



Bedford Commons Development

Archaeological Resource Impact Assessment

Heritage Research Permit A2023NS136

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BEDFORD COMMONS DEVELOPMENT:
ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT

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Category C

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Cover: Looking northwest across part of the study area, along an existing transmission corridor.

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EXECUTIVE SUMMARY

In June 2023, Davis MacIntyre & Associates Limited was contracted by Fathom Studio, on behalf of the Banc Group, to conduct an archaeological assessment for the Bedford Commons Development in Halifax Regional Municipality. The assessment included a historic background study, predictive modelling, and field reconnaissance in order to determine the potential for archaeological resources in the impact area and to provide recommendations for further mitigation, if necessary.

The rugged, bedrock and boulder-strewn terrain of much of the study area, paired with its distance from navigable waterways and historic roads, appears to have contributed to limited cultural activity in the immediate area. The results of this assessment indicate that although the presence of the Mi'kmaq and their ancestors is known in the region since time immemorial, and historic land grants were made nearby including to Joseph Scott, human activity that has resulted in the creation of significant archaeological deposits is unlikely to have occurred within the limits of the study area.

The proximity of the study area to the Bedford Barrens Petroglyphs (less than 2km) was taken under careful consideration in this assessment. Exposed bedrock was examined wherever possible, though weathering was very pronounced where the rock is not protected by vegetation. The survey has produced no evidence of existing, exposed petroglyphs within the study area, but changes to vegetation cover and weathering patterns could obscure such signs, if they are present. Any development and construction teams should maintain an awareness of the possibility of petroglyphs, and should contact CCTH in the event that possible petroglyphs are exposed or encountered during development.

No findings of archaeological interest, nor areas of elevated archaeological potential, were identified in the course of this assessment. Very few examples of twentieth century cultural activity were observed within the study area, aside from the existing developments at the edges of the wooded portion of the property. As such, no further archaeological mitigation is currently recommended.

Should development plans change and the study area is altered or expanded, then a qualified archaeologist should be contracted to conduct an additional assessment on any new areas outside the project boundaries identified in this report.

In the event that any archaeological resources, including petroglyphs, are encountered during ground disturbance and an archaeologist is not already on site, it is required that all activity cease and the Coordinator of Special Places (902-229-3159) be contacted immediately regarding a suitable method of mitigation.

1.0 INTRODUCTION

In June 2023, Davis MacIntyre & Associates Limited was contracted by Fathom Studio, on behalf of the Banc Group, to conduct an archaeological assessment for the Bedford Commons Development in Halifax Regional Municipality. The assessment included a historic background study, predictive modelling, and field reconnaissance in order to determine the potential for archaeological resources in the impact area and to provide recommendations for further mitigation, if necessary.

The assessment was conducted under Category C (Archaeological Resource Impact Assessment) Heritage Research Permit A2023NS136 issued by the Department of Communities, Culture, Tourism and Heritage. 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 Bedford Commons Development is located in Bedford, Halifax Regional Municipality (Figure 2-1). The proposed development of the land at the Bedford Commons is expected to encompass approximately 56 hectares. As this ARIA is being conducted during the design phase of this development, detailed information is not fully known. It is anticipated that construction impacts may include grubbing, excavation, trenching, infilling, and laydown area construction.

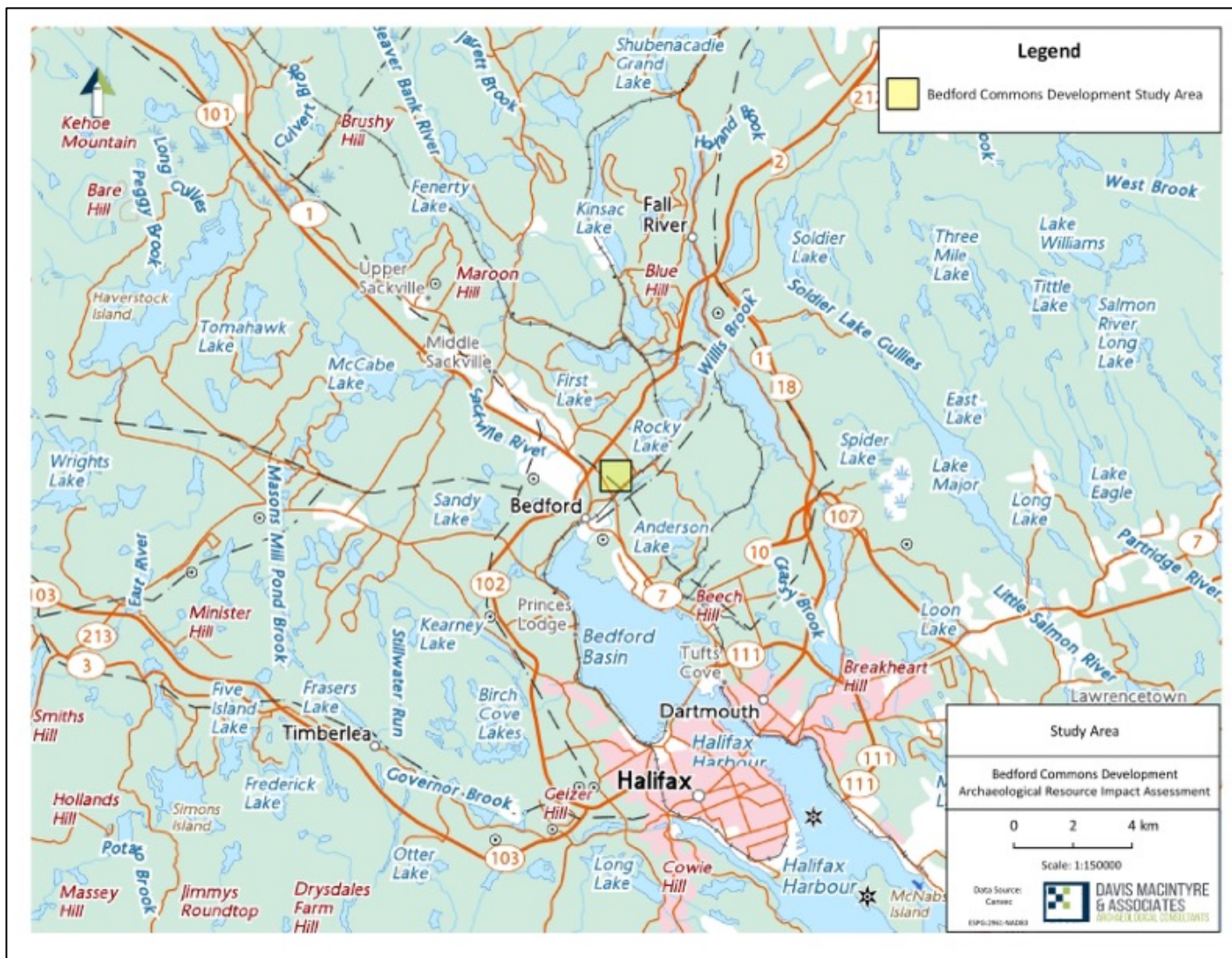


Figure 2-1: The location of Bedford Commons Development in Halifax Regional Municipality.

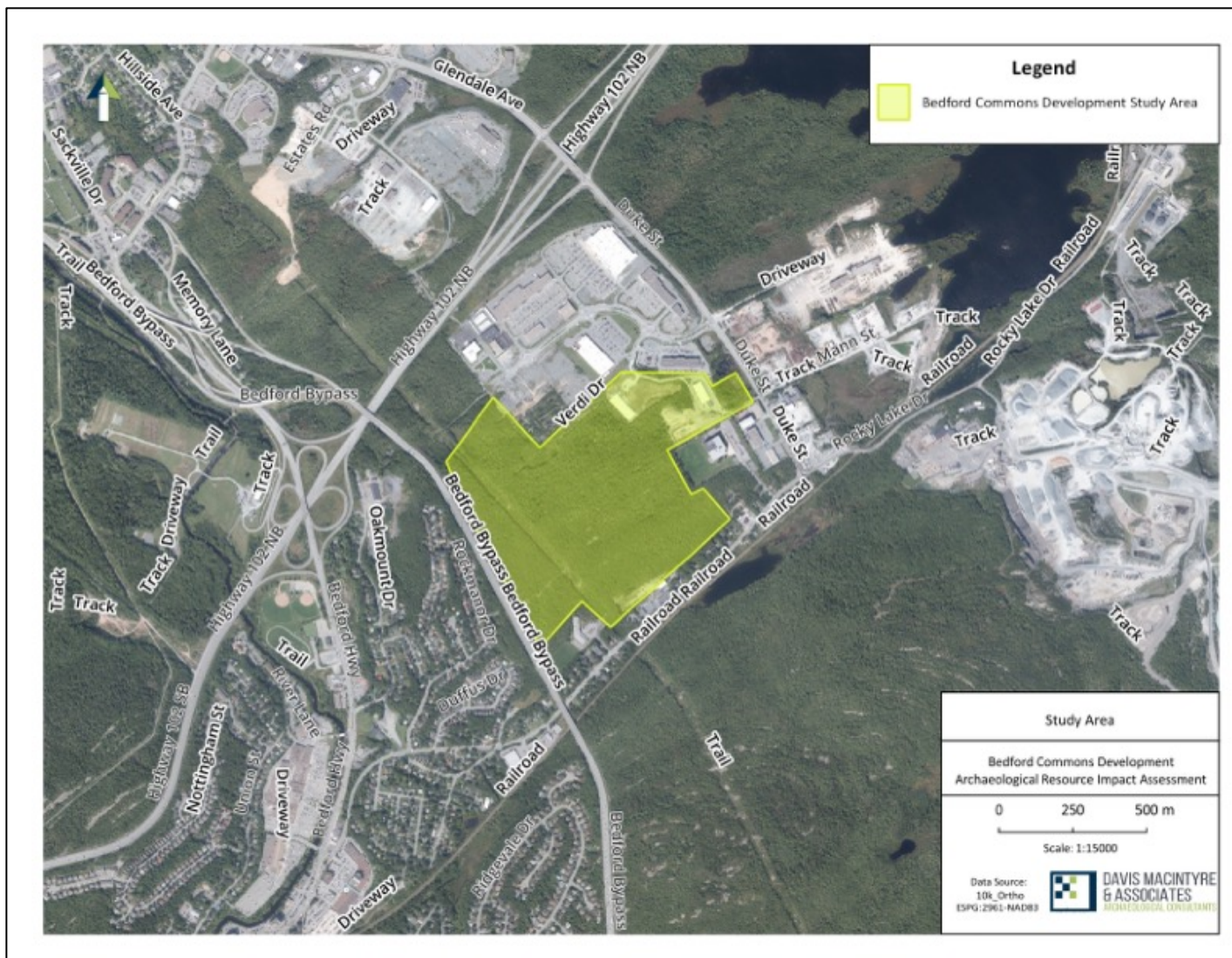


Figure 2-2: Satellite image of Bedford Commons Development showing the approximate bounds of the archaeological study area.

2.1 Palaeoecology

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 ka BP) extended its reach across the continental shelf to ocean depths of 800m.¹ The modern landscape bears the scars and relics of the Wisconsin glacialiation, 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. 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.² 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. It is believed Sa'qiwe'k L'nu'k bands followed these herds into the region by at least 10,900 BP (12,900 cal BP).³

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.⁴ Land-bound glaciers reactivated and the advance of forested regions was reversed, with areas of open shrub tundra expanding southwards. 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.⁵ 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. By about 9.5 ka BP, the pace of land rise diminished and sea levels again began to overtake exposed shores in most areas.⁶

Glacial isostasy and eustasy changed habitable coastlines over the millennia following deglaciation (Figure 2-3). Significant landforms, subaerially exposed through isostatic

¹ Fader 2005, 2; Lothrop et al. 2011, 549.

² Shaw et al. 2006, 2069, 2072.

³ Ellis 2004, 244; Newby et al. 2005, 151.

⁴ Fader 2005, 5; Lothrop et al. 2011, 550.

⁵ Newby et al. 2005, 151; Deal et al. 2006, 256.

⁶ Shaw et al. 2002a, 1867; Fader 2005, 2.

uplift were subsequently submerged by rising seas.⁷ Most ancient shorelines have been reclaimed by the sea or reshaped by powerful erosional forces. However, some sheltered or interior areas may hold the potential for relatively intact palaeoshores. 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.⁸

More generally, by 6 ka BP, the geographical setting of the Atlantic region nearly matched conditions today. 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 3,000.⁹

⁷ Fader 2005, 5.

⁸ Fader 2005, 6; Shaw et al. 2009, 24.

⁹ Shaw et al. 2002a, 1872.

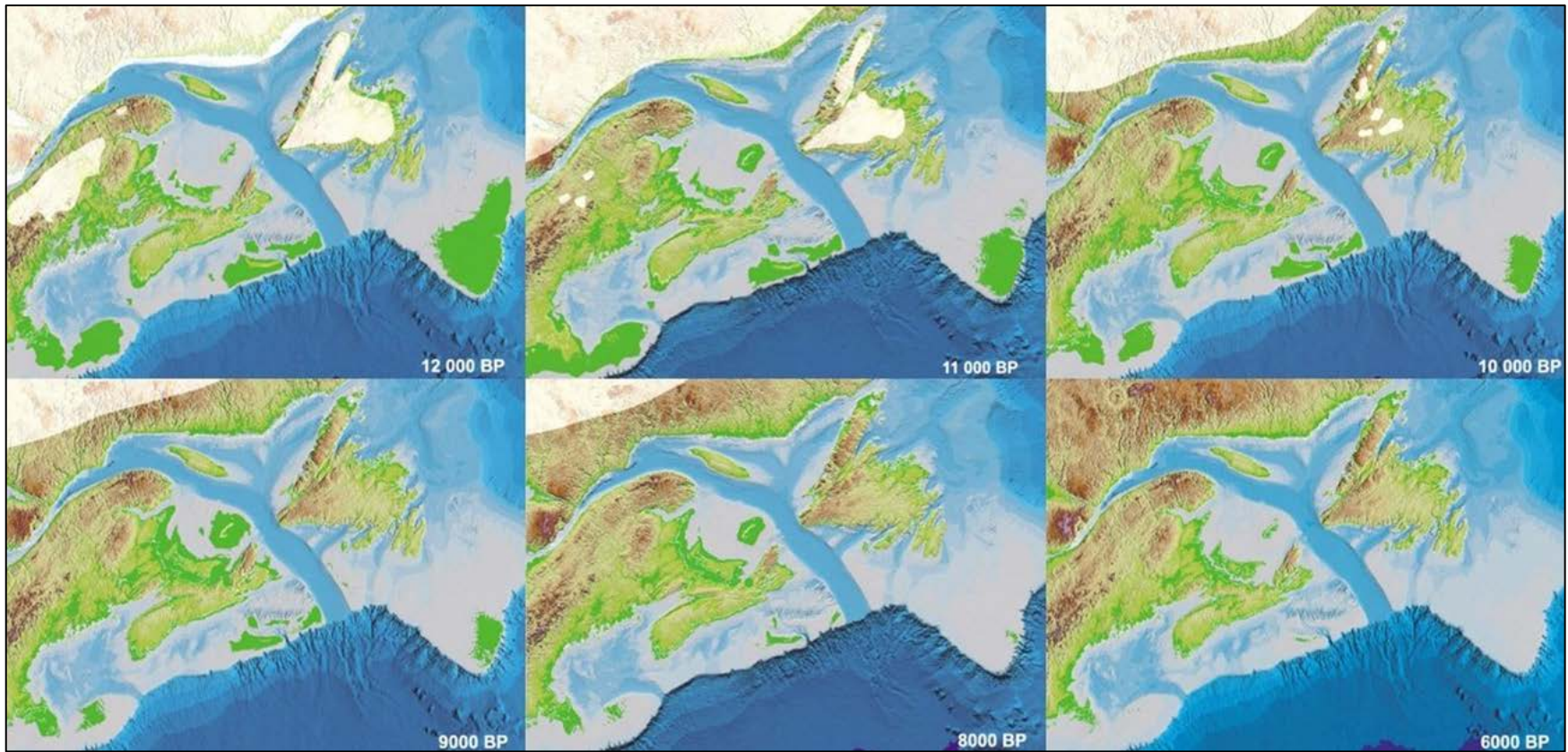


Figure 2-3: Palaeogeography of Maine and the Atlantic Provinces, depicting how emergent landforms on the continental shelf were gradually submerged.¹⁰

¹⁰ From Shaw et al. 2002a.

2.2 Natural Environment

The study area is located in the Eastern Interior (#440) Ecological Land Classification ecodistrict and the Quartzite Barrens Natural Theme Region (#413) in the Halifax sub-unit (#413a).

The Eastern Interior ecodistrict is the largest in the province, extending from Pockwock Lake in the west to Chedabucto Bay in the east.¹¹ The topography of the area is flat to rolling, with many surface boulders.¹² Changes in topography are moderate, following the gentle rise and fall of the underlying bedrock and glacial deposits. There are three distinct concentrations of drumlins in the ecodistrict. The three areas are identified by the watersheds of the three rivers that flow through them, which include Sackville River, Moser River, and Tangier River. The drumlins are oriented in a north-south direction, indicating the path of the glacier's movement toward the Atlantic Ocean.¹³

Meta-sedimentary rock, including quartzite, slate, greywacke, migmatite, and schist underlie the ecodistrict. The Halifax and Goldenville formations make up the Meguma Group that runs from Yarmouth to Canso. In the northeast and northwest of the ecodistrict there are small areas underlain by Carboniferous period sedimentary rock, such as shale, gypsum, and sandstone. The majority of gold deposits in the province are found within the Goldenville Formation. Some of the gold mines in the formation include Goldboro in the east and Moose River in the interior. Surficial deposits and parent material are composed mainly of slate tills and quartzite of varying thickness. Soils in the ecodistrict are derived from gravelly sandy loam till high in quartzite and slate, gravelly sandy clay loam till containing shale, sandstone and mudstone, shallow stony sandy loam till high in quartzite, and gravelly loam to silt loam till high in slate.¹⁴

There are several forest ecosystems found within the Eastern Interior ecodistrict. Azonal climax black spruce forest is found on dry to moist, nutrient-poor soils. Zonal softwood/mixedwood forest composed of red maple, yellow birch, hemlock, and red spruce is found on fresh to fresh-moist, nutrient medium soils. Zonal tolerant hardwood forest made up of yellow birch, red maple, and sugar maple is found on fresh, nutrient medium to rich soils. Natural disturbances such as fire, hurricanes, and insects shape the forests in the region. Disturbances are more frequent in spruce and pine forests as a result of the abundance of spruce and pine litter which fuels forest fires. Older red spruce forests are more vulnerable to damage caused by the spruce bark beetle.¹⁵

Irregular shaped lakes are common throughout the ecodistrict. They tend to be acidic and brown in colour due to high amounts of dissolved humus. Conductivity is typically low in

¹¹ Neily et al. 2017, 121.

¹² Department of Energy and Mines n.d.

¹³ Neily et al. 2017, 121.

¹⁴ Neily et al. 2017, 122–3.

¹⁵ Neily et al. 2017, 123–5.

lakes and streams in the area.¹⁶ Eutrophication is common in lakes found in areas that are more developed.¹⁷

Wet ecosystems make up a large proportion of the landscape, including forested and unforested wetlands, as well as aquatic ecosystems. Ten percent of all inland waters in the province are found within the Eastern interior. Shrub swamps and open peatlands make up the majority of the ecodistrict's open wetlands. Low heathlands occur in the open uplands and are mainly composed of vegetation such as rhodora, lambkill, blueberry, and huckleberry.¹⁸

The region hosts a good browsing habitat for deer and hare due to the extensive forest cutting that has occurred in the past. Bobcat populations in the area are supported by the abundance of hare. Throughout the region, small mammal diversity is moderately high in mixed forest habitats that are well-drained. This is especially the case along streams and rivers, while elsewhere it is quite low. Common fish species found in the region include white and yellow perch, brown bullhead, brook trout, golden shiner, lake trout, banded killifish, and white sucker.¹⁹

3.0 METHODOLOGY

A historic background study was conducted by Davis MacIntyre & Associates Limited in July 2023. Historic maps and manuscripts and published literature were consulted from the Nova Scotia Archives and other online sources. LiDAR and air photos were also examined. The Maritime Archaeological Resource Inventory (MARI), a database of known archaeological resources in the Maritime region, was searched to understand prior archaeological research and known archaeological resources neighbouring the study area.

The Archaeological Research Division at Kwiłmu'kw Maw-klusuaqn Negotiation Office (KMKNO-ARD) was contacted in July 2023 to inquire whether traditional Mi'kmaw land use is known in or near the study area. A response was received on July 3, 2023. While the traditional use information provided is confidential, it has been taken into consideration during this assessment. KMKNO-ARD also provided historical references from their database which has been incorporated into the historical background below.

A field reconnaissance of the study area was conducted in August 2023, with particular attention paid to areas anticipated to be impacted. Detailed notes and photographs were collected, with tracklogs recorded via handheld GPS units.

¹⁶ Neily et al. 2017, 122.

¹⁷ Davis and Browne 1996, 56.

¹⁸ Neily et al. 2017, 125.

¹⁹ Davis and Browne 1996, 57.

4.0 RESULTS

4.1 Maritime Archaeological Resource Inventory

The Maritime Archaeological Resource Inventory (MARI) was accessed on 30 August 2023 to determine if known archaeological sites or resources exist within or near the study area. A perimeter radius of 5 kilometres from the study area was applied, which encompasses much of Bedford as well as portions of Waverley, Sackville, and Burnside. A review of the MARI database determined that there are five registered archaeological sites within a 5-kilometre radius of the study area, with a sixth just beyond the 5km mark.

The Bedford Barrens petroglyphs (**BeCw-02**) are perhaps the most relevant registered site within the 5-kilometer search radius, as they are located on bedrock outcroppings relatively similar to the ridges seen within the study area. The petroglyphs are discussed in more detail in Section 4.2.1 below.

In Bedford, the remains of the historic Fort Sackville are known to be located on a small hill overlooking the harbour (**BeCv-10**).

Two historic cellars or outbuildings were reported near First Lake and Second Lake in Sackville (**BeCv-36** and **37**). Historic field clearing and stone piles are also located nearby, suggesting that these features relate to historic homesteads.

The remains of the early nineteenth century Acadian Paper Mill are known at Paper Mill Lake, on the far side of Bedford (**BeCw-03**).

Finally, just outside the 5-kilometer search radius, an isolated find of a Late Mu Awsami Kejikawe'k L'nuk (Archaic) stone celt was reported in 1984 near Waverley (**BeCv-16**).

The relative lack of archeological sites that have been identified within a 5-km radius of the study area, likely reflects the lack of past archaeological research in the vicinity. This is compounded by poor site preservation and visibility due to historic land development as well as steadily rising sea levels over the last several thousand years.

4.2 Historic Background

4.2.1 L'nuk Settlement During the Precontact and Historic Periods

Spatially and geographically, L'nuk land use throughout Mi'kma'ki is not considered in the same sense that European occupation is recorded in historic times. Colonialism has had a significant impact on Mi'kmaw 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”.²⁰ Therefore, the euro-centric view of the land as discrete and definitive land parcels does not reflect the Mi’kmaq world view and references to site-specific pre-contact 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, although they must be carefully considered due to their inherent bias, and Mi’kmaq 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 13,000 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 Saqiwe’k L’nuk (the Ancient People) or the Palaeoindian period (13,000 - 9,000 cal BP). The changing ecology following deglaciation allowed the entrance of large herds of migratory caribou into Nova Scotia, followed by Palaeoindian groups from the south.²¹ Currently, the Debert/Belmont Sites provide the only significant evidence of Palaeoindian 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.²²

Succeeding the Saqiwe’k L’nuk is the Mu Awsami Kejikawe’k L’nuk (the Not so Recent People) or the Archaic Period (9,000-3,000 cal BP). This time saw a reorientation to a more maritime subsistence, with settlement pivoting more towards coastal areas, lakes, and bountiful riverine resources.²³ 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.²⁴ Ground stone tools, specialized for woodworking, 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.

By the Kejikawe’k L’nuk (the Recent People) or Woodland/Ceramic period (3,000-550 cal BP), the Mi’kmaq were a maritime people, with known sites concentrating along coastal shorelines and navigable watercourses.²⁵ Migration of ideas and people introduced new

²⁰ Sable and Francis 2012, 18.

²¹ Newby et al. 2005, 151.

²² Lothrop et al. 2011, 562.

²³ Tuck 1975.

²⁴ Deal et al. 2006.

²⁵ Davis 1993, 100.

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.²⁶ 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 were practiced with varying degrees of intensity depending on seasonality and region. A generally stable cultural form is believed to have developed by 2,000 cal BP, forming the way of life first encountered by Europeans arriving on our shores.²⁷

Mi'kmaw life was substantially altered in the Kiskukewe'k L'nuk (Today's People) or Contact Period (500 BP- Present). Trade and European settlement introduced change and upheaval to the traditional way of Mi'kmaw life. Mobile hunting and gathering still defined Mi'kmaw life, with identity residing within family households.²⁸ 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.²⁹ It is not accurate, however, to say that Mi'kmaq *adopted* European goods and culture, but rather *adapted* to it. The Mi'kmaq remained an influential social and political force forming a triadic narrative of contention with the English and French in the 18th century. 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.³⁰

The Mi'kmaq 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 Aroostook County in northern Maine and southwestern Newfoundland (Figure 4-1). The study area is located within the Mi'kmaw territory known as Sipekne'katik meaning "wild potato area" or "place of groundnuts." Sipekne'katik encompasses parts of what today are Hants, Lunenburg, Kings, Colchester, Halifax, and Cumberland Counties. Historic European records suggest there were three summer villages within the territory, located at Shubenacadie, Truro, and Tatamagouche. Several villages are also recorded in and around Kjiptuk/Halifax.³¹ More villages were likely established throughout Sipekne'katik, but either fell outside of the knowledge of European sources, or were simply not recorded.

²⁶ Davis 2005, 18.

²⁷ Wicken 2004, 26.

²⁸ Wicken 2004, 30.

²⁹ Whitehead 1993, 89.

³⁰ Reid 2009.

³¹ Hoffman 1955, 534-35.

Table 4-1: Mi'kmaw/Archaeological Cultural Periods.³²

Mi'kmaw Period	Archaeological Period	Years (C ¹⁴ Uncalibrated)	Calendar Years (Calibrated)
Saqiwe'k L'nuk (the Ancient People)	Palaeoindian <i>Early/Middle</i> <i>Late</i>	11,500 – 9,000 BP <i>11,500 – 10,000 BP</i> <i>10,000 – ~9,000 BP</i>	13,000 – 9,000 cal BP <i>13,000 – 11,600 cal BP</i> <i>11,600 – 9,000 cal BP</i>
Mu Awsami Kejikawe'k L'nuk (the Not so Recent People)	Archaic <i>Early/Middle</i> <i>Late/Transitional</i>	9,000 – 3,000 BP <i>9,000 – 5,000 BP</i> <i>5,000 – 2,500 BP</i>	9,500 – 3000 cal BP <i>9500 – 5,500 cal BP</i> <i>5,500 – 3,000 cal BP</i>
Kejikawe'k L'nuk (the Recent People)	Woodland/Ceramic <i>Early</i> <i>Middle</i> <i>Late</i>	3,000 – 500 BP <i>3,000 – 2,400 BP</i> <i>2,400 – 1,700 BP</i> <i>1,700 – 500 BP</i>	3,000 – 550 cal BP <i>3,000 – 2200 cal BP</i> <i>2,200 – 1,300 cal BP</i> <i>1,300 – 550 cal BP</i>
Kiskukewe'k L'nuk (Today's People)	Protohistoric Historic/Modern	500 BP – 350 BP 500 BP – present	550 – 350 cal BP 350 cal BP – present

The cultural significance of the study area to the Mi'kmaw and their ancestors is recorded in the Mi'kmaw language. The Mi'kmaw language, inseparable from Mi'kma'ki, is embedded with knowledge of the land and a unique way of understanding the world, reflected in both oral traditions and place names.³³ For archaeologists, the Mi'kmaw language can provide powerful insights into traditional land-use, available resources, and how these places were perceived. Bedford is known as Kwipek, which has an uncertain meaning. The Mi'kmaw name for Lower Sackville is Alusulue'katik meaning "at the measles place." Rocky Lake, just east of the study area is known as Apjimoqikwitk or "severe water flow restriction."³⁴

³² Lewis 2006b; Confederacy of Mainland Mi'kmaq 2007, 3; Davis 2011, 22; Betts and Hyrnick 2021, 19.

³³ Sable and Francis 2012, 26.

³⁴ Ta'n Weji-sqalia'tiek.

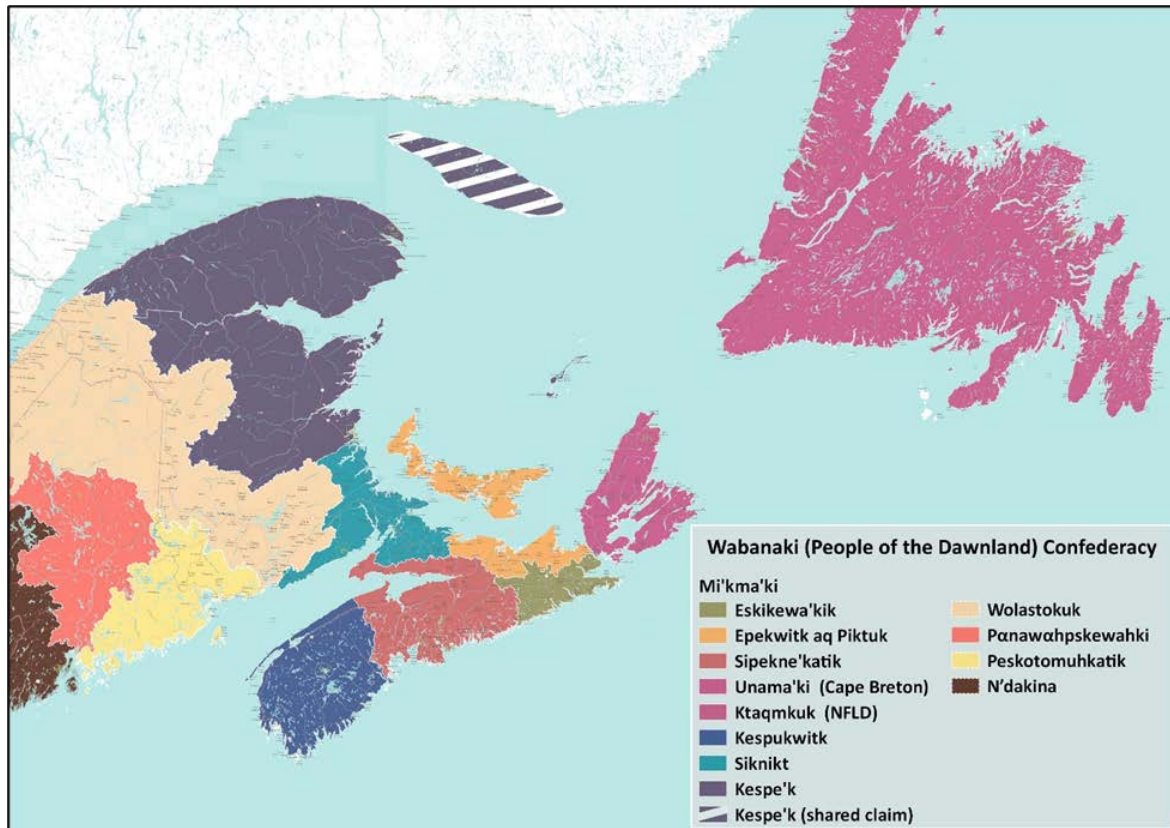


Figure 4-1: The districts of Mi'kma'ki and Wabanaki Traditional Territories.³⁵

Archaeological evidence supports a precontact occupation of Halifax County and the surrounding landscape by the Mi'kmaq and their ancestors for at least 7,000 years and almost certainly much longer. The Mi'kmaq and their ancestors would have harvested marine birds and animals at the coast, gone to interior rivers and lakes for seasonal migrations of fish, eel, and opportunities to hunt larger game animals. Plants were also harvested from different interior and coastal environments. Movement from the coast to the interior may have followed a generalized winter-interior, summer-coastal migration round suggested by ethnohistoric sources.³⁶ However, mobility across Mi'kma'ki was likely more complex.³⁷ Use of rivers and long inlets allowed more fluid movement between coastal and interior camps.³⁸ Movement between the coast and interior may

³⁵ Adapted from Sable et al. 2012; Maliseet Nation Conservation Council 2009; Johnson 2020; Membertou Geomatics Solutions (MGS) and Unama'ki Institute of Natural Resources (UINR) 2016; EPA 2015; Abbe Museum s.d. Some traditional territory overlap exists in western New Brunswick, Quebec and Northern New England. This adaptation is based upon modern watershed delineations. Boundaries within modern territories were likely fluid during periods of landscape and climactic changes. Current delineations are more reflective of series of treaties, negotiated between various Wabanaki nations and contemporary indigenous groups, and post contact treaties with the French, English, and federal governments of Canada and USA.

³⁶ Hoffman 1955, 153–4.

³⁷ Wicken 1994, 63.

³⁸ Lewis 2006a, 58.

have been dependant on weather and availability of valued resources, as suggested by other sites found throughout Nova Scotia.³⁹

Historic documents record Mi'kmaq living throughout K'jipuktuk. The indented coves and inlets of the harbour provided ideal camping grounds at places such as Birch Cove, Fairview Cove, and McNab's Island. K'jipuktuk offered Mi'kmaq families numerous advantages including freshwater sources, access to marine, coastal, and riverine resources, as well as easy movement throughout the greater landscape along waterways like the Shubenacadie and Sackville Rivers. Rivers near the study area, including the Nine Mile and Prospect Rivers, would also have been a source of important resources as well as travel routes to the outer coast at Shad Bay and Prospect Bay. Following Long Lake, it would also have been easy to travel along the lakes and waterways that empty into the head of the Northwest Arm.

The most significant travel route was the K'jipuktuk/We'kopektik trail along the Shubenacadie River System, which allowed cross-province travel between Halifax Harbour and Cobequid Bay. This trail, which archaeological evidence indicates dates to the Precontact period, could be travelled by canoe over several portages or by foot during times of the year when the lakes were impassable. Travel to the Cobequid area could also be achieved by a short trip up the Little Sackville River, a portage of less than one kilometre to First Lake, then a passage through Second and Third lakes, before entering the Shubenacadie River system.⁴⁰

Mi'kmaw settlement in K'jipuktuk is reflected in historic documents as early as 1688, when Sieur de Gargas recorded thirty-three Mi'kmaq living in seven 'cabanes' when he visited Halifax Harbour in 1688.⁴¹ Sieur de Diereville, a French surgeon and author, met three Mi'kmaw chiefs at Halifax Harbour in 1699, leading Diereville to speculate the harbour was an important gathering place for the Mi'kmaq.⁴² The Governor of Acadia, Jacques Monbeton de Brouillan, describes hundreds of Mi'kmaq living around K'jipuktuk in 1701.⁴³ While these population descriptions are helpful, the number of Mi'kmaq living in the harbour likely fluctuated throughout the year. For example, during the spring salmon run, there is evidence that Mi'kmaq gathered in a large encampment on a rise upstream of the outlet of the Sackville River into the Bedford Basin.⁴⁴ This may be the same location, near Fort Sackville, where four Mi'kmaq camps are known in the 19th century. It is likely that more habitation sites were in use around the harbour in the 17th century, however fewer records exist during this time period due to the lack of French activity in the area.

³⁹ Sheldon 1988, 134.

⁴⁰ Sanders and Stewart 1999, 7.

⁴¹ Wicken 2004, 171.

⁴² Hoffman 1955, 335.

⁴³ Ingalls and McGrath 1998, 10.

⁴⁴ Ingalls and Ingalls 2010, 11–2.

Contact between the Mi'kmaq of K'jipuktuk and Europeans became more frequent during the eighteenth century. This period also marked a time of increasing strife between Mi'kmaq and British colonizers. The Mi'kmaq of K'jipuktuk were deeply involved in these conflicts and were central in a historical tragedy which unfolded on the shores of the Bedford Basin in the mid-18th century. In the summer of 1746, Mi'kmaq warriors from Chebucto and bands throughout Mi'kma'ki gathered in K'jipuktuk. They were awaiting a French armada of over 70 ships led by Duc d'Anville, the greatest naval military force ever sent from France to North America. Together, their goal was to avenge the loss of Louisbourg the year prior, destroy the British fort at Annapolis Royal, and retake all of Acadia from the British.⁴⁵

The expedition was doomed nearly from the onset. Delayed by weather and poor organization, only forty-four ships arrived in the harbour. By the time of their arrival, many of the Mi'kmaq had dispersed and gone home. The remaining Mi'kmaq assisted the French soldiers to their camps at Fairview and Birch Coves, which proved to be a tragic decision. The sailors were in poor health and the Mi'kmaq were exposed to highly contagious diseases to which they had no immunity.⁴⁶ These illnesses killed countless Mi'kmaq in K'jipuktuk. Surviving Mi'kmaq left, unknowingly carrying these fatal diseases to their home villages, spreading the contagion further. The Mi'kmaq buried their dead “back of the site of Forrest's Tannery”, located in the vicinity of Titus Smith Park in Fairview today.⁴⁷

The historical consequences of the event for the Mi'kmaq of K'jipuktuk were immediate. Due to the depopulation of K'jipuktuk, in 1749 Edward Cornwallis and ships full of British settlers arrived at a Halifax Harbour nearly absent of its Mi'kmaq residents. Though devastated by disease, the Mi'kmaq defended their claim on K'jipuktuk and resisted British settlement in the area for years after the founding of the colony. British settlement in K'jipuktuk, seen by the Mi'kmaq as a violation of the 1726 treaty, resulted in a deterioration of relations between the two nations and numerous confrontations.⁴⁸ This includes the 1749 attack by the Mi'kmaq on the burgeoning settlement of Dartmouth. In response, a small group of Mi'kmaw living on the Dartmouth side of the Harbour were deported.⁴⁹ They were moved to the northeastern portion of McNab's Island, now called “Indian Point”, and lived there for some time.

Though displaced through disease, war and colonization, the Mi'kmaq continued to live in K'jipuktuk through the 18th and 19th centuries. A travelling reverend, Joshua Marsden explained in August 1800 that a few Mi'kmaq “...live in the vicinity of Halifax, who chiefly get their living by fishing; but alas! these natives of the wilderness are much diminished

⁴⁵ Ingalls and Ingalls 2010, 11–2.

⁴⁶ Ingalls and Ingalls 2010, 14.

⁴⁷ Ingalls and Ingalls 2010, 15–7.

⁴⁸ Paul 2008, 112.

⁴⁹ Kinsman 1995, 2.

in every part of the province...”⁵⁰ Three hundred Mi’kmaq were recorded as living in Halifax County in 1842.⁵¹ In 1880, it was reported that Mi’kmaq “from other counties” come to Bedford, Dartmouth “and other places near the city” in the summer to camp.⁵²

Dartmouth became a gathering place for local Mi’kmaq, with historic references to habitations on the harbour shores and along the area’s plentiful lakes. By at least the late 18th century, local Mi’kmaq established a community at Tuft’s Cove called Turtle Grove. A school was constructed, and several families lived in the area earning a living as artisans of baskets, hockey sticks, firkins, and other goods. Tragically, this community was destroyed by the Halifax Explosion in 1917 and never rebuilt.

Prior to European settlement in Nova Scotia, the Mi’kmaq used the Sackville River to travel between the interior and the Bedford Basin (Figure 4-2). They would set up camp each spring at the mouth of the river, fishing for salmon and gaspereau, and hunting animals such as deer, ducks, and rabbits.⁵³ The Mi’kmaq would hold a feast to honour the coming of spring. During the week-long celebrations, they would forget the past winter by taking part in activities including religion, recreation, mind-cleansing, and feasting. After the feast, they would settle down for the summer. When Jacques Brouillon, the French governor, visited Nova Scotia in 1701, he reported finding approximately 300 Mi’kmaq at the basin. With assistance from Mi’kmaw guides, he made a trip to Port Royal, making his way along the Sackville River.⁵⁴ The Mi’kmaq referred to the area as Kwebec, or Kwipek, which possibly meant “head of the tide.” Kwebec remained a peaceful stopping place for the Mi’kmaq up until the mid-eighteenth century when Governor Cornwallis placed a bounty on their heads. After Fort Sackville was established in 1749, the Mi’kmaq retreated to a wooded area on a hill behind the Sackville River, now called the Barrens.⁵⁵

Settler Joseph Scott’s log house was located on one side of the old Acadian-Mi’kmaq trail and Fort Sackville on the other. Scott was friends with the Mi’kmaq and held them in high regard. They would often stop at his side of the road while returning from business with the governor or on their way back from celebrations. There are reports of Scott hosting around forty Mi’kmaq for a feast on his lawn for several days. This event possibly took place in 1759 after a celebration of peace led by Father Maillard was held in Halifax. Scott’s relationship with the Mi’kmaq was such an important part of his life that upon his death, he requested to be buried with them.⁵⁶

⁵⁰ Marsden 1816, 16.

⁵¹ Wicken 2004.

⁵² Canada House of Commons 1881, 42.

⁵³ Edwards 2007, 1.

⁵⁴ Tolson 1979, 9–13.

⁵⁵ Edwards 2007, 1–3.

⁵⁶ Tolson 1979, 49.

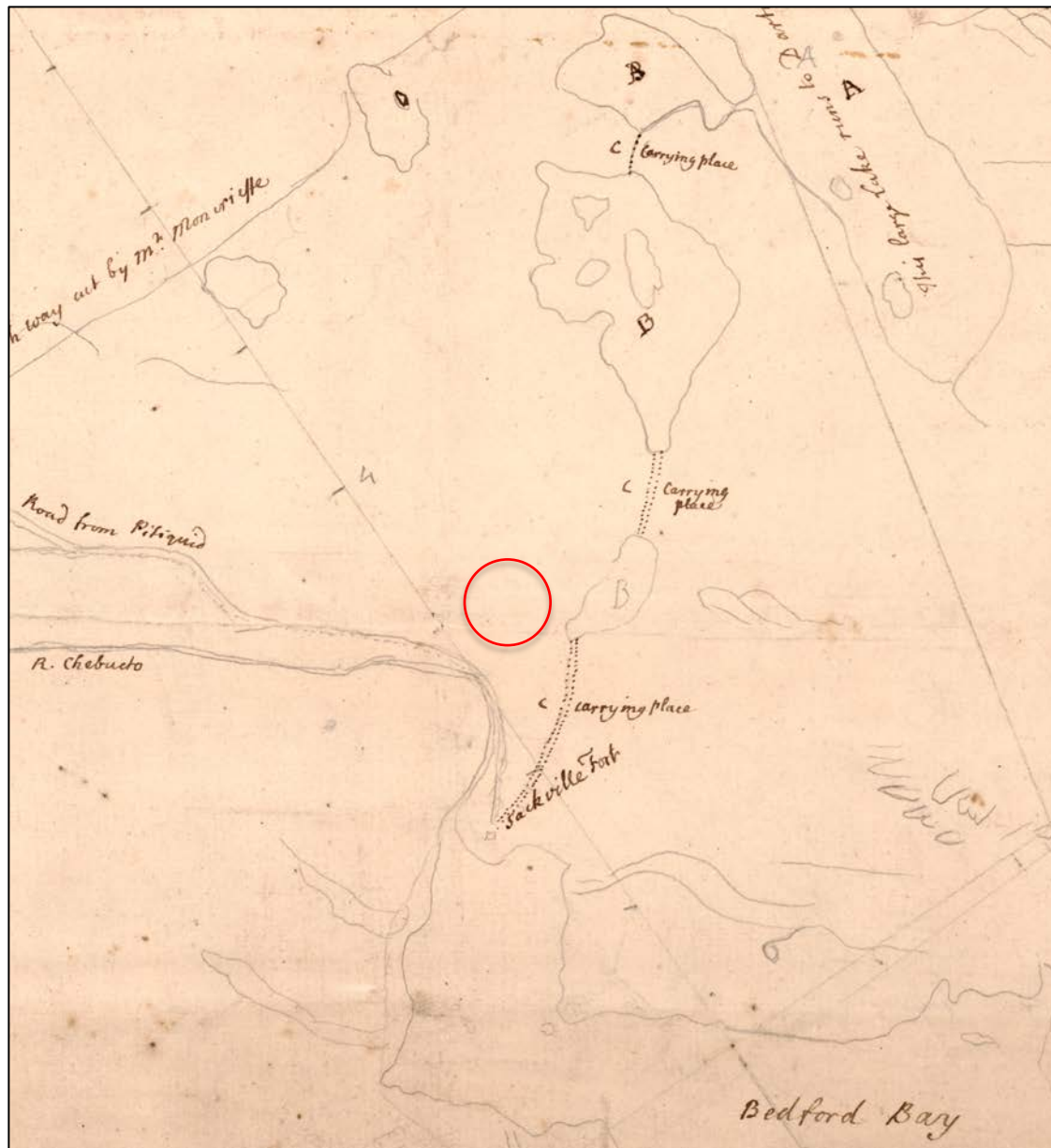


Figure 4-2: A map showing several routes that would have been used by the Mi'kmaq, including the Sackville River and several portage routes connected to a series of nearby lakes connecting to the Bedford Basin. The approximate location of the study area is shown in red.⁵⁷

The Bedford Barrens is a notable landmark in the area, with their stepped whale-backed quartzite ridges rising up out of the Bedford Basin like whale backs in the sea. The area would have been used as a trail, with the nine granite whalebacks resembling natural stone pathways. The area itself, however, would have been an unlikely place for the Mi'kmaq to set up a permanent settlement due to the absence of any significant sources of sustainable resources, aside from some small game and berries. Fresh water located at

⁵⁷ Anon 1760.

the edge of the whalebacks at the Sackville River would have provided a more ideal site for settlement.

Significantly, the Bedford Barrens is home to petroglyphs created by the Mi'kmaq and the land is considered a sacred area (Figure 4-3). The central image found in the barrens is that of an eight-pointed star, which represents "the unity of the Wabanaki Confederacy of which the Mi'kmaq belong along with seven other eastern groups." The circle encompassing the star symbolizes the sun, which surrounds the people of the eight clans.⁵⁸ The carving was cut with stone tools, which suggests it was carved prior to the arrival of the Europeans when they began trading for iron or steel tools.⁵⁹

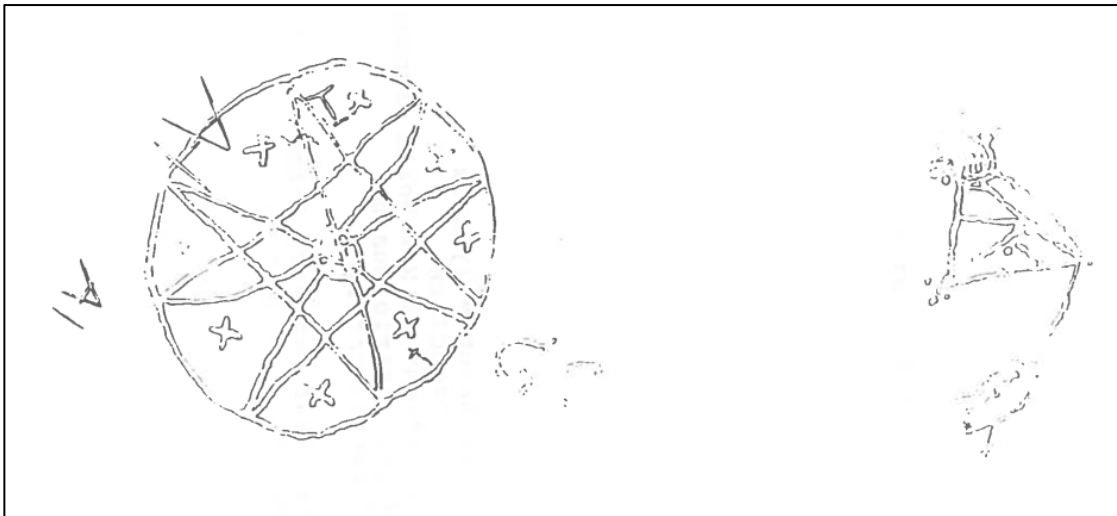


Figure 4-3: A petroglyph of an eight-pointed star found in the Bedford Barrens in Bedford, Halifax Regional Municipality.⁶⁰

Historic records from the mid-19th century describe a Mi'kmaw settlement present between Sackville and Scots House on Truro Road (which likely refers to Scott Manor House at 15 Sackville Road, Bedford), consisting of 4 wigwams. Residents in 1855 included Mary Ann Francis, Sally Francis, Michael Paul, Anne Paul, James Paul, Francis Paul, Louis Paul, Charley Paul, Madaline Toney, John Toney, and "Mrs. Paul", aged 80.⁶¹ At this time, the families were experiencing an outbreak of typhoid fever. In 1856-1857, blankets were distributed to Mi'kmaw families at Sackville, including Saqmaw [Chief] James Paul. Other Mi'kmaw individuals were listed in the document, including "[...] John Paul, Peter Joe, Louis Paul, Thomas Toney, Mrs. Cope (widow), Prosper Noel, Prosper Paul, Stephean Newall, Mrs. Penall (widow), Mrs. Philips (widow), John Paul, Mrs. Paul, Joe Francis, Peter Sack,

⁵⁸ Town of Bedford 1992, 16.

⁵⁹ Nova Scotia Museum.

⁶⁰ Town of Bedford 1992.

⁶¹ Jennings 1855.

Matthew Thomas, Peter Toney, [Vic?] Lexi, James Toney, Prosper Toney, Michael Allen, Jim Paul, Noel Prosper, Mrs. Charles (widow) [...]”.⁶²

KMKNO-ARD made note of one Mi'kmaw archaeological site within a five-kilometre radius of the study area – the petroglyphs discussed above. KMKNO also provided some additional historical details from their existing research. In an early entry from 1749, a favoured route used by the Mi'kmaq prior to the founding of Halifax was described as running from “Shubenacadie Grand Lake to Rocky Lake. Here a short portage led to the Sackville River, fifty paces from the shores of the Bedford Basin.”⁶³ In another entry from 1880, the Indian Agent for the district reported that Mi'kmaq came to Bedford, Dartmouth “and other places near the city” in the summer to camp.⁶⁴ In another entry from 1908, there is a reported Mi'kmaq settlement located in Bedford.⁶⁵ In a final entry from 1921, 50 Mi'kmaq were recorded on the reserve census in Bedford.⁶⁶

4.2.2 Settler and Euro-Canadian Settlement

In 1607, Samuel de Champlain described Bedford in the first volume of his explorations. He wrote “from Sambro we passed a very safe bay containing seven or eight leagues, where there are no islands in the route except at the head of it, where there is a small river.”⁶⁷ The first known Europeans in the Bedford area were Acadian farmers who travelled to the area along the route connecting the villages of Minas (the Grand Pré and Windsor areas) and Chebucto (Kjipuktuk/Halifax) Harbour. The drove road ran from the Bedford Basin to the villages of the Minas Basin and was connected to the portage route from Lower Sackville to the Cobequid district. The original road connecting Halifax to Windsor was little more than a rugged path of approximately 30 miles, intersecting with a blazed path that connected Lower Sackville to the Shubenacadie River system at Lake Thomas. These paths were nearly direct routes through bogs, fens, mountains, and the darkness of the thick Acadian Forest canopy, that were used as a supply line from the Acadian Villages in Minas to Cobequid and ships bound for the French fortress of Louisbourg (Figure 4-4).⁶⁸ By the time of Edward Cornwallis’ founding of the British settlement at Halifax in 1749, the strategic importance of the Acadian drove road was well known. Cornwallis ordered the road to be cut to 18 feet wide to accommodate troops traveling from Fort Edward to Halifax. This road would also be used by English settlers to drive cattle from Windsor to market in Halifax.⁶⁹

⁶² Anonymous 1856.

⁶³ Ingalls and McGrath 1998, 3.

⁶⁴ Canada House of Commons 1881, 42.

⁶⁵ Twohig 1991, 123.

⁶⁶ Census of Canada 1921.

⁶⁷ Edwards 2007, 1.

⁶⁸ Uniacke Heritage Society 2006, 57; Hicks 2017.

⁶⁹ Uniacke Heritage Society 2006, 57.



Figure 4-4: A 1755 Chart of the Sea of Coasts of the Peninsula of Nova Scotia, showing the path connecting the Bedford Basin to Windsor.⁷⁰ The approximate location of the study area is shown in red.

The Windsor Road would be again upgraded, this time into a more permanent road in 1779. A trench was dug on the upper side of the road from Sackville Bridge to Windsor and on both sides where greater drainage was needed. The road would also be rounded, hollow areas filled with stone, and sharp curves and steep hills would cause adjustments to the previous road alignment. Trees and brush would be cleared twenty feet on either side of the road to provide greater visibility. The road from Halifax to Windsor passing through Lower Sackville would be a source of controversy and disdain for the next 150 years to the citizens of the province, who were required to pay for its upkeep.⁷¹

When Governor Cornwallis arrived, he took it upon himself to rename everything. Chebucto (Kjipuktuk) was renamed Halifax, Torrington Bay became Bedford Bay, and the land at the head of the bay was named Sackville. Cornwallis was tasked with ensuring the safety of Halifax. There were three routes that the French and Mi'kmaq were able to approach from, including by sea, by way of the Dartmouth lakes, and by way of the Acadian trail to Bedford or the Sackville River. Cornwallis felt it was necessary to construct

⁷⁰ Morris 1755.

⁷¹ Uniacke Heritage Society 2006, 57–8.

a fort in Bedford, then known as Sackville, to guard the Sackville River and Acadian trail route. Captain John Gorham was placed in charge of this task and was instructed to select a location in Bedford to build a fort. Captain Gorham and his rangers sailed from Halifax to Summer Cove at the mouth of the Sackville River on September 11, 1749. Gorham chose a site that overlooked the river and the Acadian trail, located on a hill 100 feet above sea level. On October 17, 1749, Cornwallis wrote that “The Posts of the Head of the Bay and Minas are made secure.”⁷²

Fort Sackville, surrounded by wooden palisades, contained several log buildings, including a blockhouse, a barracks, and a guard room. In 1758, Colonel MacKellar described Fort Sackville as “a small stockaded Fort of about 60 yards outward. Poligan [*sic*, polygon] with four Bastions badly constructed, it stands upon the entrance of a small River at the head of Bedford Bason.[...] The stockades are almost rotten and I think cannot stand a year or two.”⁷³ There were three timber houses within the fort, “one a barrack for 50 men, with a Room for provisions, and a Guard Room, all under the same roof. Another has apartments for three officers, these two want but a few repairs.” The third was a “dwelling house, but is now Ruinous and used for a Wood House.”⁷⁴

Joseph Scott arrived in Halifax in 1749 at the age of 25. He had travelled to Halifax on the ship *London*, which was one of thirteen ships that accompanied Governor Cornwallis to Nova Scotia.⁷⁵ His family was one of many English families who moved to Ireland in order to buy land and take up permanent residence.⁷⁶ Scott married Mary Morris at St. Paul’s Church on December 30, 1750. Morris was the daughter of surveyor Charles Morris, who was responsible for planning the layout of Halifax. Scott was appointed both Justice of the Peace and Judge of the Inferior Court of Common Pleas in 1752. He had established a business in dressed lumber and opened a store near Mr. Fairbank’s wharf. In 1754, Scott was appointed Surveyor of Lumber. His role was to select high-quality trees and cut a broad arrow mark through the bark. These trees would only ever be used for the masts on Royal Navy ships. His new position caused him to move his family to Bedford. As previously discussed, he built a small log house to accommodate his family a few hundred feet from Fort Sackville (Figure 4-5).⁷⁷ It was built of heavy squared timber and measured 18 feet by 12 feet and 9 inches.⁷⁸

⁷² Tolson 1979, 28–9.

⁷³ Tolson 1979, 31.

⁷⁴ Tolson 1979, 31.

⁷⁵ Tolson 1979, 45.

⁷⁶ McAllister 2004.

⁷⁷ Tolson 1979, 45–7.

⁷⁸ Piers 1935.



Figure 4-5: Joseph Scott's log house, located 75 feet to the east of the Scott Manor House.⁷⁹

After purchasing the land, Scott supervised the building of his Manor House, which was located approximately 30 feet from his log cabin (Figure 4-6). One of the earliest grants of land located in Sackville, now Bedford, was made to Joseph Scott on November 22, 1759. Scott's first grant was for 850 acres and was the first of many. By 1761, Joseph Scott was using his land to cut timber, which would be finished at one of his sawmills, and cord wood. The government was eager to send more lumber to England, and as a result, he was given an additional grant of 7,000 acres of land to supply his mills on October 31, 1765. Over time, Scott gradually acquired more land, accumulating a large area of the countryside. In addition to his own land, he inherited his brother's land on the west side of the Sackville River after his brother's death. He came into possession of the 16-acre lot in 1767, on which he would eventually build his manor house. The house was built between 1768 and 1770. The farmland surrounding his house was made up of 506 acres and was bordered by the basin and Parker's Brook. Eventually, Scott would own 12,000 acres in total, which included "all of Bedford between Sackville River and Parker's Brook; on up to the Waverley Lakes; up the Cobequid Road to Sucker's Brook; most of the present Sackville, and beyond as far as Grand Lake. All became the Sackville Estate." Joseph Scott's brother, George Scott, owned most of central Bedford on the other side of the river.⁸⁰

⁷⁹ Piers 1935.

⁸⁰ Tolson 1979, 47–50.



Figure 4-6: An 1896 photo of the Scott Manor House.⁸¹

The first two sawmills constructed in the area were built by Joseph Scott. The first was built in 1759, shortly after Scott received his first grant. The location of one of the mills was likely on the eastern bank of the Sackville River. John Corbin would later own sawmills at the same location in the late 1800s. Scott also owned and operated a grist mill at the same location along the river, which would have been built prior to 1783.⁸²

Joseph Scott died on September 29, 1800, at his Manor House. In his will, he requested that “he be buried in an unmarked grave where the Micmac had buried their dead many years before. The grave is not far from the house and is shown on an old plan [Figure 4-7]. It is between Fort Sackville Road and the Anglican cemetery.” Scott left around 8,000 acres to his wife Margaret Scott, along with half the rents and profits from his George Field farm. He left the other half of the rents from the farm and his large estate at Cinq Maisons near Windsor to his friend Samuel Mercer. Everything else was left to his son, Michael Scott, and his sister Mary Conolly.⁸³

⁸¹ Anon 1896.

⁸² Tolson 1979, 82.

⁸³ Tolson 1979, 95.

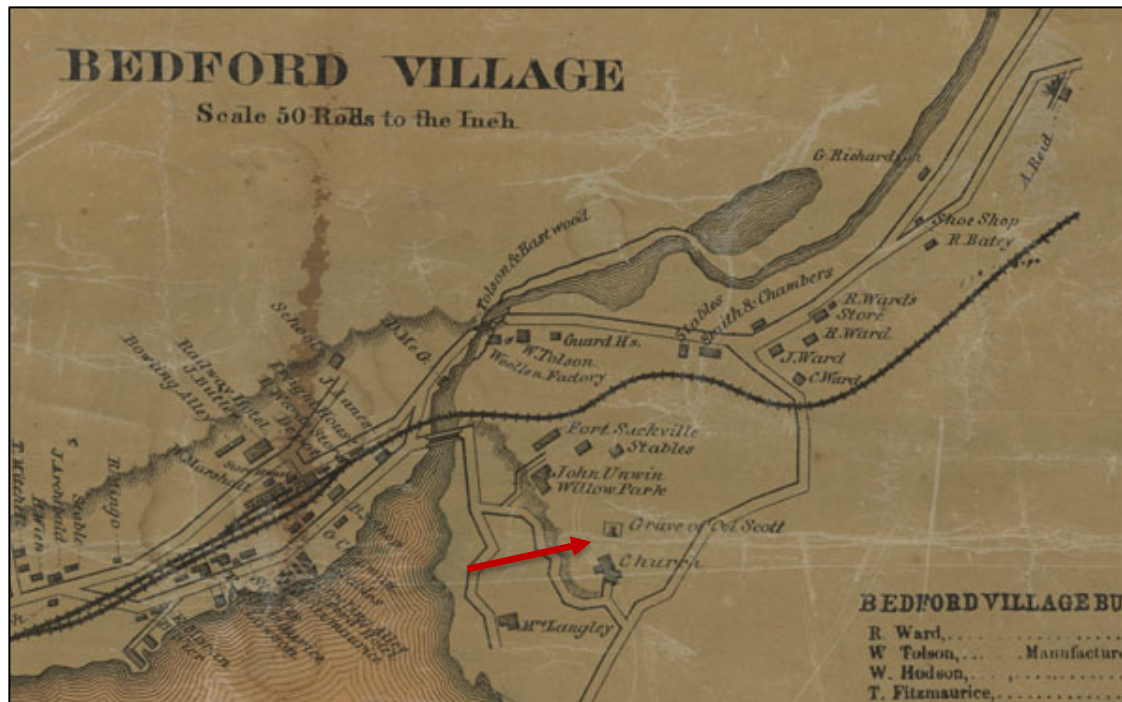


Figure 4-7: A 1864 map of Bedford Village, showing the grave of Joseph Scott to the southeast of the Manor House.⁸⁴

Joseph Scott's will was not amended before his death in 1800. Prior to his death, he had to mortgage part of his property to Richard John Uniacke and was helped by William Sabatier and Foster Hutchinson. As a result, the land was to be transferred to them when he died. In 1803, Sabatier and Hutchinson were granted legal claim to the tract from Scott's heirs.⁸⁵ After the death of Joseph Scott, Margaret Scott sold a forty-acre lot to John Lawlor for 400 pounds. Although the land was sold to Lawlor, she leased it to William Sabatier. William Sabatier purchased 488 acres in central Bedford, extending from Division Street to Sackville, bounded on the east by the Sackville River. The land had previously belonged to Joseph Scott, and Sabatier lived at the Manor House around the time of this purchase (Figure 4-8).⁸⁶ In the early 1800s, about 250 acres of Scott's land near First Lake was deeded to Reverend Benjamin Gerrish Gray. The northern portion of Gray's property was woodlot "wherein William Henry, a man of color, now lives". After 1825, Thomas Caudle had a barn on the land and logged the area.⁸⁷

⁸⁴ Church 1864.

⁸⁵ McAllister 2006, 26.

⁸⁶ Tolson 1979, 97.

⁸⁷ Sackville Lakes Park and Trails Association.



Figure 4-8: An 1817-18 map by John Elliott Woolford of the roads from Halifax to Windsor.⁸⁸ William Sabatier and Reverend Benjamin Gerrish Gray are labelled as residing in the area at the time. The red arrow indicates the direction of the location of the study area.

In 1819, John Haffler Jr. bought the forty acres of land that had been previously sold to John Lawlor by Margaret Scott. John Lawlor had failed to pay the full amount for the land to Scott, owing her £159. Scott decided to pass the mortgage over to Thomas McGory for £159 to avoid waiting for the remaining money. McGory went on to make a similar transaction with Timothy Heffernan. After Heffernan died, his widow attempted to acquire the owed money from Lawlor. When he failed to pay, the property was put up for public auction by the Chancery Court due to her complaint. John Haffler Jr. ended up buying the land for £265. In 1819, Haffler mortgaged his land, which included 250 acres and 40 acres, to William Cochran and John Lawlor.⁸⁹

By the 1820s, John Lawlor once again appeared to be in possession of the forty acres originally sold to him by Margaret Scott. It is possible that Haffler did not pay back the full mortgage and Lawlor and his partners repossessed the land, which allowed for Lawlor to buy out the other partners. There are no deeds to verify the southern part of the Sabatier and Hutchinson grant. In 1830, John Lawlor sold William Beresford the forty acres they had previously bought from Margaret Scott for forty-four pounds. Four years later,

⁸⁸ Woolford 1818.

⁸⁹ McAllister 2006, 30.

William B. Almon claimed that he purchased the forty-acre parcel at auction. Beresford sold the Sackville Estate, including the forty-acre parcel, to George Lister in 1838. There was a problem with the Beresford claim to the land, likely related to Almon's claim to the forty acres, that was eventually resolved, with Lister being granted final ownership of the land.⁹⁰ He hired William Faulkner to map out a subdivision with streets named after familiar names from his home country of England. Some of these street names include Perth, Wardour, and Camden.⁹¹ In 1856, George Lister sold the Manor House to Peter Ross in one of his lot auctions. After nine years, Ross sold the house to Patrick Goulding, who leased it to John Unwin. Unwin converted the house into a hotel, naming it the Willow Park Summer Hotel. In May 1870, Goulding listed the house for sale and in July 1870 it was sold to the Ternan family.⁹²

The population of Bedford in its early years was largely Irish. In 1871, 38.9% of people in Bedford claimed to be of Irish decent on the census. The most densely populated Irish neighbourhood in Bedford was known as Irishtown. It was roughly established around 1856, when George Lister, the owner of a large amount of property and the Scott Manor House at the time, divided the property between the Manor House and Parker's Brook into lots he went on to sell. Most of the lots were sold to families such as the Ternans, the Butlers, the Sibleys, and the McGraths, all of whom were of Irish descent. The Ternan family purchased the Manor House and remaining land in the 1870s and continued to own the house until 1945. The family used the house initially as their main residence, later using it only as a summer house. The last family members to live in the house were two elderly sisters, who found it difficult to maintain the property, which resulted in the house falling into disrepair.⁹³ The manor house still stands today, and is now operated as a museum.

Waterpower was widely used in early communities throughout Nova Scotia. Mills were constructed along the natural streams in the area, including the Sackville River and Paper Mill Run. They provided a source of power to local industries, which included sawing lumber and grinding grain. Moir's sawmill and box factory at Mill Cove were some of the more well-known mills at the time. In the 1850s, the first railway bridge was constructed in the province, crossing over the Sackville River. Around this time, Sackville was renamed Bedford after John Russel, Fourth Duke of Bedford and Secretary of State of the Lords Commissioners for Trade and Plantations.⁹⁴ The community was also referred to as Ten Mile House for a time, after an inn where stagecoaches would stop to change horses.⁹⁵ Over time, the population steadily grew, and as a result, new churches and schools began to appear in the community. The former shipbuilding industry began to be replaced with new forms of employment, including hydroelectric power generation, a fish hatchery, and

⁹⁰ McAllister 2006, 34–9.

⁹¹ Edwards 2007, 4.

⁹² Edwards 2007, 41.

⁹³ McAllister 2004.

⁹⁴ Edwards 2007, 4–5.

⁹⁵ Fergusson 1967, 50.

telephone services. Bedford also became a popular stopping point for travellers taking weekend trips to the Annapolis Valley or around the basin.⁹⁶

The study area is located to the northeast of Scott's Manor House between Rocky Lake and the old Windsor Road. The Crown Land Index Sheet map shows that the study area is located on a 440-acre plot of land originally granted to Joseph Scott (Figure 4-9). This land was likely part of the large swathe of countryside that Scott had accumulated over the years. Other large plots of land belonging to both George and Joseph Scott surround the 440-acre plot, including 850 acres to the south and 5,500 acres to the north. Faribault's 1909 Geological Survey of Canada map shows the land as being unoccupied (Figure 4-10). There are no dwellings or structures visible along Waverley Road directly to the south of the area. The closest settler, N. H. Meagher, is located to the west of the study area on the east side of Windsor Road.

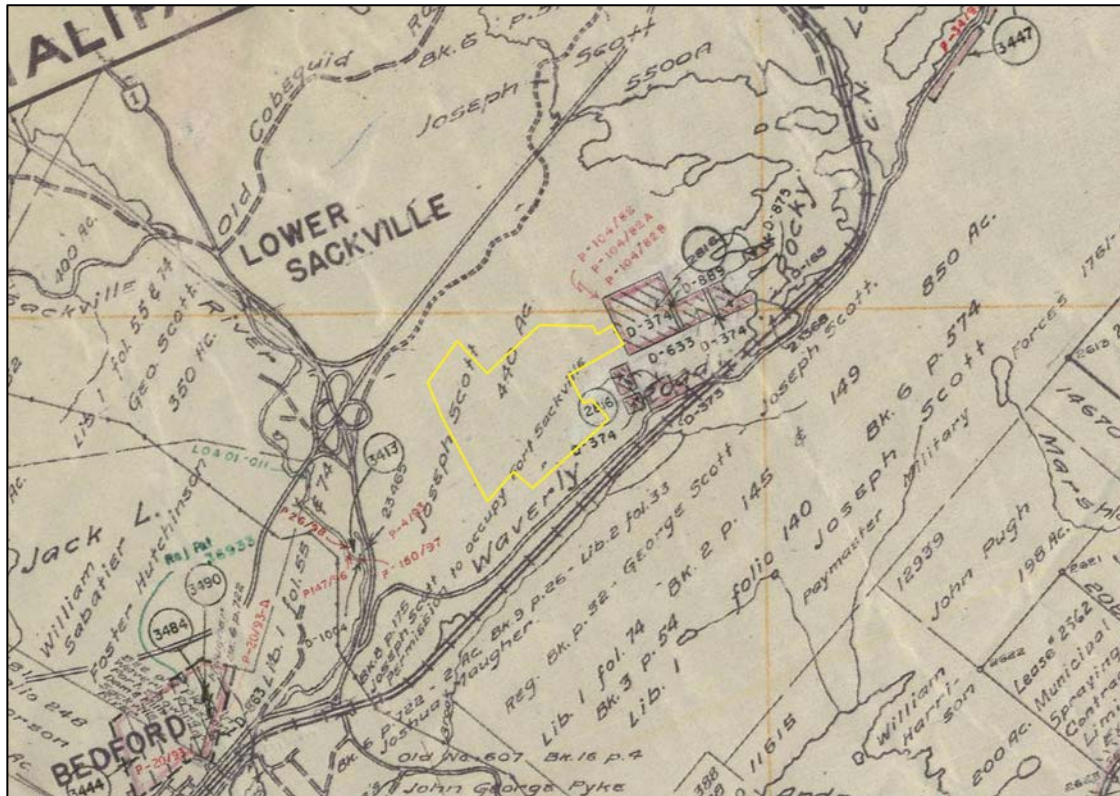


Figure 4-9: The Crown Land Index Sheet map for Bedford, showing the 440-acre grant made to Joseph Scott. The approximate location of the study area is shown in yellow.⁹⁷

⁹⁶ Edwards 2007, 4–5.

⁹⁷ Department of Lands and Forests 1954.

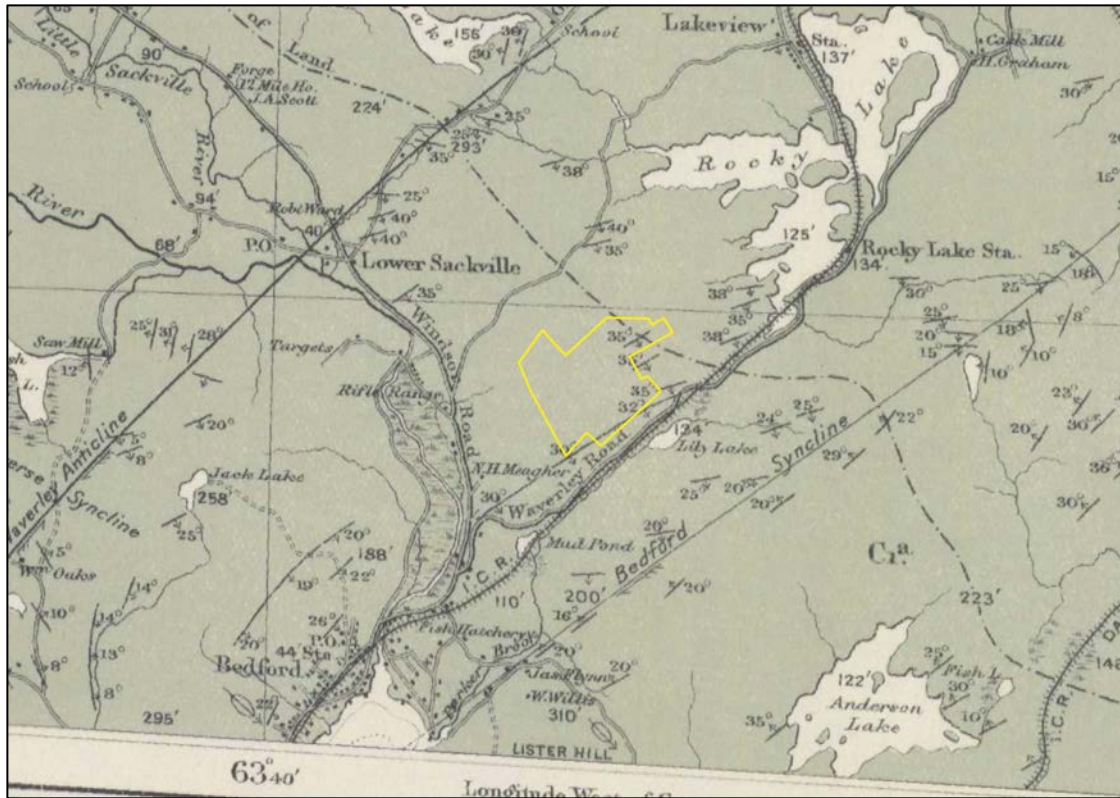


Figure 4-10: Faribault's 1909 Geological Survey of Canada map of the Bedford area, showing the approximate location of the study area (yellow).⁹⁸

A review of historic air photos from 1931 to 1981 shows several changes occurring near the location of the study area. In the earliest photo from 1931, there are no visible structures near or within the boundaries of the study area (Figure 4-11). By 1947, several dwellings were constructed along Rocky Lake Drive to the south of the study area (Figure 4-12). By the mid-sixties, the surrounding area had undergone a great deal of development (Figure 4-13). To the west, the early stages of the construction of the Bedford Industrial Park had occurred. Several more structures were also built to the south of the study area, including a school in the southeast corner. Further development occurred in the surrounding area by the early 1980s, including the construction of the Bedford Bypass directly to the east (Figure 4-14). To the west, additional construction had taken place within the Bedford Industrial Park and a new school had been built along the west boundary. During this period, the study area witnessed little development within its borders, aside from the construction of a transmission line in the west section prior to 1981.

⁹⁸ Faribault 1909.



Figure 4-11: 1931 air photo showing the approximate location of the study area (yellow).⁹⁹

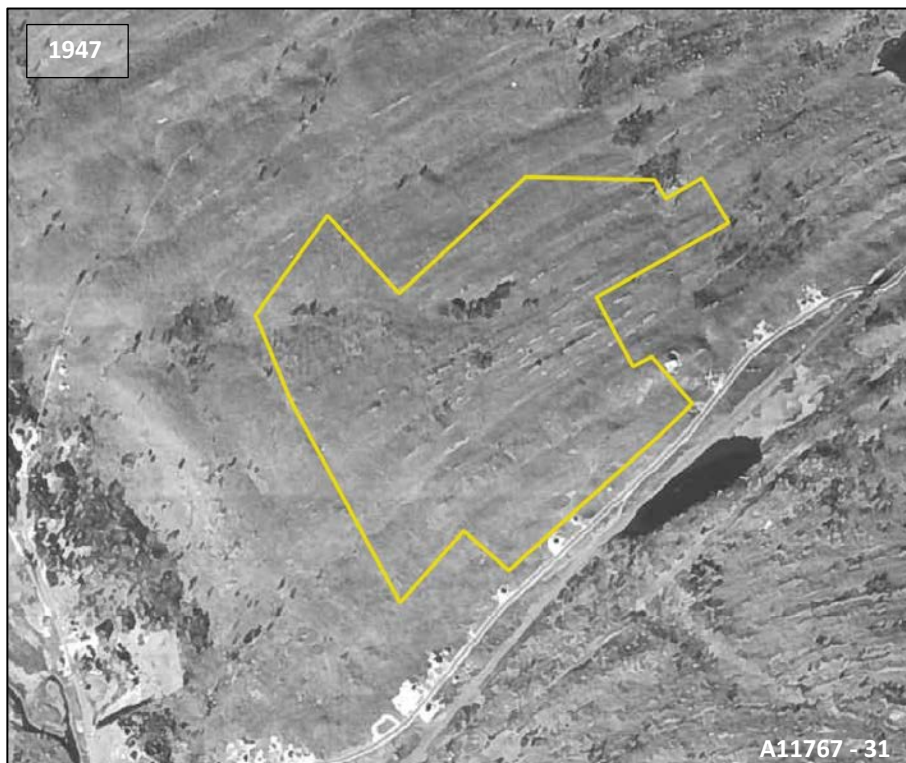


Figure 4-12: 1947 air photo showing the approximate location of the study area (yellow).¹⁰⁰

⁹⁹ Nova Scotia Department of Lands and Forests 1931.

¹⁰⁰ Nova Scotia Department of Lands and Forests 1947.



Figure 4-13: 1964 air photo showing the approximate location of the study area (yellow).¹⁰¹



Figure 4-14: 1981 air photo showing the approximate location of the study area (yellow).¹⁰²

¹⁰¹ Nova Scotia Department of Lands and Forests 1964.

¹⁰² Nova Scotia Department of Lands and Forests 1981.

4.3 Predictive Modelling

Predicting the occurrence of L'nuk heritage resources during the Late Pleistocene to the Holocene is a complicated task. Understanding localized geomorphological factors that influenced this rapidly evolving landscape and how the landscape may have been utilized by the ancestors is paramount for the prediction of potential site locations. Often, face value modern visual interpretations of these landscapes are not sufficient. This may lead to unintentionally overlooked resources for this expansive time period.¹⁰³ However, human movement is seldom tied solely to resource collection and to the ease of passage between resource collection areas. Exchange networks, familial histories, traditions, and ceremonial practices are also important factors to consider when seeking the relationships of past peoples and a given landscape.¹⁰⁴ Nevertheless, the prediction of past resource collection areas and travel corridors, such as the evolution of individual watercourses, can help narrow down potential activity areas. Difficulty in predicting landscape use for a specific study area is also compounded by the lack of localized geomorphological, climactic, and archaeological research. Historic anthropogenic landscape alterations further complicate desktop models. This is additionally muddled by innumerable unknown factors. However, broader regional trends and statistical modeling may offer insight into how the landscape may have been utilized as it evolved, thus, predicting the occurrence of previously unknown resources with greater accuracy and efficiency.

The earliest known occupation of the Maritime Peninsula occurred just before, and roughly overlapping with, the Younger Dryas cooling event that occurred from ~11,000 ¹⁴C to 10,000 BP (13,000 to 11,600 cal BP). The open spruce landscape typical of the region reverted to a dry, cold, treeless shrub tundra with the onset of colder temperatures.¹⁰⁵ During this time glaciers residing in the Highlands of Nova Scotia were reinvigorated, blocking several river systems near these areas with sediments and ice. New glacial lakes and outflows were formed throughout the province (See Section 2.1).¹⁰⁶ The Minas Basin Glacier reactivated and blocked the outlet to the Shubenacadie drainage system with an ice and clay dam. At around 10.6 ¹⁴Cka, the Shubenacadie River and its tributaries overflowed their banks flooding low-lying areas of the Shubenacadie, Musquodoboit and Stewiacke River valleys that were located below 30 m in elevation. This massive lake, coined Glacial Lake Shubenacadie II, was the largest of two massive glacial lakes that flooded central Nova Scotia during this event. These lakes essentially bisected the province for the duration of their short existence. New outflows were created through the Dartmouth lakes into Dartmouth Cove and near Gibraltar Rock in Musquodoboit Harbour.¹⁰⁷ The Dartmouth outlet flowed into the remnants of the Ancient Sackville River north of Georges Island towards the sea, which at the time, was located at approximately

¹⁰³ Suttie et al. 2007.

¹⁰⁴ Lacroix 2015, 31.

¹⁰⁵ Stea and R.J. Mott 1989, 172.

¹⁰⁶ Stea 2011.

¹⁰⁷ Stea and R.J. Mott 1989.

-65m below modern levels. Sea level rose rapidly during this period, and then steadily increased after 11 ka.¹⁰⁸ Coastal lowstands offered early peoples open corridors for moving freely about the region unimpeded by modern ocean extents.¹⁰⁹ Archaeological evidence for Early to Middle Palaeo peoples traveling south deep into Nova Scotia's interior comes from isolated finds recorded in Yarmouth, Dartmouth, Sable River, Blomidon, a quarry site at Davison's Cove, and the Melanson site on Gaspereau River as well as at Medford.¹¹⁰ These finds are suggestive of considerable mobility throughout the emergent landscape.

As the climate again warmed at the end of the stadial, ice dammed lakes breached as glaciers retreated. Once flooded regions emerged as bogs and fens leaving large sand and clay deposits in their stead. These glacial lake strandlines may have continued to be important activity areas and travel corridors for both animals and L'nuk during the early post glacial period as the terrain recovered. The landscape eventually rebounded, and vegetational expanse continued into the Late Palaeo Period. Relative sea level reached approximately -40 m below modern levels by 10,000 BP.¹¹¹ The lowstand within the Halifax Harbour and Northwest Arm slowly inundated with water progressively eroding the Ancient Sackville River and its tributaries resulting in the creation ten postglacial lakes. Two of these were located within the Northwest Arm.¹¹² Artifacts with post glacial Late Palaeo attributes have been found along the Lower Mersey River and at Gaspereau Lake. Indications of continuing occupation into the Late Palaeo and Transitional Archaic Period in the region have been found in private collections, including those from Gaspereau Lake.¹¹³

Predictive modeling for the early Holocene Archaic Period presents a unique set of challenges for archaeologists. Over this approximately 3,000-year period post deglaciation, riverine systems and coastlines of the Maritime Peninsula experienced a series of dramatic changes influenced by numerous factors including localized isostatic rebound, lake formation and collapse, changes in relative sea levels, and rapid sediment depositions.¹¹⁴ Recent studies, following examples from Northern Maine suggest that during the period between 9,000 BP and 7,000 BP, river systems in the region were largely unstable, with near continual gradation and reworking due to accelerated sea level rise. Often, inland archaeological sites from this period are masked by deep aggraded deposits of alluvium. The small fraction of isolated finds representing this period are likely "dislodged" by a multitude of natural and unnatural disturbances.¹¹⁵ The natural effects

¹⁰⁸ Shaw et al. 2002a, 1867.

¹⁰⁹ Shaw et al. 1993, 223.

¹¹⁰ Davis and Christianson 1988; Bonnicksen et al. 1991, 14; Erskine 1998, 14; Laybolt 1999, 22; Betts et al. 2018.

¹¹¹ Fader and Miller 2008.

¹¹² National Resources Canada 2010.

¹¹³ Laybolt 1999, 22–3; Pentz 2008, 167.

¹¹⁴ Murphy 1998, 93.

¹¹⁵ Murphy 1998, 93.

of chronological shingling may also add to the representation bias of finds recovered from shorelines and streambeds. By 6,000 BP, sea level rise had steadied inundating drainage systems, including the Bras d'Or Lakes, and presently continues to rise approximately 0.36m/100 years.¹¹⁶ Submerged palaeoshores and ancient channels have been mapped at Lake Banook which indicate significant water fluctuations in the Dartmouth Lakes throughout the postglacial period.¹¹⁷ This stable rise resulted in the formation of a well-defined palaeoshoreline at approximately -23 m within the inner reaches of Halifax Harbour.¹¹⁸ The last remaining lake in the Harbour, Lake Bedford, transitioned from freshwater to marine as the waters raised over the shallow sill at The Narrows around 5,700 BP.¹¹⁹ Consequently by 5,000 to 4,000 BP, the lake and river systems in Nova Scotia largely stabilized in their current configurations coinciding with the latter half of the Late Archaic Period.¹²⁰ By 3,000 BP, the Halifax Harbour had resembled current conditions with the shoreline residing less than 5m from modern levels.¹²¹ A large segment of the known precontact sites in Southern Nova Scotia are from the Middle to Late Archaic period. These sites may have been discovered due in part to erosional forces caused by the extreme fluctuations in water levels by anthropomorphic changes by damming major river systems for milling and power generation, and by agriculturally-influenced soil erosion.

The general location of Woodland to Historic period occupation sites along the river systems and coastlines of Nova Scotia are largely predictable owing, in part, to river stabilization and the characteristic slow predictable sea level rise of this period. Yet, the increasing pace of mid-20th century sea level rise has left near coastal sites from this period vulnerable to rapid erosion and loss. Sea level rise combined with increasing storm severity will undoubtedly affect upstream watercourse alignments and sediment depositions, especially in low lying areas, in the years to come. The upper limits of SLR projections are estimated at 1.3m over the next 100 years.¹²² This process has submerged known L'nuk cultural resources first recorded in the early 20th century and has undoubtedly caused the erosion of numerous unknown sites along coastlines and river systems within recent memory. Modern development has also effectively masked and altered the former cultural landscape. Although original context may be lost due to landscape alteration (in a western archaeological sense), these resources continue to hold a significant cultural value to the Mi'kmaw and enrich the evolutionary story of the cultural landscape of greater Kijipuktuk.

Understanding the geomorphological changes of shorelines and individual river systems is paramount in the prediction of L'nuk cultural resource potential due to the strong

¹¹⁶ Baechler 2017, 394.

¹¹⁷ Webster et al. 2015.

¹¹⁸ National Resources Canada 2010.

¹¹⁹ Fader and Miller 2008.

¹²⁰ Shaw et al. 2002b, 143.

¹²¹ Fader and Miller 2008.

¹²² Forbes et al. 2009.

connections between Mi'kmaw, waterways, and bodies of water.¹²³ Yet, modeling landscape change and its subsequent landscape usage is a challenge that is often limited to the amount of prior localized geological and archaeological research. Historic alterations can further complicate these interpretations. However, the use of ground-truthed archaeological potential buffers can be used to statistically highlight areas to inform interpretations in the field for archaeological potential when previous research is unavailable. Following the model required to be used for archaeological consulting by New Brunswick Archaeological Services (developed from the Sevgle River Test Plot),¹²⁴ a 50-metre high and an 80-metre moderate L'nuk archaeological potential buffer was created for the watercourses and shorelines recorded near the study area (Figure 4-15).

A cross examination of the 24 sites attributed to L'nuk occupation recorded within 15km of the study area reveals that 21 sites lie within these predictive watercourse activity buffers (or within a 10 meters grace given for pre-GPS coordinate recording errors) for an accuracy of 88%. It is important to note that many of these sites were recorded before the implementation of handheld GPS and their locations rely on human transcription, and therefore may not be exact. Site locations are recorded within the MARI database as a single coordinate; therefore, recorded site locations are reflective of overall mobility trends rather than site extents. It should also be noted that sites recorded within urban HRM that lie well outside potential buffers may be related to the alteration of ancient watercourses as well as non-watercourse related movement.

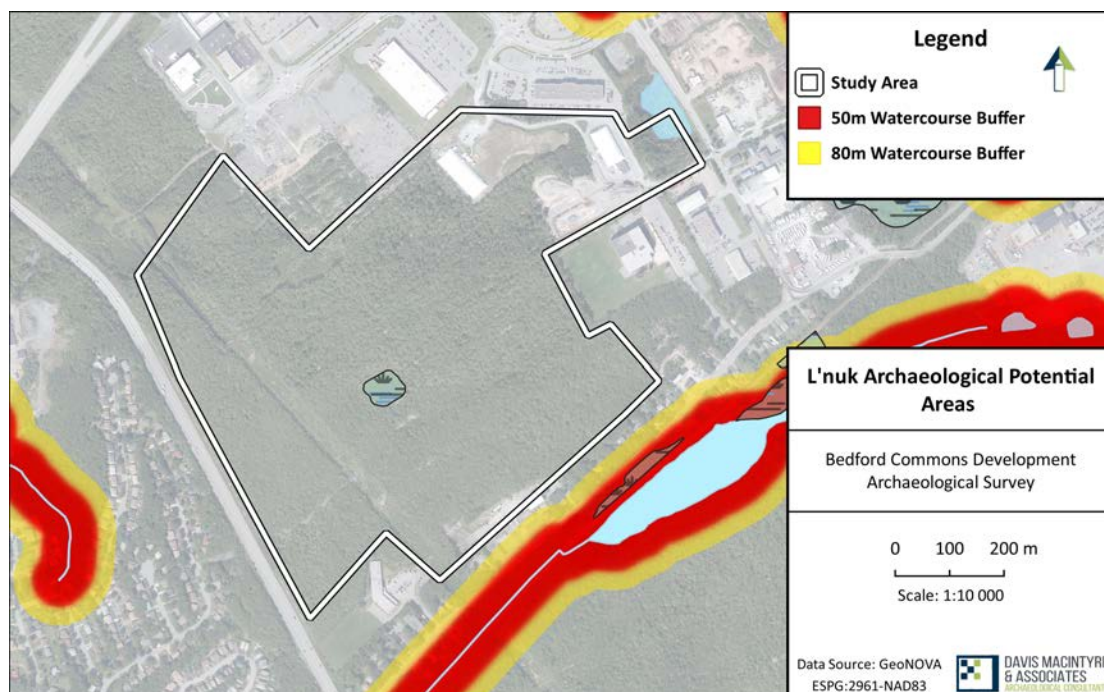


Figure 4-15: The study area with watercourses and L'nuk archaeological potential buffers.

¹²³ Thwaites 1896; Cook 2007, xxiii.

¹²⁴ Archaeological Services 2012.

4.4 Field Reconnaissance

A field reconnaissance was conducted by Laura de Boer and Russell Dignam on 29 August 2023. The field team utilized two hand-held GPS units to collect tracklog and waypoint data (Figure 4-16 and Figure 4-17), and detailed notes and photographs were taken.

The study area is dominated by a forested series of bedrock ridges and channels running from the southwest to the northeast across the entire length surveyed, showing frequent outcrops throughout (Plate 1 and Plate 2). The bedrock is part of the Taylor's Head Formation, a "grey, medium- to thick-bedded, very fine- to medium-grained metasandstone".¹²⁵ Given the study area's proximity to the Bedford Barrens petroglyphs, particular attention was paid to the exposed vertical and horizontal faces of these bedrock outcroppings in an effort to identify any signs of cultural modification (Plate 3 and Plate 4). Although some parallel striations relating to glacial movement were observed, no evidence of cultural activity to mark or modify the rock was encountered. Heavy weathering has occurred on many exposed horizontal faces of the bedrock, which could impact visibility of any cultural modification.

Throughout the area, including two larger sections near the middle of the study area, bedrock ridges and slopes have formed channels and low areas that form small pockets of wetland and black spruce growth (Plate 5 and Plate 6). Standing water was present in the larger pockets, though based upon the submerged vegetation, these areas may have been formed due to the unusually wet summer of 2023 and are probably more normally low and damp, rather than open standing water. The survey team skirted these areas where necessary, though some survey visibility was still achieved thanks to the higher vantage points of the bedrock ridges that border the wet areas.

In higher and drier areas, hardwood forest predominates, with maple, birch, and some oak (Plate 7). These sections feature a relatively open understorey dotted with ferns and huckleberry, and sometimes wild blueberry (particularly along the transmission corridor), and lambkill. Due perhaps to the unusually wet season, fungi and moisture-loving plants were observed in abundance including apricot club, purple cort, ghost pipe, and the edible fungus known as "chicken of the woods."

Although faint signs of woods roads were observed at the north and east edges of the study area (Plate 8), very few signs of human activity were present, and there were no indications of historic or twentieth century logging. A long natural trough or trench between bedrock ridges near the Bedford Bypass appears to have been filled with waste rock, perhaps around the time of the bypass construction (Plate 9).

¹²⁵ C. E. White et al. 2014.

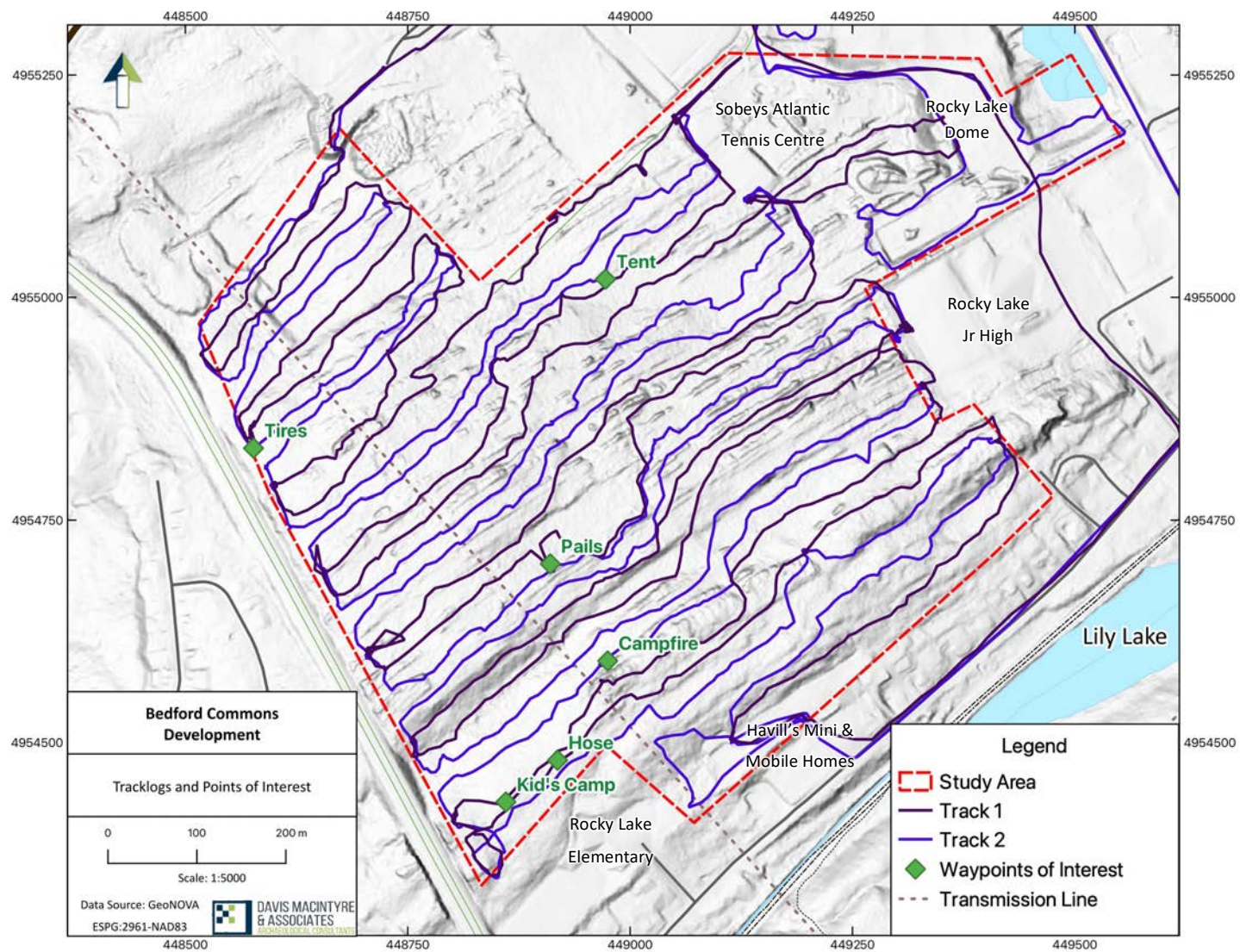


Figure 4-16: A tracklog and findings map, overlaid on hillshade (LiDAR) imagery.

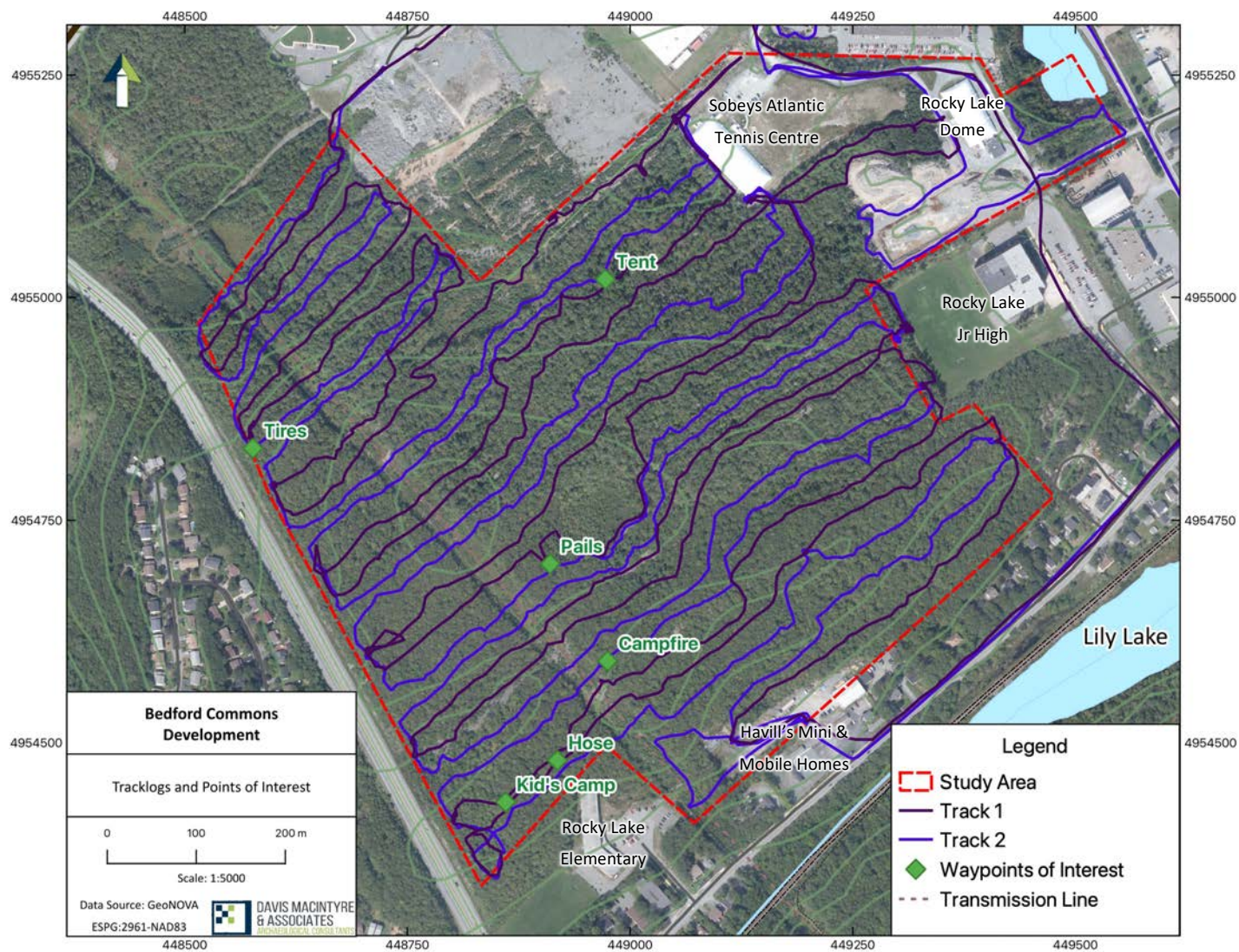


Figure 4-17: A tracklog and findings map, overlaid on orthophotos.

A few small garbage dumps were observed, including three mismatched tires near the edge of the Bedford Bypass (Plate 10), a dumped appliance clearly pushed down from the bypass (Plate 11), some plastic bucket lids and hose (Plate 12), and a cache of plastic buckets used for cooking oil (Plate 13). A small wooden structure was noted, likely constructed by children at the nearby Rocky Lake Elementary School (Plate 14), and a tent was observed south of the Sobeys Atlantic Tennis Centre. An abandoned modern campfire ring of stones was also noted near the transmission line corridor (Plate 15).

Along the northern and northeastern edges of the study area, modern development impact predominates, including dumped rock fill, the buildings and tennis courts of the Sobeys Atlantic Tennis Centre (Plate 16), the deflated remains of the Rocky Lake Dome (Plate 17), a low, wet vegetated area just north of the centre showing clear signs of twentieth century excavation and alteration (Plate 18), and the open gravelled area at the edge of Havill's Mini & Mobile Homes (Plate 19).

5.0 RESOURCE INVENTORY

No findings of archaeological interest, nor areas of elevated archaeological potential, were identified in the course of this assessment. Very few examples of twentieth century cultural activity were observed within the study area, aside from the existing developments at the edges of the wooded portion of the property. Points of interest reflecting twentieth century activity are outlined in the table below.

Table 4-2: Points of interest resulting from the field reconnaissance.

Name	Coordinates	Significance
Campfire	20 T 448975 4954593	Low
Hose & Lids	20 T 448919 4954481	Low
Kid's Camp	20 T 448861 4954434	Low
Tent	20 T 448973 4955021	Low
Tires	20 T 448577 4954831	Low
Pails	20 T 448910 4954702	Low

6.0 DISCUSSION

The rugged, bedrock and boulder-strewn terrain of much of the study area, paired with its distance from navigable waterways and historic roads, appears to have contributed to limited cultural activity in the immediate area. The results of this assessment indicate that although the presence of the Mi'kmaq and their ancestors is known in the region since time immemorial, and historic land grants were made nearby including to Joseph Scott, human activity that has resulted in the creation of significant archaeological deposits is unlikely to have occurred within the limits of the study area.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The proximity of the study area to the Bedford Barrens Petroglyphs (less than 2km) was taken under careful consideration in this assessment. Exposed bedrock was examined wherever possible, though weathering was very pronounced where the rock is not protected by vegetation. The survey has produced no evidence of existing, exposed petroglyphs within the study area, but changes to vegetation cover and weathering patterns could obscure such signs, if they are present. Any development and construction teams should maintain an awareness of the possibility of petroglyphs, and should contact CCTH in the event that possible petroglyphs are exposed or encountered during development.

No archaeological resources or areas of elevated archaeological potential have been identified in the course of this assessment. As such, no further archaeological mitigation is currently recommended.

Should development plans change and the study area is altered or expanded, then a qualified archaeologist should be contracted to conduct an additional assessment on any new areas outside the project boundaries identified in this report.

In the event that any archaeological resources, including petroglyphs, are encountered during ground disturbance and an archaeologist is not already on site, it is required that all activity cease and the Coordinator of Special Places (902-229-3159) be contacted immediately regarding a suitable method of mitigation.

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PLATES



Plate 1: A bedrock ridge in the typical hardwood forest, looking southwest.



Plate 2: A view along the length of a larger bedrock ridge, showing exposure and typical weathering on horizontal faces.



Plate 3: Exposed bedrock and blueberry bushes along the transmission corridor, looking northwest.

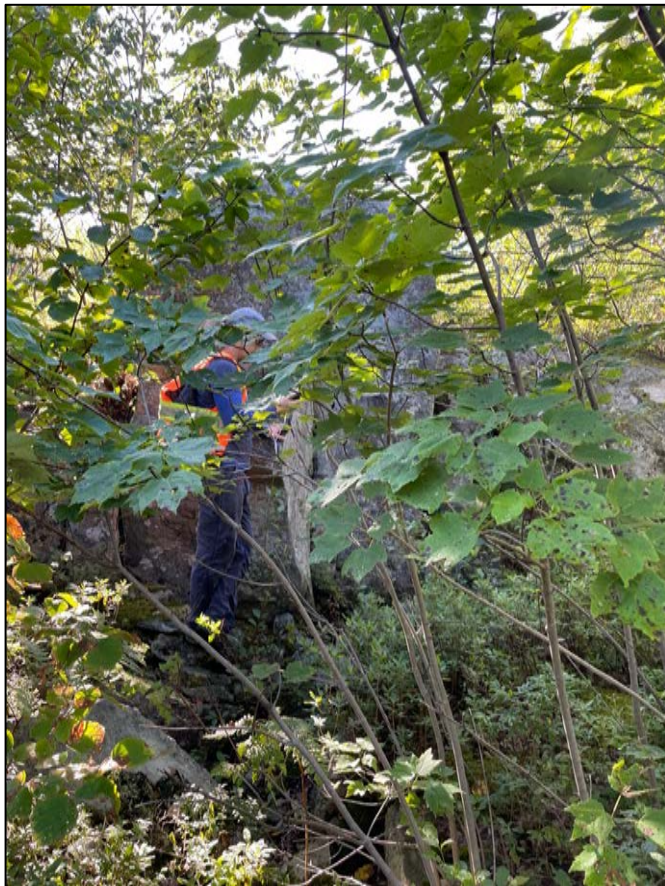


Plate 4: An archaeologist examines vertical bedrock exposures for signs of cultural modification, including petroglyphs, looking south.



Plate 5: Looking down into a low, wet area covered in huckleberry and other brush, from a bedrock ridge to the south.



Plate 6: A low, wet area in a broad trough between bedrock ridges, looking southeast.



Plate 7: A typical section of hardwood forest with a bedrock outcrop, or boulder derived from the bedrock.



Plate 8: An overgrown woods road near the northern tip of the study area, looking northeast.



Plate 9: Waste rock filling a trough or ravine between two bedrock ridges, looking northeast.



Plate 10: Three tires abandoned near the Bedford Bypass, looking south.



Plate 11: An abandoned appliance at the foot of the built-up roadbed for the Bedford Bypass, looking southeast.



Plate 12: Abandoned bucket lids and other modern debris near the southwest edge of the study area.



Plate 13: A collection of abandoned buckets near the southwest edge of the study area.



Plate 14: A small wooden structure likely constructed by children at the neighbouring Rocky Lake Elementary School, looking south.



Plate 15: A modern abandoned campfire ring near the southern corner of the study area.



Plate 16: The Sobeys Atlantic Tennis Centre (left) and a gravel road marking the edge of the study area, looking southwest.



Plate 17: The deflated Rocky Lake Dome, looking north.



Plate 18: Open water forms a portion of the northern-most tip of the study area, looking north.



Plate 19: Havill's Mini & Mobile Homes, looking east from near the transmission corridor.

Appendix A: Heritage Research Permit

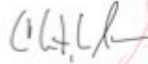


Heritage Research Permit (Archaeology)

Special Places Protection Act 1989

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

Office Use Only
Permit Number:
A2023NS136

Greyed out fields will be made publically available. Please choose your project name accordingly	
Surname de Boer	First Name Laura
Project Name Bedford Commons Development	
Name of Organization Davis MacIntyre & Associates Limited	
Representing (if applicable)	
Permit Start Date 11 July 2023	Permit End Date 31 December 2023
General Location: Bedford Commons, Bedford, Halifax Regional Municipality	
Specific Location: (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) 20T 449038.65 m E 4954966.21 m N	
Permit Category: Please choose one ☐ Category A – Archaeological Reconnaissance ☐ Category B – Archaeological Research ☒ Category C – Archaeological Resource Impact Assessment ☒ 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 	Date 27 June 2023
Approved by Executive Director 	Digitally signed by Christopher Shore Date: 2023.07.06 09:58:23 -03'00' Date 7/6/23