

Report
for
The City of Brampton Heritage Board

April 15, 2014

Request to consider listing Heart Lake Road,
between Sandalwood Parkway and Mayfield Road,
as a Cultural Heritage Landscape
on the Municipal Register of Cultural Heritage Resources



photo credit¹

Prepared by:

Dayle Laing, B.A.Sc., D.I.D., LEED AP®
David Laing, B.A.Sc., LEED AP®
Residents of the City of Brampton

Executive Summary

The listing of Heart Lake Road provides the City of Brampton with a very rare opportunity amidst a large population and extensive urbanization to capture a cultural heritage landscape for now and for future generations.

“It is the story of how places are planned, designed, built, inhabited, appropriated, celebrated, despoiled and discarded. Cultural identity, social history, and urban design are here intertwined.”²

It is because Heart Lake Road was built, despite all the odds of settlers building a road through swamp land, that we have a portal into the beauty of the natural heritage that we have come to value increasingly in the past several decades. It is because the road has been left in a relatively undeveloped state and because the west side has been protected by Toronto and Region Conservation Area for the past fifty seven years, that we have a rare opportunity to continue to appreciate the value of this cultural heritage resource.

The citizens have spoken with 361 signatures on a petition and eloquent comments, that the natural heritage of Heart Lake Road is for them, also intertwined with the cultural heritage, and that in line with Ontario’s criteria for cultural heritage value, this rallying by the community has “direct associations with a theme, event, belief... that is significant to a community”.³

This report weaves aspects of cultural heritage from the historical context, through the twentieth century to the current understanding of the term, and concludes that this request is justified.

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Appendix A – Heart Lake Road Petition Signatures

Appendix B – Heart Lake Road Petition Comments

1.0 Background

The authors have been residents of the Heart Lake area of the City of Brampton for 36 years. In 2013, they volunteered 40 hours combined in the participation of the Toronto and Region Conservation Authority's (TRCA) Heart Lake Road Ecology Monitoring Project (HLREMP) to count the dead and living wildlife along Heart Lake Road and shoulder. They were struck with the beauty and biodiversity of the area. They were concerned with the damage caused by increased traffic speed and volume from what they recalled when they first moved to Heart Lake area.

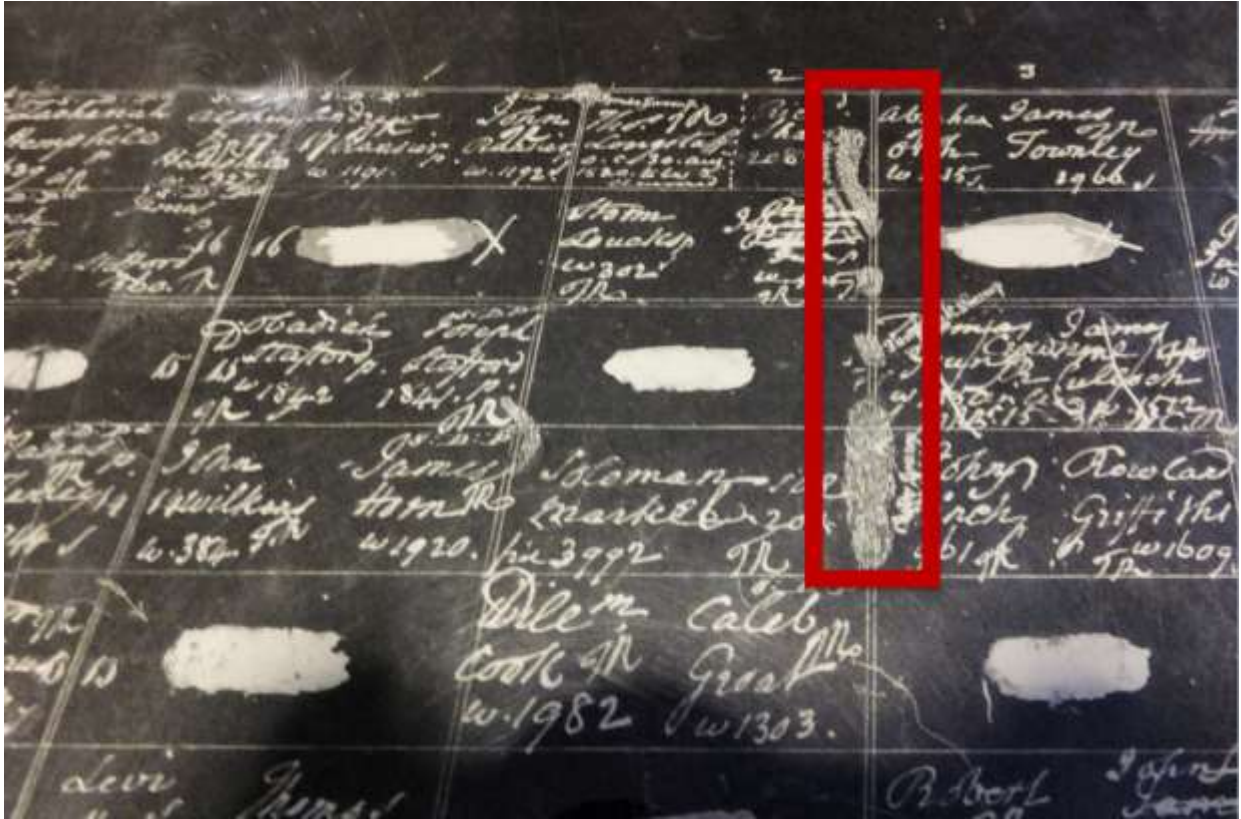
It occurred to the authors that Heart Lake Road represents a collision point, both literally and metaphorically between the competing values of suburban development and suburban living, and that the former will destroy the latter unless specific steps are taken to protect what can be considered the culturally significant aspects that are part of the representation of suburban living.

To make sure the authors were not alone in this thinking; they went out into the community, spoke and created a petition. It was this experience, the support of 361 concerned citizens, and research that has led to the preparation of this report and the request to the Brampton Heritage Board.

2.0 Introduction

It is the contention of the authors that Heart Lake Road should never have been built. Although this concept may appear radical, this report supports the contention, and since Heart Lake Road has been built, the road should be managed carefully, not be further expanded, or have its use increased.

In 1819, the County of Peel, including the southern half of Chinguacousy Township was "subject to Cadastral surveys"⁴ along the customary grid lines running north from Lake Ontario and running perpendicular east-west. Cadastral surveys document ownership boundaries with maps and descriptions.⁵



Frame superimposed on swamp marks on Chinguacousy Township Survey by Richard Bristol (1819)⁶

In the above image of Richard Bristol's survey of Peel County, the current Heart Lake Road (Concession 2 East) runs north-south between the Concession marks 2 and 3. Note Bristol's scratch lines along much of the subject road length, indicating "Tamarack Swamp". This is the earliest indication that placement of Heart Lake Road was questionable.

This report presents the history of the road and the request for a cultural heritage listing that will help prescribe the future evolution of Heart Lake Road.

3.0 Cultural Heritage Landscape Definitions

The Ontario Ministry of Municipal Affairs and Housing's Provincial Policy Statement, (2014)⁷ states that "significant cultural heritage landscapes shall be conserved". They define:

"Cultural heritage landscape: means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Aboriginal community. The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Examples may include, but are not limited to, heritage conservation

districts designated under the Ontario Heritage Act; villages, parks, gardens, battlefields, mainstreets and neighbourhoods, cemeteries, trailways, viewsheds, natural areas and industrial complexes of heritage significance; and areas recognized by federal or international designation authorities (e.g. a National Historic Site or District designation, or a UNESCO World Heritage Site).⁸

The key part of this definition that applies to Heart Lake Road is the “defined geographical area that has been modified by human activity”, as will be developed in the section on the historical context of the area. The interrelationship of natural elements is also of importance to the manner in which humans have developed the road.

The applicable portion of the Ontario Heritage Act (2006)⁹, that defines the criteria for determining cultural heritage value are:

- *“has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community”*
- *“has contextual value because it is important in defining, maintaining or supporting the character of an area”¹⁰*

Standards and Guidelines for the Conservation of Historic Places in Canada (2010)¹¹ states that:

“For the purposes of these guidelines, a cultural landscape is defined as any geographical area that has been modified, influenced or given special cultural meaning by people, and that has been formally recognized for its heritage value. Cultural landscapes are often dynamic, living entities that continually change because of natural and human-influenced social, economic and cultural processes.”¹²

It is the “dynamic living entities that continually change” aspect of this definition that the authors are proposing fits the criteria for Heart Lake Road being listed as a cultural heritage resource.

Dolores Hayden (1995)¹³, Yale Professor, architect, noted author and urban planner described the history of cultural landscape as:

“At the intersection of these fields [cultural geography, architecture and urban social history] lies the history of cultural landscape, the production of space, human patterns impressed upon the contours of the natural environment. It is the story of how places are planned, designed, built, inhabited, appropriated, celebrated, despoiled and discarded. Cultural identity, social history, and urban design are here intertwined.”¹⁴

The Toronto and Region Conservation Authority (TRCA 2006)¹⁵, in their Heart Lake Conservation Area Master Plan Background Report, lists as one of their eight

recommendations for cultural heritage resources, that they “encourage the City of Brampton Heritage Board to continue to update and to add to their existing inventories”.

Brampton addressed this in the Strategic Plan (2013)¹⁶ with a commitment to “continue Brampton’s exemplary leadership, commitment and innovation in the preservation of its cultural heritage resources”:

“We will strive to lead and educate on the preservation and conservation of our natural and built environments to ensure Brampton’s heritage, identity, pride, vitality and economic prosperity is balanced.”

One of the success indicators for Brampton’s Strategic Plan with respect to the environment will be:

“The number of cultural heritage resources conserved and integrated with new development, including landscapes”¹⁷

4.0 Topography of Heart Lake Road



Heart Lake Road, looking south of Countryside Drive, March 31, 2014, photo by D Laing

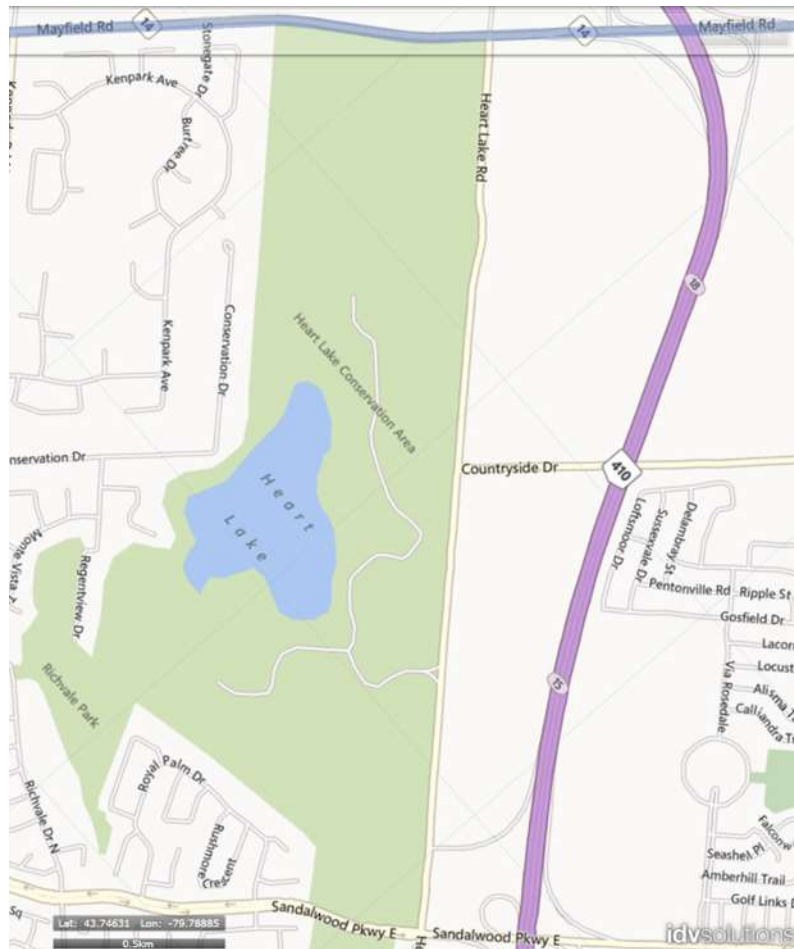
Heart Lake Road is a two-lane paved road with narrow unpaved approximately one-metre shoulders, no sidewalks and no streetlights.

The section of Heart Lake Road to be considered runs from Sandalwood Parkway in the south to Mayfield Road in the north. It is immediately west of the major four-lane Ontario Provincial Highway #410.



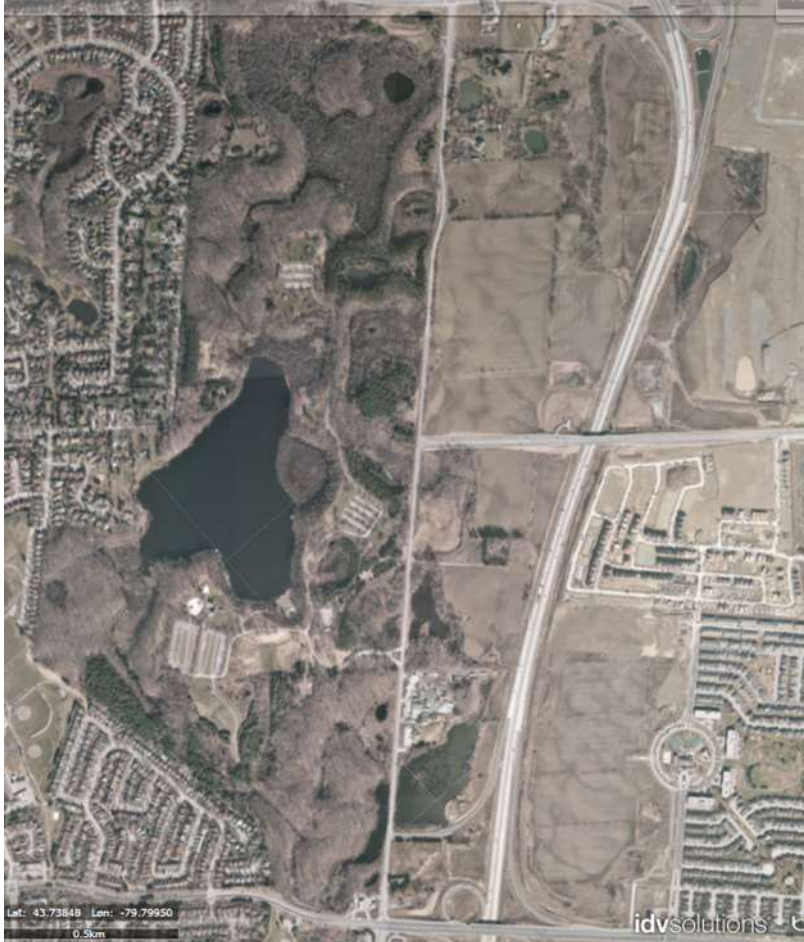
Short curb section on Heart Lake Road at Sandalwood Parkway, March 31, 2014, photo by D Laing

There is a brief section of curbs at both the north and south ends where Heart Lake Road intersects Mayfield Road and Sandalwood Parkway.



2014 Map of Heart Lake Road section - idvsolutions

This map shows the topography of Heart Lake Road with the TRCA (Toronto and Region Conservation Authority) managed Heart Lake Conservation Area lining the full length of the west side of the road, (but for the gasoline station on the northwest corner of Heart Lake Road and Sandalwood Parkway, which is not indicated on this map).



2014 Aerial View of Heart Lake Road section –idvsolutions

This aerial view of Heart Lake Road indicates the land use and current lack of residential development adjacent to the road.

There is one house on the west side at the north end of Heart Lake Road. On the east side, there is a house at the south end and four houses at the north end, immediately south of Mayfield Road.



One of the four houses on east side of Heart Lake Road north end, Mar 31, 2014, photo by D Laing



Aerial Photograph of Heart Lake Road & larger geographical area (2014) – Microsoft Corp.

This aerial photograph puts this section of Heart Lake Road in the context of being surrounded on two sides by Highway #410, and shows why the road is currently being used as a shortcut by residents of Caledon when the highway is congested during rush hour.



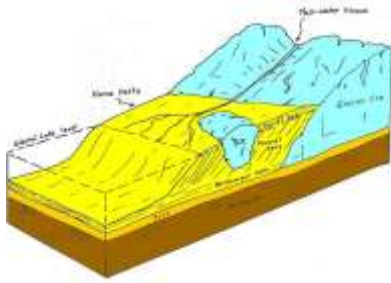
Heavy traffic and trucks on Heart Lake Road, 2:42pm Monday, March 31, 2014, photo by D Laing

5.0 Landscape Geology

Landscapes tell a story. There are two features of glaciation that are unique to Heart Lake Road and area, and which contribute to the cultural heritage.

5.1 Kettle Lakes

Twenty thousand years ago, the Wisconsin Glacial Episode was one mile thick over southern Ontario.¹⁸ The two kettle lakes, Heart Lake and Teapot Lake in the current Heart Lake Conservation Area, were formed during this period over 10,000 years ago, when blocks of ice were trapped under the glacier as it melted, causing a natural steep-sided depression.¹⁹ This melting occurred “over a period of hundreds of years after the glaciers retreated from the area”.²⁰



Drawing of Kettle Lake formation²¹

In the 19th century, Heart Lake was called Snell's Lake²², Dyer's Lake²³, and Teapot Lake was called Archdekin's Lake²⁴, after the owners of the lots on which the lakes were located.



Heart Lake, TRCA Watershed Report, 1998²⁵

5.2 Brampton Esker

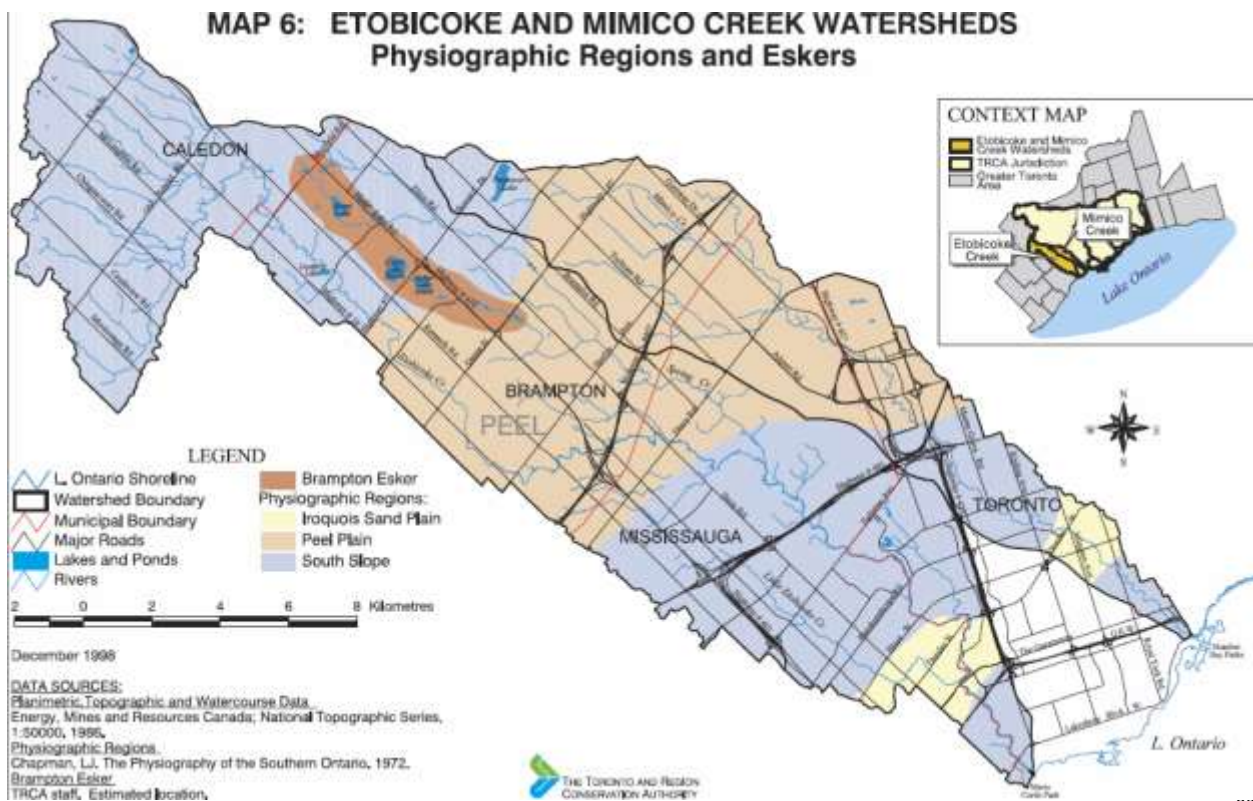
The Brampton Esker is a “long winding ridge of sand and gravel deposited by glacial melt waters during the final retreat of the Ontario lobe of the Laurentide Ice Sheet.”²⁶ “The sands and gravels of the Brampton Esker hold and purify water as it percolates downward, making the esker an aquifer and a groundwater resource.”²⁷



Drawing of esker formation²⁸



Drawing of Glaciation formation of Esker²⁹



TRCA Map Physiographic Regions and Eskers, 1998³⁰

Of significance on this map is the location of the Brampton Esker, not only within the Conservation area boundaries on the west, but also extending beyond the east side of Heart Lake Road. Since the esker rises to a ridge near the middle of its length, the sides taper downward into lowland areas, explaining the wetlands along either side of Heart Lake Road.



Heart Lake Conservation Area path along Brampton Esker, with Heart Lake down the ridge on the left side, and wetland down the ridge on the right side, with Countryside Drive in the distance on the right; panorama of 6 images taken by D Laing taken Mar 3, 2014

6.0 Historical Context of Heart Lake Road

6.1 Early Human Habitation

6.1.1 PaleoIndian Period – 10,000 to 7,000 B.C.

There is evidence that as the Laurentide ice sheet was melting, nomadic aboriginals hunted caribou and other animals, and did travel inland in what is now southern Ontario.³¹

The Brampton Esker likely informs the early cultural use of the Heart Lake area. Aboriginal people and the wildlife they hunted used the well-drained eskers for travel along the semi-continuous ridges and for burial of their dead in the workable gravel soil.³² Hence, eskers are of early cultural importance.

6.1.2 Archaic Period – 7,000 to 1,000 B.C.

The Aboriginal people of this period developed implements for hunting and fishing in the warmer climate, and inhabited the shore of lakes with fish and waterfowl.³³ Excavations in the Conservation Area, begun in 2007, yielded so many Aboriginal campsites from repeated visits, that the area has been dubbed “The Stopover Site”.³⁴

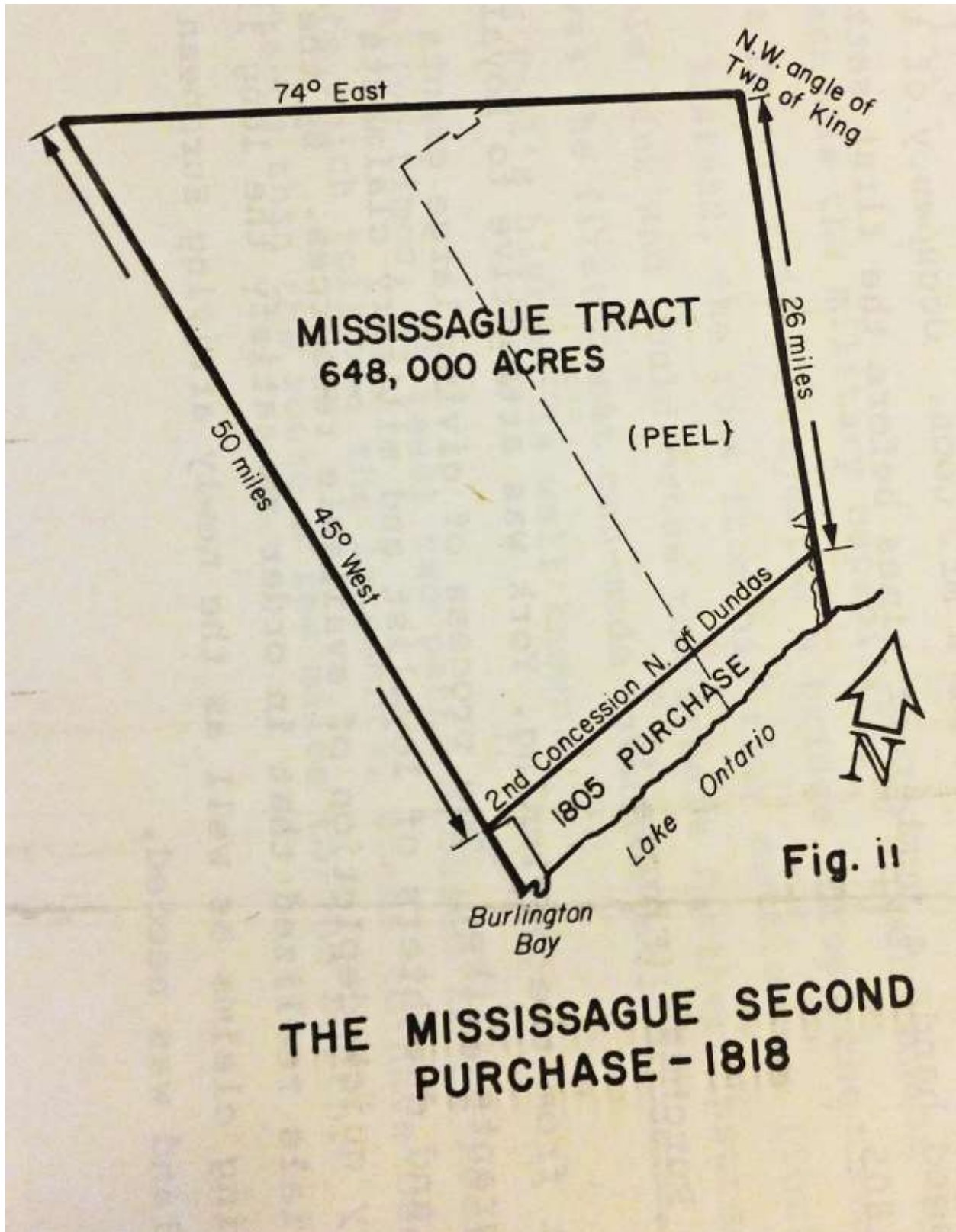
Excavations have revealed artifacts, used for making stone tools, called chert, a type of flint. More than 200 have been found in one area adjacent to the kettle lake, Heart Lake, with stone coming from the north shore of Lake Erie and from near Collingwood.³⁵ This site also contains the soil stains of past Aboriginal activity.



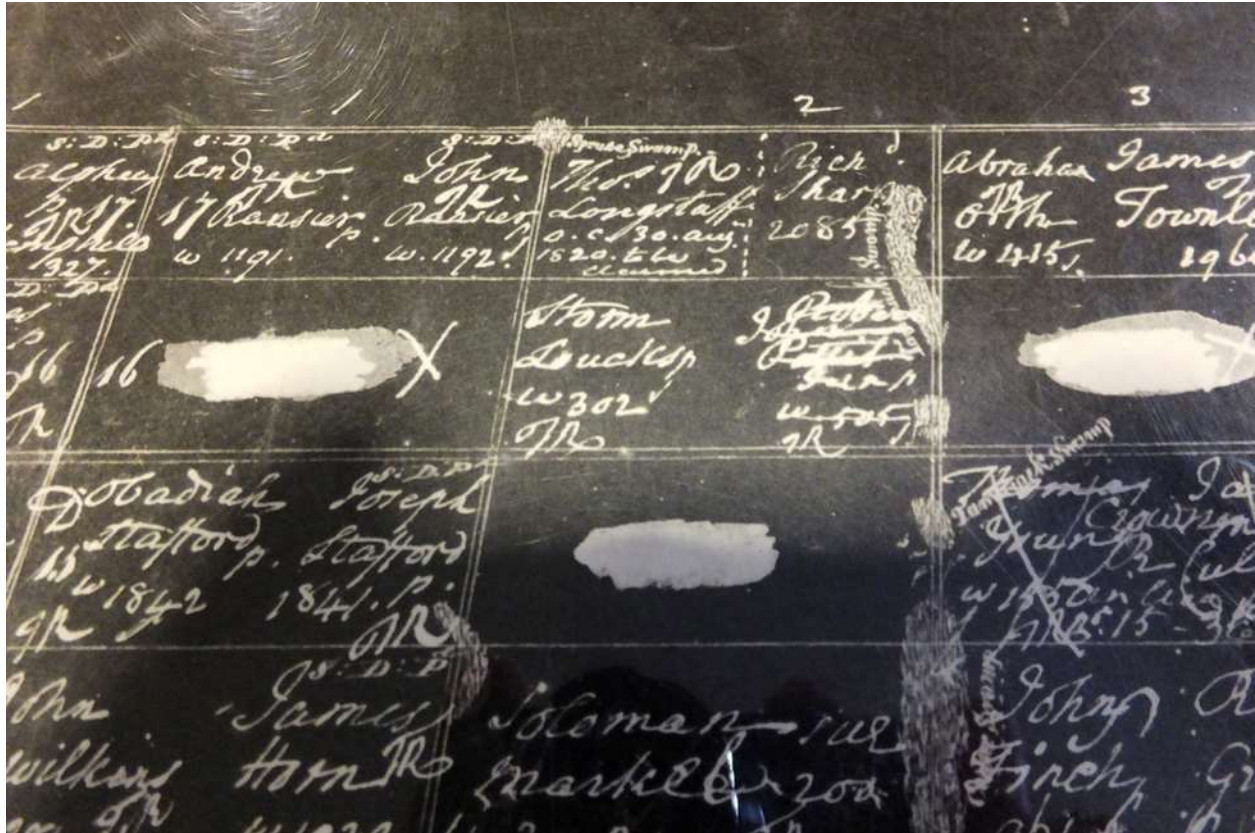
Archaeological Findings at Heart Lake Conservation Area, 2010³⁶

6.2 Euro-Canadian Settlement

In 1805, the Mississaugue sold a tract of land along the lakeshore extending north to the current Eglinton Avenue to the Crown. The purpose was to allow Lieutenant-Governor John Graves Simcoe direct access from York to the Niagara peninsula, as unrest was building with the United States.³⁷ Subsequent to the War of 1812, the Mississaugue sold 648,000 acres north of Eglinton Avenue, completing this transaction in 1818.



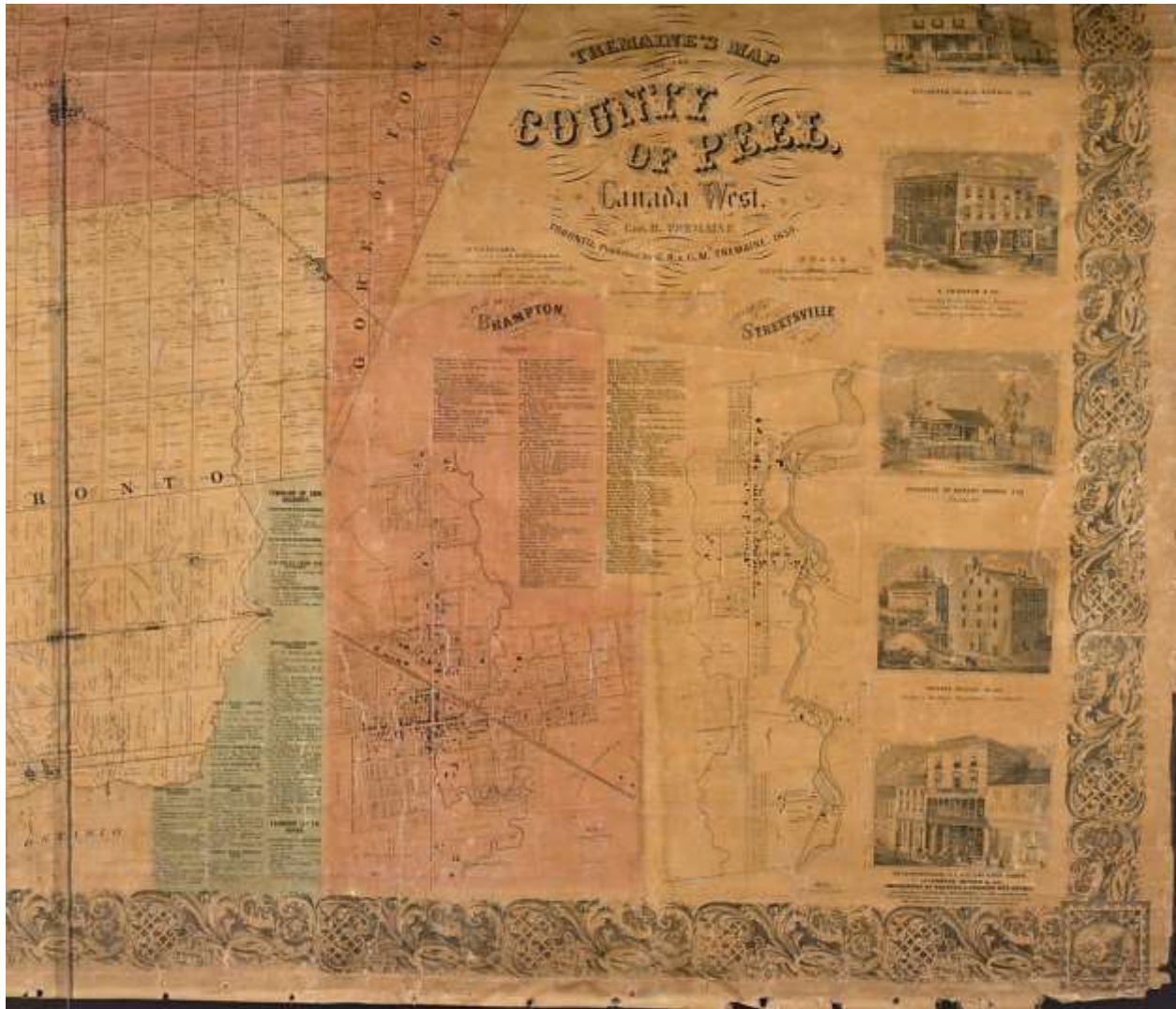
The Mississaugue Second Purchase - 1818, Settlement History of Peel, (1977)³⁸



On the southwest corner of Robert Gardiner's Lot 14, Conc. 2E, was a Wesleyan Methodist Chapel, according to George Tremaine's 1859 survey of the County of Peel.⁴⁸



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Tremaine's Map of the County of Peel, Canada West 1859⁵⁰

6.2.2 Settler Location Tickets

“Land occupied by settlers with land grants was not necessarily patented. Some settlers took years to complete the necessary settlement duties and pay the registration fees required to have the land patented (ie. free title).”⁵¹ Location Tickets were the official non-transferable documents issued under the authority of an Order in Council granting a settler land subject to conditions of settlement.

Settlement duties were as directed by the Lieutenant-Governors to clear half the road, cutting down without clearing one chain in depth from the road, along the front of each lot, included in the clearing, building a Dwelling House 16 feet by 20, and fencing five acres for every hundred. All of this was to be completed within two years from the date of the Ticket.⁵² The amount of time varied from less than one year to being waived entirely, depending on the township, and the rigor of enforcement.⁵³

A Scotsman James Strachan, visiting his brother in the town of York, travelled around the Province of Upper Canada in 1819 and made the following observations about land settlement:

“On reaching Upper Canada, emigrants have to chuse [sic] which of the ten districts they are desirous of remaining in. Having determined this, they enquire for the Land Board – one has been lately established for their convenience in every district; and, having attended this Board, the oath of allegiance is administered to them; they are examined, and if their answers prove satisfactory, they are ordered 100 acres of land.”⁵⁴

Strachan further commented that within two months, active men could clear sufficient land that they could apply for patents or deeds and have their land granted in council.⁵⁵ This observation may have been typical for easily managed terrain; however Heart Lake Road presented a different picture in our historical records.

For the east half of Concession 2E Lot 16 (land including the north tip of Heart Lake and east to Heart Lake Road), there was a succession of three attempts to settle.

The first was March 10, 1819, when John Pettit Jr., was granted 100 acres, which was subsequently marked “Returned”.⁵⁶ Pettit, from Grimsby, had been granted land for his work carrying dispatches in the War of 1812.⁵⁷

The second was a grant of 50 of those same acres to George Coon, on September 11, 1819. After almost a year of attempting settlement on the Location Ticket for Concession 2E, east quarter of Lot 16 was returned on August 25, 1820 with the following claim:

“George Coon of Grimsby, labourer, swears lot is almost all a swamp. Much so that it will be impossible to make a farm on lot”⁵⁸

In April 1823, Richard Stinson from Ireland was given a Location Ticket for the same 50 acres, and he successfully performed his settlement duties by October 3, 1827.⁵⁹

By 1821, any settler wanting unreserved lots in the Etobicoke Watershed would have had to “buy land from an earlier grantee, take up a lot forfeited for neglect of settlement duties or other causes, or rent a crown or clergy reserve lot”.⁶⁰

Records for Concession 2E, Lot 15 (the bulk of Heart Lake and land east to Heart Lake Road), show that Thomas Graham from Ireland attempted to settle this lot⁶¹, but by November 1819, his location was cancelled due to non-performance. “Proximity of the lake would have made the ground quite wet and unsuitable for farming”.⁶²

Finally eight years later, the Crown granted King’s College a patent for 200 acres on January 3, 1828.⁶³ (King’s College subsequently become the University of Toronto.) The lot was shown as vacant in assessment records between 1832 and 1835⁶⁴, and the survey map of 1835, indicated the lot as “R”.⁶⁵

In the years 1855, 1864 and 1865, Kings College divided Lot 15 into four smaller parcels and sold to the tenants who had been leasing.⁶⁶ By the time of publication of Pope's Illustrated Historical Atlas of The County of Peel, Chinguacousy looked much different.

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6.2.3 Duties for Settlement Locations



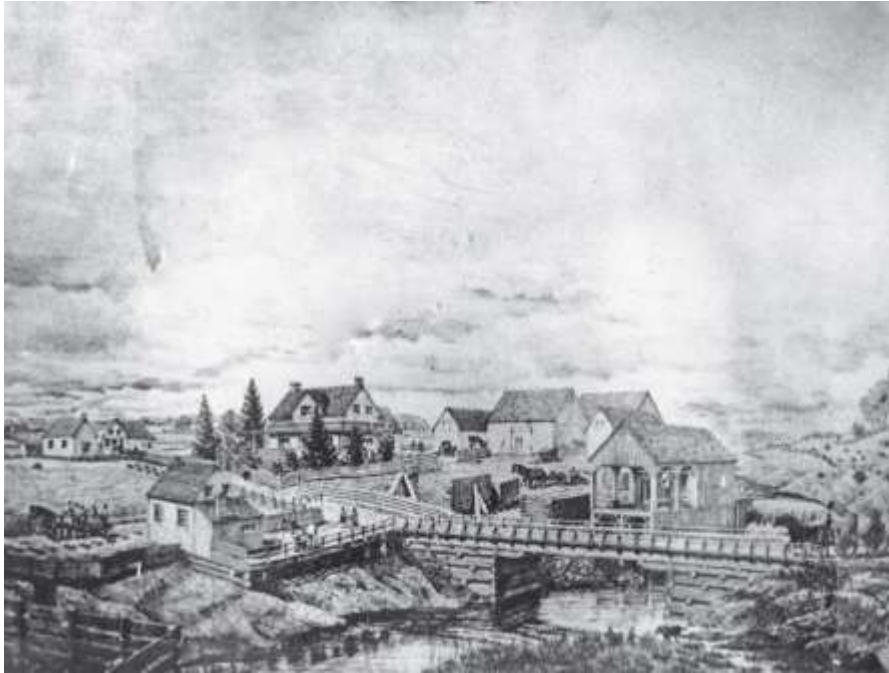
"1820, A Location", Etobicoke Valley Report M88.0037, 1947, item 881817, PAMA

The purpose of settlement was to secure the land for the Crown, and for the value of farming. "A Location"⁶⁸ shows the typical clearing in 1820 with some trees cut and a modest log cabin built on the site.



"1840, An Improved Holding", Etobicoke Valley Report M88.0037, 1947, item 881818, PAMA

By 1840, this location was “improved” to having most of the trees cut in favour of plowed fields, fences, more buildings and more farm animals.



“1860, A Typical Farm”, Etobicoke Valley Report M88.0037, 1947, item 881813, PAMA

By 1860, the typical farm was quite prosperous, well fenced with elegant buildings. The culture of Heart Lake Road was such that it likely never looked like this typical 1860 farm. Had it done so, the land would have been so valuable that the farmer would have been able to amass larger acreages, and it would have likely been developed into subdivisions during the last forty years.

The census of 1871 listed a population for Chinguacousy of 6,129.⁶⁹

“Chinguacousy is a good agricultural Township, watered on the west by the River Credit, in the centre by the Etobicoke, which is not a very valuable stream, and on the east by several small streams, branches of the Humber and Mimico.”⁷⁰

Of note in this quotation is how the cultural value of Etobicoke Creek has changed from “not a very valuable stream”⁷¹, to today being regarded as so valuable that it is carefully managed by Toronto and Region Conservation Authority.⁷² Dolores Hayden’s “human patterns impressed upon the contours of the natural environment”⁷³ expresses this evolution of our changing values in cultural heritage.

6.2.4 Settler Dwelling Houses

The trees available from the lots along the current Heart Lake Road, according to Richard Bristol’s field notes included: cedar, hemlock black ash, beech, maple, basswood, tamarack, and elm.⁷⁴

The assessment records indicate that lots settled along Heart Lake included a log house or a “squared or hewed timber house”⁷⁵

There is evidence that Robert Gardiner replaced his original squared timber house with a one-storey brick house by 1851.⁷⁶ By 1877, there is a reference to a barn on Concession 2E Lot 16, owned by Robert Hunter.⁷⁷

There appear to be no specific drawings of houses occupied by the settlers along Heart Lake Road, possibly indicating their modest means and lack of remarkable features. This etching of a log house from Upper Canada in 1833 was likely typical.



The Log House etching by Samuel Lover, R.H.A. in T.W. Magrath's Authentic Letters from Upper Canada (1833), Perkins Bull Historical Collection, 1938⁷⁸

One description of a cabin in the woods on the fringe of a swamp north of Chinguacousy may have been typical of the cabins along Heart Lake Road:

*“The walls were of logs, with the bark still on, and the spaces between the logs were partly filled with moss. The roof was made of basswood logs split in half. The floors were of split cedar. During the winter the snow lay in heaps here and there over the floor and even on the bed after a night's storm.”*⁷⁹

None of the research indicates that archaeological excavations have uncovered evidence of any of these early log dwellings along Heart Lake Road. Over the last nearly 200 years, they could have rotted, they could have been dismantled with wood

being used for other purposes around the farm, and they could have fallen into the wetlands, where their remains lay undisturbed in the mud.

The Heart Lake Master Plan (2006), discusses the archaeological potential of not only aboriginal sites, but also Euro-Canadian sites of the 19th century.⁸⁰ There are several identified sites within a few kilometres of the area.⁸¹ As funding permits, it is quite likely that more of the already located sites will be researched.

6.2.5 Settler Road Building

Thomas Roy, a Civil Engineer described the proper building of a road in great detail in his 1841 book published in Toronto.⁸² He described the importance of roads to establish communication in the development of the Province of Canada.⁸³ He said that nothing paralyzes our settlers more than the want of good roads.

Roy makes it clear that the position of our roads needed to be constructed in the proper locations:

“concession lines and side-lines run straight on, across ravines and rivers, over hills, through swamps, lakes and other hindrances, and could never have been intended to serve as leading lines of communication when the Province became settled, and good roads became necessary for the conveyance of produce and goods to and from distant markets”⁸⁴

He went on at great length about how to build a good quality road that will endure with minimal maintenance. He discussed the importance of good drainage and ditches to keep water off the road surface.

The favourite material of Roy was a metal bed filled with granite pieces. His concern with pine plank roads was due to compression:

“The action of hammering or rolling, as is well known to the Indians, separates the fibres of timber, and causes the annual rings to loosen the one from the other. This will be one cause of wear upon plank roads, and thus, the rolling action of the wheels will not a little aid the action of the horses’ feet, the greatest cause of wear upon any kind of road.”⁸⁵

After all the careful description, Roy decried the practice of no central coordination in the building of roads. Money was granted to local Commissioners, ignorant of road building, which hired inexperienced foremen and favoured local interests over the public good. There was no consistency of design and money was wasted.⁸⁶

There appear to be no descriptions of the building of the road along Concession 2E. Perkins Bull describes the construction of Dundas Street from 1810 in a manner that may have been typical of the period.

“The road was deeply rutted on the upland, while half-submerged corduroy wound through boggy hollows among logs and second growth. Settlement duty included clearing half the frontage, but with inexperienced hands and inadequate equipment, settlers strove merely to cut out underbrush and remove any tree that lay diagonally across the trail. It was still difficult to ride, and even pedestrians went Indian file.”⁸⁷

William Gillespie, an American Professor of Engineering wrote in his 1850 Manual of the Principles and Practice of Road-Making:

“When a road passes over soft swampy ground, always kept moist by springs, which cannot be drained without too much expense, and which is surrounded by a forest, it may be cheaply and rapidly made passable, by felling a sufficient number of young trees, as straight and as uniform in size as possible, and laying them side by side across the road at right angles to its length. This arrangement is well known under the name of a “Corduroy” road”.⁸⁸

This is consistent with a mid-19th century report of road making in Markham, Ontario:

“One early method of dealing with swampy ground was the laying of tree trunks side by side. Earth was dug from the side of the road and laid on top of the logs. This also produced a ditch on each side. However, with rains and floods, the earth covering was washed away and these so-called “corduroy” roads became bone jarringly bumpy.”⁸⁹

This is further supported by the Miles Illustrated Historical Atlas of the County of York (1878):

“A tract of rough country was now reached, difficult to clear and difficult to traverse with a vehicle. Here a genuine corduroy road was encountered over which wheels jolted deliberately. In the wet season portions of it, being afloat, would undulate under the weight of a passing load.”⁹⁰



Illustration of Settlers traveling along corduroy road c1815⁹¹



Current example of a Corduroy Road dated circa 1830⁹²

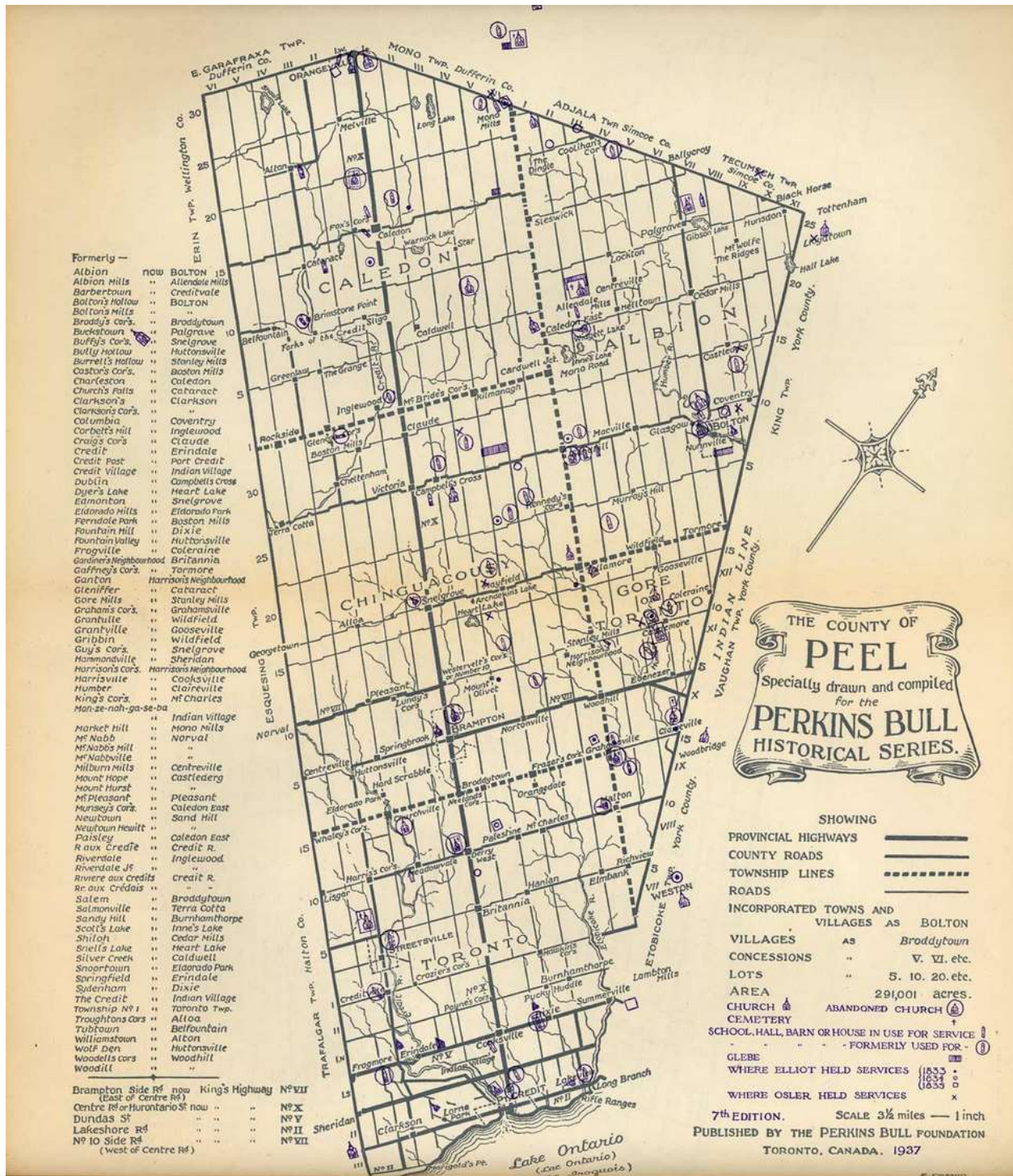
Hurontario Road, with much more traffic, was reported to have been planked as far as Edmonton (Snelgrove), and all unplanked roads were very bad in spring and fall.⁹³

6.2.6 Settler Road Maintenance

According to local historian William Perkins Bull, who gathered land registry and other documents into files now housed at Peel Art Gallery + Archives (PAMA), in 1862 and 1864, Chinguacousy Council paid rent for the use of part of the 15th side road, Concession 2.⁹⁴ This would have been a road from the current west end of Countryside Drive over to Heart Lake. It would appear from the Perkins Bull Historical Map (1937)⁹⁵, that the road jogged around the north end of Heart Lake, onto John Snell's lot, where it joined up again with what is now Conservation Drive.



Frame superimposed on section of Perkins Bull Historical Series, The County of Peel Map, 1937⁹⁶



Perkins Bull Historical Series, The County of Peel Map, 1937⁹⁷

There is a reference to C.H. Dyer being paid \$6 for digging a ditch.⁹⁸ There is an August 27, 1867 reference to \$50 being appropriated to repair the road from Lots 12 to 17 inclusive. On October 2, 1880, Gilbert McIlvene was paid "the sum of \$28 for cutting hill and covering swamp on Lot 16, Concession 2". On July 18, 1904, Jacob Hunter was paid \$20.25 by Chinguacousy Council for work on a sink hole at Concession 2, Lot 17.

By the mid 1800's in Markham, Ontario, it was acknowledged that "maintaining the concession lines and side roads was always a challenge".⁹⁹ Farmers were required by statute to provide a certain number of days labour per year on their local road.

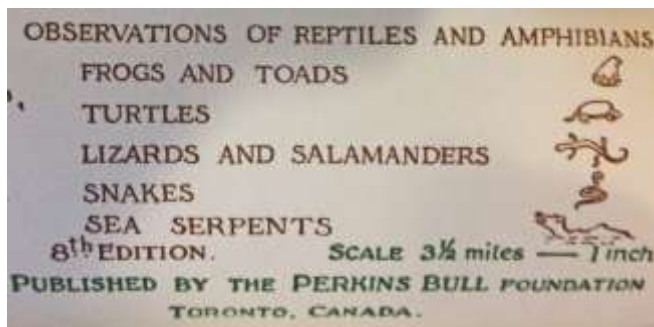
7.0 Early to Mid-Twentieth Century Context of Heart Lake Road

A window into the cultural heritage on the early 1900's can be viewed through the writings of local Brampton historian, William Perkins Bull. He wrote two books in 1938 that inform us of not only the 19th century historical context, but the manner in which it was viewed during his lifetime. One of the books, "From Amphibians to Reptiles"¹⁰⁰ provides some unlikely insight.

7.1 Cultural Folklore - Sea Serpent in Heart Lake

William Perkins Bull reported that:

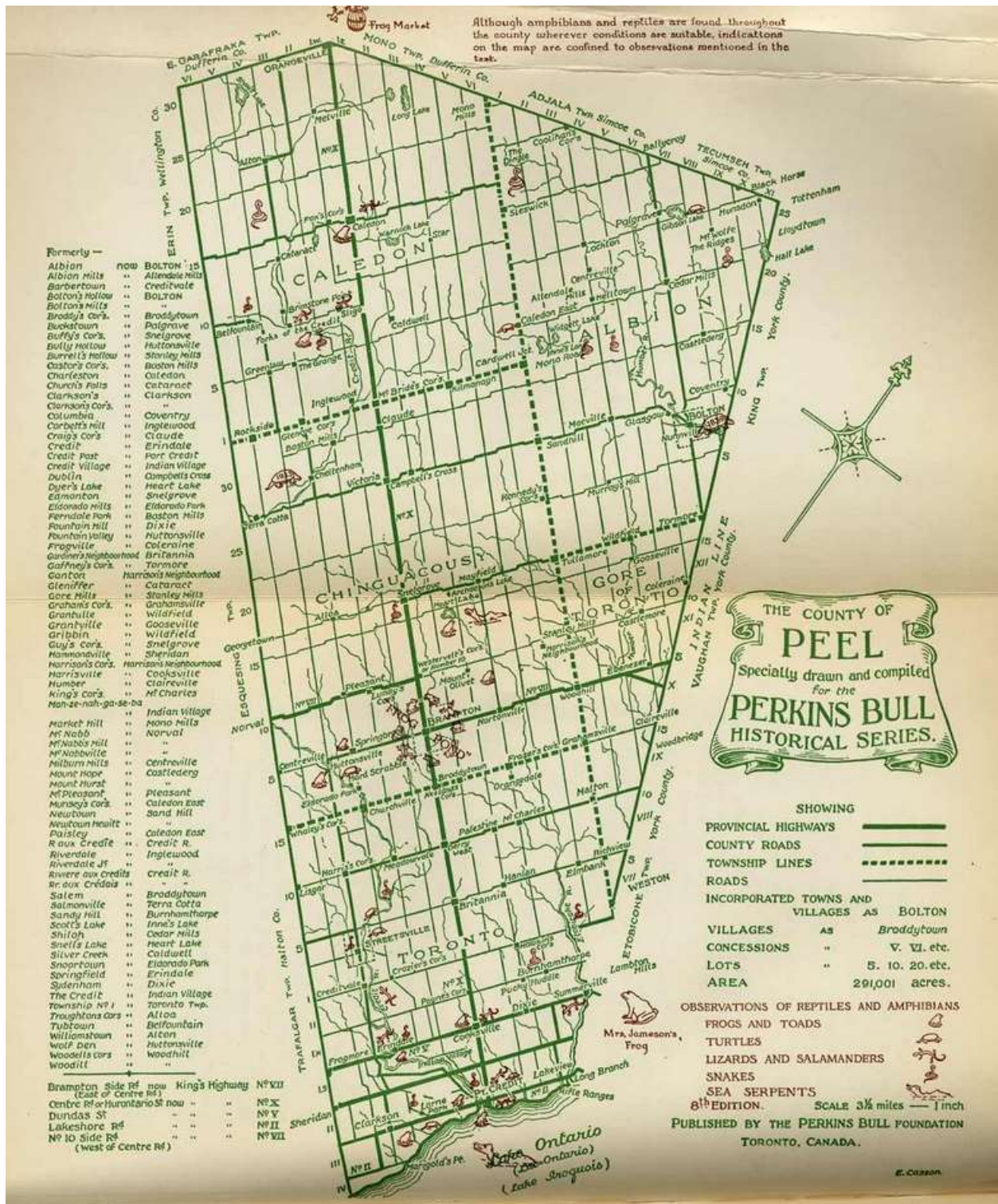
*"Colonel A. E. Taylor, who owns Heart Lake, tells of strange sub-aquatic disturbances, which rustics ascribed to a survival or revival of some prehistoric monster. It is claimed that water has been seen to spurt fifteen feet or more in the air, somewhat as a whale spouts, but not in a single fountain. The moving column seems to plough through the water for fifteen or twenty feet horizontally, at great speed, so natives believe it is produced by a moving animal. Many people, including Taylor and his family, claim to have seen the "serpent", but descriptions are vague and incoherent."*¹⁰¹



Enlarged Section of the Key, The County of Peel, drawn for Perkins Bull Historical Series, 1938¹⁰²



Enlarged Section showing Sea Serpent at Heart Lake, The County of Peel, drawn for Perkins Bull Historical Series, 1938¹⁰³



The County of Peel, drawn for Perkins Bull Historical Series, 1938¹⁰⁴

The cultural significance is that not only did Colonel Allan Taylor claim to see the monster, but members of his family did as well. His reference to “rustics” and “natives” ties this legend culturally back to aboriginals and early settlers both.

7.2 Commercial Enterprise in Heart Lake

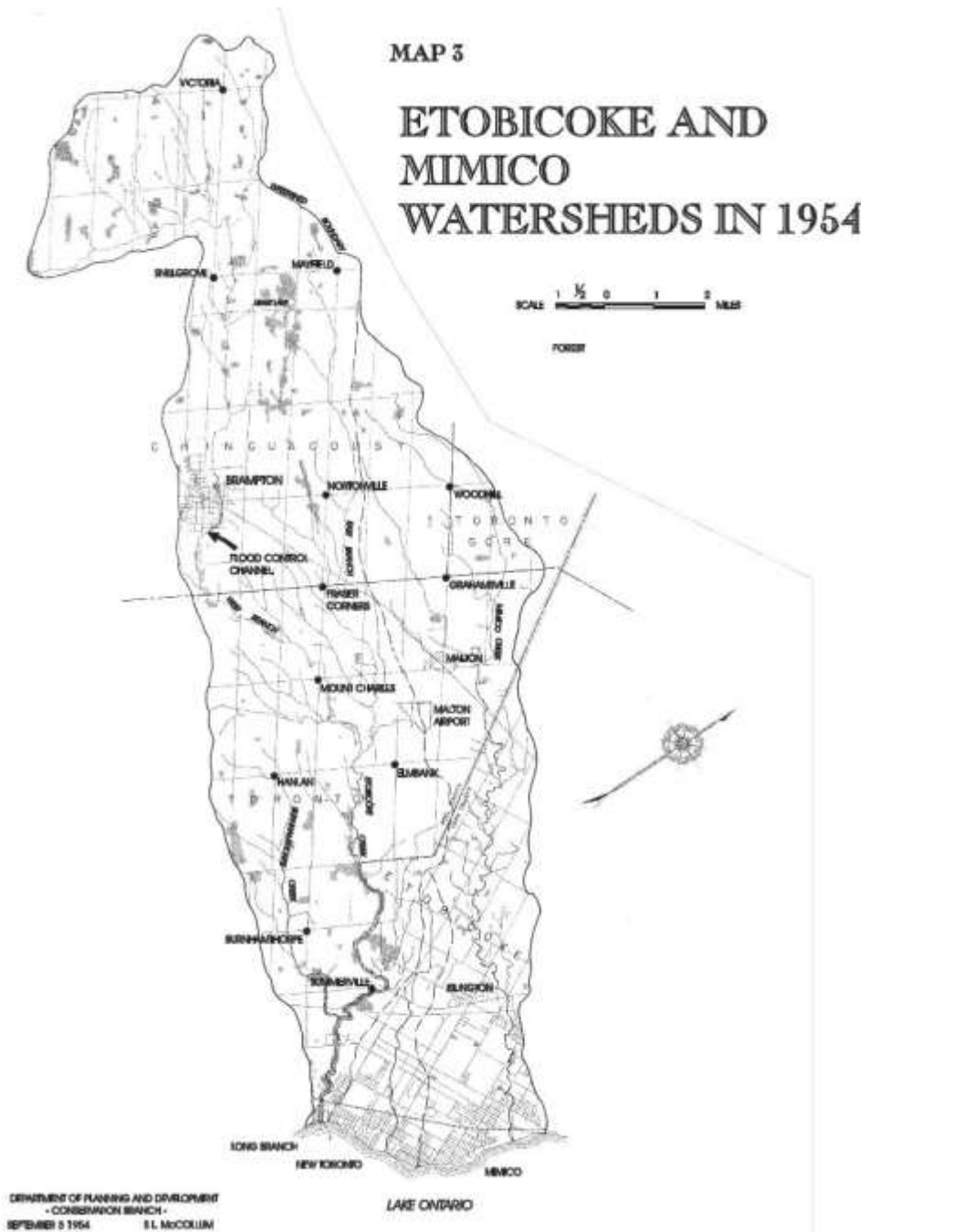
William Perkins Bull cited that the water from Heart Lake (then Snell’s Lake) in a 1913 water inspection was “absolutely pure”.¹⁰⁵ The Town of Brampton was drawing its water from Heart Lake at that time.

The Heart Lake Master Plan reports that there was a “commercial duck-raising enterprise in the 1920s”.¹⁰⁶ This contributed dead plants, uneaten food and faeces to the lake, depleting oxygen and making it not fit for swimming by the end of May each year.

This supports Dolores Hayden’s description of the “despoiled”¹⁰⁷ part of our cultural heritage before we realize what we have.

7.3 Conservation Land Acquisitions

The Etobicoke Mimico Conservation Authority (called Toronto and Region Conservation Authority, TRCA) was formed as a result of the need for flood control following the devastation from Hurricane Hazel in 1954.¹⁰⁸ Heart Lake is part of the Etobicoke Watershed. The provincial Conservation Authorities Act (1946), was amended to create Conservation Authorities in 1954.¹⁰⁹ These conservation authorities were mandated to acquire lands for recreation and conservation purposes as well as for flood management.



Etobicoke and Mimico Watersheds in 1954, TRCA State of the Watershed Report, 1998¹¹⁰

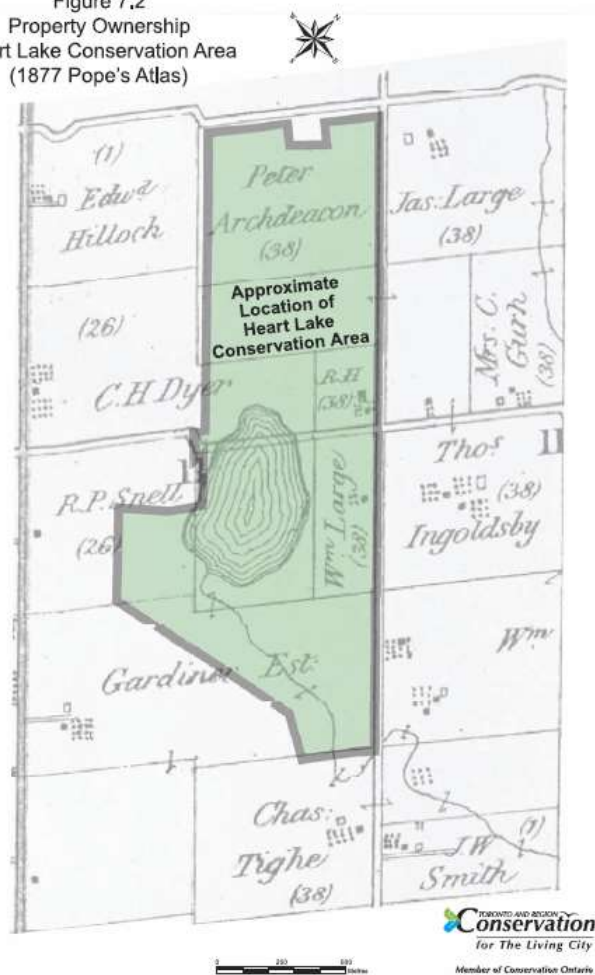
Heart Lake Conservation Area was formed in 1956 with the initial purchase of 63.3 hectares of land from Allan E. Taylor (of the sea serpent fame).¹¹¹ By 1982, nine more properties of land were added “to protect the wetland area, which provides natural water storage in the headwaters of Etobicoke Creek”.¹¹²

TABLE 2.1: HISTORY OF LAND ACQUISITION, HEART LAKE CONSERVATION AREA

FORMER OWNER	AREA (ha)	DATE	COST (\$)
Taylor, A.E.	63.287	1956.12.17 & 1957.02.18	207,000
Ingoldsby, T.B.	12.481	1958.01.03	30,000
Parkinson, H.C.	23.503	1959.03.06	20,000
Township of Chingaucousy	0.478	1964.08.14	2
Hunter, M.J. (Estate)	6.484	1965.07.14	10,000 (expropriated)
Agrob. Investments Ltd.	45.479	1969.09.24	76,500
City of Brampton	1.363	1971.06.30	1
Regional Municipality of Peel	1.095	1976.07.13	2
Rayner, G.	15.443	1979.12.28	300,000
Ministry of the Environment	0.030	1982.10.20	2
TOTAL	169.643		643,507

History of Land Acquisition, Heart Lake Conservation Area, 1956-1982, TRCA Heart Lake Master Plan¹¹³

Figure 7.2
Property Ownership
Heart Lake Conservation Area
(1877 Pope's Atlas)



Overlay of HLCA on Pope's 1877 Atlas showing ownership, Heart Lake Master Plan (2006), Fig.7.2

The Heart Lake Conservation Area was opened to the public in 1957¹¹⁴, marking a start in the positive resurgence in the value of the cultural heritage of the area.

7.3.1 Mid-Century Road Access

When Heart Lake Conservation Area was opened, there were three access points to the land, two of which were subsequently closed.¹¹⁵



Overgrown gate on west side of Heart Lake Road, just north of Countryside Drive, Mar. 31, 2014, photo by D Laing



Gate to lane at west side of Heart Lake Road in approximate location of where the 15th Side Road Lane would have been, Mar. 31, 2014, photo by D Laing

There is still some cultural evidence of typical farm fencing with cedar posts.



Farm Fencing north of Countryside Drive, east side of Heart Lake Road, Mar. 31, 2014, photo by D Laing

8.0 Contemporary Context of Heart Lake Road

Since the 1950's the development boom has caused land conversion from rural to urban, causing a "significant increase in negative impact on the remaining habitats, despite being set aside for 'protection'." ¹¹⁶

8.1 Evolution of Land Use and Perception of Cultural Value

In the 1970s, the Villages of Heart Lake was developed from farmland between Hurontario Road to the west and Heart Lake Road to the east. The community name of "Heart Lake" was taken from the dominant land form, the kettle lake in the Heart Lake Conservation Area.

Even the logo for the villages has a "heart" combined with a "house", as can be seen on the signage below.



Villages of Heart Lake Signage on Sandalwood Parkway at Kennedy Road, Google Maps, 2014

The authors purchased their first home in the Villages of Heart Lake in 1977 from The Whitehall Development Corporation¹¹⁷, who were using the map below on the last page of their real estate brochure. Note the prominence of Heart Lake Conservation Area, and note that Loafer's Lake was "proposed". The 15th Side Road is now Conservation Drive. The 1st Line East is now Kennedy Road.

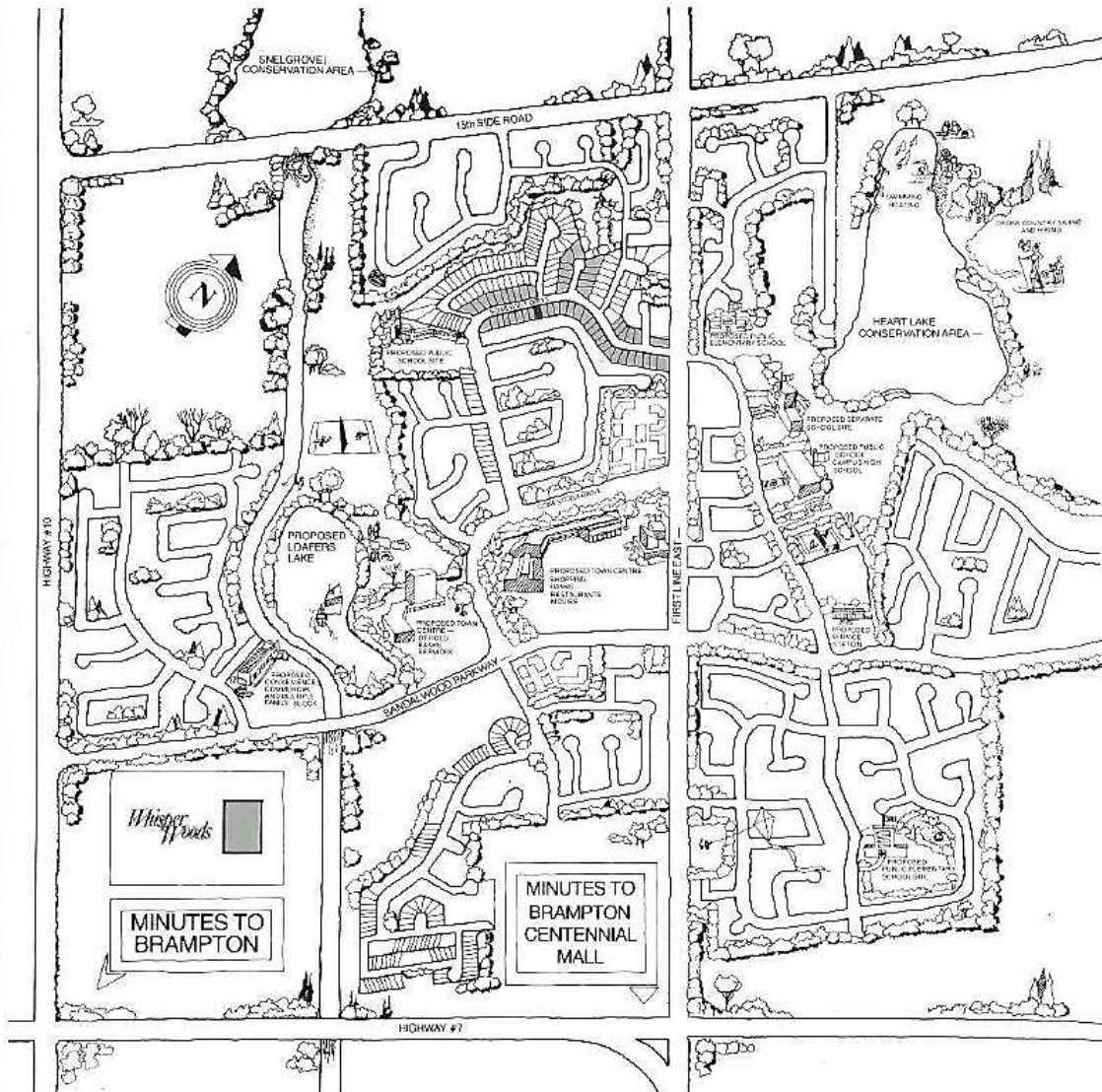
Sand and gravel extraction was an important industry, and companies were required to rehabilitate pits once mining was completed. Loafer's Lake was such an example.¹¹⁸

The Whitehall Development Corporation is a wholly owned Canadian company noted for excellence in design, craftsmanship, integrity and dependability.

As one of Canada's largest and most successful builders, Whitehall has, over the past eleven years, provided thousands of buyers with affordable new homes in Ontario.

Home ownership is a cherished Canadian tradition and all of us at Whitehall are dedicated to helping you realize this dream by providing maximum value for your home buying dollars.

Your Whitehall home ... for years of contented tomorrows.



Back page of Real Estate Sale Brochure for development in Villages of Heart Lake, 1977¹¹⁹

The authors bicycled up Heart Lake Road from Queen Street to enjoy a picnic with friends in 1977. The conservation area was wonderful area to swim, boat, picnic, barbeque and hike.



Bicycle trip for picnic at Heart Lake Conservation Area with friends, 1977, photo by D Laing

In 1994, TRCA reported that almost half the visitors to Heart Lake Conservation Area lived in Brampton.¹²⁰ Almost three quarters lived in the Regional Municipality of Peel. By 1997, over 56,000 visitors went to the conservation area.¹²¹



Boating on Heart Lake, TRCA State of the Watershed Report, 1998, p.33¹²²

8.1.1 Contemporary Road Construction

1st Line East (Kennedy Road) in 1977 was two lanes of gravel with deep ditches and tree lined on either side.

Heart Lake Road, with its tar and gravel construction, was smoother and more conducive to cycling. The authors cycled regularly along the quiet road.



Tar and gravel construction of Heart Lake Road, south of Sandalwood, 1978, photos by D Laing

Heart Lake Road north of 17th Side Road, what is now called Mayfield Road, had gravel construction with ditches.



Gravel construction of Heart Lake Road, just north of Mayfield Road, 1978, photo by D Laing

According to City of Brampton staff Brad Conklin, Manager, Construction, Capital Engineering and Construction Planning and Infrastructure Services, Heart Lake Road was rebuilt and paved in 1987.

8.1.2 Contemporary Aboriginal Cultural Context

The Toronto and Region Conservation Authority commenced archaeological excavations in 2007¹²³. In consultation with local Elders, the site for a Medicine Wheel Garden, called Gitigaan Mashkiki in Ojibwa was selected.¹²⁴ The concentration of artifacts has made this site sacred, linking the cultural heritage of early Aboriginals to our culture today.



Gitigaan Mashkiki (Medicine Wheel Garden), beside Heart Lake, TRCA, 2013¹²⁵

“The vision for this garden came from a male elder of the Anishnawbe Nation. The concept of this type of garden originated with the Sacred Medicine Wheel and represents an assortment of symbolisms and teachings. The garden honours Mother Earth’s seasonal cycles, represents rituals and expresses artistic traditions that all beings are related and the strength of the circle nourishes life. As the garden changes, the circle of life also continues.”¹²⁶

“The four sections honour the Aboriginal culture and teachings of the four cardinal directions; East, South, West, North; four sacred medicines; sage, sweetgrass, cedar and tobacco; four sacred colours; yellow, red, black and white; four sacred animals; Eagle, Turtle, Buffalo and Bear and four seasons and cycles of life. It is also a symbol of the Seven Grandfather teachings of honesty, respect, humility, love, wisdom, truth and courage.”¹²⁷

The cultural heritage of the aboriginal past is celebrated with the garden and with interpretive signage that provides education to current generations of visitors to Heart Lake Conservation Area.

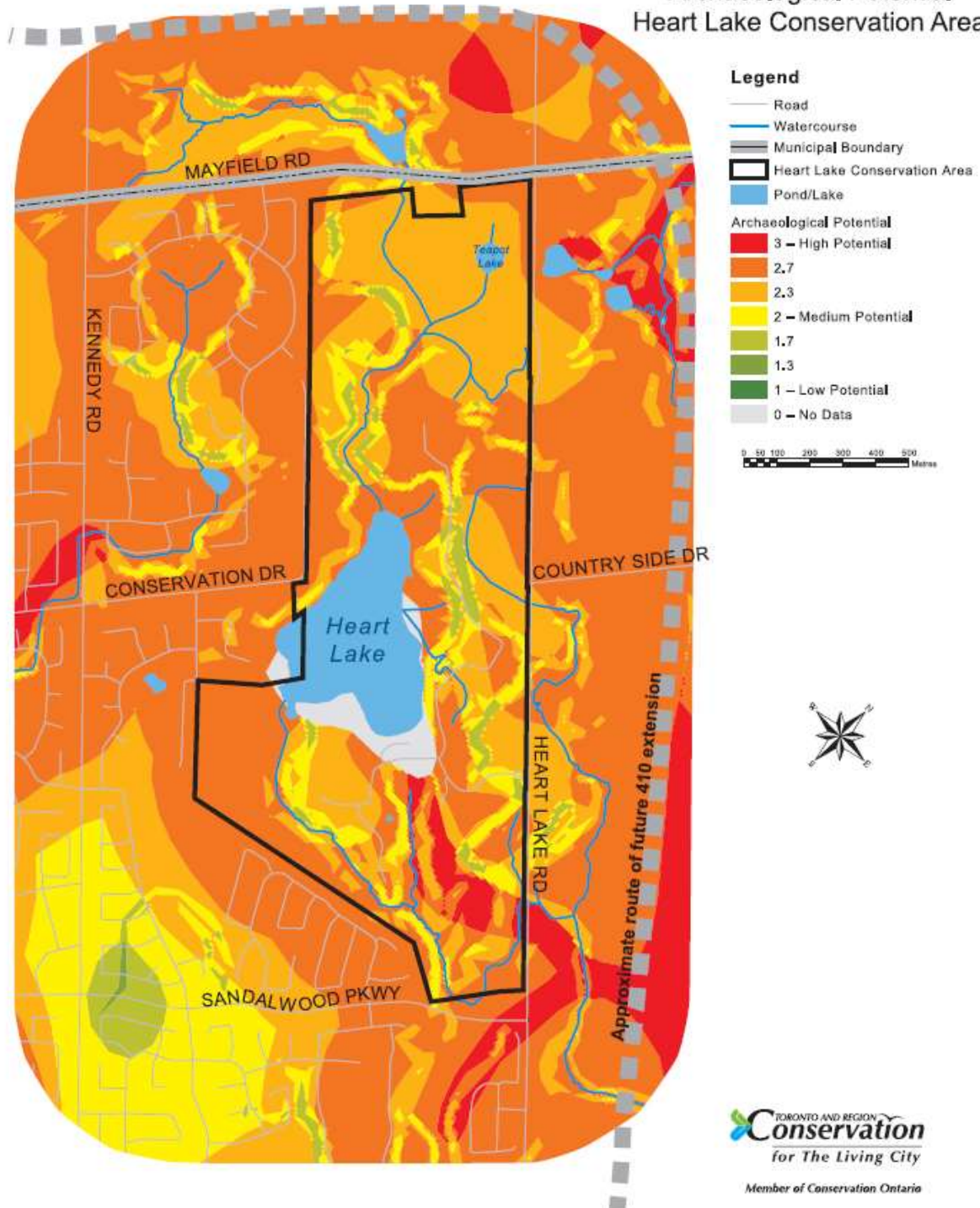


Archaeological Findings at Heart Lake Conservation Area Interpretive Signage, 2010¹²⁸

TRCA expressed in their Master Plan (2006): "Should future archaeological investigations be undertaken within the [Heart Lake Conservation Area] HLCA, there is a strong possibility that new archaeological resources will be discovered."¹²⁹

The conservation grounds as well as the surrounding area including Heart Lake Road are mapped for their archaeological potential by Toronto and Region Conservation Authority.

Figure 7.3
Archaeological Potential
Heart Lake Conservation Area



Archaeological Potential, Heart Lake Conservation Area, TRCA Master Plan, 2006¹³⁰

Note the red area of “high potential” at the Heart Lake Road / Sandalwood Parkway intersection and just north on Heart Lake Road. The road is mostly rated medium to high potential, indicating that even more cultural heritage significance may be uncovered in the future.

8.1.3 Contemporary Cultural Heritage Folklore Context

On September 14, 2013, the Heart Lake Dragon Boat Festival was held to raise money for The Living City Foundation to “support environmental restoration projects in the Etobicoke and Mimico Creeks Watersheds, two of the most highly developed, and therefore degraded, watersheds in the Toronto area”.¹³¹ Races have been held since 2002.¹³²



Logo for Heart Lake Dragon Boat Festival, TRCA, 2013¹³³



Heart Lake Dragon Boat Festival, TRCA, September 14, 2013¹³⁴

The authors note the cultural linkage between the “sea monster” reported by Colonel Allan Taylor to Perkins Bull¹³⁵, extending back to “rustics” and “natives” and the current festival is one to be celebrated and promoted.

8.1.4 Cultural Heritage Conflicting Values

Values are not uniform in our society. It is ironic that as one value of our cultural heritage is ascending, there are those in the population who do not share that value.

On one hand we have current cyclists who value travelling along the beautiful Heart Lake Road. On the other hand we have speeding automobiles, trucks and littering.



Pair of cyclists on Heart Lake Road, Mar. 31, 2014, photo by D Laing

8.1.4.1 Traffic Speed

Such is the case of conflicting cultural heritage values with Heart Lake Road, where it has become a short cut to avoid traffic congestion on Highway #410. Some residents have commented that it is traffic from north of Brampton that uses Heart Lake Road in this manner, although this has not specifically been verified with a study.



Traffic congestion #410 northbound at Bovaird Drive, Brampton Guardian, Oct. 22, 2012¹³⁶



Traffic southbound Heart Lake Road at Sandalwood Parkway, 2:51pm Mar. 31, 2014, photo by D Laing

The authors observed traffic increasing as school completion time neared, when they visited on March 31, 2014.

During their 40 volunteer hours on the Heart Lake Road Ecology Monitoring Project, the authors frequently felt unsafe walking along the shoulder of Heart Lake Road, due to the speed of cars exceeding the 60km/hr. limit and presence of illegal trucks. There are two No Trucks signs, one facing southbound just south of Countryside Drive, and one facing northbound just north of Countryside Drive. Trucks on all parts of Heart Lake Road between Sandalwood Parkway and Mayfield Road have been observed by the authors.



Illegal Truck turning from Heart Lake Road onto Countryside Drive, with No Truck signage on west side, Mar. 31, 2014, photo by D Laing



Heart Lake Road 60km/hr. Traffic Sign, Mar. 31, 2014, photo by D Laing



Countryside Drive 70km/hr. Traffic signage, Mar. 31, 2014, photo by D Laing

It should be noted that Countryside Drive that ends at Heart Lake Road, with four paved lanes, with curbs and sidewalks on both sides, has a speed limit of 70 km/hr. compared to 60km/hr. on Heart Lake Road.

8.1.4.2 Roadside Litter

The authors noted extensive litter during their participation of the HLREMP study in 2013, and again on their visit of March 31, 2014, despite the No Dumping signage.



Heart Lake Road Litter in view of No Dumping Signage, Mar. 31, 2014, photo by D Laing



Litter along east side Heart Lake Road, north of Countryside Drive, Mar. 31, 2014, photo by D Laing

The authors participated in the TRCA “Great Canadian Shoreline Cleanup Heart Lake Road”¹³⁷ held on September 28, 2013, where 60 volunteer-hours collected 1,100 lbs. of litter.



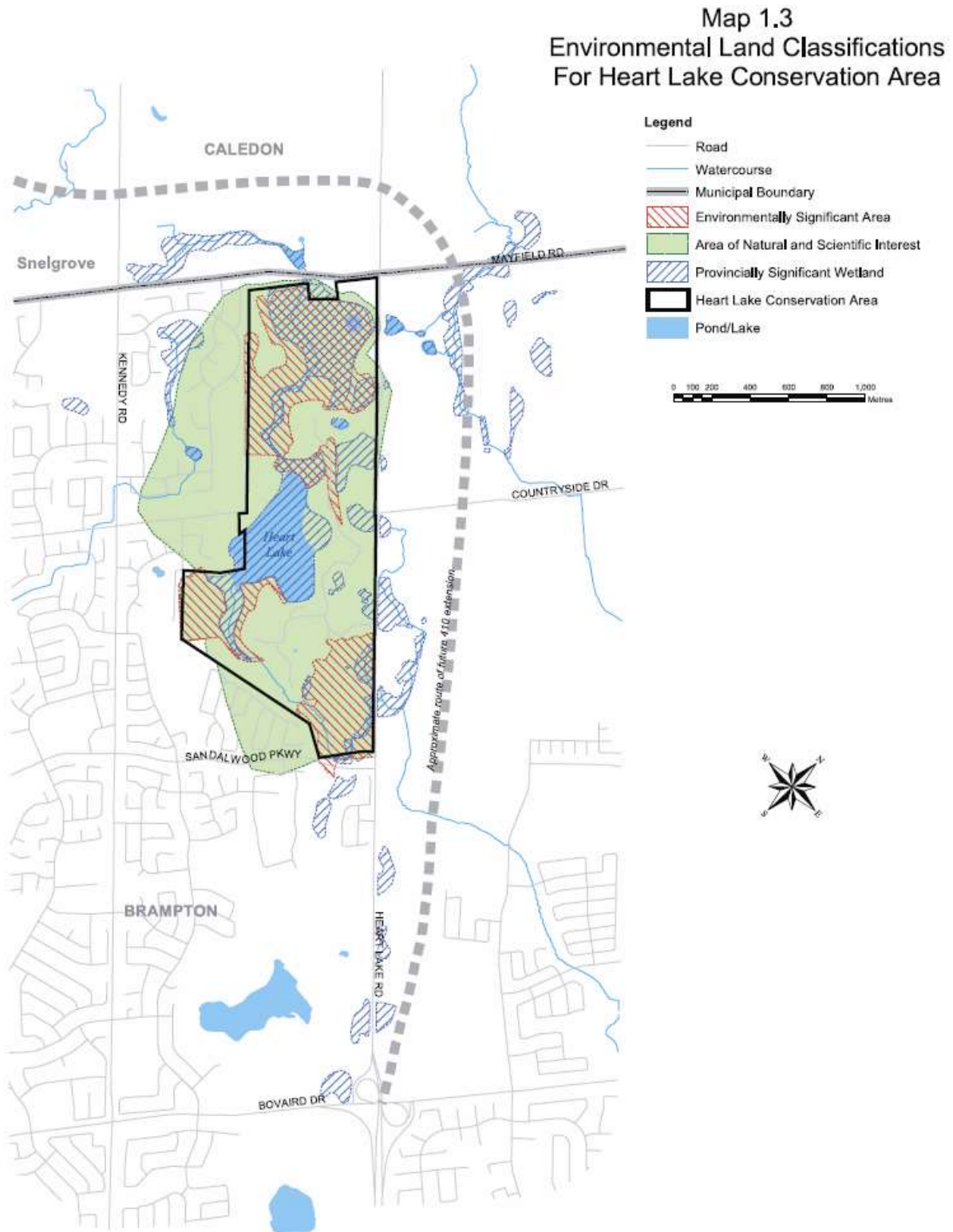
Great Canadian Shoreline Cleanup Heart Lake Road, Sept. 28, 2013, TRCA¹³⁸

8.2 Cultural Heritage Value of Unique Habitats

The Ontario Ministry of Natural Resources has identified Heart Lake Conservation Area to be “significant” in a number of different respects.¹³⁹ There are several different environmental land classifications that are discussed.

The Heart Lake Wetland Complex has classifications in three different areas: Environmentally Significant Area (ESA), Provincially Significant Wetlands (PSW), and Area of Natural and Scientific Interest (ANSI).¹⁴⁰

The City of Brampton’s Official Plan (2006)¹⁴¹ recognizes that environmentally significant or sensitive areas warrant protection for the long term interests of the community and the environment.



Heart Lake Master Plan Environmental Land Classifications, 2006, Map 1.3¹⁴²

8.2.1 Environmentally Significant Area (ESA) Woodlands

In the last 200 years since Euro-Canadian settlement, the forests of Peel have been cleared first for agriculture.¹⁴³ The urban expansion with housing developments has continued that trend away from forestation. The formation of Heart Lake Conservation Area has not only allowed the maintenance of forests, but also the replanting trees¹⁴⁴ cut by the settlers. The conservation area as of 2006 was considered 48% forest.¹⁴⁵

Heart Lake Woodlands are classified as an Environmentally Significant Area (ESA)¹⁴⁶. Further, Heart Lake Forest and Bog are the only regional life science Areas of Natural and Scientific Interest (ANSI).¹⁴⁷

Six of the 64 identified vegetative community types are classified as being provincially rare.¹⁴⁸



Forested area in Heart Lake Conservation Area adjacent to Heart Lake Road, March 31, 2014, photo by D Laing

8.2.2 Earth Science Area of Natural & Scientific Interest (ANSI)

The Brampton Buried Esker is a Regional Earth Science area of Natural and Scientific Interest (ANSI) according to the City of Brampton's Official Plan (2006)¹⁴⁹ and according to the TRCA Watershed Report (1998).¹⁵⁰

With the exception of the Heart Lake area, most of the Brampton Esker has disappeared due to aggregate extraction.¹⁵¹ More than half of the gravel has been mined.¹⁵²

Brampton was supplied by wells drilled into the esker, as reported in the Etobicoke Valley Report (1947).¹⁵³ Prior to 1972 when Brampton changed its water supply system, the Brampton Esker aquifer provided these municipal wells with water that had been purified by the sand and gravel.¹⁵⁴

8.2.3 Species of Concern

26 of the 70 species of breeding birds are TRCA regional Species of Urban Conservation Concern, and the Barn Swallow is threatened nationally.¹⁵⁵ The wetland habitat is ideal for species such as ducks and swans.



Wood Ducks in wetlands adjacent to Heart Lake Road, August 26, 2013, photo by D Laing

Trumpeter Swans disappeared from Ontario when the last one was shot by a hunter at Long Point on Lake Erie in 1886.¹⁵⁶ A restoration project was begun in 1982, signifying another example of our evolution in appreciating cultural and natural heritage.

Trumpeter Swans can now be seen occasionally in the wetlands beside Heart Lake Road.



Trumpeter Swans with their 2 goslings in wetlands adjacent to Heart Lake Road, July 16, 2013, photo by D Laing

Of course, the difficulty is that the birds leave the wetlands and wander across the narrow shoulder onto Heart Lake Road with their babies. The authors observed the swan family coming very close to traffic.



Trumpeter Swans and Cygnets on shoulder of Heart Lake Road, July 16, 2013, photo by D Laing

The Eastern Snapping Turtle and the Eastern Milksnake are designated species of Special Concern both nationally and provincially.¹⁵⁷ Snapping Turtles frequently cross Heart Lake Road between the wetlands to lay their eggs. The authors helped the Snapping Turtle below cross the road and disappear into the wetland on the other side.



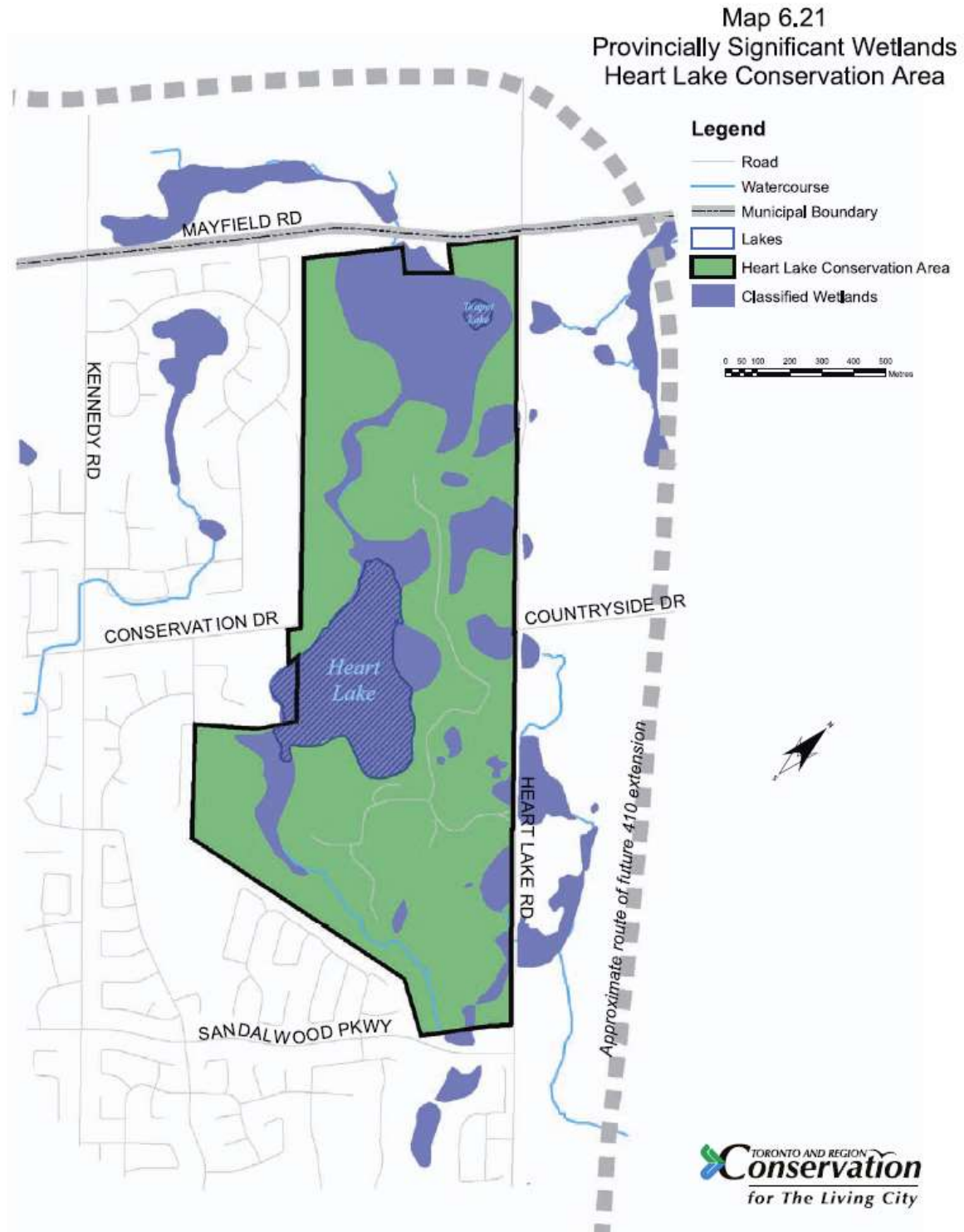
Eastern Snapping Turtle, successfully crossed Heart Lake Road, May 18, 2013, photo by D Laing

8.2.4 Provincially Significant Wetlands (PSW)

The Heart Lake Wetland Complex is a MNR-classified wetland.¹⁵⁸ The conservation area as of 2006 was considered 21% wetland.¹⁵⁹

The City of Brampton Official Plan (2006), recognizes the value of Provincially Significant Wetlands as being a

*“very important component of the natural heritage system with respect to both land and water related ecosystems including water quality and quantity, flood management, habitat for terrestrial and aquatic plants, fish and wildlife, food chain support and social and economic benefits”.*¹⁶⁰



Heart Lake Master Plan, TRCA, 2006, Map 6.21¹⁶¹

The Ministry of Natural Resources explains that wetlands play a crucial role in the province¹⁶²:

- *“provide vital habitat for rare and endangered wildlife and many other species;*
- *maintain and improve water quality;*
- *help stabilize shorelines and control flooding and erosion;*
- *provide spawning grounds for fish;*
- *help ensure a stable, long term supply of water, by functioning as groundwater recharge and discharge areas;*
- *supply many social and economic benefits, such as opportunities for outdoor recreation and tourism; and*
- *ensure opportunities for the renewable harvest of products such as timber, fuel wood, fish, wildlife and wild rice.”¹⁶³*

The wetland areas within the HLCA connect to other wetlands outside of the park boundaries, and Map 6.21 indicates that the Provincially Significant Wetlands extend to the east side of Heart Lake Road.



Great Egret in wetlands on east side of Heart Lake Road, September 18, 2013, photo by D Laing

The Heart Lake Complex interacts with adjacent natural cover and wetlands:

“It is likely that if such foraging opportunities were to be diminished by, for example, an increase in human disturbance, these species [Osprey, Green

Herons, Black-Crowned Night Herons, Wood Frogs and Spring Peepers] would be forced to find alternative breeding sites away from the immediate landscape surrounding Heart Lake, and therefore would disappear from the Etobicoke Creek watershed.”¹⁶⁴

9.0 Perception of Cultural Heritage Resources for Residents Today

It is because Heart Lake Road was built, that we have a portal into the beauty of the natural heritage that we have come to value increasingly in the past several decades. It is because the road has been left in a relatively undeveloped state and because the west side has been protected by TRCA, that we have a rare opportunity to continue to appreciate the value of this cultural heritage resource.

It is the wetlands and the road-kill that have caught the attention of the residents of Brampton and given Heart Lake Road the “special cultural meaning by people”¹⁶⁵, as described in Canada’s Historic Places (2010).

The Brampton Guardian published an article on October 8, 2013, “Thousands dying on Heart Lake Road every year”¹⁶⁶ The article reported preliminary data from the Toronto and Regional Conservation Authority’s Heart Lake Road Ecology Monitoring Project (HLREMP).



Squashed Painted Turtle, Brampton Guardian, Oct. 8, 2014

361 concerned citizens rallied and signed a petition created on February 4, 2014, and initially presented by the authors at the North West Brampton Residents’ Association. Appendix A lists the 361 signatures from both the paper and online petition.

The online petition also granted those signing the ability to comment on why they had signed. See Appendix B for nine pages of comments, which also include an email comment and four online comments about the Brampton Guardian article of October 8th.

Drawing on the Ontario provincial criteria for cultural heritage value, this rallying by the community has “direct associations with a theme, event, belief... that is significant to a community”.¹⁶⁷

Dolores Hayden described it beautifully in her description of the history of cultural landscape, when she said:

*“It is the story of how places are planned, designed, built, inhabited, appropriated, celebrated, despoiled and discarded. Cultural identity, social history, and urban design are here intertwined.”*¹⁶⁸

The Heart Lake Master Plan (2006), discussing the importance of maintaining connectivity, which is a rare possibility in the Toronto and Region Conservation Authority’s region:

*“The current landscape connectivity between this site [HLCA] and neighbouring sites would also be severely altered by any development, jeopardizing the region’s biodiversity at all levels. Continuity of habitat, especially forest and wetland, should be maintained so as to benefit fauna with low mobility, and species, such as wood frogs and spring peepers, that are especially vulnerable to any obstructions to their seasonal migrations and wanderings. Otherwise, corridors that provide access between suitable habitats should be provided. This would include access under barriers such as roads.”*¹⁶⁹

TRCA expresses that one of their mandates for cultural heritage resources is to “encourage the City of Brampton Heritage Board to continue to update and add to their existing inventories”.¹⁷⁰

Residents will be gratified to know that the City of Brampton’s Official Plan (2006) has stated that:

*“Should the proponent of a development be unable or unwilling to provide adequate protection for land adjacent to an Environmentally Sensitive Area, the application for development will be refused.”*¹⁷¹

In conclusion, it is clear that Heart Lake Road and the surrounding landscape meet the criteria for cultural heritage landscape, as defined both provincially and nationally.

The authors respectfully request that the City of Brampton Heritage Board consider listing Heart Lake Road, between Sandalwood Parkway and Mayfield Road, as a Cultural Heritage Landscape on the Municipal Register of Cultural Heritage Resources.

10.0 End Notes

- ¹ Cover image of Eastern Snapping Turtle just crossed Heart Lake Road, by D Laing, May 18, 2013
- ² Hayden, Dolores, *The Power of Place: Urban Landscapes as Public History*, The MIT Press, Cambridge Massachusetts, 1995, p.15 <http://www.larduser.net/writingcincy/wp-content/uploads/2012/03/The-Power-of-Place.pdf>
- ³ Service Ontario, Ontario Heritage Act, Ontario Regulation 9/06, Criteria for Determining Cultural Heritage Value or Interest http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_060009_e.htm
- ⁴ Region of Peel, Peel Art Museum + Archives (PAMA) Collection, Property Research in Peel: A How-to Guide, p.4
- ⁵ Natural Resources Canada, Canada Lands Survey System – Cadastral Data <http://clss.nrcan.gc.ca/data-donnees-eng.php>
- ⁶ Region of Peel, Chinguacousy Township Survey by Richard Bristol, 1819, PAMA <http://www.peelregion.ca/pw/water/enviro-assess/pdf/west-brampton/Appendix-F.pdf>
- ⁷ Ministry of Municipal Affairs and Housing, Provincial Policy Statement: Under the Planning Act, April 30, 2014, p.29 <http://www.mah.gov.on.ca/AssetFactory.aspx?did=10463>
- ⁸ Ministry of Municipal Affairs and Housing, Provincial Policy Statement: Under the Planning Act, April 30, 2014, p.40 <http://www.mah.gov.on.ca/AssetFactory.aspx?did=10463>
- ⁹ Service Ontario, Ontario Heritage Act, Ontario Regulation 9/06, Criteria for Determining Cultural Heritage Value or Interest http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_060009_e.htm
- ¹⁰ Service Ontario, Ontario Heritage Act, Ontario Regulation 9/06, Criteria for Determining Cultural Heritage Value or Interest http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_060009_e.htm
- ¹¹ Canada's Historic Places, Standards and Guidelines for the Conservation of Historic Places in Canada, 2nd Edition, 2010, p.49 <http://www.historicplaces.ca/media/18072/81468-parks-s+g-eng-web2.pdf>
- ¹² Canada's Historic Places, Standards and Guidelines for the Conservation of Historic Places in Canada, 2nd Edition, 2010, p.49 <http://www.historicplaces.ca/media/18072/81468-parks-s+g-eng-web2.pdf>
- ¹³ Hayden, Dolores, *The Power of Place: Urban Landscapes as Public History*, The MIT Press, Cambridge Massachusetts, 1995, p.15 <http://www.larduser.net/writingcincy/wp-content/uploads/2012/03/The-Power-of-Place.pdf>
- ¹⁴ Hayden, Dolores, *The Power of Place: Urban Landscapes as Public History*, The MIT Press, Cambridge Massachusetts, 1995, p.15 <http://www.larduser.net/writingcincy/wp-content/uploads/2012/03/The-Power-of-Place.pdf>
- ¹⁵ Heart Lake Conservation Area Master Plan Advisory Committee, Conservation Land Planning Group, TRCA, Heart Lake Conservation Area Master Plan Background Report, 2006, p43 <http://www.trca.on.ca/dotAsset/148584.pdf>
- ¹⁶ City of Brampton, Brampton Strategic Plan, 2013, p.16 <http://www.brampton.ca/EN/City-Hall/Citizen-Engagement/Strategic%20Plan/Documents/2013-1281.pdf>
- ¹⁷ City of Brampton, Brampton Strategic Plan, 2013, p.16 <http://www.brampton.ca/EN/City-Hall/Citizen-Engagement/Strategic%20Plan/Documents/2013-1281.pdf>
- ¹⁸ The Regional Municipality of Peel, Settlement History of Peel, PAMA January, 1977
- ¹⁹ TRCA, State of the Watershed Report: Etobicoke and Mimico Creek Watersheds, December 1998, p.136 <http://www.trca.on.ca/dotAsset/25986.pdf>
- ²⁰ Heart Lake Conservation Area Master Plan Advisory Committee, Conservation Land Planning Group, TRCA, Heart Lake Conservation Area Master Plan Report, 2006, p152
- ²¹ Drawing of Kettle Lake formation <http://img.geocaching.com/cache/log/14b847cf-e2ea-4e02-911c-215a62a1a716.jpg>
- ²² Heart Lake Conservation Area Master Plan Advisory Committee, Conservation Land Planning Group, TRCA, Heart Lake Conservation Area Master Plan Report, 2006, Ch6, p.156
- ²³ Bull, William Perkins, *From Strachan to Owen – How the Church of England was planted and tended in British North America*, Toronto, The Perkins Bull Foundation, George J. McLeod Ltd., 1938, p.352 <http://www.pinet.on.ca/peeldiglib/Page.asp?PageID=3705>
- ²⁴ Bull, William Perkins, *From Strachan to Owen – How the Church of England was planted and tended in British North America*, Toronto, The Perkins Bull Foundation, George J. McLeod Ltd., 1938, p.352 <http://www.pinet.on.ca/peeldiglib/Page.asp?PageID=3705>
- ²⁵ 1998 TRCA State of the Watershed Report Etobicoke and Mimico Creek Watersheds December 1998, p.137 <http://www.trca.on.ca/dotAsset/25986.pdf>

- ²⁶ Peel Region Planning Maps Site Summaries: Kennedy – Mayfield East (Heart Lake Conservation Area), October, 2011 http://www.peelregion.ca/planning-maps/NAI/site_summaries/Kennedy_-_Mayfield_East.pdf, also cited: TRCA website: <http://www.trca.on.ca/the-living-city/watersheds/etobicoke-mimico-creek/watershed-features.dot>
- ²⁷ TRCA State of the Watershed Report Etobicoke and Mimico Creek Watersheds, December, 1998, Section 8.2
- ²⁸ Drawing of Esker Formation <http://en.wikipedia.org/wiki/Esker>
- ²⁹ Drawing of Glaciation Formation of Esker <http://img.geocaching.com/cache/log/3703be1c-b157-489d-93b4-2d1da3e5bea5.jpg>
- ³⁰ TRCA State of the Watershed Report Etobicoke and Mimico Creek Watersheds, December, 1998, Map6
- ³¹ Heart Lake Conservation Area Master Plan Advisory Committee, Conservation Land Planning Group, TRCA, Heart Lake Conservation Area Master Plan Report, 2006, p169
- ³² Northwest Territories Protected Areas Strategy: Eskers, July, 2012 <http://www.nwtpas.ca/science-eskers.asp>
- ³³ Heart Lake Conservation Area Master Plan Advisory Committee, Conservation Land Planning Group, TRCA, Heart Lake Conservation Area Master Plan Report, 2006, p169
- ³⁴ TRCA, The Stopover Site, Etobicoke Creek Watershed, Brampton, 2014, <http://trca.on.ca/the-living-city/land/archaeology/resources.dot>, <http://trca.on.ca/the-living-city/land/archaeology/resources.dot?#sthash.Ccm3Hybs.dpuf>
- ³⁵ TRCA, Archaeology Resource Management, 2014, <http://trca.on.ca/the-living-city/land/archaeology/resource-management.dot>
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