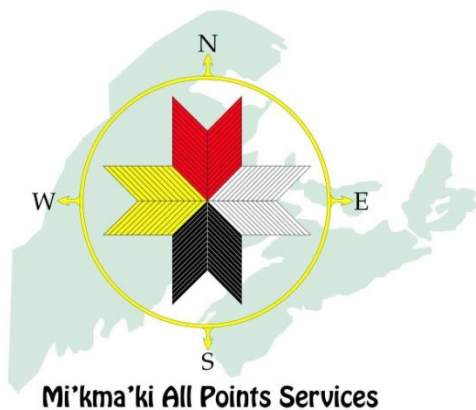


Mi'kmaw Ecological Knowledge Study

Fifteen Mile Stream Gold Development Project by Atlantic Gold Corporation

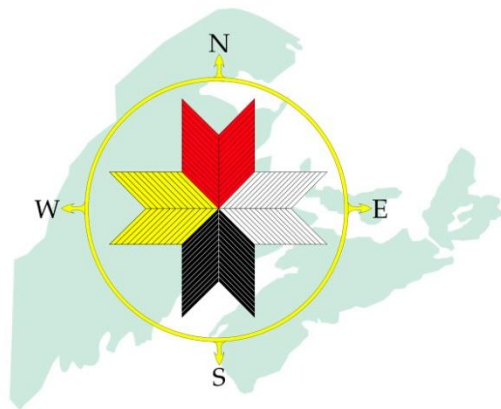
Fifteen Mile Stream, Nova Scotia



Mi'kmaw Ecological Knowledge Study

Fifteen Mile Stream Gold Development Project by Atlantic Gold Corporation

Fifteen Mile Stream, Nova Scotia



Mi'kma'ki All Points Services Inc.

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Nov. 2018

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This MEKS report does not and should not represent or be considered, in any manner in whole or in part, as consultation by government or any other third party for purposes of justifying an adverse impact on any Mi'kmaw Aboriginal or Treaty right.

1. Introduction

1.1. Mi'kma'ki All Points Services Inc.

Mi'kma'ki All Points Services Inc. (MAPS) is a not-for-profit research institution whose Board of Directors are those of the Union of Nova Scotia Indians (UNSI).

The objects of MAPS are to provide assistance and support to Mi'kmaq Bands, First Nation groups and organizations on the collection, preservation and promotion of Mi'kmaq history, traditions and culture in a manner that fosters First Nation capacity and resources in areas of education, research, environment, resource management, community land use and development.

MAPS was selected to prepare a Mi'kmaq Ecological Knowledge Study (MEKS) for the Cochrane Hill gold development project proposed by Atlantic Gold Corporation.

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1.2. Project Description

Project description as given by Atlantic Gold Corporation on its website <http://www.atlanticgoldcorporation.com/projects/overview> (Aug. 2017):

“Atlantic currently holds four gold development projects in Nova Scotia, Canada: the Moose River Consolidated Project (MRC Project) comprising the Touquoy and the Beaver Dam gold deposits, the Cochrane Hill gold deposit, and the Fifteen Mile Stream deposit, as highlighted in the map below.

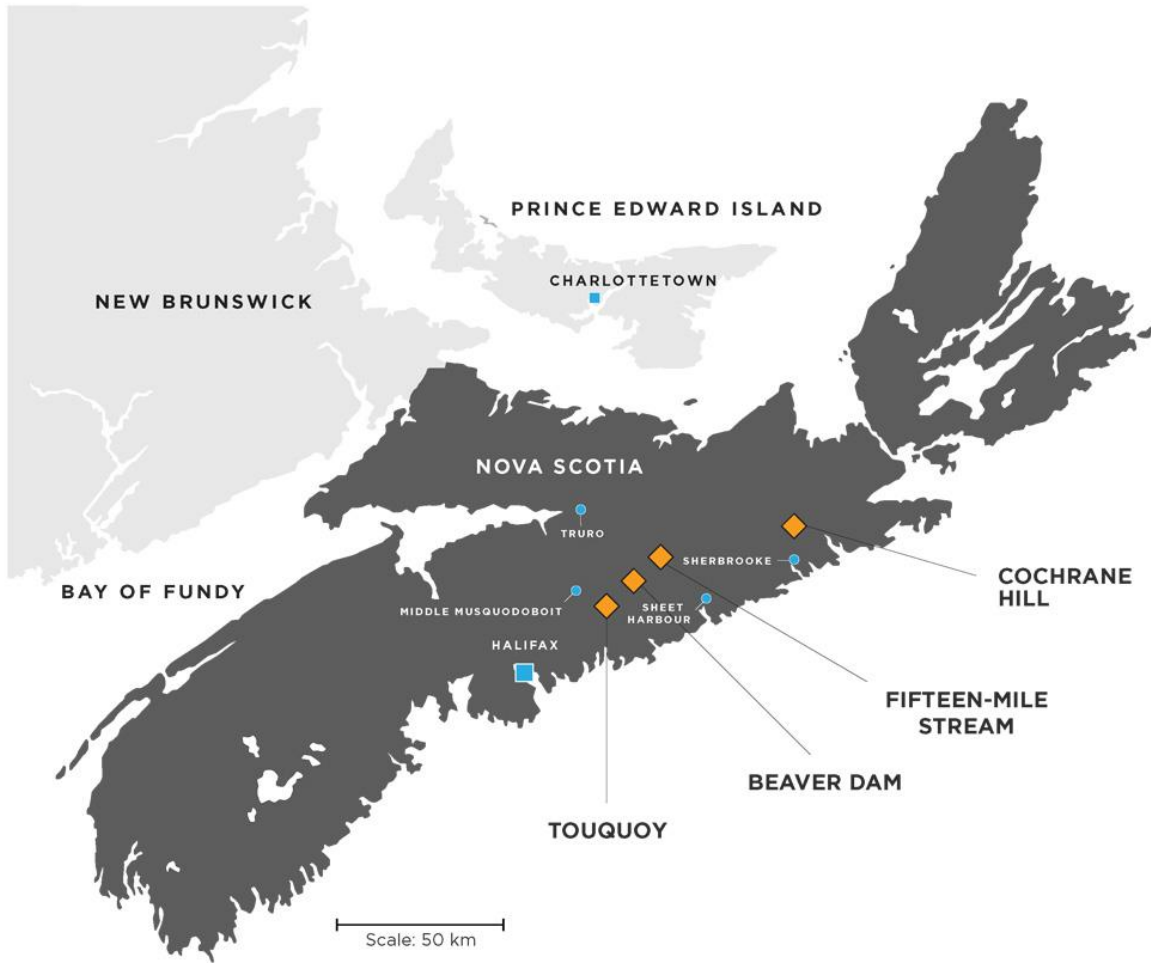


Figure 1: Atlantic Gold Corporation Projects (Atlantic Gold 2017)

The Touquoy gold project is the most advanced with all major permits in place. Beaver Dam is now in the permitting phase following the release of the results of a Feasibility study, while the Cochrane Hill project is now at the feasibility stage following the publishing of a PEA in October 2014, while the Fifteen Mile Stream project is at an earlier stage of development, with a Mineral Resource estimate in place. ...

FIFTEEN MILE STREAM PROJECT

Location

Fifteen Mile Stream is located approximately 57km northeast of the central milling facility at Touquoy and is readily accessible by highway. The project lies along the same

geological trend as the Company's other related deposits – Touquoy, Beaver Dam and Cochrane Hill – and all are hosted within the same critical stratigraphy and structure, over a strike length of 80 km.

History

Gold was discovered at Fifteen Mile Stream in 1867 with production of about 19,400oz documented during 1883-1911. During 1985-88 Pan East Resources drilled 134 diamond drill holes (26,612m) with a further 29 holes (3,741m) drilled in 2011 by Acadian Mining Corporation, now a wholly-owned subsidiary of Atlantic.

Mineral Resource Estimate

The drill database underpinning the current resource estimate in relation to Fifteen Mile Stream comprises 335 diamond drill holes from which a dataset of 17,310 two-metre composites have been created.

The composite dataset incorporates drilling from the Egerton-MacLean, Hudson and Plenty Zones, which are located at the eastern and western ends of an anticlinal dome and approximately 300m south of the dome respectively. At Egerton-MacLean and Hudson, mineralization is localized within a north-dipping sequence of sediments around and within the hinge zone of the anticline with mudstones bearing thin layer-parallel quartz veins being the preferred host. At Plenty, mineralization is localized in similar host rocks in what is interpreted to be an up-faulted limb of the same anticline.

These resource estimates for Fifteen Mile Stream have an effective date of July 20, 2017 and were prepared by Mr. Neil Schofield, a principal of FSSI Consultants (Australia) Pty Ltd. The tables below provide the current resource estimate prepared in accordance with NI 43-101 for a range of cut-off grades. The cut-off grades for the Mineral Resources below are based on Touquoy operating costs where the Company has been actively pre-production mining since July 2016. Other technical parameters and cost assumptions are listed in the Technical Disclosure section of this release. At a selected cut-off grade of 0.35 g/t Au the optimized pit shell for Fifteen Mile Stream contains Measured and Indicated Resources of 10.58 Mt at an average grade of 1.33 g/t Au and 6.64 Mt of material at 1.12 g/t Au in the Inferred category with a 2.2:1 strip ratio” (Atlantic Gold Corporation 2017).

2. Methodology

2.1. Purpose, Scope and Ethics of this MEKS

Mi'kmaw Ecological Knowledge (MEK) has been defined in the Mi'kmaq Ecological Knowledge Study Protocol (Protocol) as "...the collection and adaptation of knowledge that Mi'kmaq people have with all components of the natural environment and the interrelationships between all life forms from a unique historical, cultural and spiritual level." Outlining specific guidelines and conditions on the development of a MEKS in the province, the Protocol was ratified by the Assembly of Nova Scotia Mi'kmaq Chiefs on November 22, 2007 and updated in 2014.

The purpose of an MEKS is to foster the integration of Mi'kmaw environmental knowledge into the environmental assessment process and development decisions. It also aims to identify and report any ecological concerns regarding the Project's impact on Mi'kmaw use of land, resources and special places within the Project Study Area.

This study does not include an archaeological screening and is not an Archaeological Resource Impact Assessment, but does include some archaeological information based on existing data and literature.

This, as with any other MEKS, may not be considered consultation for justifying a potential adverse impact on Mi'kmaw aboriginal and treaty rights. However, the MEKS will recommend appropriate action should it identify possible infringements on Mi'kmaw constitutional rights. The MEKS does not intend to inform Mi'kmaw of the Project nor promote the Project to Mi'kmaw communities.

MAPS' methodological approach includes the adherence to the Mi'kmaq Ecological Knowledge Study Protocol (2nd edition) as ratified by the Assembly of Nova Scotia Mi'kmaw Chiefs (Appendix). Accordingly, this research initiative and its methodological approach were communicated to the Mi'kmaw Ethics Watch Committee in 2017 whose mandate is to ensure research activities with the Nova Scotia Mi'kmaw community comply with the Mi'kmaq Research Ethics Protocol of 1999.

MAPS informed the Union of Nova Scotia Indians as well as the Confederacy of Mainland Mi'kmaw and the Native Council of its intention to carry out this MEKS.

2.2. Definition of Terms

Environmental assessment: Environmental assessment is the process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects

of development proposals prior to major development decisions being taken and commitments made¹.

Cumulative effects: Cumulative effects are the accumulated spatial and temporal impacts to environmental and socio-economic values from multiple projects and other activities².

Mi'kmaw Land and Resource Use: Includes any type of resource harvesting such as hunting and fishing of wildlife resources, gathering of plant (food/medicinal plants, wood, etc.) and mineral resources (stones, clays, etc.), as well as occupancy categories such as camp sites, travel routes, spiritually significant sites, burials, etc.

Current or Contemporary Mi'kmaw Land and Resource Use: Respective activities occurring presently and recalled within living memory.

Historic Mi'kmaw Land and Resource Use: Respective activities that occurred before living memory, including the pre-contact era.

Living Memory: Living memory often extends to the knowledge and experiences of the parents and grandparents of the knowledge holder interviewed thus potentially reaching back two or three generations.

Mi'kmaw Ecological Knowledge (MEK): The collective body of knowledge which Mi'kmaq possess based on their intimate relationship with their natural surroundings, which encompasses a distinct world view and environmental ethic, including harvesting, conservation and spiritual concepts, and has been passed on orally from generation to generation. In general, and outside Mi'kma'ki, such knowledge systems are generally referred to as Indigenous Traditional or Traditional Environmental Knowledge (ITK or TEK).

Mi'kmaq / Mi'kmaw: 'Mi'kmaq' is an undeclined form meaning 'the family' or 'the/our people', and the plural of the singular term 'Mi'kmaw'. 'Mi'kmaw' is also an adjective preceding a noun.

Mi'kma'ki: The homeland or territory of the Mi'kmaq covering the Maritime Provinces plus the Gaspé peninsula and Newfoundland.

Comprehensive Land Claim: Comprehensive land claims arise from a First Nation's underlying Aboriginal Title to its traditional territory as long as it has not been dealt with by treaty or some other legal cessation. Aboriginal title to lands exists as a legal right flowing from a First Nation's historical occupation, use and possession of its traditional

¹ IAIA 1999:2

² Steffensen 2012:iii

lands. Aboriginal title is a recognized right contained in the Canadian Constitution under section 35 and the United Nations Declaration on the Rights of Indigenous Peoples. Through the negotiation and settlement of comprehensive claims, often referred to as modern-day treaty making, the First Nation and Crown seek to clarify ownership of, and access to, land and resources. Never having ceded any of their territory, Mi'kmaq have unextinguished aboriginal title to all lands as well as inland and adjacent waters within the Province of Nova Scotia and beyond.

Specific Land Claim: These claims deal with grievances of a First Nation arising from a failure of the federal government to honour its treaties, agreements or legal responsibilities. Various Bands are currently pursuing several specific claims within Nova Scotia.

Significance: In general, the term denotes the extent to which something matters. In the contexts of social and environmental impact assessments, a newly introduced phenomenon, event, structure or activity that has a 'significant' effect if it impacts or alters in some way other pre-existing social or natural phenomena, structures, processes or conditions.

In the context of an MEKS, the term significance is understood to evaluate the degree of potential project impacts on Mi'kmaw rights, culture or economy based on the following criteria: a) Mi'kmaw constitutionally protected rights regarding land and resources; b) the nature of Mi'kmaw use of particular lands and resources; c) the uniqueness of such lands and resources; and d) the cultural or spiritual meaning of those lands and resources.

2.3. Research Methodology

The research involved in the preparation of this MEKS is based on several components:

- An assessment of the study area's archaeological resources or potential based on existing reports and archaeological records of the Nova Scotia Museum.
- A survey of archival, published and unpublished material relating to historic Mi'kmaw land uses and occupancy in the study area housed at the Nova Scotia Public Archives, the Nova Scotia Museum; as well as the internal archive of Mi'kma'ki All Points Services.
- A two-season ground survey in the fall of 2017 and spring of 2018 of local plant resources of special significance to the Mi'kmaw community.
- Community-based research on current Mi'kmaw land and resource uses, carried out between October 2017 and August 2018 in the neighbouring Mi'kmaw First

Nations at Paqtnkek, Sipekne'katik and Eskasoni with Mi'kmaw knowledgeable about the Study Area, its resources and current Mi'kmaw land uses.

A detailed interview guide was developed specifically for this study in order to insure a consistent approach in the interviewing and recording of data by the interviewers in the above-mentioned communities.

No members of Millbrook First Nation were included in the interview survey as the community was in the process of preparing its own study.

- A regionally relevant compilation of existing current Mi'kmaq land/resource use and occupancy data out of the Traditional Use data base of Mi'kma'ki All Points Services Inc.
- Collected information has been compiled and digitized in order to allow for an analysis of potential impacts on current Mi'kmaw land and resource uses. Due to the sensitive nature of much of the information, it is reported in a generalized format only.

2.4. Limitations

- Little archaeological work has been carried out so far in the region of Guysborough County surrounding the project site. A scarcity of pre-contact archaeological evidence in this region does therefore not allow the conclusion of low Aboriginal use and occupancy during that period;
- Despite the Centralization policy in Nova Scotia interrupting during the first half of the 20th century traditional patterns of Mi'kmaw land use and occupancy, Mi'kmaw use continued to encompass all of Nova Scotia;
- Land and resource use information, both those stemming from MAPS' general data base as well as those collected for this study specifically, are based on interviews of samples of Mi'kmaw Elders and active land users. The land use data represented here therefore cannot be comprehensive. It serves as positive proof of Mi'kmaw land and resource use in the study region, but does not allow any conclusions as to the intensity of land use, nor does it imply that locations or resources not identified here are indeed not utilized by Mi'kmaq.
- The land/resource use survey carried out specifically for this study did not include members of the Millbrook First Nation.

2.5. Study Area

The study area for current Mi'kmaw land and resource use activities consists of the Project Area itself and a buffer of a five-kilometre radius surrounding the Project Area, and a corridor of two kilometres along the haul road sections extending beyond the core Project Area. Historical information and cumulative effects may relate to a wider surrounding area.

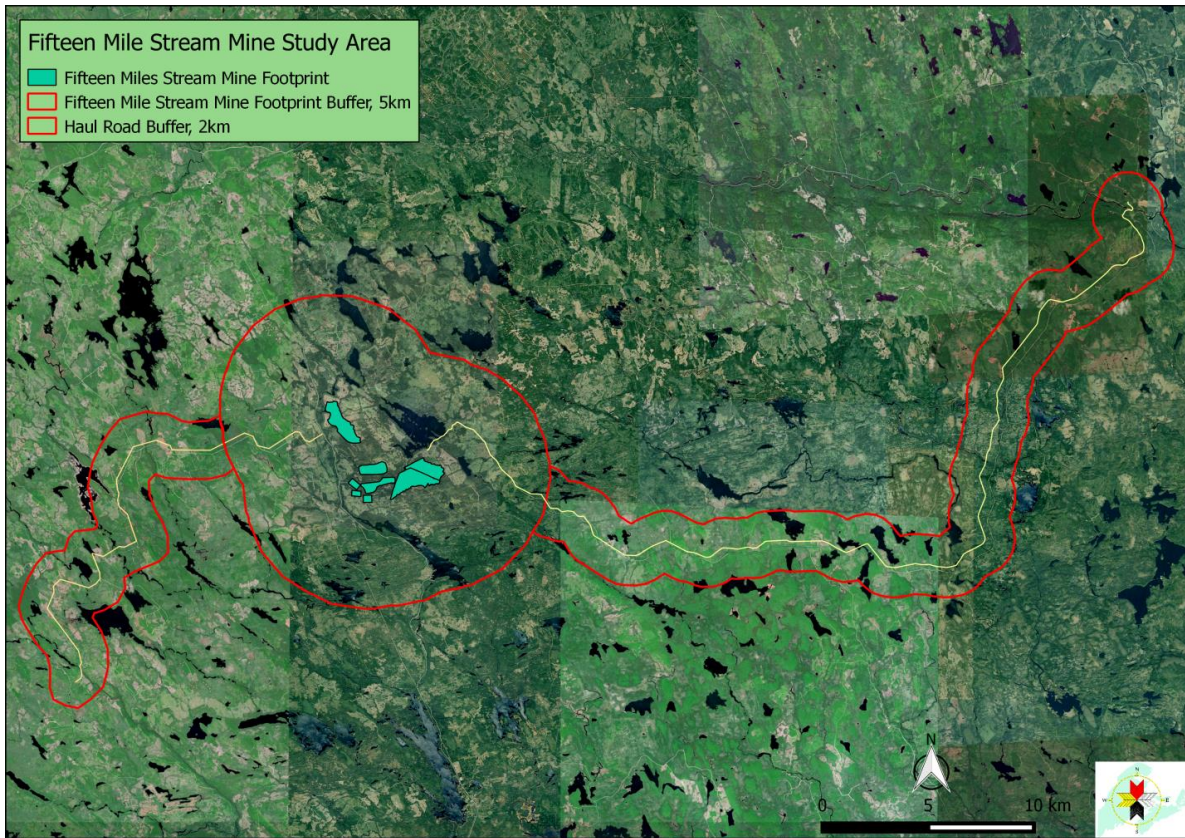


Figure 2: Fifteen Mile Stream Mine Project and Study Areas (Google base)

3. Section I: THE SETTING

In administrative terms, the project footprint lies on the eastern edge of Halifax County and Regional Municipality with the eastern haul road to the Cochrane Hill mine site extending into Guysborough County. The western haul road running past Ten Mile Lake and Creelmans Crossing links the project area with the Beaver Dam mine site and highway 224.

The Project Area is situated in the centre of the Liscomb Game Sanctuary, between Seloam Lake and Antidam Flowage as the area's main waterbodies.

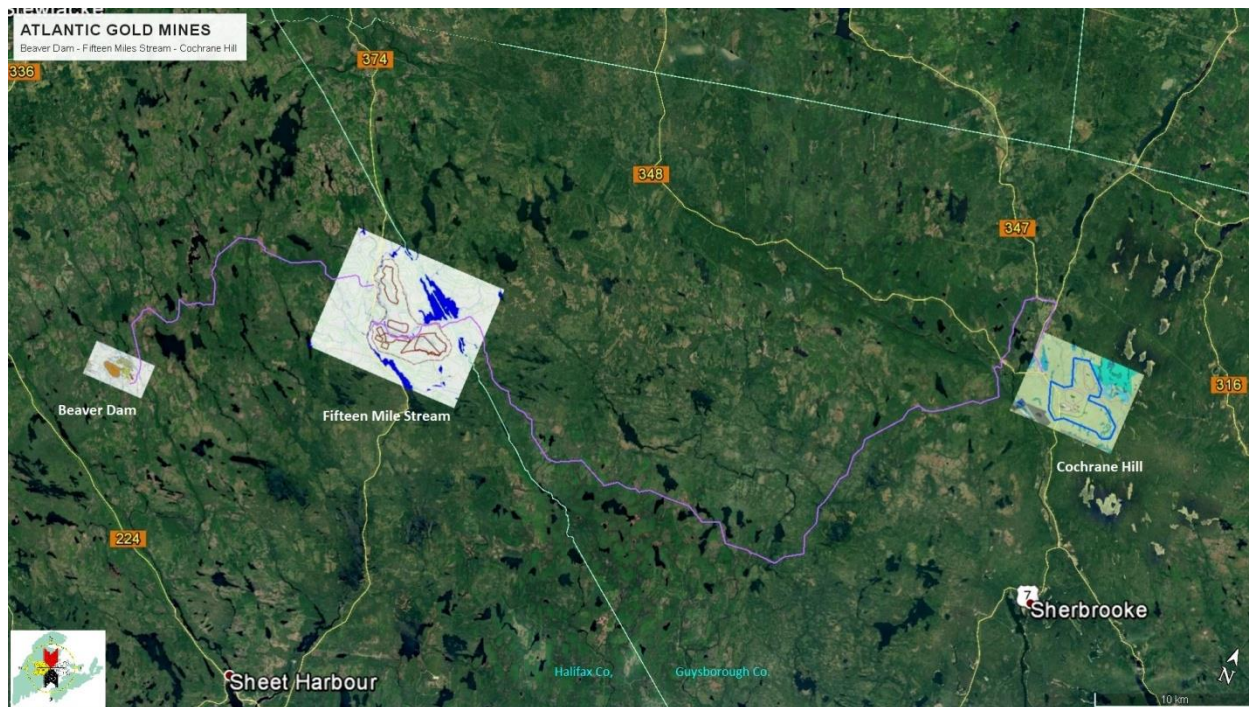


Figure 3: Locations of Beaver Dam, Fifteen Mile Stream and Cochrane Hill Mine Sites with Connecting Haul Roads (Google base)

3.1. The Biophysical Environment

The biophysical characteristics of the Project Area and surroundings can briefly be described as an undulating (elevation ca. 110-170 m), forested landscape. The terrain is interspersed with numerous lakes, brooks and wetlands forming part of the East River Sheet Harbour watershed.

The main drainage basin in the immediate Study Area is that of Seloam Lake and Seloam Brook, a tributary of Fifteen Mile Stream. Around Seloam Brook the terrain is low-lying and boggy.

The general flow pattern is northeast to southwest into the Atlantic Ocean near Sheet Harbour.

3.1.1. Surface Geology

The Study Area's surface geology is characterized by rolling stony till plains, exposed bedrock and drumlins with many surface boulders. The hummocky type terrain is interspersed with numerous lakes, streams, bogs and other wetlands.

3.1.2. Vegetation, Habitats and Fish/Wildlife Resources

The region is part of Nova Scotia's Eastern Interior's ecodistrict typified with a generally forested landcover of red and black spruce in areas of marginal, thin glacial till, and mixed forests including red maple, yellow and white birch, balsam fir, white pine, beech and hemlock in areas with thicker, more nutrient rich soils.

The terrestrial fauna common in this ecodistrict includes mammal species such as Mainland Moose, American Black Bear, Whitetail Deer, Coyote, Bobcat, Red Fox, Porcupine, Snowshoe Hare, Red Squirrel, River Otter, Beaver, Muskrat, American Mink, Weasel and others.

Among those, the Mainland Moose has been NSESA classified as endangered.

The Project Area is located in one of the few remaining areas of relative concentration of the Mainland (Eastern) Moose³.

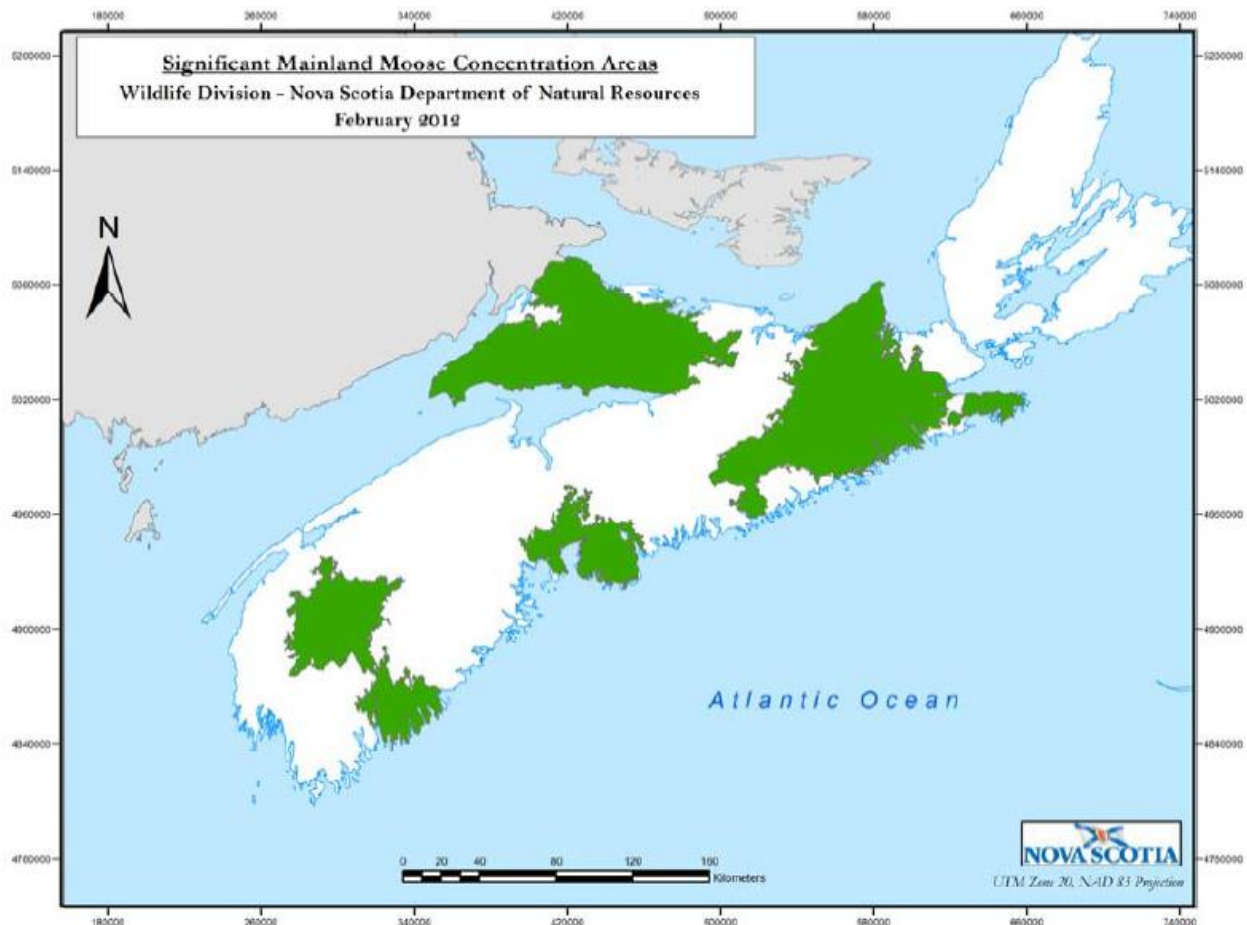


Figure 4: Significant Mainland Moose Concentration Areas (NS Dept. of Natural Resources 2012:1)

³ DNR 2012:1, DNR 2007, Parker 2003, McNeil 2013

Numerous waterbodies and wetlands, including bogs and fens, are interspersed throughout the Study Area.

The presence of fish species with a precarious population status have been reported in the study area, such as Brook Trout (S3)⁴, American Eel (COSEWIC threatened)⁵ and Atlantic Salmon (COSEWIC endangered).

The area's waterbodies also provide important breeding or staging habitat to a variety of migratory bird species.

The region's avifauna include a significant list of species with conservation concerns, i.e.: American Kestrel, Northern Goshawk, Red-breasted Merganser, Greater Yellowlegs, Wilson's Snipe, and Common Nighthawk.

3.2. Project Location Within Mi'kma'ki

Mi'kma'ki, the traditional Mi'kmaq territory, is comprised of seven districts and includes Nova Scotia, Prince Edward Island, the eastern portion of New Brunswick, the Gaspé region of Quebec, northern Maine and southern Newfoundland. Each district had its own independent government with a district chief (Saqmaw) and council. An overarching Grand Council (Santé Mawiomi) composed of representatives from each district was headed by a Grand Chief (Kji'saqmaw).

The Fifteen Mile Stream gold mining project is located near the western boundary of the district Eskikewa'kik which extends inland from the Eastern Shore east of Sheet Harbour.

The Mi'kmaw district name "*Eskikewa'kik*" translates to "Skin Dressers Country" and refers to the region's historic richness in furbearers and other terrestrial mammals. Much of this region, particularly the interior, is still in a fairly undeveloped state and contains large areas of intact ecosystems and habitats.

It is, and has been since time immemorial, an important resource area for the Mi'kmaq of Nova Scotia.

⁴ Conservation status ranking by the Atlantic Canada Conservation Data Centre (ASSDC).

⁵ Conservation status ranking by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

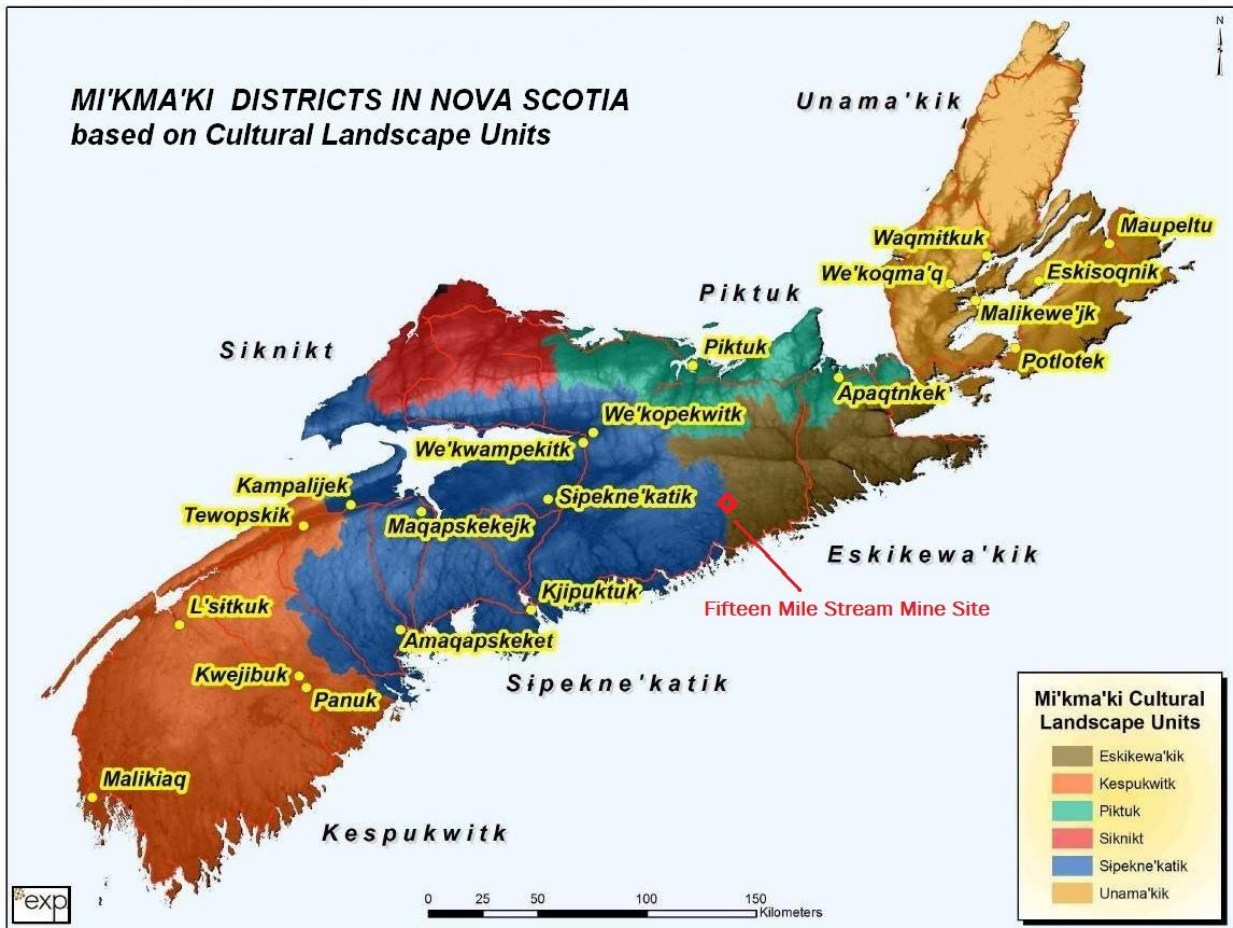


Figure 5: Mi'kma'ki Districts of Nova Scotia (source: Roger Lewis, NS Museum of Natural History) and Fifteen Mile Stream Mine Site

The Mi'kmaw First Nations and communities closest to the Project Area are Paqtnkek, Pictou Landing, Millbrook and Sipekne'katik First Nations on the Nova Scotia mainland, and Potlotek and We'koqma'q on Cape Breton Island (Unama'ki).

3.3. Reserve Lands and Specific Claims

No currently recognized Mi'kmaw reserve lands are located within, or overlap with, either the Project or Study Areas. The two closest reserve lands are Beaver Lake Indian Reserve #17 and Sheet Harbour Indian Reserve #36, both about 33 km from the Project Area.

Beaver Lake Indian Reserve #17 is a 49.4 ha parcel situated to the southwest of the Project Area at Lower Beaver Lake, between Highway 224 and the West River Sheet

Harbour. Belonging to Millbrook First Nation, it currently has a population of 21 people and an infrastructure of five homes and 4 cottages/hunting camps.

Sheet Harbour Indian Reserve # 36, also belonging to Millbrook First Nation, is located south of the Project Area and borders on Highway 7. At a size of 32.7 ha it is currently occupied by about 25 residents living in nine homes.

No specific claims are presently active within the Project or Study Areas.

4. Section II: HISTORIC MI'KMAW LAND USE & OCCUPANCY

4.1. Pre-Contact Mi'kmaw Land Use and Occupancy

Mi'kma'ki, the district of Eskikewa'kik, and the Study Area identified for this gold mining proposal have been occupied by Mi'kmaq and their ancestors since the deglaciation some 12,000 years ago. The so far earliest physical traces of the presence of Mi'kmaq and their ancestors are archaeological finds unearthed at Debert, NS dating from 11,500 BP⁶, a period labelled as Paleo-Indian by archaeologists or Sa'giwe'k L'nuk by Mi'kmaq⁷.

The vast majority of archaeological discoveries in Nova Scotia have been incidental rather than the result of targeted archaeological surveys. More often than not they have been made in the context of some sort of development – agricultural development or residential, industrial or infrastructural construction. The Study Area has so far not seen much of such development activities. The archaeological record for most of Eskikewa'kik is therefore very sparse and consists mostly of sporadic surface finds.

It is obvious therefore, and important to note, that the relative lack of archaeological evidence in the Study Area cannot be construed as proof of a lack of pre-contact Mi'kmaw occupancy⁸.

The archaeological potential of the Study Area and surrounding region, however, is judged as being high. The area has a long history of Mi'kmaw occupancy, harvesting/gathering and guiding⁹.

The three most significant factors for determining the archeological potential of a site or area are: food resources, access and suitability for habitation.

⁶ Robinson 2011.

⁷ Mi'kmaw term for the pre-contact cultural period as given in Lewis 2012, 2018.

⁸ Lewis 2011, Sheldon 2000:12.

⁹ Lewis 2018

In general, Mi'kmaw land use and occupancy involved semi-permanent and permanent settlement at resource-rich locations. Based on the overlapping seasonal fluctuations in the local availability and abundance of terrestrial and aquatic resources, Mi'kmaw groups exploited singular or multiple resources in a succession of habitats throughout their territory.

At the time of contact Mi'kmaw occupied the shores of virtually all water bodies, both marine and freshwater. River systems and connected lakes were particularly important features in traditional Mi'kmaw land use as they offered a multitude of food resources as well as access to inland terrestrial habitats and their resources.

Villages were usually situated at a navigable body of water. Preferred summer locations were coastal sites at the mouths of rivers with significant spawning runs of salmon, eel, gaspereau and other fish species as well as waterfowl. Such sites provided ready access to a variety of freshwater and marine resources, plus a waterway into the interior.

East Sheet Harbour River and what are today the Marshall and Anti-Dam Flowages represented such waterways, as well as Moser and Liscomb Rivers.

Among the most important coastal resources were migratory fish species such as salmon, eel, gaspereau, striped bass, smelts and sturgeon, marine species such as mackerel, skates, cod, marine mammals such as seals and porpoise, ducks and geese, various sea- and shore birds, clams, quahogs, limpids and other shellfish and whelks, lobster and crab.

At the time of early contact, reports of large summer villages along the Eastern Shore with easy access to the interior included *Nipmanegatik* at Beaver Bank in Halifax Bay, *Esgegeogagig* at Indian Point in Ship Harbour (at the time the residence of the District Chief), *Goimotijig* ("little harbour") at Spry Harbour, *Megateoig* ("big eels") at Liscomb Harbour, *Gamsog* ("rock on the other side") at Canso, *Notogeteoalneg* at the mouth of the Salmon River emptying into Chedabucto Bay, and *Oalamgoaganeg* ("lobster ground") at Port Mulgrave¹⁰.

Similarly, summer villages were located along the opposite coast, the Northumberland Strait, for example *Piktuk* ("from great fire") at Pictou Harbour, at Merigomish (*Maligomitjk* or "Many Coves"), Antigonish (*Naligitgonietjg* or "broken branches"), Pomquet (*Pogomgeg* or "dry sand") and Tracadie harbours (*Tlagatig* or "encampment")¹¹.

Several long-distance travel (canoe) routes though the interior connected these settlements along the two shores.

¹⁰ Hoffman 1955:536-537, MacDonald 1999

¹¹ Hoffman 1955: 537, 539, 548; Denys 1908:172; Patterson 1877:22, 27; Speck 1915; MacDonald 1999; Allen 2006

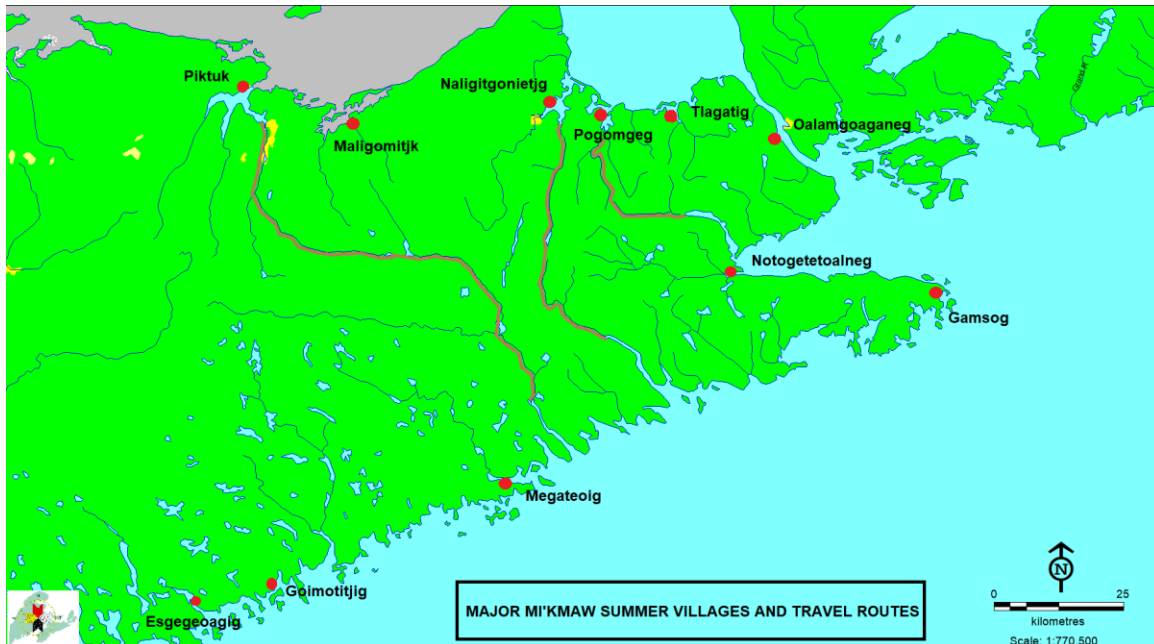


Figure 6: Major Historic Mi'kmaq Summer Villages and Travel Routes

Two of the main regional coast-to-coast travel routes connected Country Harbour with Antigonish Harbour via the South River, and Sherbrooke with Pictou and via the East River St. Mary's and the East River Pictou (*Ogoasgog* or "drawing up canoes").

During fall and winter, terrestrial and other wildlife resources of the interior generally drew Mi'kmaq families into the region -including the Study Area- whenever their abundance favoured inland food resources.

Mainland moose as well as the woodland caribou herds roaming the open inland areas, and in particular the barrens, black bear, beaver and other furbearers, the ubiquitous snowshoe hare and grouse, waterfowl, as well as fish species such as eel, salmon and gaspereau would have been able to support relatively large groups during the winter months. The district's name "*Eskikewa'kik*" or "Skindresser's Country" highlights the region's richness in terrestrial and semi-aquatic mammals¹².

In both inland and coastal areas a large variety of plant species were utilized for food, medicines, housing, crafts and tool production¹³, as well as stones and minerals for tools and implements¹⁴.

¹² The 'skins' referred to include the furbearers whose skins became trade items during the historic period (beaver, otter, marten, fox, etc.), but also moose, caribou and others whose hides were equally valuable in the manufacture of clothing and many other items.

¹³ E.g.: fiddleheads and groundnut/wild potato (*Apios americana*) for food, black ash for baskets,

Besides providing a rich wildlife habitat, Nova Scotia's original Acadian forests offered an astounding palette of plant resources. The various varieties of maple, birch, spruce, fir, pine, beech, ash, yew as well as tamarack and hemlock were used in housing (wigwam frame and covering) and tool making (tool handles, baskets, traps), for nutritional (syrup, beverage, nuts) and medicinal (tea, poultice) purposes.

A large variety of edible berries, fruits (crabapple, service berry), roots (sweetflag, dandelion), tubers (groundnuts, cattails), shoots (fiddleheads), bulbs (wild leek) and leaves (lambquarters) provided high-quality food resources some of which could be preserved by drying.

In addition to their nutritional qualities, many of those plants possess medicinal properties which were known and utilized by the Mi'kmaq.

A large number of plant species were also used primarily for medicinal purposes (e.g. alder, wild sarsaparilla, gold thread, jewelweed, Labrador tea, sheep laurel).

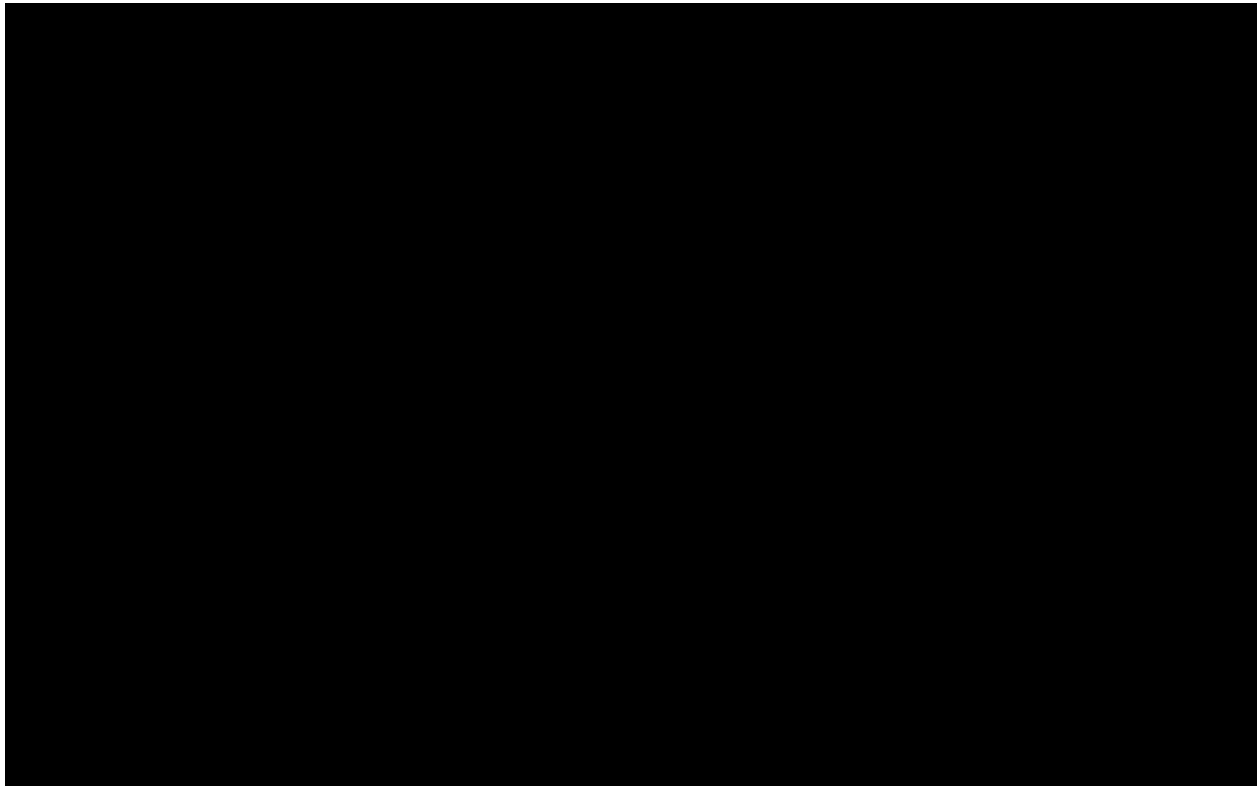


Figure 7: Currently Known Archaeological Sites, source Nova Scotia Museum of Natural History (Google base)

¹⁴ birch bark for wigwams, canoes, containers)
E.g.: cherts and quarts for projectiles and cutting implements, clays

Two known archaeological sites attest to pre-contact Mi'kmaw occupancy of this part of the interior of mainland Nova Scotia, one being site BhCp-01¹⁵, located within the Study Area on an island in Seloam Lake. Just outside the Study Area on Liscomb River, 11 km further to the east, lies BhCo-01, another archaeological site.

An additional cluster of sites, BgCp-01 to BgCp-04, are located at the north end of Marshall Flowage, about 8-9 km south of the Study Area. Some of those sites contain both pre- and post-contact components.

4.2. Post-Contact Mi'kmaw Land Use & Occupancy prior to 1950

During the first half of the 18th century, Britain was seeking to end the French influence in, and claim to, the region, and to establish its dominance in Nova Scotia. To that end it expelled the Acadians, the first small but significant wave of European immigrants who managed to maintain good relations to the indigenous population, and enticed settlers from New England to relocate to Nova Scotia and New Brunswick with grants of 'free wild lands'. As a result, over 8000 newcomers heeded the call and settled there in the 1760s, particularly in the few fertile agricultural areas such as the Annapolis River, Minas Basin and the lower Shubenacadie River basin.

Although Nova Scotia has, since the 18th century, increasingly been settled by predominantly European immigrants, no portion of Mi'kma'ki has ever been formally and legally ceded. Quite to the contrary, several treaties between the sovereign indigenous nations and the British Crown were signed between 1725 and 1779 and affirmed Mi'kmaw rights to their territory and its resources, and pledging peaceful coexistence and Mi'kmaw loyalty to the British Crown¹⁶. This covenant chain of treaties include the 1752 and 1760/61 treaties that were affirmed by the Supreme Court of Canada as legal and binding.

During the 1800s and 1900s, European settlement expanded and increasingly appropriated the most accessible and for their economic interests most productive areas - the safe harbours, resource-rich estuaries and near-shore fishing grounds all around the Nova Scotia coast as well as the few fertile agricultural regions.

In order to minimize Mi'kmaw interference in the settler economy, the government of Nova Scotia government began in 1812 to relocate Mi'kmaw families onto a number of small reserves set up in areas deemed less productive.

¹⁵ Official Borden site registration number by the Nova Museum of Natural History

¹⁶ Wicken & Reid 1996

To the Mi'kmaw population, the less disturbed inland areas and their resources gained in relative importance as a result, and the focus of much of their traditional harvesting activities were pushed into the Province's more remote regions.

The Liscomb region in particular was a favoured hunting, fishing and trapping area for Mi'kmaw, well-known for its wildlife resources¹⁷.

But even in this relatively secluded region, resource competition for wildlife resources gradually increased through subsistence and recreational hunting by the surrounding settler population and, between the late 1800s and early 1900s, sport hunting by wealthy visitors from New England¹⁸. With alternative sources for employment and cash incomes extremely scarce, some local Mi'kmaw found seasonal work as guides in the new sport hunting/fishing industry.

Joe Cope, James Cope, John Thomas and Mattio Salome were three famous Mi'kmaq guides active in and near the Study Area during that period¹⁹.

Prince Arthur Lake, located just south of Big Liscomb Lake, received its name through one such sport hunting excursion when in 1869 Prince Arthur, Duke of Connaught and Stratham (and later Governor General of Canada), and Colonial Indian Commissioner William Chearnley travelled to, and camped in, that location with James Cope as their guide²⁰.

Seloam Lake is named after well-known Mi'kmaw hunter Mattio Selome. He and his family were one of the Mi'kmaq groups active in the Study Region during the late 1800s. He used to camp most frequently at Seloam and Ladle lakes. Mattio Selome buried his wife on an island in Seloam Lake (site BhCp-01)²¹.

Typhus Lake is another one of the locations whose name relates to the presence of Mi'kmaw families in the area. Situated about 15 km east of Seloam Lake, it received its name when several Mi'kmaw died of typhoid fever at their camp and were buried at this location in the mid-1800s²².

There are records of Mi'kmaw guides providing moose meat to miners in the Fifteen Mile Stream area during the historic period of gold mining in the early 20th century²³.

¹⁷ Lewis 2018

¹⁸ Parker 1990, Dodds 1993:23-61

¹⁹ Lewis 2018a, Parker 1990

²⁰ Lewis 2018

²¹ Jerry Lonecloud to Harry Piers 23 Dec 1921, NS Museum Archives, Whitehead 1991:317, Lewis 2018:11

²² Lewis 2018

²³ Jeremiah Lonecloud to Harry Piers (NS Museum of Natural History) 1918, as cited in Lewis 2018

Indigenous place names are a strong testimonial to long-term Mi'kmaw occupancy in the region. Proven to be very persistent through the generations many, if not most, of those traditional toponyms were in existence prior to settlement by Europeans²⁴. Most of the ones recorded by the newcomers relate to locations of early contact and colonization along the coast and estuaries. Of the Mi'kmaw names for geographic features or sites of Mi'kmaw occupancy in the inland relatively few have been documented thus far.

Several of the documented Mi'kmaq place names are found in the surrounding region. Two of these relate to locations or landscape features in, or immediately adjacent to, the Study Area²⁵.

The western haul road crosses the Killag River whose official toponym is a derivation of its Mi'kmaw name Gileg. This haul road meets highway 224 near Beaver Lake, called Oaitjoig in Mi'kmaw.

<i>Mi'kmaw Toponym</i>	<i>Translation</i>	<i>Official Toponym</i>
Gileg		Killag River
Oaitjoig		Beaver Lake (at IR 17)
Emtegen		Montague (Gold Mines)
Kukwesuee'katik	Haunt of the Giants	Middle River Sheet Harbour
Weijooik		Sheet Harbour
Migtjosgog		Mill Lake (near Upper Musquodoboit)
Usoogomus oogwedamk	Wading-across Place	West Lake (near Dufferin Mines)
Oagametgog	Clear Water	West River Pictou
Piktuk	From Great Fire	Pictou
Poogunikpechk		Pictou Harbour
Pogumkek		Pomquet Harbour
Tlaqatik	At the Encampment	Tracadie
Amasipogoek		Pomquet River

Table 1: Mi'kmaw Toponyms

During the early 1900s, Frank G. Speck recorded what he described as 'Micmac family hunting territories', with the caveat that his records may not be complete²⁶.

These territories generally centre around waterbodies or watersheds. Their boundaries were, as Speck notes, rather vague and not exclusionary to trespassers. The individuals associated with them were not the 'owners' in the European sense of private property ownership, but persons who, with their extended families, were generally recognized as the primary users of these areas and their resources. The hunting territories identified by Speck were thus core areas used not only by the named

²⁴ Weiler 2008

²⁵ Frame 1892; Allen 2006 (orthography following primary sources Pacifique 1934, Ganong 1914); Sable & Francis 2012; see also fig. 6 above

²⁶ Speck1922:93-94, also Speck 1915, Chute 1999

individuals and their immediate families, but provided resources and sustenance, and likely a seasonal abode to members of their extended families and close friends.

The Project Area is located in what was identified by Speck at the time as the core territory of Peter Joe Cope. The Study Area otherwise intersects with the territories ascribed to Mattio Selome, Jim Paul, Michael Toney, Andrew Paul and Frank Cope.

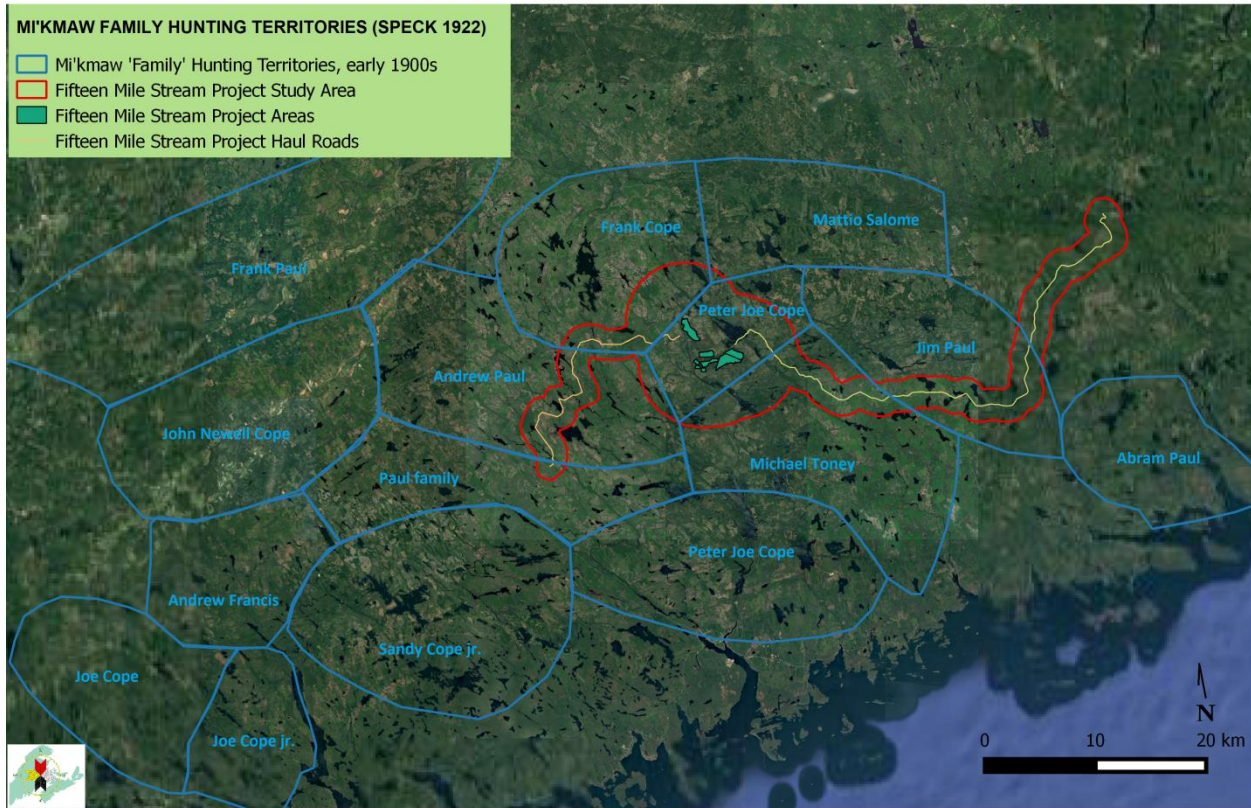


Figure 8: Mi'kmaw 'Family Hunting Territories', early 1900s, according to F.G. Speck (base Google)

Among today's non-indigenous residents, older individuals remember Mi'kmaw families criss-crossing the region, maintaining hunting camps or cabins throughout. It wasn't until the 1940s when they reported observing a noticeable drop in the presence and extended stays of Mi'kmaw family groups in the region²⁷.

This appears to have been the result of the Federal Government's Centralization policy²⁸, an attempt to further concentrate the Mi'kmaw population onto only two large reserves, Shubenacadie Indian Reserve on the Nova Scotia mainland and Eskasoni Indian Reserve on Cape Breton Island.

²⁷ Lewis 2018a

²⁸ Lewis 2018a, Bernard 2018

The policy ultimately failed²⁹, was abandoned in 1949, and the majority of Mi'kmaq today live in 18 communities spread out over the province. Most of the families that were active in the Study Area eventually relocated to the Indian Brook (Shubenacadie), Millbrook and Paqtnkek reserves.

The decline in the visibility of Mi'kmaw families or groups in the inland in terms of seasonal camps by no means implies that the importance of their traditional lands and resources began to decline, nor harvesting activities were being abandoned.

The general pattern of Mi'kmaw land and resource uses in the area gradually changed during this period from extended seasonal inland stays, often by complete families, to briefer, frequent hunting/fishing excursions. This trend was facilitated, possibly even stimulated, by increasing accessibility through a growing network of country roads and the use of motorized vehicles.

Mi'kmaw families were thus able to re-connect with their traditional harvesting areas, as far as they had not in the meantime become subject to competing uses by the dominant society such as municipal, agricultural or industrial development, or parks and protected areas.

Despite progressive developments and forced centralization the Mi'kmaw never voluntarily or wilfully abandoned any part of their traditional territory.

5. Section III: CONTEMPORARY MI'KMAW LAND AND RESOURCE USES

The use of Mi'kmaw traditional lands and resources continues across Nova Scotia, and so does the in-depth knowledge of the interdependent relationships between the territory's natural elements, plant, animal and human beings. This knowledge and the spiritual understanding of a proper balance between humans and their environment are expressed in the principles of Netukulimk, a code of conduct of ethical living³⁰.

The pattern of Mi'kmaw land use has changed, as indicated above, from that of a seasonally shifting residence between fluctuating resource-rich coastal and inland locations or areas to one of a permanent residential base with shorter-term harvesting excursions to specific seasonally productive resource areas.

The regional road network facilitates quick year-round access for harvesting excursions of one or several days by Mi'kmaw from the surrounding First Nation communities on the Eastern and Northumberland shores, the Shubenacadie River and Cape Breton, whether they reside on-reserve or not. Motorized transportation such as pick-up trucks

²⁹ Upton 1979:174-175, CMM & Peabody Museum 2001:51, 58, 69, Tobin 1999

³⁰ Prosper & al. 2011, Barsh 2002

all-terrain vehicles, snowmobiles, engine-powered boats put the Study Area's resources within relatively easy reach from any of these communities.

A number of Mi'kmaw residents maintain or regularly use cabins or cottages in the region. However, no Mi'kmaw owned or utilized cottages or cabin have so far been recorded in the Study Area.

The significance of 'traditional' land use activities to most Mi'kmaq today goes far beyond the aspects of recreation or sport. Traditional land use activities include hunting, fishing and gathering for food, social and ceremonial purposes, and for earning a livelihood.

The traditional land use activities of hunting, fishing, trapping and gathering are an essential form of expression of their cultural identity. The relationships to the land itself and its non-human inhabitants are the foundation of the Mi'kmaq traditional economy and lifestyle, world view, philosophy, and even language³¹.

These land use activities are an integral part of the domestic economy of many households and make an important contribution to their food security. Of the sample of Mi'kmaw individuals interviewed 84% identified the traditional sector of their domestic economy, the harvesting of wildlife and plant resources, as an indispensable component of their families' food security.

Both those aspects, the economic and cultural motivations for traditional land and resource uses, feed into a third impetus: the need to express, confirm and exercise their Indigenous rights to live their cultural heritage within Mi'kma'ki, and their treaty rights to continue harvesting the resources of their traditional territory.

Mi'kmaq individuals or families from all surrounding communities were involved in harvesting and other land use activities in the region including the Study Area.

The following two maps of recorded activities (figs. 9, 10) represent a mere sample of Mi'kmaw land use in the area, since only a portion of the active land users were interviewed and respondents reported only a portion of the land use activities they have carried out.

One also has to keep in mind that the importance of the discrete harvesting sites displayed on the map goes beyond the actual, distinct locations, but encompasses the habitats required to support the particular resources harvested at that location. The significance of a reported moose hunting site, for example, is not limited to the spot where the animal was killed but includes the entire range and habitat that supported this individual moose.

³¹ Sable & Francis 2012, Hornborg 2001

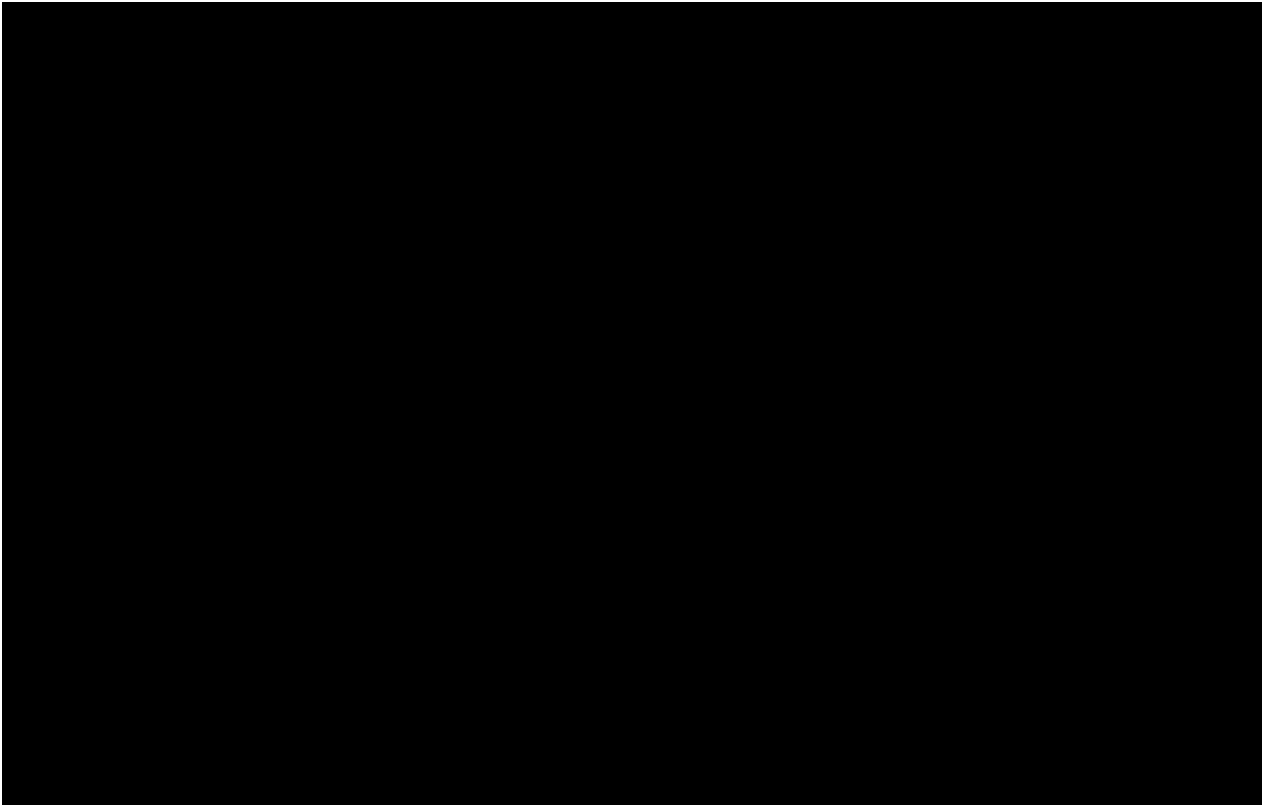


Figure 9: Reported Mi'kmaw Land and Resource Uses, overview (base Bing)

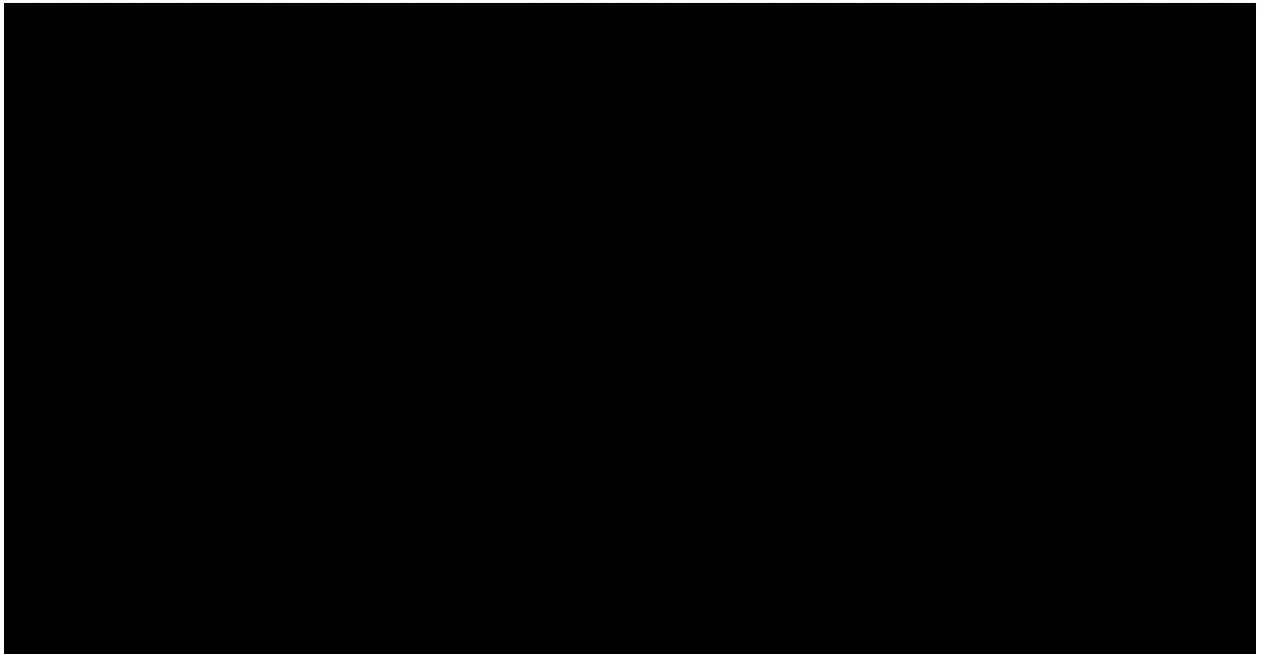


Figure 10: Reported Mi'kmaw Land and Resource Uses, detail (base Bing)

It follows, consequently, that the map does not allow the conclusion that areas or locations that do not show land use are indeed not being used by Mi'kmaq. It does, however, illustrate clearly that both the Study Area as well as the Project Area itself are being utilized by the Mi'kmaw First Nation, and that these lands and resources are integral parts of its traditional economic sector.

The pattern of reported activities shows three major spatial clusters within, or overlapping, the defined Study Area³²:

- a) One of those areas of concentration of recorded traditional land use is located between Lower Rocky Lake, Seloam Lake and Antidam Flowage, at the centre of which lies the proposed Project Area.
- b) The western haul road towards Beaver Dam traverses the second cluster of reported land use activities.
- c) The third cluster is found along the eastern haul road towards Cochrane Hill.

The following table (Table 2) lists the sample of contemporary land and resource use activities reported to occur within the Study Region.

It needs to be kept in mind, as indicated above, that these are merely a reported selection of ongoing activities by a sample of the Mi'kmaw land users active in the region.

Land & Resource Use Category	Reported Resources & Activities
Hunting & Trapping	Whitetail deer (<i>Odocoileus virginianus</i>), Eastern moose (<i>Alces alces americana</i>) [sighting], Snowshoe hare (<i>Lepus americanus</i>), Porcupine (<i>Erethizon dorsatum</i>), Groundhog (<i>Marmota monax</i>), Black bear (<i>Ursus americanus</i>), Red fox (<i>Vulpes vulpes</i>), Bobcat (<i>Felis rufus</i>), Lynx (<i>Felis lynx</i>), Coyote (<i>Canis latrans</i>), Beaver (<i>Castor canadensis</i>), Muskrat (<i>Ondatra zibethica</i>), Otter (<i>Lutra canadensis</i>), Fisher (<i>Martes pennanti</i>), Mink (<i>Mustela vison</i>), Raccoon (<i>Procyon lotor</i>),

³² Figures 9 & 10

	Ruffed grouse (<i>Bonasa umbellus</i>), Ducks (<i>Anas rubripes</i> & al.), Canada goose (<i>Branta canadensis</i>), Barred owl (<i>Strix varia</i>)
Fishing	Speckled trout (<i>Salvelinus fontinalis</i>), Atlantic salmon (<i>Salmo salar</i>), American eel (<i>Anguilla rostrata</i>), White sucker (<i>Catostomus commersoni</i>), Yellow perch (<i>Perca flavescens</i>), Gaspereau (<i>Alosa pseudoharengus</i>), Smallmouth bass (<i>Micropterus dolomieu</i>), Freshwater mussels (<i>Margaritifera margaritifera</i> & al.)
Food, Medicinal & Decoration Plants Collection	Blueberries (<i>Vaccinium angustifolium</i>), Cranberries (<i>Vaccinium macrocarpon</i>), Fiddleheads (<i>Matteuccia struthiopteris</i>), Chokecherries (<i>Prunus virginiana</i>), Goldenrod (<i>Solidago canadensis</i>), Gold thread (<i>Coptis trifolia</i>), Sphagnum moss (<i>Sphagnum spp</i>), Labrador tea (<i>Ledum groenlandicum</i>), Hazelnuts (<i>Corylus cornuta</i>), Mushrooms (<i>Cantharellus</i> , <i>Agaricus campestris</i> & al.), Mayflower (<i>Epigaea repens</i>), Lion's paw (<i>Prenanthes trifoliolata</i>), Bloodroot (<i>Sanguinaria canadensis</i>), Golden seal (<i>Hydrastis canadensis</i>), Flag root (<i>Acorus calamus</i>)
Wood & Wood Products Harvesting	White ash (<i>Fraxinus americana</i>), Black ash (<i>Fraxinus nigra</i>), Balsam fir (<i>Abies balsamea</i>), Hemlock (<i>Tsuga canadensis</i>), Juniper (<i>Juniperus communis</i>), White cedar (<i>Thuja occidentalis</i>), Birch bark (<i>Betula papyfera</i>), Red oak (<i>Quercus rubra</i>)
Ceremonial / Spiritual Activities & Sites	Sacred site
Burial & Birth Places	Burial
Habitation & Camp Sites	Cabin, travel route

Table 2: Reported Contemporary Mi'kmaw Land & Resource Uses within the Study Region

The two-season plant surveys conducted by Mi'kma'ki All Points Services at sampling points throughout the Study Area identified a significant number of species considered of specific cultural importance to the Mi'kmaw community.

The following table (Table 3) displays the results of the surveys, with the number of species broken down into the categories of food/beverage and medicinal plants as well as plant species used for arts and crafts applications.

None of the plant species identified in the surveys are threatened or limited to local distribution.

As the harvesting and use of traditional medicines embody a spiritual component beyond the practical medicinal applications, many Mi'kmaw are reluctant to publicise the respective species names, specific harvesting locations and medicinal uses. Plant uses are therefore given here in a generalized format only.

Fifteen Mile Stream Plant Surveys		
Fall (2017)	Food/Beverage	14
	Medicinal	47
	Arts/Crafts	11
Spring (2018)	Food/Beverage	6
	Medicinal	28
	Arts/Crafts	11

Table 3: Number of Identified Plant Species of Special Significance to Mi'kmaw according to Type of Use

While all above-mentioned wildlife and plant species are of economic significance to Mi'kmaw harvesters, moose, salmon, eel, black ash, and various medicinal plants are of special cultural and/or spiritual importance as well.

The threatened status of the mainland moose population further heightens the significance of the fact that its presence in the Study Area has been confirmed during the data collection for this study.

The evidence presented above clearly shows Mi'kmaw occupancy and land/resource use in the Study area and wider region of Eskikewa'kik – a changing but uninterrupted use from pre-contact times to today.

The influx of Euro-Canadian settlers with competing land and resource uses and the resulting changes in the landscape of the coastal and more fertile regions of Nova Scotia have dramatically limited Mi'kmaw access to what used to be the richest resources areas. The interior of eastern Nova Scotia has so far been one of the two remaining regions of relatively large contiguous forests and terrestrial wildlife habitats

on the mainland portion of the Nova Scotia Mi'kmaq traditional territory, with the second one located in the interior of southwestern Nova Scotia.

This enhanced the relative significance of the hitherto lightly settled and less transformed region of Eastern Shore interior to the Mi'kmaw of mainland Nova Scotia. The continuation of traditional land and resource uses, both in principle and in this specific region, are thus of utmost importance to virtually all interviewees for economic as well as cultural reasons.

As was touched upon earlier, the relationship of the Mi'kmaw to their traditional lands extends far beyond economic interests. It provides the basis of Mi'kmaw philosophy and spirituality, therefore is the very foundation of Mi'kmaw cultural identity³³.

6. Section IV: IMPACTS AND RECOMMENDATIONS FOR MITIGATION

6.1. Anticipated or Potential Project Impacts on Mi'kmaw Land and Resource Uses

6.1.1. Anticipated or Potential Direct Impacts

As with any new industrial development in a hitherto fairly 'quiet', sparsely settled area, the proposed mining activities will result in an influx of people and increased human activity in the region, both industrial and recreational – additional stresses on wildlife habitats and populations.

The most obvious and unavoidable impacts of the proposed developments are the loss of the wildlife habitat and its resources within, and in the immediate vicinity of, the project's footprint. This includes the project's entire infrastructure such as the mine pit, waste rock deposits, tailings pond/storage facilities, processing plant, the cleared areas surrounding these facilities, and the new or widened transportation corridors between the proponent's other existing or proposed neighbouring processing or transshipment facilities.

The resulting immediate loss of harvesting areas necessarily also include the legislated 'no-shooting' buffers surrounding those industrial complexes and work areas, and along roads. Equally unavoidable appear to be the increased noise and dust levels generated by the blasting, processing and trucking activities involved.

Such emissions are impacting directly Mi'kmaw land use and resource harvesting by disturbing, dispersing or expelling wildlife, or by coating and contaminating local food and medicinal plants with dust.

³³ Hornborg 2008, Sable & Francis 2012, Lewis 2018

Other types of emissions threaten to impact wildlife and plant resources or harvesting within, and even beyond, the Study Area. It appears unreasonable to assume that effluents containing arsenic, mercury and other chemical components used in ore processing, whether stored in tailings ponds or leaching out of waste rock stock piles, can reliably be prevented from entering surface water features like streams, lakes and wetlands, and possibly even local aquifers. Discharge of such effluents into the local freshwater system may disperse for considerable distances through the downstream portion of the respective watershed and contaminate water bodies, soils, aquatic fauna³⁴ and flora, and other wildlife depending on those habitats³⁵. As experience has shown, the discharge and resulting contamination from the proposed mine's tailings ponds and waste rock piles may outlast the productive life of the mine itself by decades or more³⁶.

These impacts will remove affected habitats and their wildlife or plant resources from Mi'kmaw use and further narrow both the useable land base and the spectrum of the resources of the traditional sector of their economy.

It can also not be ignored that the increasing industrialization and contamination of the natural environment can not remain without impacts on Mi'kmaw culture in general. Secularizing the living world and reducing its meaning and purpose to its utilitarian aspects, it disrupts the philosophical relationship with it and contributes to the erosion of the Mi'kmaw world view and values, self-understanding and culture.

6.1.2. Potential Cumulative Impacts

It is generally accepted today that environmental or socio-cultural impacts of industrial developments are neither always direct nor can they be understood without their historical context or in isolation from other ongoing changes. Cumulative effects are thus the accumulated spatial and temporal impacts to environmental and socioeconomic values from multiple projects and other activities³⁷.

With regard to the proposed project assessed here, several external factors and developments concur to potentially amplify impacts on the Mi'kmaw communities and their operational environment³⁸.

³⁴ Including fish, aquatic and waterborne insects and other invertebrates, mussels

³⁵ E.g. amphibians, beaver, muskrat, otter, mink, moose, ducks, geese, heron, bald eagle, osprey, insectivorous birds, bats

³⁶ Campbell & al. 2018, Willick 2018a,b, Laroche 2018, Parsons & al. 2012

³⁷ Steffensen 2016:iii, CEAWG 1999

³⁸ A society's operational environment includes the natural setting, economic resources, laws

With respect to population and development density, this region, the interior of eastern Nova Scotia, has so far been one of the two remaining areas of large contiguous forests and terrestrial wildlife habitats on the mainland portion of the Nova Scotia Mi'kmaq traditional territory.

In the second one, located in the interior of southwestern Nova Scotia, harvesting access to the resources of the traditional economic sector of Mi'kmaw domestic or community economy has already been largely withdrawn through the protected lands status of Kejimikujik National Park and Historic Site and the Tobeatic Wilderness Area. Similarly, Mi'kmaw access to the resources of the once rich harvesting area of the interior of the eastern mainland has increasingly been restricted over the recent past.

The Liscomb Game Sanctuary, established in 1928 in part to protect the dwindling population of mainland moose, severely impacted Mi'kmaw access to the area's varied and once plentiful resources³⁹.

Over the past few years, a marked increase in large-scale clearcutting of the region's forests⁴⁰, including the Liscomb Game Sanctuary, has drastically altered wildlife habitats and reduced or locally eliminated populations of forest-dependent wildlife as well as plant species.

Small-scale historic gold mining activities between the mid-19th and mid-20th centuries has left a legacy of contaminated sites⁴¹. Due to the modest scale of mining activities during this period, these sites are generally relatively small, concrete and localised. Nevertheless, they do still adversely impact animal and plant communities in the immediate surroundings and harvesting around these sites is generally avoided.

Osprey Gold Development Ltd. is proposing to re-develop several of the historic mine sites to extract remaining ore deposits in the near future. Its Caribou Gold Project site is located approximately 8 km north of Atlantic Gold's Moose River Consolidated mill site and 34 km southwest of its Fifteen Mile Stream Project Area. Its Gold Lake site is situated about 40 km to the southwest and the Miller Lake site approximately 30 km to the southeast of the Fifteen Mile Stream Project Area⁴².

Atlantic Gold's Fifteen Mile Stream Mine proposal is also merely one of several proposed projects. As outlined in the Project Description above, the Fifteen Mile Stream Gold Mine is one of a string of four mines in various stages of development.

³⁹ Sanctuary regulations: <https://www.novascotia.ca/just/regulations/regs/wiliscom.htm>

⁴⁰ See Appendix 3

⁴¹ See Appendix 1

⁴² Osprey Gold Development Ltd 2018, see Appendix 2

To assess community impacts in any meaningful manner, the combined effects of all these recent and proposed developments and the resulting environmental changes need to be considered.

The combined area anticipated to undergo significant environmental changes, and the lands and resources that, as a result, will be withdrawn from current Mi'kmaw use, is considerable.

This loss of accessible and uncontaminated lands and resources necessarily result in an increased concentration of, and competition amongst, individual Mi'kmaw land users in the remaining harvesting areas as well as heightened pressure on the resource base of those reduced areas.

The Fifteen Mile Stream Mine in itself will represent a significant agent of change and a contributor to the collective of anticipated environmental and social impacts.

Over the past years, Atlantic Gold has begun to clear the project areas, build access roads, set up an on-site field office and restrict entry into the area for non-employees.

6.2. Conclusions

While the cumulative impacts of the Fifteen Mile Stream mining proposal on the Mi'kmaq of Nova Scotia can not be quantified, the conclusion is inescapable that adverse impacts will flow from it, and those impacts will indeed be significant.

As additional, formerly productive, portions of the Mi'kmaw territory and resource base will be removed from harvesting access, the anticipated impacts felt on an economic level include:

- being barred physical access by property boundaries surrounding the mine site,
- the additional buffer created by provincial legislation prohibiting the discharge of firearms in proximity to residences, work sites, roads, etc.,
- displacement of wildlife resources through noise pollution and other human disturbances,
- contamination of terrestrial and aquatic habitat through dust generated by blasting, crushing and transportation,

- contamination of terrestrial and aquatic habitat and consequently local wildlife and plant resources by chemical effluent discharge,
- increased concentration of harvesting activities on remaining resource areas, greater competition amongst active harvesters, and intensified harvesting pressure on the resources of those areas.

These losses in harvesting areas and resources, and the potential contamination of 'country foods' and traditional medicines are expected to weaken the domestic economy of Mi'kmaw families, potentially threatening food security and health.

It will also add to the corrosion of traditional Mi'kmaw world views, values and religious concepts, that is Mi'kmaw culture and identity as a whole, through the disruption of their relationship with the land and its non-human inhabitants.

With these multitudes of recent, ongoing and proposed developments impacting the eastern interior region and significantly impacting Mi'kmaw access to what many consider to be the last contiguous natural area and its resources, there is little opportunity left to them to sustain their traditional economic sector and lifestyle.

It therefore stands to argue that this proposed project, as part of a larger-scale development push and its cumulative impacts, may infringe on Mi'kmaw aboriginal and treaty rights. It may indeed contribute significantly to other current adverse impacts of Mi'kmaw constitutionally protected rights to continue their traditional economic sector of natural resources harvesting and being meaningfully consulted on issues impacting the environmental integrity of their traditional territory.

6.3. Recommendations

Should permission be granted that Atlantic Gold Corporation's proposed Fifteen Mile Stream Mine be developed, MAPS issues the following set of recommendations in consideration of the above discussion and in order to minimize the potential and anticipated adverse impacts of the Fifteen Mile Stream Gold Mine project:

1. It is recommended that the details of the infrastructure layout (e.g. locations of waste rock deposits and tailings ponds) be developed in cooperation with Mi'kmaw environmental research institutions and experts such as the Unama'ki Institute of Natural Resources and the Mi'kmaq Conservation Group (Confederacy of Mainland Mi'kmaq).

2. It is also recommended that an environmental protection committee be established to develop environmental impact mitigation protocols, oversee monitoring procedures and evaluate test results. This committee should have an equal tri-partite composition of environmental experts of the proponent, Mi'kmaw representatives the Unama'ki Institute of Natural Resources and the Mi'kmaq Conservation Group, and the NS Department of the Environment.
3. Further, it is recommended that Atlantic Gold cease all on-site activities that significantly alter the local environment (e.g.: clearcutting, road construction, ground leveling or excavating, wetland draining) until the environmental assessment process is concluded and licences and permits are granted. This recommendation applies to all of Atlantic Gold's proposals under review, and become accepted policy for all future large-scale industrial developments.
4. It is recommended that the proponent and the Province be open to address the issue of Mi'kmaw access to impacted lands and resources.
5. Following the principles of the United Nations Declaration on the Rights of Indigenous Peoples⁴³, it is recommended that future development planning by the Province of Nova Scotia be carried out with early-stage planning involvement by the Mi'kmaw, rather than attempts at late-stage consultation.

⁴³ United Nations 2007

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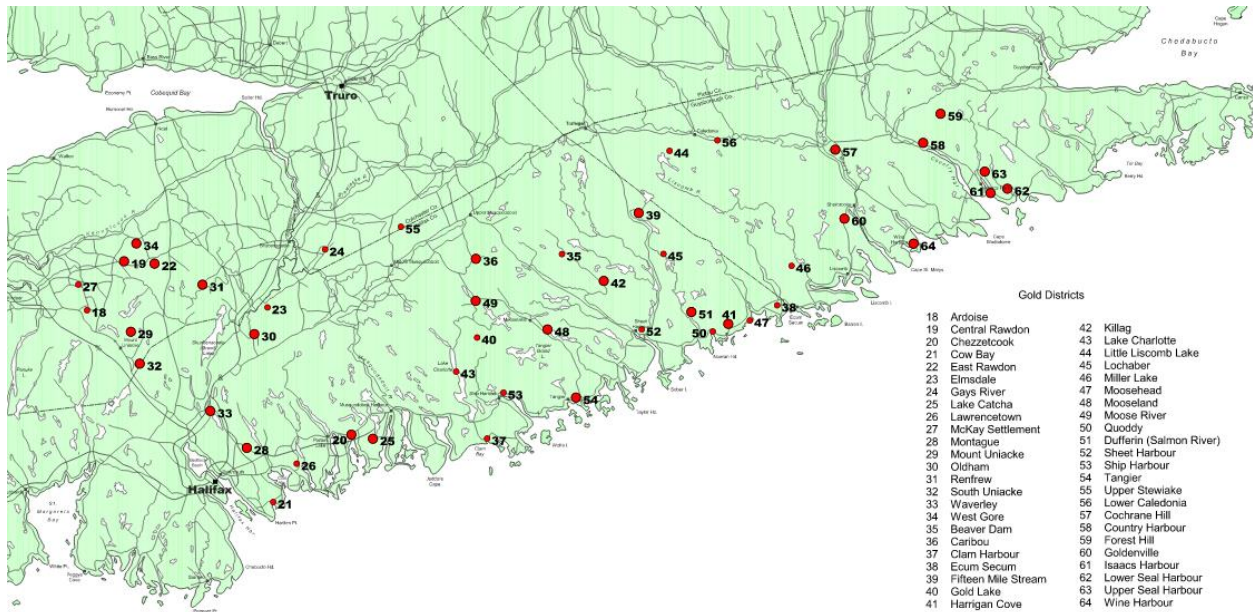
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APPENDIX 1

Historical Gold Districts in Eastern Nova Scotia

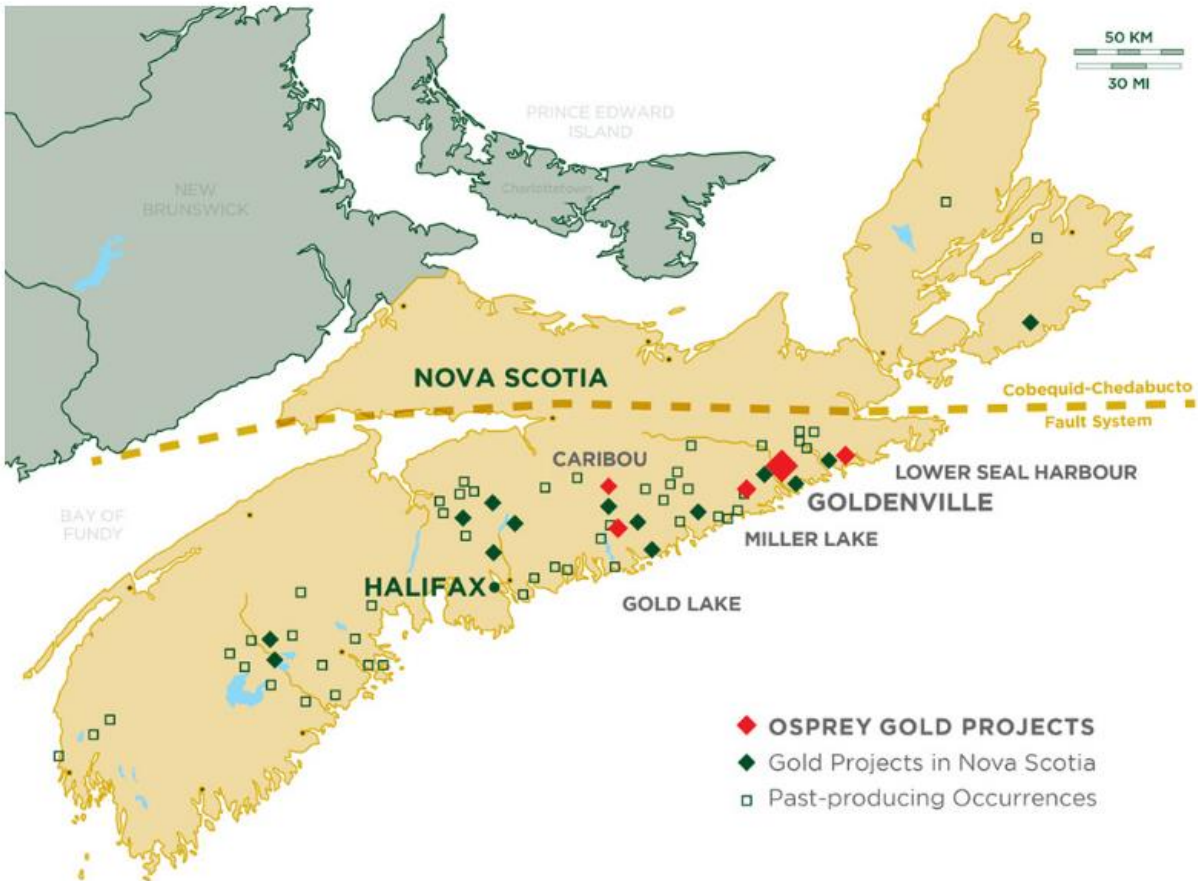


Source: NS Dept. of Lands and Forestry

<https://www.novascotia.ca/nse/contaminatedsites/docs/golddistricts.pdf>

APPENDIX 2

Osprey Gold Development Ltd Exploration/Project Sites

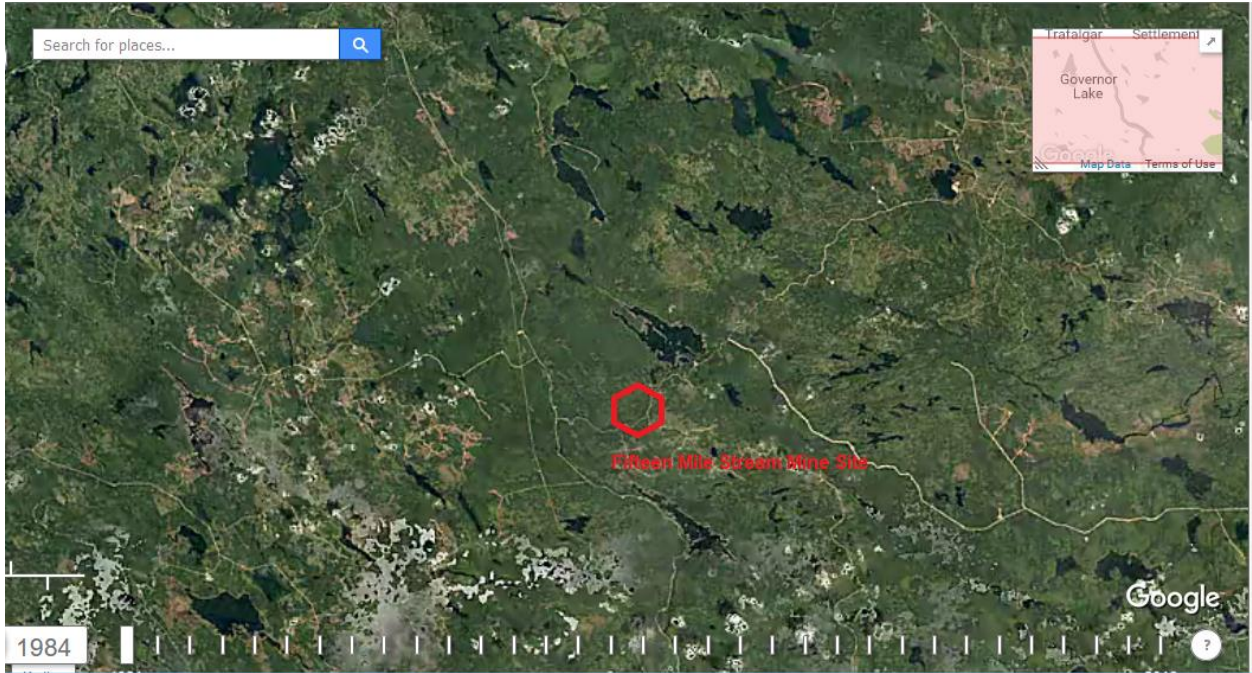


Source: Osprey Gold Development Ltd

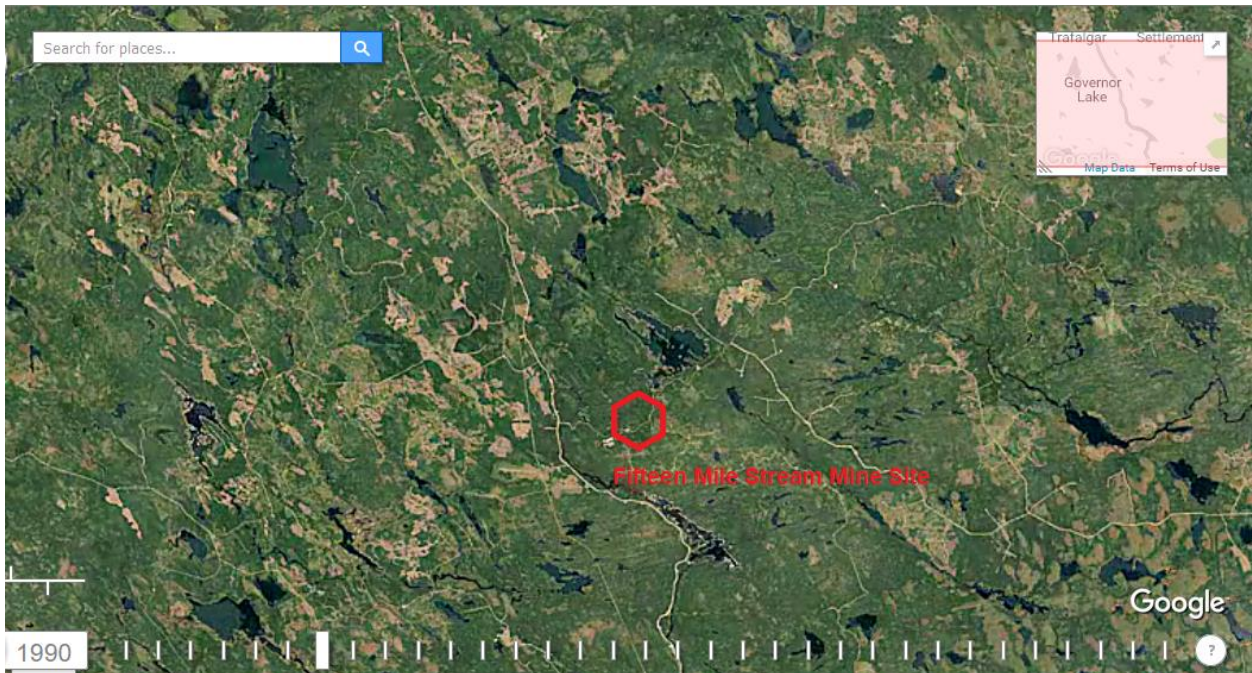
<https://www.ospreygold.com/projects/project-location-map/>

APPENDIX 3

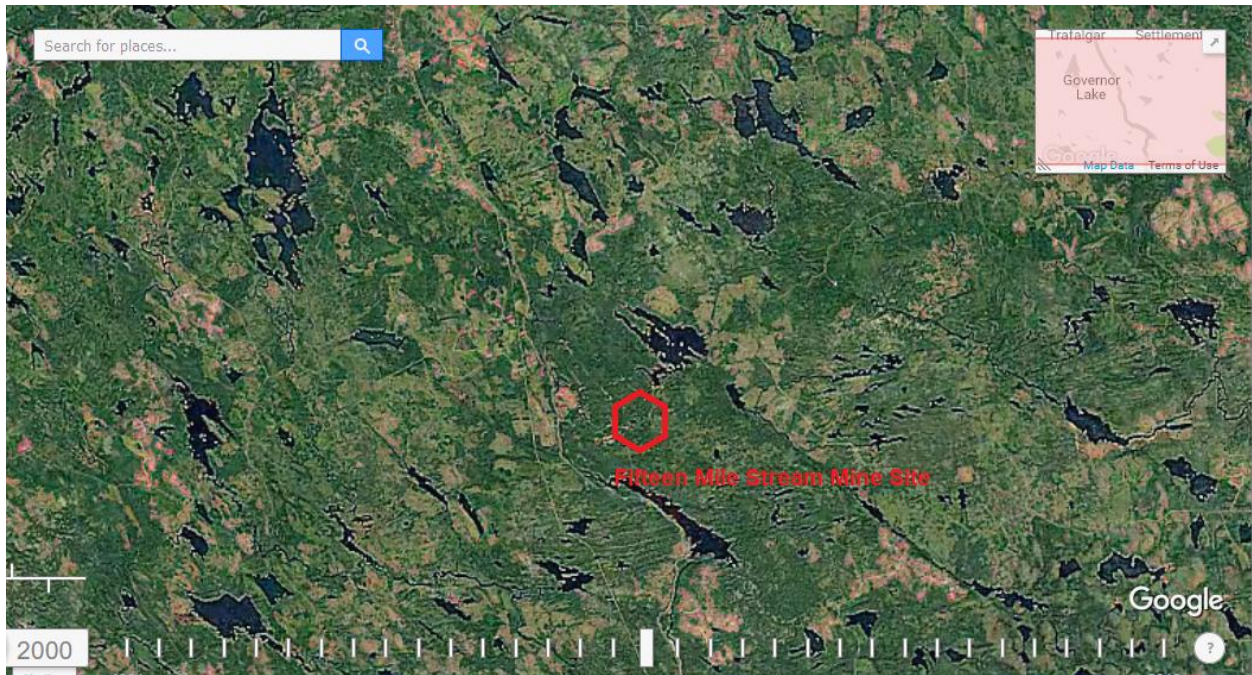
Forest Clear-Cut Progression 1984-2016



Forest Clear-Cut Status 1984 (source Google Timelaps)



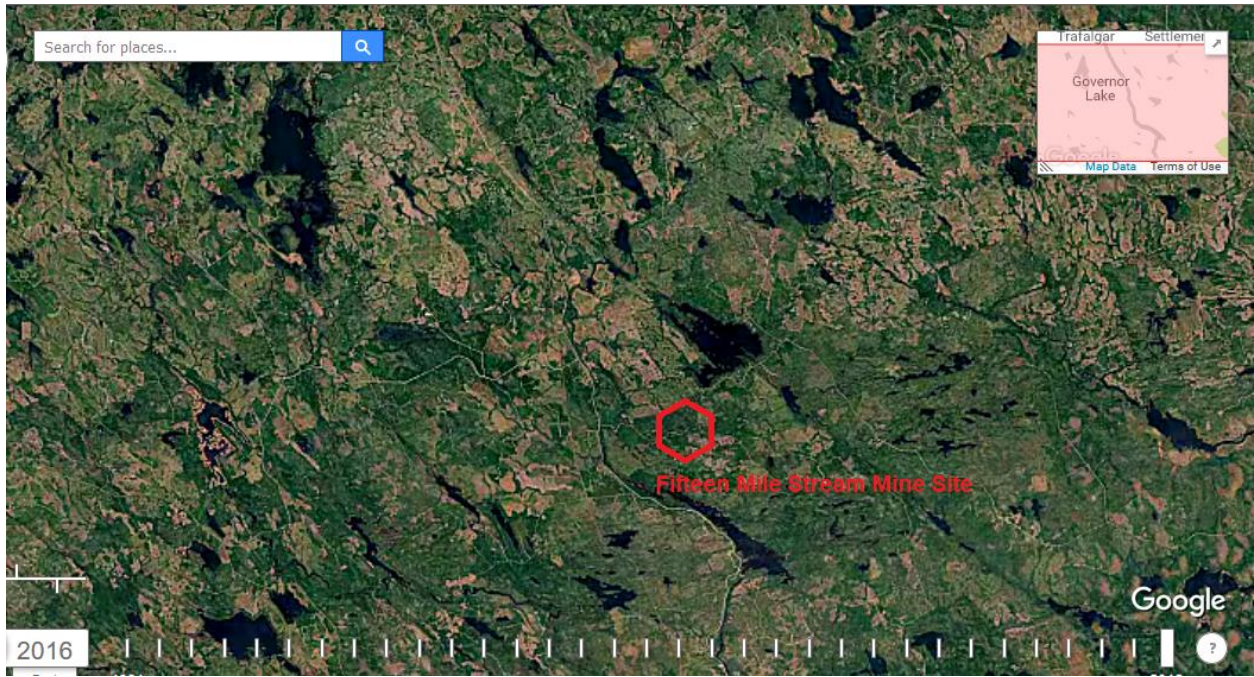
Forest Clear-Cut Status 1990 (source Google Timelaps)



Forest Clear-Cut Status 2000 (source Google Timelaps)



Forest Clear-Cut Status 2010 (source Google Timelaps)



Forest Clear-Cut Status 2016 (source Google Timelaps)

APPENDIX 4

Archaeological/Cultural Aspects Review

ARCHAEOLOGICAL/CULTURAL ASPECTS REVIEW

**FIFTEEN MILE STREAM GOLD PROJECT
HALIFAX COUNTY, NOVA SCOTIA**

**COCHRANE HILL GOLD PROJECT
GUSBOROUGH COUNTY, NOVA SCOTIA**

Prepared for: Mi'kma'ki All Points Services

**P.O. Box 63
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**Prepared By: Roger J. Lewis, MA
Mi'kmaq Archaeological Services**

August 23, 2018

INTRODUCTION:

This report represents an Archaeological/Cultural Aspects Review prepared to provide better understanding of Mi'kmaq land and resource use activities in and around the Fifteen Mile Stream and Cochrane Hill Gold Project Sites. This assessment considers a detailed review of all current archaeological, historical, ethnological and other relevant cultural resource materials.

Cultural heritage is the legacy of physical artifacts and/or intangible attributes of a group or society that are inherited from past generations, with the intent to be maintained in the present and preserved for the benefit of future generations.

Archaeology is the study of human activity through the recovery and analysis of material culture. The archaeological record may consist of such things as artifacts, architecture, biofacts, ecofacts, geofacts and cultural landscapes features.

Values considered for this report are:

- Site Location Data
- Archaeological Site Data
- Historical Data
- Landscape – Diversity and Productivity
- Archaeological Potential

Not all things that have heritage value are visible

MI'KMAQ CULTURAL LANDSCAPE

Fundamentally, cultural landscapes are landscapes that have been affected, influenced, or shaped by human involvement. A cultural landscape can be associated with a person or event or a combination of both. Collectively, cultural landscapes are narratives of culture, and expressions of identity.

Most historical descriptions of Mi'kmaq society tend to focus on describing early Mi'kmaq-European relations (Wicken 1993). Rarely fused within these narratives are descriptions of a Mi'kmaq cultural landscape.

Recently, studies have moved towards a more comprehensive understanding of the ecological, socio-cultural, and economic values of a traditional Mi'kmaq cultural landscape of which rivers and associated landscapes have always been of principal importance.

Cultural geographer, Carl Sauer, provided the initial discourse for the term '*cultural landscape*' in the 1920's stating that '*cultural landscape is fashioned out of a natural landscape by a culture group*' (Sauer 1925, 25).

R.G. Matson (1983) in his publication '*Intensification and Development of Cultural Complexities: The Northwest vs. the Northeast Coast*' argued that societies focused settlements and resource use areas in locales that allowed them control and access to critical resources which were not only abundant, but localized and predictable.

According to David Jacques the rise in the recognition of cultural landscape became associated with the recognition of differing value systems inherent in cultural landscapes (*Defining Cultural Landscapes - 1995, 91-101*).

Amos Rapoport purports that all landscapes are modified through human action and that they have been lived in and have meaning makes them cultural. He further states that they have unmistakable and easily identifiable characteristics (*Rapoport 1992, 33-47*). Rapoport also defines cultural landscapes as consisting of a system of settings.

The historical narrative as we know it, which is more about 'great events and great people', cannot communicate this. Within each of these systems of settings, are systems of activities and underlying characteristics that make them distinctive.

These settings or systems incorporate proximities, linkages, and even cultural memories tied closely to a traditional cultural landscape that is often overlooked (*Rapoport 1992, 33-47*).

Kenneth Taylor (2008) proposed that one of people's deepest needs is for a sense of identity and belonging. The one common denominator which influenced human attachment to land is determined by how one identifies within landscape and with place. He also adds that landscape is not simply what we see, but is a way of

seeing. We not only see cultural landscape with our eyes but interpret it with our mind and an ascribed set of values

Ludimir R. Lonzy (2006) states that two themes central to understanding a cultural landscape are landscape history and the concept of place examined in the time-space context of human activity. He defines landscape history as the study of past relationships between groups of people and their environment. He goes further to define ‘*cultural landscape*’ as being composed of places filled symbolically with diverse meanings and encompassing details of human past activities that can be captured.

The concept of place is not just about material objects, but other, intangible things such as memories, feelings, and sense of belonging. Landscape, has two distinct realms: cultural (recognized/meaningful) and natural. In any case, both can be experienced simultaneously (Lonzy 2006).

For Mi’kmaq peoples, ‘*place*’ becomes significant and is symbolically filled with specific meaning. **This is often unrecognizable to researchers, government officials and industry.** For example, a cultural landscape is a living entity with a yesterday, today and tomorrow. It has a consciousness and its own will towards life that cannot be taken away under the pretext of economic exploitation.

Land therefore, to the Mi’kmaq people is NOT an accidental find. In other words, they didn’t discover it. They viewed and continue to view it as a gift and the abundance offered by it is all part of that gift.

How the Mi’kmaq experience and perceive the landscape can be seen through legends, stories, music, and spiritualism. These are all filled with knowledge and references relating to the landscape and includes how one conducts oneself in relation to it.

SUBSISTENCE MODELS

From an archaeological point of view, several subsistence models have been hypothesized for a traditional Mi’kmaw economy (Hoffman 1955; Christianson 1979; Davis 1986; Nash, Deal and Stewart 1991).

Many of these models result from a review and interpretation of 17th century literature, but reinforce the reciprocal and continuous relationship Mi’kmaq had

and continue to have with their environment. Since then much of that interpretation has been expanded upon and complemented by a range of archaeological research.

Mi'kmaq often chose landscape areas that offered outstanding biodiversity and an overlapping seasonal availability of resources for settlement and resource use. This strategy of land and resource use has long linked Mi'kmaq and environment. Archaeologists continue to verify that specific locations have been used consistently over thousands of years.

Watersheds and associated river units are **high priority** land use areas for the Mi'kmaq. These locations have given rise to variability in archaeological site types, temporal range and use patterns. At the time of first European contact Mi'kmaq populations were living along each of the forty-two rivers and using and accessing the myriad of lakes found therein.

In fact, Marc Lescarbot in 1607, and Father Pierre Biard in 1610 ((Biard 1616; in JR. Vol. 3:87-95), noted that the Sagamies (Chiefs) divided up the country their territories identifiable according to bays or rivers.

Lescarbot (1607) noted the knowledge Mi'kmaq had of the overlapping resource sites;

'...when the winter was over and the mildness of the weather allured the fish to seek fresh water, upon the 14th of April, men were sent out fishing. There are a great many streams at Port Royal, and among them three or four where the fish swarm in the spawning season. One contains vast numbers of Smelts in April. Another, Herring, another, Sturgeon and Salmon, etc. So some were then sent to the river at the [30] back of Port Royal, to see if the Smelts had come. When they reached the place, Membertou (who was encamped there), received them hospitably, regaling them with meat and fish. Thence they went to the stream called Liesse by Sieur des Noyers, an Advocate in Parliament, where they found so many fish that they had to send and get some salt, to lay in a store of them. These fish are very tempting and delicate, and are not so injurious as shellfish are apt to be. They remain about six weeks in this stream; after that there is another small river near Port Royal, where Herring is found, also another to which Sardines come in great abundance. But as to the river of the Port, which is the river Equille, since named the Dauphin, at the time of which we speak it furnished Sturgeon and Salmon to anyone who would take the trouble to fish for them. When the Herrings came, the Savages (with their usual good-nature) let the French know it by signaling from their quarters

with fires and smoke. The hint was not neglected, for this kind of hunting is much surer than that of the woods. (Lescarbot, Jesuit Relations 1968, 165, 167).

Most archaeological sites today continue to be identified as being evenly distributed along shore districts, rivers, streams, and interior lakes and are contiguous in nature.

The defining qualities of landscapes and site locations are bio-diversity, localization, as well as the abundance and availability of overlapping seasonal resources. These landscape areas were also flexible and dynamic with generational changes in resource availability (populations /ecological cycles).

Aquatic and terrestrial resources associated with a myriad of lakes, rivers and forests were, and continue to be, basic to Mi'kmaq existence. Recent archaeological investigations (Lewis 2001-2006) support this hypothesis, as well as a long tenure of land and resource use by Mi'kmaq.

It is now accepted that Mi'kmaq people extended and modified plans and strategies to exploit singular or multiple resources in a succession of habitats throughout the province. For example, archaeological investigations have shown stone fish weir technology as having been used regularly on most rivers in Nova Scotia.

Four types of fish weir architecture were identified. The overlapping seasonal availability of resources allows for the seasonal harvesting of a river. Fence-stake weirs located at the mouth of rivers were utilized to harvest larger fish species that enter the river to spawn or feed such as sturgeon, bass, and shad. Their effectiveness was dictated by the rise and fall of tides.

Smaller (v-shaped) upstream oriented stone weirs at located at the heads of tide. These were used to harvest the smaller fish species such as mackerel, gaspereau, bass, and male eels.

Rectangular-ovate stone weirs were located on the intermittent portion of a river above the head of tide and designed to harvest salmon and larger (v-shaped) downstream-oriented stone weirs were located at the outflows of interior lakes. These were used to harvest out migrating female eels during a 4-5-week window of opportunity from mid-September to mid-October.

With increased infringement on their territories by newly arriving settlers, a new strategy was needed to deal with the loss of access to resource areas. That new colonial strategy came in the form of '*Licenses of Occupation*'. It can be assumed this new strategy was implemented recognizing the importance of ancient landscapes to traditional Mi'kmaq life ways.

OVERVIEW OF ARCHAEOLOGICAL SITES HALIFAX COUNTY AND GUYSBOROUGH COUNTY:

There are approximately 100 Mi'kmaq related archaeological sites in Halifax County while 29 have been identified in Guysborough County (NSM 2018). The temporal range of land and resource use ranges from *Mu Awsami Sagiwe'k* (10,000 -3,000 years ago) to *Kiskukewe'k L'nuk* (3000 years ago – present) and includes historical period sites. (Lewis 2006).

The current project areas (Fifteen Mile Stream and Cochrane Hills) are in close vicinity of known archaeological sites.

MAPS:

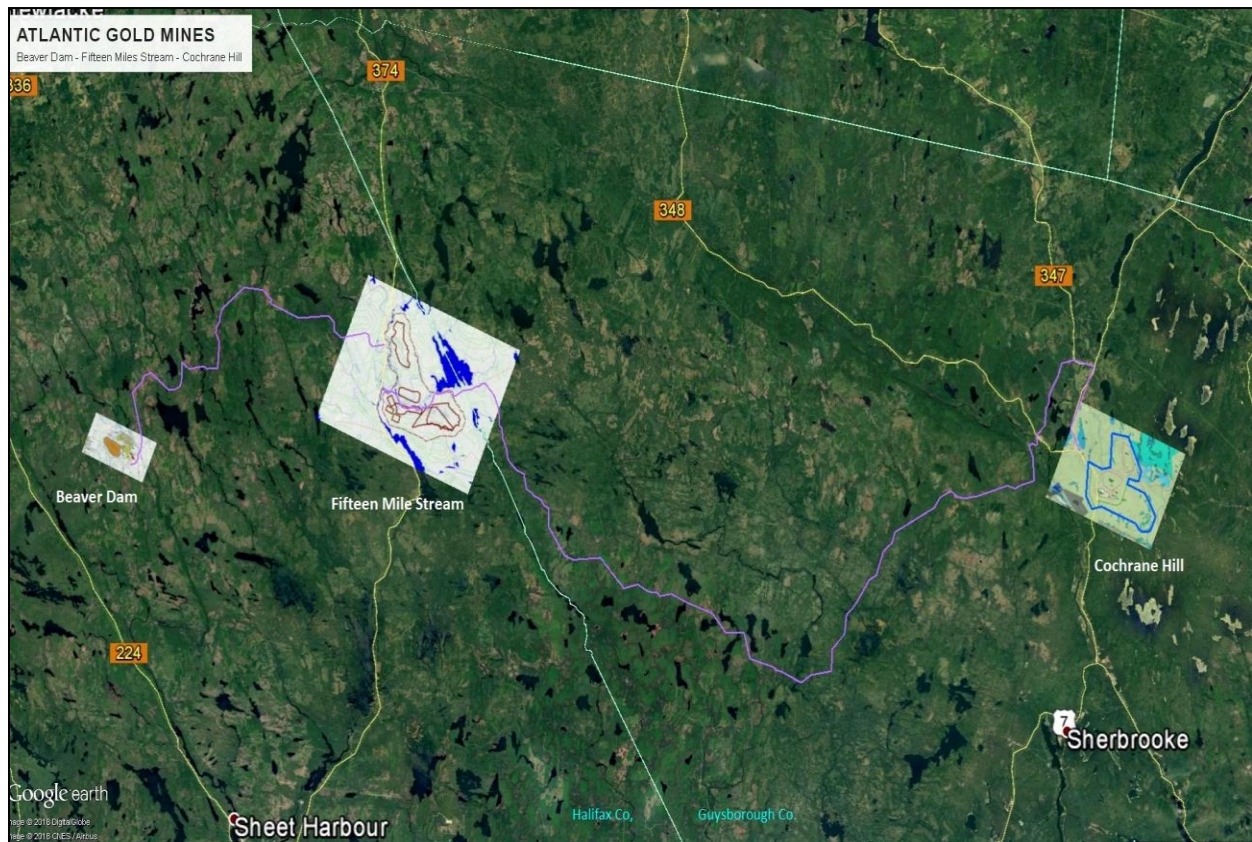


Figure 1: Map provided by MAPS (2018) of the proposed Atlantic Gold Mines projects areas relative to Beaver Dam Site NNW of Sheet Harbour, Nova Scotia.

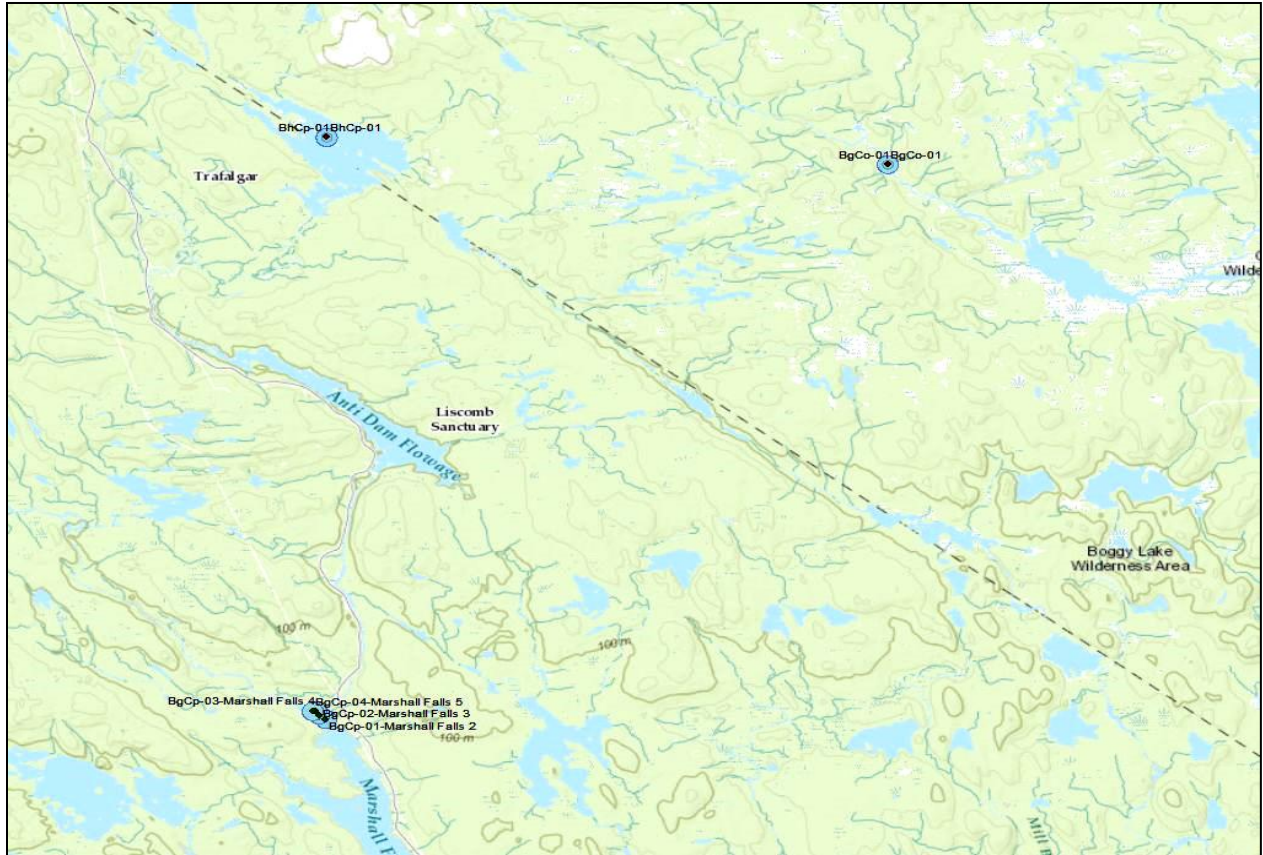


Figure 2: Archaeological Sites –Fifteen Mile Stream

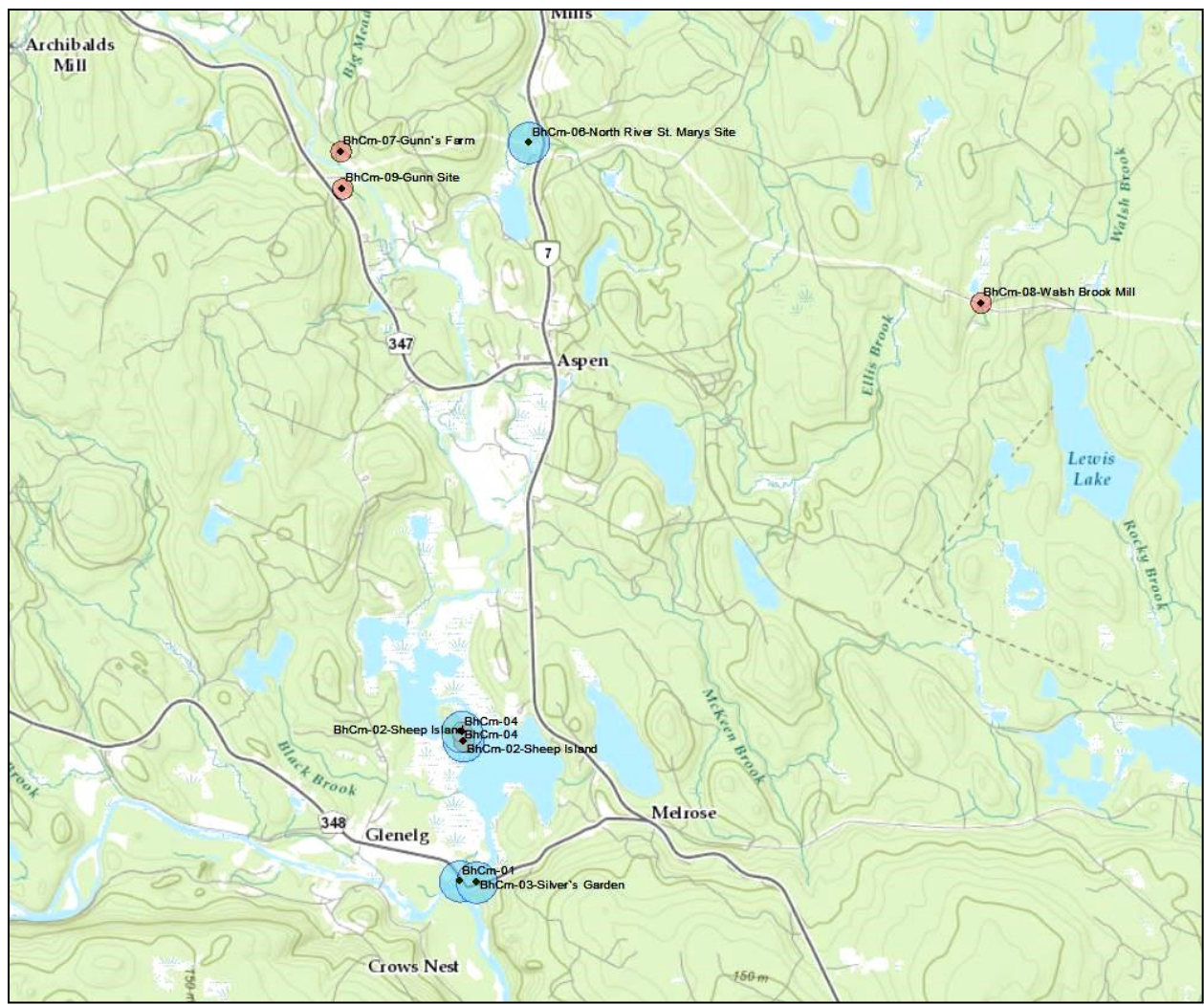


Figure 3: Archaeological Sites – Cochrane Hills

Fifteen Mile Stream Area (Figure 2):

A combination of both pre-contact and historic period Mi'kmaq sites have been identified in the immediate vicinity of the proposed Fifteen Mile Stream Gold Projects. More specifically, six (6) historic/precontract sites are identified immediately south of the Anti Dam Flowage at Marshall Falls. A historic period Mi'kmaq burial site is located at Seloam Lake.

According to Harry Piers Notes and Geological Survey (GSC) maps annotated by Mr. Piers, it is reported that 'old Matteo Selome (sic) buried his wife on an island in the lake'.

Approximately 15 kilometers east of Seloam Lake at Typhus Lake ... 'an Indian burying ground of Indians who took sick and died ...' (Fenian Raid about 1866).

Approximately 8 kilometers 'northeast' of Seloam Lake and immediately 'south' of Big Liscomb can be found Prince Arthur Lake. This was a favoured hunting and fishing area of the Mi'kmaq. Prince Arthur, the Duke of Connaught and Stratheam and later Governor General of Canada visited Nova Scotia in 1869 and travelled to that location in the company of James Cope and William Chearnley, then Colonial Indian Commissioner.

Cochrane Hills (Figure 3):

Eight (8) archaeological sites have been identified in the immediate vicinity of Glenelg, Melrose and Wallace Lake area at Aspen. One (1) of these sites has been identified as a potential Mi'kmaq Burial Site location (Harry Piers notes and annotated GSC map).

Three (3) precontract period sites are located at Glenelg at the forks of the East/West Branch St. Mary's River, at Wallace Lake and Silver's Garden.

ARCHAEOLOGICAL POTENTIAL

The cultural heritage and cultural landscapes of the Mi'kmaq people dates back many thousands of years ago, to early post-glacial Indigenous occupation and encompasses the later arrival of immigrants and settlers from cultures worldwide.

Identifying and protecting cultural heritage values, as well as respecting cultural landscapes preserves a still living archive of this province's history for future generations to study and enjoy. Cultural heritage values and cultural landscapes are especially important to Indigenous people and intimate to their beliefs and society.

Modelling for areas of archaeological potential is often conducted using assessment tools that frequently overlook actual heritage and landscape values. Too often these models are based on statistical testing and disregard the Mi'kmaq experience.

In many instances areas protected for other identified values, also overlap with areas of high archaeological potential for cultural heritage and landscape values.

The Fifteen Mile Stream and Cochrane Hills project sites identified in this summary report are suggestive as being of '**HIGH POTENTIAL**' to contain Mi'kmaq heritage resources and form part of a greater Mi'kmaq cultural landscape.

These locations are known for both primary and secondary water sources critical to Mi'kmaq lifeways. They are known to contain topographical features that could be the sites of known/unknown Mi'kmaq burials. These areas also had a long history of Mi'kmaq harvesting/gathering and guiding (see Whitehead. R.H.: The Old Man Told Us, 1991) – at Liscomb River, Hunting Lake, Indian Rips, Squaw Point, Ladle Lake, Dreadnaught Dam, Lookout Hill.

There are recorded instances of Mi'kmaq guides selling Moose meat to the Fifteen Mile Gold mine when it was an active operation in the early 20th century (Jeremiah Lonecloud to Harry Piers 1918)⁴⁴.

The family of Ned Isidore were born and lived at St. Mary's Forks, Guysborough County circa 1806 (Harry Piers Notes 2003)⁴⁵. In fact, a significant Mi'kmaq population resided in what they called the 'Eastern District' of the province throughout the 1800s (William Nixon Accts)⁴⁶.

Of note, this writer spoke to many elderly non-Mi'kmaq residents of the Eastern Shore in the years 2005/06 and a common statement made by same was '*many Micmac lived down here, and we remember them, but all of sudden they disappeared*'. Further enquiries indicated the disappearance of the Mi'kmaq coincided with the failed Centralization efforts of the 1940s.

RECOMMENDATIONS

Based on all available information and the proximity of these projects to existing heritage resources it is recommended that prior to any wide spread land alterations or deep disturbance that a '**High Potential**' archaeological assessment be undertaken.

There should also be a reasonable expectation that 'cultural importance' of the landscape throughout the 'Eastern District' be considered in any assessment considerations.

⁴⁴ Nova Scotia Museum of Natural History, archive

⁴⁵ Nova Scotia Museum of Natural History, archive

⁴⁶ PANS RG1, Vol 430, #109

