Clydesdale Wind Farm
Clydesdale, NS
MEKS

Membertou
GEOMATICS SOLUTIONS

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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 Natural Forces with regards to the proposed 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 the accountability and ethical 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 includes the expansion of the existing 51-megawatt Dalhousie Mountain Wind Farm with the installation and operation of 28 additional wind turbines and generators (approximately 50-megawatts) on land located between Mount Thom, Pictou County and Earltown, Colchester Co., Nova Scotia. (see Appendix A).

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 First Nation communities of Annapolis Valley, Glooscap, and Cambridge. The interviews took place between October 2022 to February 2023.

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 eighteen (18) 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 Sites and Study Area are within the Traditional Political District of ***Sipekni'katik*** (Wild Potato Area) of the central area of Nova Scotia.

The Tatamagouche Bay area has for at least 6,500 years been an important location to early peoples and historic Mi'kmaq. The location was at the intersection of many travel routes, offered plenty of seafood, animals, plants and was a 1–2-day travel from the next village or settlement.

These travel routes were very important during French and English hostilities as the routes allowed the flow of goods between Acadian Communities. The Acadians were also able to transport cargo and livestock to Louisbourg as the routes were far removed from English Settlements and Patrols. Mi'kmaq would gather and use the well supplied travel routes to stage attacks on Chebucto and return after battle with captured prisoners being taken to Quebec, Isle St. Jean or Louisbourg.

Although the Loganville area shares a role in history with the River John connection to Tatamagouche Bay, River John Branches are seldom mentioned and most of the travel and trade traffic was 5-10 km to the west of Loganville through the French River and Waugh's River valleys. Mi'kmaq presence in the Tatamagouche Bay area diminished over time and particularly with the establishment of a reserve at Pictou.

There are no recorded traditional hunting territories from the 1922 survey within the study area.

There are potential natural resources within the Cobequid Hills in exposed bedrock containing Rhyolite stone of suitable properties for tools and weapons for early peoples.

There are reported sources of Black Ash on the north slopes of the Cobequid Hills which are a valuable resource to early peoples and Mi'kmaq today, for tool handles and basket making.

While a distant northwest and northeast east of the Study Area, both the Tatamagouche and Pictou areas generate much of the Prehistoric and Historic Period history that is relevant in providing context as to the presence of early peoples in the area and situations the post-contact Mi'kmaq faced throughout the Province during European colonization and settlement.

The nearest Mi'kmaq communities to the Study Area today are Millbrook First Nation located south of Truro and the Study Area and Pictou Landing First Nation located roughly equal distance to the northeast of the Study Area.

The Millbrook First Nation has a long history within the vicinity of the Salmon River and Truro area. As early as the late 1700's, the Mi'kmaq resided on the banks of the Salmon River near Bible Hill, where the present-day Dalhousie Agricultural Campus is located.

A review of Specific Claims shows no current and active First Nation Claims within the Project Study Area. However, Millbrook First Nation has an active specific claim regarding loss of land for Highway R.O.W and routing of FiberOptic Cable through same R.O.W.. No specific location detail given.

It is possible that an “Indian Village” is the subject of a Specific Claim by Paq’tnkek First Nation regarding unlawful granting of 250 acres without surrender in 1827. The status on that claim is “Concluded”.

Traditional Use - Project Site Summary

Berry harvesting, Trout fishing, and Deer, Rabbit and Partridge hunting were the activities reported by interviewees in the highest frequencies.

All usage period-categorization breaks down as follows;

Current Use: ~1%

Recent Past: ~54%

Historic Past: ~45%

Traditional Use - Study Area Summary

Trout, Salmon and Bass fishing, Deer, Partridge and Rabbit hunting and Berry harvesting were the activities reported in the highest frequencies by interviewees.

All usage period-categorization breaks down as follows;

Current Use: ~1%

Recent Past: ~61%

Historic Past: ~38%

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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 Clydesdale Ridge Wind Project

The proposed project includes the expansion of the existing 51-megawatt Dalhousie Mountain Wind Farm with the installation and operation of 28 additional wind turbines and generators (approximately 50-megawatts) on land located between Mount Thom, Pictou County and Earltown, Colchester Co., Nova Scotia. (see Appendix A).

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 Natural Forces 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. The Project Site includes a 50m buffer of the proposed project footprint.

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 First Nation communities of Annapolis Valley, Glooscap, and Cambridge 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 2022 and February 2023.

For this MEKS, eighteen (18) informants provided information in regard to past and present traditional use activities. 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

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.

Initial site visits took place in October, of 2022. MGS accompanied by a Mi'Kmaq knowledge holder from Paq'tnkek conducted a 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
White Spruce	28
Balsam Fir	24
Yellow Birch	23
American Beech	18
Maple	14
Ferns	13
Goldenrod	12
Wire Birch	11
Popel	10
Raspberries	9
Blackberry	8

Foxberry	8
White Birch	8
Life Everlasting	6
Moss	4
Aster	3
Pin Cherry	3
Blueberry	2
Sedge Grass	2
Striped Maple	2
Sweet gale	2
Strawberry	1
Teaberry	1

Table 1. Summary of observation points

Figure 3. Site visit.

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. As 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 Project Sites and Study Area

The total Project Sites and overall Study Area encompass an area from the communities of The Falls in the northwest, Earltown near the western extents of the Study Area, Mount Thom and Watervale to the south and Millsville to the northeast.
The Project Study Area includes an area within a 5km radius of the Project Site structures and is the base of searching the adjacent lands and communities for history relevant to this MEKS. Some history found outside the Study Area may be included if relevant to the context of natural and cultural history of the region.

Historic Review

The Historical Review looks at a collection of sources holding knowledge of the natural and cultural history relevant to the Project Site location and surrounding larger Study Area. A review of these sources provides the pieces of a larger story of the land and people. This review attempts to tell some of that story and pass on the knowledge gained.

Context is very important in the telling of this story. The landscape, climate and wildlife were somewhat different at various periods of time than in present-day.

The Project Sites and Study Area are centered within a land corridor between the Bay of Fundy and Gulf of St Lawrence as well as the connection between the mainland province of Nova Scotia and the rest of the continent in pre-Historic times and today. The Study Area nearly straddles 2 of the 7 Districts of Mi'kma'ki with the division being the watershed of the East River of Pictou. The Communities of Millbrook First Nation and Pictou Landing First Nation of today, are roughly equal distance from the Project center.

Much of the relevant history and archaeology of this area of the province are found on the Northumberland Lowlands Ecodistrict (530) and Cumberland Hills (540) on the north side of the Cobequid Hills (340).

While a distant northwest and northeast east of the Study Area, both the Tatamagouche and Pictou areas generate much of the Prehistoric and Historic Period history that is relevant in providing context. Context with regard to the presence of early peoples in the area and the situation that the post-contact Mi'kmaq faced throughout the Province during European colonization and settlement.

Traditional Lands

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 Study Area is within the ***Sipekni'katik*** District (Territory)

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.

The Study Area is very close to the District ***Epekwitk aqq Piktuk*** which includes lands east of Abercrombie Point and East River of Pictou, to Cape Blue on St Georges 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, Pictou to Cape Blue, St Georges Bay. The District includes the East River of Pictou watershed to and including the Tracadie River and Little Tracadie River watersheds.

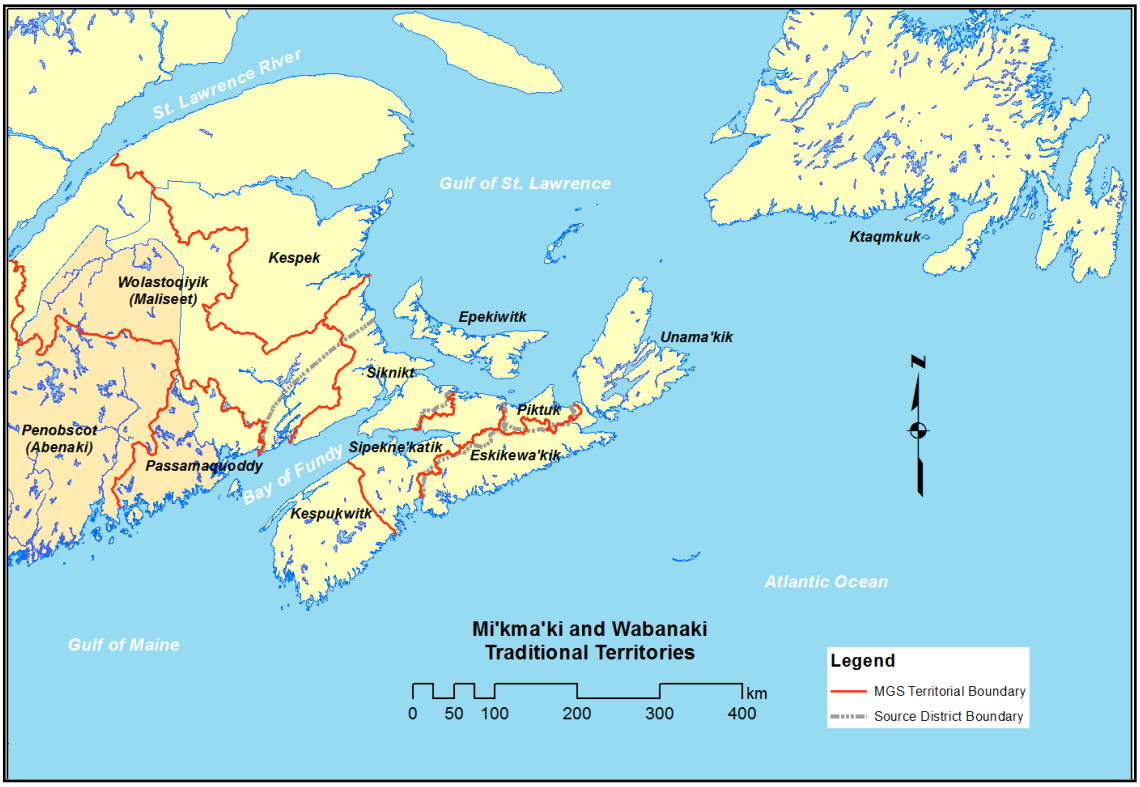


Figure 4. Mi'kmaq Political Districts with Maliseet, Passamaquoddy and partial Penobscot Traditional Territories. (1)(2)(3)(4)

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

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. The

	Siknikt District (Territory) extends west to the St. John Harbour and northeast well into present-day New Brunswick.
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.
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.
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.
Unama'kik (Land of Fog) ***Aqq Ktaqmkuk*** (Land Across	This District combines all of Cape Breton Island with the Southern Coast of Newfoundland.

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 12 thousand years ago. *(5)*

The present-day landscapes began to emerge from under ice some 12,000 years BP for Cobequid Bay which was ice free at 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 Cobequid Hills, Antigonish Highlands, South Mountain of the Annapolis Valley and Cape Breton Highlands. These ice caps and another ice block centered in Chedabuctou Bay, advanced short distances 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 Cobequid Hills 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, previously colonized plants that followed the previously receding glaciers were then covered in permanent snowfields and some large mammals became extinct. *(10)*

It is during this fluctuating climate period that the Debert-Belmont encampment sites were utilized by early peoples of the Paleo-Indian Archaeological Period of 11,000 to 10,000 BP. The entire Study Area was ice-free by 10,000 BP and left a landscape of mostly glacial ground moraine of a silty till plain with water lain deposits of deltas, outwash fans and esker systems within the north and south flow ancient drainage cuts. The elevated Cobequid Hills were erosion resistant to the ice and were left with a thin till cover to exposed bedrock. The landscape north of Amherst, is a low flat topography of Marine Deposits of gravel, sand, silt and clay covered in peat/saltmarsh. *(10)*

There are at least 5 time period references used by research and literature over the last several decades for the Atlantic Region. The most recent archaeological studies in the region also include Mi'kmaq time period references along with more common referenced time periods. *(11)*

13,000 – 9000 Years BP	*Sa'qiwe'k L'nu'k (The Ancient People)*
9,000 – 3,000 Years BP	*Mu Awsami Kejikawe'k L'nu'k (The Not So Recent People)*
3,000 – 500 years BP	*Kejikawe'k L'nu'k (The Recent People)*
500 Years BP – Present Day	*Kiskukewe'k L'nu'k (Todays People)*

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. *(12)(13)*

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)	—	—	—	—

Table #. Archaeological Periods (12)(13)

Tatamagouche Area Story

The French River was northern part of a route through the Cobequid Mountains between Cobequid Bay and Tatamagouche Bay that was important to the Mi'kmaq. The Tatamagouche Bay area supports an abundance of berries, nuts, fish, shellfish, large and small game as well as migratory birds. *(14)*

Prehistoric archaeological finds in the Tatamagouche Bay area indicate the area was also important to earlier peoples as early as 6,500 years ago. Earlier Paleo-Indian

archaeological artifacts found at Debert to the south, Lomeville, north of the mouth of River Philip also indicate peoples in the region as early as 11,000 years ago. *(14)* Steele's Island Site, Tatamagouche Bay, had a long history of occupation from the Late Archaic (6,500-4,000 years BP) to the Contact Period (500-100 years BP). Archaeological artifacts found spanned the periods with Late Archaic axes and plummets were mixed with Ceramic (Woodland) period projectile points as well as gun flint and Musket shot. *(14)* The northwest end of Steele's Island is said to be a Mi'kmaq burial site where the soil is light, loose and dry. Bones have been unearthed at the site or found near an eroded shoreline. I was reported in the mid 1900's that there was a large fieldstone near the site that has a Christian Cross carved into it. *(15)*

The Wentworth Site along the Wallace River at Wentworth Center was first excavated in 1889 and yielded Late Archaic to Middle Archaic adze blades, deep grooved gouge, fully grooved axe and fully grooved hammer. *(14)*

Indian Point, McNabs Bay, near the mouth of the Dewar River has a low mound at the end of the point. Known artifacts found include an adze blade and quartz edges. Local knowledge indicates that the mound has never been plowed or cultivated. *(14)*

A large brass pot was unearthed in the 1860's at what is known as the Treasure Pit Site at the southwestern end of Steele's Island. *(14)*

An iron trade axe and a quartz projectile point were found at the Indian Cove Site on western shore of Mattatall Lake. *(14)*

A known Oyster and Quahog midden is located at the Narrows Site located on the northwestern side of the inlet at Barrachois. An adze blade and iron trade axe were found on the site and the shell midden was mostly excavated for liming the fields. *(14)*

The Wilson Site is an isolated find of a single biface made of moss agate was found on a sand spit near Weatherbee Point, Sand Point. The Hagell Site is another isolated shore

find where a large chert biface was found near Malagash Point. A possible shell midden is thought to be located near Malagash Point and is continuously threatened by shore erosion. *(14)*

A large chipped stone tool was found in mudflats at Lazy Point, Wallace Harbour. A single glass bead was plowed up in a field on the Brule Shore. The bead was typical of type offered in 1600's trade between the French and Mi'kmaq at that time. *(14)*

There is a Historic Mi'kmaq campsite on a small knoll in Barrachois known as Indian Camp Hill Site. Another Barrachois site is the Coe Site which was found at a field edge near a stream. The Coe Site yielded Ceramic Period stone adze, large biface, small adze blade and 3 small projectile points. *(14)*

The Lepper Site is an isolated find of a small projectile point that was found on an interval on the western shore of the French River just north of the Oliver Highway Bridge. *(14)*

The Bessie Smith Site in Oliver there is a known Mi'kmaq camp site on an oxbow of the French River that was in continuous use until 1927. *(14)*

The Ross Point Site located at the now-named Williams Point, Tatamagouche Harbour has artifacts of a small adze blade, small bifaces and flakes eroded from the shore as well as a shell midden which was disturbed by road construction. The artifacts found date the site at the Middle/Late Ceramic Period. *(14)*

Another small shell midden was destroyed by road construction of an approach to Campbell's Bridge on the French River. *(14)*

A small shell midden at Hingeley Point was recorded in 1986 but was reported lost to erosion in a 1991 follow up field survey. *(14)*

Historic Mi'kmaq camps were known to be located on the southeastern shore of Fox Island and opposite southeastern shore of Shipyard Island. *(14)*

The McNutt Farm Site on Sand Point has since eroded into Tatamagouche Bay but artifacts recovered included stone chip drill tip, stone plummet, groundstone awl and a small scraper. The drill bit artifact is a rare find of the Susquehanna Tradition and dated from 4000-3400 Years Ago of the Late Archaic Period. *(14)*

2 fully grooved axes and 3 adze blades were unearthed during numerous plowing seasons at the Myres Brook Site in West New Annan. *(14)*

Tatamagouche Bay was an important rendezvous to the travelling Mi'kmaq as it was at the intersection of regional travel routes from Bay Verte, Louisbourg and Cobequid. *(15)* From Baie Verte one could travel the width of the Chignecto Isthmus to Chignecto Bay and continue inland along the Petitcoudiac River to Jemseg (Fredericton) and north along the St. John River to Rivie're-du-Loup and along the St. Lawrence River to Quebec. *(15)*
Known Mi'kmaq Place Names *(17)*

Tatamagouche,	Taknmegoochk	"barred across the entrance with sand"
Brule	Seegoaak	"empty place". Due to the fires lit by Quebec tribes
River John	Kajeboogwek	"flowing through desert or solitary place".
Pictou	Piktook	"explosion of gas"
Pictou Island	Akoogomish	no translations given.
	Gunsunkook	no translations given.
Caribou	Komoogun-uk	"where birds are decoyed".
Greenhill	Espokumegek	"high land"

Tatamagouche Bay's importance to Mi'kmaq included strategic importance as the area was both staging site and retirement rendezvous during Mi'kmaq attacks on early Chebucto Harbour (Halifax). The Mi'kmaq were supplied at Baie Verte and travelled to

Tatamagouche where they could paddle 20 miles inland and portage to Cobequid where they were further supplied before continuing along the Shubenacadie River to Chebucto. The journey from Baie Verte to Cobequid could take 2-3 days. Prisoners of the Mi'kmaq attacks on Chebucto were taken to Tatamagouche before continuing on to either to Louisbourg in the east or west to Quebec for a long wait for a ransom to be paid for their freedom. *(18)*

Since the founding of Halifax, the French have incited the Mi'kmaq to maintain a campaign of hostilities against the new English town and French could be seen with the Mi'kmaq scouting the town prior to Mi'kmaq attacks. The similar continuous attacks on the English network of Block Houses throughout the province confined the English to garrison towns and unable explore or clear land for settlements and cultivation. *(19)*

Tatamagouche became the communications point for Acadian communities of Annapolis, Cobequid, New Brunswick, Isle St Jean and Isle Royale. *(18)* Later, those communication links centered on Tatamagouche Bay, Tatamagouche became a strategic intersection of Acadian supply routes to Louisbourg during hostilities between French and English. The building of a fortress at Louisbourg gave Acadians a cash market for contraband cattle and produce destined for Louisbourg. It was too risky to sail cargo out of the Bay of Fundy and being intercepted by the English so an overland route to Tatamagouche via Cobequid was the better option and from there by options of land and water for further distribution. *(15)*

Acadian cattle and produce from the Bay of Fundy landed or arrived in Cobequid at Isgonish which was the largest Acadian village in the Cobequid area. From Isgonish a portage up the Isgonish River and over the Cobequid Mountains until the shores of source waters of the French River or the Waughs River to the east. The route continued down either river valley to the tidal waters of Tatamagouche Bay. Anchored in Tatamagouche were sloops, shallops and schooners waiting to take on cargo and sail to Louisbourg with little chance of encountering English ships. Tatamagouche had a further advantage of being far removed from any English Settlements *(15)*

The route between Cobequid and Tatamagouche was later known as the Old French Trail and does not approximate any current favoured traffic routes through the Cobequid Mountains today but a secondary route known as the Old Tatamagouche Road *does* approximate the current gravel road between McCallum Settlement and East New Annan and through New Truro Road to Tatamagouche. *(15)*

The more eastward passage via the Waughs River branches would bring cargo and people through the Cobequid Mountains eastward to West Earltown. There was no mention of the branches of the River John being of importance in the trade of Acadian goods but may have been considered by travelers as an option to a livestock choked Old French Trail or Old Tatamagouche Road if the travellers are traveling light. The Waughs River route eventually became the favoured traffic route as the old route approximates today's Highway No.311 from Tatamagouche to Bible Hill. *(15)*

Mi'kmaq and English Relations

News of the fall of Quebec on September 18, 1759 reached the town of Halifax. After 10 years of inciting the Mi'kmaq to hostilities against the English in the province, The French Priest LeLoutre was disowned by the Quebec Bishop and later captured by the English aboard a ship leaving for France. Father Maillard, who had spent 25 years with the Mi'kmaq convinced the Chiefs to go to Halifax and bury the hatchet with the English which finally allowed the English to leave their fortified towns and explore the rest of the province and bring more settlers into the province. There was still some residual apprehension on the English side as to if the Mi'kmaq would hold the peace. *(19)*

Although the Mi'kmaq were beginning to suffer as early as 1758 from years of warfare and diseases, the English remained fearful of the Mi'kmaq, particularly with growing tensions in the New England Colonies. Both the English and the Mi'kmaq were eager to negotiate a peace treaty and the Mi'kmaq were still able to negotiate from a position of strength. The treaties of 1760 did not resolve territorial limits but assured Mi'kmaq

access to the natural resources the land had always provided them. However, the land provided less over time as they were displaced from traditional territories and the amount of game available declined. *(19)*

With the 1760 series of treaty signings with various chiefs of the Mi'kmaq who had gathered on the coast for the purpose of negotiating peace and trade. The English decided to build Truckhouses at each of the existing forts for the exclusive trade with the Mi'kmaq and the first Truckhouse was built at Fort Clearance in Dartmouth. The Shubenacadie Lakes and River System were opened up as a transportation route from Halifax to the Bay of Fundy. *(19)*

There were an estimated total 1500 Mi'kmaq men, women and children within mainland Nova Scotia and Cape Breton Island in 1762. With an increase in tensions in Boston and the Mi'kmaq threat of hostilities diminishing within the province, a decision was made to recall the troops from Fort Cumberland, Annapolis Royal, Fort Frederick, Fort Amherst, St. John and Louisbourg to concentrate them in Halifax. *(19)*

Michael Franklin was appointed Superintendent of Indian Affairs and periodically reported and reassured Council in 1777 of the Mi'kmaq tranquility and maintaining the peace while they were being constantly courted by New England Rebels to take up arms against the English. To further ensure the Mi'kmaq remain neutral in the American Revolution, in 1780 the English required that all tribes retreat from the Americas. *(19)*

Franklin was worried about withdrawing troops to Halifax as Tatamagouche had long been a Mi'kmaq rendezvous location and the Mi'kmaq camped at Tatamagouche in 1765 and again in 1766. The Mi'kmaq returned in 1767 and they openly boasted that this was their land and no person would be given permission to settle. To protect the road from Cobequid, Franklin requested fortifications at Tatamagouche and was given a block house at Block House Point. *(15)*

As settlers encroached on Mi'kmaq traditional lands, Nova Scotia treaties had guaranteed Mi'kmaq access to the province's natural resources and in 1762 issued a proclamation

that there was to be no trespassing on lands claimed by the Indians until the Crown made a decision on the claims. The proclamation was more of a formality with little enforcement. The government did begin to issue licenses to the Mi'kmaq in 1783 for lands they promised to settle. *(20)*

In the late 1700's the system of Truckhouses went through a series of revisions in financial structure and there were closures as trade with the Mi'kmaq had declined due to mild winters that disrupted traditional hunting and trapping as well as quality of furs. The Mi'kmaq were encouraged to diversify by manufacturing baskets and tool handles but this was not enough to prevent Mi'kmaq petitioning for relief supplies. *(20)*

The Office of Superintendent of Indian Affairs was established to manage the peace with the Mi'kmaq and later became a conduit of provisions. As the Mi'kmaq suffered hardships from European diseases and depletion of fur and food stocks, the British treaty obligations of providing provisions was later considered charity from the Government's perspective. As the Mi'kmaq threat diminished over time so did the British commitment to treaty obligations as provisions were sporadic or had to be petitioned for by the Mi'kmaq. *(21)*

During these times of emigrant 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 1817, the Government began settling numerous Mi'kmaq families in locations such as Shubenacadie, Gold River and Bear River. In 1820 the reserve system was started and each county was instructed to set aside lands near sites frequented by Mi'kmaq. Indian lands not exceeding 1000 acres were being set aside in each county of Nova Scotia totaling 22,050 acres for exclusive use by the Mi'kmaq. The Lands were not always of good quality and not necessarily traditional Mi'kmaq hunting and fishing territories. The

Mi'kmaq continued to occupy, hunt and fish lands outside these new reserves. *(21)* If a reserve parcel was good quality land, it was subject to encroachment by settlers. *(22)*

Current Mi'kmaq communities and lands along the Northumberland Shore area include Fishers Grant IR24, Fishers Grant IR24G and Boat Harbour West IR37 near Pictou Harbour. Other Mi'kmaq lands are Merigomish Harbour IR31 located on the coast midway between the New Glasgow and Antigonish areas and another parcel is Franklin Manor IR22 located inland between Parrsboro and Amherst areas.

Over the years fewer Mi'kmaq came to the "Old Burying Grounds" at Tatamagouche until it was rare to see any Mi'kmaq in the area.*(18)*Mi'k maq presence in the Tatamagouche Bay area diminished over time and particularly with the establishment of reserves at Pictou and Merigomish

Pictou Area Story

As the last remnant glaciers receded, and the climate warmed again, the landscape the ice left behind was what the earliest peoples inherited, which had changed dramatically during the time since.

The landscape was gradually colonized by tundra vegetation of willow shrubs and herbaceous plants between 10 and 7.5 thousand years ago and were replaced by boreal vegetation such as fir, spruce and birch until 6 thousand years ago when pine and oak was prominent. *(23)* Temperatures were 2 degrees Celsius warmer than today for a period until about 4 thousand years ago when forests of hemlock mixed with beech, and maple was the dominant vegetation. Gradual cooling to present day temperatures and increased moisture favoured spruce forests. *(24)*
Between 10,000 and 8,000 years B.P., there was no Northumberland Strait as it exists today but rather a land connection with Prince Edward Island during the peak of mantle rebound at approximately 9000-year BP. The combination of lower global sea levels than

today, and the rebound of the mantle beneath the Gulf of St. Lawrence once free of the weight of ice sheets, Prince Edward Island was connected to Mainland Nova Scotia and New Brunswick. *(25)(26)* The Magdalen Islands was a large roundish island of over 100km wide east to west and separated from the mainland mass including the ancient shore of P.E.I. by an approximately 32km wide channel. The ancient shore of the Magdalen Island was approximately 50 km north of present-day East Pont of P. E. I. *(25)(26)(27)*

Based on present-day nautical charts and multi-beam surveys of the Northumberland Strait bottom in the area of the Confederation Bridge, the ancient land connection high point and east-west drainage divide was approximately 36 km northwest of the present-day Confederation Bridge, midway between Shemogue Head, N. B. and Cape Egmont, P. E. I. From this point, surface water drained southeast feeding tributaries of a larger river that eventually flowed eastward, close to the present-day P.E.I. shore between Guernsey Cove P. E. I. and Pictou Island N. S. before emptying into a former bay at approximately between East Point, P. E. I. and Sight Point, Cape Breton Island. *(25)(26)(27)(28)*

On the other side of the 9000-year B.P. drainage divide between Cape Egmont P. E. I. and Shemogue Head, N. B., surface drainage was northwest until rounding West Point P. E. I. where the direction was north-northeast until emptying into a former bay between Point Escuminac, N. B. and Cape Gage. P. E. I. *(25)(26)(27)*

Sea level rise occurred very rapidly between approximately 8,000 and 5,000 years B.P with the Northumberland Strait inundated and creating the island of P. E. I. at approximately 6,000 years B. P. The New Brunswick and Nova Scotia shoreline approximated the shoreline of present-day at that time with the sea level rise slowing from a rate of 1 m/century prior to 2,500 years B.P.to to a steady rate 20 cm/century afterwards with a 30cm rise in the past century. *(28)(29)*

Approximately 2,500 to 1,000 years ago B.P., rising sea levels filled a once elevated former pond/lake, thus transforming it into the present-day tidal estuary of Boat Harbour. *(28)(29)*

Many maps of the 1700's show Pictou Island but usually nothing of Pictou Harbour or Merigomish Harbour. Some maps of that period do show "Village Sauvage" at general locations east and west of Pictou Island. The west locations are near and east of Tatamagouche and the east locations vary in distance between Merigomish and Antigonish which may be the Barneys River location.

Monsieur Denys described the Pictou area in a 1672 publication as a large opening with cliffs adjacent low headland and meadows with numerous ponds surrounded by an abundance of game. The land supported large oak, maples, pines and firs. The size of oysters and clams in the harbour were described as the size of a shoe and in large quantity. The size and quantity of the oysters and clams had diminished at the time of the source since the first European recorded descriptions of the area. *(30)*

Mi'kmaq Place Names

Known Mi'kmaq place-names of the area include :

Abercrombie	*Pgoagoigang*	No meaning given *(33)*
Barneys River	*Sigiangatagang*	No meaning given *(33)*
Brown's Point	*Ne'iknejk*	"at the opening, where it begins" *(34)*
Begg Brook	*Sogomogoagang*	"chewing gum" *(33)*
Big Gut	*Poooigetjg*	No meaning given *(33)*
Big Island	*Sonatitjg*	No meaning given *(33)*
Boat Harbour	*Wisaoq*	"at the yellow/gold coloured rocks"*(34)*
	Esasok	"western encampment" *(33)*
Chance Harbour	Menpekwijk	"at the erosion place" *(34)*

East River Encampment	*Oqwa'skuk*	"where the canoes arrive" *(34)*
East River	*Amasipukwejk or*	
	Apji'jkmujue'katik	"Long River or Place of Ducks" *(34)*
Fisher's Grant	*Pqutamo'taqniktuk*	"at the ferry crossing place" *(34)*
Indian Cross Point	*Sukle'katik*	"at the rotting place" *(34)*
Indian Island	*Maliko'mijk*	"diversified by coves" *(34)*
Island in Little Harbour	*Ja'jikn wi'k*	'at George's" *(34)*
Little Harbour	*Menpekwik*	*"erosion" (34)*
Loch Broom Point	*Oisigoeoeg*	No meaning given *(33)*
Logan's Point	*Tanielek*	"at Daniels place" *(34)*
Middle River	*Mekwaie'katik*	"at the middle place" *(34)*
Pictou	*Piktuk or Piwktuk*	"at the explosions" *(34)*
Pictou Harbour	*Puknipkejk*	"at the narrow harbour" *(34)*
Pictou Landing	*Puksaqte'kne'katik*	"place of the wood chups" *(34)*
Trenton	*Apji'jkmujue'katik*	"place of ducks" *(34)*

One source refers to shell heaps found near "old Indian encampments" found within Merigomish Harbour on Big Island and the smaller islands and suggests these encampments were no longer in use at that time. The eastern side of the mouth of Barneys River was the principle location of the Mi'kmaq upon the English Settlers arrival. There, the Mi'kmaq had clearings where they grew corn and beans. The Mi'kmaq burial ground for the Merigomish area is located on the western end of Big Island near Savage Point *(Named after a Captain Savage who drowned at this location).* This location was in use until about the 1830's until burials were conducted on Indian Island which was donated to the Mi'kmaq of the area by Governor Wentworth. Merigomish Harbour was thought to be the headquarters of the Mi'kmaq Political District of Pectougawak (*Epekwitk aqq Piktuk*). *(30)*

A source reports conflicts with invaders that happened at Caribou Harbour and at Little Harbour- Barneys River. The Caribou Harbour conflict is more of a deception than hand to hand combat and involved the Mohawk. The Mi'kmaq waited in a hidden location and

at the appropriate time to reveal themselves and tempt the Mohawk to wade across the water only to be swept out with the strong tide and drown. Historic Mapping shows variations in the connections with the mainland between Munroes Island and Little Entrance which was open at sometime and could be the location of the conflict. Another possible location of the Mohawks drowning is the intermittent western connection between Caribou Island and mainland at Gully Head which was shown as open and "Ford at low water" on some older maps. Today, the Caribou Island connection is maintained by a permanent public road.

there was an encampment located on the eastern shore of the East River of Pictou, opposite the present-day Loading Ground-Dunbar Point. This location was interpreted by the source from a 1744 map by cartographer Bellin and published by Charlevoix in 1748. The map does depict Pictou Harbour in some detail with "Village Sauvage" calligraphy positioned to the east of the East River of Pictou. *(35)* However, the source backs up their interpretation with accounts by English settlers of the rounded flat point of land being cleared upon their arrival and subsequent ploughing turned up European as well as some early Mi'kmaq artifacts and oyster shells. Similar artifacts and oyster shells were also found in the 1800's during ploughing of William Dunbar's fields at present day Dunbar Point on the western shore of the East River of Pictou. Ploughing of fields at Frasers Point and Middle River Point also turned up an abundance of oyster shells along with stone tools indicating frequent use by early peoples. *(30)*

There is a known Mi'kmaq burial ground on Indian Cross Point located on a point of land on the eastern shore of the East River of Pictou. The 1877 source reports that a 10-foot-high iron cross stood at that location until recently at that time. Indian Cross Point was known to the Mi'kmaq as *soogunagade* translated as *The Rotting Place.* Indian Cross point was in use as burial ground by Mi'kmaq until a few years before the 1877 source which reported the burials were marked by rows of flat stones which were already partially grown over by grass at that time. Erosion of the river bank which deposited human bones along the shore was also reported by the source. *(30)*

Mi'kmaq of the area of Pictou had clearings for growing beans, indian corn and some wheat scattered throughout when the English settlers first arrived. These clearings were not reserved for the Mi'kmaq when granting lands to the settlers. Some settlers bought out the farming rights to some of the Mi'kmaq clearings while others shared a portion of the harvest in exchange for the use of the clearings. Some settlers who intruded on Mi'kmaq kept lands were eventually burned out by the Mi'kmaq. The English settlers persisted and eventually claimed the Mi'kmaq cultivated clearings. *(30)*

In 1783, Chief Paul Chackegonouet of the Pictou Indians was granted licence to occupy the lands they settled on the south-east- branch of the harbour. The location was unable to be found by this study but was listed as River Merigomish or Port Luttrell. They were granted liberty to hunt and fish the woods, rivers and lakes of that area. However, the land was not reserved for the Mi'kmaq and eventually they were displaced by English settlers. *(30)*

Another clearing used as an encampment during the time of the arrival of the English is described as Middle River Point. Here, there were 5 to 6 acres cleared where the Mi'kmaq grew potatoes and beans fertilized with fish offal and encampment refuse. The location was described as being in front of the farm of William McKay who eventually took over the garden plots. *(30)*

Loch Broom seems a likely Middle River Point candidate as it has a small island to the east of the point named Fraser's Island on one map. *(36)* The source mentions an island off of Middle River Point. *(30)* A review of historic maps shows only a few islands within Pictou Harbour and the three major rivers. A Review of *Illustrated Historical Atlas of Pictou County* mapping found the farm property of William McKay mentioned in the source, located on Loch Broom which must have been previously named Middle River Point. *(30)(37)*

William McKay is also the author of The Great Map Pictou County 1834 that shows Abercrombie Point as known today as Fraser's Point. The *Illustrated Historical Atlas of*

Pictou County also shows the location of the farm of Hugh Fraser on Frasers Point where the shell midden was ploughed up in the farm's early history along with stone implements. Hugh Fraser's farm also produced the remains of a sword beside parts of a human skull. The sword was later broken down into fishing knives. *(30)*

Frasers Point was mentioned again, along with Middle River Point, as locations of annual Mi'kmaq gatherings in September for feasts and games. Approximately 100-150 canoes would pull up on the shores for the multiple day event with the last night spent singing and praying. This annual event continued until about 1838 when a ship with smallpox was quarantined near these locations. Since then, the Mi'kmaq moved the location of their annual gatherings to Indian Island, Merigomish Harbour, held in the month of July. *(30)*

Abercrombie Point has a registered Ceramic Period archaeological site, BjCq-01 north of The Northern Pulp Plant site. There is also an Archaic Period site location, BjCq-04 on the opposite shore of the East River of Pictou near Pictou Landing. *(30)*

A burial site was found near Lowdens Beach, Braeshore, roughly 90m inland from the shoreline. The copper pot burial was determined to be dated in the late 1500's and was in good condition as were the grave gifts found within the burial. A second copper pot burial site was discovered later at the same location. Most of the Grave gifts recovered were European trade goods such as metal tools, metal knives, metal points and Glass beads are some examples as well as sword and dagger. *(39)*

The 1877 source states there was land reserved by the Government for the Mi'kmaq at Indian Cross Point, their burial grounds. They eventually sold the Indian Cross Point parcel, excluding the portion containing the burial grounds. The lands where the Mi'kmaq resided at that time was a parcel purchased for them by the County at a location described as "inside the beaches". A review of historic maps did not locate a place name of "The Beaches" but the source description accurately describes the location inside Moodie Cove. *(30)*

Beginning in 1820, Mi'kmaq were petitioning the government for lands for their exclusive use. Fifty acres at Fisher's Grant were acquired in 1864 for the Mi'kmaq of the Pictou area. In the same year two small islands at Merigomish were also acquired to be shared among the area Mi'kmaq. The area Mi'kmaq claimed 2 islands within Merigomish Harbour including Indian Island, which they claim that both islands were given to the Mi'kmaq by Governor Wentworth. There were attempts by English Settlers to "dispossess" these 2 islands from the Mi'kmaq. The Fisher Grant Reserve was eventually expanded over the years for additional food and fuel supply by acquiring near and adjacent parcels. *(40)*The *Illustrated Historical Atlas of Pictou County* shows the 50-acre parcel inside Moodie Cove as "Indian Land" along with an additional 89 acres south and adjacent the original 50-acre parcel with the additional parcel giving access to Boat Harbour. *(37)*

The French

Prior to English settlement of Pictou there were the French. The English settlers found the remains of French homesteads in the form of abandoned open cellars, clearings, wells and at least one sawmill. Tatamagouche was the main French settlement of the region with an overland route to Cobequid (Truro) and sea routes to connections to Ile St. Jean (P.E.I.), Cape Breton and Minas Basin. Not much was recorded of French settlement within the Pictou area, nor of their departure. However, they left behind evidence of their presence and hasty departure. Their clearings were reverting to forest. The largest settlement was on Big Island at Merigomish Harbour at the head of the French Channel within the harbour with several building remains of open cellars along with some orchards and gardens gone wild. West of this settlement on Big Island were the remains another similar French settlement, some tools, knives, spoons, crockery and some coins were later found at these locations by the English settlers. *(30)*

The English Settlers

In 1767, the brig *Betsy* left Philadelphia destined for an area west of the West River and bounded on the east at present-day Haliburton. Granted in 1765 to a company in Philadelphia, the charter dropped off at least six men and one family to settle the Philadelphia Grant. *(41)*

The *Hector* arrived from Loch Broom, Scotland in 1773 with 179 passengers and an additional 10 passengers from Greenock. The *Hector* passengers settled the McNutt Grant and founded the town. The McNutt Grant was escheated in 1770 and re-granted in 1778 to 44 individuals mostly *Hector* passengers. Five thousand acres of the McNutt Grant was granted to Lieutenant Richard Williams of the 80th Regiment in 1775. Williams traded the grant with Walter Patterson and then acquired by John Patterson who divided the grant into lots as well as a town laid out in 1788 with the first house built in 1790. *(41)*

Although peace had been made between the Mi'kmaq and British with the burying of the hatchet and gun in Halifax in 1761, the Pictou Settlers were uneasy with the local Mi'kmaq presence. Although the local Mi'kmaq had no intention of breaking the peace, they were amused with the uneasiness the settlers felt around them and did little to discourage it. *(30)*

As late as 1804-1808, it was noted by the then Superintendent of Indian Affairs for the Province that the Mi'kmaq were travelling to Quebec to gather with other tribes/nations to discuss the possibility of an invasion by the French to drive the British from former French Territories. The local Mi'kmaq were taking a "wait and see" attitude during all this speculation and eventually invited the Pictou Settlers to a successful and well attended feast hosted by the Mi'kmaq to improve relationships between the two communities and cultures. *(30)*

Pictou Landing owes the place name to the ferry crossing Pictou Harbour to the Town of Pictou. Originally a 1765 grant to John Fisher, the Fisher Grant was laid out in 1785 as the town of Walmsley by the disbanded 82nd Regiment but the town did not materialize.

(41) The *Illustrated Historical Atlas of Pictou County* shows 4 loading piers along the shore of Pictou Landing with 3 of the piers serviced by the railroad.

There are at least 15 water lots shown on the historic map with 4 having piers in 1879. *(37)* There are only remnants of the piers today and only 3 water lots being mapped with the most southerly former railroad pier location serving as a present-day marina.

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 Mik'maq on large reserves such as Indian Brook I. R. 14 located at Shubenacadie, East Hants Co. *(42)*

Today, the nearest Mi'kmaq communities to the Study Area today are Millbrook First Nation located south of Truro and the Study Area and Pictou Landing First Nation located roughly equal distance to the northeast of the Study Area.

The Millbrook First Nation has a long history within the vicinity of the Salmon River and Truro area. As early as the late 1700's, the Mi'kmaq resided on the banks of the Salmon River near Bible Hill, where the present-day Dalhousie Agricultural Campus is located. *(43)*

When the land was sold to the original college in 1855, Millbrook's ancestors were relocated to a property on King Street near the train tracks and where St. Mary's Elementary School is located and known to the new residents as Christmas Crossing. *(43)*

The land of Millbrook First Nation today was discovered by Peter Wilmot as full of game and ash trees. The residents of Christmas Crossing wanted to exchange their King Street location for the land Peter Wilmot found. Sometime around 1875 the Christmas Crossing residents relocated to 35 acres of land approximately 8km south of Truro. Additional 120 acres was purchased in the early 1900's and totals 747 acres (302.3 hectares) today. In addition to better access to natural resources then, all future land transportation corridors

between Halifax and the rest of North America would have to pass through or adjacent Millbrook No. 27. *(43)*

N. S. Ecological land Classification

Although south of the Study Area, the Minas Lowlands (620) are lowland shores surrounding Cobequid Bay and extend approximately 8km north inland to Onslow Mountain. The Minas Lowlands (620) extend further north to approximately the 75m contour along river and brook cuts in the upper elevated Cobequid Slopes (350), which are southwest of the Project Study Area, reaching approximately 150m elevation at East Mountain.

There are archaeological finds/sites southwest of the Study Area at Onslow. One site is associated with a north shore brook far upstream from where it meets the Salmon River. Another Archaeology site is a short distance south of the Salmon River on raised ground within a large floodplain currently in agricultural use. Locally known as Savage Island, local history has the island-like landscape feature associated with the Catholic Church, Mi'kmaq and the Acadians. Once considered Consecrated Ground complete with burials and a Pulpit Stone with Latin inscriptions, the Colchester Wastewater Facility now occupies the top westward third of the raised landscape feature with the remaining top in agricultural use. Only the steep north facing slope appears to be undisturbed and is covered in forest. *(44)*

Local Mi'kmaq Placenames *(45)*

Belmont	Nisaqaniskik	flowing downward
Chiganois River	Nisaqaniskik	flowing downward
Onslow	Nisaqaniskik	flowing downward
Cobequid Basin	We'kopekitk	end of the flow

Debert River	Wasoqsikek	glistening signal in the distance
Millbrook	Niktuipukwek	flowing fork wise
Salmon River	Plamui-sipu	salmon river
Truro Area	We'kwampekitk	the bay runs far up

It is within the transition from the Minas Lowlands (620) to the Cobequid Slopes (350) where the region's oldest archaeological sites of Debert and Belmont are located.

Outside and south of the Study Area, is the archaeological rich area of the Debert Paleo-Indian Site, 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. *(46)(47)*

The existing known sites are scattered within a large area 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. *(46)(47)*

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 and the Magdellan Islands were one landmass with the Northumberland Lowlands (530). Debert-Belmont area would be an Ideal location to find migrating herds of the wildlife of the time. *(46)(47)*

North of the Minas Lowlands and climbing in elevation are the Cobequid Slopes (350) that represent an approximate 5km narrow, east-west band of sloped topography between

75m and 125m elevation. North River and Totem Brook form the south limits of the Cobequid Slopes (350) and MaCallum Settlement and Londonderry form the approximate north limits. *(48)*

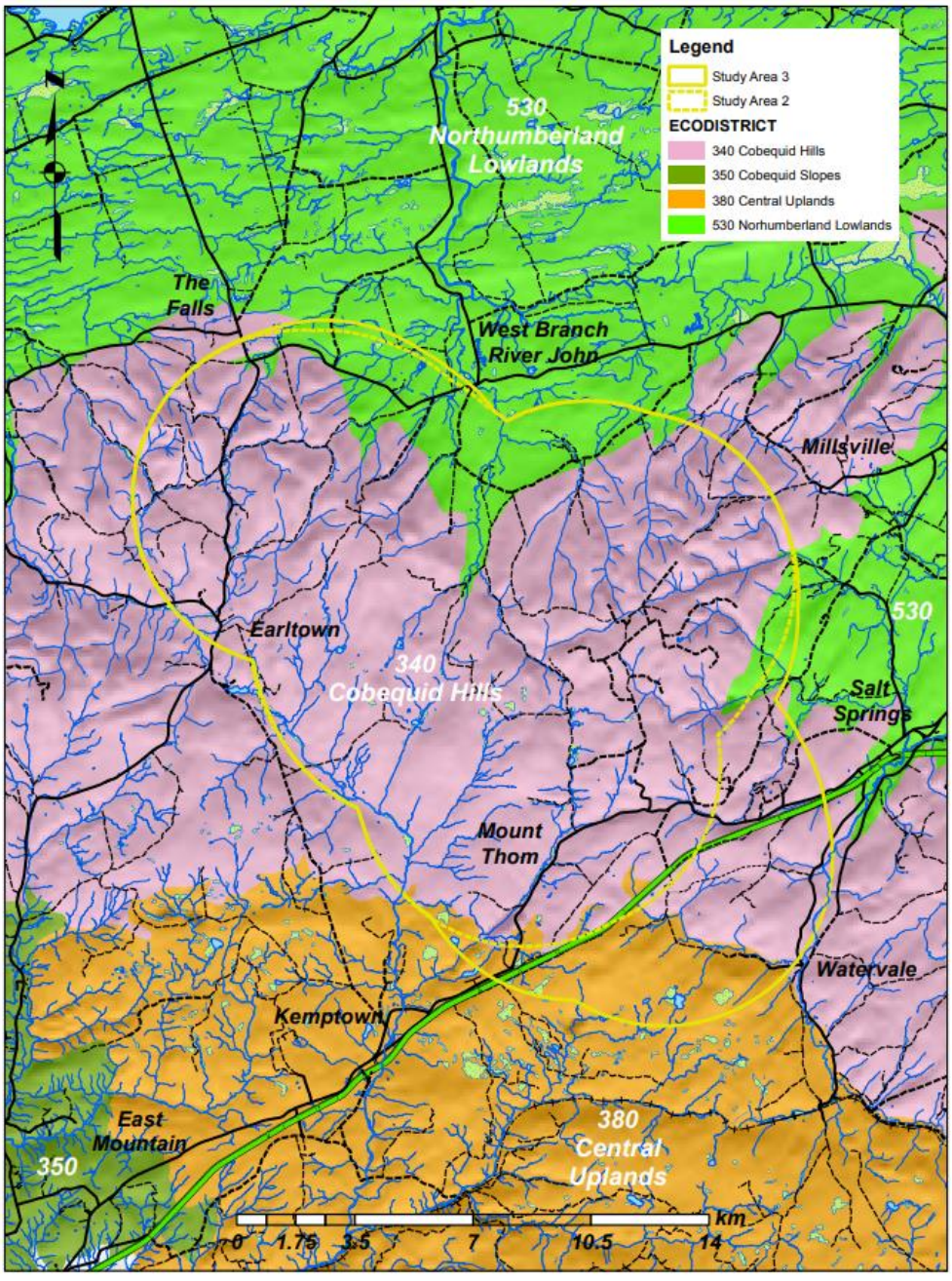


Figure 5. Nova Scotia Ecological Districts (13) (48)

Cobequid Hills (340)

The south portion of the Study Area has elevations in the 175m to 200m range with the high point at Mount Thom at approximately 250m elevation. The northeast portion of the Study Area has a cluster of highpoints of approximately 300m elevation separated by deep cut ravines such as Six Mile Brook and Eight Mile Brook that drain southeast into the West River of Pictou. *(48)*

Elevations of the Cobequid Hills (340) centered within the Study Area in the 275m to 300m range, drop north to approximately 50m at the community of West Branch River John within the Northumberland Lowlands (530). The West Branch River John drains the north portion of the Study Area and cuts a ravine draining south to north to Amet Sound. *(48)*

The northwest portion of the Study Area is a cluster of high points of the Cobequid Hills (340) in the 225m to 250m range with the highest being Spidell Hill at 300m elevation the promontories are separated by ravines of Waughs River, Balmoral Brook, Chambers Brook and MacKays Brook draining north. *(48)*

The western extents of the Study Area at Earltown is centered within the Cobequid Hills (340) and has the highest elevations in the 275m to 350 Range. The area is drained by the Salmon River branches of MaKays Mill Brook, White Brook, Gully Lake Brook, Juniper Brook, Ross Brook and Salmon River draining south to Cobequid Bay. *(48)*

Forest cover consists of Acadian hardwood Sugar Maple, Yellow Birch, Beech from crests to lower slopes and White Ash and Ironwood on more humus rich soils. Softwood stands are found on level terrain, mixed forest within the ravines. The upper elevation forests are subject to ice and wind damage. There are few wetlands within the Cobequid Hills (340) due to rapid surface drainage with lager wetland supporting habitat for Mainland Moose. *(48)*

Black Ash is a natural resource prized by the Mi'kmaq to craft into products for own use and sale. The source referenced *i*-Naturalist for nearby geo-locations of Black-Ash which was confirmed by this study review and shows an abundance of identified locations along the north slope of the Cobequid Hills (340) and Cumberland Hills (540). The south facing Cobequid Slopes (350) had no observed Black Ash locations with only a single location found at Debert. *(49)(50)(51)*

Anecdotal history places a seasonal Mi'kmaq resident and occasional Mi'kmaq gathering encampment along Whetstone Brook below Station Road, Wentworth Valley. The brook was used to soak split Ash tree for crafting into tool handles and splints for shaving thin Ash strips *(49)*

Black Ash is a natural resource prized by the Mi'kmaq to craft into products for own use and sale. The source referenced *i*-Naturalist for nearby geo-locations of Black-Ash and shows an abundance of identified locations along the north slope of the Cobequid Hills (340) and Cumberland Hills (540) as well as the Northumberland Lowlands. The south facing Cobequid Slopes (350) had very few observed Black Ash locations with single locations found at Masstown/Debert, east of East Branch Moose River and north of Campbells Siding. *(49)(50)*

Black Ash is typically found in poorly drained areas that are often seasonally flooded. Most commonly found peat and wet soils but can also on fine sands over sands and loams. Although habitats include semi-stagnant conditions, swampy woodland stream and river banks with moving water are the preferred habitat. It is often associated with other moisture needing species such as Red Maple, Speckled Alder, Balsam Poplar, and Black Spruce. Black Ash is shade intolerant, and seedlings, saplings and sprouts tend to regenerates only in partially opened forest canopies. *(51)*

Black Ash (Fraxinus nigra), or Wisqoq in Mi'kmaq, was identified as a Threatened Species under the Nova Scotia Species Act in 2013. The province of Nova Scotia is thought to the northern range extent of habitat for Black Ash. A slow reproductive cycle,

Limited genetic stock, over-harvesting by cottage industries and draining of wetlands for agriculture has left remaining habitat and trees of this species in poor health. Future threats include the invasive insect, the Emerald Ash Borer. It is estimated there are approximately 1000 trees within the Province of Nova Scotia today with an estimated only 40 some seed-bearing trees at the time of the source publication. *(51)*

There is a single Black Ash observation by others within the Study Area approximately 2km northwest of Three Lakes, north of Campbells Siding. Most other Black Ash observations within the vicinity but, are outside the Study Area, are west of Earltown, in the Nutby and Central New Annan areas. *(50)*

The East Wentworth mountains above the Annandale Waterfall on East Branch Swan Brook is where Mi'kmaq would take refuge from "Settler Authorities" but no further detail was given. *(49)*

The same source also recounts what local history believes, to be a Mi'kmaq burial ground on the west side of the Wallace River in the area of Wentworth, just north outside the Study Area. Described as an intervale, the small field had several low mounds in a row formation that included two small mounds. Believed to be Mi'kmaq burials, haying was only done by hand and the landowner never ploughed nor operated machinery over the site. The general area described appears to be covered in forest today but LiDAR - Hillshade imagery does show a row of three prominent mounds. *(49)*

Similar mounds were observed by the source adjacent Higgins Brook on the Wentworth Valley floor. However, being close proximity to the highway, the mounds may be a result of previous original highway construction activities. *(49)*

Central Uplands (380)

The Central Uplands (380) Ecodistrict is central hub of biodiversity within a gently rolling upland between the Cobequid Hills (340) to the west and the Pictou-Antigonish Highlands (330) to the east. The ecodistrict is central to the northern mainland Province

and covers an area from the communities of Sunny Brae, Pictou County on the East River of Pictou to east of Truro and Brookfield and following north of the Stewiacke River Valley. *(48)*

Rising to 270m elevation, 225m within the Study Area, the Central Uplands (380) has few lakes, however the central location includes the top of watersheds of numerous rivers including the Stewiacke and Calvary Rivers which flow into the Bay of Fundy; the East, Central and West Rivers of Pictou flowing into the Northumberland Strait; and the Musquodoboit River flowing to the Atlantic Ocean. *(48)*

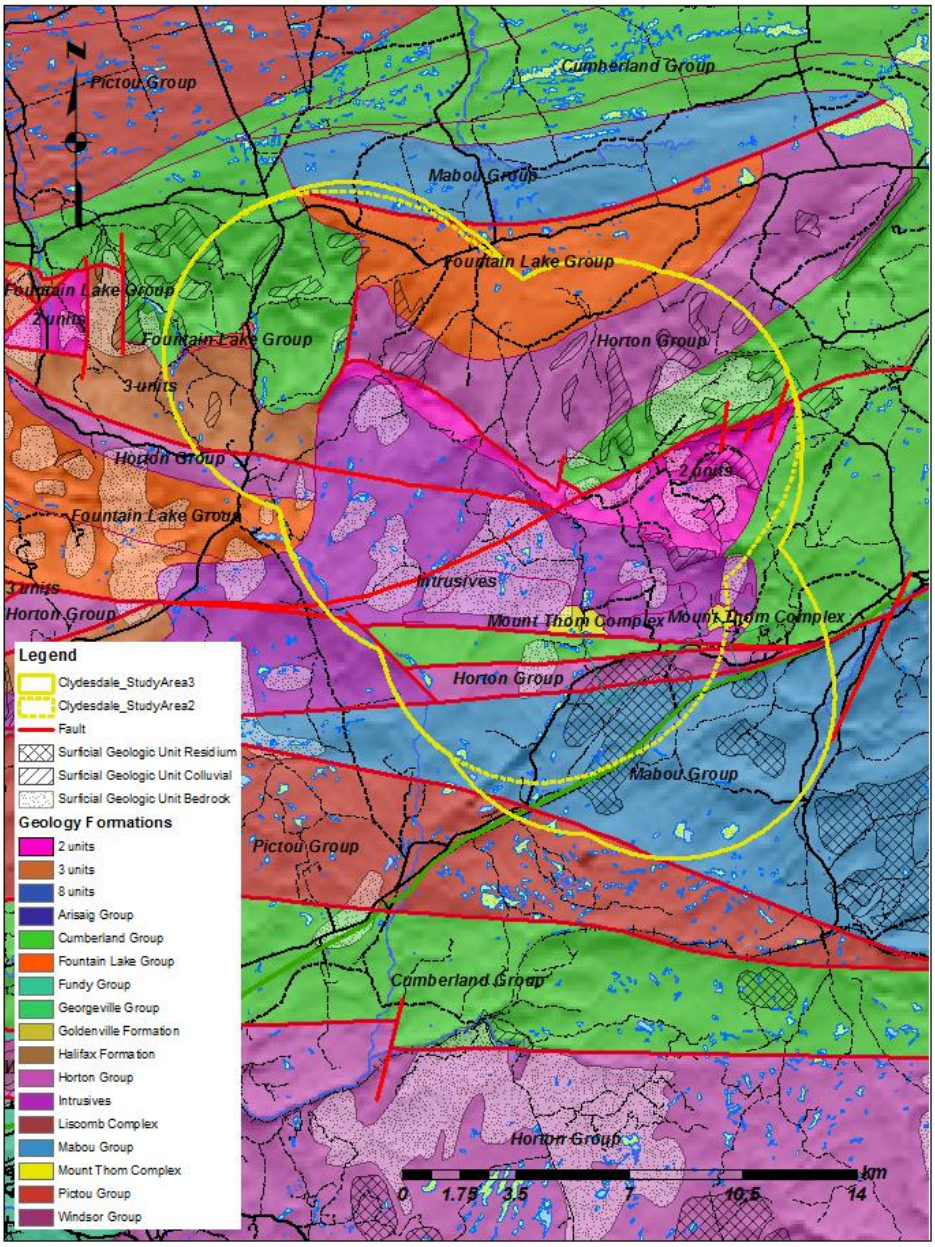
The ecodistrict within the Study Area are covered in Tolerant Mixwood Hills and Spruce Hemlock Pine Hummocks and Hills. *(48)*

The Study Area north includes the Ecodistrict of the Northumberland Lowlands (530) from College Grant, upriver to Diamond and northeast to Plainfield. The lowlands are an approximate 25km wide topography sloping northward from the 75m contour to the Northumberland Strait. The coastline resembles a drowned landscape of low sandstone cliffs and fine tills slipping below the Strait waters and leaving flooded river estuaries and extensive slat marshes. The southeast portion of the Study Area includes an area of Northumberland Lowlands (530) at Stillman, west of Salt Springs. *(48)*

Geology

The underlying geology is divided into north and south by a fault running east-west through the ecodistrict and approximately Mount Thom. South of the fault is younger Carboniferous Period Sedimentary bedrock of the Mabou Group of approximately 318Ma; Cumberland Group of 300Ma and the Pictou Group also of approximately 300Ma. All underlie large areas in east to west uniform swaths. The Mabou Group is south and adjacent the Fault and underlies the south extents of the Study Area south of Mount Thom. *(53)*

North of the fault and Mount Thom is a mix of older bedrock separated by a web of Faults. Within the Study Area and adjacent the main east-west fault is sedimentary rock of the Horton Group and Cumberland Group of 353Ma to 311Ma in age. Moving north within the Study Area from Mount Thom there is a mix of granites of mostly 360Ma in age with small areas of old granites of approximately 600Ma in age. North of communities of Mount Thom and Brookland are very old Granites of the Mount Thom Complex of approximately 900-1000Ma in age. Central to the Study Area is a patch of Dalhousie Mountain Volcanics and a northwest sliver of Warwick Mountain Formation (2Units) of metamorphic rock and lavas of approximately 610-620Ma. *(53)*



Underlying the north portion of the Study Area from McBains Corner, through West Branch River John to Plainfield and south to Diamond, is the **Fountain Lake Group** Bedrock. The Fountain Lake Formation. Another small patch located at Earltown is underlain with Fountain Lake Group Bedrock. *(53)*

The Fountain Lake Group bedrock is significant as it potentially contains Rhyolite which was a useful resource to early peoples due to the stone's cleavage and hardness

properties. Rhyolite was valued for it's workability to craft into sharp edge tools and weapon points.

The McBains Corner to Plainfield Fountain Lake Group Bedrock is covered in Silty Till Plain and Kame and Esker Systems with only accessible sources of stone are the Colluvial slopes on the western edge of the formation. The Earltown patch of Fountain Lake Group stone has small areas of exposed bedrock and a thin cover of Stony Till Plain which would make some areas of the stone accessible to early peoples. *(54)*
Care should be taken around areas exposed bedrock in the northern portion of the Study Area and near Earltown, as there may be early peoples' quarry sites for tool stone?

Regional/Local History

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 New England Planters arrived between 1760 and 1766 to occupy former Acadian farms. Mi'kmaq and Acadian place names were replaced with English names. *(55)*

Not many of the Mi'kimaq place names survived place name changes within this area of the Province area.

Local Mi'kmaq Placenames *(45)*

Amherst	Nemaluskɨte'kn	meaning uncertain
Big Lake	Wpnk	his/her lungs
Fort Lawrence	Kweso'malikek	a point of land where there is hard wood
Franklin Manor I,R,	Kospemk (Qospemk)	at the lake
Little River	Ksikaqnji'jk	at the fast flowing little river

River Philip Ksu'skipukwek flowing through hemlock

A second wave of approximately 1000 English settlers known as the Yorkshire Migration arrived in Nova Scotia between 1771 and 1776. The Yorkshire Emigrants were recruited from northern England to occupy Acadian farms and increase British presence among the planters and republican sentiments. The Yorkshire Emigrants landed at Fort Cumberland in 1772. *(56)*

American Revolution was fought and won by the Americans. Loyalists (citizens loyal to England) and British soldiers and officers were looking for land and British protection. These Loyalists arrived in large numbers between 1783 and 1784 and founded numerous new Cumberland settlements. *(57)*

The land grants to the Loyalist and the Scottish-Irish emigrants that followed was wide spread throughout Nova Scotia and most all remaining lands in Nova Scotia were granted to emigrants who left their home countries.

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. The 1820 reserve system intended to set aside lands near sites frequented by Mi'kmaq. Totaling 22,050 acres, each of approximately 1000 acres each planned for each county of Nova Scotia, was to be for exclusive use by the Mi'kmaq. This produced little action on the ground 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. *(42)*

An example of encroachments and Mi'kmaq loss of land reserved for their use is Cumberland County to the west of the Study Area. Cumberland County was particularly problematic for Mi'kmaq concerning land set aside for their exclusive use. Cumberland County had surveyed and set aside 500 acres on the western shore of Pugwash Harbour. However, these lands were subject to title dispute due to a questionable transaction concerning two Loyalist brothers buying the 500 acres from 3 Mi'kmaq which had no authority to sell the land. After prospering for a while, the title dispute continued to plague the brothers until their eventual financial ruin. The title dispute was put to rest when the crown auctioned off the Pugwash Indian Lands. *(58)*

The Mi'kmaq eventually had 1000 Acres surveyed at Shinimicas Bridge which is approximately 20 km west of Pugwash and 23 km east of Amherst. The parcel straddled the West Branch of the Shinimicas River and the plan lists the parcel as *reserved for Indians 1000 acres* and is shown adjacent the boundary for the Township of Amherst. East of the 1000 acre parcel are adjacent parcels of J. Smith and to the southeast is the parcel of North Merrit. *(59)*

However, Crown Land Grant maps show the same 1000 acre parcel with 580 acres subdivided into 4 parcels distributed among four title holders with the last name of Smith and two other of the last name Fahey. The remaining acreage of the former 1000 acre Reserve parcel was still listed as reserve on the Land Grant Index Map but is also subdivided with no title owners listed. The circumstances as to how this Reserve Parcel became subdivided are unknown to this study at this time. *(60)*

Inland, the Crown Land Index Map shows a large acreage reserve west of the Herbert River and northwest of Halfway River (Newville Lake). *(61)* A.F. Church's 1873 Map indicates an "Indian Grant" in the same approximate location as the Reserve shown on the Crown Land Map. However, Church's map also shows an "Indian Village" on the western shore of Halfway River Lake (Newville Lake). The person's name scribed within the Indian village on the map is that of P. Toney. *(62)* The "Indian Village" location today is approximately the same location as former Newville Lake Park.

It is possible that the above “Indian Village” is the subject of a Specific Claim by Paq’tnkek First Nation regarding unlawful granting of 250 acres without surrender in 1827. The status on that claim is “Concluded”. *(63)* The Crown Land Index Sheet 50, shows a date icon of 1827 for a small shaded parcel and a note “leased To The Crown” on the western shore of Newville Lake. *(65)*

However, Franklin Manor I. R. 22 located 35km south of Amherst on Indian Brook, maintains a Mi’kmaq presence in this portion of Cumberland County. Consisting of 212.5 hectares (525 acres). Franklin Manor reserve today, is shared between Pictou Landing First Nation, Pictou County and Paqtnkek Mi’kmaw Nation, Antigonish County. *(66)*

4.4 Mi’kmaq Traditional Use Findings

Project Site

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

Fishing

Trout (5 cases), Salmon (2 cases), Bass (2 cases), Eel (1 case), Mackerel (1 case), and Smelt (1 case) fishing activity was identified in the Project footprint.

Period-categorization breaks down as follows;
Current Use: 0%
Recent Past: ~41%
Historic Past: ~59%

Hunting

Deer (3 cases), Rabbit (3 cases), Partridge (2 cases), Beaver (1 case), Otter (1 case), Fox (1 case), Bobcat (1 case), Raccoon (1 case), Porcupine (1 case), Pheasant (1 case), and Squirrel (1 case) hunting activity has been identified in the Project footprint.

Period-categorization breaks down as follows;

Current Use: 0%

Recent Past: ~84%

Historic Past: ~16%

Gathering

Berries (9 cases) and Wood (7 cases) gathering activity has been identified in the Project footprint.

Period-categorization breaks down as follows;

Current Use: ~4%

Recent Past: ~37%

Historic Past: ~59%

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

Reported Fishing Usage

Category	count
Trout	50
Salmon	30
Bass	22
Smelt	6
Brown Trout	5
Speckled Trout	5
Mackerel	4
Sea Bass	3
Eel	3
Clams	1

Period-categorization breaks down as follows;

Current Use: 0%

Recent Past: ~48%

Historic Past: ~52%

Fishing activity spans across the Study Area. See Appendix B, map "Clydesdale Ridge Wind Project MEKS – Mi'kmaq Traditional and Current Use Areas: Fishing"

Hunting

Reported Hunting Usage

Category	count
Deer	10
Partridge	7
Rabbit	7
Bobcat	2
Beaver	1
Otter	1
Fox	1
Raccoon	1
Porcupine	1
Pheasant	1
Squirrel	1

Period-categorization breaks down as follows;

Current Use: 0%

Recent Past: ~67%

Historic Past: ~33%

Hunting activity spans the central and north-west territory of the Study Area.
See Appendix C, map "Clydesdale Ridge Wind Project MEKS – Mi'kmaq Traditional and Current Use Areas: Hunting".

Gathering

Reported Gathering Usage

Category	count
Blueberry	12
Apples	2
Spruce Tips	2
White Ash	2
Lions Paw	2
Balsam Fir	2
Brush	2
Maple	2
Pine Comb	2
Evergreen	2
Fiddlehead	2
Mushroom	1
Pine	1
Birch Bark	1
Garland	1
Red Berries	1
Blackberry	1
Princess Pine	1
Raspberry	1
Spruce Sap	1
Cranberry	1
Black Spruce	1
Black Ash	1
Mayflower	1

Period-categorization breaks down as follows;

Current Use: ~4%

Recent Past: ~67%

Historic Past: ~29%

Gathering activity spans across the entire northwest section of the Study Area, and along the highway in the southern section. See Appendix D, map "Clydesdale Ridge Wind Project MEKS – Mi'kmaq Traditional and Current Use Areas: Gathering".

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	177	57
Medicinal/Ceremonial	4	3
Tools/Art	1	1

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. *(66)*

American Eel, while not listed on the Nova Scotia species at risk registry, is considered a threatened species by the federal species registry. (67)

Striped bass 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. (*67*)

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 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 frequency of activities reported by the interviewees, Trout, Salmon, and Bass fishing, along with Berry harvesting can be considered to be the favored activities for Mi'kmaq in this particular area.

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 Sites and Study Area are within the Traditional Political District ***of Sipekni'katik*** (Wild Potato Area) of the central area of Nova Scotia.

The Tatamagouche Bay area has for at least 6,500 years been an important location to early peoples and historic Mi'kmaq. The location was at the intersection of many travel routes, offered plenty of seafood, animals, plants and was a 1-2 day travel from the next village or settlement.

These travel routes were very important during French and English hostilities as the routes allowed the flow of goods between Acadian Communities. The Acadians were also able to transport cargo and livestock to Louisbourg as the routes were far removed from English Settlements and Patrols. Mi'kmaq would gather and use the well supplied

travel routes to stage attacks on Chebucto and return after battle with captured prisoners being taken to Quebec, Isle St. Jean or Louisbourg.

Although the Loganville area shares a role in history with the River John connection to Tatamagouche Bay, River John Branches are seldom mentioned and most of the travel and trade traffic was 5-10 km to the west of Loganville through the French River and Waugh's River valleys. Mi'kmaq presence in the Tatamagouche Bay area diminished over time and particularly with the establishment of a reserve at Pictou.

There are no recorded traditional hunting territories from the 1922 survey within the study area.

There are potential natural resources within the Cobequid Hills in exposed bedrock containing Rhyolite stone of suitable properties for tools and weapons for early peoples.

There are reported sources of Black Ash on the north slopes of the Cobequid Hills which are a valuable resource to early peoples and Mi'kmaq today, for tool handles and basket making.

While a distant northwest and northeast east of the Study Area, both the Tatamagouche and Pictou areas generate much of the Prehistoric and Historic Period history that is relevant in providing context as to the presence of early peoples in the area and situationsthe post-contact Mi'kmaq faced throughout the Province during European colonization and settlement.

The nearest Mi'kmaq communities to the Study Area today are Millbrook First Nation located south of Truro and the Study Area and Pictou Landing First Nation located roughly equal distance to the northeast of the Study Area.

The Millbrook First Nation has a long history within the vicinity of the Salmon River and Truro area. As early as the late 1700's, the Mi'kmaq resided on the banks of the Salmon River near Bible Hill, where the present-day Dalhousie Agricultural Campus is located.

A review of Specific Claims shows no current and active First Nation Claims within the Project Study Area. However, Millbrook First Nation has an active specific claim regarding loss of land for Highway R.O.W and routing of FiberOptic Cable through same R.O.W.. No specific location detail given.

It is possible that an "Indian Village" is the subject of a Specific Claim by Paq'tnkek First Nation regarding unlawful granting of 250 acres without surrender in 1827. The status on that claim is "Concluded".

Traditional Use - Project Site Summary

Berry harvesting, Trout fishing, and Deer, Rabbit and Partridge hunting were the activities reported by interviewees in the highest frequencies.

All usage period-categorization breaks down as follows;

Current Use: ~1%

Recent Past: ~54%

Historic Past: ~45%

Traditional Use - Study Area Summary

Trout, Salmon and Bass fishing, Deer, Partridge and Rabbit hunting and Berry harvesting were the activities reported in the highest frequencies by interviewees.

All usage period-categorization breaks down as follows;

Current Use: ~1%

Recent Past: ~61%

Historic Past: ~38%

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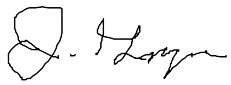
Membertou
GEOMATICS SOLUTIONS

To whom it may concern:

In May 2023, Membertou Geomatics Solutions (MGS) completed a Mi'kmaq Ecological Knowledge Study (MEKS) for Natural Forces with regards to the proposed Clydesdale Ridge Wind Project. The study area for this MEKS consisted of a 5km buffer around the site layout (turbines and roads). Since completing the MEKS in May 2023, the project layout has been adjusted slightly by the proponents. All updated infrastructure elements are within the 2023 MEKS buffer area (see Appendix A). These adjustments do not alter any findings within the existing MEKS and thus MGS will update and version the existing MEKS with new maps containing the updated layout.

If you have any questions for comments, feel free to contact me at (902)233-7159 or jasongoogoo@membertou.ca.

Wela'lin,



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