

**Appendix E**  
**Mi'kmaq Ecological Knowledge Study**

# Lingan 10 MW Wind Farm Project Mi'kmaq Ecological Knowledge Study



**Membertou Geomatics Consultants  
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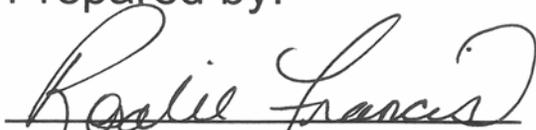
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## Executive Summary

This Mi'kmaq Ecological Knowledge Study, also commonly referred to as MEKS or a TEKS, was developed by Membertou Geomatics Consultants on behalf of Glace Bay Lingan Wind Power Limited ("GBLWP"). GBLWP operates a wind power generating facility at Lingan, N.S., located on the coastline, northwest of the Nova Scotia Power Inc. Lingan power station.

GBLWP was granted its Environment Assessment Approval for the Lingan Wind Farm by the Nova Scotia Department of Environment and Labour ("NSE") on August 3, 2006. As per condition 6.4 of GBLWP's Environmental Assessment Approval, this MEKS has been developed as a mechanism to ensure that Mi'kmaq traditional knowledge and use of the Study Area, as defined in Section 2.2, by the Mi'kmaq is included in the environmental data for the project and considered within the environmental presentation of the project.

The MEKS mandate for this project is to consider the land and water area that will be utilized by the project, identify what is the Mi'kmaq traditional use activity that has or is currently taking place within such areas and to consider what Mi'kmaq ecological knowledge presently exists in regards to the area. In order to ensure accountability and ethic responsibility of this MEKS, the MEKS development has adhered to the "Mi'kmaq Ecological Knowledge Protocol". The 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 in the Study Area. Numerous interviews were undertaken by the MEK Team with Mi'kmaq hunters, fishers and plant gatherers, who shared with the team the details of their traditional use activities. The interviews were undertaken during the months of November and December 2008, whereby Mi'kmaq were shown topographical maps of the Project Site Area (as defined in Section 2.2) and larger Study Area. Those interviewed were then asked to identify the location of any traditional activities they currently undertake or have undertaken in the past. All of the interviews were audio recorded and the interviewees were asked to provide their written consent for the use of their information within this MEKS. If permitted by the interviewee, their information was incorporated into the GIS data. These interviews allowed the team to develop data that reflects the most current Mi'kmaq traditional use in this area.

The data gathered was also considered in regards to Mi'kmaq Significance whereby each species identified was analyzed through the consideration as food/sustenance resources, medicinal/ceremonial plant resources and Art/Tools resources. These resources were also considered for their availability or abundance in the Study Area, and their availability in areas adjacent or in other areas outside of the Study Area, their use, and their importance, with regards to the Mi'kmaq.

The data collected allowed the team to identify various land, coastal and water areas where Mi'kmaq have historically and currently, undertake traditional use activities. Fishing is the traditional activity that the MEKS team identified as most actively occurring in the Study Area, primarily within the coastal waters from the mouth of Sydney Harbour through to New Waterford, Lingan and Glace Bay. Fishing also occurs in the interior waters of Lingan Bay and Indian Bay. Mackerel, Trout, Lobster, Smelt, and Cod, are the fish species that are most commonly fished by Mi'kmaq throughout the Study Area. As well, some hunting

of Deer, Rabbit and Partridge also occurs throughout the Study Area, in varying locations and at varying degrees, although in a much less significant manner than the fishing. Plant gathering activities are also found to be occurring, specifically for Blueberry and Sweetgrass.

Based on the data, documentation and analysis, it was concluded that the Mi'kmaq have historically undertaken traditional use activities in the Study Area to some degree, and that these activities continue to occur today. As well, the Mi'kmaq undertake traditional hunting activities within the lands of the Project Site Area and fishing activities in the adjacent waters. However, these traditional activities are much less significant than the traditional activities found throughout the Study Area. No medicinal plants are harvested by the Mi'kmaq from the specific Project Site Area.

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## **1.0 INTRODUCTION**

### **1.1 *Membertou Geomatics Consultants***

Membertou Geomatics Consultants (MGC) is a Membertou First Nation Company that was established as a commercially viable company that could provide its' expertise in the field of GIS Services, Data Base Development, Land Use Planning Services and Mi'kmaq Ecological Knowledge Studies. It 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 9001:2000 certification.

For the development of this MEKS, MGC brings to the table a team whose expertise and skills with land documentation have developed a sound Mi'kmaq Ecological Knowledge Study. The 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.

### **1.2 *Lingan Wind Farm***

The Lingan Wind Farm has 7 turbines with a total capacity of 14 MW and is operated by GBLWP. The site is located on the coastline northwest of the Nova Scotia Power Inc. Lingan power station in Cape Breton Regional Municipality, Nova Scotia. Over time, GBLWP is expected to evaluate the potential for additional turbines on the site.



*Lingan Wind Farm Site*

The turbines are 64 meters high and have a 71 meter blade diameter. The project infrastructure includes 1.6 kilometres of access roads, crane pads adjacent the turbines, and an electrical gathering system that connects the turbines to the Nova Scotia Power (NSPI) grid (approximately 1.6 kilometers of cable). The electricity generated is sold to NSPI under a long term contract.

## 2.0 MI'KMAQ ECOLOGICAL KNOWLEDGE STUDY SCOPE & OBJECTIVES

### 2.1 *Mi'kmaq Ecological Knowledge*

The Mi'kmaq people have a long-existing, unique relationship with the land, waters and their' resources which involves the harvesting of resources, the conservation of resources and spiritual ideologies surrounding such. 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 generations of ecological information and this knowledge is maintained by the Mi'kmaq people and has been passed on from generation to generation, elder to youth, *kisaku kinutemuatel mijuijij*.

The assortment of Mi'kmaq Ecological Information which is held by various Mi'kmaq individuals is the focus of Mi'kmaq Ecological Knowledge Studies (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. As well, specific resource patterns of migration, population and abundance is documented, where possible.

Characteristically, MEKS have some similar components to that of an Environmental Impact Assessment; yet differ in many ways as well. Among its' purpose, Environmental Assessments seek to 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 *Species at Risk*. 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 consideration of Mi'kmaq land and resource practices. This is an element that is extremely important to be identified when developing an environmental presentation of a 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 contributes to the ecological understandings of the Study Area.

## **2.2 *Mi'kmaq Ecological Knowledge Study Mandate***

In September of 2008, Membertou Geomatics Consultants (MGC) was awarded a contract to undertake a Mi'kmaq Ecological Knowledge Study for Dillon Consulting Limited, on behalf of GBLWP for the Lingan Wind Farm operating at Lingan, located in the Cape Breton Regional Municipality, Nova Scotia. This project required the documentation of key environmental information in regards to the project activities and its possible impacts on the land and the resources located here.

MGC proposed to assist with the gathering of necessary data by developing an MEKS which will identify Mi'kmaq traditional land use activity within:

- i) the project site area, which encompasses the land where the wind turbines and associated infrastructure are located and does not include lands outside the property boundaries or adjacent waters (the "Project Site Area"), and;
- ii) the surrounding area within a 10 kilometer radius of the Project Site Area (collectively the "Study Area").

The proposed MEKS would identify, gather, and document the collective body of ecological knowledge which is held by individual Mi'kmaq people.

The information gathered by MGC is documented within this report and presents a thorough and accurate understanding of the Mi'kmaq peoples land and resource use within the Study Area.

MGC understands that this study will be provided to Nova Scotia Department of Environment (NSE) as it is a deliverable under Condition 6.4 of GBLWP's Environmental Assessment Approval and will be used to identify Mi'kmaq traditional land and resource use within the Study Area.

***However, it must be stated that this MEKS is not intended to be used as Consultation by government and/or companies or to replace any consultation process that may be required or established in regards to the project and 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 Lingan Wind Farm Study Area. The data that the study will gather and document will include use from both the past and present time frame. The final MEKS report may 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 MEKS 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. Finally, through the development of this MEKS for the Lingan

Wind Farm, Mi'kmaq ecological knowledge and traditional land, water and resource use will be identified.

## **2.4 MEKS Study Area**

The Lingan Wind Farm is located on the coastline northwest of the Nova Scotia Power Inc. Lingan power station, located in Lingan, Cape Breton Island, Nova Scotia. The Project Site Area encompasses an area approximately 0.58 sq kilometers in size and is located on the north eastern coast of Lingan. The MEKS will focus its Mi'kmaq traditional use specifically on this area, but will also consider adjacent lands and waters within a 10 kilometer radius. This larger area is also considered for traditional use activities so as to allow a more accurate presentation of traditional use activities that encompass large hunting and fishing areas which may extend beyond the Project Site Area.

## 3.0 METHODOLOGY

### 3.1 Interviews

As a first step to gathering traditional use data, the Membertou Geomatics team initiated dialogue and correspondence with the 5 Mi'kmaq communities located in Unama'ki, *Cape Breton Island*. Discussions occurred regarding the identity of individuals who undertake traditional land use activities or who are knowledgeable of the land and resources and an initial list of key people was developed by the team. These individuals were then contacted by the MGC team members and interviews were scheduled.

For this MEKS, interviews were undertaken by the project team whereby twenty one (21) informants provided information in regards to past and current traditional use activities. Interviewees resided within or were from the communities of Membertou and Eskasoni. In total, information from forty six (46) informants, including individuals from recent MEKS and from the communities of Membertou, Eskasoni, Chapel Island, Wagmatcook, and Waycobah, was used within this MEKS. All of the interviews that were completed followed the procedures identified within the Mi'kmaq Ecological Knowledge Protocol (MEKP). Prior to each interview taken place, interviewees were provided information about the MEKS including the purpose and use of the MEKS, the non-disclosure of their personal information, and the future use of the traditional use information they provided.

Interviewees asked to sign a consent form, providing permission for Membertou Geomatics to utilize their interview information within this MEKS. During the interview, individuals were provided 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 activities, and what type of resource they utilized. Interviews were audio recorded, when permission was granted by the interviewee. This 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 accuracy of the information gathered. As well, when required, interviews were conducted in the Mi'kmaq language.

### **3.2 *Literature and Archival Research***

With regards to the Lingan Wind Farm 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 occupation of the Study Area. Documents reviewed included 19<sup>th</sup> and 20<sup>th</sup> century census records, colonial government records, burial records and published works. A complete listing of the documents that were utilized by the study is outlined within the *Sources Cited* section.

### **3.3 *Field Sampling***

Site visits were undertaken by the project lead, along with a Mi'kmaq Ecological Knowledge holder from the Mi'kmaq community of Membertou, as well as Membertou Natural Resources. Site visits were undertaken over a five (5) day period, which consisted of a walk through of the Study Area, noting and identifying any particular plant species growths, animal habitats or other land or water areas of importance.

The following plant species of Sage, Strawberries, Cranberries, Blueberries and Wild Rose bushes was found throughout the Study Area



*Cranberries*

Other species identified included Alder, White Birch, and Willow. Habitat areas and signs of Deer, Fox, Rabbit and Coyotes were identified during the site visits.

## **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 data analysis in regards 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 is considered both in terms of "Time Periods" and in regards to the "Type of Use" that the resource is being utilized. The Time Periods that the MEKS team differentiates traditional use activities by are as follows:

**"Present" – 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 Mi'kmaq 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 on the 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 documentation research and interviews with Mi'kmaq traditional activity users, this study has identified Mi'kmaq Traditional Use activities that continue or have occurred in the Study Area. This has allowed the study to identify traditional use activities in a manner that Membertou Geomatics believes is complete and thorough, as required by the MEKP. Historical documents within public institutions were accessed and reviewed and individuals from all 5 Unama'ki communities were interviewed. The information provided from these interviews, has been undertaken with key Mi'kmaq community people, identified initially by the MEKS team, who are involved and are knowledgeable regarding traditional use activities. Through the 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. However, because the MEKS team process is highly dependant on the information that is provided to the team by only several Mi'kmaq traditional activity users and not all Mi'kmaq traditional activity users, there is always the possibility that some traditional use activity may not have been identified by the MEKS.

### 4.3 *Historical Review Findings*

The Lingan Wind Farm is located in Cape Breton Island, N.S. The project area is located in Lingan, a small community located sixteen (16) kilometers North East of Sydney, Nova Scotia. Lingan is located on the eastern side of Cape Breton Island and stretches along the north side of Lingan Basin. The name Lingan is a derivative of the French name; *L'Indienne*, as this area maintained a French community here in the 1700's. However, during the siege of Louisbourg the settlement was disbanded and by 1748 the French were gone. Lingan was resettled by Irish immigrants during the 1780's, which was the beginning of the settlement that exists here today.<sup>1</sup>

However, long before the French or the English settlements in the Lingan area, the Mi'kmaq people lived and utilized this area and all lands that encompassed present day Atlantic Canada. Mi'kmaq daily life involved a reliance on the lands, the waters and the natural resources, all of which were integral to the Mi'kmaq's survival. Mi'kmaq society also consisted of indigenous beliefs, values and customs in regards to the natural resources, and consequently, their daily social, religious and sustenance practices were also founded on such understandings. Like most areas in the Atlantic, the Mi'kmaq utilized their own place names, names which often found their meaning in the relationship the Mi'kmaq maintained with the land. With regards to the Lingan area, they referred to this as ***Mile''jk, meaning a place of abundance or rich lands.***<sup>2</sup>

With colonization of Cape Breton Island in the early part of the 19<sup>th</sup> century, Mi'kmaq settlement became more localized in various specific

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<sup>1</sup> Nova Scotia Archives and Records Management, "Place Names and Places Of Nova Scotia", p.355.

<sup>2</sup> Rand, Silas T. , " Micmac place-names in the Maritime Provinces and the gaspe Peninsula recorded between 1852 and 1890", 1919, p.49.

communities, communities which today continue to exist. The Lingan area, although utilized for traditional use activities of hunting and fishing, did not assume any permanent Mi'kmaq settlement. Some reserve lands and communities that are adjacent to the Study Area include the Lingan Reserve and The Membertou Reserve. The **Lingan Reserve (No.28a)** is located thirteen (13) kilometers southwest of the project area. These lands are 51 hectares in size and its vegetation consists primarily of woodlands and blueberries. This area was designated as reserve in 1921, when it was purchased by Indian Affairs as lands that would be used to replace the King's Road Reserve lands. It was at that time when the Mi'kmaq occupying the King's Road reserve in Sydney were forcibly relocated and lands had to be found for a new reserve. However, although the land was purchased for the Mi'kmaq of the King's Road reserve, they never occupied it as their permanent settlement. Instead, in 1926 they moved from King's Road to the present day **Membertou Reserve** and since 1921 have utilized the Lingan Reserve lands for various use activities.

**Membertou** is 95.1 hectares in size and is the primary lands that are occupied by the community for residential and business purposes. This Mi'kmaq community is located seventeen point eight (17.8) kilometers from the project area and these lands were established as a reserve in 1926. It is at this time that the King's Road reserve community members were relocated to this location. **Membertou** has a population of approximately 1096 people, with nearly 800 living in the community. The community is active in the business world and has recently numerous business establishments within the community, including a Trade and Convention Centre, Gaming Facilities, Gas Bar and an Entertainment facility.



*Kings Road Reserve*

**The King's Road Reserve**, known as ***Kun'tewiktu – place of the rock***,<sup>3</sup> was Membertou's former community up until 1926 when the community was moved to present day Membertou. The King's Road Reserve was located at the present day location of the Medical Arts Building on King's Road in Sydney and was 2.45 acres in size. It was a Mi'kmaq settlement that had existed there for hundreds of years and in the early 1800's Paul Christmas and others applied to the colonial government for a land grant for the reserve, likely to stop the encroachment of community lands by non-Mi'kmaq settlers. An early description from the 1850's described the Mi'kmaq community here as follows:

***It was a little cluster of birch bark wigwams, pitched upon a carpet of greensward, just at the edge of one of the loveliest harbours in the world....Nearer at hand were the murmuring pines and the hemlocks, the tender green light seen in vistas of firs and spruces, the thin smoke curling up from the wigwams, the birch bark canoes, the black, bright, eyes of the children, the sallow faces of the men...<sup>4</sup>.***

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<sup>3</sup> Mi'kmaq Association of Cultural Studies, *Mi'kmaq Place Names*, Unpublished Document, p.257.

<sup>4</sup> Frederic S. Cozzens, *Acadia; A Month With the Blue Noses*, New York: Hurd and Houghton, 1870, p.176,177.

The lands were designated as Reserve lands by the late 1870's and the Mi'kmaq community continued to be frequented by many Mi'kmaq from nearby communities, primarily due to its location. In 1926 the community was relocated through the *Exchequer Court Decision of 1916* which stated that the Indians of the **King's Road Reserve** be removed from their community. In 1926, when the community residents were relocated, the reserve population was around 105 people and the reserve contained 27 homes.<sup>5</sup>

Four (4) other Mi'kmaq communities are located outside of the Study Area but are within the boundaries of Cape Breton Island. This includes the communities of **Chapel Island (Potlotek)**, **Eskasoni**, **Waycobah**, and **Wagmatcook**. The **Chapel Island Band** is located approximately eighty two (82) kilometers **SW** from the project area and has a band population of nearly 600 people. The **Waycobah** community is located approximately eighty nine (89) kilometers **SW** from the project area and its' band population is 826 people. **Wagmatcook** is located sixty nine (69) kilometers **SW** from the Project area and has a band population of 645 people. Finally, the **Eskasoni** band is located on the north eastern side of the Bra's d'Or Lakes and is approximately fifty two (52) kilometers **SW** from the project area. **Eskasoni** is presently the largest Mi'kmaq community in Nova Scotia and maintains a band population of approximately 3,750 people.

Mi'kmaq use in the Lingan area is also supported when considering the cultural aspect of Hunting Territories, a social practice of the Mi'kmaq that involved the allotting of lands to specific families for hunting territories<sup>6</sup>.

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<sup>5</sup> Rosalie Francis, *King's Road Fact Sheet*, Membertou Band Council, unpublished internal document.

<sup>6</sup> Frank Speck, *Beothuk and Micmac*, New York, AMS Press, p.88.

The allotment of hunting territories was a cultural practice that the Mi'kmaq utilized within their social structure well into the 20<sup>th</sup> century. In 1914, Frank Speck, a well known anthropologist, studied and documented this subject of Mi'kmaq Hunting Territories, which still was practiced at this time period. In the early 20<sup>th</sup> century the Mi'kmaq leadership divided Nova Scotia into various hunting territories that were allotted annually.<sup>7</sup> When considering the project area in regards to hunting territories, this area would have been the hunting territory of John Isaac in 1914. John Isaac's hunting territory covered lands and waters from Sydney Harbour through to Bras d'Or. His territory was known as *Kwundewe'gade*, meaning rocky head, and his territory encompassed lands from Point Aconi through to Lingan.<sup>8</sup> John Isaac was a member of the King's Road reserve and his territory would have been used by his extended family through to the 1950's. After this time all lands began to be used by all Mi'kmaq in a less formalized hunting territory manner, which would have included Lingan.

#### **4.4 Mi'kmaq Traditional Use Findings**

Mi'kmaq traditional use data was gathered from the Project Site Area, located on the Northeastern coast of Lingan. For the purposes of this MEKS, data was also gathered by the team from a larger Study Area. The Study Area consists of the Project Site Area, and also includes a 10 kilometer radius buffer zone surrounding the Project Site Area. This Study Area includes outlying areas of New Waterford, Glace Bay, Gardiner Mines and Reserve Mines.

The data gathered for this MEKS was drawn from two primary sources. One source is those interviews that were recently conducted in November through to December of 2008. These interviews were done with Mi'kmaq

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<sup>7</sup> Frank Speck, *Beothuk and Micmac*, New York, AMS Press, p.89.

<sup>8</sup> Frank Speck, *Beothuk and Micmac*, Map Insert.

individuals who reside in the surrounding Mi'kmaq communities and who are familiar with or undertake traditional use activities. This set of data was acquired through the primary interviews that were undertaken by team members with such individuals, which then allowed the study team to identify the various traditional use activities, resources and areas that are currently or have been used by the Mi'kmaq. These interviews took place during the months of November through to December of 2008.

A second set of data was also utilized by the Study, which consisted of interviews that were previously undertaken with Mi'kmaq during 2006 and 2007. These interviews also focused on traditional use activities that were occurring within the Lingan area.

To easily identify the traditional use data findings of this study, the data gathered has been categorized into two (2) large geographic areas, which encompass smaller regions. The first category is the Project Site Area – this being the area that has been identified by the proponent as the location of the current and potential wind turbines. The second area is that of the lands outside of the Project Site Area but within the Study Area ten kilometer range and includes such areas as Glace Bay, Reserve Mines, Gardiner Mines and New Waterford.

Based on the data that was gathered by the study team, it is clear that Mi'kmaq traditional use activities are occurring in various land and water areas found throughout the Study Area. The majority of the activities that the study has documented occur **currently**, with nearly 87% of all activities occurring currently and recently. 13% of the traditional activities documented have occurred within the **historical past**.

## **Project Site Area – Lingan Wind Farm**

The Project Site Area encompasses the lands where the wind turbines are located and does not include lands outside the property boundaries or adjacent waters.

### **Fishing:**

The study found that fishing was a traditional activity that has occurred in waters adjacent to the Project Site Area in the past and continues to occur here currently. **Nine (9)** species of fish were identified as those harvested by the Mi'kmaq, with **Cod, Eel, Lobster, Crab, Trout and Salmon** being those resources harvested predominantly. In regards to these species, **thirteen (13)** fishing areas in total were identified, with all of these fishing site areas being located on the coastal waters of the project site. **Three (3)** other fish species were also identified as being harvested here and include one (1) fishing area for **Arctic Char**, one (1) fishing area for **Clam**, and one (1) fishing area for **Smelt**.

### **Hunting**

The study also found that Mi'kmaq currently undertake some hunting activities in the Project Area, although within the Project Site Area our interviews found this activity to be minimal. The Study only identified **three (3)** hunting areas being located in the immediate Project Site Area. These areas were specifically for a **Deer** hunting area, a **Rabbit** hunting area and a **Partridge** hunting area.

### **Plants**

The Mi'kmaq people utilize various plant resources as a part of their traditional use activities, primarily for food, medicinal, or ceremonial purposes and/or also for the development of tools and art. Through the

interview process, the MEKS team was able to identify that Mi'kmaq continue to gather **blueberries** in the Project Site Area.



*Blueberries*

**Surrounding Area – New Waterford, Lingan, Glace Bay, Gardiner Mines, Reserve Mines, Lingan Bay, Indian Bay,**

As mentioned previously, the MEKS data gathered for the Study is drawn from the Project Site Area and a larger buffer zone area which encompasses a ten (10) kilometer radius around the smaller Project Site Area. This larger area includes within its boundaries the town of Lingan itself, and the waters and land areas which surround Lingan. For ease of interpretation, the traditional use activities that the Mi'kmaq undertake in these areas are presented in the following.

**Fishing**

From the data gathered, the study found that **Lobster, Mackerel, Trout, Cod, and Smelt**, are the species of fish that are most harvested by Mi'kmaq currently. For these species, a total of **seventy eight (78)** fishing areas were identified and the majority of these occurred in the northern

coastal areas of **Lingan**, extending through to **New Waterford** in the east and **Glance Bay** to the west. Some fishing areas were also found to be located in **Lingan Bay, Indian Bay and Sydney Harbour**. The Study also identified fishing areas for **thirteen (13)** other fish species, with a total of **thirty two (32)** fishing areas being identified throughout the coastal areas of **Lingan, New Waterford and Glance Bay** and as well within **Indian Bay and Lingan Bay**. These species are fished by the Mi'kmaq within the project area to a somewhat lesser extent, and some of the species harvested include **Caplin, Clam, Crab, Eel, Bass, Flounder, Gaspereau, Herring, Mussel, Oyster, Salmon, Scallop and Shrimp**. The fishing resources are harvested for both food and commercial use.

### **Hunting**

The study found that the Mi'kmaq people continue to undertake their traditional hunting activities in the project area lands, both in the past and presently. **Deer, Rabbit, Partridge and Squirrel** are species that the study found to be harvested, with a total of **fifty three (53)** areas identified throughout the Study Area. **Deer** is harvested the most with eighteen (18) areas being identified. These areas occur primarily in the **South Bar and New Waterford** areas, although a few hunting areas were also located in the **Lingan** area and **Gardiner and Reserve Mines**. **Partridge, Rabbit and Squirrel** are also harvested from primarily the same areas, although only 1 hunting area was identified for **Squirrel**.

### **Plants**

With regards to traditional plant gathering activities, the study identified **eighty six (86)** plant gathering areas located throughout the Study Area where the Mi'kmaq continue to harvest. These sites include **twenty five (25)** different species of plants that are gathered, with the **Blueberry plant** being the species that is harvested primarily. The harvesting areas for

**Blueberry** occur primarily in the interior lands between **South Bar** and **River Ryan**, although a few are also found in the **Lingan** area and the **New Waterford** area. **Sweetgrass, Cowlily, Birch and Chokecherry** are other species that are found to be commonly harvested, with between five (5) and eight (8) areas being harvested for each. These harvesting areas are also found in the interior of lands between **South Bar** and **River Ryan**, although **Sweetgrass** sites are also located all along the **South Bar** area. Other species harvested include **Alder, Apple, Blackberry, Flagroot, Gooseberry, Juniper, Maple, Poplar, Strawberry and Fir**, although in a much lesser degree than the previous. Some of these plant species are utilized by the Mi'kmaq for medicinal purposes and some for food purposes and spiritual purposes as well.

#### **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 MEK 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 then 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 regards to other water or land areas that are outside of the Study Area. This measuring is primarily done in the context to the areas adjacent to the Study Area, and if required, other areas throughout the province are also considered. 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 Provincial Species at Risk list or Provincial 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.

This allows the study team to identify whether 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 if its use is for

food or art or regardless if the resource is scarce or abundant. However, to further identify the importance; the MEKS team also considers the frequency of the use by the Mi'kmaq; whether the resource is commonly used by more than one individual, 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 destroyed by the project activities.

#### **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 continues to be utilized by the Mi'kmaq people. The data was not only gathered from the GBLWP Project, but also throughout a 10 kilometer buffer zone surrounding the immediate Study Area.

The study identified the following:

<b>TYPE OF USE</b>	<b>NUMBER OF AREAS</b>	<b>NUMBER OF SPECIES</b>
<b>Food/Sustenance</b>	233	37
<b>Medicinal/Ceremonial</b>	19	8
<b>Tools/Art</b>	16	7

No rare plants were identified during the site visit. Other various plant and tree resources documented within this MEKS can be classified as common, as their availability in the Study Area is sound, and as well they are found throughout many other areas of Nova Scotia.

With regards to food resources, this study identified **Lobster, Cod, Mackerel, Smelt, Trout, and Deer** as most prevalent, with nearly 100

hunting and fishing areas being identified from the entire Study Area. Many other resources were also identified for traditional use activity, including numerous fish species and some small mammals. **Lobster** fishing areas are found through out the coastal waters and as well as **Mackerel and Cod**.

Within the interview process, individuals stressed that based on their own ecological knowledge that they have noticed a decline in the availability of specific resources, primarily in regards to **Lobster, Cod and Trout**. However, the statement reflected a general observation over time, and is not attributable to any specific project or action.

It was also noted in the interview process, that due to development within the study area, **blueberry** is scarcer, and as well as **chokecherry**.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

This Mi'kmaq Ecological Knowledge Study has gathered, documented and analyzed the traditional use activities that have been occurring in the Project Site Area and Study Area of the Lingan Wind Farm, located in Lingan, Cape Breton Island. The MEKS gathered Mi'kmaq traditional use activity in regards to this area, and also from a larger ten (10) kilometer area, through oral interviews with Mi'kmaq individuals who practice traditional use activities and/or are knowledgeable with regards to traditional ecological knowledge. The information gathered was then considered in regards to species harvested, location of resource, its use, its availability and the frequency of which it is found within the Study Area and other areas. This supported the assessment of the traditional use relationship that the Mi'kmaq maintain with the Study Area.

Based on the data, documentation and analysis, it was concluded that the Mi'kmaq have historically undertaken traditional use activities in the Study Area to some degree, and that these activities continue to occur today. Based on the data gathered the study supports the opinion that Mi'kmaq activities primarily involve the harvesting of fish species, with some collection of plants and trees and some deer hunting activity as well. These activities occur in varying locations throughout the Study Area and at varying times of the year. The most common traditional use activity that the study identified to be occurring is that of fishing, although hunting and plant gathering also occur. The fishing activity occurs primarily in the coastal waters from Sydney Harbour, following through to New Waterford, Lingan and Glace Bay. Interior fishing also occurs at Indian Bay and Lingan Bay. Hunting and plant gathering occur primarily in the interior lands lying between River Ryan and South Bar.

With regards to the specific Project Site Area, our study identified some hunting and plant gathering activities to be occurring here, and some fishing in the adjacent waters. Cod, Lobster, Mackerel, Eel and Snow Crab are identified as being fished in this area, although only one fishing area for each species was found to be located in the waters adjacent to the Project Site Area. As well, one Blueberry gathering area was found within the Project Site Area and one Deer and Rabbit hunting site as well. No rare plants or medicinal plants were identified as being gathered in the specific Project Area.

**RECOMMENDATION # 1:**

***The Lingan Wind Farm MEKS identified Mi'kmaq Traditional Use Activities occurring in the Project Site Area and Study Area and identified that some of the site areas where traditional activities occur are in close proximity to the wind farm area. The potential effects of the project are considered minimal. However, it is recommended that GBLWP meet with the Assembly of Nova Scotia Mi'kmaq Chiefs to present results and offer the information for use and consideration by the Assembly.***

## Sources

Brown, Richard, A History of the Island of Cape Breton, Ontario: Mika Publishing, 1979.

Conrad, Margaret R., Hiller, James K., Atlantic Canada A Region in the Making, Ontario: Oxford University Press, 2001.

Cozzens, Frederic S., Acadia, A Month With the Blue Noses, New York: Cambridge University Press, 1870.

Fergusson, Bruce C., Uniacke's Sketches of Cape Breton and Other Papers Relating to Cape Breton Island, Halifax: Public Archives of Nova Scotia, 1958.

Frame, Elizabeth, List of Micmac Names of Places, Rivers, etc. in Nova Scotia, Cambridge: University Press, 1892.

Harvey, D. C., Holland's Description of Cape Breton Island and Other Documents, Halifax: Public Archives of Nova Scotia, 1935.

Library and Archives Canada, Census of Canada, (microfiche), 1871, 1881, 1891, C-10568, C-13167, Ottawa.

Library and Archives Canada, Ottawa, Indian Affairs Annual Reports 1864 -1990, 1868, <http://www.collectionscanada.gc.ca/databases/indianaffairs/index-e.html>.

Mi'kmaq Association of Cultural Studies, Mi'kmaq Place Names, unpublished document.

Nova Scotia Archives and Resource Management, Place Names and Places of Nova Scotia, <http://www.gov.ns.ca/nsarm/cap/places/page.asp>

Rand, Silas T., Micmac Place Names in the Maritime Provinces and the Gaspé Peninsula recorded between 1852 and 1890, Canada: 1919.

Service Nova Scotia and Municipal Relations, The Nova Scotia Atlas, Halifax: Formac Publishing, 2001.

Speck, Frank G. Beothuk and Micmac, New York: AMS Press, 1922.

Whitehead, Ruth. The Old Man Told Us, Excerpts from Micmac History 1500-1950, Halifax: Nimbus Publishing, 1991.



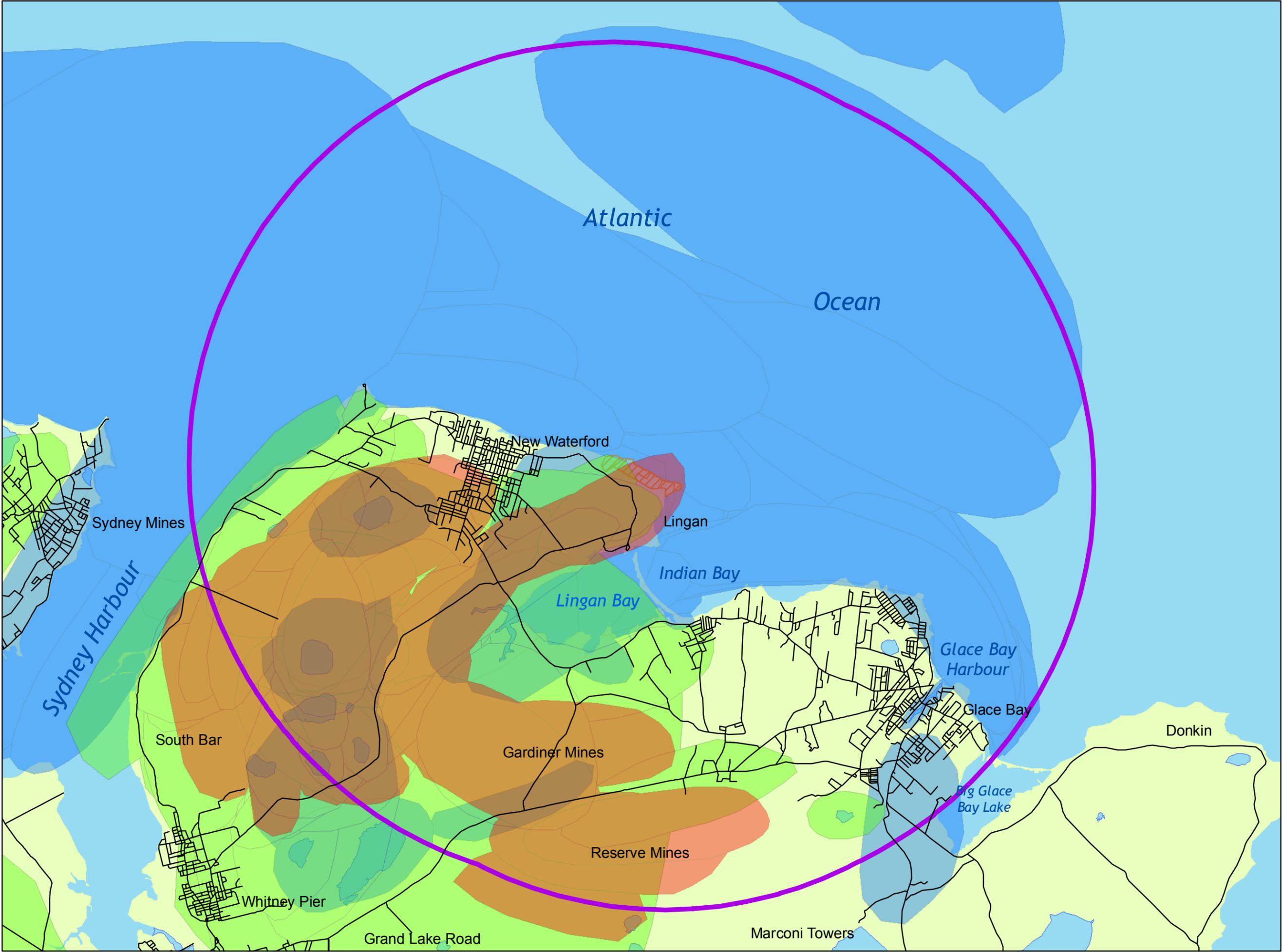
# APPENDIXES



Map A  
Mi'kmaq Traditional and Current Use Areas

**MEKS**  
**Lingan Wind Farm**  
 Lingan, Cape Breton Co.

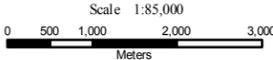
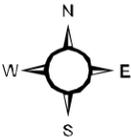
Mi'kmaq Traditional and Current Areas



**Legend**

-  Study Area
-  Hunting Areas
-  Gathering Areas
-  Fishing Areas
-  Project Site

Disclaimer:  
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Map B  
Mi'kmaq Traditional and Current Hunting Areas

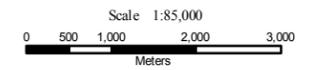
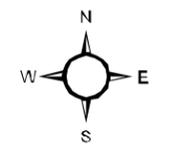
**MEKS**  
**Lingan Wind Farm**  
 Lingan, Cape Breton Co.

Mi'kmaq Traditional and  
 Current Hunting Areas



- Legend**
- Study Area
  - Project Site
  - Hunting Areas

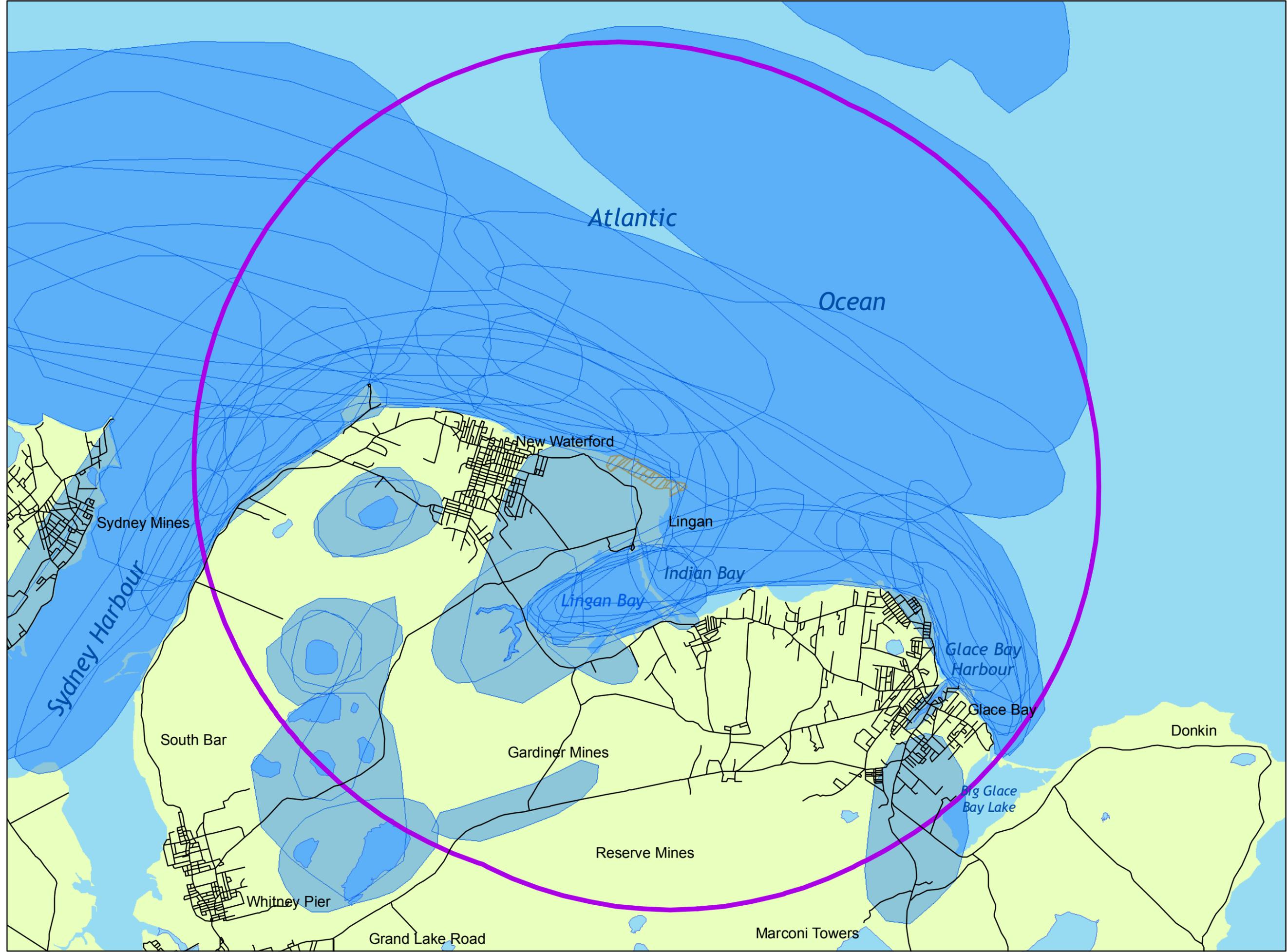
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Map C  
Mi'kmaq Traditional and Current Fishing Areas

**MEKS**  
**Lingan Wind Farm**  
 Lingan, Cape Breton Co.

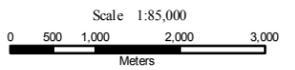
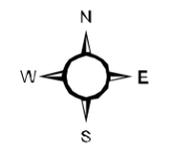
Mi'kmaq Traditional and  
 Current Fishing Areas



**Legend**

-  Study Area
-  Fishing Areas
-  Project Site

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Map D  
Mi'kmaq Traditional and Current Gathering  
Areas

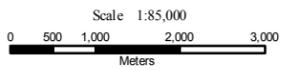
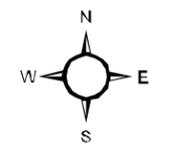
**MEKS**  
**Lingan Wind Farm**  
 Lingan, Cape Breton Co.

Mi'kmaq Traditional and  
 Current Gathering Areas



- Legend**
- Study Area
  - Project Site
  - Gathering Areas

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Map E  
Mi'kmaq Traditional and Current Land  
Occupation Areas

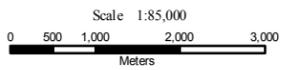
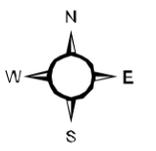
**MEKS**  
**Lingan Wind Farm**  
 Lingan, Cape Breton Co.

Mi'kmaq Traditional and  
 Current Land Occupation  
 Areas



- Legend**
-  Study Area
  -  Project Site

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Map F  
Traditional Mi'kmaq Family Hunting Areas

**MEKS**  
**Lingan Wind Farm**  
 Lingan, Cape Breton Co.

Traditional Mi'kmaq Family  
 Hunting Areas  
 Identified by Frank Speck



**Legend**

-  Study Area
-  Project Site
-  F. Speck Hunting Areas

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