



Spicer Quarry Expansion



Archaeological Resource Impact Assessment

Heritage Research Permit A2019NS020

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SPICER QUARRY EXPANSION
ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

Heritage Research Permit A2019NS020
Category C

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Cover: The active Spicer Quarry operations looking southeast with the Annapolis River in the distance.

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EXECUTIVE SUMMARY

In January 2019, Davis MacIntyre & Associates Limited was contracted by East Coast Aquatics Inc. on behalf of B. Spicer Construction Limited to conduct an archaeological assessment for the proposed Spicer Quarry expansion. The assessment included a historic background study and archaeological reconnaissance in order to determine the potential for archaeological resources in the impact area and to provide recommendations for further mitigation, if necessary.

It has been well established through oral tradition, historical documentation and the archaeological record that First Nations people have been present in the general area of the Annapolis River and its tributaries since time immemorial. They continued to settle and frequent the area in the historic period and allied themselves with the French and Acadians that settled this region in the 17th and 18th centuries. The French established the first permanent settlement in North America at Port Royal and the Acadians dyked marshlands all along the Annapolis River and its estuary, establishing small villages in the upland regions around the marshes. Though most of the early Acadian settlers were deported in the mid-18th century, their farms continued to be settled and worked into the latter half of the 18th century by New England Planters and by later immigrants in the 19th century.

A field reconnaissance of the study area has revealed a landscape largely untouched by cultural activity until early 20th century forestry operations. The forest has recovered within the last 40-70 years in much of the study area, however, the landscape is still heavily scarred from ground disturbance.

The assessment has concluded that the study area is of low potential for archaeological resources of precontact or historic First Nations or Euro-Canadian archaeological resources and therefore, no further active mitigation is recommended.

However, in the unlikely event that archaeological resources are encountered in the future during grubbing, soil removal, or other ground disturbance activities, it is required that any ground-disturbing activity be halted immediately and the Coordinator of Special Places (902-424-6475) be contacted immediately regarding a suitable method of mitigation. Should the impact area be modified to expand beyond the currently understood range, a qualified archaeologist should be consulted to evaluate whether further archaeological assessment may be required.

1.0 INTRODUCTION

In January 2019, Davis MacIntyre & Associates Limited was contracted by East Coast Aquatics Inc. on behalf of B. Spicer Construction Limited, to conduct an archaeological assessment for the proposed Spicer Quarry expansion on Spicer Mountain, Upper Granville, in Annapolis County. The assessment included a historic background study and reconnaissance in order to determine the potential for archaeological resources in the impact area and to provide recommendations for further mitigation, if necessary.

The current assessment was conducted under Category C (Archaeological Resource Impact Assessment) Heritage Research Permit A2019NS020 issued by the Department of Communities, Culture and Heritage (Appendix A). This report conforms to the standards required by the Culture and Heritage Development Division under the Special Places Protection Act (*R.S., c. 438, s. 1*).

2.0 STUDY AREA

The Spicer Quarry is located on Spicer Mountain, 7297 HWY 1, Upper Granville, in Annapolis County (Figure 2.0-1). The study area includes the current quarry footprint as well as the proposed quarry expansion spanning approximately 0.5 km².

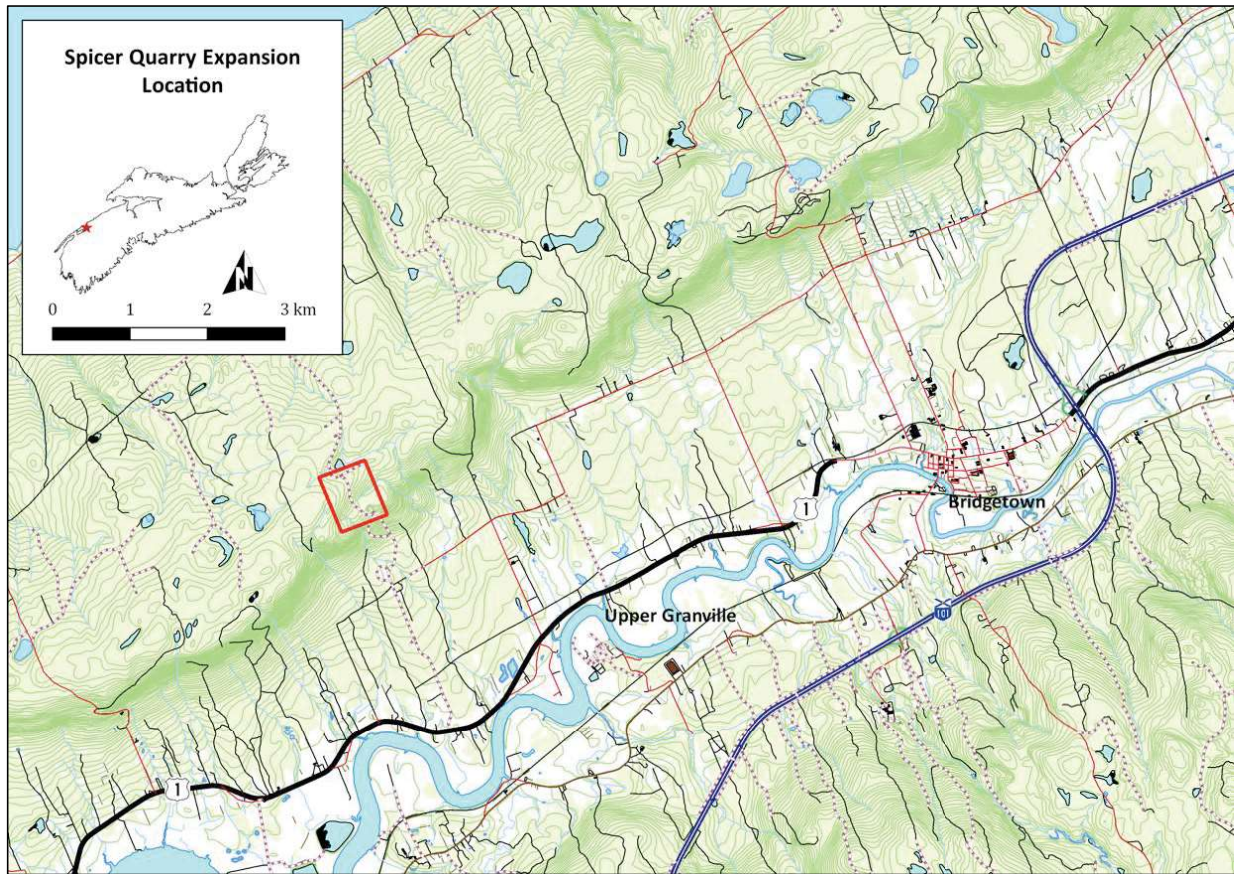


Figure 2.0-1: The location of the proposed Spicer Quarry expansion (red).

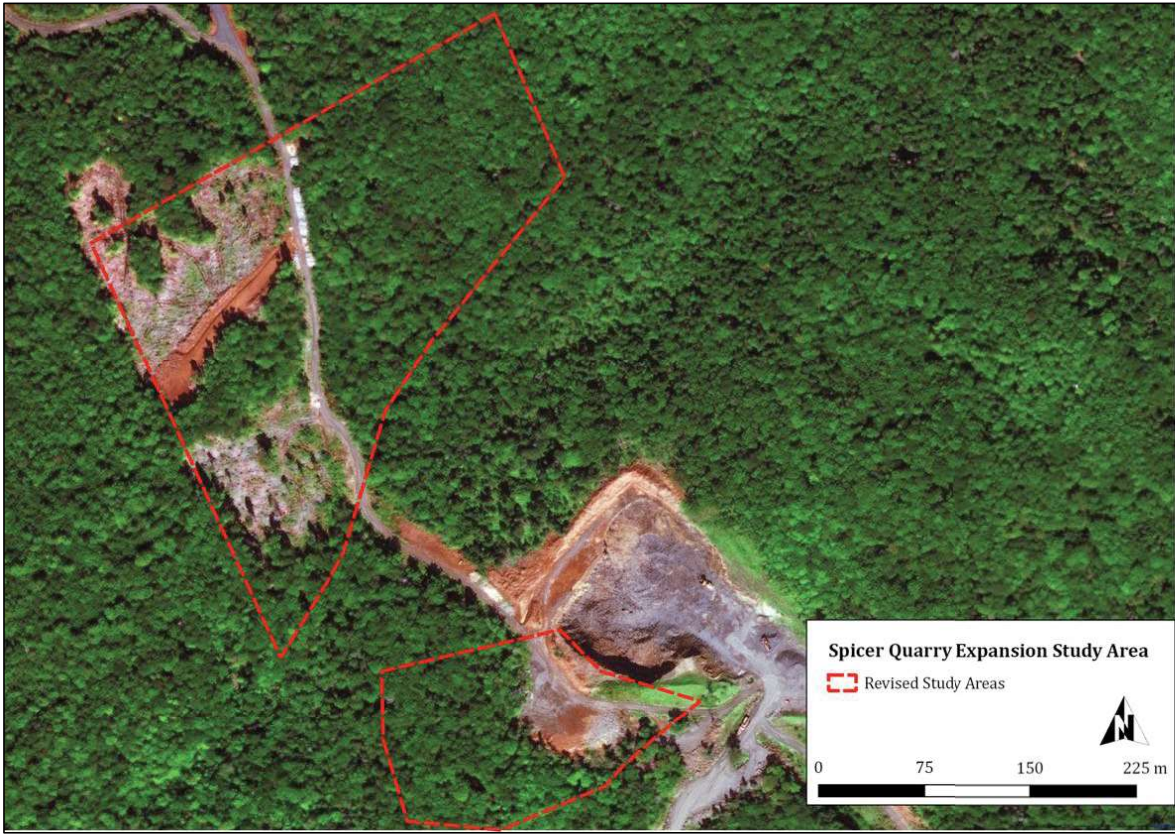


Figure 2.0-2: A revised plan of the Spicer Quarry expansion study area.

2.1 Natural Environment

Spicer Mountain Quarry is located in the Valley region of the Triassic Lowlands (Natural Theme Region #610) (Figure 2.1-1). The Annapolis Valley extends from the eastern edge of St. Mary's Bay in the west to the mouth of the Cornwallis River in the east. The palaeo-geology here was comprised mainly of sandstones and basalts. The sandstones were gradually carved out of the basalt as a result of river action and glacial scouring. Rivers flowed at right angles across the valley rising on South Mountain and flowing north across the present valley and North Mountain before emptying into a river that flowed down the Bay of Fundy. As the ice retreated after the last glaciation, sea levels rose and the land rebounded. In the Bay of Fundy area, sea levels encroached inland. The average elevation above present sea level in the Bay area is 15 to 30 centimetres and raised beaches and terraces can be seen in Digby County at the mouths of rivers and around the lower part of the Annapolis Basin. Rising sea levels over the past 4,000 years have resulted in flooding of the Annapolis Basin as the sea broke through the gap at the north end of Digby Gut.

The Valley is drained by two major rivers - the Annapolis and the Cornwallis - which are separated by a secondary watershed divide. Many first- and second-order streams drain off the North and South Mountains to feed both rivers. In the lower reaches of each river system are several tertiary watershed divides. Both rivers are tidal and tidal flats and muddy banks can be seen during low tide.

Soils in this region have developed on parent material from various exposed geological strata. The uppermost layers are fine-grained Triassic shale on which well-drained soils have developed. This is underlain by coarser sandstones from which sandy loams have been derived. The lower most strata are fine-grained conglomerates from which a well-drained loamy sand has developed. Alluvial deposits have developed beside streams and rivers.

The Valley is an obvious agricultural region although earlier extensive clearing in the eighteenth and nineteenth centuries has reverted to areas of forest growth. Apple orchards were originally located on the fertile valley slopes and remnants can still be seen throughout the region. Sugar Maple, American Beech, Red Spruce and Eastern Hemlock are common in these reclaimed areas. Oldfields have been regenerated with White Spruce except in wetter areas where alder and Black Spruce are more common.

Salt marshes, mud flats and dykelands provide good coastal habitat for marine and avian species. Raccoons, Red Fox, woodchuck and skunk are common in agricultural areas. Muskrat and mink are also common. Pheasant, snipe, woodcock, hawks, crows and Bald Eagles abound in this region. Dykelands provide good habitat for Gray Partridge and Short-eared Owl. The Annapolis Basin provides an important migration habitat for waterfowl in spring and fall and a moderate number of ducks remain in the winter months. High numbers of shorebirds can be seen at the head of St. Mary's Bay,

particularly in August. American Shad and Atlantic Salmon pass through this area to spawn in freshwater further upstream. Striped bass are also present but do not manage to spawn upstream.¹

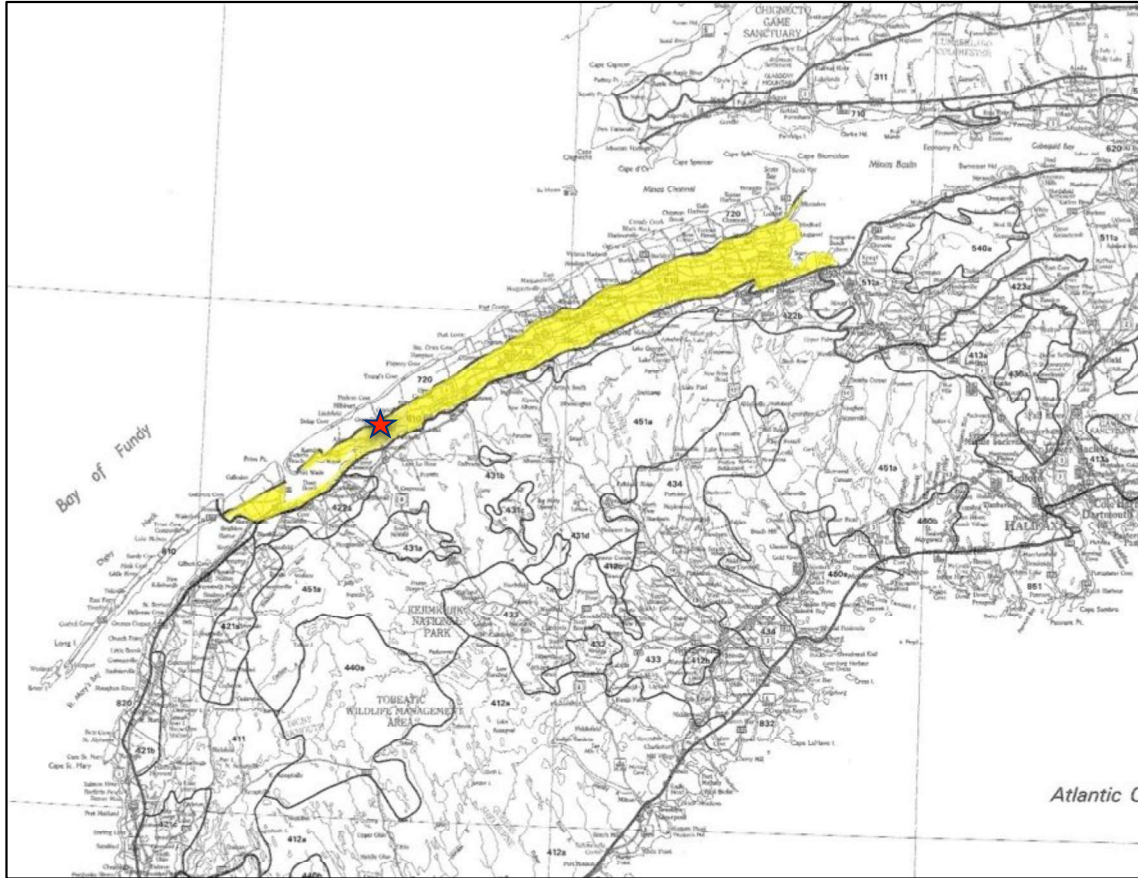


Figure 2.1-1: A map of Nova Scotia's natural theme regions showing region #610 (highlighted) - Valley region, Triassic Lowlands. The approximate location of Spicer Quarry is indicated (red star).²

2.3 Paleocology of Nova Scotia

Understanding the changing ecology of the early Holocene is paramount to understanding the archaeological record and the course of human history in our region from its beginnings. Processes associated with glacial advance and retreat have made a lasting impression on our province. During the most recent ice age, Atlantic Canada lay beneath the kilometre thick Laurentide Ice Sheet, which at the last glacial maximum (24

¹ Davis & Browne, 1996:159-161.

² Adapted from Davis & Browne 1996.

ka BP) extended its reach across the continental shelf to ocean depths of 800m.^{3,4} The modern landscape bears the scars and relics of the Wisconsinan glaciation, in the form of drumlins, moraines, glacial erratics, lakes and drainage systems.

Deglaciation in the northeastern United States and the Atlantic Provinces began in earnest by 20 ka BP. Significant ice streams, draining vast areas of the Laurentide Ice Sheet, delivered large volumes of ice to the ocean and it was along these ice streams that calving occurred.⁵ The opening of the Gulf of Saint Lawrence in 14 ka BP accelerated this process, and calving ice margins eventually isolated a Newfoundland ice cap.⁶ Glaciers were largely land-bound by 13 ka, and reduction continued through melting and climatic conditions rather than calving. In the wake of retreating glaciers a mixed spruce woodland consisting of sedge, spruce, birch, and pine migrated northwards into Nova Scotia and created an environment suitable for large herds of migratory caribou.⁷ It is believed Paleoindian tribes followed these herds into the region by at least 10,900 BP.⁸ Glaciers, harried towards high elevations, remained a prominent feature in the landscape, and may have held a special significance to both human and caribou populations living in their shadow.

Deglaciation was not a unilinear process, as climate variables caused glaciers to retreat at different rates at different times. The Younger Dryas Cooling event took place between 10,900 and 10,600 BP (or 12,900 – 11,600 cal BP) and had a profound effect on vegetation.^{9,10} Land-bound glaciers reactivated and the advance of forested regions was reversed, with areas of open shrub tundra expanding southwards.¹¹ Ellis believes that this cooling period led to the deterioration of suitable Paleoindian environments, and instigated either emigration or cultural adaptation.¹² A rapid warming period followed the Younger Dryas, and with it, the environment changed again to a more closed, mixed deciduous forest of oak and pine.¹³ Large, long-distance caribou herds likely moved northwards for good with this change, though this new closed woodland environment would have been amendable to smaller caribou herds and large solitary cervids like moose and deer.¹⁴

In the Minas Basin, Stea posits that a glacial dam blocked the outlets of rivers during the last glaciation, backing up water into the valleys. At that time a narrow corridor existed

³ Lothrop et al. 2011: 549

⁴ Fader 2005: 2.

⁵ Shaw et al. 2006: 2069.

⁶ Shaw et al. 2006: 2072.

⁷ Newby et al. 2005: 151

⁸ Ellis 2004: 244.

⁹ Fader 2005: 5.

¹⁰ Lothrop et al. 2011: 550.

¹¹ Newby et al. 2005: 151.

¹² Ellis 2004: 244.

¹³ Deal et al. 2006: 256.

¹⁴ Lothrop et al. 2011: 562.

between the Cobequid Highlands and a “low-profile glacier in the Minas Basin”¹⁵ with isolated glacial lakes occupying parts of the low-stand corridor. The largest lake created by the Minas Basin Glacier, Glacial Lake Shubenacadie 2, inundated lowlands below 30m above modern sea level resulting in the Shubenacadie River flowing southward through a chain of lakes into Halifax Harbour and the Stewiacke and Musquodoboit Rivers to flow south eastward through Gibraltar Rock into the Musquodoboit Harbour.¹⁶ Stea believes that the Younger Dryas readvance or rejuvenation of small ice caps that persisted throughout the Allerød period, a warm period preceding the Younger Dryas event, was a result of a marked increase in snowfall. This could only occur if there was a continuation of snowfall over the summer months and a series of “summerless years”¹⁷ would not be supportive of long-term occupation.¹⁸ During the Younger Dryas, a glacier likely extended right to the mouth of the Minas Basin and a very narrow ice-free corridor ran along the north shore of the Basin in the low-lying region, bounded by a large ice sheet in the Cobequid Highlands (Figure 2.3-1)

Stea and Mott collected lake bottom cores for ¹⁴C (radiocarbon) sampling in several areas throughout the province. At Little Dyke Lake, which lies at the north margin of the Minas Basin near Glenholme, coring indicated that the lake is a kettle lake formed in an outwash deposit with a basal age of 11,600 ¹⁴C years BP. Cores at Leak Lake near Parrsboro (13,000 ¹⁴C years BP) and at Spencer’s Island (14,300 ¹⁴C years BP) indicate ice-free conditions much earlier than at Glenholme, supporting the notion of a slow eastward glacial retreat into the Minas Basin. By 11,000 ¹⁴C years BP, relative sea level in the Basin was below present and Nova Scotia was almost completely ice-free, save for small ice caps that persisted throughout the Cobequid Highlands (Figures 2.3-2 and 2.3-3).

Two major processes governed geological changes post-glaciation. The first were isostatic changes, which are shifts in the height of land in relation to sea level. The second were eustatic changes, which are changes in the overall volume of water in the oceans. Unburdened by the Laurentide Ice Sheet, the continental crust rebounded in isostatic uplift, resulting in a drop of relative sea level. At the same time, large volumes of water held in glacial ice was released back to the oceans, resulting in eustatic change. The pace of eustatic change was initially rapid, following a low sea level stand of -65m at 11.3-11.7 ka BP. Sea level rise slowed after 11 ka BP and was outpaced by isostatic change.¹⁹ By about 9.5 ka BP, the pace of land rise diminished and sea levels again began to overtake exposed shores in most areas.²⁰

¹⁵ Stea 2005:66.

¹⁶ Stea 2011:75.

¹⁷ Stea 2005:68.

¹⁸ Stea 2005:68.

¹⁹ Shaw et al. 2002:1867

²⁰ Fader 2005:2

Glacial isostasy and eustasy changed habitable coastlines over the millennia following deglaciation. Significant landforms, subaerially exposed through isostatic uplift were subsequently submerged by rising seas. Seafloors now at 60m depth in the Bay of Fundy, for instance, would have been above sea level.²¹ Local conditions varied, as sedimentation near George's Island indicates that the Halifax Harbour emerged sometime between 8,400 BP to 7,000 BP, functioning as a low-productivity estuarine environment, before submerging again after 7,000 BP.²² Sea level at this point is thought to be somewhere higher than -25 m below its present level. Intact ancient shorelines are elusive. Most have been reclaimed by the sea or reshaped by powerful erosional forces. However, areas like the Bedford Basin and Bras d'Or Lakes as well as certain interior riverine locations retain relatively intact paleoshores.²³ Evidence of human occupation from submerged sites has been found offshore. Artifacts like ridged ulus have turned up as unexpected catches of scallop draggers in the Bay of Fundy, Gulf of Maine, and off the coast of Prince Edward Island.²⁴

By 6 ka BP, the geographical setting of the region nearly matched conditions today.²⁵ The inundation of the Northumberland Strait finally isolated what is now Prince Edward Island from the mainland as sea levels continued to rise, reaching within 5m of their present depth off the Atlantic coast by 3,000.²⁶ The Far Northeast was a challenging and ever-changing landscape. However, events which play out in geological leaps unfurled slowly over generations for people living at the time. The complications deriving from a dynamic landscape also challenge the archaeologist, who must see the environment for what it was, and not necessarily how it is today.

²¹ Ibid: 5

²² Edgecomb et al. 1999:814

²³ Shaw et al. 2009:24

²⁴ Fader 2005: 6.

²⁵ Shaw et al. 2002: 1872.

²⁶ Fader and Miller 2008: 6.

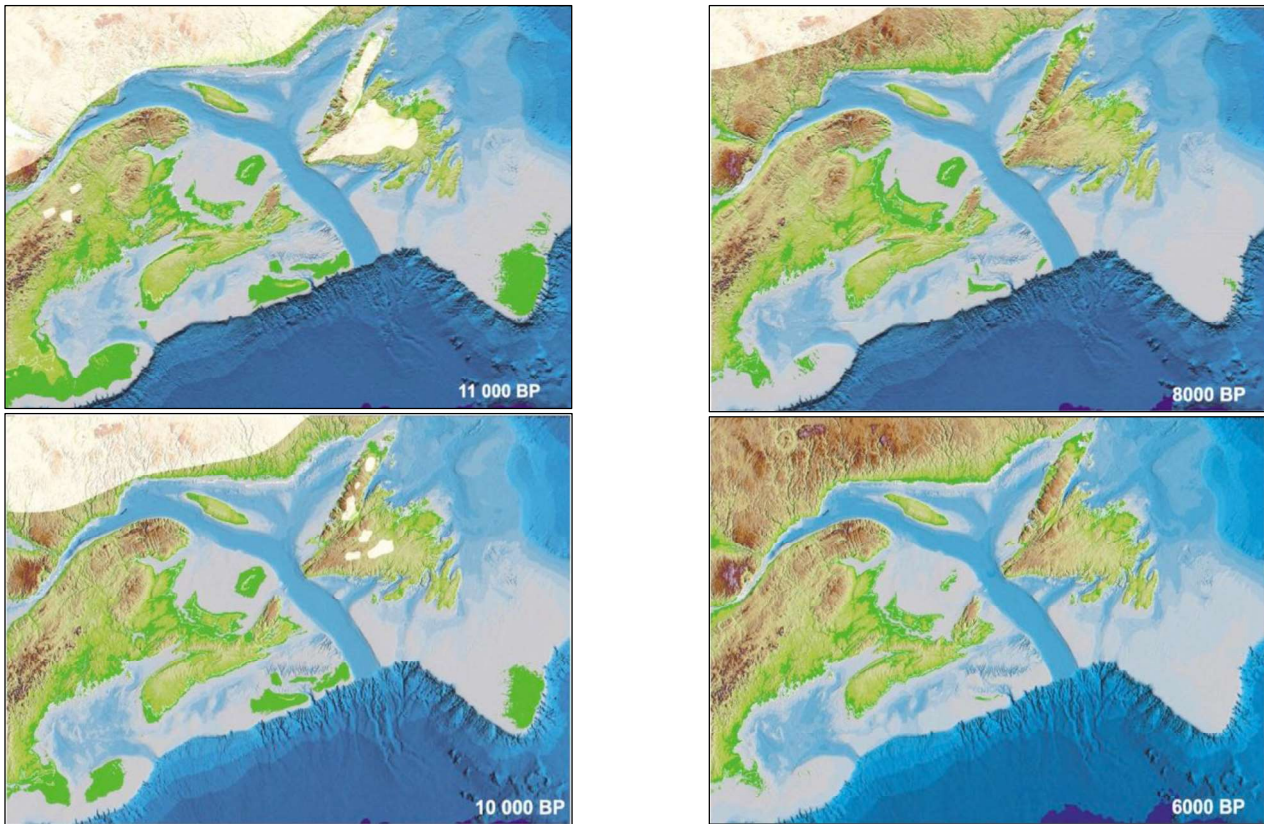


Figure 2.3-1: Palaeogeography of Maine and the Atlantic Provinces, depicting how emergent landforms on the continental shelf were gradually submerged.²⁷

²⁷ Shaw et al. 2002.

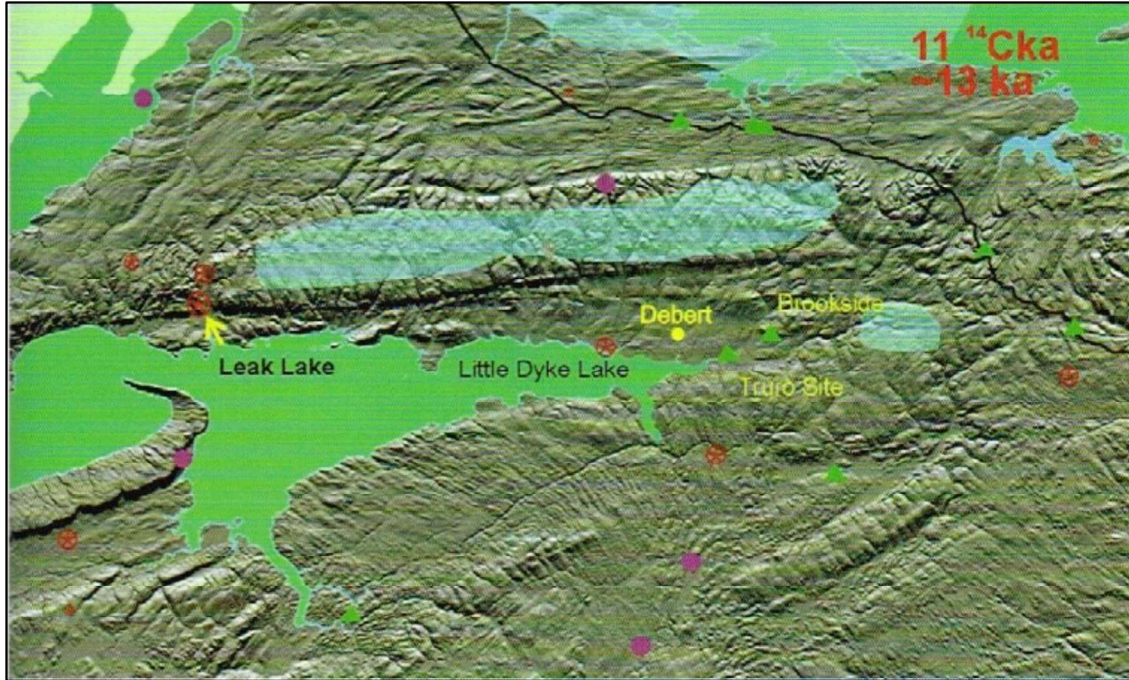


Figure 2.3-2: Deglaciation of the Minas Basin region showing the ice caps (light blue) and former land areas (green) against the current topography at the temporal margin of the Allerød and Younger Dryas periods.²⁸

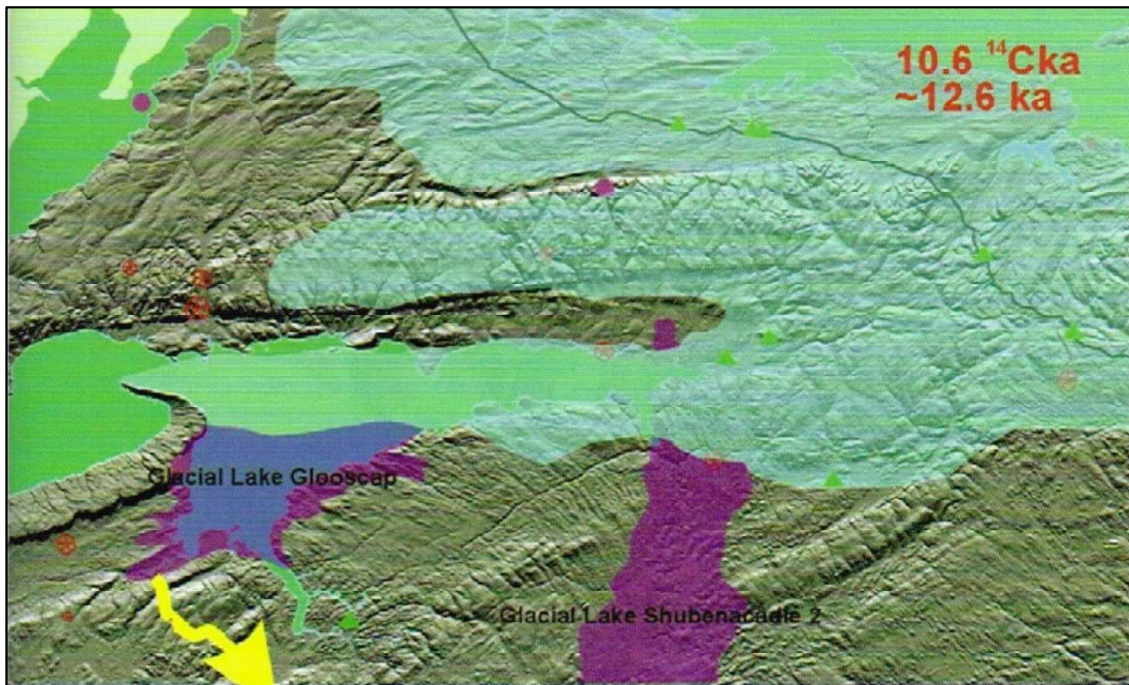


Figure 2.3-3: Deglaciation of the Minas Basin region showing the ice caps (light blue), formation of glacial lakes (purple) and ocean (dark blue), and former land areas (green) against the current topography during the Younger Dryas cooling event.²⁹

²⁸ Stea 2005:71.

3.0 METHODOLOGY

A historic background study was conducted by Davis MacIntyre & Associates Limited in April 2019 and included consultation of historic maps and manuscripts and published literature focussed specifically on the current study area. The Maritime Archaeological Resource Inventory, a database of known archaeological resources in the Maritime region, was searched in an effort to understand prior archaeological research and known archaeological resources neighbouring the study area. Finally, the Archaeology Research Division at Kwilmu'kw Maw-klusuaqn (KMKNO-ARD) and was contacted on 16 April 2019 as part of this assessment in order to elicit information regarding past and traditional land use in the study area.

3.1 Maritime Archaeological Resource Inventory

The Maritime Archaeological Resource Inventory was accessed on 16 April 2019 in order to determine if known archaeological sites or resources exist within or near the study area. The nearest three recorded archaeological sites are located within a 5 kilometers radius of the study area. The first, BeDi-01, is representative of a historic Acadian habitation dated to the early 18th century. The second, BeDi-02, is representative of several Acadian domestic structures located on the Belleisle Marsh. The third, BeDh-02, is representative of an aboiteau located at Bloody Creek believed to be from the 17th century.

Within a 10-kilometer radius of the study area, two First Nations sites are recorded. The first, BeDi-06, is an encampment site representing the *Kejikawe'k L'nu'k* (the Recent People) or the Woodland/Ceramic Period (3,000 –500 BP) located on a farm near Round Hill. The second, BfDh-08 is an isolated find representing a possible Protohistoric Copper Kettle burial near Bridgetown. The relative absence of reported sites within the vicinity of the study area is likely due to a lack of previous archaeological research being conducted in the area and is not necessarily reflective of an absence of archaeological sites.

3.2 Historic Background

3.2.1 The Precontact Period

Spatially and geographically, First Nations land use throughout Mi'kma'ki is not considered in the same sense that European occupation is recorded in historic times.

²⁹ Stea 2005:71.

Colonialism has had a significant impact on Mi'kmaq lifeways but prior to European contact, the Mi'kmaq and their ancestors had a very dynamic relationship with the land which was reflected in their language, legends, songs, dances and oral tradition. The landscape was viewed as "sentient, ever-changing, and in a continual process of becoming".³⁰ Therefore, the euro-centric view of the land as discrete and definitive land parcels does not reflect the Mi'kmaq world view and thus, references to site-specific pre-contact First Nations land use from the first-hand perspective of the Mi'kmaq (through oral tradition) are difficult to ascertain. However, historic references by Europeans do exist and First Nations land use and occupation is reflected in the archaeological record.

Nova Scotia has been home to the Mi'kmaq and their ancestors for at least 11,500 years. A legacy of experience built over millennia shaped cultural beliefs and practices, creating an intimate relationship between populations and the land itself. The complexity of this history, culturally and ecologically, is still being explored.

The earliest period is *Sa'qiwe'k L'nu'k* (the Ancient People) or the Paleo-Indian period (11,500 - 9,000BP). The changing ecology following deglaciation allowed the entrance of large herds of migratory caribou into Nova Scotia, followed by Paleoindian groups from the south.³¹ Currently, the Debert/Belmont Sites provide the only significant evidence of Paleo-Indian settlement in the province. Commonly believed to be big-game hunters, research is now aimed at exploring the diverse subsistence patterns that may have supported populations, and what adaptations were made when the environment shifted once again in the early Holocene.³²

Succeeding the *Sa'qiwe'k L'nu'k* is the *Mu Awsami Kejikawe'k L'nu'k* (the Not so Recent People) or the Archaic Period (9,000-3,000 BP). This time saw a reorientation to a more maritime subsistence, with settlement pivoting more towards coastal areas, lakes and bountiful riverine resources.³³ Remnants of these sites along the coast have largely been engulfed by rising seas or battered by wind and wave, though interior sites are increasingly being discovered.³⁴ Ground stone tools, specialized for wood-working, appear at this time and may have been used to create dug-out canoes. Numerous traditions and distinct technologies have been documented throughout Maine and the Atlantic provinces. A growing catalogue of exotic cultural components demonstrates that groups within Nova Scotia were engaged in spheres of interaction spanning hundreds of kilometers. Unfortunately, a lack of formally excavated sites within Nova Scotia still obscures the degree to which these traditions were present.

³⁰ Sable and Francis 2012:18.

³¹ Newby et al. 2005: 151.

³² Lothrop et al. 2011: 562.

³³ Tuck 1975.

³⁴ Deal et al. 2006.

By the *Kejikawe'k L'nu'k* (the Recent People) or Woodland/Ceramic period (3,000-500 BP), the Mi'kmaq were a maritime people.³⁵ Known Woodland/Ceramic sites concentrate along coasts shorelines, and navigable watercourses. Migration of ideas and people introduced new worldviews and technologies from groups originating in places like northern New England and the Great Lakes area, to local populations, including the earliest ceramic forms. Harvesting of marine molluscs and shellfish appears in this period, and substantial shell-middens have gifted archaeologists with well-preserved records of these past lives.³⁶ Fish weirs populating the province's rivers and streams speak to the importance of migrating fish species to Mi'kmaq life. Terrestrial hunting and foraging was practiced with varying degrees of intensity depending on seasonality and region. A generally stable cultural form is believed to have developed by 2,000 BP, forming the way of life first encountered by Europeans arriving on our shores.³⁷

Mi'kmaw life was substantially altered in the *Kiskukewe'k L'nu'k* (Today's People) or Contact Period (500 BP- Present). Trade and European settlement introduced change and upheaval to the traditional way of First Nation life. Mobile hunting and gathering still defined Mi'kmaw life, with identity residing within family households.³⁸ Trading posts and fishing villages became intersections of European and Mi'kmaq interaction, affecting traditional seasonal rounds and access to land. The hunting of fur-bearing mammals intensified to satisfy the mutual exchange of skins for European goods.³⁹ It is not accurate, however, to say that Mi'kmaq *adopted* European goods and culture, but rather *adapted* it. The Mi'kmaq remained an influential social and political force well into the 18th century, forming a triadic narrative of contention with the English and French. However, disease, conflict, and alienation from the land wreaked a ruinous effect on the Mi'kmaq by the 19th century, pushing people to the margins of colonial society.⁴⁰

The Mi'kmaw inhabited the territory known as Mi'kma'ki or Megumaage, which included all of Nova Scotia including Cape Breton, Prince Edward Island, New Brunswick (north of the Saint John River), the Gaspé region of Quebec, part of Maine and southwestern Newfoundland (Figure 3.2-1). Upper Granville is part of the traditional Mi'kmaw territory known *Kespukwitk* meaning “end of flow”, which covers the counties of Queens, Shelburne, Yarmouth, Digby and Annapolis. Nearby Bridgetown is known as *Likalie'katik* meaning “at the church area” referring to the church frequented by the Mi'kmaw. Bloody Creek is known as *L'sni'skwek* or *Isenisgoeg gisna Esgenesgeg*

³⁵ Davis 1993: 100.

³⁶ Davis 2005: 18.

³⁷ Wicken 2004: 26.

³⁸ *Ibid*: 30.

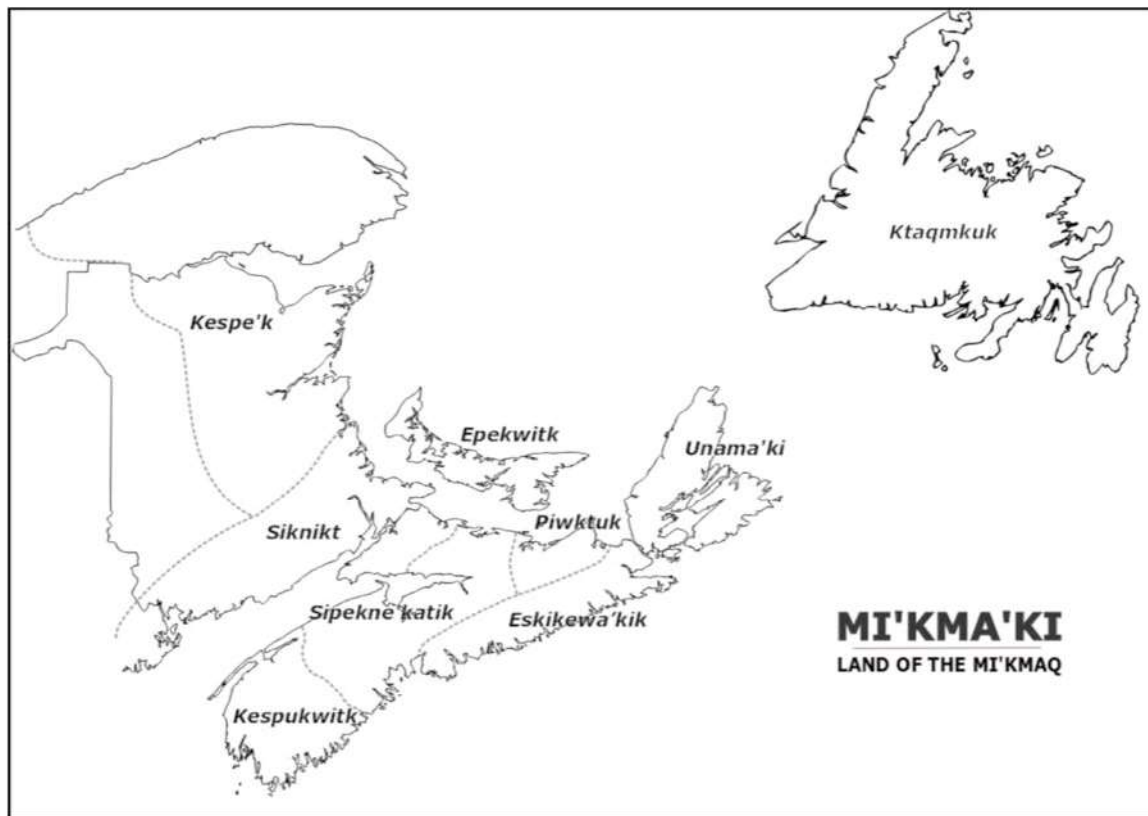
³⁹ Whitehead 1993: 89.

⁴⁰ Reid 2009.

meaning “Mrs. Eason’s Home”. Tupper Brook is known as *Niktuapkek* meaning “rocky fork”.⁴¹

Table 3.2-1: Mi'kmaw/Archaeological Cultural Periods

Mi'kmaw Period	Archaeological Period	Years
Sa'qiwe'k L'nu'k (the Ancient People)	Paleo-Indian	11,500 – 9,000 BP
Mu Awsami Kejikawe'k L'nu'k (the Not so Recent People)	Archaic	9,000 –3,000 BP
Kejikawe'k L'nu'k (the Recent People)	Woodland/Ceramic Period	3,000 –500 BP
Kiskukewe'k L'nu'k (Today's People)	Contact	500 BP – present



*Figure 3.2-1: Map of the Mi'kmaw districts.*⁴²

⁴¹ Ta'n Weji-sqalia'tiek: Mi'kmaw Place Names Atlas 2019.

⁴² McKillop, Adapted from Confederacy of Mainland Mi'kmaq, 2007:11.

3.2.2 Historic Mi'kmaw Settlement

The Archaeology Research Division at Kwilmu'kw Maw-klusuaqn (KMKNO-ARD) was also contacted as part of this assessment on 16 April 2019 to inquire whether past or traditional Mi'kmaq land use is known in or near the study area. Their research database recorded one traditional use site within a one-kilometre radius of the proposed study area. This is a hunting site. Their databases recorded no precontact sites within a five-kilometer radius from the study area however there are many located along the Annapolis River corridor.⁴³

According to Hoffman, there were four or five summer villages in the *Kespukwitk* territory, not all of which were occupied at the same time. The Annapolis River as well as Allains River were important canoe routes for the Mi'kmaq. The Grand Chief Membertou resided at Port Royal and was baptized there on 24 June 1610, along with his family. Prior to the coming of the French, it is speculated that Membertou resided at St. Mary's Bay or Annapolis Bay. After the establishment of Port Royal, it is believed that he had a village somewhere in the Annapolis Basin, but the exact location is not known. Lescarbot reported that in 1607 the Mi'kmaw, under Grand Chief Membertou, were established in a "lodge which their Sagamos Membertou had fashioned anew in form of a town surrounded with high palisades".⁴⁴ Lescarbot again reported in 1610 that Membertou's village was located in the Annapolis Bay but in the following year, he had relocated to St. Mary's Bay which was likely a summer village. By the 20th century, the traditional residence of the district chief removed to Bear River.⁴⁵ Today, the Bear River reserve is the nearest First Nations community to the study area.

A search of census records for 1871 through 1891 did not reveal any First Nations residents in the subdistricts of New Caledonia (which includes present-day Granville Ferry and Granville Beach in 1871 and 1881) and Granville Ferry (1891).⁴⁶

3.2.3 Historic Euro-Canadian Settlement

The first attempt at permanent settlement in these parts was by Sieur de Monts who sailed from Havre, France in the spring of 1604. De Monts crew sailed westwardly until they reached the south coast of Nova Scotia and anchored in St. Mary's Bay. They continued northeastward exploring Annapolis Basin. It is said that Baron de Poutrincourt, one of the party, was so charmed with the beauty and safety of the harbour here that he made application to De Monts for a grant of land here and called it Port Royal, thus beginning the first permanent colony of French settlement in Nova Scotia.⁴⁷ For much of

⁴³ Kaitlin MacLean pers comm.

⁴⁴ Lescarbot, in Hoffman 1946:531.

⁴⁵ Hoffman 1946:522-533.

⁴⁶ Censuses of Canada, Library and Archives Canada 1871, 1881 and 1891.

⁴⁷ Wilson 1900:16-19.

the time since its first settlement by Europeans in 1605, Port Royal would serve as the capital of the colony until 1749.

Samuel de Champlain mapped the area of the Annapolis Basin in 1609 (Figure 3.2-2). His map depicts the settlement on the north shore of the Basin established by the French in 1604 as well as agricultural lands at the present town site of Annapolis Royal. The garrison was stationed in a fort further out the basin at Port Royal. The lands further east along the river were indicated as "*Prairies qui font innodées des eaux aux grandes marées*" or "fields which are flooded by high tides". As Acadian settlement grew throughout the 17th and 18th centuries, these areas would be dyked in order to reclaim and exploit the fertile marshlands where they grew wheat, rye, hemp, and vegetables which supplied not only their own households but also the French, and later English, garrison at Port Royal and Louisbourg, as well as to residents in the town of Halifax. Marshland dyking would be the principle method of farming until the mid 18th century when the Acadians were expelled and replaced by New England Planters. Even then, however, the Planters realized the advantage of the deep fertile marshlands and repaired the old dykes and began clearing the forested uplands.

The French settlement at Port Royal was short-lived. In 1613, the English attacked the settlement and took possession of the lands. By about 1636, the French had removed their fort further up the river to where Annapolis Royal is now situated.

Geographically, Port Royal extended from the mouth of the Annapolis River to the present day Belleisle/ Granville area (Figure 3.2-3). A land grant from Sieur de Belle-Isle, then residing at Port Royal, to Pierre and Mathieu Martin in 1679, consisted of a currently cultivated marsh which was limited to the east by a large meadow, on the west by Domachin Brook, to the south by the Dauphin River (Annapolis) and by North Mountain to the north.⁴⁸

Of the settlement of Port Royal and surrounding areas in 1686, the clerk Gargas noted that the settlers would construct "nira guans" or weirs six feet high at that mouths of certain brooks that emptied into the Annapolis River. The high tide would flow over the weirs, trapping the fish behind them once the tides receded.⁴⁹ Gargas also noted in his census for that year that there were seventy-four people settled at "Beilisle", modern day Belleisle, south of the study area. They had constructed ten dwelling houses and had 72 cattle and 122 sheep. They farmed 40 arpents (about 34 acres) of marshland and had cleared 2^{1/2} arpents (about 2 acres) of upland.⁵⁰

⁴⁸ Lavoie 1987:18.

⁴⁹ Coleman 1969: 14-15.

⁵⁰ Coleman 1969: 17.

In 1701, approximately 456 Acadians (approximately 70 families) were living in the Port Royal area, most along the river adjacent to the dyked marshlands.⁵¹ They settled in small villages, usually in groups of six to twelve houses, reflecting the importance of family and community ties.⁵²

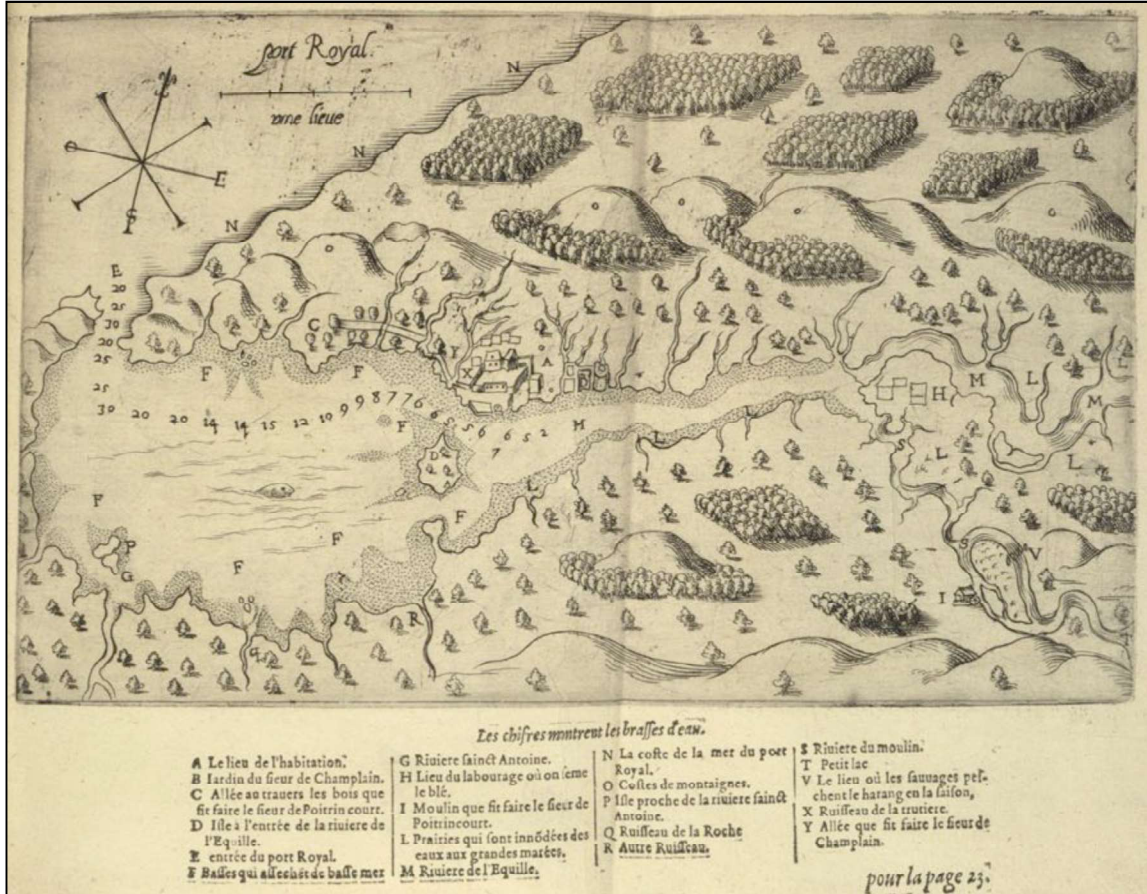


Figure 3.2-2: Samuel de Champlain's map of "Port Royal", published in 1613. The original settlement was located further out the Basin on the north side (where the Habitation National Historic Site is located today). "H" indicates agricultural fields where the French grew grains. "L" indicates marshlands that flooded during high tides.⁵³

Following a siege of Port Royal by the English in 1710, the French surrendered the fort and only the area within a 3-mile radius of it. The villages eastward along the Annapolis River, including Belleisle, were spared for the time being (Figure 3.2-4). Some Acadians remained within the surrendered limit while the war raged on, making for a very tense situation for the Acadians living within the bounds of the surrendered area as well as for

⁵¹ Dunn 2004:48.

⁵² Moody 2014:32.

⁵³ Champlain 1613.

the British who were surrounded at a very short distance away by French Acadians.⁵⁴ A 1707 census reports a population decline in Belleisle to forty-nine people. Lavoie postulates that this decline is likely due to the relocation of approximately 3 to 4 families leaving the area during ongoing tensions with the British.⁵⁵



Figure 3.2-3: A part of “Carte générale de la baie et rivière du Port Royal”, dated to the late 17th century, depicting a large dwelling at Belleisle (red ellipse).

The English took official possession of Nova Scotia in 1713, by the Treaty of Utrecht. At Annapolis Royal, they established a garrison in a fort known as Fort Anne where Champlain earlier indicated an area under cultivation. In 1720, there remained about 200 Acadian families along the Annapolis River, some of whom resided in the town. As previously mentioned, in 1722, there were also 47 Mi'kmaw (about 10 families) at Port Royal.⁵⁶

A map of the Annapolis River as it was surveyed in the 1730s through 1750s, updated by British surveyor George Mitchell, shows three villages above Belleisle Marsh, those of Barnabys, Denise and LeBlanc.⁵⁷ Sixteen homesteads, some presumably barns and outbuildings, and a gristmill are depicted (Figure 3.2-5). A 1747 census recorded a

⁵⁴ Dunn 2004:88.

⁵⁵ Lavoie 1987:41.

⁵⁶ Dunn 2004:122.

⁵⁷ Mitchell 1753.

population of approximately 30 families, increasing from the 14 families recorded in 1714.⁵⁸



Figure 3.2-4: Part of Jean Delabat's "Plan de la Banlieue du Fort Royal a l'Acadie et des Environs", ca. 1708.⁵⁹ Note the red 3-mile radius surrender boundary (red arrows) centred on Port Royal (blue ellipse).

Tensions continued to mount throughout the remainder of the 18th century and the English and French remained in a state of undeclared war until 1744. By the end of the war, the English were disgruntled and worried about Acadian neutrality. They had tried for four decades to encourage the Acadians to take an oath of allegiance to the British Crown, thereby ensuring that they would not take up arms against the English in war times. Many continued to refuse, however, and eventually, the English began the infamous campaign of expelling Acadian settlers from the region. Their livestock were seized and their homes burned. A total of 1,664 Acadians were deported from Annapolis Royal.⁶⁰ Two hundred and thirty two of those deported were sent out on board the *Pembroke*, but they quickly overpowered the British crew, seized the ship and headed to the St. John River. Most fled up the river, eventually making their way to Quebec. By the end of 1755, only a small remnant of Acadian settlers remained in the Annapolis Royal area. Farms on both sides of the river were burned and the town suffered great economic setbacks as they had lost an important supplier of timber, fire wood, farm

⁵⁸ Lavoie 1987:46.

⁵⁹ De Labat ca.1708.

⁶⁰ Landry url.

produce and furs and an equally important buyer of goods from the New England states.⁶¹

Upon their expulsion in 1755, a new wave of settlers from New England known as the New England Planters was brought to the Annapolis Valley. They arrived in the 1760s and shortly thereafter, established settlements and received land grants extending from the Annapolis Valley up into North and South Mountains. These grants were laid out in the form of long narrow rectangles, allowing access to water for all grantees by extending from the Annapolis River or the Bay of Fundy up into North Mountain. This first generation of new settlers established themselves mostly on the valley floor like the Acadians, and it was “not they but their sons and grandsons who were the pioneers of the Mountain settlements.”⁶²



Figure 3.2-5: Part of “Plan of the River of Annapolis Royal in Nova Scotia.”⁶³ Note the sixteen homesteads located above Bellisle (red ellipse).

The Township of Granville, which encompasses the study area, was laid out in 1759 and it was in 1758 and 1759 that a large influx of New England Planters arrived in Nova Scotia, most of those who settled in the Annapolis County townships being from Massachusetts (Figure 3.2-6). By 1762, there were 60 families settled in Granville and Annapolis Townships.⁶⁴ In addition to the long narrow lots, each grantee was also

⁶¹ Moody 2014:21-22.

⁶² Dexter 1983:5.

⁶³ Unknown 1757.

⁶⁴ Dunn 2004:212-213.

assigned a portion of the dyked marshland, though not always adjacent to the rest of the grant.⁶⁵

By the latter part of the 18th century, a number of post roads and post houses had been established in the Province. The post road from Halifax to Annapolis roughly followed the present-day route of Highway 1 along the north bank of Annapolis River to Granville where a ferry then crossed the river to Annapolis.⁶⁶

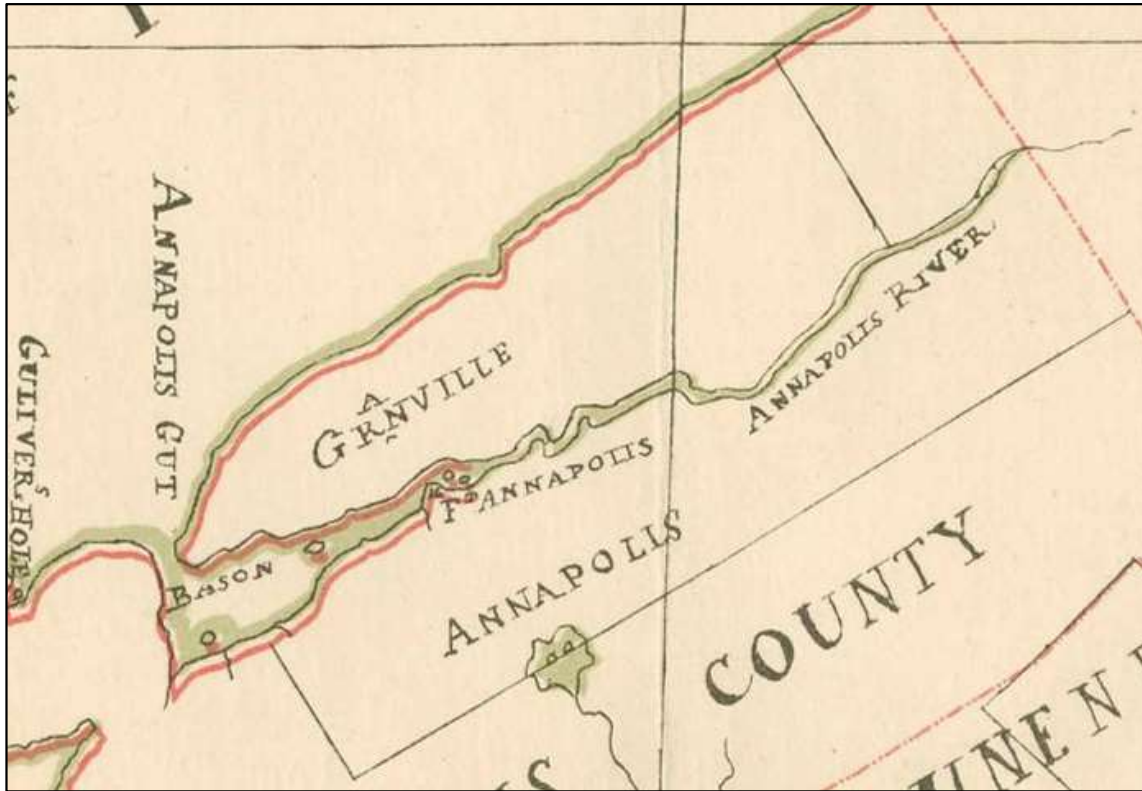


Figure 3.2-6: Part of Charles Morris's "A Chart of the Peninsula of Nova Scotia" showing the bounds of Granville Township.⁶⁷

At the end of the American Revolution in 1783, droves of American Loyalist refugees arrived in Nova Scotia and thousands took up settlement in Granville and Annapolis Townships and new townships at Digby, Clements and Sissiboo were established. About 100 Black Loyalist refugees also came, most of them settling near Digby and Lequille.⁶⁸

⁶⁵ Moody 2014:32.

⁶⁶ Dawson 1988:139.

⁶⁷ Morris 1761.

⁶⁸ Dunn 2004:223-225; Moody 2014:64-65.

An 1858 Admiralty chart of the Annapolis Basin and River depicts cultural activity focused around the post road in the Upper Granville area (Figure 3.2-7). No roads or structures are depicted within the study area or the immediate vicinity.⁶⁹ In 1876, Ambrose Church mapped the area recording a similar lack of activity on North Mountain (Figure 3.2-8).⁷⁰ However, several homesteads and roads above the original post road are depicted at this time. By the time the 1930 Geological Survey of Canada Map was published, more roads and structures are depicted on North Mountain (Figure 3.2-9).⁷¹ No activity is recorded within the immediate vicinity of the study area.



Figure 3.2-7: Part of the 1858 British Admiralty chart of Annapolis Basin and River.⁷² The approximate location of the study area outlined in red.

⁶⁹ Hydrographic Office of the Admiralty 1858.

⁷⁰ Church 1876.

⁷¹ Faribault 1930.

⁷² Hydrographic Office of the Admiralty 1858.

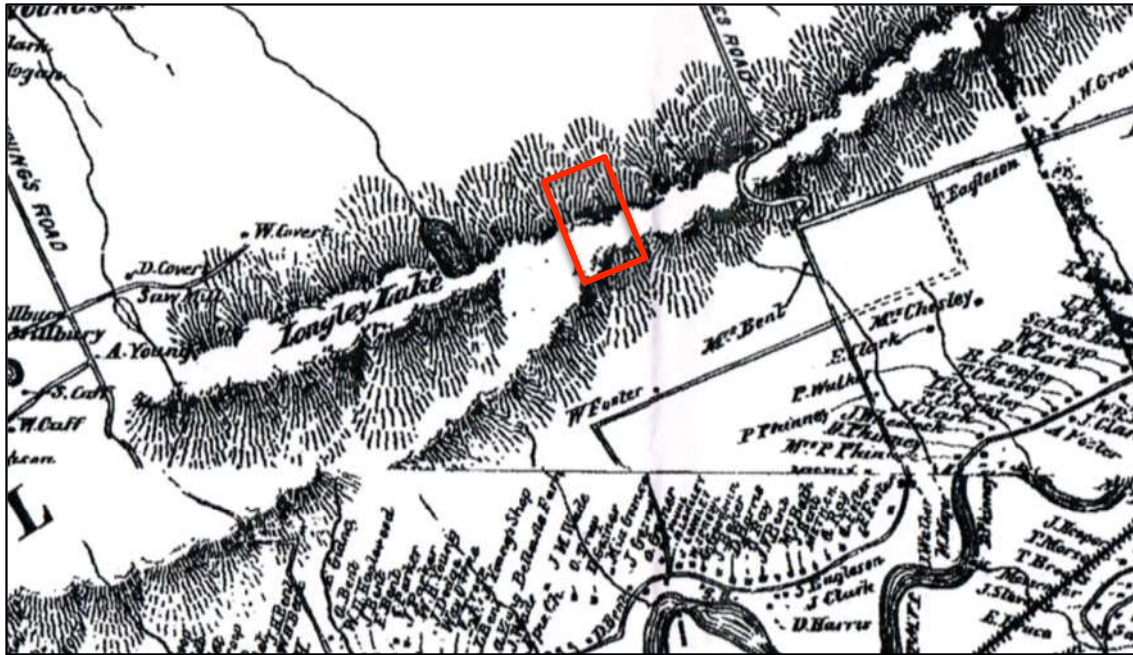


Figure 3.2-8: A.F. Church's 1876 map of Annapolis County depicting a lack of roads and activity within the study area (red).



Figure 3.2-9: The 1930 GSC map of the Bridgetown area depicting no roads or structures in the study area (red).⁷³

⁷³ Faribault 1930.

A review of historic aerial photography exhibits a landscape largely unaltered by historic activity until the beginning of quarrying activity in the mid- 2000's (Figure 3.2-10). Small pockets of forestry activity are apparent within the study area; however, no structures or significant heritage resources are visible.⁷⁴

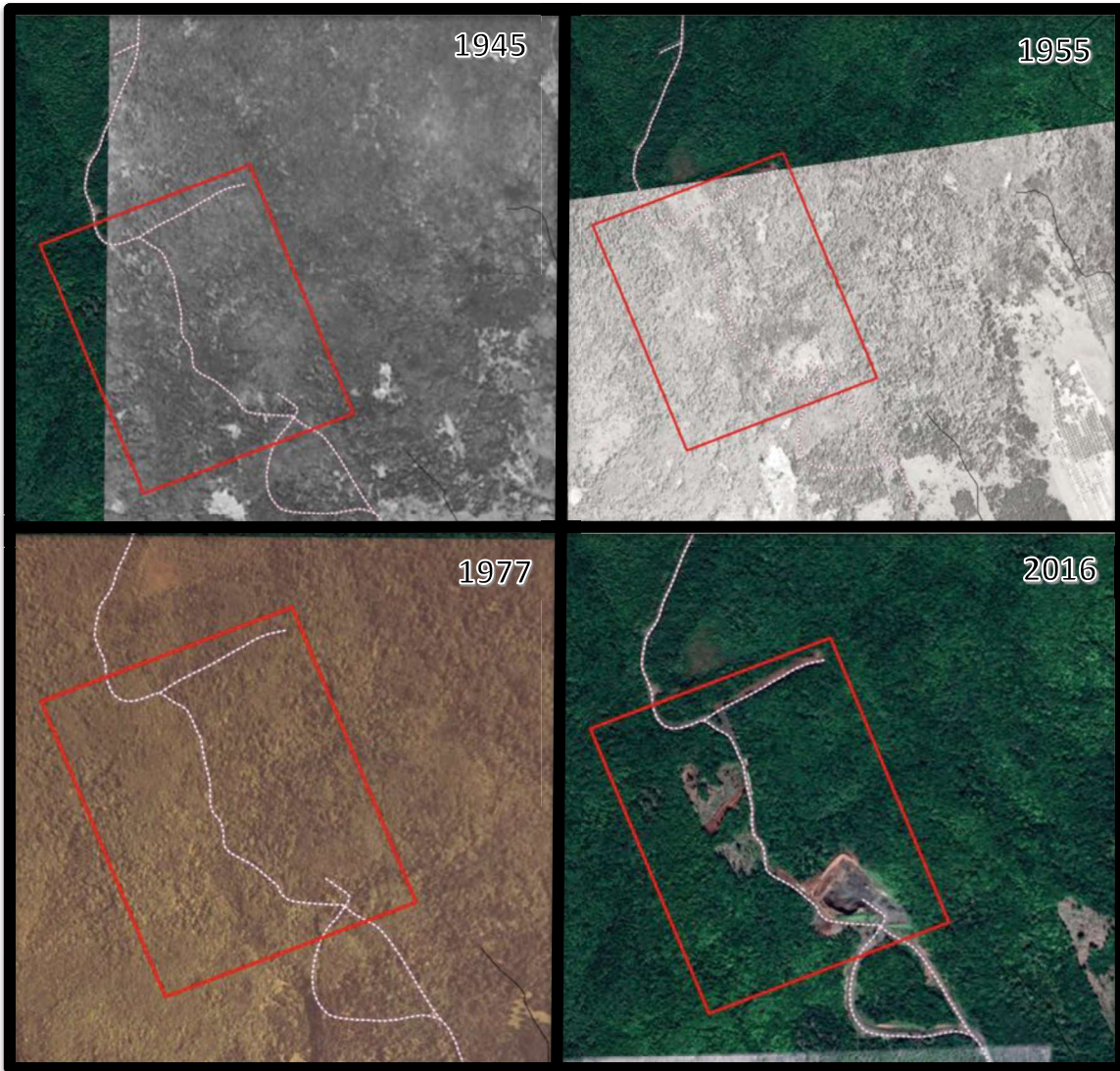


Figure 3.2-10: Historic air photos depicting the evolution of the study area from 1945 to 2016.

⁷⁴ DNR 1945, 1955, 1977; Google Earth 2016.

3.3 Archaeological Reconnaissance

A field reconnaissance was conducted by Vanessa McKillop and Courtney Glen on 08 May 2019. The reconnaissance focused on the areas surrounding the existing quarry operations and the location of the proposed expansion. For ease of description, the study area is divided into quadrants based on cardinal directions using the existing access road as a centre line (Figure 3.3-1). Each archaeologist was equipped with a GPS unit to record tracklogs.

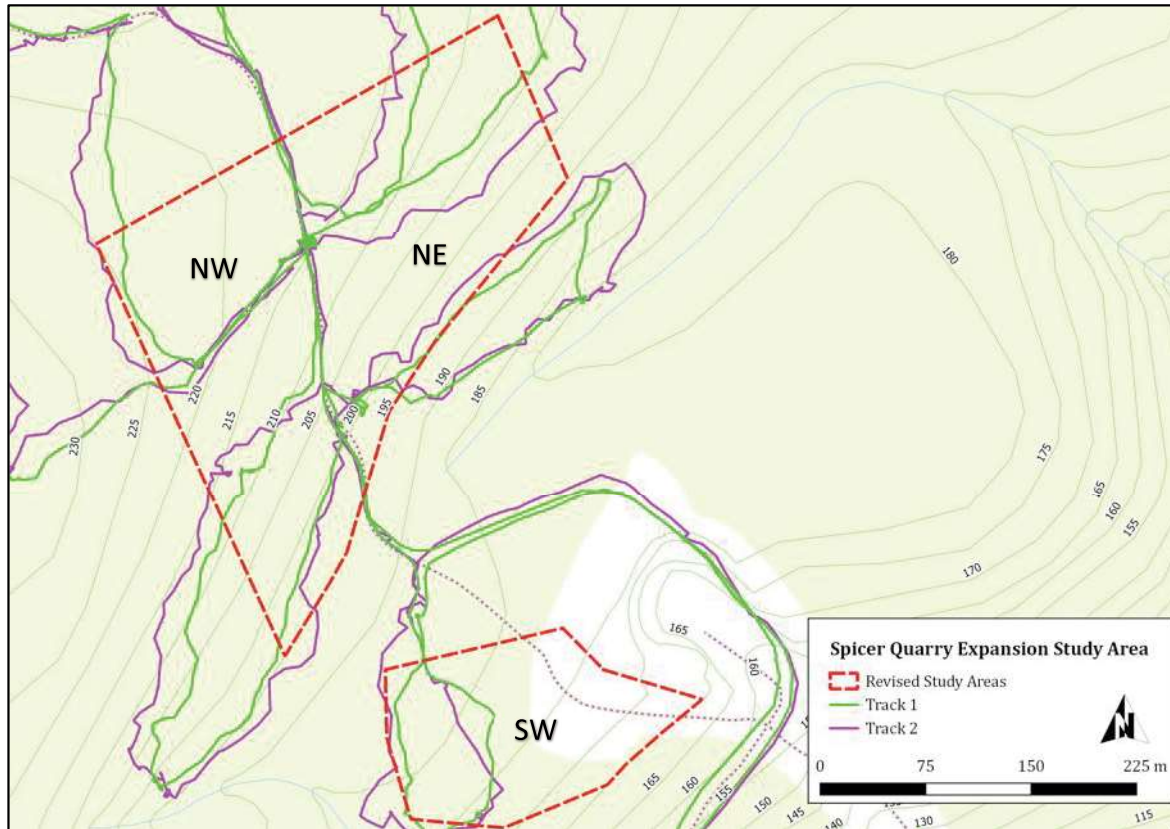


Figure 3.3-1: A map of the Spicer Quarry expansion study area including GPS tracklogs.

The survey began near the centre of the northwestern quadrant of the study area, and continued on northward. This area has been extensively disturbed by grubbing, bulldozing and logging activity with pockets of immature spruce regrowth and grasses (Plate 1). Here, the dark organic soil is very thin and in underlain by an orange brown silty sand subsoil with pebbles and cobbles (Plate 2). A bulldozed access road runs westward along the ridge line until it ends in a forested area (Plate 3). Basalt bedrock outcrops frequent this area. The ridgeline itself is shaded by mature spruce and maples (Plate 4).

Moving west towards the study area's western boundary, a forested area shows signs of past logging activity some 40 to 70 years ago (Plate 5). The forest has largely recovered

with a predominantly semimature to mature hardwood cover on forest duff. The landscape shows signs of skidder ruts and low wet hummocks. Several tree throws are also present in this area exposing thin rocky soils (Plate 6). No cultural materials or deposits were observed. Towards the northern portion of this quadrant, basalt bedrock outcrops become more frequent as the elevation increases. The forest becomes increasingly dense and is dominated by immature and semimature spruce on sphagnum moss (Plate 7). Just outside of the northern border of the study area, the landscape is heavily disturbed by bulldozing to create an access road running east to west (Plate 8). Here, exposed soils were examined for cultural materials or deposits, however, none were observed (Plate 9).

Continuing on to the northeastern quadrant of the study area, the landscape is similar to the northwestern quadrant. Dense semimature and immature spruce with frequent basalt outcrops at higher elevations transitions into open, predominantly hardwood forest (Plate 10). Near the southern border of the northeast quadrant, the landscape becomes increasingly wet, with a stream and wetland located well outside the study area (Plate 11).

The survey continued southward to access the southern portion of the northwestern quadrant at the base of a steep inaccessible ridge (Plate 12). At the base of this slope, the study area is largely cleared with pockets of immature spruce and grasses (Plate 13 and Plate 14). Moving south into the treeline, mature hardwoods dominate and the terrain becomes increasingly wet and hummocky down slope towards the southern edge of the quadrant (Plate 15 and 16).

Finally, moving south to the south eastern quadrant of the study area, much of the landscape is altered by existing quarry operations. Here the topsoil is stripped with rocky orange brown substrate exposed (Plate 17 and Plate 18). A small portion of the study area is still treed to the west of the current quarry. This area is relatively flat and open, with mature hardwoods underlain by immature spruce (Plate 19). Within the quarry operation itself, basaltic bedrock of the North Mountain formation is exposed with numerous veins of quartz (Plate 20).

4.0 RESULTS AND DISCUSSION

It has been well established through oral tradition, historical documentation and the archaeological record that First Nations people have been present in the general area of the Annapolis River and its tributaries since time immemorial. They continued to settle and frequent the area in the historic period and allied themselves with the French and Acadians that settled this region in the 17th and 18th centuries. The French established the first permanent settlement in North America at Port Royal and the Acadians dyked marshlands all along the Annapolis River and its estuary, establishing small villages in

the upland regions around the marshes. Though most of the early Acadian settlers were deported in the mid-18th century, their farms continued to be settled and worked into the latter half of the 18th century by New England Planters and by later immigrants in the 19th century.

A field reconnaissance of the study area has revealed a landscape largely untouched by cultural activity until early 20th century forestry operations. The forest has recovered within the last 40-70 years in much of the study area, however, the landscape is still heavily scarred from ground disturbance.

5.0 RECOMMENDATIONS AND CONCLUSIONS

The assessment has concluded that the study area is of low potential for archaeological resources of precontact or historic First Nations or Euro-Canadian archaeological resources and therefore, no further active mitigation is recommended.

However, in the unlikely event that archaeological resources are encountered in the future during grubbing, soil removal, or other ground disturbance activities, it is required that any ground-disturbing activity be halted immediately and the Coordinator of Special Places (902-424-6475) be contacted immediately regarding a suitable method of mitigation. Should the impact area be modified to expand beyond the currently understood range, a qualified archaeologist should be consulted to evaluate whether further archaeological assessment may be required.

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PLATES



Plate 1: A bulldozed road leading westward in the northwest quadrant.



Plate 2: A bulldozed area exposing orange brown rocky soils.



Plate 3: Immature spruce regrowth with a mature mixed forest in the distance.



Plate 4: A view of the ridgeline lined with mature hardwoods and basalt bedrock outcrops.



Plate 5: A view of the semimature hardwood regrowth bordering the western boundary of the study area.



Plate 6: A tree throw showing characteristically culturally sterile soils.



Plate 7: Dense semi mature mixed regrowth of the northwest quadrant.



Plate 8: An access road that runs along the northern border of the study area, looking eastward.



Plate 9: An archaeologist examines disturbed soils on the western edge of the access road.



Plate 10: Mixed mature and semimature hardwoods near the ridge in the northeast quadrant.



Plate 11: A low wet area bordering a wetland located just outside the southern edge of the northeast quadrant.



Plate 12: Looking northward towards an extreme slope in the northwest quadrant.



Plate 13: A cleared area in the northwest quadrant.



Plate 14: A previously cleared area in the northwest quadrant.



Plate 15: A mature hardwood dominated forest near the southern extent of the northeast quadrant.



Plate 16: A mature mixed forest sloping southward in the southwest quadrant.



Plate 17: A topsoil stripped area bordering the current quarry operations in the southwest quadrant.



Plate 18: A highly disturbed area bordering the current quarry operations in southwest quadrant.



Plate 19: Semimature hardwoods underlain by immature spruce.



Plate 20: Exposed basaltic bedrock of the North Mountain Formation found along the southeastern extent of the active quarry workings.

APPENDIX A: HERITAGE RESEARCH PERMIT



Heritage Research Permit (Archaeology)

Special Places Protection Act 1989

(Original becomes Permit when approved by
Communities, Culture and Heritage)

Office Use Only
Permit Number:

A2019N5020

<i>Greyed out fields will be made publically available. Please choose your project name accordingly</i>	
Surname McKillop	First Name Vanessa
Project Name Spicer Quarry Expansion	
Name of Organization Davis MacIntyre & Associates Limited	
Representing (if applicable)	
Permit Start Date 16 April 2019	Permit End Date 31 August 2019
General Location: Young's Cove, Highway 1, Annapolis County	
Specific Location: <i>(cite Borden numbers and UTM designations where appropriate and as described separately in accordance with the attached Project Description. Please refer to the appropriate Archaeological Heritage Research Permit Guidelines for the appropriate Project Description format)</i> 20 T 311583 m E 4967510 m N (NAD83)	
Permit Category: Please choose one	
<input type="checkbox"/> Category A – Archaeological Reconnaissance	
<input type="checkbox"/> Category B – Archaeological Research	
<input checked="" type="checkbox"/> Category C – Archaeological Resource Impact Assessment	
<input checked="" type="checkbox"/> I certify that I am familiar with the provisions of the <i>Special Places Protection Act</i> of Nova Scotia and that I have read, understand and will abide by the terms and conditions listed in the Heritage Research Permit Guidelines for the above noted category.	
Signature of applicant <i>Apu MacIntyre</i> for Vanessa McKillop	Date 26 March 2019
Approved by Executive Director <i>[Signature]</i>	Date <i>May 5-19</i>