

APPENDIX J

Mi'kmaq Ecological Knowledge Study

ALTON GAS STORAGE PROJECT

Mi'kmaq Ecological Knowledge Study



Photo courtesy of Nova Scotia Museum
1833, Shubenacadie River – C-130951



Membertou Geomatics Consultants
December, 2006

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Executive Summary

This Mi'kmaq Ecological Knowledge Study, also commonly referred to as a MEKS or a TEKS, was developed by Membertou Geomatics Consultants for the Alton Gas Storage Limited Partnership for the Alton Gas Storage Project. The purpose of the MEKS is to identify Mi'kmaq land and resource use activities that have or continue to be pursued by Mi'kmaq in the geographical areas being considered for development activities with regards to the Alton Gas Storage Project. The Alton area is currently being considered for a future underground natural gas storage site which will hold natural gas in salt caverns up to 800 m underground. The project proposes to form the storage sites by forming them in the salt caverns by drawing water from the Stewiacke and Shubenacadie Rivers, flowing it through underground pipes 12 kilometers in length to the mine site, and then dissolving the underground salt deposits with the river water. The project also proposes to take the waters, and return them back to the rivers, after the salt caverns have been formed into underground storage for natural gas. This MEK study considers the areas of land where the underground storage containers are to be formed, specifically in Alton Nova Scotia, and the 12 kilometre proposed pipeline that will be buried underground and flow to the Stewiacke. This study also includes traditional use activities that take place in a 10 kilometre buffer zone surrounding the study area.

The Mi'kmaq Ecological Knowledge Study consists of three major components:

- A **Historical Review** regarding past Mi'kmaq occupation and use of the area in question,
- **Mi'kmaq Traditional Land and Resource Use Activities**, both past and present,
- A **Mi'kmaq Significance Species Analysis**, considering the resources which are important to Mi'kmaq use.

The Historical Review undertook archival research regarding the Stewiacke, Truro, Brookfield and Shubenacadie areas to identify past Mi'kmaq use and occupation of the area. From the information that was located it was found that Mi'kmaq use and occupation in these areas has been extremely significant and Mi'kmaq communities have historically been here on the Shubenacadie and Stewiacke and Cobequid rivers for hundreds of years prior to the arrival of European peoples. Further, Shubenacadie specifically was the gathering place for Mi'kmaq throughout the Atlantic as this was the home of the Shubenacadie Mass House; one of the 1st missions ever established for the Mi'kmaq people by missionaries. This would have occurred in the 18th century.

The Mi'kmaq Traditional Land and Resource Use component utilized current interviews as the key source of information regarding Mi'kmaq use in the study area. Numerous interviews were undertaken by the MEK Team with Mi'kmaq hunters, fishers and plant gatherers, who shared with us the details of their traditional use activities. The interviews were undertaken during the month of December whereby Mi'kmaq were shown maps of the study area and surrounding lands and waters and then were asked to identify the places where they undertook their traditional use activities, and the type of activity that

occurred there. All interviews were recorded and the data that was provided was then put into a geographic information system for data analysis. Interviews regarding Mi'kmaq traditional use activities that had also been previously undertaken by other projects were also incorporated into the GIS data. These interviews also allowed us to identify the key Mi'kmaq people that currently pursue traditional use activities in the communities, and to ensure that we re-interviewed them for the most current data.

The data collected allowed us to identify various hunting areas used by Mi'kmaq to harvest deer, small game and other activities involving the gathering of plants for food and medicine. However, the most significant data that was gathered was that involving fishing on the Stewiacke and Shubenacadie rivers and their connecting tributaries. The use identified was extremely high and include the harvesting of many fish species such as Bass, Salmon, Eels, trout, smelts, etc.

The data was then analyzed in accordance with Mi'kmaq Significance, identifying 8 medicinal plants, 5 food plants, 1 spiritual plants, 9 small game, 4 tool/ art plants and deer. These resources were considered for their availability or abundance in the study area, their use and importance with regards to the Mi'kmaq and their availability in areas adjacent or in other areas outside of the study area.

The study found that Mi'kmaq continue to undertake traditional activities throughout the study area, in a most significant manner. Such activities occur not only on much of the lands in the study area, but also throughout the waters found here as well. Specifically, the Shubenacadie and Stewiacke rivers play a key role in being the source of the resource that Mi'kmaq harvest, specifically, all of the fish species that are found there which Mi'kmaq depend on for food. Based on the data gathered regarding the various resource it was found that these resources play an important role to Mi'kmaq, specifically the fish species, some of which are not readily available in all waters throughout Nova Scotia.

Table of Contents

M.E.K.S Project Team.....	i
Executive Summary.....	ii
1. Introduction.....	1
1.1. Membertou Geomatics Consultants.....	1
1.2. Alton Gas Storage Project.....	1
2. Mi'kmaq Ecological Knowledge Study – Scope & Objectives.....	2
2.1 Mi'kmaq Ecological Knowledge.....	2
2.2 Mi'kmaq Ecological Knowledge Mandate.....	3
2.3 MEKS Scope and Objectives.....	3
2.4 MEKS Study Area.....	4
3. Methodology.....	
3.1 Interviews.....	5
3.2 Literature and Archival Research.....	5
3.3 Field Sampling.....	5
4. Mi'kmaq Land, Water and Resource Use.....	
4.1 Overview.....	6
4.2 Limitations.....	6
4.3 Historical Review Findings.....	7
4.4 Traditional Use Findings.....	9
4.5 Mi'kmaq Significant Species Process.....	12
4.6 Mi'kmaq Significant Species Findings.....	13
5. Conclusions and Recommendations.....	15
6. References Cited.....	16

Attached Schedules

- Schedule A – Mi'kmaq Traditional Sites and Areas
- Schedule B – Mi'kmaq Fishing Sites and Areas
- Schedule C – Mi'kmaq Hunting Sites and Areas
- Schedule D – Mi'kmaq Plant Gathering Sites and Areas
- Schedule E – Mi'kmaq Land Occupation Sites and Areas

1.0 INTRODUCTION

1.1 Membertou Geomatics Consultants

Membertou Geomatics Consultants (MGC) is a Membertou First Nation company that was developed as a result of the 2002 Supreme Court Donald Marshall Jr. Decision. MGC was established as a company which would provide GIS expertise and environmental services from a Mi'kmaq perspective. Membertou Geomatics Consultants is one of several companies established by the Membertou First Nation – Membertou Corporate Division, and MGC. MGC not only provides consultant services, but also provides employment opportunities for aboriginal persons and contribute to Membertou's efforts to provide high quality social programs and services to its community members. As well, Membertou's excellent management and accountability of their operations is further enhanced by their ISO 9001:2000 certification. Most recently, Membertou has undergone an ISO audit, and have been successfully recertified as ISO 9001:2000 for another three years.

MGC brings to the front table a team of five individuals who have expertise and specialized skills with regards to land documentation and the development of Mi'kmaq Ecological Knowledge Studies. The MGC team skills include expertise within the area of historical Mi'kmaq research, GIS data analysis, Mi'kmaq environmental knowledge and sound Mi'kmaq community connections and understandings.

1.2 Alton Gas Storage Limited Partnership

Alton Gas Storage Limited is a company that proposes to develop an underground storage facility for natural gas which will be constructed in the salt caverns, near Alton, Nova Scotia. The storage facilities will be developed in the salt deposits that are located at least 700 m -946 m below the surface. They are formed when fresh water is used to dissolve the salt deposits, ultimately resulting in a shaped, underground, salt cavern storage facility. The Alton Gas storage will draw water out of the Shubenacadie and Stewiacke Rivers at a rate of 10,000 m³ per day, flow it through a buried pipeline to the proposed storage site, and then return the brined water to the Shubenacadie River.

At the storage site the water will also be processed through a settling tank which will remove any solids acquired during the brining process. The pipeline length from the site to the river will be around 12.5 kilometres. A connector pipeline will also be constructed which will run from the storage facility to the Maritimes and Northeast Pipeline natural gas transmission system, although that is not a component of this MEKS.



Proposed Drill Site

2.0 MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY SCOPE & OBJECTIVES

2.1 Mi'kmaq Ecological Knowledge

The Mi'kmaq people are the first people of the area we call Atlantic Canada, also known as Mi'kma'ki, and they have inhabited this land for thousands of years. Long before the arrival of European peoples in Mi'kma'ki, the Mi'kmaq relied on the land and its' various resources for all aspects of their livelihood, including sustenance, spirituality practices, and cultural knowledge. This reliance on the natural world allowed the Mi'kmaq to establish a long-existing, deeply entrenched relationship with the land and its' resources, which today continues to exist. 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 endearing relationship has allowed the Mi'kmaq to accumulate years and years of ecological information and it is this knowledge that continues to be maintained by the Mi'kmaq people and is passed on from generation to generation, youth to elder, *kisaku kinutematel mijuijij*.

It is this wealth of Mi'kmaq Ecological Information which is held by the Mi'kmaq that Mi'kmaq Ecological Knowledge Studies, also referred to as Traditional Ecological Knowledge Studies, focus on gathering and identifying. Specific ecological information regarding Mi'kmaq/Aboriginal use of various lands, waters, and resources are documented within an MEKS, providing a more accurate and thorough understanding of how the Mi'kmaq people may use the land that is being considered by the study. In this manner, it would be accurate to state that MEKS are similar to environmental impact assessments in their overall scope, as EIA also seek to measure the present and lasting impact of human activity on the environment and its' resources, often by prioritizing significant effects of project activities in accordance with specific federal or provincial legislation, such as Species at Risk. However, Mi'kmaq Ecological Knowledge Studies find their distinctiveness from that of an overall environmental impact assessments through the idea that although MEKS are also concerned with the impact of developmental activities on the land and its' resources, MEKS seek to identify such in accordance with Mi'kmaq land and resource practices. This is quite significant if indeed ones goal is to develop an environmental study that provides a thorough understanding of a particular area, as Mi'kmaq use of the land, waters and their resources differs from that of dominant society. Thus, in order to identify the ecological impacts of developmental activities on Mi'kmaq land and resource use, we must first evaluate such in accordance with Mi'kmaq understandings of land and resource significance. At the end of the day, although such effects identified may indeed correlate with the findings of EA's, MEKS ensure that Mi'kmaq land activity in the study area is identified in accordance with Mi'kmaq ecological knowledge and uses of the land.

2.2 Mi'kmaq Ecological Knowledge Study Mandate

As a manner in which to identify Mi'kmaq traditional land use activity within the study area, the Alton Gas Storage Project, through Jacques Whitford Inc., has contracted MGC Consultants to undertake a Mi'kmaq Ecological Knowledge Study. The mandate of this MEKS is to identify and gather Mi'kmaq ecological information with respect to land and resource use within the study area located in Alton, Nova Scotia and the surrounding vicinity of 10 kilometers. The MEKS will identify, gather, and document the collective body of ecological knowledge which is held by individual Mi'kmaq people. The information that is gathered by MGC will be documented within this report and will present a more thorough and accurate understanding of the Mi'kmaq peoples land and resource use within the study area. This study will likely accompany the Environmental Assessment that is submitted by the Alton Gas Storage Project to its' regulators and will be the primary component for identifying Mi'kmaq traditional land and resource use of the site area. HOWEVER, this MEKS is not intended to be used for Consultation purposes by government and/or companies or to replace any consultation process that may be required. As well, this report cannot be used for the justification of the Infringement of S.35 Aboriginal Rights that may arise from the project activities.

2.3 Mi'kmaq Ecological Knowledge Study Scope & Objective

The MEKS objective is to identify Mi'kmaq Ecological information regarding Mi'kmaq land and resource use within the study area. This will occur through an interview process where various Mi'kmaq people will be asked to provide information regarding their land and resource use in and around the study area. The information they provide will then be documented on land maps, digitized within a geographic information system and then the resulting data will be analyzed by team members. The finding data analysis results will be detailed within this MEKS, although in a manner which will not disclose the identity of the individuals who have provided their ecological knowledge to this study and will not reveal specific locations of resources. These results will then allow the Alton Gas Storage Project and regulators to consider the ecological information regarding the lands and resources in a more thorough manner by understanding the current and past use by the Mi'kmaq people. As well, this report will ensure that Mi'kmaq Ecological Knowledge is incorporated and considered by all interested parties who will review the implications of the project on the study area.

Although it is not the intent of this study to consider whether the project may have implications for aboriginal rights infringements, should the MEKS data identify the likelihood of such infringements to occur by the project activities, it will provide recommendations on the necessary steps that the company and government must undertake so as to engage in formal Consultations with the Mi'kmaq leadership.

2.4 MEKS Study Area

The Alton Gas Storage Project will be located in the area of Alton Nova Scotia, with the storage sites located approximately three (3) kilometers east of Highway 102. The pipeline that will transport the water from the Shubenacadie and Stewiacke Rivers will run from a point just south of Fort Ellis, Stewiacke, run in a Northern Direction for two (2) kilometers, run westward across Highway 102 and Highway 2 through Alton, and arrive at the storage site. The pipeline is approximately twelve point five (12.5) kilometers in length and spans from Stewiacke through to Alton, Nova Scotia. The drill site will also have a settling tank constructed here, which help to remove solids from the water once it has been used for the development of the salt caverns. This study considers the use within this area, and also includes a 10 kilometre buffer zone surrounding such.



3.0 METHODOLOGY

3.1 Interviews

The first step that the MGC team considered for the development of this MEKS was the interview process that needed to be undertaken with various Mi'kmaq individuals. An initial list of Mi'kmaq individuals who may be potential holders of Mi'kmaq Ecological Knowledge was developed by the team as the target group to be interviewed. Numerous interviews were undertaken with individuals from the surrounding Mi'kmaq communities of Millbrook and Indian Brook. All of the interviews that were held followed interview procedures that have been established by the MGC team as culturally appropriate. Individuals were shown maps of the study area and asked various questions regarding their Mi'kmaq use activities, including where they undertook their activities, when they did such, and what type of resource they utilized. As well, when permission was granted, interviews were audio recorded. These audio recordings assisted with the data accuracy checks and allowed for a comparison of audio data with the information documented on the maps, providing further assurance to the accuracy of the information gathered. Finally, all individuals who were interviewed signed a consent form allowing MGC to utilize the information they provided to us for inclusion within this MEKS.

3.2 Literature and Archival Research

For the purposes of this Mi'kmaq Ecological Knowledge Study, various archival documents and published works were reviewed for information regarding the past or present Mi'kmaq occupation of the study area. Documents which were reviewed included census records, colonial government records and published books. A complete listing of the documents that were referenced are outlined within *Sources Cited*.

3.3 Field Sampling

Site visits were undertaken by the MEKS coordinator and two Mi'kmaq Ecological Knowledge holders from the Mi'kmaq community of Indian Brook. The drill sites were visited, and as well the site where the water will be drawn from the Shubenacadie and Stewiacke Rivers and where it flow back in. These visits were undertaken so as to familiarize the ecological knowledge holder with the areas within the study area that would be developed. As well, this provided an opportunity for further identification of specific plant resources key to Mi'kmaq Traditional Use activities that may be located within the study area.



4.0 MI'KMAQ LAND, WATER AND RESOURCE, USE

4.1 Overview

The Mi'kmaq Land, Water and Resource information is a component of the MEKS which identifies several crucial components to Mi'kmaq interaction with the study area.

First, within the Historical Review, information is provided regarding Mi'kmaq land occupation of the area in question. This provides the project with an understanding of how or when Mi'kmaq would have been occupying the land. This also can provide information which may flag the company as to whether there are areas that may be more prone for burial sites, based on past occupations.

Secondly, we focus on Mi'kmaq resource use of the area, both from the recent past and presently, recent past being defined as that within living memory. The type of use defined includes spiritual use, and sustenance use, such as fishing, hunting or medicinal gathering activities. This information is significant to all involved as it allows a thorough understanding of Mi'kmaq use of the land and resources and will allow a further understanding of the potential effects of the project on the Mi'kmaq people.

The third component we focus on is what we call Mi'kmaq Significant Species. This section also focuses on Mi'kmaq land and resource use, however, an analysis is undertaken of the resource to ascertain whether it is a species that may be extremely significant to Mi'kmaq use alone and whether or not its' loss would be unrecoverable and would prevent Mi'kmaq use in the future. This component is significant to the study as it provides further ecological information, which is held by the Mi'kmaq, which provides a more complete and thorough ecological and environmental understanding of the project on the study area.

4.2 Limitations

Although it is the intention of this study to be as complete and thorough as possible, because of the dependence of the project on numerous factors, there is always the possibility that some information may be overlooked. This may include further information being made available from Mi'kmaq individuals, as some individuals who were contacted were unavailable for an interview.

With regards to archival information, although the written resources utilized for this study were significant, there still exists the fact that further information may be located regarding the Mi'kmaq people within the study area.

Due to the large size of the Study Area; a 12.5 kilometre long pipeline and a kilometer square area at the proposed storage site, it was impossible it was possible for a team member and a Mi'kmaq elder to walk the entirety of the study

area. However, both the storage sites and the river sites were thoroughly walked through, resulting in further data consideration for resource availability.

4.3 Historical Review Findings

A historical review of the study area was undertaken by Membertou's research department, so as to identify the past relationship that Mi'kmaq may have had with the land and the resources located here. Literature sources that were reviewed included both primary and secondary sources.

Presently, there are (2) two established Mi'kmaq reserves that are located within 10 kilometers of specific points of the study area. These reserves are Mi'kmaq communities whose lands are defined as *federal lands that have been set aside for the use and benefit of Indians under the Federal legislation of the Indian Act*. One of the reserves is the Indian Brook First Nation and it is located (9) nine kilometers from the water withdrawal site located on the Shubenacadie River. Indian Brook is located southwest of the Alton study area, west of the town of Shubenacadie and the Shubenacadie River. The other community is the Millbrook First Nation and it is located 13.7 kilometers from the proposed salt cavern storage site. It is located northeast of the Alton study area on the outlying area of the town of Truro. The Mi'kmaq people from both of these communities have a history of continuous occupation in this area which spans centuries and begins hundreds of years before European contact.

Historically, the Mi'kmaq people lived within small winter villages located some distance from each other, but during the warmer season these small winter villages came together to form a larger summer village. This action was primarily due to the availability of resources, which during the warmer months became more available, thus could support a larger population. In the lands throughout and surrounding the study area, Mi'kmaq maintained various winter villages, and at least two or three larger summer villages. The larger villages were known as Cobequit, Mouscadobouet, and Shubenacadie, and they were all located on key waterways found in the area; those being the Shubenacadie River, the Musquadoit River and the Cobequid River. All of these rivers were significant to the Mi'kmaq as they allowed for easy travel by canoe from one area of Mi'kma'ki to another.

However, sometime during the 19th century Mi'kmaq occupation of this area decreased, due to colonization by Europeans, until eventually by the 20th century Mi'kmaq only occupied this area when hunting and traveling through the area.

The Millbrook First Nation was historically known as the Cobequid Mi'kmaq and this community was located closer to the Salmon River area and the Cobequid River area. The Mi'kmaq name for Millbrook is *Niktuipuek*, which means "flowing into a fork". The Mi'kmaq name for Truro is called *We'kopekwitk*,

which means; “the end of the bore”. The Mi’kmaq of Millbrook and the Mi’kmaq of Shubenacadie had always maintained a close relationship, primarily through kinship and personal and political ties. In 1783 a petition for land was presented to the crown by Paul Pemmenwick, who requested lands for the Mi’kmaq of Shubenacadie (IndianBrook) and Cobequid (Millbrook) in the area of the Stewiacke River, Middle Stewiacke, during the late 18th century. The land acreage was (2500) acres and ran along the Stewiacke River one (1) mile back on each side of the river.

It was not until 1886 that the Mi’kmaq people of Millbrook officially received reserve lands by the federal government. The original land acreage at that time was for 30 acres, although today the size of the community has increased in size to 150 acres, with other reserve lands also located in Cole Harbour, Beaver Lake and Sheet Harbour. At one time the Millbrook community was located in closer proximity to the Salmon River area, but during the latter part of the 19th century, the Mi’kmaq community of Millbrook became located south of Truro, its’ present day location. The population for the community during this time was around 100 people and the people primarily lived through hunting and fishing and as well as making baskets and other goods, which they sold to the local Truro community. Because of the location of the Millbrook community, other Mi’kmaq from other reserves often frequented here for short periods of time so as to sell their wares to the local townspeople. Millbrook came to its’ present day location primarily because it was found that this area contained a plentiful array of natural resources, such as wild game, fish and ash wood, all of which the Mi’kmaq relied on for their livelihood. In 1965 the Millbrook community surrendered fifty three point thirty eight (53.38) acres of the Millbrook reserve lands for the development of Highway 102. However, in 1972 eighty four point seven (84.7) and fifty eight point thirty eight (58.38) acres were added to the overall reserve acreage. Today Millbrook has a population of 729 people.

The Shubenacadie area has historically been a key Mi’kmaq territory for the Mi’kmaq people. The Atlantic provinces are divided into 7 Mi’kmaq districts, and Shubenacadie is located in the district of *Sipekne’katik*. This is also the Mi’kmaq word for Shubenacadie, which means “Ground Nut Place”. Historically, the Shubenacadie Mi’kmaq community was a significant Mi’kmaq community from the time period of contact through to colonization. During the eighteenth century, and prior to such, all Mi’kmaq of the Atlantic Provinces utilized the Shubenacadie River as a primary travel route, and as well came to the Shubenacadie area for political, social and religious gatherings. The Mi’kmaq hunted and fished on the lands and waters of the Shubenacadie region as they traveled from one community to the next. It is during these travels when Mi’kmaq would establish small overnight hunting sites along the banks of the Shubenacadie and Stewiacke rivers, a practice that continued well into the 20th century. In 1753 its’ significance is noted by a British official who described the Shubenacadie location:

This was always the Indian route, when they passed from Cobequid to Gebnecto...It is very evident that if a fort was built upon the Subenacoada below where the two rivers join it would cut off their communication both with the sea coast and with the English settlements.¹

It was also here where the Shubenacadie Mass House Mission was founded in 1738 by L'Abbè LeLoutre, a French priest who became a friend to many of the Mi'kmaq in this area.² The Mass house was destroyed by the English during the time of the Acadian expulsion and was rebuilt again in the 1770's. It remained here up until the at least the 1830's, but it is around this time that the Mi'kmaq of the Shubenacadie area were forced out of the area by colonization and settled at the Spring Brook area, the present day location of Indian Brook. The Shubenacadie reserve land of Indian Brook was originally granted to the Mi'kmaq in the early 19th century, in the amount of approximately 1,100 acres.

4.4 Mi'kmaq Traditional Use Findings

Mi'kmaq Traditional Use data was gathered from the proposed project area for the Alton Gas Project area, which is approximately kilometres square, considering the total area of the proposed salt cavern sites, the water site and the pipeline area. However, as a manner in which to ensure that the data gathered for this study was thorough, this MEKS also included Mi'kmaq land and resource use within a 10 kilometer radius surrounding the Alton Project area. Because Mi'kmaq traditional activities will often cover a broad area, such as that which occurs in hunting, fishing or trapping, this allows our data to be analyzed in its complete form, thus allowing for a more accurate reflection of Mi'kmaq traditional use activities.

With regards to the data for this MEKS, two sources of data were utilized by the study team which allowed us to identify the various traditional use activities, resources and areas that are used by the Mi'kmaq people.

The first set of data that was utilized for the Mi'kmaq Traditional Use Findings was the interviews that were undertaken by our team members with Mi'kmaq ecological knowledge holders from the surrounding Mi'kmaq communities. As well, Mi'kmaq traditional use interviews that had been undertaken previously by other related projects were also considered. This data not only provided further information regarding Mi'kmaq Use in the study area, but when considered in the scope of our most recent interviews, the data combined provided further accuracy

¹ Judge Charles Morris, "Remarks Concerning the Settlement of Nova Scotia, documents sur l'Acadie, 1753" in *Collections de Documents Inédits publiè par le Canada-Français*, II (Quebec City, 1889), p.100, "R. v. Stephen Frederick Marshall et al, Vol.8, no.161.

² Reverend John McCarthy, "Shubenacadie, The Catholic Mission", from the unpublished papers of Reverend John McCarthy.

and consistency to identifying the areas and resources which the Mi'kmaq utilize for traditional use.

From the data gathered, it is evident that Mi'kmaq traditional use activities are undertaken throughout the study area and the surrounding vicinity, both currently and in the past in a most significant manner. As well, the activities have not only been substantial in the past, but today continue to be practiced throughout all of the study area.

Upon analysis of our data, we found that the most significant traditional use activity that occurs within the study area is that which involves food resources, be it gathering, hunting or fishing. There are also noted areas within the study area that Mi'kmaq frequent when gathering medicinal and/or spiritual plant resources.

Food/Sustenance – Fishing

Our data findings have identified fishing as the most significant traditional use activity that continues to occur throughout the study area; both in the past and presently. Many species of fish are harvested throughout the study area, with the most common species harvested being **trout, bass, salmon** and **eel**.

Trout is harvested throughout many of the waterways, with the most common areas being the **Shubenacadie River, North Salem** area, **St. Andrews** area, **Birch Hill**, and the **Stewiacke River**. Trout is also harvested to a lesser degree in areas such as **Pleasant Valley, Shortts Lake, Macleans Brook**, along the area of the pipeline, and **Brookfield** area.

Bass is also found through most of the same waterways, and is harvested specifically in the **Shubenacadie River, the Pipeline area, and the Stewiacke River**. It is also harvested from the **Birch Hill** area, **West St. Andrews River, Shortts Lake** and **North Salem**.

Salmon is a resource that is fished by Mi'kmaq and is an important food resource. **Salmon** is harvested primarily from the **Shubenacadie and Stewiacke Rivers**, but is also harvested to a lesser degree from **North Salem, McLeans Brook, proposed pipeline area, Stewiacke** and **Brookfield areas**.

Eels are another important food resource to the Mi'kmaq people and it is also found to be a significant food resource that is fished in many of the waterways throughout the study area. **Eels** are fished primarily from the **Shubenacadie and Stewiacke Rivers** and areas around the pipeline. However, it is also harvested to some degree from the **North Salem** area, **Indian Brook, St. Andrews area, and Birch Hill**.

Other fish species are also harvested from the **Stewiacke and Shubenacadie rivers**, such as **cod, gaspereau, shad, pickerel, perch, cod, and smelts**.

Food Sustenance – Game: Deer, and Small Game

The resource that is most frequently harvested by Mi'kmaq throughout the study area is **deer**, which is harvested in all areas. The Mi'kmaq community of **Indian Brook** and its surrounding lands is by far the most utilized area that Mi'kmaq hunt deer. Our data identified at least 150 incidents of hunting deer here, which primarily occurred in one area of Indian Brook. **Deer** is also harvested throughout the area of the **pipeline**, as the study identified at least 15 areas and 36 specific sites where **deer** have been taken. The **North Salem area**, the **Stewiacke and East Stewiacke areas**, **Brookfield**, **Pleasant Valley**, **Birch Hill** and through to the **Shubie River** are all areas of high use by MI'kmaq for hunting deer. These areas contain at least **62 specific areas** for hunting deer, and over **100 sites** where deer has been harvested.



Small game is also harvested throughout the study area, with harvest areas ranging from **Brookfield**, at the northern part of the study area, through to **Indian Brook**, located at the southern part of the study area. The small game that is harvested from the area includes many species, such as **rabbits, partridge, porcupine, pheasant, fox, beaver and some geese**. Our data shows that **rabbits** form the majority resource that is hunted with at least **54 areas** identified for hunting and over **200 kill sites** documented. **Beaver** and **porcupine** are also harvested in the **Indian Brook** area, the **pipeline area**, the **Brookfield** area, **Stewiacke**, and the **Shortts Lake** area. It also appears that **bobcat** at one time was hunted in the **Brookfield** area. **Geese** are specifically hunted in the **Shubenacadie/Shubenacadie River** area and also around the **pipeline**.

Medicinal/Food/Spiritual Plants

Today, the Mi'kmaq people continue to harvest various plants for various uses, including food, art and medicines. This study has identified at least 7 species of plants that Mi'kmaq continue to harvest for Mi'kmaq medicine and two of the key plants that are harvested are **flagroot**, **Ki'kwesu'sk** and **golden thread**, **Wisswtaqi'jkl**. The data we gathered identified that these plants primarily harvested in the **Indian Brook** area, the **Brookfield** area, the **pipeline area**, and the **Stewiacke River** area, with over 19 specific areas identified for plant gathering. Other plants that are also gathered by the Mi'kmaq throughout the study area include **mayflowers**, **labrador tea**, **sweetgrass**, **switte**, **cow parsnip**, **Pako'si**, and **spruce gum**. **Sweetgrass** is harvested primarily from the areas of **Brookfield**, **West St. Andrews**, **Birch Hill** and the **pipeline area**. **Mayflowers** are gathered around **Indian Brook**, **pipeline area**, **North Stewiacke area**, and **Brookfield**. **Labrador tea** is gathered in the areas of the **pipeline**, **North**

Stewiacke and Brookfield and cow parsnip is gathered around the **Indian Brook** area.

There are also food plants that Mi'kmaq harvest in the study area and they include **blueberries, raspberries, wild cherries, blackberries, cranberries, and wild cherries**. **Blueberries** are harvested primarily in the **Stewiacke River** area, the **Indian Brook** area and **West St. Andrews**. **Blueberries, Blackberries, cranberries, and raspberries** are all harvested throughout the **pipeline** area.

4.5 Mi'kmaq Significant Species Process

In order to identify possible project effects which may be of significance to Mi'kmaq land, water and/or resource use, two primary factors are considered by this study in relation to the findings of the Mi'kmaq Ecological Knowledge gathered.

Availability and Importance

The main factor that is considered is the **Availability** of the resource identified. If a resource is identified as one which is harvested within the study area, we then consider whether the resource is abundant in the study area or whether it is rare or scarce. Also, based on information that is made available to us from the ecological knowledge holders and/or written literature sources, the availability of the resource is then considered in the scope of other water or land areas that are outside of the study area. This is done for the areas adjacent to the study area, and as well throughout other Nova Scotia lands. By proceeding in this manner, the study has the ability to closely identify whether a resource is rare or scarce or abundant. This can then allow the study team to provide an opinion as to whether a resource may be harmed if it is destroyed by the development activities being proposed.

The second factor we also consider when we are 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 if its' use is for food or art. However, we also utilize other factors to identify importance, such as the frequency of the use, whether it is commonly used by more than one individual, and then the use itself. Again, this allows us to identify whether the loss of a resource will cause irrevocable harm to Mi'kmaq use, if destroyed by the project activities.

Type of Use

Prior to measuring the availability and importance of a resource, the study considers the resources that have been identified in the study and categorizes them in two manners:

First, all findings are identified into various general categories regarding the **Type of Use**. General headings are used, instead of specific resource heading, so as to ensure further confidentiality with respect to each specific resource and the area where it is harvested. As well, the total number of instances where a resource harvest has been documented by the study is quantified here as well.

**Medicinal/Ceremonial ,
Sustenance
Tool/Art,**

It is then that we begin to consider this data in accordance with their Availability:

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

Abundant – easily found throughout the study area or in other areas in the vicinity.

Our final considerations is arrived at by considering the use and availability and formulating an opinion as to whether a resource will be affected.

4.6 Mi'kmaq Significance Species Findings

This MEKS identified numerous resource and land/water areas within the study area, and adjacent to the study area, that continue to be utilized by the Mi'kmaq people. The data was not only gathered from the Donkin study area, but also throughout a 10 kilometer buffer zone surrounding the immediate study area.

The study identified the following:

Type Of Use	Number of Sites or Areas	Number of Distinct Species
Food/Sustenance	Over 1000	25
Medicinal/Ceremonial	44	8
Tool/Art	5	4

The above data findings were then considered within the parameters of their availability as found within the study area, the 10 kilometer buffer zone around the study area and then throughout the province.

When considering the plant and tree resources documented by the study, the majority of these can be classified as common, as their availability in the study area is common, and as well is common throughout other areas of Nova Scotia. Such resources considered include such plants as **Golden Thread, Wisswtaqji'jkl, Flagroot, Ki'kwesu'sk,** and **Sweetgrass,(Hierochloe odorata L.) Switte'**. None

of the plants which the MEKS documented are identified on the provincial Species at Risk list.

As well, the majority of these plants are considered to be very important resources in relation to traditional use in the Mi'kmaq community, specifically those used for medicine. However, their availability is sound in specific land areas.

With regards to the food resources, the most significant resource that were documented within this study was **deer**, *lentuk* and as well as **bass, trout and salmon** and **eels**. These resources are key food resources to the local Mi'kmaq populations and are actively harvested on a daily basis, depending on the resource and the season. Some of these resources are not necessarily common, such as **salmon**, whose numbers have been decreasing as years pass by.

5.0 Conclusions and Recommendations

This MEKS considered the traditional use activities that have, and continue to be undertaken by the Mi'kmaq people in the study area of the Alton Gas Storage Project. The project undertook interviews with Mi'kmaq people and also considered literature research so as to identify Mi'kmaq past and current use in the area. **Based on the data findings, the Mi'kmaq people continue to undertake traditional**



use activities within the study area, and in the surrounding 10 kilometre buffer zone, in a most significant manner. Our data analysis has shown that the resource use from both the waters and lands is extremely significant and that the Shubenacadie and Stewiacke Rivers and their surrounding tributaries are key to the harvesting of these resources.

Based on the amount of Mi'kmaq traditional use activity that is occurring in the study area, specifically on the Stewiacke and Shubenacadie Rivers, and in consideration of the activities that the company proposes to undertake with regards to these rivers, such as the withdrawal of water from the Shubenacadie and Stewiacke Rivers and putting the salted water back into the rivers, it is highly recommended by the project team that:

The Alton Gas Storage Partnership and government or regulators meet with the Mi'kmaq leadership to discuss the activities of the project in relation to the Stewiacke and Shubenacadie Rivers, as the likelihood of infringements on Mi'kmaq use activities is highly possible.

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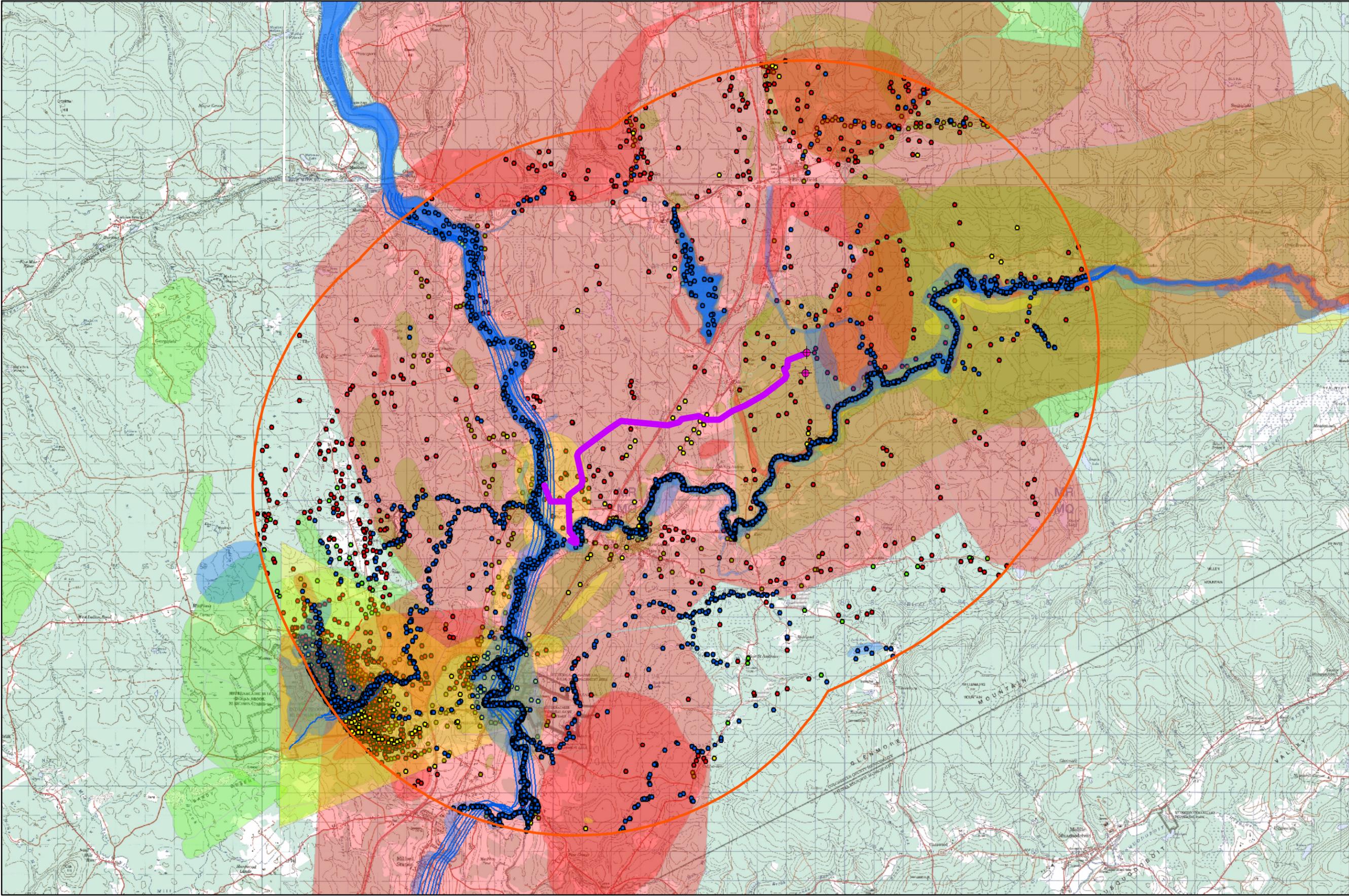
http://www.archivescanadafrance.org/english/accueil_en.html

<http://www.collectionscanada.ca/aboriginal/index-e.html>

Schedule A

Mi'kmaq Traditional Sites and Areas

Mi'kmaq Traditional Sites and Areas

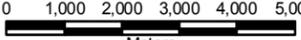


Legend

- Study Area
- Fishing Site
- Plant Site
- Hunting Site
- Land Occupation Site
- ▬ Fishing Area
- ▬ Plant Area
- ▬ Hunting Area
- ▬ Land Occupation Area
- ✦ Drill Location
- ▬ Proposed Pipeline

These sites and areas are graphical representations of current and historical data captured from traditional use interviews.

This map is considered a living document, and does not represent an absolute indication of Mi'kmaq ecological knowledge.



Scale 1:125,000