G4G5			SE5	I
Alliaria petiolata	Garlic Mustard	G?			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Ambrosia artemisiifolia	Annual Ragweed	G5			S5	N
Ambrosia trifida	Great Ragweed	G5			S5	N
Amelanchier arborea	Downy Serviceberry	G5			S5	N
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane	G5T			S5	N
Arctium minus ssp. minus	Lesser Burdock	G?T?			SE5	I
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit	G5T5			S5	N
Asclepias incarnata ssp. incarnata	Swamp Milkweed	G5T5			S5	N
Asclepias syriaca	Common Milkweed	G5			S5	N
Asparagus officinalis	Asparagus	G5?			SE5	I
Aster ericoides ssp. ericoides	Heath Aster	G5T?			S5	N
Aster lateriflorus var. lateriflorus	Calico Aster	G5T5			S5	N
Aster novae-angliae	New England Aster	G5			S5	N
Bidens cernua	Nodding Beggar's Ticks	G5			S5	N
Bidens frondosa	Devil's Beggar's Ticks	G5			S5	N
Boehmeria cylindrica	False Nettle	G5			S5	N
Butomus umbellatus	Flowering-rush	G5			SE5	I
Calamagrostis canadensis	Blue-joint Reedgrass	G5			S5	N
Capsella bursa-pastoris	Common Shepherd's Purse	G?			SE5	I
Carex blanda	Woodland Sedge	G5?			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Carex lacustris	Lake-bank Sedge	G5			S5	N
Carex radiata	Stellate Sedge	G4			S5	N
Carpinus caroliniana ssp. virginiana	American Hornbeam	G5T			S5	N
Carya cordiformis	Bitternut Hickory	G5			S5	N
Carya laciniosa	Big Shellbark Hickory	G5			S3	N
Carya ovata var. ovata	Shagbark Hickory	G5			S5	N
Celtis occidentalis	Common Hackberry	G5			S4	N
Cephalanthus occidentalis	Buttonbush	G5			S5	N
Chrysanthemum leucanthemum	Oxeye Daisy	G?			SE5	I
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	G5T5			S5	N
Cirsium arvense	Crepping Thistle	G?			SE5	I
Cirsium discolor	Field Thistle	G5			S3	N
Cirsium vulgare	Bull Thistle	G5			SE5	I
Convolvulus arvensis	Field Bindweed	G?			SE5	I
Cornus amomum ssp. obliqua	Silky Dogwood	G5T?			S5	N
Cornus drummondii	Rough-leaved Dogwood	G5			S4	N
Cornus foemina ssp. racemosa	Gray Dogwood	G5			S5	N
Cornus stolonifera	Red-osier Dogwood	G5			S5	N
Crataegus crus-galli	Cockspur Hawthorn	G5			S5	N
Crataegus mollis	Downy Hawthorn	G5			S5	N
Crataegus punctata	Dotted Hawthorn	G5			S5	N
Daucus carota	Queen Anne's Lace	G?			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Decodon verticillatus	Hairy Swamp Loosestrife	G5			S5	N
Echinochloa crusgalli	Barnyard Grass	G?			SE5	I
Elaeagnus umbellata	Autumn Olive	G?			SE3	I
Elymus hystrix	Bottle-brush Grass	G5			S5	N
Epilobium coloratum	Purple-leaf Willow-herb	G5			S5	N
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	G5T?			S5	N
Eupatorium perfoliatum	Common Boneset	G5			S5	N
Floerkea proserpinacoides	False Mermaid-weed	G5	NAR		S4	N
Fraxinus pennsylvanica	Green Ash	G5			S5	N
Galium aparine	Cleavers	G5			S5	N
Geranium maculatum	Wild Geranium	G5			S5	N
Geum canadense	White Avens	G5			S5	N
Geum vernum	Spring Avens	G5			S4	N
Glyceria striata	Fowl Manna Grass	G5			S5	N
Helianthus tuberosus	Jerusalem Artichoke	G5			SE5	I
Hesperis matronalis	Dame's Rocket	G4G5			SE5	I
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N
Hydrophyllum virginianum	Virginia Waterleaf	G5			S5	N
Impatiens capensis	Spotted Jewel-weed	G5			S5	N
Juglans nigra	Black Walnut	G5			S4	N
Juniperus virginiana	Eastern Red Cedar	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Lemna minor	Lesser Duckweed	G5			S5	N
Lonicera tatarica	Tartarian Honeysuckle	G?			SE5	I
Lycopus americanus	American Bugleweed	G5			S5	N
Mentha arvensis ssp. borealis	Corn Mint	G5			S5	N
Morus alba	White Mulberry	G?			SE5	I
Nepeta cataria	Catnip	G?			SE5	I
Nymphaea odorata	Fragrant White Water-lily	G5			S5	N
Oenothera parviflora	Northen Evening-primrose	G4?			S5?	N
Osmorhiza longistylis	Smooth Sweet-cicely	G5			S5	N
Oxalis stricta	Upright Yellow Wood Sorrel	G5			S5	N
Parthenocissus quinquefolia	Virginia Creeper	G5			S4?	N
Phalaris arundinacea	Reed Canary Grass	G5			S5	N
Phragmites australis	Common Reed	G5			S5	N
Pilea pumila	Canada Clearweed	G5			S5	N
Pinus sylvestris	Scotch Pine	G?			SE5	I
Plantago lanceolata	English Plantain	G5			SE5	I
Plantago major	Nipple-seed Plantain	G5			SE5	I
Poa compressa	Canada Bluegrass	G?			S5	N
Poa pratensis ssp. pratensis	Kentucky Bluegrass	G5T			S5	N
Polygonum amphibium	Water Smartweed	G5			S5	N
Polygonum lapathifolium	Dock-leaf Smartweed	G5			S5	N
Polygonum pensylvanicum	Pennsylvania Smartweed	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Polygonum scandens	Climbing False-buckwheat	G5			S4S5	N
Polygonum virginianum	Virginia Knotweed	G5			S4	N
Populus deltoides ssp. deltoides	Eastern Cottonwood	G5T5			SU	N
Prunella vulgaris ssp. lanceolata	Self-heal	G5T?			S5	N
Prunus nigra	Canada Plum	G4G5			S4	N
Quercus alba	White Oak	G5			S5	N
Quercus bicolor	Swamp White Oak	G5			S4	N
Quercus macrocarpa	Bur Oak	G5			S5	N
Quercus rubra	Northern Red Oak	G5			S5	N
Rhus radicans ssp. negundo	Poison Ivy	G5T			S5	N
Rhus radicans ssp. rydbergii	Western Poison Ivy	G5T			S5	N
Rhus typhina	Staghorn Sumac	G5			S5	N
Ribes americanum	Wild Black Currant	G5			S5	N
Rosa carolina	Carolina Rose	G4G5			S4	N
Rosa multiflora	Rambler Rose	G?			SE4	I
Rosa palustris	Swamp Rose	G5			S5	N
Rubus allegheniensis	Allegheny Blackberry	G5			S5	N
Rubus occidentalis	Black Raspberry	G5			S5	N
Rumex crispus	Curly Dock	G?			SE5	I
Salix alba	White Willow	G5			SE4	I
Salix amygdaloides	Peach-leaved Willow	G5			S5	N
Salix exigua	Sandbar Willow	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Sambucus canadensis	Common Elderberry	G5			S5	N
Sanicula odorata	Clustered Snakeroot	G5			S5	N
Scrophularia marilandica	Carpenter's Square Figwort	G5			S4	N
Setaria pumila	Yellow Foxtail	G?			SE5	I
Smilax ecirrhata	Upright Greenbrier	G5?			S3?	N
Solanum dulcamara	Climbing Nightshade	G?			SE5	I
Solidago altissima var. altissima	Tall Goldenrod	G?			S5	N
Solidago canadensis	Canada Goldenrod	G5			S5	N
Solidago gigantea	Smooth Goldenrod	G5			S5	N
Sonchus arvensis ssp. arvensis	Field Sowthistle	G?T?			SE5	I
Sparganium americanum	American Bur-reed	G5			S4?	N
Taraxacum officinale	Common Dandelion	G5			SE5	I
Thalictrum dasycarpum	Purple Meadowrue	G5			S4?	N
Thuja occidentalis	Northern White Cedar	G5			S5	N
Tilia americana	American Basswood	G5			S5	N
Trifolium pratense	Red Clover	G?			SE5	I
Trifolium repens	White Clover	G?			SE5	I
Typha angustifolia	Narrow-leaved Cattail	G5			S5	N
Typha x glauca	Blue Cattail	HYB			S4?	N
Ulmus americana	American Elm	G5?			S5	N
Ulmus rubra	Slippery Elm	G5			S5	N
Urtica dioica ssp. dioica	Stinging Nettle	G5T?			SE2	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Urtica dioica ssp. gracilis	Slender Stinging Nettle	G5T?			S5	N
Verbascum thapsus	Common Mullein	G?			SE5	I
Verbena hastata	Blue Vervain	G5			S5	N
Verbena urticifolia	White Vervain	G5			S5	N
Vernonica missurica	Ironweed	G4G5			S3?	N
Viburnum lentago	Nannyberry	G5			S5	N
Viburnum opulus	Guelder-rose Viburnum	G5			SE4	I
Viola affinis	Lecontes Violet	G5			S4?	N
Viola sororia	Woolly Blue Violet	G5			S5	N
Vitis riparia	Riverbank Grape	G5			S5	N
Xanthium strumarium	Rough Cockle-bur	G?			S5	N
Abutilon theophrasti	Velvet-leaf	G?			SE5	I

A.3.6 Faunal Inventory

Surveyors: Dave Martin, Linda Wladarski and Dean Ware

Field Dates: May 3, May 4, June 8, July 26 and August 15, 2009

Birds

Table 44: Full inventory of bird species identified at Site #3.

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Pied-billed Grebe	4 NE	S4	- -	Uncommon Local 21%	-	-
Double-crested Cormorant	1 visitor	S5	NAR NAR	Common Local 32%	-	-
Least Bittern	1 SH	S4	THR THR	Rare Local 13%	-	Area Sensitive
Great Blue Heron	12 visitors	S5	-	Uncommon Widespread 35%	-	-
Great Egret	13 visitors	S2	-	Rare Local 13%	-	-
Black-crowned Night-Heron	13 visitors	S3	-	Uncommon Local 21%	-	-
Mute Swan	11 N	SNA	-	Common Local 27%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Canada Goose	27 NY	S5	- -	Common Widespread 83%	-	-
Wood Duck	20 FY	S5	- -	Common Widespread 70%	-	-
Mallard	27 FY	S5	- -	Common Widespread 91%	-	-
Blue-winged Teal	2 P	S4	- -	Uncommon Local 35%	-	-
Cooper's Hawk	2 SH	S4	NAR NAR	Common Widespread 78%	-	Area Sensitive
Red-tailed Hawk	1 SH	S5	NAR NAR	Common Widespread 75%	-	-
Sora	1 SH	S4	- -	Uncommon Widespread 40%	-	-
Common Moorhen	7 FY	S4	- -	Rare Local 18%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
American Coot	5 FY	S4	NAR NAR	Rare Local 10%	-	-
American Woodcock	1 SH	S4	-	Uncommon Widespread	-	-
Black Tern	5 NY	G4S3	NAR SC	Rare Local 10%	-	Area Sensitive
Mourning Dove	10 P	S5	-	Common Widespread 86%	-	-
Downy Woodpecker	2 P	S5	-	Common Widespread 89%	-	-
Northern Flicker	5 SH	S4	-	Common Widespread 89%	Regional Concern	-
Willow Flycatcher	2 T	S5	-	Uncommon Widespread 67%	Continental Concern	-
Least Flycatcher	1 migrant	S4	-	Rare Local 13%	-	Area Sensitive

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Eastern Kingbird	5 FY	S4	-	Common Widespread 91%	Regional Concern	-
Warbling Vireo	13 CF	S5	-	Common Widespread 81%	-	-
Red-eyed Vireo	2 T	S5	-	Common Widespread 86%	-	-
Blue Jay	5 N	S5	-	Common Widespread 83%	-	-
Tree Swallow	100 FY	S4	-	Common Widespread 94%	-	-
House Wren	3 P	S5	-	Common Widespread 86%	-	-
Marsh Wren	3 T	S4	-	Uncommon Local 35%	-	-
American Robin	7 CF	S5	-	Common Widespread 89%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Gray Catbird	3 T	S4	-	Common Widespread 81%	-	-
Cedar Waxwing	18 SH	S5	-	Common Widespread 89%	-	-
Yellow Warbler	15 CF	S5	-	Common Widespread 86%	-	-
Yellow-rumped Warbler	5 migrants	S5	-	Not a breeder	-	-
Palm Warbler	1 migrant	S5	-	Not a breeder	-	-
American Redstart	4 migrants	S5	-	Uncommon Widespread 29%	-	Area Sensitive
Ovenbird	1 migrant	S4	-	Rare Local 16%	-	-
Common Yellowthroat	6 T	S5	-	Common Widespread 75%	-	-
Song Sparrow	10 A	S5	-	Common Widespread 83%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Swamp Sparrow	4 A	S5	-	Uncommon Widespread 48%	-	-
White-throated Sparrow	2 migrants	S5	-	Very rare 2%	-	-
Northern Cardinal	4 N	S5	-	Common Widespread 94%	-	-
Red-winged Blackbird	200 FY	S5	-	Abundant Widespread 94%	-	-
Common Grackle	75 FY	S5	-	Abundant Widespread 94%	-	-
Brown-headed Cowbird	4 T	S4	-	Common Widespread 83%	-	-
Baltimore Oriole	1 SM	S4	-	Common Widespread 94%	Regional Concern Regional Stewardship	-
American Goldfinch	6 P	S5	-	Common Widespread 86%	-	-

Breeding evidence codes: SH = suitable habitat, SM = singing male, T = territory, P = pair, A = agitated behaviour, N = nest building or excavation of nest hole, V = visiting probable nest site, AE = adult entering presumed active nest hole, FY = fledged young, CF = carrying food, NE = nest with eggs, NY = Nest with young. SNA = Exotic, non-native species.

Mammals

Table 45: Full inventory of mammal species identified at Site #3.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Eastern Cottontail	15	S5	-	Common Widespread	-
Eastern Gray Squirrel	3	S5	-	Common Widespread	-
Muskrat	15	S5	-	Common Widespread	-
Northern Raccoon	Tracks	S5	-	Common Widespread	-
White-tailed Deer	Tracks 1 fawn	S5	-	Common Widespread	-

Reptiles

Table 46: Full inventory of reptile species identified at Site #3.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Midland Painted Turtle	7 adults	S5	- 	Common Widespread	-
Blanding's Turtle	4 adults	G4 S3	THR THR	Uncommon Local	-
Eastern Foxsnake	1 adult	G3 S3	END END	Locally common Widespread	Essex County has the bulk of the world population of this snake
Common Watersnake	1 adult	S5	NAR NAR	Uncommon Restricted range	Known only from Pelee, Hillman, Canard River, Big Creek, Ojibway, Bob-lo

Amphibian

Table 47: Full Inventory of amphibian species identified at Site #3.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
American Bullfrog	5 adults	S4	-	Common Widespread	Area Sensitive
Green Frog	70+ adults / juveniles	S5	-	Common Widespread	-
Northern Leopard Frog	50+ adults / juveniles	S5	-	Common Widespread	-

Butterflies

Table 48: Full inventory of butterfly species identified at Site #3.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Least Skipper	2	S5	- -	Common Widespread	-
Cabbage White	10	SNA	- -	Common Widespread	-
Orange Sulphur	4	S5	- -	Common Widespread	-
Summer Azure	20	S5	- -	Common Widespread	-
Crescent species	1	S4 or S5	- -	Common Widespread	-
Mourning Cloak	2	S5	- -	Common Widespread	-
Viceroy	1	S5	- -	Common Widespread	-
Hackberry Emperor	1	S2	- -	Uncommon Local	-
Eyed Brown	4	S5	- -	Locally common -	-
Monarch	7	S4	SC SC	Common Widespread	-

Odonata

Table 49: Full inventory of odonatan species identified at Site #3.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Fragile Forktail	15	S4	-	Common	-
Eastern Forktail	70+	S5	-	Common	-
Common Green Darner	6	S5	-	Common	-
Lance-tipped Darner	1	S5	-	Common	-
Eastern Pondhawk	5	S5	-	Common	-
Widow Skimmer	10	S5	-	Common	-
Twelve-spotted Skimmer	12	S5	-	Common	-
Blue Dasher	17	S5	-	Common	-
Eastern Amberwing	3	S4	-	Common	-
White-faced Meadowhawk	1	S5	-	Uncommon	-
Black Saddlebags	10	S4	-	Common	-

A.4 Site #4

A.4.1 Site Location

Municipality: Town of Amherstburg

Legal Description: Pt. Lot 55 & 56, Conc. 5, Pt. Lot 57 & 63, Conc. 6 Malden Township

ARN: 372953000000100, 372953000000200, 372953000000450, 372953000000400, 372951000009700, 372951000009600

PIN: 705720814, 705720339, 705720420, 705720419, 705730381, 705730421, 705730420, 705730379, 705730314, 705730411

UTM: Zone 17N 331160 4655880

A.4.2 Size

78.6 hectares (194.3 acres)

A.4.3 General Description

Site #4 is known as Holiday Beach Conservation Area. It is bounded on the south by Lake, on the east by Site #3 (Lake Erie Country Club) and the Essex County Demonstration Farm, on the north by County Road 50, and on the west by Site #6 (the main Big Creek Marsh basin).

The shoreline is a sand beach with a treed and shrub shoreline. A large successional thicket/forest contains an extensive walking trail. The site also consists of large areas utilized for public camping and picnicking. Water flows into Site #4 from Site #3 on the east side of the site, through the marsh wetlands.

Vegetation community composition is 68% terrestrial and 32% wetland/aquatic with a total of 28 vegetation types documented for the site. The uplands support 15 woody and 2 herbaceous plant communities. The wetlands support 10 herbaceous and 1 woody plant communities.

Wetland communities are generally composed of emergent cattail marsh and portions of the American Lotus open aquatic community, in the western portion of the site.

Upland communities are generally composed of shrub thickets and Carolinian forests in the central portion of the site and shrub and treed shoreline along the beach in the southern part of the site.

Soils are classified as Perth Clay (Pc) and Bottom Land (B.L.) in the northern portion of the site, Marsh (Ma) in the southern portion of the site, and Eastport Sand (Es) along the beach also in the southern portion of the site.

A.4.4 Evaluation of 10 Standard Natural Heritage Features

<u>Significant Wetland</u>

The site contains lands which are within the boundary of the Big Creek Marsh Provincially Significant Wetland (PSW), as a result of evaluation and mapping conducted by staff of the Ontario Ministry of Natural Resources (OMNR) during the 2009 field season.

Significant Habitat of Endangered/Threatened Species

Specimens which closely resemble Red Mulberry (*Morus rubra*), an Endangered species, were found growing within the Fresh Moist Oak Carolinian Deciduous Forest [FOD (FODM10-2)] vegetation community in the Group Campground and the Marshview Campground. Red Mulberry and White Mulberry (*Morus alba*) hybridize and a great number of White Mulberry trees were noted growing throughout the site. The specimens which are reported as Red Mulberry are worthy of genetic analysis to ascertain purity, due to the physical characteristics noted at the time in the field.

Hop Tree (*Ptelea trifoliata*), a Threatened species, was found growing within the Mineral Treed Shoreline [BBT1 (SHTM1)] vegetation community along the beach, in several locations.

Two sightings of Prothonotary Warbler (*Protonotaria citrea*), an Endangered species, were documented for the site with the habitat generally described as "flooded woodlot" and "at nest box in flooded swamp". Vegetation communities associated with these sightings include:

Table 50: Vegetation communities associated with Prothonotary Warbler sightings at Site #4.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Fresh-Moist Cottonwood Deciduous Forest Type	FODM8-3

One sighting of the King Rail (*Rallus elegans*), an Endangered species, was documented for the site, with the habitat generally described as "pond by hawk viewing tower". Vegetation communities associated with this sighting include:

Table 51: Vegetation communities associated with King Rail sightings at Site #4

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Pondweed Mixed Shallow Aquatic Type	SAM_1-4
Duckweed Mixed Shallow Aquatic Type	SAM_1-2

One sighting of the Eastern Foxsnake (*Pantherophis gloydi*), an Endangered species, was documented for the site, with the habitat generally described as "marsh boardwalk". Vegetation communities associated with this sighting include:

Table 52: Vegetation communities associated with Eastern Foxsnake sightings at Site #4.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Fresh-Moist Oak Carolinian Deciduous Forest Type	FODM10-2

Two sightings of a Least Bittern (*Ixobrychus exilis*), a Threatened species, was documented for the site with the habitat generally described as "cattail marsh". Vegetation communities associated with these sightings include:

Table 53: Vegetation communities associated with Least Bittern sightings at Site #4.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Cattail Mineral Shallow Marsh Type	MASM1-1

In addition, 2 sightings (totaling 4 individuals) of Blanding's Turtle (*Emydoidea blandingii*), a Threatened species, were documented for the site with the habitat generally described as "near hawk viewing tower". Vegetation communities associated with these sightings include:

Table 54: Vegetation communities associated with Blanding's Turtle sightings at Site #4.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Fresh-Moist Cottonwood Deciduous Forest Type	FODM8-3

Significant Woodland

The site contains the following deciduous forest types creating patches greater than 2 hectares in size:

Table 55: Deciduous forest types identified at Site #4.

Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Deciduous Forest	Fresh - Moist Lowland Deciduous Forest	FODM7
	Fresh - Moist Willow Lowland Deciduous Forest	FODM7-3
	Fresh - Moist Cottonwood Deciduous Forest	FODM8-3
	Fresh - Moist Oak - Maple - Hickory Deciduous Forest	FODM9
	Fresh - Moist Oak - Maple Deciduous Forest	FODM9-2
	Fresh - Moist Carolinian Deciduous Forest	FODM10
	Fresh - Moist Oak Carolinian Deciduous Forest	FODM10-2
	Naturalized Deciduous Plantation	FODM12

Some of these patches are also located within 30 metres of fish habitat likely receiving ecological benefit.

Significant Wildlife Habitat

The site contains colonial bird nesting sites of Least Bittern, Forster's Tern, Black Tern, and most likely Marsh wren, Red-winged Blackbird and Common Grackle. The open water wetlands on the site are also known to be significant as a waterfowl stopover and staging area. The diverse upland areas of the site provide landbird migratory stopover areas. Based on sightings recorded, the site provides suitable areas of reptile hibernacula for the following species: Eastern Foxsnake, Snapping Turtle, Midland Painted Turtle, Blanding's Turtle, and the Common Map Turtle. The wetland is of sufficient quality to support a population of Bullfrogs, which were recorded from this site during the faunal inventories. The site also provides adequate stopover habitat for the Monarch butterfly. The site contains Provincially rare (S1 to S3) vegetation communities (see Criterion No. 9 – Significant Communities for further information). The faunal inventory recorded the presence of area-sensitive bird species. The forested areas contain amphibian woodland breeding ponds. The beach shoreline provides significant opportunities for turtle nesting. Finally, the site contains habitats of species of conservation concern (see Criterion No. 8 – Significant Species for further information).

Significant Valleyland

Not fulfilled.

Ecological Function

The site performs the ecological functions of hydrological flow, water retention and purification, receiving water from wetlands to the east, and purifying it within the site before flowing west towards the main Big Creek marsh basin. The site also provides east-west linkage of habitats located near Lake Erie as well as linkage along the east side of the Big Creek marsh basin.

Diversity

The site exhibits very high diversity containing 28 ELC vegetation types (ecoelements) in 13 Community Series. The following is a summary of the ELC vegetation communities documented for the site.

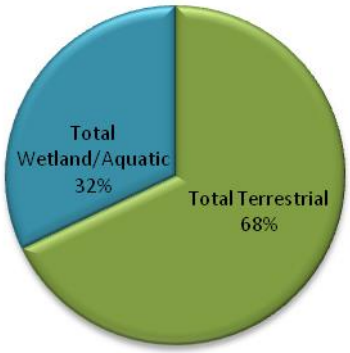
Table 56: ELC vegetation communities documented at Site #4.

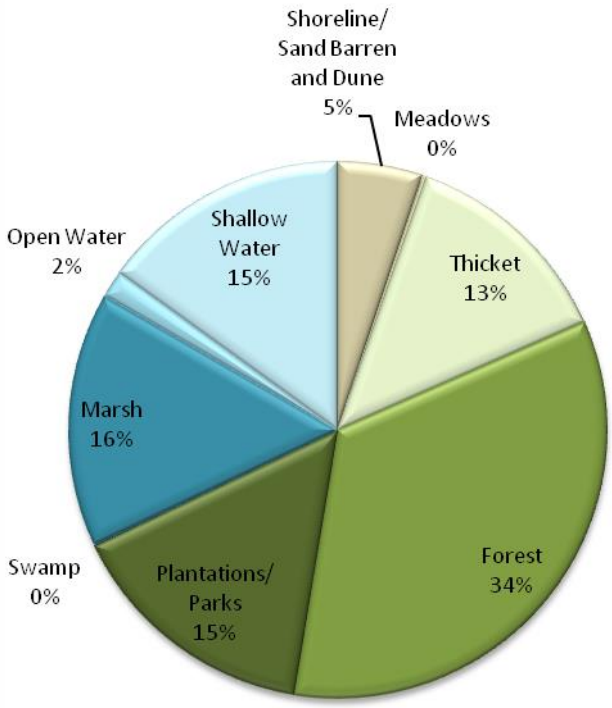
Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Open Shoreline	Mineral Open Shoreline	SHOM1
Treed Shoreline	Mineral Treed Shoreline	SHTM1
Graminoid Meadow	Reed Canary Grass Graminoid Meadow	MEGM3-8
Deciduous Thicket	Gray Dogwood Deciduous Shrub Thicket	THDM2-4
	Native Deciduous Regeneration Thicket	THDM4-1
	Gray Dogwood Deciduous Thicket	THDM5-1
Deciduous Forest	Fresh - Moist Lowland Deciduous Forest	FODM7
	Fresh - Moist Willow Lowland Deciduous Forest	FODM7-3
	Fresh - Moist Cottonwood Deciduous Forest	FODM8-3
	Fresh - Moist Oak - Maple - Hickory Deciduous Forest	FODM9
	Fresh - Moist Oak - Maple Deciduous Forest	FODM9-2
	Fresh - Moist Carolinian Deciduous Forest	FODM10

Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
	Fresh - Moist Oak Carolinian Deciduous Forest	FODM10-2
	Naturalized Deciduous Plantation	FODM12
Green Lands	Parkland	CGL_2
Treed Agriculture	Managed Austrian Pine Coniferous Plantation	CUT_1-12
	Managed White Pine Coniferous Plantation	CUT_1-2
Thicket Swamp	Willow Mineral Deciduous Thicket Swamp	SWTM3
Meadow Marsh	Common Reed Graminoid Mineral Meadow Marsh	MAMM1-12
Shallow Marsh	Cattail Mineral Shallow Marsh	MASM1-1
	Common Reed Mineral Shallow Marsh	MASM1-12
	Reed Canary Grass Mineral Shallow Marsh	MASM1-14
	Forb Mineral Shallow Marsh	MASM2-1
Open Aquatic	Open Aquatic	OAO
Mixed Shallow Aquatic	Duckweed Mixed Shallow Aquatic	SAM_1-2
	Pondweed Mixed Shallow Aquatic	SAM_1-4
Floating-leaved Shallow Aquatic	American Lotus Floating-leaved Shallow Aquatic	SAF_1-2
	Duckweed Floating-leaved Shallow Aquatic	SAF_1-3

Table 57: ELC community class coverage at Site #4.

Community Class	Hectares	Acres
Shoreline/Sand Barren and Dune	4.03	9.96
Meadows	0.19	0.48
Thicket	10.24	25.29
Woodland	0.00	0.00
Forest	26.89	66.45
Plantations/Parks	12.04	29.74
Swamp	0.06	0.15
Marsh	12.06	29.81
Open Water	1.29	3.18
Shallow Water	11.82	29.20
Total Terrestrial	53.39	131.93
Total Wetland/Aquatic	25.23	62.34
Total Habitat	78.62	194.26





Significant Species

The following 14 significant floral species were observed:

Table 58: Significant floral species identified at Site #4.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Carya glabra	Pignut Hickory	G5			S3	N
Carya laciniosa	Big Shellbark Hickory	G5			S3	N
Cirsium discolor	Field Thistle	G5			S3	N
Gleditsia triacanthos	Honey Locust	G5			S2	N
Hibiscus moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
ssp. moscheutos						
Lycopus virginicus	Virginia Bugleweed	G5			S3	N
Morus rubra	Red Mulberry	G5	END	END	S2	N
Nelumbo lutea	American Lotus	G4			S2	N
Nuphar advena	Yellow Pond-lily	G5			S3	N
Ptelea trifoliata	Hop Tree	G5	THR	THR	S3	N
Ratibida pinnata	Gray-headed Coneflower	G5			S3	N
Rosa setigera	Climbing Prairie Rose	G5	SC	SC	S3	N
Triosteum perfoliatum	Perfoliate Horse Gentian	G5			S1	N
Vernonica missurica	Ironweed	G4G5			S3?	N

The following significant faunal species observed include breeding species and the species that use the site in large numbers for an extended period of time. Migrants and occasional visitors are not included as significant fauna.

Table 59: Significant faunal species identified at Site #4.

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Least Bittern	S4	THR THR	Rare Local	-	Area Sensitive
Great Egret	S2	-	Rare Local	-	-
Black-crowned Night-Heron	S3	-	Uncommon Local	-	-

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Green-winged Teal	S4	- -	Very rare Local	-	-
Bald Eagle	S4	NAR SC	Uncommon Widespread	-	Area Sensitive
Cooper's Hawk	S4	NAR NAR	Common Widespread	-	Area Sensitive
King Rail	S2	END END	Very Rare Local	-	Area Sensitive
Common Moorhen	S4	- -	Rare Local	-	-
American Coot	S4	NAR NAR	Rare Local	-	Area Sensitive
Forster's Tern	S2	DD DD	Rare Local	-	Area Sensitive
Black Tern	G4S3	NAR SC	Rare Local	-	Area Sensitive
Belted Kingfisher	S4	- -	Uncommon Widespread	Regional Concern	-
Red-headed Woodpecker	S4	THR SC	Uncommon Widespread	THR SC	Rapidly declining
Hairy Woodpecker	S5	- -	Uncommon Widespread	-	Area Sensitive
Northern Flicker	S4	- -	Common Widespread	Regional Concern	-

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Eastern Wood-Pewee	S4	-	Common Widespread	Regional Concern	-
Willow Flycatcher	S5	-	Uncommon Widespread	Continental Concern	-
Least Flycatcher	S4	-	Rare Local	-	Area Sensitive
Eastern Kingbird	S4	-	Common Widespread	Regional Concern	-
Blue-gray Gnatcatcher	S4	-	Uncommon Widespread	-	Area Sensitive
Wood Thrush	S4	-	Uncommon Widespread	Continental Concern Regional Concern	-
Prothonotary Warbler	S1	END END	Very Rare Local	END END	-
Rose-breasted Grosbeak	S4	-	Uncommon Widespread	Regional Stewardship	-
Baltimore Oriole	S4	-	Common Widespread	Regional Concern Regional Stewardship	-
Blanding's Turtle	G4 S3	THR THR	Uncommon Local	-	-
Northern Map Turtle	S3	SC SC	Common Local	-	Area Sensitive
Eastern Foxsnake	G3 S3	END END	Locally common Widespread	-	Essex County has the bulk of the world population of this snake
American Bullfrog	S4	-	Common Widespread	-	Area Sensitive

Common Name	SRank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Hackberry Emperor	S2	- 	Uncommon Local	-	-
Monarch	S4	SC SC	Common Widespread	-	-

Significant Communities

The following significant communities were identified and mapped according to the Ecological Land Classification (ELC) System for Southern Ontario. Global (GRank) and Provincial (SRank) rarity ranks for these vegetation communities are provided by the Ontario Ministry of Natural Resources' (OMNR) Natural Heritage Information Centre (NHIC).

Table 60: Significant vegetation communities identified at Site #4.

Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)	GRank	SRank	Ha	Ac
American Lotus Floating-leaved Shallow Aquatic Type	SAF_1-2	G5	S1	6.14	15.17

Condition

The site contains lands which are within the boundary of the Big Creek Marsh life science Area of Natural and Scientific Interest (ANSI) as identified by the Ontario Ministry of Natural Resources (OMNR), signifying one of the best examples of shoreline marsh and associated wetland in the Province of Ontario.

Floristically, the site's flora has a mean Coefficient of Conservatism (CC) of 4.37 and a Floristic Quality Index (FQI) value of 54.46. This indicates that the site's flora is relatively intact with high floristic quality, an extremely rare condition representing a significant component of Ontario's native biodiversity and natural landscapes.

A.4.5 Floral Inventory

Table 61: Floristic quality data at Site #4.

Floristic Quality Data	Native		Introduced		All Species	
Species Type	Number	% of Total	Number	% of Total	Number	% of Total
Trees	32	15.46	6	2.90	38	18.36
Shrubs	24	11.59	7	3.38	31	14.98
Woody Vines	3	1.45	1	0.48	4	1.93
Total Woody	59	28.50	14	6.76	73	35.27
Herbaceous Vines	3	1.45	1	0.48	4	1.93
Forbs	77	37.20	35	16.91	112	54.11
Ferns	2	0.97	0	0.00	2	0.97
Total Herbaceous Non-Graminoids	82	39.61	36	17.39	118	57.00
Grasses	8	3.86	2	0.97	10	4.83
Rushes	1	0.48	0	0.00	1	0.48
Sedges	5	2.42	0	0.00	5	2.42
Total Graminoids	14	6.76	2	0.97	16	7.73
Total Non-Woody	96	46.38	38	18.36	134	64.73
Total All Species	155	74.88	52	25.12	207	100.00

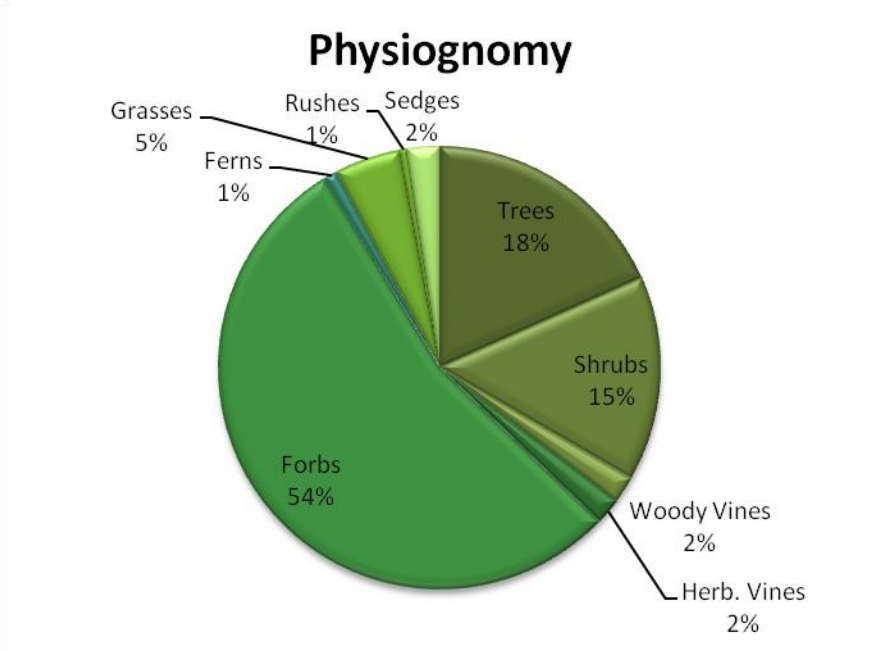


Figure 9: Overall physiognomy at Site #4.

The Wetness Index for the site, calculated from the mean Coefficient of Wetness (CW) of all native taxa recorded from the site inventory, is -0.47 indicating that the site has a predominance of wetland species.

A total of 207 plant species were recorded for the site.

Table 62: Full inventory of plant species identified at Site #4.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Abutilon theophrasti	Velvet-leaf	G?			SE5	I
Acer negundo	Manitoba Maple	G5			S5	N
Acer rubrum	Red Maple	G5			S5	N
Acer saccharinum	Silver Maple	G5			S5	N
Acer x freemanii	Freeman's Maple	G?			S5	N
Agrimonia gryposepala	Tall Hairy Agrimony	G5			S5	N
Agrimonia parviflora	Small-flower Agrimony	G5			S4	N
Agrostis gigantea	Redtop	G4G5			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Ailanthus altissima	Tree-of-heaven	G?			SE5	I
Alliaria petiolata	Garlic Mustard	G?			SE5	I
Ambrosia artemisiifolia	Annual Ragweed	G5			S5	N
Ambrosia trifida	Great Ragweed	G5			S5	N
Amelanchier arborea	Downy Serviceberry	G5			S5	N
Anemone canadensis	Canada Anemone	G5			S5	N
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane	G5T			S5	N
Arctium lappa	Greater Burdock	G?			SE5	I
Asarum canadense	Wild Ginger	G5			S5	N
Asclepias incarnata ssp. incarnata	Swamp Milkweed	G5T5			S5	N
Asclepias syriaca	Common Milkweed	G5			S5	N
Asparagus officinalis	Asparagus	G5?			SE5	I
Aster ericoides ssp. ericoides	Heath Aster	G5T?			S5	N
Aster lanceolatus ssp. lanceolatus	Panicled Aster	G5T?			S5	N
Aster lateriflorus var. lateriflorus	Calico Aster	G5T5			S5	N
Aster novae-angliae	New England Aster	G5			S5	N
Atriplex patula	Halberd-leaf Saltbush	G5			S5	N
Berberis thunbergii	Japanese Barberry	G?			SE5	I
Bidens cernua	Nodding Beggar's Ticks	G5			S5	N
Bidens frondosa	Devil's Beggar's Ticks	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Boehmeria cylindrica	False Nettle	G5			S5	N
Butomus umbellatus	Flowering-rush	G5			SE5	I
Calamagrostis canadensis	Blue-joint Reedgrass	G5			S5	N
Capsella bursa-pastoris	Common Shepherd's Purse	G?			SE5	I
Carex blanda	Woodland Sedge	G5?			S5	N
Carex lacustris	Lake-bank Sedge	G5			S5	N
Carex radiata	Stellate Sedge	G4			S5	N
Carya cordiformis	Bitternut Hickory	G5			S5	N
Carya glabra	Pignut Hickory	G5			S3	N
Carya laciniosa	Big Shellbark Hickory	G5			S3	N
Carya ovata var. ovata	Shagbark Hickory	G5			S5	N
Catalpa bignonioides	Southern Catalpa	G4G5			SE1	I
Celtis occidentalis	Common Hackberry	G5			S4	N
Cephalanthus occidentalis	Buttonbush	G5			S5	N
Ceratophyllum demersum	Common Hornwort	G5			S5	N
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	G5T5			S5	N
Cirsium arvense	Crepping Thistle	G?			SE5	I
Cirsium discolor	Field Thistle	G5			S3	N
Cirsium vulgare	Bull Thistle	G5			SE5	I
Convolvulus arvensis	Field Bindweed	G?			SE5	I
Cornus amomum ssp. obliqua	Silky Dogwood	G5T?			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Cornus drummondii	Rough-leaved Dogwood	G5			S4	N
Cornus foemina ssp. racemosa	Gray Dogwood	G5			S5	N
Cornus stolonifera	Red-osier Dogwood	G5			S5	N
Crataegus crus-galli	Cockspur Hawthorn	G5			S5	N
Crataegus mollis	Downy Hawthorn	G5			S5	N
Crataegus punctata	Dotted Hawthorn	G5			S5	N
Daucus carota	Queen Anne's Lace	G?			SE5	I
Decodon verticillatus	Hairy Swamp Loosestrife	G5			S5	N
Dipsacus fullonum ssp. sylvestris	Common Teasel	G?T?			SE5	I
Echinochloa crusgalli	Barnyard Grass	G?			SE5	I
Echinocystis lobata	Wild Mock-cucumber	G5			S5	N
Elaeagnus angustifolia	Russian Olive	G?			SE3	I
Elaeagnus umbellata	Autum Olive	G?			SE3	I
Elymus hystrix	Bottle-brush Grass	G5			S5	N
Epilobium coloratum	Purple-leaf Willow-herb	G5			S5	N
Epipactis helleborine	Eastern Helleborine	G?			SE5	I
Equisetum arvense	Field Horsetail	G5			S5	N
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	G5T?			S5	N
Erythronium americanum ssp. americanum	Yellow Trout-lily	G5T5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Eupatorium perfoliatum	Common Boneset	G5			S5	N
Euthamia graminifolia	Grass-leaved Goldenrod	G5			S5	N
Floerkea proserpinacoides	False Mermaid-weed	G5	NAR		S4	N
Fragaria vesca ssp. americana	Woodland Strawberry	G5T?			S5	N
Fragaria virginiana ssp. virginiana	Virginia Strawberry	G5T?			SU	N
Fraxinus americana	White Ash	G5			S5	N
Fraxinus nigra	Black Ash	G5			S5	N
Fraxinus pennsylvanica	Green Ash	G5			S5	N
Galium aparine	Cleavers	G5			S5	N
Geranium maculatum	Wild Geranium	G5			S5	N
Geranium robertianum	Herb-robert	G5			SE5	I
Geum aleppicum	Yellow Avens	G5			S5	N
Geum canadense	White Avens	G5			S5	N
Glechoma hederacea	Ground Ivy	G?			SE5	I
Gleditsia triacanthos	Honey Locust	G5			S2	N
Glyceria striata	Fowl Manna Grass	G5			S5	N
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	G5	SC	SC	S3	N
Hieracium aurantiacum	Orange Hawkweed	G?			SE5	I
Hydrophyllum virginianum	Virginia Waterleaf	G5			S5	N
Impatiens capensis	Spotted Jewel-weed	G5			S5	N
Iris virginica	Virginia Blue Flag	G5			S5	N
Juglans nigra	Black Walnut	G5			S4	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Juncus tenuis	Slender Rush	G5			S5	N
Juniperus virginiana	Eastern Red Cedar	G5			S5	N
Lactuca biennis	Tall Blue Lettuce	G5			S5	N
Lemna minor	Lesser Duckweed	G5			S5	N
Leonurus cardiaca ssp. cardiaca	Common Motherwort	G?T?			SE5	I
Lobelia siphilitica	Great Blue Lobelia	G5			S5	N
Lonicera tatarica	Tartarian Honeysuckle	G?			SE5	I
Lotus corniculatus	Bird's-foot Trefoil	G?			SE5	I
Lycopus americanus	American Bugleweed	G5			S5	N
Lycopus virginicus	Virginia Bugleweed	G5			S3	N
Lysimachia nummularia	Moneywort	G?			SE5	I
Lythrum salicaria	Slender-spike Loosestrife	G5			SE5	I
Maianthemum racemosum ssp. racemosum	False Solomon's Seal	G5T			S5	N
Medicago sativa ssp. sativa	Alfalfa	G?T?			SE5	I
Melilotus alba	White Sweet Clover	G5			SE5	I
Melilotus officinalis	Yellow Sweet Clover	G?			SE5	I
Menispermum canadense	Canada Moonseed	G5			S4	N
Mentha arvensis ssp. borealis	Corn Mint	G5			S5	N
Monarda fistulosa	Wild Bergamot	G5			S5	N
Morus alba	White Mulberry	G?			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Morus rubra	Red Mulberry	G5	END	END	S2	N
Nelumbo lutea	American Lotus	G4			S2	N
Nepeta cataria	Catnip	G?			SE5	I
Nuphar advena	Yellow Pond-lily	G5			S3	N
Nymphaea odorata	Fragrant White Water-lily	G5			S5	N
Oenothera parviflora	Northen Evening-primrose	G4?			S5?	N
Onoclea sensibilis	Sensitive Fern	G5			S5	N
Osmorhiza claytonii	Hairy Sweet-cicely	G5			S5	N
Oxalis stricta	Upright Yellow Wood Sorrel	G5			S5	N
Panicum virgatum	Switch Grass	G5			S4	N
Parthenocissus quinquefolia	Virginia Creeper	G5			S4?	N
Pastinaca sativa	Wild Parsnip	G?			SE5	I
Phalaris arundinacea	Reed Canary Grass	G5			S5	N
Phragmites australis	Common Reed	G5			S5	N
Phryma leptostachya	Lopseed	G5			S4S5	N
Picea glauca	White Spruce	G5			S5	N
Pilea pumila	Canada Clearweed	G5			S5	N
Pinus nigra	Black Pine	G?			SE2	I
Pinus resinosa	Red Pine	G5			S5	N
Pinus strobus	Eastern White Pine	G5			S5	N
Plantago lanceolata	English Plantain	G5			SE5	I
Plantago major	Nipple-seed Plantain	G5			SE5	I
Platanus occidentalis	Sycamore	G5			S4	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Poa compressa	Canada Bluegrass	G?			S5	N
Poa pratensis ssp. pratensis	Kentucky Bluegrass	G5T			S5	N
Podophyllum peltatum	May Apple	G5			S5	N
Polygonatum biflorum	Giant Solomon's Seal	G5			S4	N
Polygonum amphibium	Water Smartweed	G5			S5	N
Polygonum scandens	Climbing False-buckwheat	G5			S4S5	N
Polygonum virginianum	Virginia Knotweed	G5			S4	N
Populus deltoides ssp. deltoides	Eastern Cottonwood	G5T5			SU	N
Potamogeton crispus	Curly Pondweed	G5			SE5	I
Potentilla recta	Sulphur Cinquefoil	G?			SE5	I
Prunella vulgaris ssp. lanceolata	Self-heal	G5T?			S5	N
Prunus nigra	Canada Plum	G4G5			S4	N
Prunus serotina	Wild Black Cherry	G5			S5	N
Prunus virginiana ssp. virginiana	Choke Cherry	G5T?			S5	N
Ptelea trifoliata	Hop Tree	G5	THR	THR	S3	N
Pycnanthemum virginianum	Virginia Mountain-mint	G5			S4	N
Quercus alba	White Oak	G5			S5	N
Quercus bicolor	Swamp White Oak	G5			S4	N
Quercus macrocarpa	Bur Oak	G5			S5	N
Quercus palustris	Pin Oak	G5			S4	N
Quercus rubra	Northern Red Oak	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Ratibida pinnata	Gray-headed Coneflower	G5			S3	N
Rhus glabra	Smooth Sumac	G5			S5	N
Rhus radicans ssp. negundo	Poison Ivy	G5T			S5	N
Rhus radicans ssp. rydbergii	Western Poison Ivy	G5T			S5	N
Rhus typhina	Staghorn Sumac	G5			S5	N
Ribes americanum	Wild Black Currant	G5			S5	N
Rosa canina	Dog Rose	G?			SE2	I
Rosa multiflora	Rambler Rose	G?			SE4	I
Rosa setigera	Climbing Prairie Rose	G5	SC	SC	S3	N
Rubus allegheniensis	Allegheny Blackberry	G5			S5	N
Rubus hispidus	Trailing Blackberry	G5			S4S5	N
Rubus occidentalis	Black Raspberry	G5			S5	N
Rumex crispus	Curly Dock	G?			SE5	I
Salix alba	White Willow	G5			SE4	I
Salix amygdaloides	Peach-leaved Willow	G5			S5	N
Salix exigua	Sandbar Willow	G5			S5	N
Sambucus canadensis	Common Elderberry	G5			S5	N
Sanicula marilandica	Black Snakeroot	G5			S5	N
Sanicula odorata	Clustered Snakeroot	G5			S5	N
Saponaria officinalis	Bouncing-bet	G?			SE5	I
Scirpus fluviatilis	River Bulrush	G5			S4S5	N
Scirpus validus	Soft-stemmed Bulrush	G?			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Sium suave	Hemlock Water-parsnip	G5			S5	N
Solanum dulcamara	Climbing Nightshade	G?			SE5	I
Solidago altissima var. altissima	Tall Goldenrod	G?			S5	N
Solidago canadensis	Canada Goldenrod	G5			S5	N
Solidago gigantea	Smooth Goldenrod	G5			S5	N
Sonchus arvensis ssp. arvensis	Field Sowthistle	G?T?			SE5	I
Sonchus oleraceus	Common Sowthistle	G?			SE5	I
Sparganium americanum	American Bur-reed	G5			S4?	N
Taraxacum officinale	Common Dandelion	G5			SE5	I
Thuja occidentalis	Northern White Cedar	G5			S5	N
Tilia americana	American Basswood	G5			S5	N
Tragopogon pratensis ssp. pratensis	Meadow Goat's-beard	G?T?			SE5	I
Trifolium pratense	Red Clover	G?			SE5	I
Trifolium repens	White Clover	G?			SE5	I
Triosteum aurantiacum	Horse Gentian	G5			S5	N
Triosteum perfoliatum	Perfoliate Horse Gentian	G5			S1	N
Typha angustifolia	Narrow-leaved Cattail	G5			S5	N
Ulmus americana	American Elm	G5?			S5	N
Ulmus pumila	Siberian Elm	G?			SE3	I
Ulmus rubra	Slippery Elm	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Urtica dioica ssp. gracilis	Slender Stinging Nettle	G5T?			S5	N
Verbena hastata	Blue Vervain	G5			S5	N
Verbena urticifolia	White Vervain	G5			S5	N
Vernonica missurica	Ironweed	G4G5			S3?	N
Viburnum lentago	Nannyberry	G5			S5	N
Viburnum opulus	Guelder-rose Viburnum	G5			SE4	I
Viburnum trilobum	Highbush Cranberry	G5T5			S5	N
Viola affinis	Lecontes Violet	G5			S4?	N
Viola sororia	Woolly Blue Violet	G5			S5	N
Vitis riparia	Riverbank Grape	G5			S5	N

A.4.6 Faunal Inventory

Surveyors: Dave Martin, Linda Wladarski, Dean Ware, Ross Snider and James Holdsworth

Field Dates: April 29, May 3, May 4, May 24, June 3, June 6, June 7, July 25 and August 9, 2009

Birds

Table 63: Full inventory of bird species identified at Site #4.

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC	Common Name	# Individuals or Territories / Breeding Evidence	SRank
Pied-billed Grebe	8 P	S4	-	Uncommon Local 21%	-	-
Double-crested Cormorant	5 visitors	S5	NAR NAR	Common Local 32%	-	-
Least Bittern	1 SM	S4	THR THR	Rare Local	-	Area Sensitive

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC	Common Name	# Individuals or Territories / Breeding Evidence	SRank
				13%		
Great Blue Heron	8 visitors	S5	-	Uncommon Widespread 35%	-	-
Great Egret	7 visitors	S2	-	Rare Local 13%	-	-
Green Heron	3 T	S4	-	Uncommon Widespread 67%	-	-
Black-crowned Night-Heron	2 visitors	S3	-	Uncommon Local 21%	-	-
Mute Swan	12 FY	SNA	-	Common Local 27%	-	-
Canada Goose	21 FY	S5	-	Common Widespread 83%	-	-
Wood Duck	17 FY	S5	-	Common Widespread 70%	-	-
Green-winged Teal	7 P	S4	-	Very rare Local 8%	-	-
American Black Duck	7 migrants	S4	-	Rare Local 10%	-	-
Mallard	50 FY	S5	-	Common Widespread 91%	-	-
Northern Pintail	3 migrants	S5	-	Very rare Local 5%	-	-
Blue-winged Teal	2 P	S4	-	Uncommon Local 35%	-	-
Gadwall	10 migrants	S4	-	Rare Local 8%	-	-
American Wigeon	3 migrants	S4	-	Very Rare Local 5%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC	Common Name	# Individuals or Territories / Breeding Evidence	SRank
Ring-necked Duck	10 migrants	S5	-	Not a breeder	-	-
Lesser Scaup	19 migrants	S4	-	Very rare Local	-	-
Common Merganser	2 migrants	S5	-	Not a breeder	-	-
Ruddy Duck	30 migrants	S4	-	Uncommon Local 24%	-	-
Turkey Vulture	2 visitors	S5	-	Common Widespread 75%	-	-
Bald Eagle	4 visitors	S4	NAR SC	Uncommon Widespread 37%	-	Area Sensitive
Cooper's Hawk	2 AE	S4	NAR NAR	Common Widespread 78%	-	Area Sensitive
King Rail	1	S2	END END	Very Rare Local 5%	-	Area Sensitive
Common Moorhen	9 AE	S4	-	Rare Local 18%	-	-
American Coot	58 AE	S4	NAR NAR	Rare Local 10%	-	Area Sensitive
Solitary Sandpiper	1 migrant	S4	-	Not a breeder	-	-
American Woodcock	1 D	S4	-	Uncommon Widespread	-	-
Ring-billed Gull	5 visitors	S5	-	Common Local 13%	-	-
Forster's Tern	4 SH	S2	DD DD	Rare Local 13%	-	Area Sensitive
Black Tern	4 SH	G4S3	NAR SC	Rare Local 10%	-	Area Sensitive
Mourning Dove	6 FY	S5	-	Common Widespread 86%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC	Common Name	# Individuals or Territories / Breeding Evidence	SRank
Yellow-billed Cuckoo	1 SH	S4	-	Uncommon Widespread 70%	-	-
Belted Kingfisher	1 visitor	S4	-	Uncommon Widespread 75%	Regional Concern	-
Red-headed Woodpecker	1 SH	S4	THR SC	Uncommon Widespread 40%	THR SC	Rapidly declining
Red-bellied Woodpecker	1 AE	S4	-	Common Widespread 67%	-	-
Downy Woodpecker	5 N	S5	-	Common Widespread 89%	-	-
Hairy Woodpecker	1 A	S5	-	Uncommon Widespread 45%	-	Area Sensitive
Northern Flicker	4 SH	S4	-	Common Widespread 89%	Regional Concern	-
Eastern Wood-Pewee	4 T	S4	-	Common Widespread 81%	Regional Concern	-
Willow Flycatcher	1 SM	S5	-	Uncommon Widespread 67%	Continental Concern	-
Least Flycatcher	1 SM	S4	-	Rare Local 13%	-	Area Sensitive
Eastern Phoebe	1 NY	S5	-	Uncommon Widespread 48%	-	-
Great Crested Flycatcher	2 T	S4	-	Common Widespread 64%	-	-
Eastern Kingbird	10 FY	S4	-	Common Widespread 91%	Regional Concern	-
Warbling Vireo	6 CF	S5	-	Common Widespread 81%	-	-
Red-eyed Vireo	8 CF	S5	-	Common Widespread	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC	Common Name	# Individuals or Territories / Breeding Evidence	SRank
				86%		
Blue Jay	5 N	S5	-	Common Widespread 83%	-	-
Purple Martin	2 visitors	S4	-	Common Widespread 78%	-	-
Tree Swallow	100+ NY	S4	-	Common Widespread 94%	-	-
Barn Swallow	1 visitor	S4	-	Common Widespread 89%	-	-
Black-capped Chickadee	7 N	S5	-	Common Widespread 67%	-	-
Carolina Wren	2 T	S4	-	Common Widespread 86%	-	-
House Wren	9 N	S5	-	Common Widespread 86%	-	-
Marsh Wren	1 T	S4	-	Uncommon Local 35%	-	-
Blue-gray Gnatcatcher	1 T	S4	-	Uncommon Widespread 45%	-	Area Sensitive
Wood Thrush	4 T	S4	-	Uncommon Widespread 67%	Continental Concern Regional Concern	-
American Robin	12 CF	S5	-	Common Widespread 89%	-	-
Gray Catbird	11 A	S4	-	Common Widespread 81%	-	-
Cedar Waxwing	14 SH	S5	-	Common Widespread 89%	-	-
European Starling	4 FY	SNA	-	Abundant Widespread 94%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC	Common Name	# Individuals or Territories / Breeding Evidence	SRank
Blue-winged Warbler	1 migrant	S4	-	Rare Local 10%	Continental Concern	-
Nashville Warbler	1 migrant	S5	-	Not a breeder	-	-
Yellow Warbler	50 CF	S5	-	Common Widespread 86%	-	-
Yellow-rumped Warbler	4 migrants	S5	-	Not a breeder	-	-
Black-throated Green Warbler	3 migrants	S5	-	Not a breeder	-	Area Sensitive
Blackburnian Warbler	1 migrant	S5	-	Not a breeder	-	Area Sensitive
Palm Warbler	1 migrant	S5	-	Not a breeder	-	-
Bay-breasted Warbler	1 migrant	S5	-	Not a breeder	-	-
Blackpoll Warbler	1 migrant	S4	-	Not a breeder	-	-
American Redstart	3 migrants	S5	-	Uncommon Widespread 29%	-	Area Sensitive
Prothonotary Warbler	2 NE	S1	END END	Very Rare Local 8%	END END	Area Sensitive
Common Yellowthroat	6 T	S5	-	Common Widespread 75%	-	-
Scarlet Tanager	1 migrant	S4	-	Uncommon Widespread 37%	-	Area Sensitive
Song Sparrow	4 A	S5	-	Common Widespread 83%	-	-
White-throated Sparrow	5 migrants	S5	-	Very rare 2%	-	-
Northern Cardinal	6 A	S5	-	Common Widespread 94%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC	Common Name	# Individuals or Territories / Breeding Evidence	SRank
Rose-breasted Grosbeak	4 T	S4	-	Uncommon Widespread 51%	Regional Stewardship	-
Indigo Bunting	5 T	S4	-	Common Widespread 78%	-	-
Red-winged Blackbird	100 FY	S5	-	Abundant Widespread 94%	-	-
Common Grackle	50 FY	S5	-	Abundant Widespread 94%	-	-
Brown-headed Cowbird	8 P	S4	-	Common Widespread 83%	-	-
Orchard Oriole	2 T	S4	-	Common Widespread 72%	-	-
Baltimore Oriole	6 N	S4	-	Common Widespread 94%	Regional Concern Regional Stewardship	-
American Goldfinch	14 T	S5	-	Common Widespread 86%	-	-

Breeding evidence codes: SH = suitable habitat, SM = singing male, T = territory, P = pair, A = agitated behaviour, N = nest building or excavation of nest hole, V = visiting probable nest site, AE = adult entering presumed active nest hole, FY = fledged young, CF = carrying food, NE = nest with eggs, NY = Nest with young. SNA = Exotic, non-native species.

Mammals

Table 64: Full inventory of mammal species identified at Site #4.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance	Common Name
Eastern Cottontail	11	S5	-	Common Widespread	-	Eastern Cottontail
Eastern Gray Squirrel	9	S5	-	Common Widespread	-	Eastern Gray Squirrel
Meadow Vole	1	S5	-	Common Widespread	-	Meadow Vole
Muskrat	3	S5	-	Common Widespread	-	Muskrat
Northern Raccoon	6	S5	-	Common Widespread	-	Northern Raccoon
White-tailed Deer	7 adults and fawns	S5	-	Common Widespread	-	White-tailed Deer

Reptiles

Table 65: Full inventory of reptile species identified at Site #4.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Midland Painted Turtle	25 adults	S5	- 	Common Widespread	-
Blanding's Turtle	4 adults	G4 S3	THR THR	Uncommon Local	-
Northern Map Turtle	2 adults and juveniles	S3	SC SC	Common Local	Area Sensitive
Eastern Foxsnake	1 adult	G3 S3	END END	Locally common Widespread	Essex County has the bulk of the world population of this snake
Common Watersnake	2 adults	S5	NAR NAR	Uncommon Restricted range	Known only from Pelee, Hillman, Canard River, Big Creek, Ojibway, Bob-lo

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Eastern Gartersnake	15 adults	S5		Common Widespread	-

Amphibians

Table 66: Full inventory of amphibian species identified at Site #4.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
American Toad	14 adults / juveniles	S5	-	Common Widespread	-
American Bullfrog	2 adults	S4	-	Common Widespread	Area Sensitive
Green Frog	31 adults / juveniles	S5	-	Common Widespread	-
Northern Leopard Frog	26 adults / juveniles	S5	-	Common Widespread	-

Butterflies

Table 67: Full inventory of butterfly species identified at Site #4.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Silver-spotted Skipper	1	S4	-	Common Widespread	-
Least Skipper	1	S5	-	Common Widespread	-
Broad-winged Skipper	51	S4	-	Increasingly common	-

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Eastern Tiger Swallowtail	1	S5	- 	Common Widespread	-
Cabbage White	8	SNA	-	Common Widespread	-
Spring Azure	2	S5	-	Common Widespread	-
Summer Azure	30	S5	-	Common Widespread	-
Question Mark	1	S5	-	Common Widespread	-
Mourning Cloak	1	S5	-	Common Widespread	-
Red Admiral	3	S5	-	Common Widespread	-
Common Buckeye	1	SNA	-	Rare and erratic immigrant	-
Viceroy	3	S5	-	Common Widespread	-
Hackberry Emperor	5	S2	-	Uncommon Local	-
Little Wood-Satyr	5	S5	-	Common Widespread	-
Monarch	17	S4	SC SC	Common Widespread	-

Odonata

Table 68: Full inventory of odonatan species identified at Site #4.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Slender Spreadwing	25	S5	-	Common	-
Orange Bluet	2	S4	-	Common	-
Fragile Forktail	200+	S4	-	Common	-
Eastern Forktail	300+	S5	-	Common	-
Common Green Darner	6	S5	-	Common	-
Eastern Pondhawk	34	S5	-	Common	-
Twelve-spotted Skimmer	2	S5	-	Common	-
Blue Dasher	100+	S5	-	Common	-
Eastern Amberwing	5	S4	-	Common	-
Black Saddlebags	1	S4	-	Common	-

A.5 Site #5

A.5.1 Site Location

Municipality: Town of Amherstburg

Legal Description: Pt. Lot 57 & 58, Conc. 6 Malden Township

ARN: 372951000005050, 372951000005100, 372951000005200

PIN: 705730417, 705730373, 705730282, 705730284, 705730411

UTM: Zone 17N 331957 4656277

A.5.2 Size

14.5 hectares (35.9 acres)

A.5.3 General Description

Site #5 is part of the Holiday Beach Conservation Area and features a coniferous plantation as well as a Heritage Forest, which is planted in native deciduous trees. It is bounded on the south side by County Road 50, on the north side by Collison Sideroad, on the east side by agricultural land and on the west side by a single family residential lot.

Vegetation community composition is 100% terrestrial with a total of 7 vegetation types documented for the site (6 woody and 1 herbaceous plant communities).

Upland communities generally consist of mature white pine and white spruce plantations, with little understorey vegetation, and a successional deciduous forest plantation in the eastern part of the site.

Soils are classified as Perth Clay (Pc).

A.5.4 Evaluation of 10 Standard Natural Heritage Features

Significant Wetland

Not fulfilled.

Significant Habitat of Endangered/Threatened Species

A specimen which closely resembles Red Mulberry (*Morus rubra*), an Endangered species, was found growing within the Managed White Pine Coniferous Plantation [CUP3-2 (CUT_1-2)] vegetation community. Red Mulberry and White Mulberry (*Morus alba*) hybridize and White Mulberry trees were also noted growing on the site. The specimen which is reported as Red Mulberry is worthy of genetic analysis to ascertain purity, due to the physical characteristics noted at the time in the field.

Kentucky Coffee-tree (*Gymnocladus dioicus*), a Threatened species, was found growing within the Deciduous Plantation [CUP1 (TAGM3)] vegetation community east of the main coniferous plantation. This Deciduous Plantation is part of a memorial Heritage Forest and these specimens were intentionally planted in this location from nursery stock.

Significant Woodland

The site contains a Managed White Pine Coniferous Plantation (CUT_1-2) and Managed White Spruce Coniferous Plantation (CUT_1-13) creating a forest patch greater than 2 hectares in size.

Significant Wildlife Habitat

The diverse upland areas of the site provide landbird migratory stopover areas. The site also provides adequate stopover habitat for the Monarch butterfly. Finally, the site contains habitats of species of conservation concern (see Criterion No. 8 – Significant Species for further information).

Significant Valleyland

Not fulfilled.

Ecological Function

Not fulfilled.

Diversity

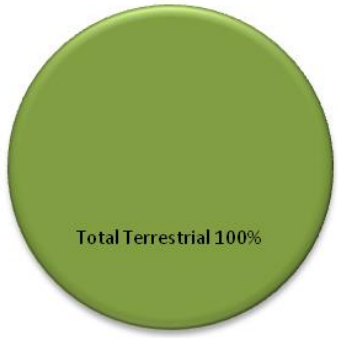
The site exhibits high diversity containing 7 ELC vegetation types (ecoelements) in 3 Community Series. The following is a summary of the ELC vegetation communities documented for the site.

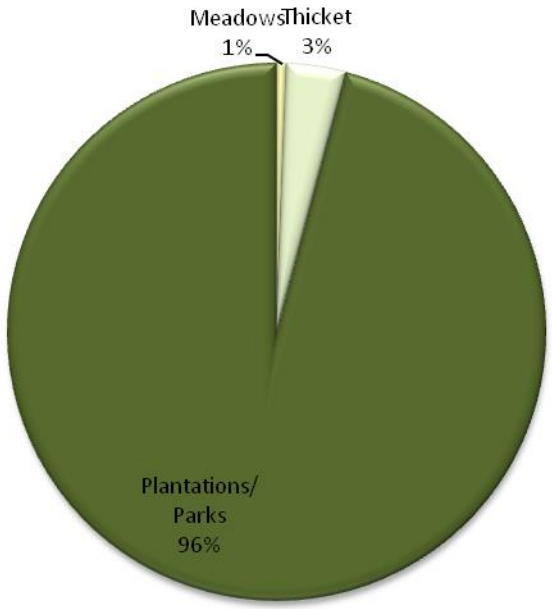
Table 69: ELC vegetation communities documented at Site #5.

Community Series	Ecoelement (Vegetation Type) Name	Ecoelement Code (2008)
Graminoid Meadow	Fresh – Moist Graminoid Meadow	MEGM4
Deciduous Thicket	Native Deciduous Regeneration Thicket	THDM4-1
	Fresh – Moist Deciduous Thicket	THDM5
Treed Agriculture	Managed White Pine Coniferous Plantation	CUT_1-2
	Managed White Spruce Coniferous Plantation	CUT_1-13
	Deciduous Plantation	TAGM3
	Fencerow	TAGM5

Table 70: ELC community class coverage at Site #5.

Community Class	Hectares	Acres
Shoreline/Sand Barren and Dune	0.00	0.00
Meadows	0.08	0.21
Thicket	0.52	1.28
Woodland	0.00	0.00
Forest	0.00	0.00
Plantations/Parks	13.92	34.40
Swamp	0.00	0.00
Marsh	0.00	0.00
Open Water	0.00	0.00
Shallow Water	0.00	0.00
Total Terrestrial	14.52	35.89
Total Wetland/Aquatic	0.00	0.00
Total Habitat	14.52	35.89





Significant Species

The following 3 significant floral species were observed:

Table 71: Significant floral species identified at Site #5.

Scientific Name	Common Name	Grank	COSEWIC	MNR	Srank	NatStatus
Gleditsia triacanthos	Honey Locust	G5			S2	N
Gymnocladus dioicus	Kentucky Coffee-tree	G5	THR	THR	S2	N
Morus rubra	Red Mulberry	G5	END	END	S2	N

The following significant faunal species observed include breeding species and the species that use the site in large numbers for an extended period of time. Migrants and occasional visitors are not included as significant fauna.

Table 72: Significant faunal species identified at Site #5.

Common Name	Srank	COSEWIC COSSARO	Essex Breeding Status	Partners in Flight Level of Concern	Other Significance
Willow Flycatcher	S5	-	Uncommon Widespread	Continental Concern	-
Eastern Kingbird	S4	-	Common Widespread	Regional Concern	-
Brown Thrasher	S4	-	Uncommon Widespread	Regional Concern	-
Field Sparrow	S4	-	Uncommon Widespread	Regional Concern	-

Significant Communities

Not fulfilled.

Condition

Floristically, the site's flora has a mean Coefficient of Conservatism (CC) of 3.82 and a Floristic Quality Index (FQI) value of 42.75. This indicates that the site's flora is of sufficient quality to be of remnant natural quality and possess sufficient conservatism and richness to be floristically important from a Provincial perspective.

A.5.5 Floral Inventory

Table 73: Floristic quality data at Site #5.

Floristic Quality Data	Native		Introduced		All Species	
Species Type	Number	% of Total	Number	% of Total	Number	% of Total
Trees	33	21.29	2	1.29	35	22.58
Shrubs	20	12.90	8	5.16	28	18.06
Woody Vines	6	3.87	0	0.00	6	3.87
Total Woody	59	38.06	10	6.45	69	44.52

Floristic Quality Data	Native		Introduced		All Species	
Species Type	Number	% of Total	Number	% of Total	Number	% of Total
Herbaceous Vines	1	0.65	0	0.00	1	0.65
Forbs	51	32.90	19	12.26	70	45.16
Ferns	0	0.00	0	0.00	0	0.00
Total Herbaceous Non-Graminoids	52	33.55	19	12.26	71	45.81
Grasses	8	5.16	1	0.65	9	5.81
Rushes	0	0.00	0	0.00	0	0.00
Sedges	6	3.87	0	0.00	6	3.87
Total Graminoids	14	9.03	1	0.65	15	9.68
Total Non-Woody	66	42.58	20	12.90	86	55.48
Total All Species	125	80.65	30	19.35	155	100.00

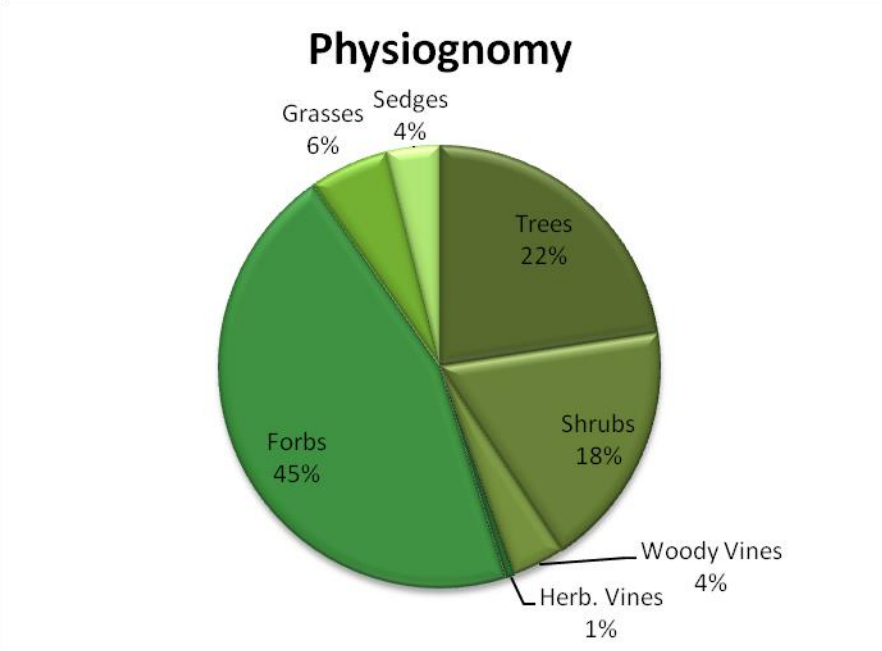


Figure 10: Overall physiognomy at Site #5.

The Wetness Index for the site, calculated from the mean Coefficient of Wetness (CW) of all native taxa recorded from the site inventory, is -0.07 indicating that the site has a predominance of wetland species.

A total of 155 plant species were recorded for the site.

Table 74: Full inventory of plant species identified at Site #5.

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Acer saccharinum	Silver Maple	G5			S5	N
Agrostis gigantea	Redtop	G4G5			SE5	I
Alliaria petiolata	Garlic Mustard	G?			SE5	I
Ambrosia artemisiifolia	Annual Ragweed	G5			S5	N
Ambrosia trifida	Great Ragweed	G5			S5	N
Anemone canadensis	Canada Anemone	G5			S5	N
Aster ericoides ssp. ericoides	Heath Aster	G5T?			S5	N
Aster lanceolatus ssp. lanceolatus	Panicled Aster	G5T?			S5	N
Aster lateriflorus var. lateriflorus	Calico Aster	G5T5			S5	N
Aster novae-angliae	New England Aster	G5			S5	N
Bidens frondosa	Devil's Beggar's Ticks	G5			S5	N
Boehmeria cylindrica	False Nettle	G5			S5	N
Carex blanda	Woodland Sedge	G5?			S5	N
Celtis occidentalis	Common Hackberry	G5			S4	N
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	G5T5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Cirsium arvense	Crepping Thistle	G?			SE5	I
Cirsium vulgare	Bull Thistle	G5			SE5	I
Cornus amomum ssp. obliqua	Silky Dogwood	G5T?			S5	N
Cornus drummondii	Rough-leaved Dogwood	G5			S4	N
Cornus foemina ssp. racemosa	Gray Dogwood	G5			S5	N
Cornus stolonifera	Red-osier Dogwood	G5			S5	N
Crataegus chrysocarpa	Fineberry Hawthorn	G5			S5	N
Crataegus mollis	Downy Hawthorn	G5			S5	N
Daucus carota	Queen Anne's Lace	G?			SE5	
Echinocystis lobata	Wild Mock-cucumber	G5			S5	N
Elaeagnus umbellata	Autumn Olive	G?			SE3	I
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	G5T?			S5	N
Fraxinus americana	White Ash	G5			S5	N
Fraxinus nigra	Black Ash	G5			S5	N
Fraxinus pennsylvanica	Green Ash	G5			S5	N
Geranium maculatum	Wild Geranium	G5			S5	N
Geranium robertianum	Herb-robert	G5			SE5	I
Geum canadense	White Avens	G5			S5	N
Gleditsia triacanthos	Honey Locust	G5			S2	N
Glyceria striata	Fowl Manna Grass	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Gymnocladus dioicus	Kentucky Coffee-tree	G5	THR	THR	S2	N
Hieracium aurantiacum	Orange Hawkweed	G?			SE5	I
Hydrophyllum virginianum	Virginia Waterleaf	G5			S5	N
Impatiens capensis	Spotted Jewel-weed	G5			S5	N
Juniperus virginiana	Eastern Red Cedar	G5			S5	N
Laportea canadensis	Wood Nettle	G5			S5	N
Leonurus cardiaca ssp. cardiaca	Common Motherwort	G?T?			SE5	I
Lonicera tatarica	Tartarian Honeysuckle	G?			SE5	I
Lotus corniculatus	Bird's-foot Trefoil	G?			SE5	I
Medicago sativa ssp. sativa	Alfalfa	G?T?			SE5	I
Melilotus alba	White Sweet Clover	G5			SE5	I
Melilotus officinalis	Yellow Sweet Clover	G?			SE5	I
Morus alba	White Mulberry	G?			SE5	I
Morus rubra	Red Mulberry	G5	END	END	S2	N
Oxalis stricta	Upright Yellow Wood Sorrel	G5			S5	N
Panicum virgatum	Switch Grass	G5			S4	N
Parthenocissus quinquefolia	Virginia Creeper	G5			S4?	N
Picea glauca	White Spruce	G5			S5	N
Pilea pumila	Canada Clearweed	G5			S5	N
Pinus strobus	Eastern White Pine	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Poa compressa	Canada Bluegrass	G?			S5	N
Poa pratensis ssp. pratensis	Kentucky Bluegrass	G5T			S5	N
Polygonum virginianum	Virginia Knotweed	G5			S4	N
Quercus alba	White Oak	G5			S5	N
Quercus macrocarpa	Bur Oak	G5			S5	N
Quercus palustris	Pin Oak	G5			S4	N
Quercus rubra	Northern Red Oak	G5			S5	N
Rhus radicans ssp. rydbergii	Western Poison Ivy	G5T			S5	N
Rosa multiflora	Rambler Rose	G?			SE4	I
Rubus occidentalis	Black Raspberry	G5			S5	N
Sanicula marilandica	Black Snakeroot	G5			S5	N
Solidago altissima var. altissima	Tall Goldenrod	G?			S5	N
Solidago canadensis	Canada Goldenrod	G5			S5	N
Solidago gigantea	Smooth Goldenrod	G5			S5	N
Taraxacum officinale	Common Dandelion	G5			SE5	I
Tilia americana	American Basswood	G5			S5	N
Trifolium pratense	Red Clover	G?			SE5	I
Trifolium repens	White Clover	G?			SE5	I
Ulmus americana	American Elm	G5?			S5	N
Urtica dioica ssp. gracilis	Slender Stinging Nettle	G5T?			S5	N
Verbena urticifolia	White Vervain	G5			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Viburnum opulus	Guelder-rose Viburnum	G5			SE4	I
Vitis riparia	Riverbank Grape	G5			S5	N
Acer saccharinum	Silver Maple	G5			S5	N
Agrostis gigantea	Redtop	G4G5			SE5	I
Alliaria petiolata	Garlic Mustard	G?			SE5	I
Ambrosia artemisiifolia	Annual Ragweed	G5			S5	N
Ambrosia trifida	Great Ragweed	G5			S5	N
Anemone canadensis	Canada Anemone	G5			S5	N
Aster ericoides ssp. ericoides	Heath Aster	G5T?			S5	N
Aster lanceolatus ssp. lanceolatus	Panicled Aster	G5T?			S5	N
Aster lateriflorus var. lateriflorus	Calico Aster	G5T5			S5	N
Aster novae-angliae	New England Aster	G5			S5	N
Bidens frondosa	Devil's Beggar's Ticks	G5			S5	N
Boehmeria cylindrica	False Nettle	G5			S5	N
Carex blanda	Woodland Sedge	G5?			S5	N
Celtis occidentalis	Common Hackberry	G5			S4	N
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	G5T5			S5	N
Cirsium arvense	Crepping Thistle	G?			SE5	I
Cirsium vulgare	Bull Thistle	G5			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Cornus amomum ssp. obliqua	Silky Dogwood	G5T?			S5	N
Cornus drummondii	Rough-leaved Dogwood	G5			S4	N
Cornus foemina ssp. racemosa	Gray Dogwood	G5			S5	N
Cornus stolonifera	Red-osier Dogwood	G5			S5	N
Crataegus chrysocarpa	Fineberry Hawthorn	G5			S5	N
Crataegus mollis	Downy Hawthorn	G5			S5	N
Daucus carota	Queen Anne's Lace	G?			SE5	
Echinocystis lobata	Wild Mock-cucumber	G5			S5	N
Elaeagnus umbellata	Autumn Olive	G?			SE3	I
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	G5T?			S5	N
Fraxinus americana	White Ash	G5			S5	N
Fraxinus nigra	Black Ash	G5			S5	N
Fraxinus pennsylvanica	Green Ash	G5			S5	N
Geranium maculatum	Wild Geranium	G5			S5	N
Geranium robertianum	Herb-robert	G5			SE5	I
Geum canadense	White Avens	G5			S5	N
Gleditsia triacanthos	Honey Locust	G5			S2	N
Glyceria striata	Fowl Manna Grass	G5			S5	N
Gymnocladus dioicus	Kentucky Coffee-tree	G5	THR	THR	S2	N
Hieracium aurantiacum	Orange Hawkweed	G?			SE5	I

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Hydrophyllum virginianum	Virginia Waterleaf	G5			S5	N
Impatiens capensis	Spotted Jewel-weed	G5			S5	N
Juniperus virginiana	Eastern Red Cedar	G5			S5	N
Laportea canadensis	Wood Nettle	G5			S5	N
Leonurus cardiaca ssp. cardiaca	Common Motherwort	G?T?			SE5	I
Lonicera tatarica	Tartarian Honeysuckle	G?			SE5	I
Lotus corniculatus	Bird's-foot Trefoil	G?			SE5	I
Medicago sativa ssp. sativa	Alfalfa	G?T?			SE5	I
Melilotus alba	White Sweet Clover	G5			SE5	I
Melilotus officinalis	Yellow Sweet Clover	G?			SE5	I
Morus alba	White Mulberry	G?			SE5	I
Morus rubra	Red Mulberry	G5	END	END	S2	N
Oxalis stricta	Upright Yellow Wood Sorrel	G5			S5	N
Panicum virgatum	Switch Grass	G5			S4	N
Parthenocissus quinquefolia	Virginia Creeper	G5			S4?	N
Picea glauca	White Spruce	G5			S5	N
Pilea pumila	Canada Clearweed	G5			S5	N
Pinus strobus	Eastern White Pine	G5			S5	N
Poa compressa	Canada Bluegrass	G?			S5	N
Poa pratensis ssp. pratensis	Kentucky Bluegrass	G5T			S5	N

Scientific Name	Common Name	GRank	COSEWIC	MNR	SRank	NatStatus
Polygonum virginianum	Virginia Knotweed	G5			S4	N
Quercus alba	White Oak	G5			S5	N
Quercus macrocarpa	Bur Oak	G5			S5	N
Quercus palustris	Pin Oak	G5			S4	N
Quercus rubra	Northern Red Oak	G5			S5	N
Rhus radicans ssp. rydbergii	Western Poison Ivy	G5T			S5	N
Rosa multiflora	Rambler Rose	G?			SE4	I
Rubus occidentalis	Black Raspberry	G5			S5	N
Sanicula marilandica	Black Snakeroot	G5			S5	N
Solidago altissima var. altissima	Tall Goldenrod	G?			S5	N
Solidago canadensis	Canada Goldenrod	G5			S5	N
Solidago gigantea	Smooth Goldenrod	G5			S5	N
Taraxacum officinale	Common Dandelion	G5			SE5	I
Tilia americana	American Basswood	G5			S5	N
Trifolium pratense	Red Clover	G?			SE5	I
Trifolium repens	White Clover	G?			SE5	I
Ulmus americana	American Elm	G5?			S5	N
Urtica dioica ssp. gracilis	Slender Stinging Nettle	G5T?			S5	N
Verbena urticifolia	White Vervain	G5			S5	N
Viburnum opulus	Guelder-rose Viburnum	G5			SE4	I

A.5.6 Faunal Inventory

Surveyors: Dave Martin, Linda Wladarski

Field dates: May 4 and June 9, 2009

Bird

Table 75: Full inventory of bird species identified at Site #5.

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Mallard	1 NE	S5	-	Common Widespread 91%	-	-
Mourning Dove	2 T	S5	-	Common Widespread 86%	-	-
Willow Flycatcher	3 T	S5	-	Uncommon Widespread 67%	Continental Concern	-
Eastern Kingbird	3 T	S4	-	Common Widespread 91%	Regional Concern	-
Blue Jay	1 T	S5	-	Common Widespread 83%	-	-
Black-capped Chickadee	1 T	S5	-	Common Widespread 67%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
House Wren	1 SM	S5	-	Common Widespread 86%	-	-
Blue-gray Gnatcatcher	1 migrant on May 3	S4	-	Uncommon Widespread 45%	-	Area Sensitive
American Robin	7 NE	S5	-	Common Widespread 89%	-	-
Gray Catbird	4 T	S4	-	Common Widespread 81%	-	-
Brown Thrasher	1 SM	S4	-	Uncommon Widespread 64%	Regional Concern	-
Cedar Waxwing	13 SH	S5	-	Common Widespread 89%	-	-
Yellow Warbler	21 T	S5	-	Common Widespread 86%	-	-
Yellow-rumped Warbler	1 migrant on May 4	S5	-	Not a breeder	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
Chipping Sparrow	2 T	S5	-	Common Widespread 78%	-	-
Field Sparrow	2 T	S4	-	Uncommon Widespread 59%	Regional Concern	-
Song Sparrow	3 T	S5	-	Common Widespread 83%	-	-
White-throated Sparrow	1 migrant on May 4	S5	-	Very rare 2%	-	-
Northern Cardinal	5 T	S5	-	Common Widespread 94%	-	-
Red-winged Blackbird	15 FY	S5	-	Abundant Widespread 94%	-	-
Common Grackle	6 T	S5	-	Abundant Widespread 94%	-	-
Brown-headed Cowbird	6 SM	S4	-	Common Widespread 83%	-	-

Common Name	# Individuals or Territories / Breeding Evidence	SRank	COSEWIC COSSARO	Essex Breeding Status % squares	Partners in Flight Level of Concern	Other Significance
House Finch	1 SM	SNA	-	Common Widespread 81%	-	-
American Goldfinch	6 T	S5	-	Common Widespread 86%	-	-

Breeding evidence codes: SH = suitable habitat, SM = singing male, T = territory, P = pair, A = agitated behaviour, N = nest building or excavation of nest hole, AE = adult entering presumed active nest hole, FY = fledged young, CF = carrying food, NE = nest with eggs, NY = Nest with young. SE = Exotic, non-native species.

Mammals

Table 76: Full inventory of mammal species identified at Site #5.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Eastern Cottontail	1	S5	-	Common Widespread	-
Eastern Gray Squirrel	1	S5	-	Common Widespread	-
White-tailed Deer	tracks	S5	-	Common Widespread	-

Reptiles

No reptiles were found.

Amphibians

Table 77: Full inventory of amphibian species identified at Site #5.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Northern Leopard Frog	1	S5	-	Common Widespread	-

Butterflies

Table 78: Full inventory of butterfly species identified at Site #5.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Silver-spotted Skipper	1	S4	-	Common Widespread	-
Clouded Sulphur	1	S5	-	Common Widespread	-
Spring Azure	14	S5	-	Common Widespread	-
Summer Azure	4	S5	-	Common Widespread	-
Crescent species	7	S4 or S5	-	Common Widespread	-
Mourning Cloak	2	S5	-	Common Widespread	-

Odonata

Table 79: Full inventory of odonatan species identified at Site #5.

Common Name	Evidence/# Individuals	SRank	COSEWIC COSSARO	Essex Status	Other Significance
Common Green Darner	1	S5	-	Common	-
Twelve-spotted Skimmer	2	S5	-	Common	-
Eastern Forktail	2	S5	-	Common	-