APPENDIX B
MEKS STUDY

Mersey River Wind Project
Mersey River, NS
MEKS

Membertou
GEOMATICS SOLUTIONS

January 2023
Version: Draft

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Executive Summary

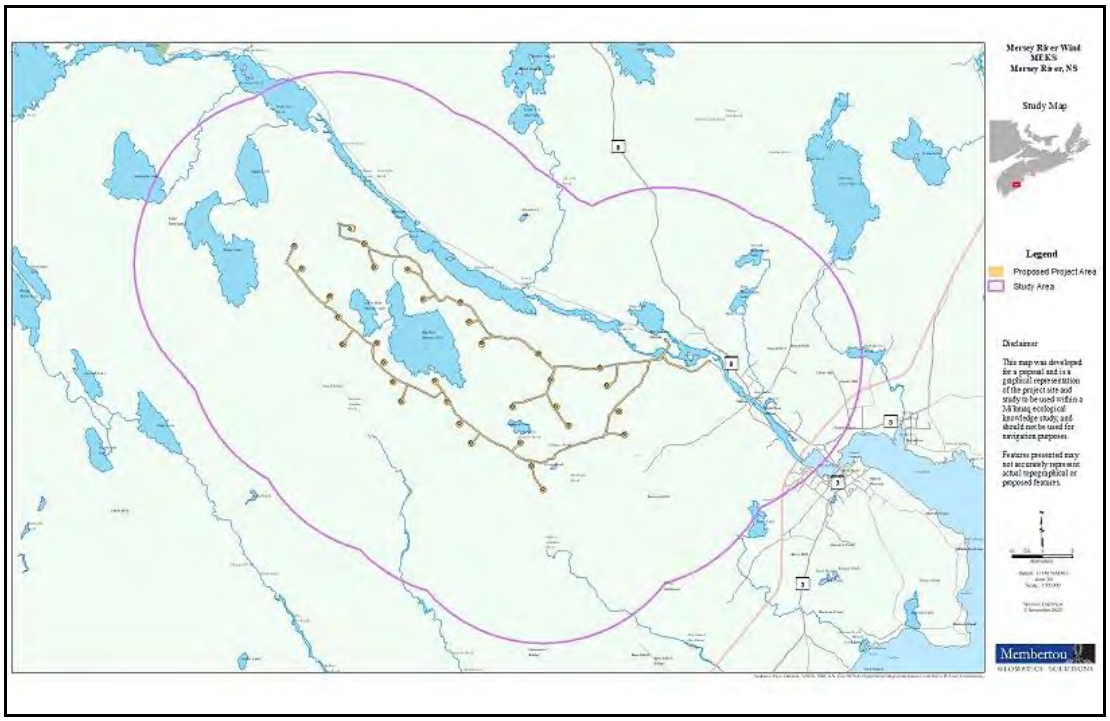
This Mi'kmaq Ecological Knowledge Study, also commonly referred to as a MEKS or a Traditional Ecological Knowledge Study (TEKS), was developed by Membertou Geomatics Solutions (MGS) for STRUM with regards to the proposed Mersey River Wind Project.

This MEKS mandate is to consider land and water areas in which the proposed project is located and to identify what Mi'kmaq traditional use activities have occurred, or are currently occurring within, and what Mi'kmaq ecological knowledge presently exists regarding to the area. In order to ensure accountability and ethic responsibility of this MEKS, the MEKS development has adhered to the "Mi'kmaq Ecological Knowledge Protocol, 2nd Edition". This protocol is a document that has been established by the Assembly of Nova Scotia Mi'kmaq Chiefs, which speaks to the process, procedures and results that are expected of a MEKS.

The Mi'kmaq Ecological Knowledge Study consisted of two major components:

- **Mi'kmaq Traditional Land and Resource Use Activities**, both past and present,
- A **Mi'kmaq Significance Species Analysis**, considering the resources that are important to Mi'kmaq use.

The Mi'kmaq Traditional Land and Resource Use Activities component utilized interviews as the key source of information regarding Mi'kmaq use within the Project Site and Study Area. The Project Site includes the development up to 33 wind turbines and supporting roads on a rolling plateau above the Mersey River, West of Milton, Nova Scotia.



Project Site (orange areas) and Study Area (purple outline) are identified by the Project Team.

The Study Area will consist of an area within a 5 km radius around the Project Site.

Interviews were undertaken by the MEKS Team with Mi'kmaq knowledge holders from the Acadia First Nation communities of Ponhook, Medway, Wildcat and Gold River. The interviews took place between October to November 2022.

Interviewees were shown topographical maps of the Project Site and Study Area and asked to identify where they undertake their activities as well as to identify where and what activities were undertaken by other Mi'kmaq, if known. This MEKS processed information from twenty (20) interviewees, including interviewees from other recent studies, within the analysis portion. Permission was requested of the interviewee(s) to have their information incorporated into the GIS data. These interviews allowed the team to develop a collection of data that reflected the most recent Mi'kmaq traditional use in this area, as well as historic accounts.

All interviewee's names are kept confidential and will not be released by MGS as part of a consent agreement between MGS and the interviewee to ensure confidentiality.

The data gathered was also considered in regard to its significance to the Mi'kmaq people. Each species identified was analyzed by considering their use as food/sustenance resources, medicinal/ceremonial plant resources and art/tools resources. These resources were also considered for their availability or abundance in the areas listed above, and their availability in areas adjacent or in other areas outside of these areas, their use, and their importance, with regards to the Mi'kmaq.

Historic Review Summary

The Project Site(45) and Study Area are entirely within **Kespukwik** District (Territory). **Kespukwik** (Last Flow, Land Ends) This District includes all the lands and waters draining into the Bay of Fundy from approximately Margaretsville, the Gulf of Maine coast and the Atlantic coast to the western shore of the LaHave River.

The entire Study Area was ice-free by 12,000 BP and does not appear to be directly impacted by the ice flows of the Younger Dryas Period. The receding ice left a landscape of mostly glacial ground moraine of a Stony Till Plain with a few Silty Till Drumlins and patch of Silty Till Plain southwest of the Town of Liverpool.

There are no known archaeological sites or finds within the Project Site. The Mersey River within the Study Area has some 70 known archaeological Sites/Finds demonstrating the rich archaeological resources within the ancient travel route between the Atlantic coast to the Fundy coast.

Champlain arrived in Liverpool Bay to find a ship *La Levrette* commanded by Captain Jean de Rossignol who was further inland up the Mersey River of today on a trading mission with the Mi'kmaq at a community of islands known as Kedgi on a large lake.

The Cape Sable Indians of southwestern portion of the mainland province today, were numerous and known as fierce warriors hardened by the constant warring among the tribes of the Gulf of Maine and later New Englanders. The Cape Sable Indians suffered great losses from participating in a failed French Expedition to retake Louisbourg. The French transports brought disease to the Cape Sable Warriors who returned to their villages with the disease.

The Study Area is close to the traditional Hunting Territories 9 and 10 using the source's map and numbered reference system. Hunting Territory 9 was held by father and son Joe and Old Joe Maltai and included both east and west sides of Lake Rosignol. Hunting Territory 10 was held by Louis Luxey which he shared with his sons.

The Project Site and most of the southwestern half of the Project Study Area are within the Nova Scotia Ecological Classification Ecodistrict "Sable (760)". The northeastern half of the Study Area including the Mersey River and the southwest river valley wall, are within the "Rossignol (750)" Ecodistrict. The lower part of Mersey River and southeastern corner of the Study Area are within the "South Shore (830)" Ecodistrict.

A review of Specific Claims shows one current and active First Nation Claims within the vicinity of the Study Area. Launched by all Nova Scotia Bands (Nova Scotia TC 9005 and 9113 ASSCTN) concerning "Mismanagement of Kejimkujik I.R." with a current status of "Invited to Negotiate" and "Awaiting Response" since July 02, 2014. No specific location details for the Kejimkujik parcel were given.

Traditional Use - Project Site Summary

Based on the data documented and analyzed, it was concluded that there is reported Mi'kmaq use reported on the Project Site.

Activities with the highest frequency of use in the Project Site include trout, salmon, and eel fishing happening along with deer, partridge and rabbit hunting. There was other fishing, hunting, and gathering activities reported, as well as an area identified to have Mi'kmaq artifacts.

Overall, the majority of activities took place as Historic Past (39%) timeline category while the remaining activities occurred in the Recent Past (34%) and Current Use (25%) categories.

Traditional Use - Study Area Summary

Trout, salmon, and eel fishing, along with deer, partridge and rabbit hunting were also the activities reported by interviewees in the highest frequency. There was other fishing, hunting, and gathering activities reported, as well as an area identified to have Mi'kmaq artifacts.

Overall, the activities took place primarily in the Recent Past (41%) and Historic Past (37%) timeline categories. The reported Current Use activities account for Twenty percent (20%) of the data.

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1.0 INTRODUCTION

1.1 Membertou Geomatics Solutions

Membertou Geomatics Solutions (MGS) is a Membertou First Nation company that was developed as a result of the 2002 Supreme Court Marshall Decision. MGS was established as a commercially viable company that could provide expertise in the field of GIS Services, Database Development, Land Use Planning Services and Mi'kmaq Ecological Knowledge Studies (MEKS). MGS is one of many companies established by the Membertou First Nation – Membertou Corporate Division and these companies provide employment opportunities for aboriginal persons and contribute to Membertou's efforts of growth and development. As well, Membertou's excellent management and accountability of their operations is further enhanced by their ISO 9001:2015 certification.

For the development of this MEKS, MGS brings to the table a team whose expertise and skills with land documentation have developed a sound MEKS. The team skills include knowledge of historical Mi'kmaq research, GIS data analysis, Mi'kmaq ecological and cultural knowledge, and Mi'kmaq community connections.

1.2 Mersey River Wind Project

The Mersey River Wind Project is located high on a rolling plateau above the Mersey River, near the Milton Substation. The site was extensively logged by the now defunct Bowater Mersey Paper Co., leaving regenerating forests and a network of solid access roads.

The proposed project consists of development of 33 wind turbines and supporting roads west of Milford, Nova Scotia.

2.0 MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY SCOPE & OBJECTIVES

2.1 Mi'kmaq Ecological Knowledge

The Mi'kmaq people have a long-existing, unique and special relationship with the land and its resources, which involves the harvesting of resources, the conservation of resources and spiritual ideologies. This relationship is intimate in its overall character, as it has involved collective and individual harvesting of the resources for various purposes, be it sustenance, medicinal, ceremonial and/or conservation. This relationship has allowed the Mi'kmaq to accumulate generations of ecological information and this knowledge is maintained by the Mi'kmaq people and has been passed on from generation to generation, youth to elder, ***kisaku kinutemuatel mijuijij***.

The assortment of Mi'kmaq Ecological Information, which is held by various Mi'kmaq individuals, is the focus of MEKS, also commonly referred to as Traditional Ecological Knowledge Studies (TEKS). When conducting a MEKS, ecological information regarding Mi'kmaq/Aboriginal use of specific lands, waters, and their resources are identified and documented by the project team.

Characteristically, MEKS have some similar components to that of an Environmental Assessment; yet differ in many ways as well. Among its purpose, Environmental Assessments measure the impact of developmental activity on the environment and its resources. This is often done by prioritizing significant effects of project activities in accordance with resource legislation, such as the Federal *Species at Risk Act* and the Nova Scotia *Endangered Species Act*.

Mi'kmaq Ecological Knowledge Studies are also concerned with the impacts of developmental activities on the land and its resources, but MEKS do so in context of the land and resource practices and knowledge of the Mi'kmaq people. This is extremely important to be identified when developing an environmental presentation of the Study

Area as Mi'kmaq use of the land, waters and their resources differs from that of non-Mi'kmaq. Thus, the MEKS provides ecological data which is significant to Mi'kmaq society and adds to the ecological understandings of the Project Site and Study Area.

2.2 Mi'kmaq Ecological Knowledge Study Mandate

Membertou Geomatics Solutions was contacted by STRUM to undertake a MEKS for the proposed project. This project will require the documentation of key environmental information in regard to the project activities and its possible impacts on the water, land and the resources located here. The MEKS must be prepared as per the **Mi'kmaq Ecological Knowledge Study Protocol** (MEKSP) ratified by the Assembly of Nova Scotia Mi'kmaq Chiefs on November 22, 2007, and the 2nd Edition released in 2014.

Note: Due to the current Covid19 pandemic, this study was delayed due to Covid19 restrictions and safety concerns regarding conducting interviews within Mi'kmaq communities.

MGS proposed to assist with the gathering of necessary data by developing a MEKS which will identify Mi'kmaq traditional land use activity within the Project Site and in the surrounding areas. This MEKS had gathered, identified, and documented the collective body of ecological knowledge which is held by individual Mi'kmaq people. The information gathered by the MEKS team is documented within this report and presents a thorough and accurate understanding of the Mi'kmaq's use of the land and resources within the Project Site/Study Area.

It must be stated, however, that this MEKS preparation and/or acceptance of this report is not considered Consultation within itself, nor is it deemed to fulfill the Duty to Consult owed by the Crown to the Mi'kmaq. This report does not replace any Consultation process that may be required or established in regard to Aboriginal people. As well, this report cannot be used for the justification of the Infringement of S.35 Aboriginal Rights that may arise from the project.

2.3 Mi'kmaq Ecological Knowledge Study Scope & Objective

This MEKS will identify Mi'kmaq ecological information regarding Mi'kmaq traditional land, water and resource use within the Project Site/Study Area. The data that the study will gather and document will include traditional use from both the past and present time frames. The final MEKS report will also provide information that will identify where the proposed project activities may impact the traditional land and resource of the Mi'kmaq. If such possible impact occurrences are identified by the MEKS then the study will also provide recommendations that should be undertaken by the proponent. As well, if the MEKS identifies any possible infringements with respect to Mi'kmaq constitutional rights, the MEKS will provide recommendations on necessary steps to initiate formal consultation with the Mi'kmaq.

2.4 MEKS Project Site and Study Area

This MEKS will focus on the Project Site. This Project Site is located high on a rolling plateau above the Mersey River, near the Milton Substation. The site was extensively logged by the now defunct Bowater Mersey Paper Co., leaving regenerating forests and a network of solid access roads. The Project Site consists of the development of 33 wind turbines and supporting roads west of Milford, Nova Scotia.

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The Study Area will consist of a larger area that falls within a 5km radius around the Project Site.

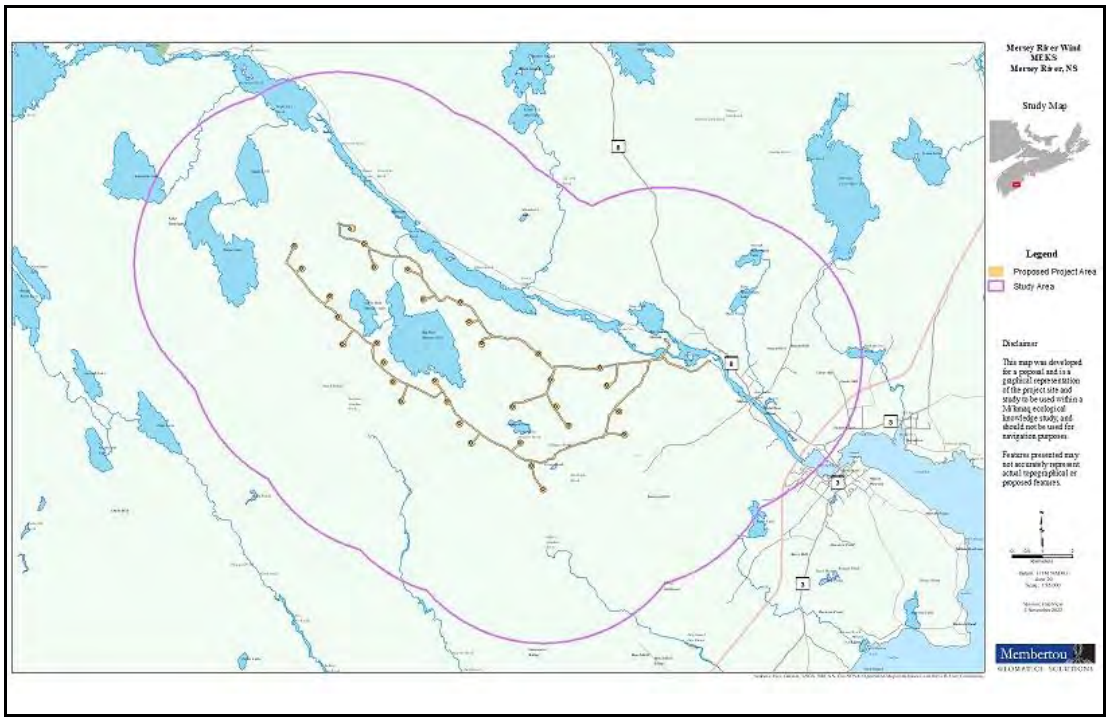


Figure 1. Project Site (orange areas) and Study Area (purple outline) are identified by the Project Team.

3.0 METHODOLOGY

3.1 Interviews

As a first step to gathering traditional use data, the MEKS team had initiated dialogue with knowledge holders from the Acadia First Nation communities of Ponhook, Medway, Wildcat and Gold River, given their close proximity with the Project Site. Interviews were also conducted through an online portal that was recently developed by Membertou Geomatics Solutions. This online portal allows Mi'kmaq individuals the ability to provide traditional knowledge and use with regards to the proposed project.

Knowledge holders were contacted by the MEKS team members and interviews were conducted between October and November 2022.

For this MEKS, twenty (20) informants provided information in regard to past and present traditional use activities. These individuals were from the communities of Ponhook, Medway, Wildcat and Gold River. All of the interviews that were completed following the procedures identified within the Mi'kmaq Ecological Knowledge Protocol (MEKP) document. Prior to each interview, interviewees were provided information about the MEKS, including the purpose and use of the MEKS, an agreement of non-disclosure of their personal information in any reports, and the future use of the traditional use information they provided. Information gathered from other studies conducted in the area were utilized in this study as well.

Interviewees were asked to sign a consent form, providing permission for MGS to utilize their interview information within this MEKS. During each interview, individuals were provided a map of the Project Site/Study Area and asked various questions regarding Mi'kmaq use activities, including where they undertook their activities or where they knew of activities by others, when such activities were undertaken, and how that type of resource was utilized. Other information gathered could be species habitats, changes in species populations, and/or general information about the land related to its' use. When required or preferred, interviews were conducted in the Mi'kmaq language.

3.2 Literature and Archival Research

With regards to this MEKS, various archival documents, maps, oral histories and published works were reviewed in order to obtain accurate information regarding the past or present Mi'kmaq use or occupation relevant to the Project Site and Study Area.

As part of the historical review process, it should be noted there may be other sources of Historical and Archaeological data available but may have restricted access or not uncovered within this project's Historical Review. A complete listing of the documents that were referenced is outlined within the *Sources* section.

3.3 Field Sampling

Methodology

Field sampling, or site visits, are conducted as another method to gather and document plants, trees, animal signs/tracks, fish and wildlife habitats, or any other land feature which would hold significance to the Mi'kmaq (food or sustenance, social, cultural, or ceremonial purposes).

Site visits consist of site reconnaissance (to evaluate the entrances to the site, terrain characteristics, and evaluation of any other information that would affect safety or logistics of the site visit), logistics planning, as well as capturing "observation points" with the assistance of a Mi'kmaq knowledge holder. Observation points are stops along the site visit where species or landmarks significant to the Mi'kmaq were observed to be occurring. These are taken at approximate set intervals, or whenever a species or feature was deemed worthy to be noted by the knowledge holder. While every effort is made to ensure the Project Site receives a good coverage of observation points, weather, vegetation, available paths and trails, or difficult terrain can cause some data gaps.

Site visits took place in November of 2022. MGS staff, accompanied by a Mi'kmaq knowledge holder from Paq'tnkek First Nation and a STRUM staff member, conducted the site visit of the Project Site. Throughout the site visit various species (and subspecies) of plants, trees, and animal signs/tracks were observed.

Site Visit Observations

Observation	# of observations	Observation	# of observations
Pine	38	Ferns	4
Teaberry	32	Juniper	4
Foxberry	30	Goldenrod	4
Sweetgale	26	Yellow Birch	4
Maple	26	Sage	4
Sweetfern	22	Life Everlasting	4
Fir	22	Alder	4
Sarsaparilla	22	Moss	4
Oak	16	Tamarack	4
Birch	14	Sedges	2
Black Spruce	12	White Spruce	2
Poplar	12	Evergreen	2
Bayleaf	8	Raspberry	2
Lichen	6	Rabbit Sign	2
Wire Birch	6	Basil	2
Labrador Tea	6	Cranberry	2
Beech	6		

Table 1. Summary of observation points

Figure 3. Mixed growth stand found within the Project Site

Figure 4. Cranberries found within Project Site

4.0 MI'KMAQ LAND, WATER AND RESOURCE USE

4.1 Overview

The Mi'kmaq Land, Water and Resource Use Activities component of the MEKS provides relevant data and analysis in regard to Mi'kmaq traditional use activities that are occurring or have occurred within the Study Area. It identifies what type of traditional use activities are occurring, it provides the general areas where activities are taking place and it presents an analysis regarding the significance of the resource and the activity as well.

The Mi'kmaq traditional use activities information that is provided by interviewees is considered both in terms of "Time Periods" and in regard to the "Type of Use" for a given resource. The Time Periods that the MEKS team differentiates traditional use activities by are as follows:

"Current Use" – a time period within the last 10 years
"Recent Past" – a time period from the last 11 – 25 years ago
"Historic Past" – a time period previous to 25 years past

The "Type of Use" categories include spiritual use, and sustenance use, such as fishing, hunting or medicinal gathering activities.

Finally, the study analyzes the traditional use data in consideration of the type of land and resource use activities and the resource that is being accessed. This is the Mi'kmaq Significant Species Analysis, an analysis which ascertains whether a species may be extremely significant to Mi'kmaq use alone and if a loss of the resource was to occur through project activities, would the loss be unrecoverable and prevent Mi'kmaq use in the future. This component is significant to the study as it provides details as to Mi'kmaq

use activities that must be considered within the environmental understanding of the Project Site and Study Area.

By analyzing the traditional use data with these variables, the MEKS thoroughly documents Mi'kmaq traditional use of the land and resources in a manner that allows a detailed understanding of potential effects of project activities on Mi'kmaq traditional use activities and resources.

4.2 Limitations

By undertaking a desktop background review and interviews with Mi'kmaq participants in traditional activities, this study has identified Mi'kmaq Traditional Use activities that have occurred or continue to occur in the Study Area and Project Site. This has allowed the study to identify traditional use activities in a manner that the MEKS team believes is complete and thorough, as required by the MEKP. Historical documents within public institutions were accessed and reviewed and individuals from nearby Mi'kmaq communities were interviewed. The interviews were undertaken with key Mi'kmaq community people, identified by the MEKS team, who are involved and are knowledgeable regarding traditional use activities. Through the historical documentation review and the interview process, the MEKS team is confident that this MEKS has identified an accurate and sufficient amount of data to properly reflect the traditional use activities that are occurring in the Study Area.

The MEKS process is highly dependent on the information that is provided to the team. Because only some of the Mi'kmaq traditional activity users and not all Mi'kmaq traditional activity users are interviewed, there is always the possibility that some traditional use activities may not have been identified by this MEKS.

At the time of this report, it should be noted that due to the ongoing Covid19 pandemic, MGS noticed a decline in interview participation as well as a decline in traditional use

activities occurring during the pandemic. The Covid19 pandemic is still a concern within Mi'kmaq communities.

4.3 Historical Review Findings

The traditional lands of the Mi'kmaq are collectively known as Mi'kma'ki. The sources reviewed provided very general boundaries of 7 Districts of Mi'kma'ki and have just enough detail to give an approximation of boundaries along the coast but not much detail for the interior boundaries. (1)(2)(3)(4)

Using the general boundaries provided by the sources, MGS interpreted the source maps and recreated boundaries of the 7 Districts of Mi'kma'ki in more detail. The sources included relevant maps, significant watersheds, some major rivers and landscape features, as the defining features on the ground.

The Project Site and Study Area are entirely within **Kespukwik** District (Territory)

Kespukwik (Last Flow, Land Ends) This District includes all the lands and waters draining into the Bay of Fundy from approximately Margaretsville, the Gulf of Maine coast and the Atlantic to the western shore of the LaHave River. The LaHave River Watershed may have divided by east and west districts with the eastern watershed a portion of Sipekni'katik and the western watershed is a portion of Kespukwik. Champlain's early map of the LaHave River show two separate Mi'kmaq communities on either side of the river located near Upper Kingsburg and at Green Bay near Petite Riviere (LaHave Islands Marine Museum, 2016). This

may indicate a community of each district sharing the LaHave River.

Mi’kmaq Political Districts with Maliseet, Passamaquoddy and partial Penobscot Traditional Territories. (1)(2)(3)(4)

The district boundaries may be adjusted after review by the Mi’kmaq and Maliseet Communities. Until that time, the other Districts of Mi’kma’ki outside the Study Area are proposed as follows (1)(2)(3)(4):

Unama’kik (Land of Fog)
Aqq Ktaqmkuk (Land Across)

This District combines all of Cape Breton Island with the Southern Coast of Newfoundland.

Eskikewa’kik (Skin Dressers)

Eskikewa’kik includes all lands and waters draining into the Atlantic from St. Margarets Bay including

Big Indian Lake, Chebucto (Halifax), Eastern Shore, Strait of Canso to Cape Blue on St. Georges Bay. The District includes the entire Musquodoboit River watershed, a portion of the Shubenacadie River to and including the Stewiacke River watershed draining into Cobequid Bay. In addition, Eskikewa'kik includes the West St. Marys River watershed, East St. Marys River watershed, Country Harbour River watershed as well as the Salmon River and Milford Haven River watersheds draining into Chedabuctou Bay.

Epekwitk (Lying in the Water)

aqq Piktuk (The Explosive Place) This District combines the entire Island of Prince Edward Island with all the lands and waters draining into the Northumberland Strait and St. Georges Bay from Mainland N. S. east of Abercrombie Point to Cape Blue. The District includes the East River of Pictou watershed and eastward including Antigonish Harbour, Pomquet Harbour and the Tracadie River, Little Tracadie River watersheds.

Sipekni'katik (Wild Potato Area) This District includes all lands and waters draining into the Northumberland Strait from MacFarlane Point, Wallace Harbour to and including the Middle River of Pictou watershed. Sipekni'katik also includes all the lands and waters draining into Cobequid Bay, Minas Basin and Bay of Fundy from Five Islands Carrs Brook and Economy River watersheds to and including North River and Salmon River, Avon River,

	Cornwallis River watersheds to MacNeily Brook near Margaretsville. In addition, Sipekni'katik includes all lands draining into St. Margarets Bay and Mahone Bay including the Ingram River watershed to and including eastern shore of the LaHave River.
Siknikt (Drainage Area)	All the lands and waters draining into the Gulf of St. Lawrence and Northumberland Strait south of Escuminac Point, N. B. to and including the Wallace River watershed and Wentworth Valley. All the lands and waters draining into Cobequid Bay, the Minas Basin, and Bay of Fundy west of Five Islands N. S. and including the Petitcodiac River watershed and all drainage along the Bay of Fundy coast to Mispec Point on the east side of St. John Harbour.
Kespek (Last Land)	All the land and waters draining into the Gulf of St. Lawrence north of Escuminac Point, N. B. including the Miramichi River watershed and north to include the Gaspe' Peninsula and south shore of the St Lawrence River. This was the last land to be added to Mi'kmaq territory after a war with the Iroquois.

Ice

Evidence from deep-ocean sediments indicate that there have been at least 16 glacial periods that lasted approximately 100 thousand years each. The last glacial period was the Wisconsin Glaciation which began 75 thousand years ago and ended between 12 and 10 thousand years ago. During this period, early glaciers flowed across the Atlantic

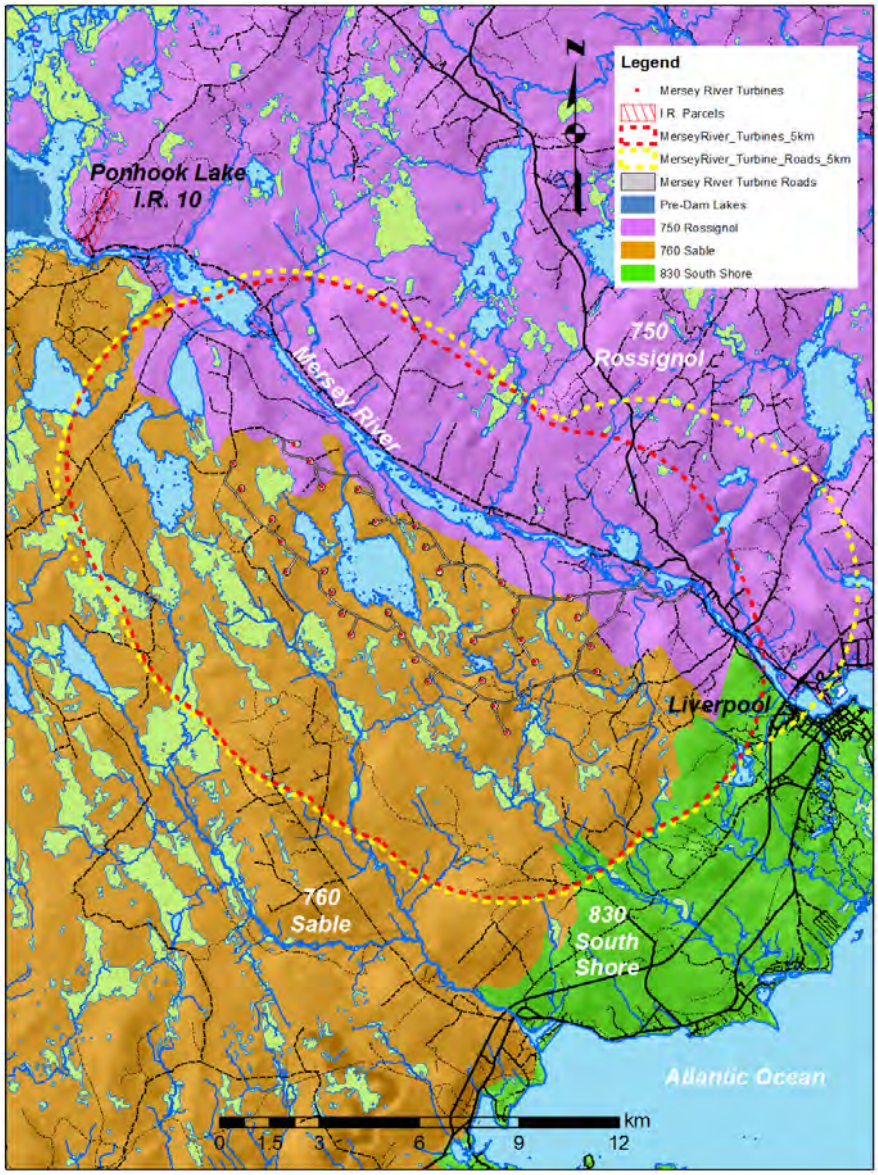
Region in an eastward direction shifting to the south in later ice flows. The last of the glaciers were formed locally within the region while being fed by the high amounts of precipitation. By 13 thousand years ago the ice sheets had receded to the approximate coastline of today and then only residual ice caps remained in highland areas at approximately 11-12 thousand years ago. (5) In the late stages of the glacial period, the Project Site and Study Area were impacted by a large and long local ice ridge over the Study Area and paralleling the Atlantic coastline of today

The present-day landscapes across the region began to emerge from under ice some 12,000 years BP for Cobequid Bay and the southern part of the present-day province which remained mostly ice free from that time. The ice continued to melt and reveal barren landscapes of deep till deposits being eroded and transported about by meltwater. The ice also left exposed and thinly covered erosion resistant bedrock at higher elevations. The sea level rose some +60m over the next 6000 years reaching near present day level and coastline. At 11,000 years BP, remnant ice caps topped the Antigonish Highlands, Cobequid Hills, South Mountain of the Annapolis Valley and Cape Breton Highlands. These ice caps and another ice block centered in Chedabuctou Bay, advanced a short distance each during the Younger-Dryas cold period of approximately 11,000-10,500 BP. (5)(6)

The Younger Dryas Period was a cold period that saw local ice centers such as the Pictou-Antigonish ice cap advance flows again in directions radiating from their center ridges. (6) Sources have the Younger Dryas Period a northern hemisphere cold event lasting 1000 years to 1500 years. (7)(8) The impacts of the Younger Dryas Period were not consistent across the northern hemisphere as there were varied regional impacts influenced by local conditions. (9) Nova Scotia sources have the cold period lasting approximately 200 years based on analysis of lake sediment and peat beds throughout the Province. (6)(10) During the Younger Dryas Period, colonized plants that followed the previously receding glaciers were then covered in permanent snowfields and some large mammals became extinct. (10)

The entire Study Area was ice-free by 12,000 BP and does not appear to be directly impacted by the ice flows of the Younger Dryas Period. The receding ice left a landscape of mostly glacial ground moraine of a Stony Till Plain with a few Silty Till Drumlins and patch of Silty Till Plain southwest of the Town of Liverpool. (10)

Nova Scotia Ecological Classification



Nova Scotia Ecological Classification Ecodistricts (11)

The Project Site and most of the southwestern half of the Total Study Area are within the Nova Scotia Ecological Classification Ecodistrict “Sable (760)”. The northeastern half of the Study Area including the Mersey River and the southwest river valley wall, are within the “Rossignol (750)” Ecodistrict. The lower part of Mersey River and southeastern corner of the Study Area are within the “South Shore (830)” Ecodistrict. These three ecodistricts have the warmest and earliest springs of the Province. (11)

Sable (760)

The Project Site itself is almost entirely within the Sable (760) Ecodistrict with the exception of a couple of the most northern turbine locations near Eagle Lake. (11)

The Sable (760) Ecodistrict is a landscape of low-lying plain dominated by poorly drained soils, bogs and extensive wetlands. The ecodistrict is extensive, stretching inland to include the south shore of Lake Rossignol and extending southwest into Yarmouth County to include Mushpauk Lake and Great Pubnico Lake. Underlain with Quartzite and Slate bedrock, soils derived from the quartzite-slate tills is moderately coarse textured and imperfectly to poorly drained soils. (11)

Mean elevation for the ecodistrict is 60m and a highest elevation of 135m. Within the Project Site, elevations are roughly 75m with turbine locations high ground of approximately 100m elevation. (11)

Forest cover over half the ecodistrict and imperfectly drained soils is climax Black Spruce with White Pine on upper slopes of hills and better drained sites. Roughly a quarter mof the ecodistrict is Treeless Bog. A history of fires and cementing of the soils has produced numerous barrens throughout. Also known as Heathlands the combination of wetlands and heathlands provide habitat for the Mainland Moose population. (11)

Rossignol (750)

Occupying the northeastern half of the Study Area, the Rossignol (750) Ecodistrict includes the upper lakes and the Mersey River along with its western shores below the 75m contour. (11)

The Rossignol (750) Ecodistrict is a landscape of low hills and drumlin-like ridges that reaches northwest inland to include the eastern and western shores of Lake Rossignol and further inland to the outlets of Kejimkujik Lake and Peskowesk Lake. Mean elevation for the ecodistrict is 75m and highest point is 160m elevation. (11)

The underlying Quartzite and Slate provided shallow and moderately coarse soils, generally not suitable for agriculture. The soils tend to be well-drained which causes moisture deficits during summer months. The Rossignol (750) Ecodistrict is underlain with Goldenville and Halifax formations bedrock of Greywacke-Quartzite, Slate, Schist and Migmatite which produced Quartzite and Slate tills of which gravelly-sandy loam and gravelly loam soils were derived. (11)

Treeless Bogs and Black Spruce cover poorly drained sites and climax forest of Hemlock, Red Spruce and White Pine cover lower slopes and well-drained sites. Drumlins are covered in shade tolerant hardwoods and larger hills have forest cover of White Ash, Hemlock, White Pine and Red Spruce. (11)

The northeast portion of the ecodistrict within the Study Area drains directly south to southeast into the Mersey River by Upper Great Brook, Nine Mile Brook, Allens Brook, Lower Great Brook,Deep Brrok and Beaver Dam Brook. The western shore of the Mersey River within the Rossignol (750) Ecodistrict, drains north and includes Eagle Lake drained by Eagle Lake Brook, Bon Mature Brook, West Deep Brook. (11)

South Shore (830)

The South Shore (830) Ecodistrict is a thin strip of coastal landscape that extends along the Atlantic Ocean coast from the Aspotogan Peninsula between St. Margarets Bay-

Mahone Bay, southwest to Pubnico. The South Shore (830) Ecodistrict mostly extends inland from the Atlantic Ocean to the extent of coastal inlets and bays. (11)

Within the Study Area, the South Shore (830) Ecodistrict extends inland from Liverpool Bay, upriver along the western shore of the Mersey River to Milton. From Milton, the ecodistrict extends southwest parallel to the coast to include Town Lake and Five Rivers Meadow. (11)

The landscape of the South Shore (830) Ecodistrict is low hills, extensive flats and scattered drumlins. Mean elevation for the ecodistrict is 20m. Within the Study Area, the elevations within the ecodistrict are roughly 75m with a couple of high ground areas of 100m elevation. (11)

Softwood forests of Black Spruce, White Spruce and Fir cover covers most of the South Shore (830) Ecodistrict with more mixed-wood forest cover further inland from coast. Red Maple and White Birch are hardwoods scattered among the softwoods. (11)

The South Shore (830) Ecodistrict is underlain with mostly Halifax Formation Slate covered with shallow stony tills with up to excessive surface stoniness. Drumlins are located over sources of Slate and are finer in texture than surrounding tills. Soils are mostly gravelly-sandy loam high in Quartzite and Slate. Although the soils and tills are shallow, there is only one area southeast of Bon Mature Lake where there is mapped bedrock exposure over Quartzite laden Goldenville Formation. Pre-Contact artifacts of weapons and tools use Quartzite due to hardness and edge properties. (11)

Project Site and Study Area

The Project Site consists of 33 turbine sites and road infrastructure that spans some 14 km northwest to southeast and roughly 15km wide. The Project Site covers an area from West Deep Brook and high ground of Kenny Hill at approximately 100m elevation following high ground to straddle Big Bon Mature Lake northeast and southwest. The

high ground of 100m elevation straddles a large expanse of wetlands of the Kempton Meadows atop a plain of roughly 75-100m elevation. (12)

The Project Study Area covers an area from Kempton Lake, approximately 4 km southwest of Ponhook Lake I.R.10, southeast to Town Lake just southwest of Liverpool. Kempton Lake is just one lake among 10 named lakes within the Study Area not including the Mersey River and dammed reservoirs. (12)

The Study Area straddles and includes the Mersey River from the reservoir for Big Falls Generating Station, downriver to Liverpool Bay. Northeast of the Mersey River, the Study Area extends 4.0 to 5.0km northeast and just shy of Little Ten Mile Lake and Hearing Cove Lake but including (12):

First Beaver Dam Lake
Second Beaver Dam Lake
Hearing Cove Lake (Outlet)
Lower Great Brook Meadows (Wetland)

Southwest, The Study Area extends southwest from the Mersey River approximately 10.0 to 11.0km to include (12):

Kempton Lake	Eagle Lake
Toney Lake	Little Bon Mature Lake
Bon Mature Lake	Solnow Lake
Town Lake	

There are numerous named wetlands southwest of the Project Site including (12):

Long Lake Bog	Clear Bog
Tom Knowles Meadow	Clancys Meadows
Flake Woods Bog	Hagen Meadow

Five Rivers Meadows

The Mersey River within the Study area includes six individual dam sites located along the lower Mersey River between Indian Gardens (Ponhook I.R. 10) at the modern outlet of Lake Rossignol and downriver to Milton. The dam sites are locations of the following generating stations (12):

Cowie Falls Generating Station
Deep Brook Generating Station
Lower Great Brook Generating Station
Big Falls Generating Station
Lower Lake Falls Generating Station
Upper Lake Falls Generating Station

Archaeology

The Natural History of Nova Scotia lists 5 Archaeological time periods for the Province of Nova Scotia that are prior to and including European contact with the Mi'kmaq. (10):

11,000-10,000 Years BP, Paleo-Indians
The earliest evidence of early peoples east of the State of Maine is found at the foot of the Cobequid Mountains at Debert, Nova Scotia. There is evidence of an encampment on the site dated to be in use roughly 11,000 to 10,500 years BP. (13) At this time, local ice sheets remained centered at locations of Bras d'Or Lakes/Highlands of Cape Breton, Canso, Baie Verte-Cobequid Mountains and South Mountain adjacent the Annapolis Valley. There was a large ice sheet centered on the Eastern Mainland of the province with ice flows into St. Georges Bay, Minas Basin and along the Eastern Shore. (10) The time of the Debert Site occupation is within the approximate period of the glacial re-advances of the Younger Dryas Period of 11,000- and 10,000-years BP. Increasingly harsh conditions are thought to have caused the early peoples to abandon the region. (10)

10,000-5,000 Years BP, the Great Hiatus

The rising sea levels and submerging coastlines are thought to be responsible for the lack of physical evidence of early peoples for this time period. Any evidence of coastal settlements of that period would be lost to coastal erosion and submergence. (10)

Sea level rise on the Atlantic Coast was a combination of land rebound after ice sheets receded, rising ocean temperatures and water released by melting glaciers. (10) As the thick and heavy ice sheet centers depressed the earth's mantle, the areas of mantel along the ice sheet margins were less weighted by ice and rose slightly through displacement. There was an ice sheet center located in the Gulf of St Lawrence. As the weight of the ice sheets diminished with melting, the depressed center areas rebounded and rose in elevation while the mantel of the former ice margin areas lowered in elevation. (14) (15)

5,000-3,500 Years BP, the Archaic Period

A period characterized by physical evidence of stone tools some of which are found offshore and possibly lost during deep water fishing. There was a cultural influence or cultural presence of peoples in the southern part of the province dated at a time between 3,500 and 2,500 BP known as the Susquehanna Tradition. The Susquehanna Tradition originated in area of the mid-Atlantic states of today and is identified by some unique artifacts. (10)

2,500-500 Years BP, the Ceramic Period

Evidence of pottery is introduced to the archaeological record during this period as are burial mounds. Ceramic period sites are scattered throughout the province and a 10m diameter burial mound was discovered at Whites Lake, HRM, dated at 2,300 BP. (10)

500-100 Years BP, the Contact Period

The first European contact with the Mi'kmaq was most likely with Portuguese fishermen roughly 500 years ago. (10)

There are various period delineations being used for Archaeology in the Province and Maritime publications which differ in the number of periods, names, and time spans. The Archaeological Periods Table below places the periods in context with each other. It is useful to provide these various periods for reference and context when reviewing archaeological reports and placing in time the artifacts and features found. (10)(16)

Artifacts are archaeological objects that can be recorded and removed from the site such as flakes (chips from tool or point manufacture), arrow/spear tips (points), tools, bones, preforms (unfinished tool or point blanks) and pottery sherds. Features are archaeological finds that cannot be removed from the site and can only be recorded such as charred or discoloured ground, a storage pit or Historic Period building foundations as some examples.

		Archaeological Periods	* (Dates are Approximate)	
Time	**Natural History of N. S.**	*** Periods**	*** Northeastern Periods**	*** Maritime Region Tradition**
11,000 B.P.	< Paleo-Indians		< Paleo-Indian	< Paleo-Indian
	11,000 - 10,000 yrs. B.P.	< Early Period	11,000 - 10,000 yrs. B.P.	11,000 - 10,000 yrs. B.P.
	↓	10,600 - 6,000 yrs. B.P.	↓	↓
10,000 B. P.	< Great Hiatus	|	< Early Archaic	—
	10,000 - 5,000 yrs. B.P.	|	10,000 - 8,000 yrs. B.P.	?
	?	|	↓	?
8,000 B.P.	?	|	< Middle Archaic	?
	?	|	8,000 - 6,000 yrs. B.P.	?
	?	↓	↓	?
6,000 B.P.	?	< Middle Period	< Late Archaic	< Laurentian
	?	6,000 - 3,000 yrs. B.P.	6,000 - 2,500 yrs. B.P.	+/- 5,000 yrs. B.P.
	< Archaic Period	|	|	< Maritime Archaic
	5,000 - 3,500 yrs. B.P.	|	|	5,000 - 3,700 yrs. B.P.
4,000 B.P.	↓	|	|	< Susquehanna Tradition
	< Susquehanna Tradition	|	|	4,000 - 3,500 yrs. B.P.
	3,500 - 2,500 yrs. B.P.	|	|	—
	|	↓	↓	?
3,000 B.P.	|	< Late Period	< Ceramic (Woodland)	< Maritme Woodland
	|	3,000 - 500 yrs. B.P.	3,000 - 500 yrs. B.P.	+/- 3,000 yrs. B.P.
	↓	|	|	- Present
2,500 B.P.	< Ceramic Period	|	|	|
	2, 500 - 500 yrs. B.P.	|	|	< Middlesex
	|	|	|	+/- 2400 yrs. B.P.
2,000 B.P.	|	|	|	|
	↓	↓	↓	↓
500 B.P	< Contact Period	< Historic Period	< Historic	< Mi'kmaq, Maliseet and
	500 -100 yrs B.P.	500 yrs B.P. - Present	500 yrs B.P. - Present	European Traditions
	—	↓	↓	↓
Present (1950)	—	—	—	—

Archaeological Periods (10)(16)

It is during this fluctuating climate period that the earliest signs of people on the land at the Debert-Belmont encampment sites that were utilized by early peoples of the Paleo-Indian Archaeological Period of 11,000 to 10,000 BP. Located within the transition from the Minas Lowlands (620) to the Cobequid Slopes (350) the archaeological rich area of the Debert Paleo-Indian Site, is a National Historic Site of Canada. The area of the former RCAF Station Debert has been explored over the last 60 some years since the first site discovery in 1948 and extensively explored from 1962-1964 with new discoveries added since that time near Belmont. (17)(18)

The existing known Paleo-Indian sites are scattered within a large area north of Plains Road atop prominent ground overlooking the Debert River Valley and Cobequid Basin. It is believed that these were strategic seasonal camps to hunt Caribou migrating from the Cobequid Hills (340) to the Minas Lowlands (620) of Cobequid Bay for calving. Some 5000 stone artifact of points, knives and hide scrapers of the Paleo-Indian Period have been retrieved from the area. (17)(18)

Although disturbed by the former base development, these sites appear to be undisturbed by the ice advance of the Younger-Dryas period and there may have been ice-free corridor between ice sheets from the Minas Basin through to the Northumberland Strait through present-day Pictou Harbour at that time. With the lower sea levels at that time, Prince Edward Island was one landmass with the Northumberland Lowlands (530). The Magdalen Islands (Îles de la Madeleine) was a large low-lying island close offshore. The Debert-Belmont area would be an Ideal location to find migrating herds of the wildlife of the time. (1)(18)

The Study Area is officially designated as a 5km buffer surrounding Turbine Sites and road infrastructure. However, it is difficult to discuss the history of this portion of the Mersey River without reviewing the Mersey River as a whole as it exists today and as it existed when the earliest peoples have been known to be on the river. The section of river

within the Study Area is just a portion of travel route that provided travel connections to other river systems and other coasts through a network of interior lakes and the upper Mersey River. The most notable of the ancient connections was the overland route between the Atlantic Coast and the Bay of Fundy through the Mersey River, interior lakes and the Allains River emptying into the Annapolis River. (19) Some of the original interior lakes have since been absorbed by the dammed waters of Lake Rossignol today.

A historic review of a project site normally focuses on finding evidence of the presence of early peoples within the Study Area and Post-Contact Mi'kmaq use of land. However, the evidence of early peoples on the Mersey River is overwhelming with archaeological finds documented in their respective reports in more detail than this review can attempt to present. There are 70 known archaeological finds/sites within the stretch of Mersey River within the Study Area alone.
This review will focus somewhat on the landscape during the presence of early peoples and prior to the damming of the Mersey River and Lake Rossignol and the resources available to them.

During previous maintenance work on the Generation Stations in 2004, archaeological finds on the exposed original river course and shores date as early as 8,000-10,000 years BP (Before Present) including Paleo-Indian Period (8,000-10,500 BP) tools and weapons. The results of the survey are that 125 sites had been recorded including 110 new Pre-Contact sites and more than 20,000 artifacts were recovered between Indian Gardens and Milton. (19)

The 2004 maintenance period had been the first time the original river was exposed since damming of the river began in 1893 with the Acadia Pulp and Power Co. Ltd. damming of Rapid Falls located 3.2 km upstream from Milton. A second dam was built below Cowie Falls in 1900. The Town of Liverpool built a hydro plant at the mouth of Beaver Brook in 1899 which was superseded by the 1903 Guzzle plant 8 km upstream from Liverpool and was eventually acquired by the Nova Scotia Power Commission in 1928. Salmon sport fishing continued on the Mersey River with the Guzzle and Markland

Hydro Plants operating with salmon attempting to reach old spawning grounds only to reach the Guzzle. However, construction of the Cowie Falls, Deep Brook and Lower Deep Brook plants reduced salmon fishing as the river flow was diverted from its normal route and fish ladders constructed were deemed ineffective by the source. The River bottom also became covered in bark from logging operations and log holding ponds. (20)

In 1985 Lake Rossignol Reservoir was lowered for the first time since the dam for the Upper Falls Generation Station was constructed in 1928. (19) Archaeological fieldwork occurring during the 1985 maintenance period discovered 50 new sites along the exposed original lakes shorelines dating as early as within the last 5000 years. However, a report and interpretation of the 1985 finds remains unfinished. (19) At the time of the source publication, the majority of archaeological work along the Mersey River and Allains River travel route was concentrated between the Kejimkujik National Park and Liverpool with 203 pre-contact Mi'kmaq sites identified in previous archaeological research. North of the Kejimkujik National Park, the ancient travel route produced no archaeological sites due in part to heavy disturbance but mostly due to little archaeological research activity on the Upper Mersey River.(19) In 1984 an archaeological resource survey of the Annapolis Valley identified 3 Pre-Contact sites at the head of tide of the Allains River. Parks Canada did some excavations at Fort St. Anne located at the mouth of the Allains River between 1989 and 1992 and found Pre-Contact artifacts that had been disturbed by the fort construction in the 18 century. The artifacts found at Fort St. Anne dated from the Archaic Period (5,000-3,500 BP, Early Ceramic (3,000-2,000 BP), Mid/Late Ceramic Period (2,000-450 BP) and Contact Period (1497-1763 AD). With pre-contact sites dating back to the Paleo-Indian period on the lower Mersey River and a continuous record of Pre-Contact sites within Kejimkujik National Park possibly dating back to Middle Archaic Period (5,000-7,000 BP). The Upper Mersey/Allains River Corridor Archaeological Survey was carried out in 2006 in an attempt to complete the archaeological record between the Allains River and Kejimkujik National Park. The 2006 survey resulted in 18 new archaeological sites identified with 14 being Pre-Contact, 1 Contact Period and 3 Post-Contact. Of the sites, 4 are stone weirs identified along the Allains River System. The proposed connection between the Allains River System and

the Upper Mersey River System is by a 600m long, elevation carry route between Springhill Mud Lake and on to Sandy Bottom Lake. The survey completed the archaeological record between the Allains River System and Kejimkujik National Park and furthered the proposed coast to coast travel route. (19)

Contact

By 1502 the fishery off the coasts of the new-found land had been established and countries and captains had their preferred fishing areas and fishing stations. Ocean crossing became more common place as captains established their routes and landmarks. French records alone have 70 vessels travelling to the New World between 1523 and 1556. (21)

The Contact Period is 500 to 100 years BP, although Norse people visited the region as early as 1000 years BP and colonized the northern tip of Newfoundland. Portuguese and Basque fishermen were the first Europeans to establish continuous contact with the Mi'kmaq and began arriving 500 years BP. They arrived to find Mi'kmaq peoples inhabiting the thick forests of Nova Scotia as well as eastern New Brunswick, eastern Quebec, Prince Edward Island and southern Newfoundland. (10)

As early as 1481, fishing fleets from Bristol, England were sailing to the Atlantic Coast of North America. Most likely, fleets of French and peoples from the Basque Provinces were also sailing to these Atlantic Coasts. One such Bristol fleet recorded finding an island they called the Isle of Brasil and no doubt found the fishing grounds of the Grand Banks. Due to competition, news of discoveries was kept quiet as to exploit the resources unhindered by competing fleets. (21)(22)
Recent research has confirmed a Basque whale fishery had visited the Gulf of St. Lawrence and Labrador coast from the 1540's to the early 1600's. The Basque also participated in the cod fishery while establishing ports such as Plaisance (Placentia) in Newfoundland and Cape Breton until the arrival of other nation's fleets. (23)

By 1534, there was a fishery of ports, watering places along the Atlantic Coast from Southeastern Labrador to Southern Nova Scotia. As a sideline to fishing, fishermen began trading with the Mi'kmaq, Beothuk and Montagnais-Naskapi, the peoples that they encountered while drying their catch along the shores. (22)

During Champlain's approach to Canso, onboard was attorney/historian Marc Lescarbot who recorded a wealth of information for future Historians. Lescarbot recorded that their Atlantic crossing brought them to Canso where he observed two Basque long-boat approaching with one of the boats crewed by Frenchmen from St. Marlo and the other boat crewed by Mi'kmaq. Through a long association with seasonal Basque Fishermen these Mi'kmaq had mastered sailing skills and Lescarbot noted that they spoke in a language that was "half Basque". (24)

After a 4 day stay at the bay Champlain named Port de la Heve, Champlain sailed further south along the coast in search of more protected harbours and came to Liverpool Bay of today. However Champlain was not the first French ship to arrive as there was French trading ship at anchor in the bay with only a few crew members aboard. The *La Levrette* was commanded by Captain Jean de Rossignol who was further inland up the Mersey River of today on a trading mission with the Mi'kmaq at a community of islands known as Kedgi on a large lake. It was determined the *La Levrette* was trading without licence and was seized by Champlain as was Captain Rossignol on his return from Kedgi. Champlain named the Bay Port de le Rossignol which is known as Liverpool today. (25)

Champlain's 1604 map of Port Rossignol depicts the Mersey River and Liverpool Bay as well as Beach Meadows Brook. Coffin Island is also shown on the map with Mi'kmaq encampments on both sides of the pool as are fish sheds of present-day. Champlain's map also shows a Mi'kmaq encampment on the southwestern shore most likely between Moose Harbour and Western Head. (25). Scott Bay would be a likely location with south to southeast facing slope, landing beach and nearby stream but a spring location as per a sources site criteria is unknown. (26)

Upon their arrival at Port Royal Lescarbot describes the Mi'kmaq village and its Sagamore Membertou. The village was of dozens of conical Wigwams, several large lodges and one large lodge for public gatherings, all surrounded by high palisades. (24) This is the only reference found by this review of a fortified Mi'kmaq village. Membertou is described by Lescarbot as being an impressive character, taller than his fellow Mi'kmaq, full bearded and estimated to be in his fifties. Lescarbot recorded that Membertou's name or at least was referred to as "Maupeltuk" (cock who commands many). He led his people with just enough authority to "harangue, advise, lead them to war and render justice". Champlain said he had the reputation as the most treacherous of his people but a good warrior and leader and gracious host to the Frenchmen. In addition to his warrior skills Membertou was also a "buoin" (medicine man) and continued this practice among his people. (24)

Cape Sable Indians

The Mi'kmaq Champlain depicted at Port Rossignol would be known as The Cape Sable Indians throughout much of Region's colonial history. The Cape Sable Indians were a collection of Mi'kmaq west of the LaHave River who were numerous prior to their losses through disease. (27)

The Cape Sable Indians were known to be distinct warriors due in part to their geographic location to other warrior tribes of the Gulf of Maine and later the New Englanders.

In 1715, 27 New England fishing vessels were seized by the Cape Sable Indians and a commission was formed to negotiate the return of the vessels. (28)

At Some time between 1744 and 1745 several armed vessels from New England arrived at Annapolis Royal and attempted to press the local inhabitants by violence to act as pilots to attack and scalp the Indians and any inhabitants that had any Indian blood in them. Not only were a large number of the inhabitants of mixed race they did not dare go

against the Indians for fear of certain vengeance the Indians would inflict on them after these new Englanders left. (29)
The Cape Sable Indians (Mi'kmaq) were estimated to be 600 warriors but this number may have included warriors from village along the entire coast from Annapolis Royal to LaHeve and possibly as far north as Canso. It is known that the number does not include Mi'kmaq living in mission communities. The mission at Shubenacadie had 200 warriors, 80 warriors at Maillard's mission on Isle Royal and another 250 warriors from the Miramichi and Restigouche. (30)

It is estimated that two thirds of the Cape Sable Mi'kmaq warriors and half the Mi'kmaq warriors of the villages of northern portion of the Mainland Nova Scotia, died in 1746 as a result of participating in the failed d'Anville Expedition of the same year. The diseases carried by the warriors to their villages would cause deaths among the women, children and the elderly which cannot be counted. The contagious diseases accompanying the 1746 French Expedition at Chebucto (Halifax) may be responsible for the deaths of one third to one half the entire Mi'kmaq population of Peninsular Nova Scotia in 1746-1747. (30)

In 1759 Mariner and Officer Silvanus Cobb reported to Governor Lawrence that while transporting New England settlers to Nova Scotia they were fired upon by the Cape Sable Indians along with some Acadians. The plans to settle New Englanders in Nova Scotia was postponed until the following year when Cobb landed settlers at Liverpool. (29)

Southwestern Nova Scotia Mi'kmaq Today

Today the Mi'kmaq of Southern Nova Scotia are comprised of four bands with the Acadia Band having five Reserve Parcels distributed between Yarmouth and Luneburg Counties and the Bear River First Nation Band having three Reserve Parcels distributed within Digby and Annapolis Counties. Further north on the Cornwallis River in Kings County is the Annapolis Valley Band located with Reserve Parcels located within Kings

and Hants Counties. The Glooscap Band has a Reserve Parcel located within Kings County. (31)(32)(33)(34)

The Acadia Band received two Reserve Parcels in 1820 with Gold River, Luneburg County being one and Wildcat being the other on the Medway River, Queens County and is an original Mi'kmaq settlement. The Acadia Band received the Ponhook Reserve Parcel on the Mersey River, Queens County in 1843 and the Medway Reserve Parcel on the Medway River at Greenfield in 1865. The fifth parcel received by the Acadia Band is the Yarmouth Reserve, Yarmouth County in 1887. (35)

Traditional Hunting Territories

In earlier Historic Period years, the warmer months were times of abundance with surrounding areas of coastal camps providing fish, shellfish, fowl and eggs. Offerings were made to spirits but the Mi'kmaq rarely stockpiled enough food for the entire winter. They brought with them from the coast smoked and sun-dried seafood, dried and powdered hard-boiled eggs. Berries were boiled and formed into cakes and were sun-dried. Grease and oils from boiled marrow and fat were stored and transported in animal bladders. Root vegetables such as segubun (wild potato) which was similar to today's sweet potatoes and wild nuts were also part of the winter food supply. (36)

Month	Seasonal Locations	Seasonal Groupings	Food Resource
Jan.	Sea Coast	Bands	Smelt, Tomcod, Seals & Walrus Beaver, Moose, Bear, Caribou
Feb. (Period of Winter Famine Begins)	Inland	Bands & Family Units	Smelt, Tomcod (ending) Seals & Walrus, Beaver, Moose, Bear, Caribou
Mar.	Inland	Bands & Family	Smelt, Seals & Walrus (ending)

(Period of Winter Famine)		Units	Scallops, Crab, Urchins, Winter Flounder, Beaver, Moose, Bear, Caribou
April (Period of Winter Famine ends)	Sea Coast	Villages	Smelt, Winter Flounder, Scallops, Crab, Urchins, Sturgeon, Brook Trout, Alewife, Herring, Spring Bird Migrations, Beaver, Moose, Bear, Caribou
May	Sea Coast	Villages	Smelt, Scallops, Crab, Urchins, Sturgeon, Salmon, Brook Trout Alewife, Codfish, Capelin, Shad, Mackerel, Skates, Herring, Spring Bird Migrations, Beaver, Moose, Bear, Caribou
Jun.	Sea Coast	Villages	Scallops, Crab, Urchins, Sturgeon, Salmon, Brook Trout Alewife, Codfish, Capelin, Shad, Mackerel, Skates Lobsters, Spring Bird Migrations, Beaver, Moose, Bear, Caribou
Jul.	Sea Coast	Villages	Scallops, Crab, Urchins, Codfish, Capelin, Shad, Mackerel, Skates Lobsters, Spring Bird Migrations, Beaver, Moose, Bear, Caribou, Strawberries, Raspberries
Aug.	Sea Coast	Villages	Scallops, Crab, Urchins, Codfish, Skates Lobsters, Beaver, Moose, Bear, Caribou, Strawberries, Raspberries, Blueberries, Ground Nuts
Sept.	Sea Coast	Villages	Scallops, Crab, Urchins, Codfish, Skates, Salmon, Herring, Eels, Fall Bird Migrations, Beaver, Moose, Bear, Raspberries, Blueberries, Ground Nuts, Cranberries
Oct.	Small Rivers	Villages	Scallops, Crab, Urchins, Smelt

			Codfish, Skates, Salmon, Herring, Eels, Brook Trout, Fall Bird Migrations, Beaver, Moose, Bear, Blueberries, Ground Nuts, Cranberries
Nov.	Inland	Bands	Smelt, Tomcod, Turtles, Seals, Beaver, Moose, Bear, Ground Nuts, Cranberries
Dec.	Rivers	Bands	Smelt, Tomcod, Turtles, Seals, Beaver, Moose, Bear, Ground Nuts,

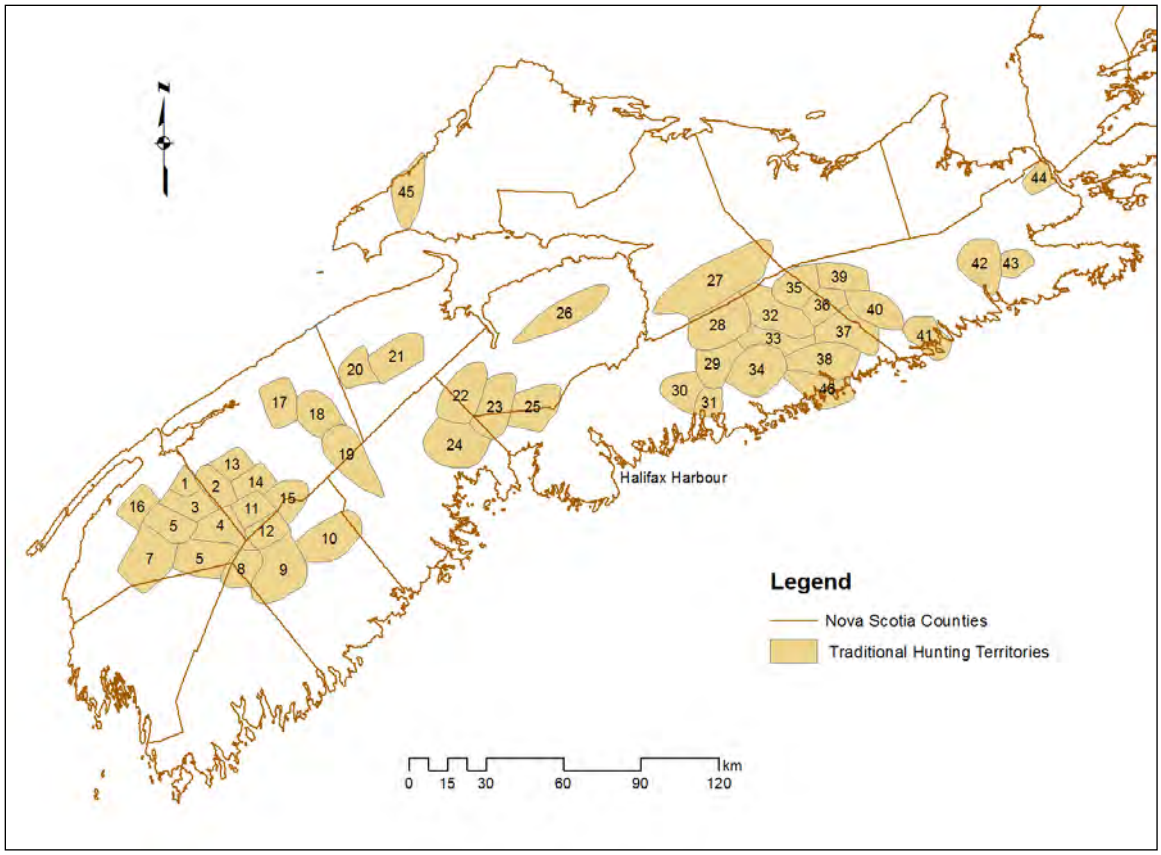
Mi'kmaq Annual Subsistence (37)

Mi'kmaq had an intimate knowledge of the ecology of their territory and fit their lives to seasonal cycles of the vegetation and animals and fish. Due to climate conditions, agriculture for food was a risk for Mi'kmaq. (38) Highly mobile Bands consisting of several related families would assemble at favorite coastal camp sites in warmer seasons. In the fall and winter, the camps would disperse into small groups of 10-15 people for winter hunting. (38)

It was the duty and responsibility of the chief of each political district to assign the hunting territories to families and any changes were made in the presence of the Council of Elders which met in the spring and fall of every year. (36) Hunting districts of approximately 200-300 square miles were assigned to families. (38)

Map Reference	Name of Family	Geographic Territory
9	Joe Maltai and father Old Joe Maltai	East side of Rossignol Lake West side of Rossignol Lake
10	Louis Luxey (La'ksi)	Ponhook Lake (divided among his sons).

Mainland Nova Scotia Traditional Hunting Territories Recorded Circa 1919 (39)



Mainland Nova Scotia Traditional Hunting Territories (39)

The cluster of Traditional Hunting Territories within the interior of Southwestern Nova Scotia are centered on the Lake Rossignol Reservoir-Kejimkujik Lake area as well as a portion of the upper Mersey River. (39)

Hunting Territories 9 and 10 are nearest to the Study Area. Hunting Territory 9 was held by father and son Joe and Old Joe Maltai and included both east and west sides of Lake Rosignol. Hunting Territory 10 was held by Louis Luxey which he shared with his sons. (39)

The territories were usually surrounding lakes and rivers and were passed on to sons unless there were no sons where the district was then assigned to another family. (39)

The Mi'kmaq respected the boundaries of the assigned territories and only took from the land what they needed for the family to survive thereby preserving game and fish for the family's future survival. (36)

The hunting territories of the mainland Nova Scotia were numerous compact interior territories that encompassed the watersheds of interior lakes and rivers as Mi'kmaq did most their game hunting during colder months of the year when they moved inland from the summer coastal camps (36)(39) Cape Breton Island (Unama'ki) Mi'kmaq hunting territories are larger and more regional, encompassing saltwater coastal shorelines and interior river systems. (39)

The territorial reference numbers pertain to the source's original reference system and it is unknown if territorial numbers were assigned by Chiefs. (39)

Former Pre-Dam River and Lakes

The Mersey (Liverpool) River and Lake Rossignol have changed dramatically from their original course and form when the Mersey River and Lake Rossignol was dammed for hydroelectric power generation.

The Liverpool (Mersey) River was a narrow watercourse from the outlet of the former First Lake until Milton where a mill dam 2.8 km upriver from Liverpool Harbour created a small head pond. The Liverpool (Mersey) River entered Liverpool Harbour just after Milton approximately where the former train trestle crossed the river and further empties into the ocean at Liverpool Bay. An 1888 map shows wharves past the draw bridge on the road crossing the river from Bristol to Liverpool. (40) The source map does not indicate former waterfall locations along the river but the power generating station locations of today may indicate former falls locations of which some generating stations were named:

Cowie Falls Generating Station	7.7 km Upriver
Deep Brook Generating Station	9.5 km Upriver
Lower Great Brook Generating Station	14.4 km Upriver
Big Falls Generating Station	23.5 km Upriver
Lower Lake Falls Generating Station	27.7 km Upriver
Upper Lake Falls Generating Station	29.5 km Upriver

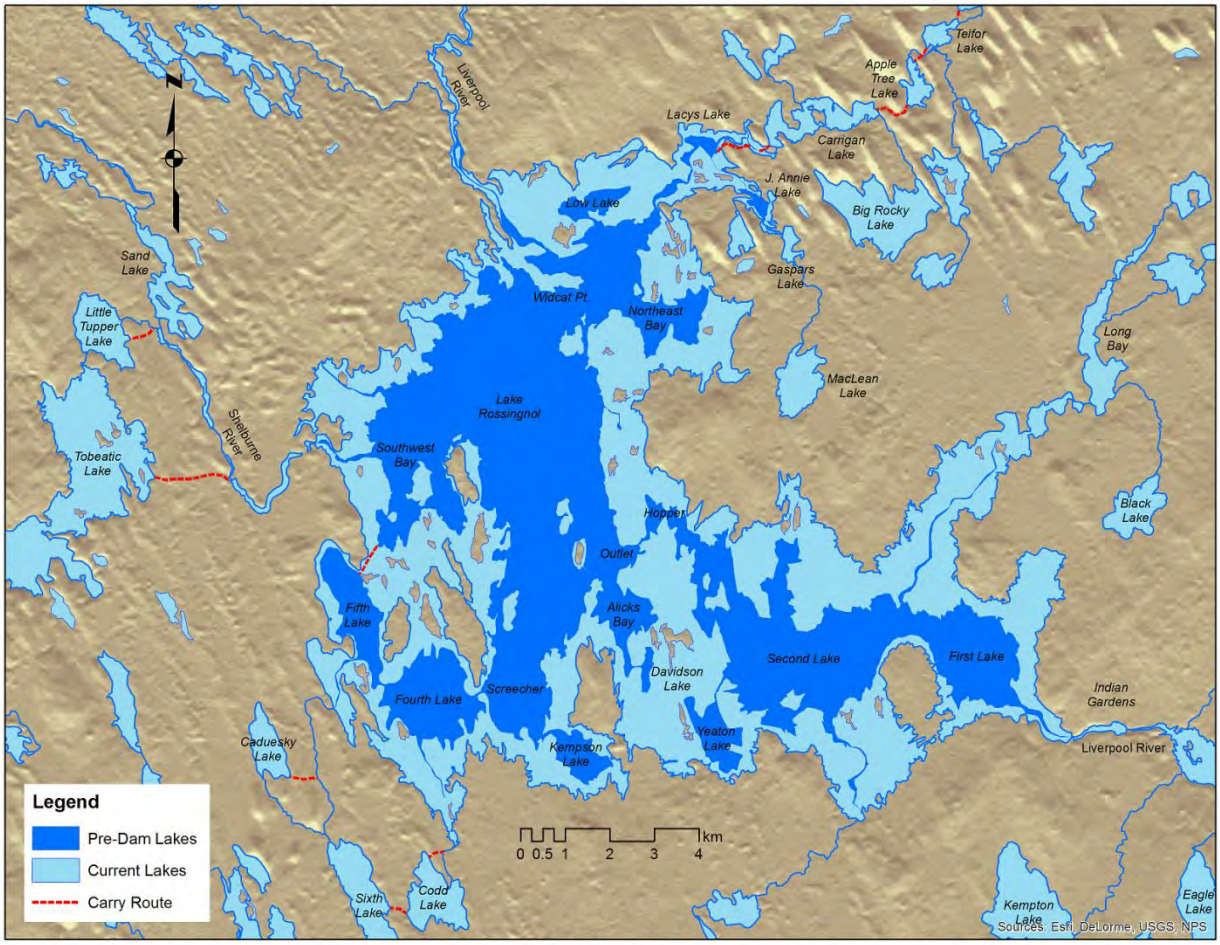
The head ponds created by the dams for these generating stations filled the original river valley topography and today ponds range in sizes from 9.4 km to 0.8 km long and 1.3 km to 0.7 km wide.

The 1888 A. F. Church Map of Queens County was published just prior to the first hydro dams and depicts the Liverpool River (Mersey River) and upper lakes in their original form and with some cultural features such as portage routes. Lake Rossignol was much smaller prior to the dams and the large lake-reservoir of today was once 11 individual lakes each with their own islands, narrows and bays. (40) The following former lakes have since been flooded and absorbed by the controlled larger Lake Rossignol Reservoir:

First Lake
Second Lake
Lake Rossignol
Yeaton Lake
Davidson Lake
Kempson Lake
Fourth Lake
Fifth Lake
Low Lake
Lacys Lake
J. Annie Lake

In addition to absorbing lakes the reservoir also absorbed points of land and the former bays between them such as Alicks Bay, Southwest Bay and Northeast Bay. Narrows such as the Screecher between former Fourth Lake and Lake Rossignol, the Outlet and Hopper between Lake Rossignol and Second Lake also disappeared in the dammed lake levels. Portions of the Liverpool River between the then named Fairy Lake (Kejimkujik Lake) and emptying into Lake Rossignol, were flooded as well as a portion of the Shelburne River. (41)

An attempt was made to bring the 1888 Map into GIS (Geographic Information System) but as detailed as the Church maps are in depicting the topography of the time, the differences between today's maps was too great to make it a practical exercise. However, another more recent source depicting the former lakes was referenced to produce the following MGS depiction of the former upper lakes prior to dam construction. (41):



Pre-Dam Lakes and Carry Routes (40)(41)

The A. F. Church map also depicts carry routes between the Shelburne River and Tobeatic Lake and Little Tupper Lake as well as between former Fifth Lake and Lake Rossignol. Carry routes to the southwest were between Caduesky and former Fifth Lake, Sixth Lake to Codd Lake and further between Codd Lake and Fourth Lake. The carry routes to the north were along the travel route linking Ponhook Lake with Lake Rossignol with carry routes between former Lacys Lake and Carrigan Lake and further carry route between Carrigan Lake and Apple Tree Lake and further to Telfor Lake, Little Christopher Lake and beyond. (40)

The 1888 source map shows a trail paralleling the Queens and Shelburne County line and labels the trail as an “Indian Foot Path to Bear River”. A remnant of the trail exists

between First Beaver Lake and Second Beaver Lake where the trail is used as logging roads to the south. To the north, the trail as depicted on the source map fades away in today's Google Earth imagery. However, today's road crosses over the Church map's "Indian Lookout" or "Bald Mountain" rather than passing to the east as depicted on the source map. No other adjoining A. F. Church maps continue the path to Bear River so the original trail ends and routes are unknown to this review. (40)

Indian Gardens is located on the A. F. Church map showing a road or trail extending to a since submerged point of land before turning northeast along the ridge. (40) The ridge at Indian Gardens is visible on the hill shaded background of the Pre-Dam Lakes and Carry Route map.

Until the dam construction on Lake Rossignol, little attention was given to Indian Gardens concerning Archaeology found in the vicinity as Indian Gardens has a long history of Mi'kmaq cultivating small plots there each year. Dam construction upturned numerous artifacts that attracted the attention of academics who visited the Indian Gardens site along with midden sites at Port Jolie and Port L'Hebert. (42)

It was determined by this curious group that the Indian Gardens site was too large to be a garden plot site alone but was a large site capable of supporting "hundreds" of Mi'kmaq. Analysis of artifacts found in tree trunks determined the site was extensively used at least until mid 1700's. it was also determined that there were matches made between artifacts found at Indian Gardens and the artifacts found at Port Jolie and Port L'Herbert supporting the idea of seasonal migrations between the coast and the interior. Excavations revealed that wigwams were placed in the same locations year after year by the circular distribution of bone, shell and pottery found at the sites. Indian Gardens had resources available as a winter camp in wild game on the extensive bogs, blowdown firewood on lake shores to support a large Mi'kmaq population but seemed to be abandoned some 50-55 years later when an expedition into the interior and later surveyors found no trace of Mi'kmaq at Indian Gardens. The same surveyors were told of

an old wooden cross mounted within a pile of stones that previously existed at the site. (42)

It was proposed by the group that Mi'kmaq abandoned Indian Gardens after they suffered tremendous loss of life due to disease brought to them by a 1746 failed French Expedition that landed at Chebucto (Halifax) to take back Louisbourg from New Englanders/British. (42)

The 1873 History of Queens County also offers insights into the former upper lakes providing seemingly random facts and places of interest within the text. The source identifies numerous "Indian" burial sites within Queens County including "at the foot of the first lake on the Liverpool River" which would be near Indian Gardens. Other sites with proximity to the Project Study Area include the source's reference to a burial site at "Cadoskah", between former Third Lake and former Fourth Lake. The source makes another reference to "Cadoskah" as being 4 miles (6.4km) west-southwest from the former "Outlet" on Lake Rossignol. The site is described as being the first stream entering Lake Rossignol being "Cadoskah" where there is a burial site and "a beautiful ridge of land" used by the Mi'kmaq as an overnight campsite. (43)

The descriptions seem to point to the area of the former "Screecher" narrows between former Fourth Lake and Lake Rossignol which is sometimes referred to as "Third Lake". There is an upstream connection with Caduesky Lake via former Fifth Lake, up Sixth Lake Brook and a carry route to Caduesky Lake. There are gravel eskers, which are linear debris mounds from former under/internal ice sheet watercourses that run roughly north-south with one esker passing through the "Screecher" and could be the ridge referenced as a campsite. Any portion of the eskers in the area would make a suitable burial site.

An Esker east of Big Bon Mature Lake being used for a logging road (Google Earth Image)

Other Burial sites mentioned in the History of Queens County include Greenfield, on the Medway River, “Pesquewess” near Loon Lake, at “Liverpool Ponhook and at “Cegemecega” near the Fairy Rocks. (43)

The Mi’kmaq used these burial sites until 1829 when the arrival of a Catholic Priest prompted burial to occur within Chapel Yards at Liverpool and Caledonia. (43)

Mi’kmaq Placenames (44)

Most Acadian and original Mi’kmaq place names were replaced with English themed place names. The following are some of the known original Queens County Mi’kmaq place-names, translations and the current location:

Brooklyn, Queens Co.	*Katkooch (45)*	“a hill on the opposite side”
	Katkoolch (45)	“
	Katkootch (46)	“between the hills”

Charleston, Queens Co.	*Banoo (46)*	"the first lake on a river"
Liverpool, Queens Co.	*Ogumkwigeok (45)*	"the place of departure"
	Ogukegeok (46)	"
	Ogomkigeak (46)	"a dry sandy place"
Medway River, 2nd lake	*Malegeak (45)*	"fretful waters"
Medway River, 3rd lake	*Minegooskek (45)*	"the place of the little island"
Medway River, 4th lake	*Nabegwonchuk (45)*	"the ships place"
Milton, Queens Co.	Kabok *(46)*	"the Narrows"
	Kebek *(46)*	"
Molega Lake, Queens Co.	*Maligeak (45)*	"fretful water"
Ponhook Lake, Queens Co.	*Bahnook (45)*	"first lake in a chain"
Port Joli, Queens Co.	*Emsik (45)*	"blown along by wind"
Port Medway, Queens Co.	Alacah *(45)*	"a river with many branches or streams"
	Ulgwedook (45)	"the place of mushrooms"
Port Mouton, Queens Co.	Wolugumkook *(45)*	"a deep gully" or "hole in the river"
South Brookfield, Queens Co.	*Bankwenopskw (46)*	"we hurt him amongst rocks"
Wildcat, Queens Co.	*Kwebejook (45)*	"name given to place near Liverpool"
	Utkoweeh (45)	"wildcat"
Indian Gardens	***Se'se'nmetuek** (47)*	**"**at the place where they are scattered"
Kempton Lake	***L'nu'ki li-suitte'tijk** (47)*	"at the cremation place using sweet grass"
Broad River Lake	***Wapie'katik** (47)*	"at the place of the swans"

Mersey River First Lake	***Panuk** (47)*	"at the opening (as in lake)"
(Former) Second Lake	***Ketu'skek** (47)*	"surrounded by tall trees"
Lake Rossignol	***Utqutaqne'kati'jk** (47)*	"at the small graveyard"
(Former) Fourth Lake	***Kejimkujik** (47)*	"place of fairies"
(Former) Fifh Lake	***Elmitkaq** (47)*	"leading straight on"
Sixth Lake	***Tupia'tukuk** (47)*	"at the place of alders"
Caduesky Lake	***Ketuiski**(47)*	"I need to urinate"
Little Tobeatic Lake	***Tupsia'tukji'jk** (47)*	"at the little alder grove"
Little Pine Lake	***Kuowikeji'jk** (47)*	"at the place of little pines"
Shelburne River	*Asoqmamkiajk (47)*	"at the little sand crossing place"
East Bay	***Tuitnu'jk** (47)*	"at the small outflow"
Jordan Lake	*Mekwe'saqawey Qospem (47)*	"reddish coloured lake"
Grand Lake (Allains River System)	***Skite'kmujua'kik** (47)*	"place of ghosts"
Milford (Allains River System)	***Sikunme'katik** (47)*	"at the gaspereaux place"
Christopher Lakes (waterways)"	***Milaqopskikeji'jk** (47)*	"at the place of many turns

The late1700's was a critical time in Mi'kmaq history when the Mi'kmaq population was decimated by disease and Mi'kmaq way of life was disappearing. It was at this time that England encouraged settlement on Acadian lands that had been abandoned after the Acadian Deportation in 1755.

The Mi'kmaq traditional territories were granted away to successive waves of by then immigrants looking to work land granted them. During these times of immigrant settlers Mi'kmaq were not granted title to land but rather were granted "Licenses of occupation during pleasure". The land was owned by the Crown and reserved for particular Mi'kmaq Bands. The first of these licenses in Nova Scotia was granted in the 1780's and locations were typically coastal and ravine sites long frequented by Mi'kmaq.

In 1820 the reserve system was started and each county was instructed to set aside lands near sites frequented by Mi'kmaq. A number of reserves of approximately 1000 acres

each was planned for each county of Nova Scotia totaling 22,050 acres for exclusive use by the Mi'kmaq. This produced little action and it was the Mi'kmaq themselves that pushed for reserve lands. However, what the Mi'kmaq received was not always of their choosing and if their reserve was good land, it was subject to encroachment by settlers. (38)

There was a period beginning in the early 1800's when Mi'kmaq were encouraged to remain in a single location. Attempts were made to introduce Mi'kmaq to farming and centralizing Mi'kmaq on large reserves such as Indian Brook I. R. 14 located at Shubenacadie, East Hants Co. and later Eskasoni I.R. 3 located on the western shore of East Bay, Bras d'Or Lakes. (38)

Today, Ponhook Lake I.R.10 (Acadia Band) at Indian Gardens, Mersey River is the single Mi'kmaq Reserve parcel within close vicinity of the Study Area (48)

Specific Claims

A review of Specific Claims shows no current or active First Nation Claims within the Project Site specifically. There is an active Specific Claim within the vicinity of the Study Area.

There is an Active Claim Launched by all Nova Scotia Bands (Nova Scotia TC 9005 and 9113 ASSCTN) concerning "Mismanagement of Kejimkujik I.R." with a current status of "Invited to Negotiate" and "Awaiting Response" since July 02, 2014. No specific location details were given. (49)

A similar Specific Claim launched By Union of Nova Scotia Mi'kmaq-Advisory Services TC-9113, concerning eleven Surrenders of which "Kedgemakooge" Reserve was one of the eleven Surrenders. The status is "Concluded" with "No Lawful Obligation Found" and "Not Accepted for Negotiations" on Jan.06, 1985. (49)

There was two previous Specific Claims launched by all Nova Scotia Bands (Kejikujik Assn. ASSCTN) concerning loss of use of land by Surrender in 1906 and by Expropriation for National Park in 1963. The second Specific Claim launched by same Kejikujik Assn. ASSCTN concerning loss of timber on lands surrendered by leasing in 1908 and timber resources Surrendered in 1917. Both Specific Claims have "File Closed" status as of Jan. 26, 2011. (49)

Another previous Specific Claim launched by Acadia Band concerns Ponhook I.R.10 and alienation of two Reserve lots including a burial ground by flooding and intermittent loss of use of two other lots and Breach of Trust. The specific Claim status is "Settle Through Negotiations" on oct. 25, 2002. (49)

4.4 Mi'kmaq Traditional Use Findings

The traditional use data gathered for this MEKS was drawn from one primary source: interviews with Mi'kmaq individuals who reside in the surrounding Mi'kmaq communities and those who are familiar with or undertake these types of activities. This data was acquired through interviews with interviewees that allowed the study team to identify the various traditional use activities, resources and areas that are currently or have been used by the Mi'kmaq, and any information that was gathered in previous MEKS in the area. Interviewees were asked to identify areas within the Study Area and Project Site where they knew of traditional use that had taken place, or currently in use. These interviews took place from October and November 2022.

To easily identify the traditional use data findings of this study, the analysis has been broken down into two groups. The first is the Project Site analysis, and the second is the Study Area.

Unless otherwise stated, areas identified by interviewees are considered to be utilized by the Mi'kmaq currently, in the recent past, and/or the historic past.

Project Site

The Project Site, as well as locations in the *immediate* vicinity (within 50 meters) of the Project Site, will be considered when analyzing traditional use activities.

Fishing

Trout, salmon and eel fishing was identified the most in the Project Site.

Fourteen (14) Trout fishing areas were identified in the areas of:

- Mersey River areas within the project site
- Big Bon Mature Lake
- Little Bon Mature Lake
- Solnow Lake
- Solnow Pond
- Trout Pond

Four (4) salmon fishing areas were reportedly fishing near:

- Mersey River areas within the project site

Four (4) eel fishing areas were reportedly fishing near:

- Mersey River areas within the project site
- Big Bon Mature Lake
- Little Bon Mature Lake

Other species identified in the Project Site are gaspereau (1 area) and bass (1 areas). (see Appendix B, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Fishing Areas")

Hunting

Deer, partridge and rabbit were the most hunted species in the Project Site.

Eight (8) deer hunting areas were found to be located:

- Areas south of the Mersey River within the project site
- Areas around Trout Pond to Little Bon Mature Lake
- Areas west of Toney Lake

Five (5) partridge hunting areas were found to be located:

- Areas south of the Mersey River within the project site
- Areas around Trout Pond to Little Bon Mature Lake
- Areas west of Toney Lake

Rabbit/Furs was found to be hunted in five (5) areas located:

- Areas south of the Mersey River within the project site
- Areas around Trout Pond to Little Bon Mature Lake
- Areas west of Toney Lake

Other species hunted in the Project Site include porcupine (1 area) and squirrel (1 area). (see Appendix C, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Hunting Areas").

Gathering

Ash, Birch and Goldenrod were the gathering activities reported within the Project Site.

Ash was gathered in one (1) area:

- South of Mersey River along the north boundary of the Project Site

Birch was reportedly gathered in one (1) area:

- South of Mersey River along the north boundary of the Project Site
- Trout Pond to Kempton Lake and surrounding areas

One (1) goldenrod gathering area was identified in:

- South of Mersey River along the entrance of the Project Site

(see Appendix D, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Gathering Areas").

Other

One (1) area containing historical Mi'kmaq artifacts was identified:

- Areas along the Mersey River within the North Eastern section of the Project Site.

(see Appendix E, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Other Areas").

Study Area

As mentioned previously, the MEKS data is also drawn from the Study Area. The purpose of this portion of the study is to portray other land characteristics and land use activities that may have been missed in a narrow Project Site data analysis.

Fishing

Trout, salmon and eel fishing was identified the most in the Project Site. (see Appendix D, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Fishing Areas").

Thirty-two (32) Trout fishing areas were identified in the areas of:

- Mersey River areas throughout the Study Area
- Big Bon Mature Lake, Little Bon Mature Lake
- Solnow Lake, Solnow Pond, Trout Pond
- Eagle Lake, Toney Lake, Kempton Lake
- First Beaverdam Lake, Second Beaver Dam Lake, Duck Pond
- Small brooks and streams south of the Project Site

Five (5) salmon fishing areas were reportedly fishing near:

- Mersey River areas within the project site
- Eagle Lake

Five (5) eel fishing areas were reportedly fishing near:

- Mersey River areas within the Study Area
- Big Bon Mature Lake
- Little Bon Mature Lake
- Toney Lake

Other species identified in the Project Site are gaspereau (2 areas) and bass (1 area). (see Appendix B, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Fishing Areas")

Hunting

Deer, partridge and rabbit were the most hunted species in the Project Site.

Fourteen (14) deer hunting areas were found to be located:

- Moose Hill to Kenney Hill

- Milton to Little Ten Mile Lake
- Mersey River areas
- Areas around Trout Pond to Kempton Lake

Seven (7) partridge hunting areas were found to be located:

- Moose Hill to Kenney Hill
- Milton to Little Ten Mile Lake
- Mersey River areas within the project site
- Areas around Trout Pond to Kempton Lake

Rabbit/Furs was found to be hunted in six (6) areas located:

- Moose Hill to Kenney Hill
- Milton to Little Ten Mile Lake
- Mersey River areas within the project site
- Areas around Trout Pond to Kempton Lake

Other species hunted in the Project Site include porcupine (1 area) and squirrel (1 area). (see Appendix C, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Hunting Areas").

Gathering

Berries, Cranberry, Apples, Ash, Birch and Goldenrod were the gathering activities reported within the Project Site.

Berries were gathered in two (2) areas:

- Areas around and west of Toney and Kempton lakes
- Areas around First Beaverdam and Second Beaverdam lakes

Cranberry was gathered in one (1) area:

- Areas north of the intersection of River Road and Moores Road

Apples was gathered in one (1) area:

- South of Mersey River along the north boundary of the Project Site

Ash was gathered in one (1) area:

- South of Mersey River along the north boundary of the Project Site

Birch was reportedly gathered in one (1) area:

- South of Mersey River along the north boundary of the Project Site
- Trout Pond to Kempton Lake and surrounding areas

One (1) goldenrod gathering area was identified in:

- South of Mersey River along the entrance of the Project Site

(see Appendix D, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Gathering Areas").

Other

One (1) area containing historical Mi'kmaq artifacts was identified:

- All along the Mersey River within the Study Area

(see Appendix E, map "Mersey River Wind MEKS – Mi'kmaq Traditional and Current Other Areas").

4.5 Mi'kmaq Significant Species Process

In order to identify possible project activities which may be of significance to the Mi'kmaq with regards to traditional use of the Study Area, the project team undertakes a

number of steps in order to properly consider the MEKS data. This involves three main components: Type of Use, Availability, and Importance.

Type of Use

The first component of analysis is the "Type of Use" of the resource which involves the categorization of the resource. All resources are placed into various general categories regarding the Type of Use**.** The category headings are Medicinal/Ceremonial, Food/Sustenance, and Tool/Art. These general headings are used so as to ensure further confidentiality with respect to the resources and the area where they are harvested. As well, the total number of instances where a resource harvest has been documented by the study is quantified here as well.

Availability

After the data is considered by the Type of Use, it is considered in accordance with its availability. This involves considering whether the resource is abundant in the Study Area or whether it is rare or scarce. Based on the information that is provided to the team from the ecological knowledge holders and/or written literature sources, the availability of the resource is then measured in regard to other water or land areas that are outside of the Study Area. This measuring is primarily done in the context of the areas adjacent to the Study Area, and if required, other areas throughout the province. By proceeding in this manner, the study can provide an opinion on whether that resource may be **Rare, Scarce** or **Abundant**.

The data is classified in accordance with following:

Rare – only known to be found in a minimum of areas, may also be on the species at risk or endangered plants list;

Common – known to be available in a number of areas; and

Abundant – easily found throughout the Study Area or in other areas in the vicinity.

This allows the study team to identify the potential impact of a resource being destroyed, by the proposed project activities, will affect the traditional use activity being undertaken.

Importance

The final factor the MEKS team considers when attempting to identify the significance of a resource to Mi'kmaq use is whether the resource is of major importance to Mi'kmaq traditional use activities. This can be a somewhat subjective process, as any traditional resource use will be of importance to the individual who is acquiring it, regardless of whether its use is for food or art, and regardless if the resource is scarce or abundant. However, to further identify the importance, the MEKS team also considers the frequency of its use by the Mi'kmaq; whether the resource is commonly used by more than one individual, the perceived importance to the Mi'kmaq in the area, and finally the actual use itself. These factors support the broad analysis of many issues in formulating an opinion on significance and supports identifying whether the loss of a resource will be a significant issue to future Mi'kmaq traditional use, if it is impacted by the project activities.

4.6 Mi'kmaq Significance Species Findings

This MEKS identified resource and land/water use areas within the Project Site and Study Area that continue to be utilized by the Mi'kmaq people, to varying degrees.

Type of Use

The study identified the following in the Study Area:

TYPE OF USE	NUMBER OF AREAS	NUMBER OF SPECIES
Food/Sustenance	77	17
Medicinal/Ceremonial	7	3
Tools/Art	6	3

Table 5. Resource Use within Study Area

Availability

During the information gathering for the Study Area, interviewees had mentioned the fishing for salmon. The Atlantic Salmon is considered an endangered species in Canada. *(50)*

The American Eel, while not listed on the Nova Scotia species at risk registry, is considered a threatened species by the federal species registry. (*51*)

Striped bass, again like the American Eel, has no status with the Nova Scotia species registry, the federal species at risk registry consider the Gulf of St. Lawrence population of Striped Bass to be of special concern. (*51*)

Importance

While stated above, it is worth noting again that assigning an importance designation for any activity done by Mi'kmaq can be a subjective process, and that all activities are considered ways of preserving the Mi'kmaq way of life, in some shape or form. Scarcity and abundance of a species in an area can both increase the importance of a species.

As noted previously, Atlantic Salmon, American Eel, and Striped Bass are considered an endangered, threatened, or species of special concern in Canada and the Mi'kmaq still rely on these species for sustenance and for cultural ceremonies and activities. Any disturbances to their habitats could have an impact on Mi'kmaq use.

Based upon the high frequency of activities reported by the interviewees, trout, salmon, and eel fishing along with deer, partridge and rabbit hunting can be considered to be the favored activity for Mi'kmaq in this particular area.

It should be noted that informants mention the following concerns about the project:

- Noise from the turbines and effect this may have on local wildlife, specifically birds and a mainland moose that have been traveling through the area for years.
- Increased foot traffic near personal cabins.
- Possible impacts on the surrounding ecology.

5.0 CONCLUSIONS

This Mi'kmaq Ecological Knowledge Study has gathered, documented and analyzed the traditional use activities that have been occurring in the Project Site and the Study Area by undertaking interviews with individuals who practice traditional use, or know of traditional use activities within these areas and reside in the nearby Mi'kmaq communities.

The information gathered was then considered in regard to species, location, use, availability and frequency of use to further understand the traditional use relationship that the Mi'kmaq maintain within the Project Site and Study Area.

Historic Review Summary

The Project Site(45) and Study Area are entirely within **Kespukwik** District (Territory). **Kespukwik** (Last Flow, Land Ends) This District includes all the lands and waters draining into the Bay of Fundy from approximately Margaretsville, the Gulf of Maine coast and the Atlantic coast to the western shore of the LaHave River.

The entire Study Area was ice-free by 12,000 BP and does not appear to be directly impacted by the ice flows of the Younger Dryas Period. The receding ice left a landscape of mostly glacial ground moraine of a Stony Till Plain with a few Silty Till Drumlins and patch of Silty Till Plain southwest of the Town of Liverpool.

There are no known archaeological sites or finds within the Project Site. The Mersey River within the Study Area has some 70 known archaeological Sites/Finds demonstrating the rich archaeological resources within the ancient travel route between the Atlantic coast to the Fundy coast.

Champlain arrived in Liverpool Bay to find a ship *La Levrette* commanded by Captain Jean de Rossignol who was further inland up the Mersey River of today on a trading mission with the Mi'kmaq at a community of islands known as Kedgi on a large lake.

The Cape Sable Indians of southwestern portion of the mainland province today, were numerous and known as fierce warriors hardened by the constant warring among the tribes of the Gulf of Maine and later New Englanders. The Cape Sable Indians suffered great losses from participating in a failed French Expedition to retake Louisbourg. The French transports brought disease to the Cape Sable Warriors who returned to their villages with the disease.

The Study Area is close to the traditional Hunting Territories 9 and 10 using the source's map and numbered reference system. Hunting Territory 9 was held by father and son Joe and Old Joe Maltai and included both east and west sides of Lake Rosignol. Hunting Territory 10 was held by Louis Luxey which he shared with his sons.

The Project Site and most of the southwestern half of the Project Study Area are within the Nova Scotia Ecological Classification Ecodistrict "Sable (760)". The northeastern half of the Study Area including the Mersey River and the southwest river valley wall, are within the "Rossignol (750)" Ecodistrict. The lower part of Mersey River and southeastern corner of the Study Area are within the "South Shore (830)" Ecodistrict.

A review of Specific Claims shows one current and active First Nation Claims within the vicinity of the Study Area. Launched by all Nova Scotia Bands (Nova Scotia TC 9005 and 9113 ASSCTN) concerning "Mismanagement of Kejimkujik I.R." with a current status of "Invited to Negotiate" and "Awaiting Response" since July 02, 2014. No specific location details for the Kejimkujik parcel were given.

Traditional Use - Project Site Summary

Based on the data documented and analyzed, it was concluded that there is reported Mi'kmaq use reported on the Project Site.

Activities with the highest frequency of use in the Project Site include trout, salmon, and eel fishing happening along with deer, partridge and rabbit hunting. There was other fishing, hunting, and gathering activities reported, as well as an area identified to have Mi'kmaq artifacts.

Overall, the majority of activities took place as Historic Past (39%) timeline category while the remaining activities occurred in the Recent Past (34%) and Current Use (25%) categories.

Traditional Use - Study Area Summary

Trout, salmon, and eel fishing, along with deer, partridge and rabbit hunting were also the activities reported by interviewees in the highest frequency. There was other fishing, hunting, and gathering activities reported, as well as an area identified to have Mi'kmaq artifacts.

Overall, the activities took place primarily in the Recent Past (41%) and Historic Past (37%) timeline categories. The reported Current Use activities account for Twenty percent (20%) of the data.

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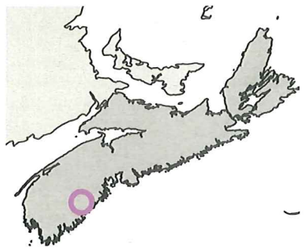
Mersey River Wind
MEKS
Mersey River, NS
Traditional Usage



All Traditional Usage
Study Area
Project Site

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0 2 5 km

Datum: UTM NAD83 ZONE 20
Scale: 1:82,000

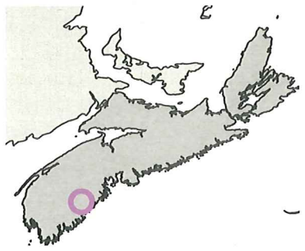
January 2023

Membertou
GEOMATICS SOLUTIONS

Sources: Esri, Garmin, USGS, NRCAN, GeoNOVA, OpenStreetMap contributers, and the GIS User Community.

Ponhook Lake 10
Indian Gardens
Upper Lake Falls
Lower Lake Falls
Georges Brook
Kempton Brook
Eagle Lake Brook
Big Falls
Mortons Brook
Kempton Lake
Eagle Lake
Upper Great Brook
Nine Mile Brook
Lake Rossignol
Toney Lake
Mortons Island
Bon Mature Brook
Allens Brook
Lower Great Brook
Little Bon Mature Lake
Big Bon Mature Lake
Duck Pond
Knowles Meadow Brook
Solnow Lake
Kempton Meadow Brook
Solnow Pond
Trout Pond
De Wolfe Brook
Second Lake
First Lake
Southwest Lake
Lily Pond
Owls Hill
Payzant Brook
The Branch
Hagen Meadow Brook
Kenney Hill
Little Lake Brook
Long Point Stillwater
Little Lake
Seans Hole
Martin Brook
Hammetts Ridge
Beech Hill
Beech Hill Farms
Indian Log Brook
Devils Funnel Stillwater
McQuinns Stillwater
East Broad River
Maple Swamp Stillwater
Campbells Stillwater
Reubens Brook
Ten Mile Lake
Mink Island
Beaver Island
Birch Island
Eight Mile Lake
Little Ten Mile Lake
Six Mile Brook
Charlotte Lake
Deep Brook
Guzzle Falls
Big Guzzle Island
Cowie Falls
West Deep Brook
Beaverdam Brook
Milton
Johns Millpond
East Branch Five Rivers
Heatherington Brook
Shingle Mill Brook
East Brook
Murley Brook
West Brook
Crane Lake
Herring Cove Lake
Second Beaverdam Lake
First Beaverdam Lake
Duck Pond
Moose Hill
Moose Hill
Great Hill
Great Hill
The Cove
Wild Pear Island
Sandy Cove
Sandy Cove
Liverpool Harbour
Mersey River
Meadow Pond Brook
Mount Pleasant
Tuppers Point
Taxon Lake
Meadow Pond
Betty Hill
Neck Pond
Round Pond
Bar Pond
Horse Pond
Huskins Pond
Victoria Lake
Hemeon Brook
McAlpines Brook
Moose Creek Pond
Gull Bay
Gull Island
Nickersons Pond
Herring Cove Brook
Herring Cove
Brooklyn
Fort Point
Liverpool Bay

Mersey River Wind
MEKS
Mersey River, NS
Traditional Usage



Fishing Areas
Study Area
Project Site

Ponhook Lake 10
Indian Gardens
Georges Brook
Upper Lake Falls
Lower Lake Falls
Kempton Brook
Eagle Lake Brook
Big Falls
Mortons Brook
Kempton Lake
Eagle Lake
Upper Great Brook
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Mortons Island
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Lower Great Brook
Little Bon Mature Lake
Big Bon Mature Lake
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Little Ten Mile Lake
Six Mile Brook
Charlotte Lake
Heatherington Brook
Shingle Mill Brook
East Brook
Murley Brook
West Brook
Crane Lake
Herring Cove Lake
Second Beaverdam Lake
First Beaverdam Lake
Duck Pond
Deep Brook
Guzzle Falls
Big Guzzle Island
Cowie Falls
West Dean Brook
Moose Hill
Great Hill
Nickersons Pond
Beaverdam Brook
The Cove
Milton
Wild Pear Island
Herring Cove Brook
Sandy Cove
Herring Cove
Brooklyn
Liverpool Harbour
Fort Point
Mersey River
Liverpool Bay
Meadow Pond Brook
Mount Pleasant
Tuppers Point
Town Lake
Meadow Pond
Betty Hill
Neck Pond
Round Pond
Horse Pond
Bar Pond
Huskins Pond
Victoria Lake
Hemeon Brook
McAlpines Brook
Moose Creek Pond
Gull Bay
Gull Island
Second Lake
Duck Pond
Knowles Meadow Brook
First Lake
Southwest Lake
Solnow Lake
Kempton Meadow Brook
Solnow Pond
Trout Pond
De Wolfe Brook
Lily Pond
Owls Hill
Kenney Hill
Hagen Meadow Brook
Payzant Brook
The Branch
Johns Millpond
Little Lake Brook
Long Point Stillwater
Little Lake
Seans Hole
Martin Brook
Hammetts Ridge
Beech Hill
Beech Hill Farms
East Branch Five Rivers
Indian Log Brook
Devils Funnel Stillwater
McQuinns Stillwater
East Broad River
Maple Swamp Stillwater
Campbells Stillwater
Reubens Brook

Sources: Esri, Garmin, USGS, NRCAN, GeoNOVA, OpenStreetMap contributers, and the GIS User Community.

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Scale: 1:82,000

January 2023

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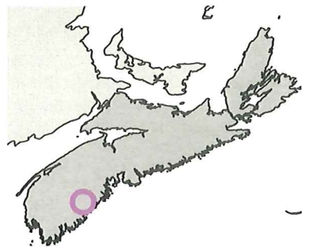
Mersey River Wind
MEKS
Mersey River, NS
Traditional Usage



Gathering Areas
Study Area
Project Site

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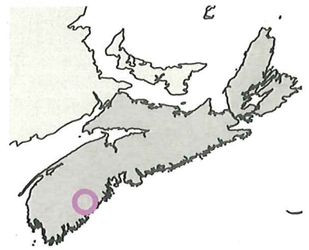

Hunting Areas
Study Area
Project Site

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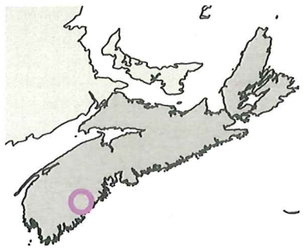

Other Usage
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