2017

Provincial Archaeology Office Annual Review

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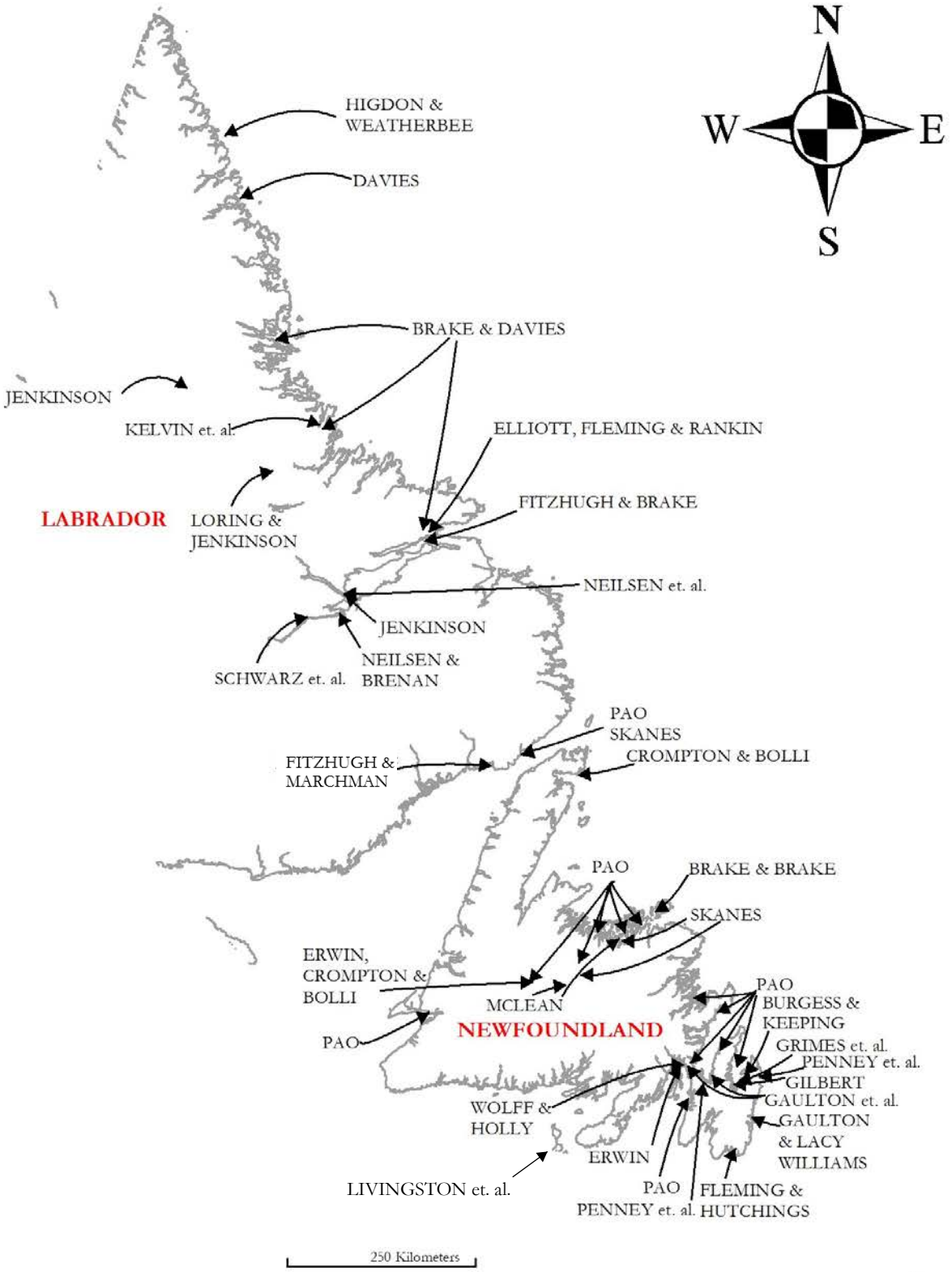
Cover: The remains of Labrador's first snowmobile, a Model T Ford with a patented 'Snowmobile' conversion kit recovered from an archaeology site in Labrador. See Brake & Davies this volume.

Stephen Hull
Delphina Mercer
Editors

In memory of Peter Pope

1946-2017

ARCHAEOLOGY IN NEWFOUNDLAND AND LABRADOR 2017



Stephen Hull
Provincial Archaeology Office

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Saunders Family Archaeology in Change Islands, Newfoundland

Jamie Brake & Joyceanne Brake

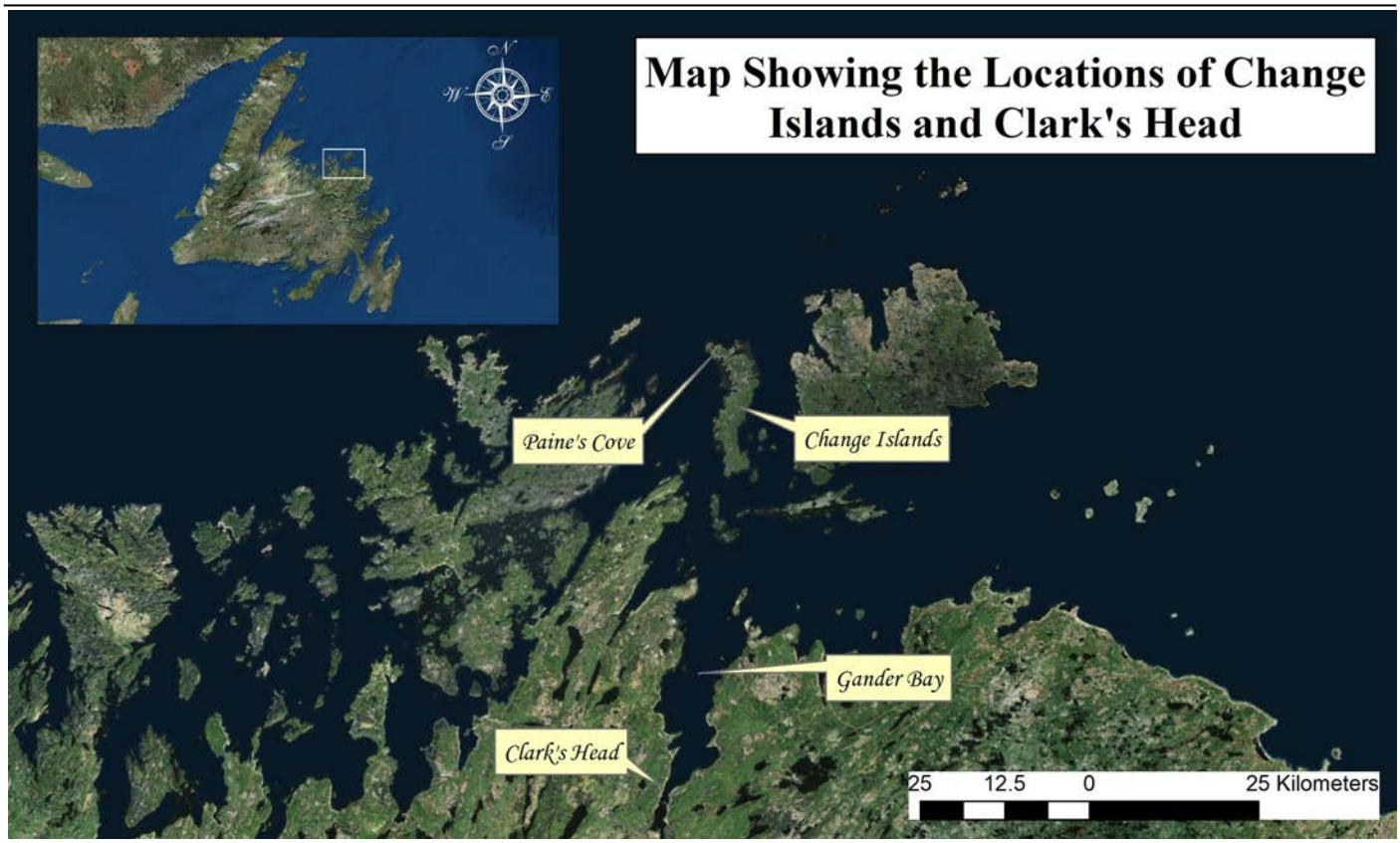

Figure 1: Places discussed in the text.

Introduction

Three summers ago a project was initiated which involves documenting and exploring archaeological traces of the Saunders family of Gander Bay and Change Islands, Newfoundland, a family which both authors belong to. Field activity to date has focused on a single nuclear family per year and has moved backwards in time each season. This past summer we visited and recorded a site which represents the home of the very first members of this line to settle in Newfoundland.

Work began in 2015 in Clark's Head, Gander Bay at the homestead of Harold and Kathleen Saunders, the respective parents and grandparents of the authors. Harold and Kathleen owned a house, sawmill, forge, and other out buildings at a site which constituted the first study area for the project. The remains of most of these structures were located and recorded that first year (Brake & Brake 2016).

In 2016 during a family reunion, attention was turned towards the property bordering Harold and Kathleen's, which belonged to Harold's parents, Frank and Mary Gillingham Saunders. They owned a house, shop, water-powered sawmill, storage buildings, a winter house and other out buildings. With information from Frank and Mary's son Donald, the locations of two undisturbed winter houses were found in woods still belonging to the Saunders family on the north side of Clark's Brook (Brake & Brake 2017).

Each year we have made use of genealogical information, oral history and historical records to guide and inform the archaeology, and our inquiries and discussions with family members have led to the production and preservation of valuable records in

addition to the archaeological information gathered. Field activity each summer has taken place over a period of just 1-2 days, but it generates a family dialogue throughout the course of the year, and the work is shedding a surprising amount of light on previously undocumented aspects of a rich and interesting family history, pieces of which might otherwise have been lost forever.

As is now our tradition, we have divided this article into two main sections, the first dealing with genealogy and oral history, and the second covering the results of our fieldwork in 2017. The work to date is summarized, and some thoughts on future activity are provided in a conclusion.

Genealogy and Oral History

Frank Saunders was born and raised in Paine's Cove, Change Islands where their property was known locally as Saunders' Hill. Frank's grandfather, Edward Saunders, was the first of this family to set up a homestead in Newfoundland. His father was a yeoman whose property in Poole, Dorset could barely support one family so the oldest son would have inherited the family homestead and his two other sons needed to branch out into other fields. One son became a soldier and fought in the Egyptian Campaign at Khartoum with Major General Charles Gordon. Edward's great great grandson, Calvin Saunders, has in his possession a sword and cane belonging to that brother. Edward was apparently apprenticed to the Newfoundland fishing fleet. His name first appears in the Fogo District 1833 census where it is recorded in the margin. At that time Edward would have been single and would have owned no property. In a documented account given by Calvin's father in the 1970s he states that Edward "…moved back and forth between Poole and Change Islands for years trading in fish and rum" (Saunders 1986:273).

Edward acquired property at Paine's Cove where the ruins of sheds and stages are still visible. Again from Edward's great great grandson, Calvin, we learn that Edward brought a prefabricated house from England and erected it in Paine's Cove. According to Lloyd's List, in 1886 a schooner, the 27 ton Sea Bride, was registered at St. John's to Edward Saunders of Change Islands, registration # S886060. Later a schooner of the same tonnage, number and name was registered as belonging to his son Samuel. So by 1886 Edward was a "planter" with property, a schooner, and had married and had five children. On September 2nd 1885, a survey was done by Thomas Peyton[1] for Edward Saunders of Change Islands of a small island off Paine's Cove called Dock Island, which he had purchased from Nathaniel Barnes (Peyton Family Collection Land Surveys, Archives and Special Collections, Memorial University [7.03.153]). When Edward died in April 1892, his will stated that his "fishing room and all appertaining thereunto such as schooner boats traps nets cordage lands and gardens" were bequeathed to his two sons Samuel and James. In October 1892, James, who was unmarried, also died so Samuel would have become the sole inheritor of the property.

Samuel married Thirza Porter in 1874 and had six children of whom Frank was the eldest. Apparently fishing for a living did not appeal to him. A reason for this lack of interest in the fishing industry may be the result of influential people in the community such as parents, teachers, clergy, and businessmen, insisting on a good education and encouraging young people to improve their station in life as can be ascertained by the high number of Change Islands born citizens who became teachers, bankers, clergy and so on. Frank was apprenticed to Owen & Company in Twillingate. From there he moved to St. John's and took a business course. According to his son, Don, he then packed up two suitcases and took the steamer for Gander Bay where he started a retail business. According to Calvin he had a house on the south side of Gander Bay which he moved across the bay around the turn of the century when he met his wife Mary. By the time his father, Samuel, died in 1907, Frank was well established in Clark's Head with a shop, a water mill, a wife and a young son.

Samuel's second son, Edwin (Ned), died of tuberculosis in 1915 leaving no male heir. His only daughter, Marjorie, moved to Nova Scotia where she remained after her marriage to Arthur Graves. Samuel's youngest son, Henry Thomas (Harry), never married. He served in World War I and then went to New York. Calvin Saunders and his father, Brett, visited Uncle Harry in a poor part of Buffalo where he

[1]Thomas Peyton was the son of John Peyton Jr. and Eleanor Mehaney. Shawnadithit, the last known Beothuk, lived for more than 5 years in John and Eleanor's home on Exploits Island (Penney 2015:10).

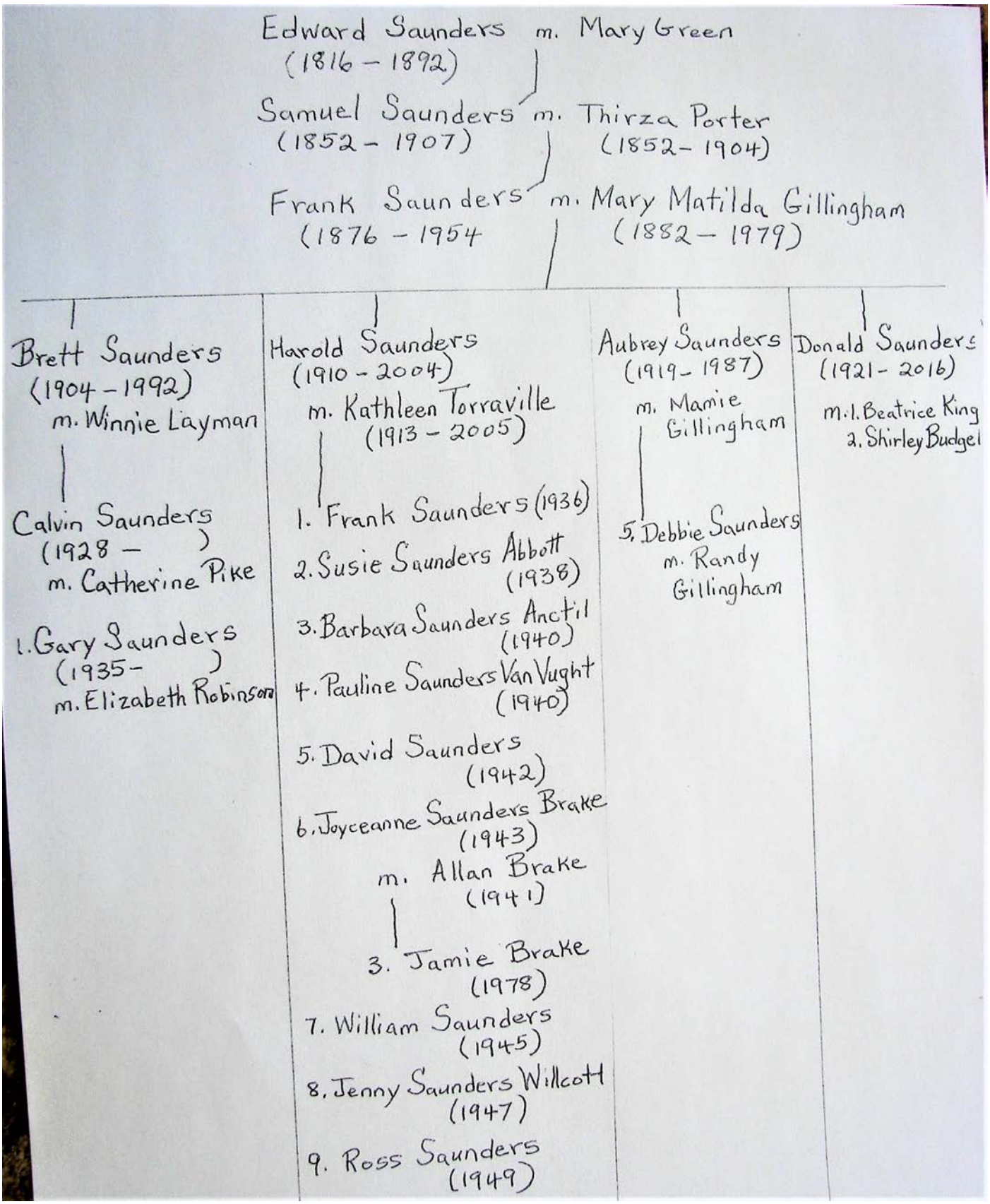

Figure 2: Family tree.

worked as a carpenter. Calvin said when they visited he was watching a very tiny screen television.

Samuel was a fisherman and a schooner captain. He was also a prominent member of his community. The Twillingate Sun reported on August 4th 1894 that "Captain Samuel Saunders arrived at Change Islands from Belle Isle on Monday last with a full load of codfish. The gallant captain reports three other Change Islands schooners loaded there and fish extraordinarily abundant" (collections.mun.ca).

In a 1907 edition of the Evening Telegram, there is a reference that the Governor in Council replaced Samuel Saunders with Thomas Torraville as the Church of England Board of Education member for Change Islands because Samuel Saunders was deceased. Samuel had departed this life in May of 1907, aged 56 years.

Calvin Saunders says that Grandpa Frank and his son Harold went to Change Islands and took down the Saunders house to use the lumber. The property was sold to a Peckford who also fished from Paine's Cove. He said he thought Mr. Peckford's son had told him that he and his father had taken down the house and shed so he is not sure who took the house down. About 1953 Calvin and his grandfather, Frank, went to Change Islands and Calvin says the stages and flakes were intact at that time. The foundation of the family home was still there then as well and was pointed out to Calvin by Frank. He first visited the community with his grandfather when he was about 14 years of age, so about 1942. Grandpa had a load of birch hoops that he had bought from men in Gander Bay to sell to a merchant, Roberts, in Change Islands. Dolph Gillingham went with them to look after the engine and they didn't visit Paine's Cove so it was most likely already sold. They visited Ernest Hyde (who witnessed Edward's will), then St. Margaret's Church, and then the graveyards where Grandpa showed Calvin the gravestones of his parents and grandparents (Figure 2).

Archaeology

Fieldwork on Change Islands took place under permit 17.18 on July 10th with two main goals: 1) to find and record the location of the original homestead of Edward and Mary Saunders which was later owned by Samuel and Thirza Saunders; 2) to attempt to stabilize and provide some protection to Edward's headstone according to the family's wishes. The location of Mary's headstone, if one exists, is not currently known. Samuel and Thirza's headstones are still standing and are in good condition.

The community of Change Islands is situated on the two largest islands in a tight cluster in Notre Dame Bay, about 40 kilometers north of Gander Bay, where our work took place during the previous two summers. European settlement at Change Islands began in the 18th century and today the biggest part of the community is located along the shores of 'Main Tickle', which separates the two largest islands (Town of Change Island 2018; Scammell 1994). According to Fred R. Oake, a contributor to Arthur R. Scammell's book 'We Go A-Fishing', there was a population of 316 people in 1845, and not quite 40 years later in 1884 the population had nearly tripled, to 934 (Scammell 1994:96).

Scammell's book, as the cover states, consists largely of 'Personal recollections by former fishermen of Change Islands, Newfoundland, related in their own words with a minimum of editing', and it contains valuable contextual information for a project like ours (1994). Information on the Change Islands fishing economy, for example, is extremely useful, and details about the Labrador fishery are particularly relevant as many Change Islands fishers took part in it during the nineteenth and early 20th centuries, including members of the Saunders family. The earliest members of the family to settle in Newfoundland probably started out fishing locally, as traditionally there were excellent cod-fishing grounds less than 10 kilometers from Change Islands (1994:93), but by the latter part of the 19th century the Labrador fishery was extremely important to the people living in this area (1994:46).

According to Ray Scammell, who was in his 80s when he provided input for A.R. Scammell's book, crew members would be hired in March and April and preparations for Labrador would begin after the first of May when crews would paint their schooners. A detailed explanation of how the hull exteriors would be painted is provided, which involved tipping the ship to one side at a time next to a wharf using block and tackle until half the keel was out of the water allowing half of the lowest part of the boat to be painted at a time. "As soon as both sides of the boat were done and the vessel upright, with the living quarters cleaned and painted, the crew

took up residence aboard the schooner. Previous to this the crew ate and slept in the store loft" (1994:47). Next, traps and nets would need to be barked to preserve them and to camouflage them from codfish, and food, water and firewood needed to be acquired and brought onboard. On rainy days nets would be repaired and wooden implements like oars and buoys would be fixed or made. During this period salt would normally be purchased and taken on at Fogo, and after that "…the crew would return to their various homes… for their clothes, and to say goodbye, and to get 'the farewell kiss'" (1994:47).

Change Islands schooners that went to Labrador were usually gone until early September and the drying of the catch would continue until the snow started to fall. Crew members were typically involved as 'sharemen', "…which meant the voyage would be shared equally among the captain and crew. Each crew member would turn back half of his amount to the captain (or owner) to pay expenses" (Scammell 1994:50-51).

Scammell's book contains two references to a schooner owned first by Edward Saunders and then by his son Samuel. The first is a journal entry written on December 8th, 1890 by a teacher from England named Justinian Dowell:

> About 9:30 a.m. we had a very heavy storm come on from NW and blew the whole day with great violence. The schooner 'Slyph' parted her chains and drove ashore, carrying away the foremast of Saunders' schooner. She stranded by Albert Oake's stage and beat it down… This has been the roughest day I have seen for over thirty years (Dowell in Scammell 1994:92).

A review of Mercantile Navy List data, from this period, available through Memorial University's Digital Archives Initiative (collections.mun.ca), shows Edward Saunders as the owner of a registered schooner named 'Sea Bride' at the time, and our searches identified no other Saunders' in Change Islands with a registered vessel during this period. We therefore assume that the schooner which lost its foremast in the December 1890 storm described by Dowell was the Sea Bride.

The second reference is in a four page poem provided by Frank Brinson which lists the names of schooners that operated out of Change Islands and that were involved in the Labrador fishery in the late 19th and early 20th centuries. A few stanzas of the poem are worth quoting here:

> "The names of Change Islands schooners
> On Change Islands once were owned
> The Labrador fishery was the thing
> And they weathered many a storm…
>
> The Good Hope she is out in front
> the Annie B. Beside her
> the Henriette and Laverock
> Sea Bride and Wild Briar
>
> They are all bound for Labrador
> The wind a strong southwest
> The Hettie and the Myrtle Jane ahead
> Followed by the rest…" (1994:109).

The poem continues for another 3 pages and ends with the following lines:

> "So these are the names of all the ships
> Who one time or another
> Were owned and skippered from Change Is lands
> Of course there may be others
>
> The younger generation
> Below the age of forty
> Will never know the meaning
> Of a schooner and her party" (1994:112).

The 2017 field crew consisted of Calvin Saunders, now the eldest member of the family, Allan Brake, husband of Joyceanne and father of Jamie, Mahala Brake, granddaughter of Joyceanne and daughter of Jamie, and the authors. Survey relating to the Saunders homestead at Change Islands was guided by traditional knowledge passed down from Frank Saunders to his eldest grandson Calvin (Figure 2). In the early 1950s Frank had brought Calvin to see the foundation of the house that Frank had grown up in. The house had belonged to Frank's parents Samuel and Thirza, and to Edward and Mary before them, Edward being the first in our Saunders family to settle in Newfoundland. Calvin can still remember the location of this foundation more than sixty years later.

Change Islands is accessible today by ferry from Farewell, Notre Dame Bay, where our group

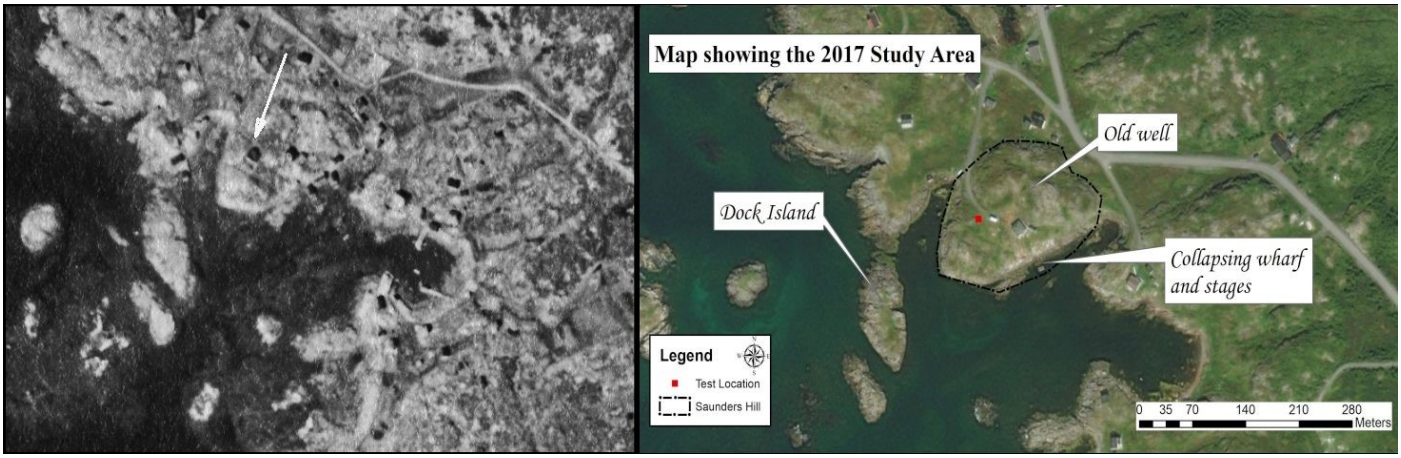

Figure 3: On the left is an air photo taken in 1949 which clearly shows a structure at the location where Calvin remembers seeing the foundation of the Saunders home as a young man in the 1950s. The white arrow shows the location of the structure. The map on the right shows the same area as it looked in 2017.

gathered on the morning of the 10th for an early crossing. About a half an hour or so after driving aboard the MV Veteran we were dropped off on the south end of Change Islands. The community is located about 12 kilometers north of the ferry dock. Paine's Cove, the ancestral home of the Saunders family, is on the western side of the northernmost of the two largest islands (Figure 3).

After fortifying ourselves at the Harbour View Café on the south side of Main Tickle we crossed the bridge to the northern island and followed Calvin's directions to the north-central portion of Paine's Cove, which we recently learned was always known as Saunders Hill according to local elder Ron Torraville. The location is strikingly beautiful and overlooks a rugged and battered coastline shaped by an ocean which was dotted with countless icebergs on the day we paid our visit.

Upon arrival Calvin pointed out the general area where he remembers seeing the foundation of the old Saunders home years before. A historic air photo taken in 1949 shows a standing structure at this location (Figure 3).Prior to doing any subsurface testing we started with a walkover and visual inspection of the grassy meadows, outcrops and shores of this part of the cove. The only structures at the site are an old boarded up and collapsing house and shed built by the Peckford family who acquired the land from the Saunders' in the mid-20th century. Partially surviving portions of fishing stages, built with square nails were recorded on the bank going down the shore, as well as a section of preserved dock cribbing in the water itself just below the stages (Figure 4). The use of square nails in the stage and wharf construction suggest that these were built before the mid-1900s and were built through the efforts of Saunders family members, though others may well have carried on using them in more recent times. An old well was recorded on the northern side of the site on higher ground below outcrops forming the summit of the hill that bears the family name.

Figure 4: Remains of stages, sheds and wharf cribbing at the site in 2017. View southeast.

Figure 5: Allan standing beside the open test pit and possible foundation stone. View northwest.

After the initial pedestrian survey had been completed we focused our attentions on the area where Calvin indicated the house foundation should be. Before long Allan found a very large flat rectangular stone beneath the grass in this area and we decided to open a test pit next to it. Camping chairs were setup for Calvin and Joyceanne next to the test location before any digging began. Jamie, Allan and Mahala excavated a single 40 centimeter x 60 centimeter test pit adjacent to the east side of the large stone just mentioned and came into contact with a dense archaeological deposit. Artifacts were encountered as soon as the sod was cut and were found throughout a 30 centimeter thick level of dark organic soil that has clearly been enriched over considerable time by human activity (Figure 5).

Materials recovered from this test pit include a variety of 19th and 20th century ceramics, square nails, window and bottle glass, the decorative base of an unidentified glass object, a portion of an oil lamp globe, a flat glass disc, a brick fragment, unidentified metal fragments and some food bone (Figure 6). The deposit clearly contains domestic refuse that fits the period during which the Saunders' were dwelling at the site. The large rectangular stone that the material was found in association with is probably a foundation stone and it is in the very area where Calvin remembers seeing the remains of the early family house.

Due to the density of cultural material in the deposit we were only able to dig a single test pit before it was time to shift our attention to Edward's headstone, which is in an old cemetery less than 400 meters east of Saunders Hill. We had visited the grave and taken photos of the monument the year before and at that time it was flat down on the ground and nearly overgrown with vegetation. Cracks were visible, and the stone had long ago broken away from its base. Earlier this year Calvin had a friend deliver bags of crushed white marble and concrete blocks to the cemetery and with this and with the tools we carried, we tried to give the headstone some support and protection. We cut back vegetation, shifted the stone temporarily onto a thick piece of plywood adjacent to where it lay and poured and leveled our crushed marble. The concrete blocks were placed onto the marble and the headstone was then put on top of the concrete. The stone is no longer obscured by vegetation and is now much higher. It is no longer sinking into the ground and has a solid base to lie on. We also found that none of the cracks noted the year before went all the way through, and aside from be-

Figure 6: Selected artifacts recovered from Test Pit 1 at Saunders Hill.

Figure 7: Edward Saunders' headstone after we had cut back vegetation and placed it onto crushed marble and concrete blocks according to the family's wishes.

ing broken away from its original footing the headstone is in one piece.

Conclusions

The 2017 fieldwork in Change Islands was successful and met our goals. We are confident that we have recorded the site that Edward, the first in our line of Newfoundland Saunders', settled in the early 19th century, and our efforts to stabilize his headstone in a nearby cemetery have given that monument some protection. Analysis of the collection from the living site, known locally as Saunders Hill, will add to what is currently known about life in this landscape when our ancestors were dwelling there in the 19th and early 20th centuries. Our work there this past summer has demonstrated that the site contains a dense and substantial cultural deposit representing part of an important archaeological record that has great potential to tell us much more about our family's history.

Future work at Saunders Hill could involve additional testing to determine whether or not the rectangular stone we dug next to in 2017 is, in fact, part of the foundation of the pre-fabricated house originally occupied by Edward, Mary and their family. If it is, attempts at determining the size of the structure's footprint could be made.

Dock Island presents another interesting area for exploration. We know that Edward was in possession of the island by 1885, but we do not know what it was used for. The toponym for the little island is still in use according to a retired local gentleman named Bond Hurley who recently described its location over the phone. Archaeological testing there might lead to an understanding of what Edward did on Dock Island.

Our work thus far has presented genealogical information, preserved oral history, and allowed us to make direct connections with landscapes associated with a family that has now been in Notre Dame Bay for eight generations. It is interesting to note that Calvin was doing something similar when he contacted other family members about saving Edward's headstone, and Calvin's grandfather Frank was doing something similar when he brought his grandson to Edward's grave and when he pointed out the remains of the house he grew up in at Paine's Cove. Calvin's brother Gary was doing something similar when he recorded interviews with their father and published the results (Saunders 1986). Joyceanne's siblings did something similar again when they prepared the book of memories for their parents on their 60th wedding anniversary (Brake & Brake 2015), as did the family members who visited the Clarke's Head homestead in 2016 during the reunion. These are all 'acts of remembrance' (see Ingold 1993:152-153) that involve interaction with and dialogue and thought about places that exist as they do now because of the actions and the decisions and the work and the struggles of earlier members of this family. These are acts that matter. Although the use of archaeology in our explorations in this context might be novel, we are by no means the first or the only members of our family to understand the importance and the value of learning about where we came from.

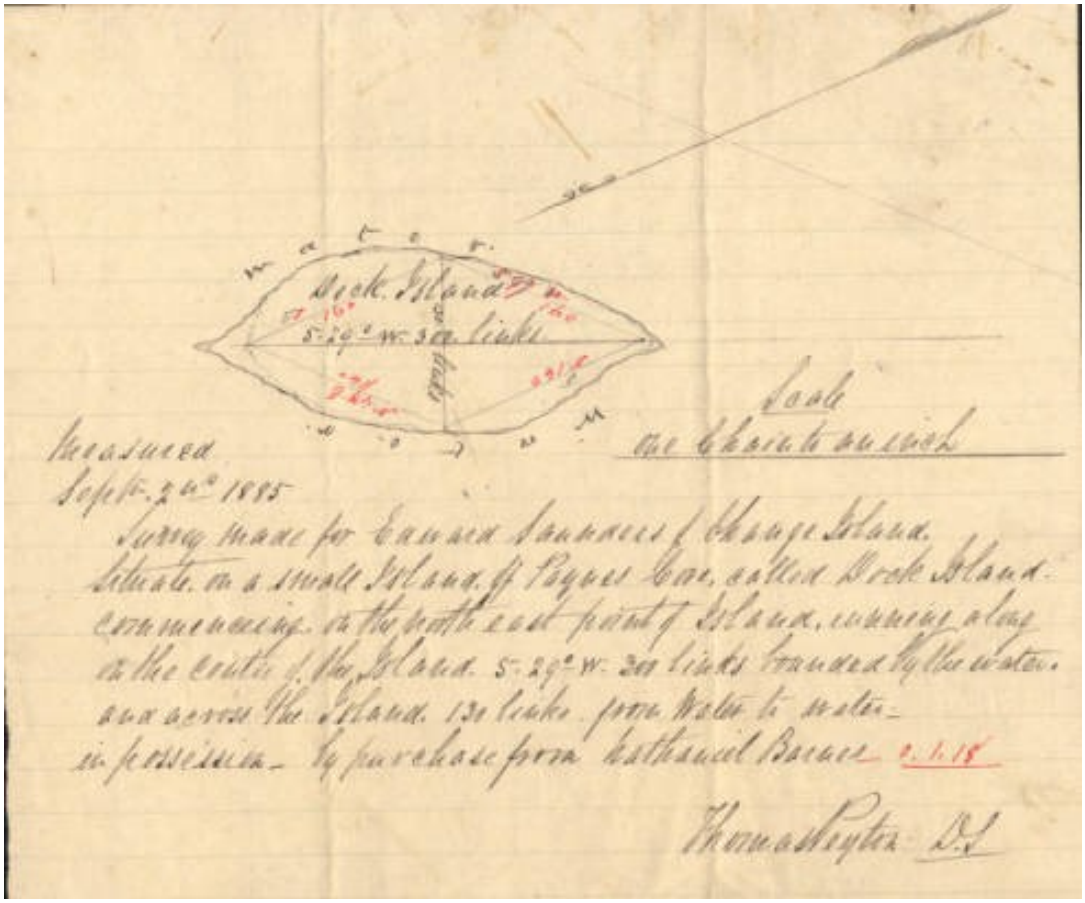

Figure 8: Thomas Peyton's survey of Dock Island for Edward Saunders in 1885 (Peyton Family Collection Land Surveys, Archives and Special Collections, Memorial University [7.03.153]).

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Nunatsiavut Archaeology Office Fieldwork 2017

Jamie Brake & Michelle Davies
Torngâsok Cultural Centre, Nunatsiavut

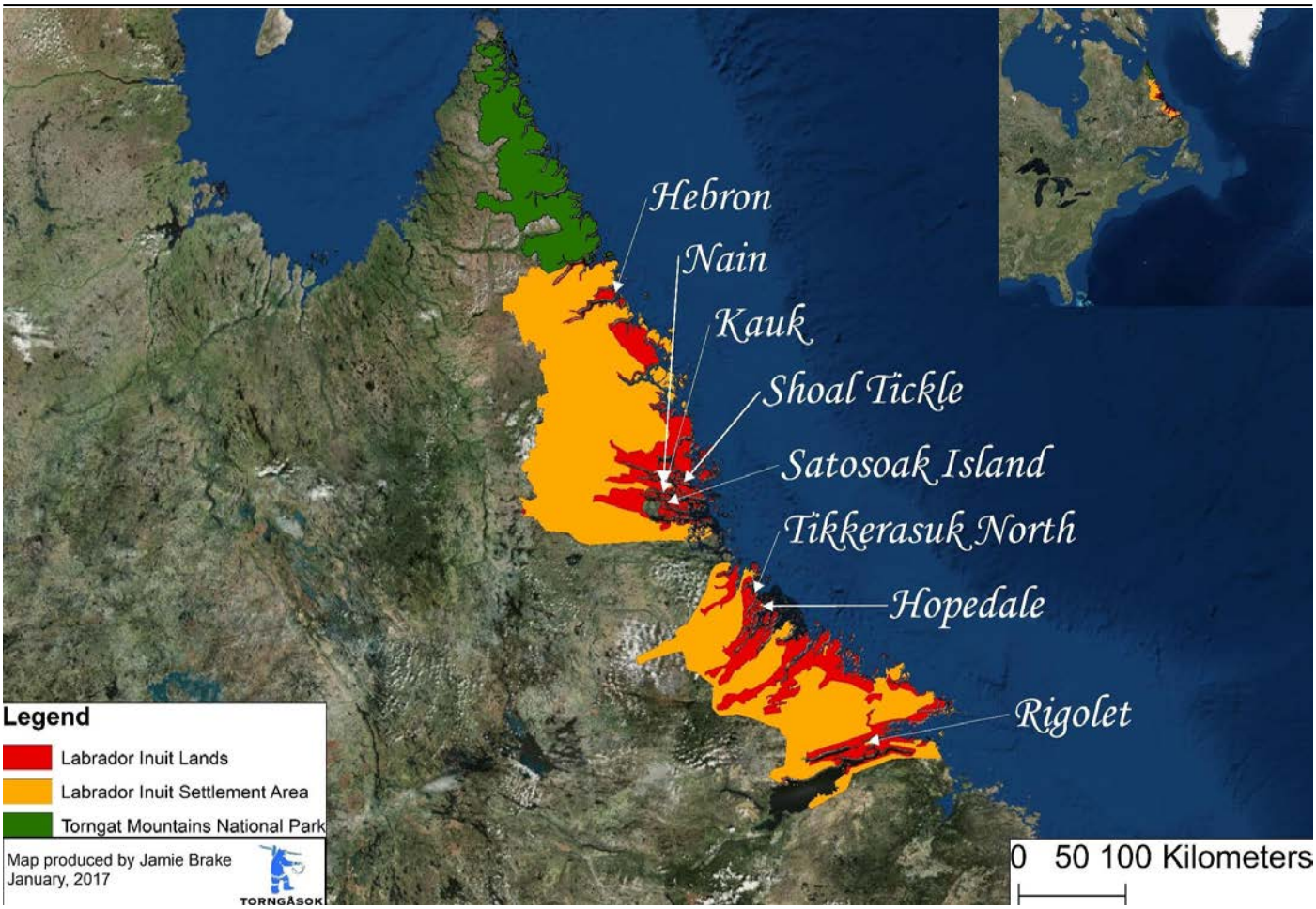

Figure 1: Map showing areas mentioned in the text.

Introduction

In 2017, the Nunatsiavut Archaeology Office (NAO) conducted fieldwork in and near the community of Hopedale, in the Rigolet region (see Fitzhugh and Brake, this volume), near Nain, and at Hebron (see Davies, this volume) (Figure 1). The results of field activities in Hopedale and the Nain region are discussed in separate sections below. A report on significant progress that was made in relation to Labrador's first snowmobile is provided along with overviews of a new kayak revival program that was initiated in the fall, and of our underwater robot-building program that started in 2016. A brief overview of Nunatsiavut's 2017 Heritage Forum is also included.

In 2017, the NAO reviewed 40 land use referrals, an equal number of research proposals, which we review as part of our involvement with the Nunatsiavut Government (NG) research committee, 11 archaeology permit applications, and 5 mineral exploration or mining related applications. The office reviewed 96 referrals this year, which is consistent with previous years. Other non-field related work done by staff members throughout 2017 included things like policy work, fast-paced content development for a new permanent exhibit for the soon to be

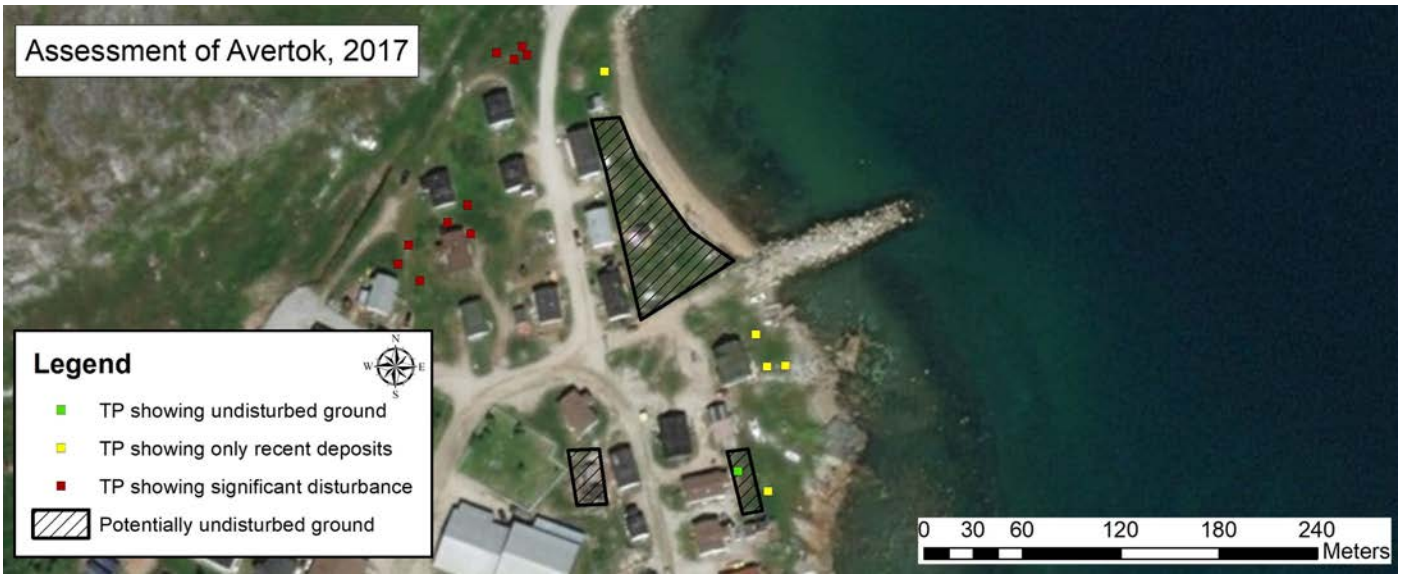

Figure 2: Map showing the June 2017 testing locations at Avertok (image courtesy of Kyle Crotty).

opened Illusuak Cultural Centre, review of material in relation to the development of a new high school social studies curriculum, and work on an initiative to help family members find out what happened to lost loved ones who were sent south for medical treatment between the 1940s and the 1960s and who never returned. In this article we focus mainly on archaeological fieldwork that was conducted in the Hopedale and Nain areas, as well as some archaeology related programming.

Hopedale Region

Avertok

Nunatsiavut Archaeology Office staff members Jamie Brake and Michelle Davies conducted an archaeological assessment of the historic settlement of Avertok (GiCb-01) in the Inuit Community of Hopedale on June 17th and 18th, 2017. The work was done at the request of Nunatsiavut Government (NG) Minister of Health and Social Development Greg Flowers, and the Hopedale Inuit Community Government. The results of this fieldwork will help the NG manage the historic resources within this community, and they helped inform research activity initiated in July of 2017 by Dr. Lisa Rankin, of Memorial University, and several of her graduate students. Community members hope to learn about their history and to generate tourism activity through archaeology.

The primary goal of the project was to determine how much, if any, of the historic Inuit whaling settlement of Avertok still exists within the community of Hopedale. Avertok was occupied by Inuit from at least the 17th century on, and was among the earliest sites to have been excavated by professional archaeologists in Labrador. Junius Bird, his wife Peggy, and a local Inuit man named Henrich excavated nine houses and a substantial portion of a midden at the site in 1934. Testing had previously been done at the site in the late 1920s by William Duncan Strong, who was the first archaeologist to work in northern Labrador. Despite the fact that the site has been known to members of the archaeology community for close to one hundred years, the community of Hopedale has grown substantially since the 1930s and today there are modern houses, roads, water and sewer lines in the Avertok area.

A careful review of previous archaeological activity in the community and of relevant maps and air photos was undertaken before beginning fieldwork. The work of Junius Bird in the early 1930's and of Gerald Penney in the late 1990's was particularly relevant (Bird 1945; Penney 2002), though work in the area done by Beatrix Arendt (2011; 2008) and the NAO (Brake 2010) was also helpful. A map of Avertok produced by Bird was overlaid on recent aerial imagery to guide survey efforts, and Penney's interpretation of Bird's map with archaeological features and his test pit locations were plotted on a contemporary town plan. All three maps were used to prepare for fieldwork, and they were taken into the field as well. Photographs taken by Bird, Penney and the NAO in 1933, 1999 and 2014 respectively were used before and during the assessment as well.

On June 17th and 18th 15 test pits were excavated in areas of the site that, based on map interpre-

Figure 3: Looking northeast at Tikkerasuk North.

tations and historic photos, appeared to correspond with the locations of houses recorded and mapped by Bird in 1934 (Figure 2). Test pits were at least 40 centimeters x 40 centimeters and were expanded in cases where it was felt that this could provide valuable information about stratigraphy, disturbance, or possible structural evidence. Test pits were typically excavated to sterile or to bedrock and maximum depths ranged from 16 cm to more than 50 cm below the surface.

Most test pits revealed serious soil disturbance. Our initial interpretation of data generated through the assessment is that potentially undisturbed areas are limited to a strip of grass-covered land between the high water mark and modern houses that is divided in half by a substantial sewage outflow and an area behind a modern home where a woodpile and snowmobiles prevented subsurface exploration during our visit. Test pits along parts of the strip along the shore revealed an archaeological record relating to recent occupations less than 100 years old. A test pit on a low beach ridge on the southwestern edge of this strip revealed what appears to be a well-preserved midden deposit 42 centimeters below the surface that was still frozen in June. This almost certainly relates to Avertok, though houses and an old arena foundation just a few meters away would have impacted the site adjacent to our test pit. Nonetheless, intact archaeological deposits do appear to exist at this isolated location. It should be noted that areas between the houses and the shoreline north of the sewage outflow were not tested because property owners were not available to provide permission for this activity prior to our arrival or during our time in the community. We recommended that Rankin and her students check that area. Rankin has since suggested that undisturbed deposits might be present beneath piles of crushed stone adjacent to the road on the north end of the site. She intends to check this location in 2018 after the community government removes the crushed stone.

Tikkerasuk North

Hopedale resident McKinley Winters contacted the NAO in late July about finding an old square nail and charcoal beneath sod at Tikkerasuk North, just a few kilometers from his home community. He and his family found this material while cutting sod for their smokehouse, and McKinley indicated that he is considering applying for the land so that he can build a cabin there. A trip to Hopedale for a community discussion about heritage and archaeology in early August provided an opportunity to visit the site, which had not previously been recorded.

On the 10th of August a small crew consisting of Jamie Brake (NAO), McKinley Winters, Ida Semigak (Hopedale archaeology summer student), Laura Kelvin (Memorial University) and Mark Turner (Tradition & Transition Research Partnership) travelled to Tikkerarsuk in McKinley's speedboat to assess the site (Figure 3). A small U-shaped hearth and a second probable hearth consisting of a cluster of four small cobbles were found a few meters apart during a walkover and visual inspection of the area. These features were tested but they did not produce material culture. Test pits were dug at four other parts of the site as well and small amounts of material culture, including charcoal and nails were found in each of these. The greatest concentration of artifacts was found in TP6, about 20 meters east of the two features just mentioned. Blue seed beads, nails, kaolin pipe fragments, and half of a copper disk that could be a coin were recovered from that unit.

The site appears to be limited in size to about 20 x 30 meters and to represent a short-term camp. The U-shaped hearth suggests an Inuit affiliation, and the artifacts, particularly a 'McDougall, Glasgow' pipe stem fragment, indicate use of the location in the mid -late 19th century. Though there was no time to investigate, we did observe a raised beach series from the boat at a cove nearby that looked promising for pre-contact archaeology as well.

Nain Region

Nain Sand Quarry

The office received an application in June to expand the sand quarry in Nain, which is located south of the power plant and is accessible by road. While community members now use the road to collect fresh water, many remember using the trails and picnicking where the sand quarry is now located. Several Maritime Archaic sites are known nearby at a very similar elevation. As this is an area that has archaeological potential, we planned to conduct an archaeological assessment prior to the expansion of the quarry. When we first arrived at the proposed development area, we were dismayed to find that the expansion had partially begun, and drone imagery superimposed on satellite map data revealed that 27% of the expansion area had already been disturbed. We brought our concerns forward to the Minister of Culture, Recreation and Tourism and to the AngajukKak (Mayor) of Nain to ensure that any future development in the community receives sufficient archaeological assessment.

We began our assessment with a low UAV flight to determine the extent of the survey area, and placed test pits every 5 meters. While the artifacts recovered from the vicinity were surface collected, our test pits were brought to an almost impenetrable iron pan level about 17cm below surface to ensure that no subsurface deposits were missed. There was a consistent burn horizon 4-5 cm below vegetation likely representing a natural forest fire event. In total, 23 test pits were placed; however, neither cultural material nor features were recorded as a result. A modern u-shaped hearth was recorded just north of the survey area. The hearth had a crushed Vienna sausage tin in it and is very recent. We completed the survey using a secondary low UAV flight to efficiently map the location of the test pits (Figure 4).

Kauk

A weekend overnight kayaking and camping trip in early August provided a chance to further explore and test a site recorded by the NAO in 2015 at Kauk Harbour about 5 kilometers south of Nain. This year a cluster of three additional tent rings were found about 30 meters south of those recorded in 2015. These are considered to belong to the same site. The southernmost tent ring in this group was the easiest to discern from the surface and this structure was mapped and tested on August 6th (Figure 5).

Figure 4: 3D model of the Nain quarry study area made with photos taken from an NAO drone (image courtesy of Kyle Crotty).

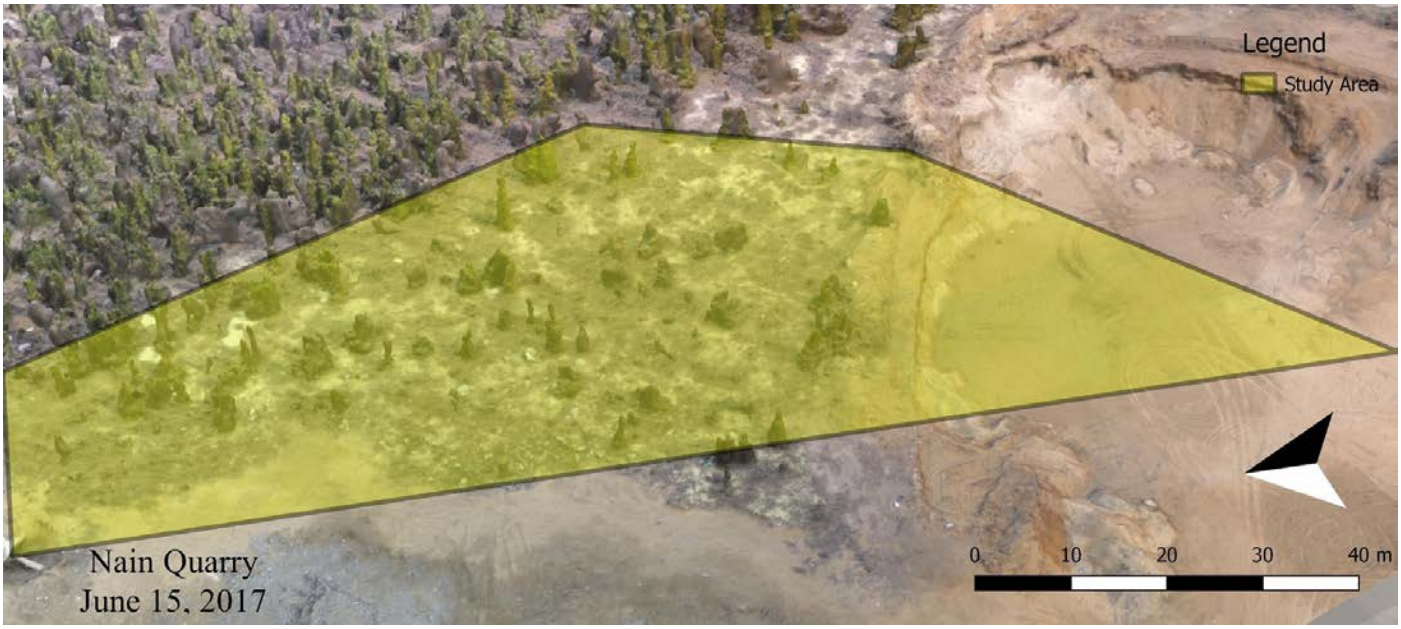

Figure 5: Looking southwest at the tent ring at Kauk Harbour 11 that was tested in 2017.

The feature measures 7.5 meters east-west and 6 meters north-south, has an oval shape and is made up of an outer perimeter of tightly spaced cobbles. An internal hearth was present, and a gap in the outer ring of stones appears to be an entrance. A 50cm x 50cm unit containing the hearth was excavated which produced a small amount of charcoal and piece of translucent white glass. A second test pit was dug inside the structure near the entrance. A small lead droplet, two small seal bones, and a tiny sherd of earthenware were recovered from the second unit.

Based on our observations in 2015 we suggested an Inuit affiliation for the site and we suggested that the features observed at that time probably dated to the early 20th century and likely overlapped in time with Richard White's nearby trading post. The historic feature tested in 2017 might be a little older and could belong to the mid-late 19th century based on the presence of a lead droplet. This is probably the byproduct of bullet production which was more common prior to the 1900s.

Satosoak Island

Our traditional first freighter canoe trip to Satosoak Island to test our equipment and look for a small 18th century Inuit winter settlement took place again this year and resulted in the discovery of several new sites with tent rings and caches on the northeastern side of the island. One cache still contains an intact seal skull. A cabin site that was used in the early 1900s was found on the northeastern side of the island as well. The collapsed remains of the structure were found along with stove parts, an old komatik and scattered gun parts, tools and a small vintage tobacco tin.

Later in the summer a map was re-discovered in J. Garth Taylor's fieldnotes from 1966 which contains information on interviews he conducted with residents of Nain at the time (Papers of J. Garth Taylor, Canadian Museum of History Archives, Ottawa). An elder he spoke with named Ephraim Merkuratsuk could remember seeing sod house remains at a point on the northeastern side of Satosoak Island shown on the sketch map – an area that we had not yet looked at. With this information in hand, we returned to the island on August 25th and recorded an unusual structure in the general area indicated in Taylor's notes. From the surface, it is visible as a low, linear mound forming what looks like half of a perimeter wall of a rectangular sod house. We mapped the feature and excavated a single 65cm x 40cm test pit along the inside of the northwestern corner of the mound and recovered kaolin pipe fragments, charcoal, a bone button and a piece of sponge-decorated earthenware, which together indicate a likely mid-late 19th century occupation (Hume 1969; Loring and Cabak 2000).

We returned to the site on August 30th with a metal detector and a drone. Using the metal detector, we mapped the location of subsurface metal objects, which showed an interesting pattern. Metal was detected within a discreet rectangular area corresponding well with the visible mound and the area where

one would expect walls to extend based on the shape of the mound. The site was mapped in 3 dimensions from the air using the drone, and 4 additional test pits were excavated which produced a few square nails, traces of poorly preserved skin or bark and structural wood (Figure 6).

Though it is difficult to say much about the feature with any level of certainty at this point, it does appear to have been roughly rectangular and to have been approximately 6 meters north to south x 9 meters east to west. It must be kept in mind that the latter measurement is entirely based on the location of subsurface metal located using the metal detector. Why only half of the feature is visible on the surface is difficult to explain at this point, but it is possible that it was never completed, or that it was not a typical dwelling. The cultural affiliation of the site is not clear either, though two stone caches a few meters east of this structure suggest that it is an Inuit site.

Kogaluk River and Sungilik Island

NAO staff members Michelle Davies and Jamie Brake travelled to the mouth of the Kogaluk River, and to Sungilik, an island in the Nain archipelago, on September 6th in an attempt to find a historic trading post and to follow-up on a request that we received from a local individual.

From 1858-1861 the Hudson's Bay Company (HBC) operated a short lived trading post known as Fort Trial on the Kogaluk River that has not yet been recorded by archaeologists (HBC Archives, Manitoba, section B, class 74, pieces 1& 2, Fort Trial, Labrador Coast, post journals, 1858-1861). The post's brief lifespan means that a collection from the site would have excellent temporal control and would be quite useful for comparative purposes. The post itself is historically significant and there is a fairly detailed historical record associated with it. The complete post journal for Fort Trial was kindly provided to the NAO by James Gorton of the HBC Archives in Manitoba in 2015 and this contains a great deal of information with which to interpret the site itself.

In 2017, a local man approached the archaeology office about a site he observed at Sungilik Island which he thought might be a traditional Inuit winter village, and he asked if we could visit the site to determine what it is. The island is on the way to the Kogaluk River so we planned to visit both locations on the same day. Because of the distance involved, a more than 120 kilometer round trip, we travelled to both locations with conservation officer Simon Kohlmeister in his speedboat which is equipped with a 90 horse power motor, which allowed us to make the trip much more quickly.

Recent aerial photos provided to our office by a photographer working on a federal small craft harbours project in 2015 show large overgrown clearings on the eastern side of the mouth of the Kogaluk River that may very well relate to the post. However, our plan to investigate these slowed significantly, as the channel into the river is narrow and difficult to find and our approach was further hampered by a falling tide. The river has deposited enormous amounts of sand in Voisey's Bay over the centuries on either side of the channel leading out of it creating shallow areas

Figure 6: Kyle Crotty using a metal detector on Satosoak Island. The upright sticks behind him show the locations of subsurface metal and the patch of dark green at centre left is a low linear mound.

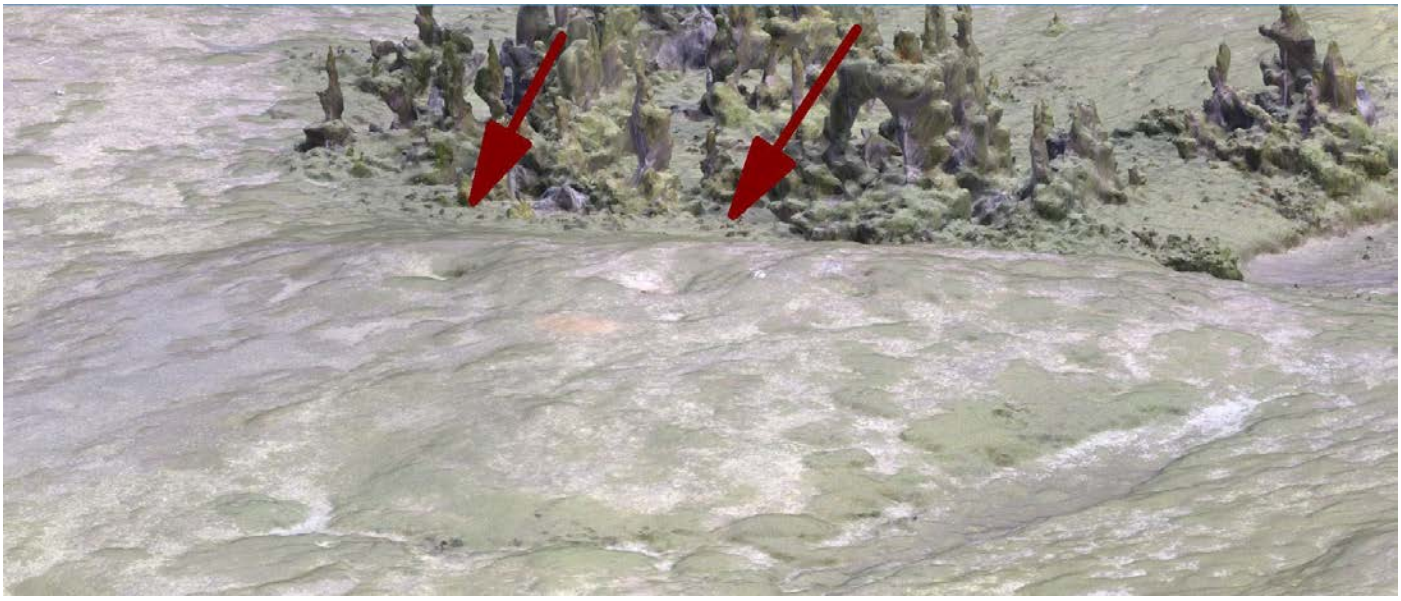

Figure 7: 3D model of circular depressions at Shoal Tickle. Each of the two indicated by the red arrows is about 5 meters in diameter and there are at least three others at the site (image courtesy of Kyle Crotty).

that stretch for more than 2 kilometers on each side. Finding our way into the river, even with a very experienced pilot, took us more than 2 hours. After landing, we found that the clearings we wanted to explore were vegetated by impenetrable masses of tangled alders and willows. We walked along the eastern side of the river hoping we might be lucky enough to find historic material eroding from its banks but found none. We also tried surveying from the air using our drone, but the vegetation was so thick that streaming video and still images from the drone revealed nothing useful either. Finally, before leaving the area Jamie spent a little time crawling through the 20 foot alders and willows with a metal detector which proved to be hopeless. The best chance of finding Fort Trial would be to visit the area in spring before vegetation completely takes over in the summer.

Our exit from the River mouth was even more challenging than our entrance and even involved pushing the boat through little more than ankle deep-water kilometers from shore. However, eventually we were free from the sandy shallows and passing famous Kamarsuk on our way to Sungilik. We landed in a small harbor on the west side of the island where our informant had encountered archaeological material. We conducted a foot survey of the area and recorded two tent rings, but found no trace of a winter occupation on this part of the island. It seems likely that the map location that was shown to us was not the same as the actual location of the particular site in question. As we were leaving, a heavy downpour started but lasted just a short time. We decided to make a quick stop on the way back to Nain at a cove on the eastern end of Kiuvik Island, which is just west of Sungilik. Here we recorded the collapsed remains of a mid-20th century semi-subterranean plank cabin.

Shoal Tickle

In the Spring of 2017 a series of fairly substantial circular depressions with approximate 5 meter diameters were noted at a known archaeological site at Shoal Tickle (HdCj-03) about 8 kilometers east of Nain. These were of interest since the cultural affiliation of the site was listed as Intermediate Indian (3500-2000 BP) and circular depressions like this are not currently known to be associated with Intermediate Indian sites in Labrador. The NAO mapped these features and tested one of them on September 1st and 7th (Figure 7).

Testing revealed the remains of a pit that had been dug in antiquity with the removed soil piled in a ring around the perimeter of the hole. Large stones were then brought into the pit which were visible in each of the three quadrants of our .75 m test unit. Grey sand with charcoal, some greasy staining and some firecracked rocks between large central stones indicate a hearth beginning to become visible at 17 cm below the surface. Three Ramah chert flakes and one flake of an unidentified grey chert, possibly from the Cape Mugford area were recovered from the fea-

ture. The thickness of the cultural deposit was no less than 35 centimeters suggesting use over some time, or a very large fire. Though the function of the depressions at Shoal Tickle is not yet clearly understood our work at the site left us with the impression that the one we tested might represent a tipi-like structure that had been dug into the ground. This is an idea that should be tested in the future.

We did recover several charcoal samples from the hearth that was partially exposed in our test unit. Two of these were processed and returned dates of 570 +/- 30 cal BP (Beta 481993) and 650 +/- 30 BP (Beta 481994). These dates are much younger than we expected based on the assigned Intermediate Indian affiliation for the site, and based on the elevation of 10.5 meters above sea level. The dates and the raw materials we observed and recovered fit much better with a Point Revenge occupation. A review of original site records and an examination of the collection from 1978 shows that two separate loci were noted at that time, though there were no suggestions of multiple cultural components. The 2017 work suggests that the archaeological record at Shoal Tickle relates to at least two occupations by at least two cultures separated by two thousand or so years of history. Additional work at the site would no doubt prove interesting.

Labrador's First Snowmobile

The remains of Labrador's first snowmobile, a Model T Ford truck with a patented 'Snowmobile' conversion kit (involving the addition of an extra axle, idler wheels, tracks and skis) were recovered from the remains of an early 20th century research station near Nain in 2013 and 2014. The station was built for the 15 month long Rawson-MacMillan Subarctic Expedition of 1927-28 which brought the snowmobile to Labrador. The expedition also brought the first professional archaeologist to work in Labrador.

The plan to recover and to attempt to restore the machine so that it could be displayed through actual use was developed between 2012 and 2013 when a mining road was proposed quite close to the expedition station. This would have greatly elevated risk to the Model T, long considered the most significant part of the expedition site and which had already been impacted by souvenir collecting (Brake 2014a; 2014b; Thomson 1996). The recovery of related material from the site began during the fall of 2013 after an excavation grid had been established over the area where associated parts had been scattered over the years, and after the site had been mapped and modelled in three dimensions. All of the small easily moveable parts were recovered at that time and the largest components of the machine, including the engine, transmission, chassis and attached body were prepared for winter pickup and were collected in March of 2014. All of this work was done with the help of numerous local people including Rodney Gear, Shawn Soloman, Russell Barbour, Antone Harris, David Harris, Wayne Jenkins and Elsie Jenkins of Aivek Holdings, Jacob Larkin and Jens Haven Memorial School, Johannes Lampe, Richard Pamak, Sean Lyall and Richard Okkuatsiak. Numerous others helped remotely at various points or throughout the duration of the project including people like former radio broadcaster Winston White, Richard White Jr., conservator Miki Lee, Model T enthusiasts like Andy Lasso, the late Robert MacDonald, Enos Wiseman, Norman Weatherly, Apple Autoglass, the Model T Ford Club of America and the Model T Ford Snowmobile Club. Anthropologist Peter Armitage provided photos of the machine taken in the mid-1990s when the station was first recorded as an archaeological site. Susan Kaplan and Genevieve Lemoine of the Peary-MacMillan Arctic Museum and Arctic Studies Centre at Bowdoin College provided encouragement, advice and access to historical records owned and maintained by the institution they work for.

Following the publication of a related article in Labrador Life detailing our intentions for the machine (Brake 2014b) we were contacted by a gifted machinist named Frank Noseworthy from Port au Choix who stated that the Model T was entirely restorable, that he wanted to be the one to do the work, and that he would do it for a better price than anyone else. He encouraged us to shop around, which we did, and we confirmed that Frank was the best person to take on the restoration phase of the project. In late 2014, with an enormous amount of help from Jacob Larkin, principal of Jens Haven Memorial School, we prepared the parts of the machine, crated them for transportation and shipped them to Lewisporte. From there they were trucked to Port au Choix and delivered to Frank by Jamie, who had travelled to Newfoundland at the time for personal reasons, and his father Allan who had arranged an excellent deal on ground transportation through friends with a local

trucking company. This provided an opportunity to meet Frank in person and to tour his workshop and garage.

The machine was delivered to Port au Choix on December 2nd, and before the end of the month Frank had torn down the engine and was reporting historically significant information as part of his regular updates to the NAO on his work. He was able to make a rough estimate of the number of kilometers that the engine had been driven, and he was able to explain what finally caused the machine to fail. His estimated mileage can be compared to what we know from expedition records, but the cause of the engine failure, blown valves, is information that is not available through written records. A problem valve had been historically replaced in the field with one that had been made by hand. The makeshift valve worked, but only briefly, before failing again along with a second valve that seized at this point as well (Brake & Davies 2015).

Frank worked on the machine part-time, as his schedule allowed, over the course of about 2 and a half years, providing regular reports and updates as things progressed. He finished his work in the summer of 2017. At that point, he provided us with photos and videos of the first start up in 90 years showing a complete and stunningly beautiful machine shiny magnificently in glossy black. If only Henry Ford, the lover-of-quality, so difficult to impress, could see her! The man who started the Ford Motor Company and 'put the world on wheels' with the Model T would surely beam with pride in the presence of Frank's fine work (Figure 8).

Arrangements were made between the late summer and the fall to return the snowmobile to Nain by coastal boat. This move corresponded with a trip that Jamie had to make to Newfoundland for other reasons and so he and his father Allan were again able to personally truck the Ford to Lewisporte and to secure the machine in a shipping container prior to ocean travel where activity at the dock all but stopped for an hour or so while workers gathered around the machine to take photos and ask questions.

The Model T arrived in Nain on the coastal boat Astron in the early morning hours of November 19th and, to our great relief, in the same condition it had left Lewisporte. NG Maintenance Driver David Harris helped Jamie move the machine to its new home in a heated garage near the centre of the community, which was no easy task. The machine was not yet setup to be driven, and a stuck clutch lever had to be addressed. The lever issue was minor – a linkage to a locking mechanism had simply popped out of its seat and needed to be put back in and secured. When this was figured out we were able to get all 6 wheels turning allowing us to pull and push the Ford to the garage according to instructions provided by Frank weeks earlier in Port au Choix.

Although the machine had been previously started, it had never actually been driven since the restoration and there was still quite a bit of work to be done to allow this to happen. Transmission band adjustments would need to be made to allow for the operation of low gear, reverse and brake. By this point, we already had snow on the ground and it was time to convert the truck into a snowmobile.

There were also some serious safety considerations. Driving a Model T is completely different

Figure 8: Frank Noseworthy and the Model T from an article published in the Northern Pen on his restoration work (http://www.northernpen.ca/community/a-relic-restored-83822/).

Figure 9: Labrador's First Snowmobile on January 2nd, 2017 when it was taken for a first real test drive in 90 years.

from driving a modern vehicle, so being absolutely sure that we knew how to operate it before moving it was critical. In addition, the Model T has no true neutral so it is entirely possible for the machine to start moving away immediately upon starting. For this reason, we jacked up the back wheels every time we started the machine until we were absolutely sure that things were working as expected and that we knew what we were doing.

Over the course of several weeks the front wheels were removed, the skis were attached, the tracks were put on and the transmission bands were adjusted countless times in preparation for a test drive. The tracks required the addition of a few extra chain links as the idler wheels we have today have a slightly larger diameter than the original idler wheels. This work was done with the help of a number of local people including David Harris, Kyle Crotty, Noah Nochasak, Joey Angnatok, Sam Ittulak, and Jimmy Dyson. By late December, we were finally ready to attempt a test run. The first attempts to drive the machine were made on December 29th and 30th – the 30th being the 90-year anniversary of the first time the snowmobile drove into Nain in 1927. On the 29th we found that additional transmission band adjustments were required, that a fuel line was slightly restricted with fuel conditioner, and that we had a minor oil leak underneath the magneto wiring. Our battery had also died. We also learned that at least a quarter tank of gas is required to ascend even a small hill because the flow of fuel depends on gravity rather than on a pump. Mechanical issues were corrected the following day, though the gas station was closed for the holidays. A brief test just in and out of the driveway on the 30th seemed to indicate that things were in order, and provided an opportunity to become more familiar with the controls, particularly the spark advance lever.

On January 2nd the gas station was finally opened again allowing us to make our first real attempt at getting the machine moving properly under her own power. That afternoon we filled the fuel tank, drained the coolant, filled the cooling system with water, reconnected our recharged battery, fired

the machine up and drove her through Nain for the first time since 1928. We did not publicize this attempt because this was a test drive, and because of the safety concerns mentioned above, but the operation generated a tremendous amount of excitement anyway. Each time we stopped thrilled community members came running up to jump aboard, to take photos and videos and to ask questions. Before the end of the day, various media groups were making contact to cover the latest developments in the story of Labrador's first snowmobile. The idea behind the restoration was to display it through use in hopes of generating interest in Labrador history and culture (Brake 2014; Brake & Davies 2015; 2016). The excitement and interest during and following the first test drive has been overwhelming and has already surpassed all expectations (Figure 9).

Kayak Revival Program

Jamie Brake and Noah Nochasak initiated the Kayak Revival Program this year which involves the construction of Labrador style skin on frame kayaks on this coast for the first time in nearly 50 years and teaching people how to use them. The hope is that kayaking will eventually become common and routine in northern Labrador again, as it was up until the mid -20th century.

The beginning of the project coincided with Noah's return home to Nain after completing a degree in adventure tourism at Thomson Rivers University in British Columbia. Noah specialized in kayaking during his studies and has also achieved level three Paddle Canada certification which allows him to train kayak instructors. Prior to leaving Nain to pursue his university education he completed several long distance solo trips in a series of kayaks that he designed and built himself using as much information as he could gather from local elders, and he is the first in his generation to do so on this coast. Noah is the only trained Labrador Inuit kayaking instructor, he is one of very few people who has kayak building experience in the region, and the only person here to have built multiple kayaks and to have used them to travel long distances. Because of his concerted efforts to learn about kayak construction and use from elders he is now without question the authority in his age category when it comes to traditional knowledge on the subject. Noah is uniquely qualified to lead the program, and Nunatsiavut is lucky that he is so inter-

Figure 10: Nain residents learning to build a kayak through the Labrador Kayak Revival Program. (Image courtesy of the Canadian Broadcasting Corporation: http://www.cbc.ca/news/canada/newfoundland-labrador/nain-woodworking-shed-1.4433494).

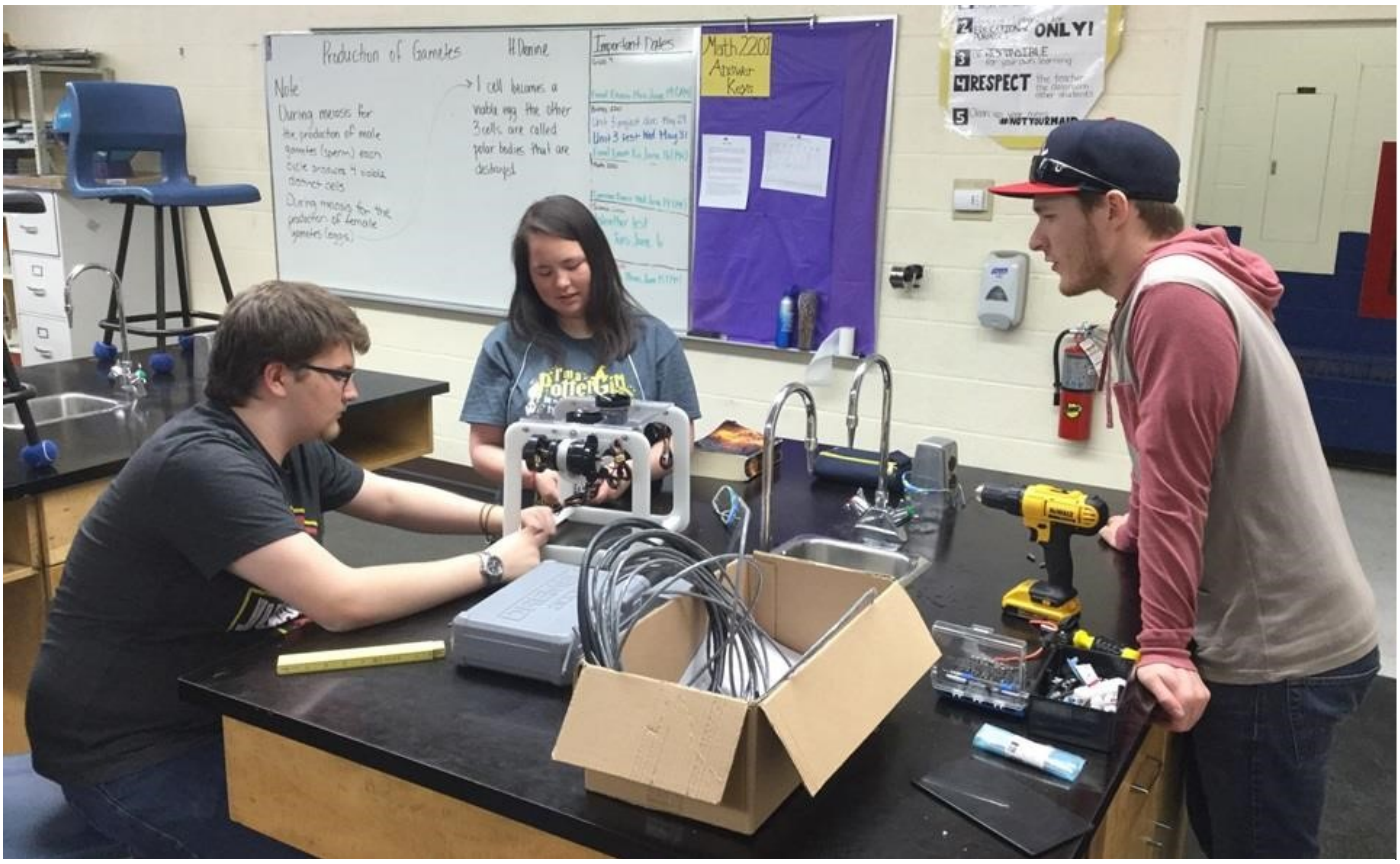

Figure 11: Kyle Crotty and students from Jens Haven Memorial School constructing an underwater ROV from a kit provided by MATE Newfoundland and Labrador.

ested in using his skills and qualifications to make such a positive difference in his home community.

In 2017, the NAO secured a budget that allows for the construction of between 5 and 10 skin on frame kayaks and for training under controlled circumstances here in the Nain region. When Noah arrived in September, we began advertising for local community members to participate. The program began in October and has already been an enormous success. Close to 20 people participated in training and guided excursions in the limited amount of time that was available before freeze-up, and five students have already received Paddle Canada Level 1 certification through the program. Incredibly, one student has even received Paddle Canada Level 2 certification through the program. Construction has been underway since winter temperatures set in, and nine kayaks are now nearly complete. These kayaks are the direct result of the efforts of community members. Nearly 50 people have participated or assisted in some way with various aspects of construction so far, and interest is increasing throughout the region with each passing day (Figure 10).

Community members have been excited to see their government support this type of programming that involves the revival of an important Inuit cultural tradition. Kayaking is a healthy activity, like some of the other sports that are supported by the Nunatsiavut Government, but the revival of kayaking in Labrador can do much more. We feel that it connects to notions like cultural healing, and that in the future it can help support tourism and economic development plans by training and encouraging local entrepreneurs who might like to start their own kayaking companies. It also provides free access to the ocean and to the land, which is so crucial for cultural and economic activity in Nunatsiavut.

Marine Advanced Technology Education (MATE) Program

The Marine Advanced Technology Education (MATE) program began in California in the late 1990s and has since become an international affair with 17 regions involved in the United States, Cana-

Figure 12: Heritage Forum participants get a tour of the Double Mer Point site with Dr. Lisa Rankin.

da, Scotland and China. The program gives students the opportunity to design and build an underwater remote operated vehicle or ROV which is then used to compete in an annual regional competition. Winners can go on to compete at national and international levels. Funding for necessary materials and useful instructions to guide beginners are provided for free through the program (Marine Institute 2018).

In the winter of 2016, the NAO and Jens Haven Memorial School collaborated to offer the program to students in Nain who have now nearly completed construction of an ROV which they hope to use in the province's regional competition in May. Kyle Crotty who joined the NAO in 2016 is running the program. These efforts continue to connect youth at Jens Haven Memorial High School with NAO activities and they are helping grow our technological tool kit. Kyle established a partnership with Joe Singleton from the Marine Institute to get things started, and for the past year he has met with local students once a week to guide them in building an underwater robot. Once the ROV is completed, it may be used to help the office identify underwater archaeological resources (Figure 11).

Heritage Forum

The NAO hosted the 8th annual Heritage Forum in Rigolet this year, from May 29 to June 2. Andrea Procter from the Tradition & Transition Research Partnership and Inez Shiwak from Rigolet's successful Culture Connect Program facilitated the Heritage Forum, and the agenda was organized around interests from the host community. This year's theme was 'Preserving Heritage, Promoting Tourism'; in order to highlight the significant steps Rigolet has taken towards promoting tourism in their community, many of which are now carefully drawn from their rich heritage resources. The forum facilitates the sharing of important updates from each community's heritage council, provides an opportunity to discuss new initiatives from relevant institutions, and helps to direct the heritage goals of the NG's Department of Culture, Recreation and Tourism each year (Figure 12).

Some of the many highlights from this year's forum include Inuttitut lessons in the Rigolet dialect by Ellen Adams and students from Northern Lights Academy, a keynote address from Rowena House of the Craft Council of Newfoundland and Labrador, and a site visit via boardwalk to the excavated sod houses at Double Mer Point (Rankin 2014). The site at Double Mer Point is of particular interest as it has been a community-driven project that demonstrates remarkable community engagement and is "a leading example of how tourism and archaeology can be successfully combined in an initiative that both preserves

heritage and promotes tourism" (Procter 2017). The project has inspired other Nunatsiavut communities to examine how local heritage resources may invigorate local tourism, as the community of Hopedale is now investigating the heritage and tourism potential of the 17th century Inuit village of Avertok (see Rankin this volume for further details). The Heritage Forum report is available through the NAO and on the Torngasok website (www.torngasok.ca).

Conclusion

Much of the NAO's archaeological activities, fieldwork and programming were directly inspired by community feedback from public engagement, and particularly from the Nunatsiavut's annual heritage forum. We are at a stage where we are not just reporting on our work to communities, rather, community members are participating directly in much of the work that we do, such as the Kayak Revival Program and the MATE program described above.

Input from previous heritage forums guided some of the fieldwork from this year, including our assessment at Avertok, while other aspects of our field activities stem from development or involve strategic local archaeological investigations. The restoration of the Model T Snowmobile is an example of the presentation of heritage that is generating excitement and interest about history and archaeology in the region and it is our hope that this enthusiasm continues to inspire our efforts in 2018.

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Survey of Schooner Shipwreck in Conception Harbour, NL

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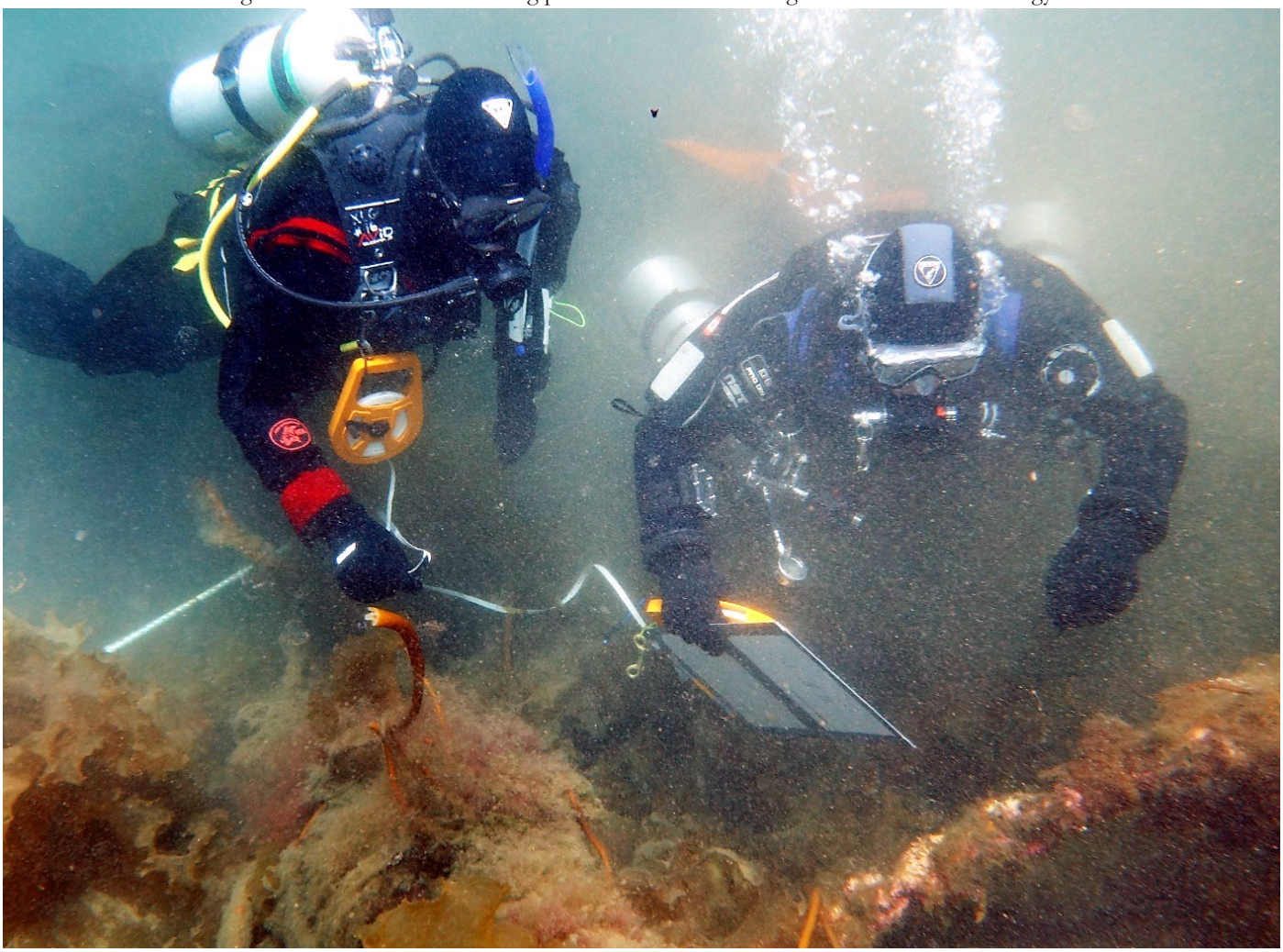
[2] Maritime Survey Services Ltd.

Introduction

In 2017, the Shipwreck Preservation Society of Newfoundland & Labrador (SPSNL) and the town of Conception Harbour continued their collaborative effort to improve the adventure tourism facilities along the waterfront section of the town. The project included upgrades to the town's wharf for pleasure boats, as well as researching and documenting a schooner shipwreck, which lies adjacent to the three whaling shipwrecks in the harbour. The objective of the overall project was to promote the waterfront of Conception Harbour as an adventure tourism destination for divers, kayakers, pleasure boaters and tourists. The objective for SPSNL was to conduct historical research on the schooner, to complete an underwater photo survey, produce three-dimensional photogrammetry of the wreck, gather information for wreck divers, and summarize all this information for a storyboard to be erected on the shoreline beside the schooner wreck in the future.

To kick off the survey of the schooner wreck, volunteer members of SPSNL participated in Nauti-

Figure 1: SPSNL members taking part in NAS Part I training in underwater archaeology.



cal Archaeology Society (NAS) Introduction and Part 1 courses in Underwater and Foreshore Archaeology in June, 2017 (Figure 1). The courses were organized by SPSNL and taught by NAS Senior Tutor Ken Keeping and Assistant Tutor Neil Burgess. NAS courses provide recreational scuba divers with basic avocational education in archaeological principles and methods, as well as practical experience in conducting non-invasive underwater surveys (NAS 2008). In completing the course, the participants acquired an understanding of archaeological dating techniques, principles of deposition, site formation processes, archaeological legislation, and underwater 2D survey skills, which enabled them to properly record a submerged site and prepare the final results for interpretation.

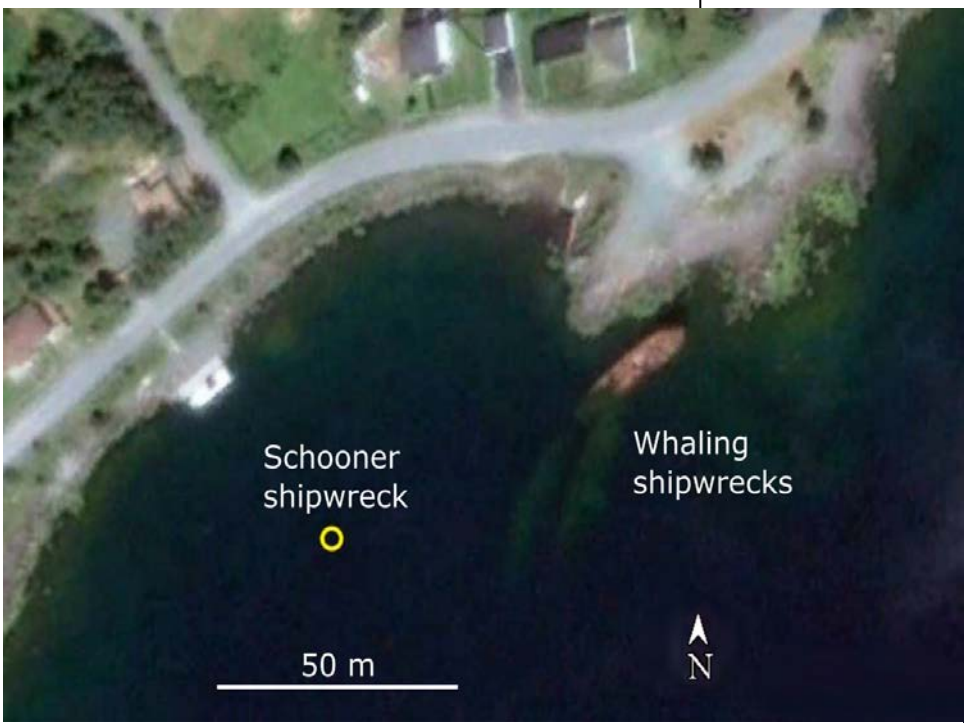


Figure 2: Location of the schooner shipwreck in Conception Harbour, Newfoundland & Labrador.

Site History and Historical Research

Information from the local community suggested that the shipwreck was the schooner *Ellenora Spurvey*, and that it sank ca. 1951. Research at the Maritime History Archive at Memorial University revealed that *Ellenora Spurvey* was a two-masted wooden schooner built in Fox Harbour, Placentia Bay in 1930 (MHA 1998). The vessel was owned by the merchant Thomas S. Keats of Argentia, Nfld. from 1930 to 1939 (UK MoT 1931:1000). In 1940, ownership passed to James Baird Ltd. of St. John's, Nfld. until 1952 (UK MoT 1953:1311). The specifications of the schooner are listed in Table 1.

Official No.	Built	Length (ft)	Beam (ft)	Depth (ft)	Gross Registered Tons
157401	1930	62	17	8	35

Table 1. Specifications for the wooden schooner *Ellenora Spurvey* (from MHA 1998).

Shipwreck Site

The schooner shipwreck is located in Conception Harbour, Newfoundland & Labrador at the southern end of Conception Bay (Figure 2). The site is located adjacent to Corporal Jamie Murphy Memorial Drive, and the shipwreck is accessible from a parking area on the shoreline. The GPS coordinates for the shipwreck site are 47° 26.6634' N, 53° 12.4086' W (WGS84).

The bow of the schooner shipwreck is oriented to the north, with the stern to the south. The shipwreck lies partially buried in a soft mud bottom, with several boulders scattered on the north and west sides of the wreck site. The shipwreck is upright on the bottom and leaning approximately 25° to port. The entire port side of the hull is buried in the sediment, while the starboard hull is exposed. Most of the planking on the hull and deck has decomposed or fallen off, except for small portions where attached by nails to the timbers. The framing timbers of the starboard hull and deck timbers are mostly intact but have partially decomposed, and more deck timbers are missing or displaced than hull framing timbers. Towards the bow, a broken mast lies on the deck (Figure 3) and a deck windlass (Figure 4) remains. Also evident was a portion of anchor chain.

Survey Methodology and Results

SPSNL used two different types of survey methodology on the shipwreck to gain experience and assess their advantages and disadvantages. We employed

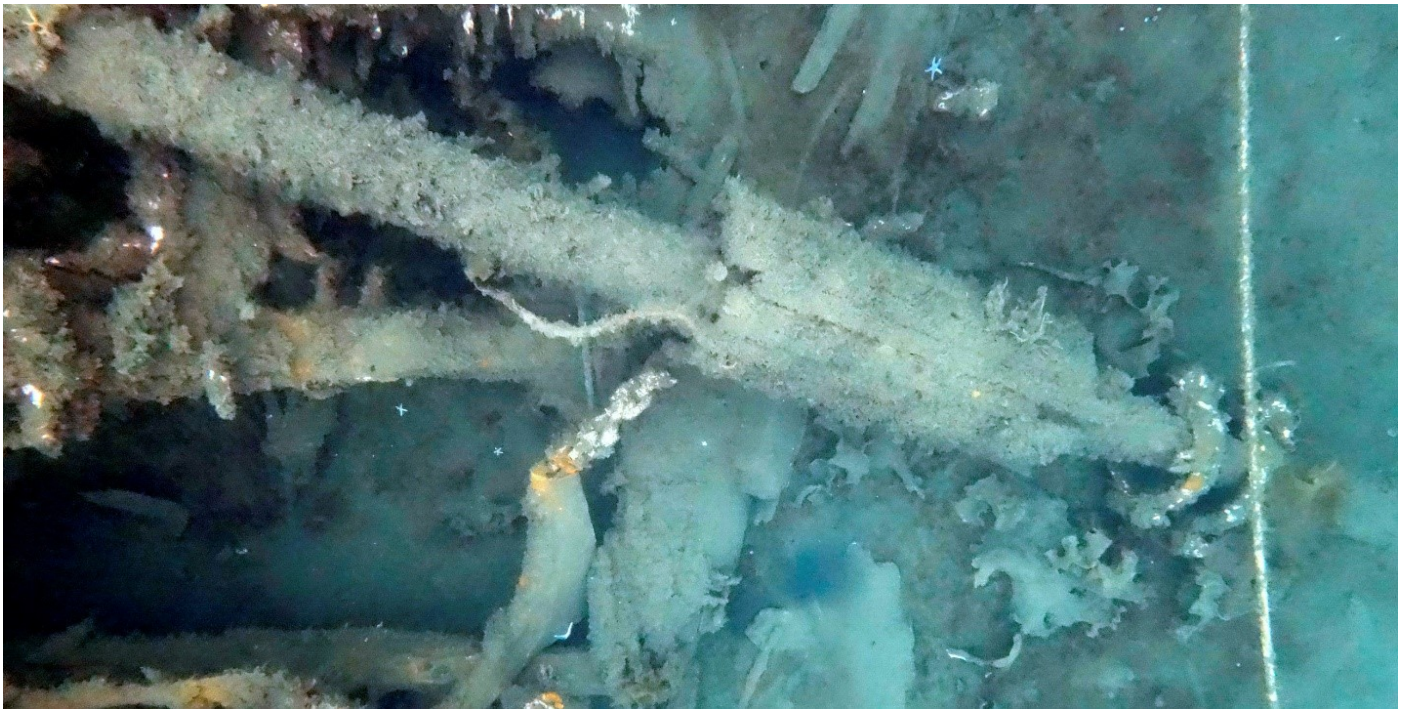


Figure 3: Underwater photograph of broken mast on deck of schooner shipwreck.

Figure 4: Underwater photograph of deck windlass near the bow of the schooner shipwreck.

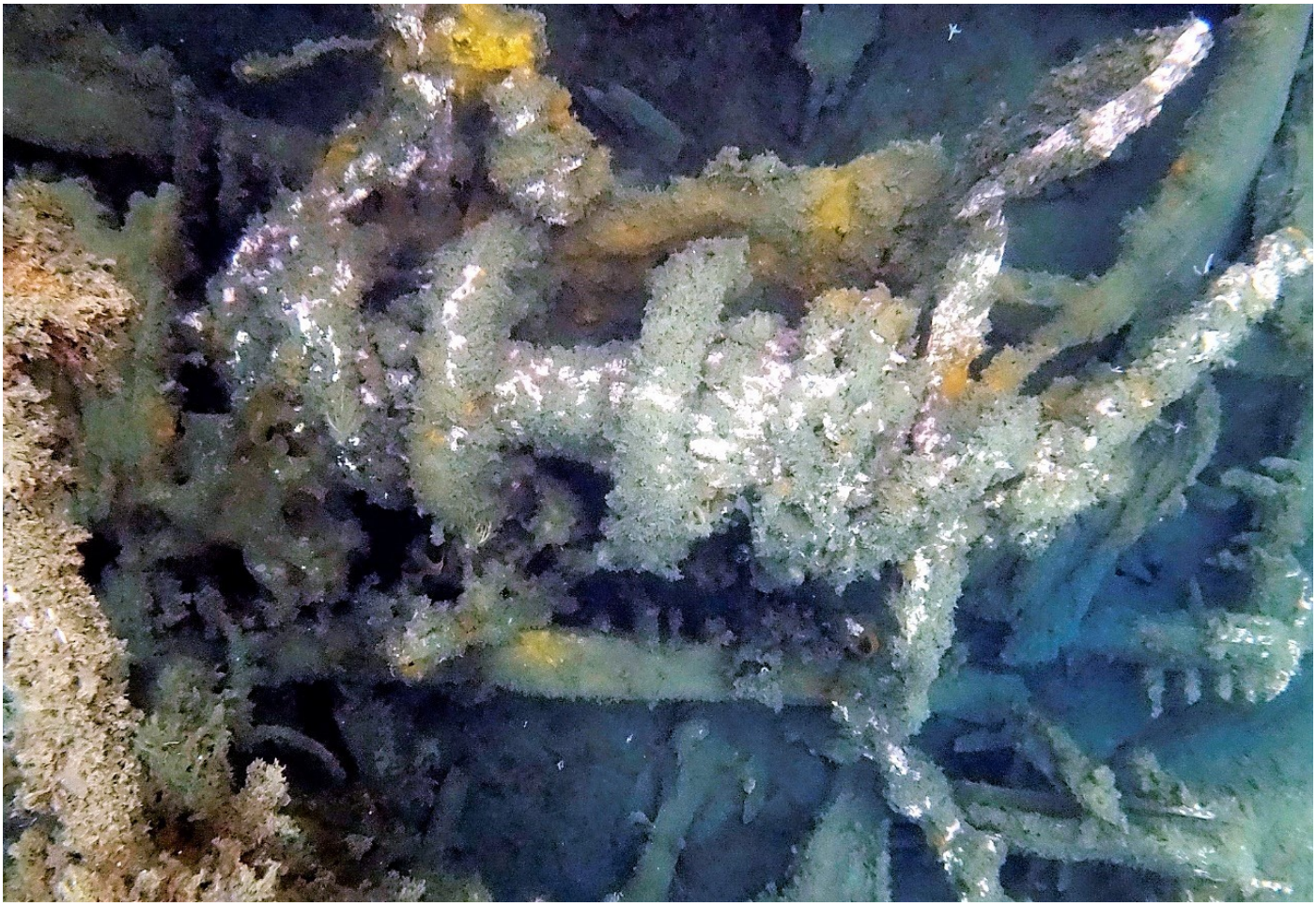
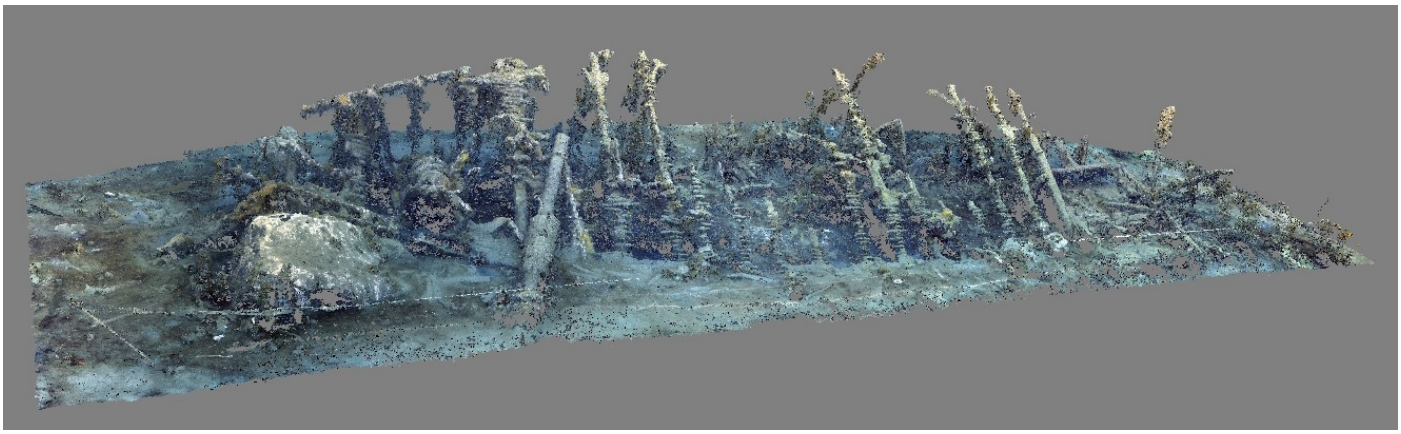


Figure 5: Plan view of 3D photogrammetry model of schooner shipwreck. Bow and north to left, stern and south to right.

Figure 6: Oblique view of 3D photogrammetry model of schooner shipwreck. Bow and north to left, stern and south to right.



both a two-dimensional (2D) tape-measure survey (following NAS 2008: chapter 14) and a three-dimensional (3D) photogrammetry survey.

The 2D method was used to survey the overall dimensions and depths of the shipwreck. SPSNL established a 25 m baseline (running north to south) along the length of the shipwreck, adjacent to the port side. This baseline was used for offset measurements during the NAS Part I training course in June. Linear tape measurements were also made from the presumed stem post (at the bow) to the stern post, to determine the overall length of the shipwreck. Depth measurements were determined to the nearest 10 cm using a Shearwater Petrel dive computer.

The shipwreck was 18.9 m (62 ft) in length. The beam was greater than 4.0 m (13 ft) (the port gunwhale was buried in the sediment and could not be reached for measurement). The depth of the bottom at the bow was 7.6 m (25 ft) and 8.4 m (27.5 ft) at the stern. The highest point on the wreck was at midships along the starboard gunwhale at 5.8 m (19 ft) depth.

We also used 3D photogrammetry to survey the shipwreck. Transects of overlapping photographs were taken looking vertically down on the shipwreck and then perpendicular to the starboard hull. The photographs overlapped approximately 60% between adjacent photo pairs and between adjacent transects. We employed the computer program Agisoft PhotoScan (standard version 1.3.4) to process the photographs into a 3D photogrammetry model of the shipwreck. We used GNU Image Manipulation Program (GIMP, version 2.8.22) to adjust the white balance of the underwater photographs, prior to their input into PhotoScan.

The 3D photogrammetry model of the schooner shipwreck is shown in plan view (Figure 5) and oblique view (Figure 6). The standard version of PhotoScan produces a finely detailed 3D model which can be zoomed in to examine smaller objects.

The resolution of the model is limited by the resolution of the original photographs used to construct the model. The standard version of PhotoScan does not allow the 3D model to be scaled accurately or for measurements to be taken off the model. (Both these capabilities are only available in the more expensive professional version of Agisoft PhotoScan.) Prior to taking the photographs for the 3D photogrammetry survey, volunteer divers from SPSNL had to conduct several dives to remove the thick kelp growth, which obscured the shipwreck.

Limitations

The primary physical limitations for conducting these underwater surveys were water visibility, temperature, and kelp growth on the site. When measuring distances underwater and taking photographs, poor visibility reduced the ability to see clearly and take high-quality photographs. Cold water temperatures made the wearing of thick neoprene gloves necessary, which reduced manual dexterity and consequently slowed the survey work. The density of kelp on the site also posed significant challenges for the initial survey work. The kelp growth present during the 2D surveys in the summer months was especially thick, and necessitated its removal from the shipwreck before the photographic survey. Without kelp removal, accurate photography and interpretation of the shipwreck would not have been possible, as diagnostic features would have been obscured.

We encountered two technological limitations in carrying out these underwater surveys. The first was the limited resolution and low-light capability of the compact digital camera used for underwater photography (Sony RX-100 II, 20 MP resolution). A higher quality digital camera, housing and strobe lights would yield better photographs for 3D photogrammetry. The second limitation was using the standard version of Agisoft PhotoScan versus the professional version. The professional version would permit us to accurately scale the 3D model of the shipwreck, take shipwreck measurements from the 3D model, and produce rotatable PDF files of the 3D model for sharing with others.

Interpretation and Discussion

The archival length measurement available for the Newfoundland schooner *Ellenora Spurvey* of 62 feet matches the length of the shipwreck determined by our 2D survey. This single piece of evidence supports our tentative identification of the shipwreck, but it is certainly not conclusive. Further archival and community research is necessary before an identification can be made with any certainty.

This preliminary survey of the schooner shipwreck has not identified all the features and artifacts visible on the wreck site. Nevertheless, many of the larger features and artifacts are visible in the 3D photogrammetry model of the shipwreck. We do not know how much of the shipwreck buried in the sediment is intact (mainly the port side of the ship), or what artifacts may be buried in the sediment.

Comparing the results of the 2D and 3D surveys offers some important lessons for future shipwreck surveys conducted by SPSNL. The 2D measurements (shipwreck length, beam and depths) were completed in a single dive and provided useful data for tentatively identifying the wreck. However, using 2D measurement techniques to survey the complex 3D structure of the shipwreck with its many timbers and other features (mast, windlass, etc.) would have been very labour intensive, time consuming and error prone. Instead, we chose to conduct a photographic survey of the shipwreck's structure, and use software to construct a 3D photogrammetry model. The photographic survey was completed in a single dive (308 photographs). Processing the photographs and producing the 3D photogrammetry model took 2.5 days, since Agisoft PhotoScan takes several hours for each step in the 3D modeling process: creating a dense point cloud, creating a 3D mesh, and then laying colour and texture over the mesh. The detail in the resulting 3D model was excellent, considering the limitations noted previously. When the above 2D and 3D survey methods are combined with a GPS location of the wreck, a preliminary survey of a small shipwreck can be completed with only 2 or 3 days of fieldwork (in this case, 1 day was spent just cleaning kelp off the wreck before the photo survey). This approach offers a feasible means of conducting non-disturbance surveys rapidly with a small field team and limited equipment. These survey methods could also be scaled up to survey larger shipwrecks, although this would require a more powerful computer for producing the 3D photogrammetry model, based on a larger number of photographs (> 1000 photos).

Project Outcomes

Through this project, SPSNL has met its goals of ad-

vancing education, increasing our survey skills, and documenting shipwrecks and their importance to the province's history through these outcomes:

1. Offering NAS training courses in underwater archaeology and providing experience in wreck survey methods to Newfoundland scuba divers,
2. Compiling historical information on the ship,
3. Completing 2D and photographic surveys of the shipwreck with SPSNL volunteers,
4. Applying new computer software to create a 3D photogrammetry model of the shipwreck,
5. Partnering on improvements to the tourism facilities at the shipwreck site (e.g. installation of a concrete base for a future storyboard on the schooner shipwreck), and
6. Promoting the shipwreck site as an adventure tourism destination in partnership with the town of Conception Harbour on the SPSNL website and in social media.

Next Steps

There are several activities which SPSNL is planning to complete our work on this shipwreck:

1. Further archival research on possible schooners,
2. Collection of oral history and historical photographs in Conception Harbour and nearby communities,
3. Compilation of historical information, photographs, and information for wreck divers and visitors on a storyboard at the shipwreck site and the SPSNL website,
4. Creation of a wreck divers' guide to exploring and understanding the schooner shipwreck,
5. Promotion of the schooner shipwreck as an excellent diving site for local adventure tourism on social media, and
6. Access to Agisoft PhotoScan Professional to create a scaled version of the 3D shipwreck model and a rotatable PDF file of the 3D model for use on the SPSNL website.

Acknowledgements

SPSNL thanks our volunteer members who donated their time and energy to the historical research, training, shipwreck surveys, and kelp removal. We also thank the town of Conception Harbour and mayor Craig Williams in particular for their dedication and cooperation. We thank the financial sponsors of the project, including the Atlantic Canada Opportunities Agency and the NL Dept. of Innovation, Business and Rural Development. This shipwreck survey was conducted under a research permit from the Provincial Archaeology Office.

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Low-Elevation, UAV-based Aerial Survey of a Historic Coastal Fishing Site: A Pilot Project

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Saint Mary's University & Memorial University of Newfoundland CREAIT Network

Our project uses Unmanned Aerial Vehicles (UAVs) to collect low-elevation aerial data in the documentation of archaeological sites around the island's coastlines. The incorporation of UAV platforms into archaeological projects have become increasingly common in recent years, and with the acquisition of our first UAV in 2013, we have been developing standards and practices to incorporate these platforms into our research. UAVs allow the rapid and repeated acquisition of low-elevation aerial photography of archaeological sites, either using attachable special-purpose cameras or stock cameras that are integrated into the UAV airframe. The value of an easily-obtained overhead perspective on a known archaeological site is readily apparent, and a single photograph of a site, taken from overhead, is of some basic use in showing the location of a site in its immediate surroundings.

However, the research value of UAV-based photography truly lies in the platform's ability to capture multiple images, and to carry different imaging devices. Flown in an overlapping grid, with sufficient sidelap and overlap between images, a series of captured photographs can be transformed using specialized software (such as Agisoft Photoscan or Open Drone Map [ODM]). This software corrects for camera lens distortion, camera tilt, and other camera positioning issues during image capture. The resulting images are transformed into an orthomosaic, a geometrically corrected image that can be used in the same manner as a map, to measure true distances.

Thanks to exhaustive fieldwork conducted by the late Peter Pope, as well as detailed historic landscape analyses by Bryn Tapper (e.g. Pope 2009; Tapper 2014; Tapper and Pope 2014), many of the French historic sites used for the cod fishery (dating between the sixteenth and early twentieth centuries) are well known and well documented. Our current pilot project was designed to build on their work, and to document the landscapes that they have identified in an expedient and efficient way with UAV flights.

Figure 1: The French fisheries site at EiAv-07 (Observation Point). Subtle changes in the site's topography, such as terracing and *galet* location, can be difficult to capture in standard field photographs such as this.

French fishing crews began venturing to Newfoundland to seasonally fish and process cod on the island's shorelines in the sixteenth century, and while the depth of French engagement in the Newfoundland fishery might have fluctuated through the centuries, it remained a consistent practice until 1904. The most popular of these sites were used on an annual, seasonal basis by these transient French crews, who built and rebuilt their fishing sites every year, shaping the landscape in identifiable and regularly-patterned ways (Tapper 2014). Crews built shore stations (consisting of stages, flakes, cookrooms, and sometimes bread ovens, for example), dug garden plots, and built and tended manufactured cobblestone *galet* beaches upon which they dried boatloads of codfish. Where these sites were not overbuilt by modern communities, these now-abandoned fishing sites are now covered by wild vegetation, which tends to obscure the subtle topographic changes that mark them as archaeological sites. Though they might appear as 'natural' landscapes, they are in fact the product of centuries of human intervention.

In 2017, we used Unmanned Aerial Vehicles (UAVs) to gather low-elevation imagery of a known French fishing site in Crémaillère Harbour (Observation Point, EiAv-07; see Figure 1), likely used between the 18th-19th century (Tapper 2014). We selected the site because Crémaillère harbour is currently unoccupied, and because it appears undisturbed based on the work of Tapper and Pope (2014). The site may have seen some use by Newfoundlanders during the 20th century, but cartographic data (as indicated by an early twentieth century map of Crémaillère in the Provincial Archives of Newfoundland and Labrador, series RG58.1 "Crown Lands—General") suggests that the true focus of Newfoundlander fishing efforts in the 20th century was focused on sites elsewhere in the harbour. As a result, the site has no traces of modern occupation or use.

We equipped our 3DR-X8 octocopter UAV with both a visible light camera and a Near-Infrared (NIR) camera. The visible light camera (a Canon Powershot 260HS 12 MP, GPS-enabled camera) was running the CHDK program, which permits access to the camera's firmware in a non-permanent manner, allowing us to set controls on the camera, such as image capture frequency. Simultaneously mounted on the UAV was a MapIR Survey2 NIR+NDVI camera, which enabled us to photograph the same landscape in the same flight run, but in Red and NIR spectra.

We visited the site in August of 2017, and waited for a weather window in which to conduct UAV flights. On August 15th, the weather permitted a site visit, with only light gusty winds to contend with (and the winds were well within safe flying conditions). We arrived at the site and laid out a series of numbered Ground Control Points (GCPs) which were captured by the cameras during flight, and whose location we accurately recorded. We launched the UAV and flew a series of transects across the site, with both visible light and NIR cameras recording an image once every two seconds. Then, we conducted a brief survey of vegetation cover that exists on the site today.

To record the location of GCPs, we successfully launched our RTK (Real-Time Kinematic) GNSS (Global Navigation Satellite System) unit, which is able to enhance the positional data received from GPS and GLONASS satellites (among others) to provide centimeter-level accuracy in location measurement. Before fieldwork began, we acquired an Emlid Reach chip and antenna set, and constructed both a base station and a rover station in-house. Configuring portable routers (running on portable power sources), we established a field wifi network to connect rover and base station. In the field, we were able to obtain centimeter-accurate locational measurements of our GCPs.

Throughout the winter of 2018, we will be post-processing our low-elevation photographs, with several research goals in mind. We use the visible light photographs to generate high-resolution orthomosaics of the modern ground surface, which can be converted into false-colour elevation maps. We will then work to correlate the subtle changes in site topography with archaeological and historical site location data (see Figure 2 for the initial results from our UAV flight). By gathering low-elevation imagery, we hope to demonstrate the utility of UAVs in the documentation and characterization of ephemeral archaeological sites from their appearance on the modern ground surface today, in a non-invasive fashion.

We are also equally interested in the vegetation that grows overtop of these abandoned archaeological sites. A small but growing body of research

Figure 2: A point cloud representation of EiAv-07 (Observation Point), showing the important nearshore area where stages were constructed. The level of resolution achievable through a very short UAV flight, even when taken on a day when wind gusts produced less-than-ideal flight conditions, is promising. We can then transform these point cloud representations into Digital Elevation Models, which will permit correlations with historic and archaeological evidence about site layout. White dots in image are the Ground Control Point targets.

suggests that archaeological sites leave identifiable traces in the modern vegetation that grows overtop of archaeological sites. Indeed, Tapper and Pope (2014) make frequent reference to 'vegetation shadows' that mark the different components of French fishing sites. These vegetation shadows are created after site abandonment, when previously occupied landscapes are largely overtaken by wild flora. We suspect that Tapper and Pope's (2014) vegetation shadows are a reflection of historic land alteration process (for example, we noted that low-lying depressions likely from structure foundations, which readily retain water, are marked by the presence of damp-loving *Angelica atropurpurea*, or Purplestem Angelica/ Alexander plant). We also noted that the galet portions of the site were covered with wild strawberry plants (*Fragaria sp.*) and wild raspberry canes (*Rubus sp.*), and that raspberries were particularly prominent on former cobblestone galets with surprisingly little available surface soil.

We also collected soil samples across the site, with the intention of exploring the relationship between soil chemistry and plant growth on the site. Much recent research has shown that sites focused on marine animal processing, including fish processing sites, can produce soils with distinct elemental signatures, and we intend to explore whether or not such soil enrichment plays a role in overall plant health of contemporary plant populations. NIR imagery has the potential to clearly indicate such vegetation patterning, as well as indicating overall plant health/ stress. Vegetation indices, such as the Normalized Differential Vegetation Index (NDVI) use NIR imagery to assess plant health and plant species delineation. As a result, we will use NDVI data to aid in our identification of anthropogenic landscapes, in which the processes of historic land alteration, soil enrichment, and modern vegetation growth create identifiable and observable patterns on the modern ground surface today (see Figure 3 for a preliminary NIR orthophoto). In effect, vegetation patterns can be interpreted as a proxy for soil conditions, and thus, the presence of archaeological sites.

This post-processing and analysis of low-elevation aerial imagery is compute-intensive, producing a substantial compute bottleneck that is difficult

Figure 3: A Near Infrared textured orthophoto derived from point cloud data of EiAv-07 (Observation Point). Analysis of NIR imagery is ongoing, as is calculating NDVI values for this imagery. Red dots are the Ground Control Point targets.

to resolve on a standard workstation. Accordingly, we have worked with ACENET (part of Compute Canada, the national resource for Advanced Research Computing) to process our data on Compute Canada's Cloud OpenStack resources, with great success. This season, we also used Compute Canada's resources to help us make on-the-fly decisions in the field. By uploading images from our first test flight to Compute Canada's cloud resources on a mobile phone via cellular networks, we were able to rapidly generate a point cloud representation of the terrain, allowing us to visualize our data. In so doing, we were able to determine if our image collection was spatially comprehensive, or if our data had gaps that needed to be filled with further UAV flights. Further post-processing of field data has been made possible at Memorial University's Computing, Simulation and Landmark Visualization Facility (CSLV), part of the CREAIT network.

Our work on this UAV-derived data is just beginning, and we will have further updates on our progress throughout 2018. We have been fortunate to access the help and guidance of many individuals in the process of building this multi-disciplinary project, and we would like to acknowledge their assistance here. We would like to thank Carl Thibault at Maketech for his UAV engineering expertise. We are grateful to staff at the CREAIT Network (Memorial University) for providing analytical computational assistance, and we would like to acknowledge Dr. Brent Myron for facilitating this access. We have also been fortunate enough to draw on the computational resources in Memorial University's CSLV lab, and would like to thank Dr. Charles Hurich (Chair, Scientific Advisory Committee for CSLV Lab) for facilitating lab access, and Peter Bruce and Paul Sherren for the lab's technical support. We are also most grateful to ACENET and Compute Canada for assistance and access to national Advanced Research Computing infrastructure; Dr. Oliver Stueker in particular acted as a critical resource. Bryn Tapper (Memorial University) has graciously provided both data and advice during the planning phase of the project. Most importantly, we would like to acknowledge the late Dr. Peter Pope (Memorial University); his exhaustive work on the archaeology of French fishing sites made this project possible, and his enthusiasm for the archaeology of French fishing sites remains an inspiration.

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Archaeological Surveys and Oral Histories from the Hebron Family Archaeology Project in 2017

Michelle Davies
Nunatsiavut Archaeology Office

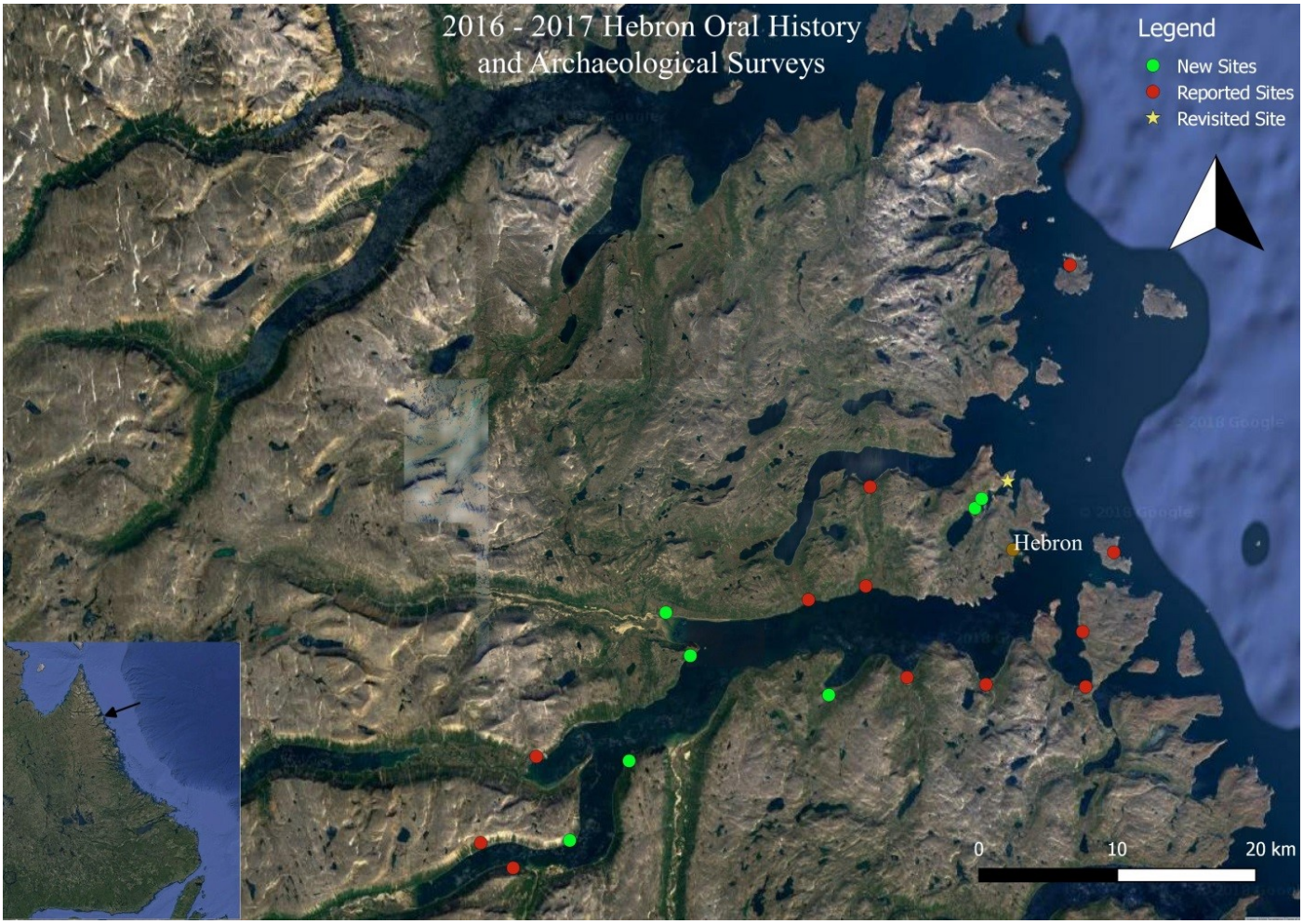

Figure 1: Location of family fishing sites which were reported by Hebronimiut during 2016 community consultations, as well as

The Hebron Family Archaeology Project is a multi-year project which seeks to conduct community-based archaeological investigations at Hebron and the surrounding region, and to provide an opportunity for relocated Hebronimiut to return and share their memories and stories with family members. While some archaeological investigations have taken place at Hebron (Brake and Davies 2014; Kaplan 1983; Loring and Arendt 2009), this project is largely focused on the oral histories and memories of relocated Hebronimiut in order to record and showcase areas of significance to the community. In 2016 the project focused on mapping the locations of family houses, as well as recording stories and memories of Hebron elders, in order to share the information with the larger Hebron community so they may meaningfully engage with the project goals (Davies 2016). This report outlines the results of the second field season, which was conducted under Permit NG17.04 with the support of

Figure 2: Locations of Hebron houses from Year One of the Hebron Family Archaeology Project, created with John Jararuse and Elias (Jerry) Tuglavina. Map drawn by Kyle Crotty using Google Earth.

the Nunatsiavut Government and Memorial University Tradition and Transition Research Partnership.

The second year of the Hebron Family Archaeology Project took place from July 22nd- 29th, 2017 with family participants from Hopedale: Maggie Jararuse, her husband Billy, and their daughter. Following the selection procedure of the previous year, Maggie submitted an application to the Hebron Selection Committee, which consists of volunteers from Hebron in the communities of Nain, Hopedale, Makkovik, and Goose Bay, who then conducted a blind vote. Beverley Hunter was selected to join and provide mental health support for participants by the Nunatsiavut Government's Department of Health and Social Development. Our goal for this field season was to record nearby family fishing camps which had been identified during community consultations (Figure 1), and to locate and partially excavate the house where Maggie's parents Joseph and Sara Jararuse lived along with Simeon Tuglavina (Figure 2, House 17). However, our goals changed once we arrived at Hebron, and the emotional impact of the proposed work was felt more directly by the family. Fortunately, the flexible nature of the project goals and the wide range of research activities available made for a productive field season.

The Jararuse family and Beverley arrived in Nain by plane on July 21st, and we left by speedboat the next morning in the highly capable hands of our two drivers, Simon Kohlmeister and Richard Pamak. The water was calm, and with only one stop for lunch at Mugford Tickle, we arrived in Hebron by late afternoon. We were greeted by the Hebron Ambassadors Gus Semigak, Lena Semigak and Justin Barfoot, as well as the Hebron church restoration team Levi Nochasak, Abia Zarpa, and Johannes Semigak. Our

Figure 3: Maggie and Billy Jararuse consult the house map created in the first year of the project to locate their family homes.

canvas tents had been thoughtfully set up by the crew, so we unloaded the boats and settled in, enjoying the company of the first of many visitors this week, including the Canadian Rangers and later, the Canada 150 C3 ship.

Our first full day at Hebron was highly emotional, as the full implication of the work we had planned to do was felt by the family. Many people from Hebron rightfully consider the remains of the houses to be private property, as they had no say in the 1959 relocation, and little time to collect their belongings before being forced to leave (Aldrich Pears Associates 2016; Carol Brice-Bennett 2000; Simon Kohlmeister pers. comm.). The excavation was discussed at length before the trip, and family members had been consulted about disturbing the house. However, the community of Hebron is a registered archaeological site, and the Nunatsiavut Government has title to all archaeological materials under the Labrador Inuit Land Claims Agreement (LILCA Ch.15). As the family considered all of the known and unknown family members who may have a vested interest in the house, they felt they could not provide permission to excavate the house and remove the artifacts at that time. As the Hebron Family Archaeology Project is based on informed and ongoing consent, the withdrawal from participation was met with no resistance, and our plans for the week shifted to the many other research opportunities which exist in the surrounding region.

We were very fortunate to have access to a speedboat and our driver, Simon, whose family is also from Hebron. We spent the week consulting the maps from previous community consultations in order to locate and record family fishing camps around Hebron fjord. It was a great opportunity to address another major goal of the project, which was designed to connect family histories and practices to the larger region where many spent most of the time during the year.

We began our survey at the north arm at the bottom of the bay, called Ikaguit (as described by an elder in Hopedale) or Tessiujak (as described by workers at Hebron), where the cabin belonging to the provincial Department of Fisheries and Land Resources is located. The tide was falling quickly, so we only had time to record the location of the cabin before we sped off to Ikuliasuk (meaning 'always calm'),

Figure 4: Maggie points north while recording a tent ring at Hebron 16 (IaCs-07) during our survey of Hebron Bay.

Figure 5: Recording a cache or grave feature at Hebron 17 (IaCs-08).

the more southern arm of the bay. We had hoped to locate two camps at the bottom of the bay where Andrew Piercy and Simeon Nochasak had fishing camps; however, the tide was against us and we couldn't locate a channel deeper into the bay. We stopped at a small sandy spit on the north side of the bay, and recorded three small tent rings at Hebron 16 (IaCs-07), though no artifacts were recovered (Figure 4).

We stopped again on a small point of land on the south side of the bay, where we recorded 3 more tent rings on either side of a small stream, as well as a cache or small grave built against a boulder, recorded as Hebron 17 (IaCs-08) (Figure 5). As we left the spit by speedboat, we passed a small point where a standing stone was visible from the water, which was recorded at Hebron 18 (IaCs-09). Often called 'pinnacles', their cultural affiliation is archaeologically unclear, though presumed to have been used by Thule and Inuit (Brake and Larkham 2011; Kaplan 1983: 230). An inuksuit oral history project in Nunatsiavut has identified that some upright stones were constructed by Inuit to mark safe or unsafe travel routes, though other groups in Labrador may have used them as well (Brake and Larkham 2011). Simon mentioned that 3 gleaming white stones used to stand there, since knocked over, and that it marked a good spot to wait for seals. While pinnacles may have different meanings and uses depending on their locations, it was a delight to be able to record the meaning for this particular location based on oral history.

That afternoon, we stopped to fish at Ikarok (also called 'Freitag Inlet') and though we could see the Department of Fisheries and Land Resources cabin, the tide was again too low to visit. We made another stop at Kasungasunga, where Andrew Piercy indicated fishing weirs had been constructed, and recorded a series of tent rings as Kasungasunga 1 (IaCr-02). We passed in front of a large natural stone formation which looks like a woman nursing her baby,

Figure 6: Rock formation called 'Amatok', on an island near Kasungasunga 1 (IaCr-02).

which is called 'Amatok' and reportedly made by a shaman (Figure 6). Simon stopped the boat and suddenly burst into song, which he had learned from his father and others from Hebron:

Upingâk avanetluta iKalunniatluta

In the spring, when went north, when we were char fishing

Kasungasuk taggani

Kasungasuk in the north

iKalunniatluta nuluavut kivimajut kanajualunnut

When we were char fishing, our fishing nets sunk to the bottom with sculpins

Tautukkunatsainapuk

That's his memory

Later in the week, we drove the boat to Jerusalem Harbour, just north of Hebron, towards Tikigatsukulluk, a well-known fishing camp. The area was home to many families from Hebron, including Maggie's husband Billy, who continued to return to the region seasonally after the community was forced to close in 1959. We began our survey at the bottom of the bay, following worn trail lines on the north side of the cove out towards Tikigatsukulluk. Along the way, we recorded a grave (Jerusalem Harbour 3, IbCq-09) and a pinnacle (Jerusalem Harbour 4, IbCp-49). A little further east in the cove, we first came across Tikeratsuk West (IbCp-01), consisting of several tent rings from Maritime Archaic, Pre-Dorset and Dorset occupations. As we walked the length of the cove, we encountered Tikeratsuk 1 (IbCp-02), which was referred to as 'Tikigatsukulluk' during community consultations and by the Hebron reconstruction crew. According to Gus Semigak, families from this area would walk 2 hours to Hebron every Sunday for church. The site consists of several Inuit sod houses and a large scatter of household items, including metal barrels, shovels, bed frames, axes, stove legs, frying pans, cups and plates (Figure 7). We took a lot of photos, and held a few emotional interviews with the family, but did not collect anything. On the upper terrace, approximately 10m above sea level, the remains of a large Pre- Dorset and Dorset site, consisting of tent rings, caches and graves was also re-visited and photographed (IbCp-03 to IbCp-05).

The next day, I flew the drone over Hebron to capture any changes to the site which may have occurred since the previous year, finding that the site was largely unchanged except for restoration work at the Inuit cemetery and the growing addition of Gus' new cabin (Figure 8). We walked down to the area where Billy's family house once stood, and he spread some mussel shells he had collected from Tikigatsukulluk (Figure 9). That afternoon, John Ja-

Figure 7: Billy stands on a wall of a house at Tikeratsuk 1 (IbCp-02). Located at the small cove directly north of Hebron, the site is locally known as Tikigatsukulluk, where Billy's family, among many others, fished seasonally.

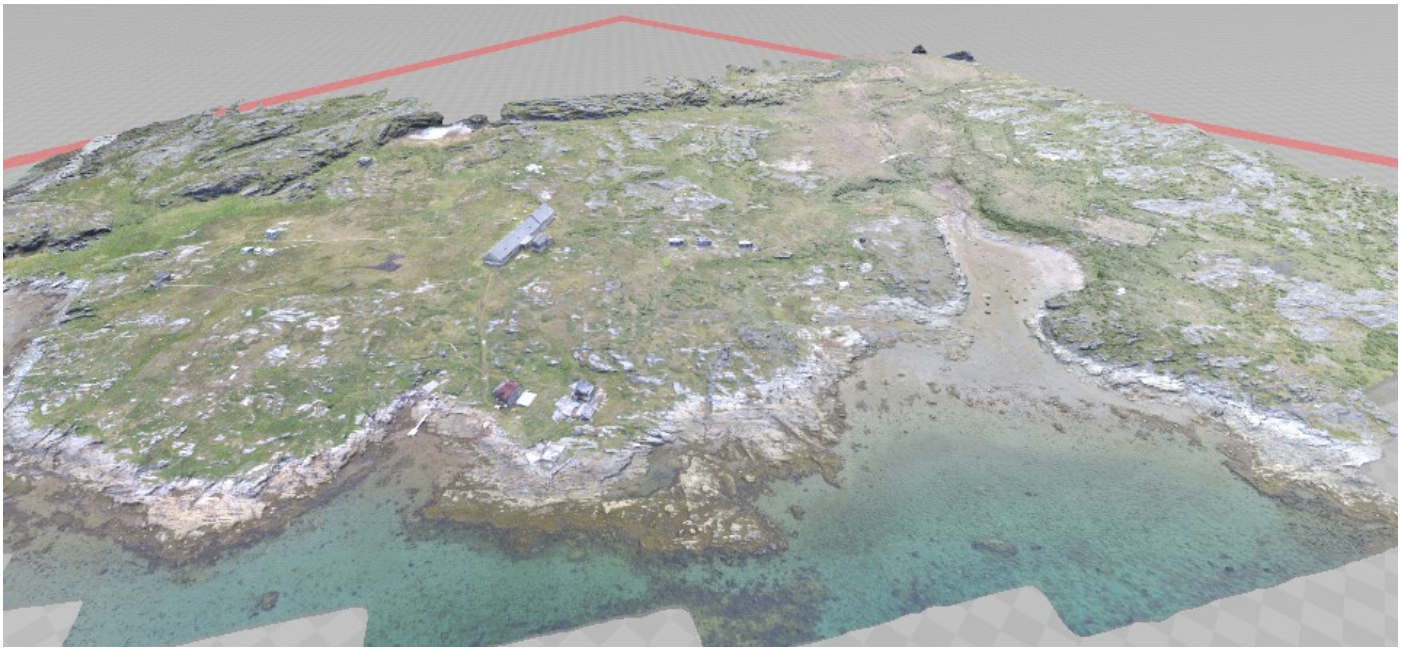

Figure 8: Image of Hebron made from stitched photographs captured during multiple UAV flights in 2017. Annual UAV flights can help to monitor changes to the site over years of restoration, as well as tourist and local visitation. Image rendered by Kyle Crotty using Pix4D.

raruse and Sophie Keelan arrived from the Torngat Mountains National Park Base Camp. Both are from Hebron, and John participated in the project last year as he and Jerry Tuglavina mapped out family house locations from memory (Davies 2016).

Figure 10 here

They spent the night telling stories about the community, and were particularly keen to tell ghost stories which tickled the visitors that night. Sophie and I discussed the Informed Consent Form so that she could participate in the project, and she spent some time with me telling family stories which I recorded by notebook and video (Figure 10). We listened to happy stories relating to the American military base, the Christmas candy drop, and travelling over the land by dog team, but also heard stories of death and misadventure, including the drowning death of a young girl in the bog at Hebron, and another of a young boy who disappeared after a day of sliding by the water.

As the project is now entering the third year of research at Hebron, the experience from this year's field season has prompted some reorganization around the methodology of recording and interpreting family histories. It is clear that excavation at any house at Hebron may be too sensitive a subject, and the family entanglements too complex for a consent form. Instead, excavation goals may be better served through a communal structure, such as the school or the community hall. Alternatively, an examination of the significance and interpretation of Hebron artifacts may be addressed through curated family heirlooms, as well as artifacts which have been surface collected and displayed at the Hebron church. Community consultations will once again take place in Nain, Hopedale, Makkovik and Goose Bay during the spring of 2018, where community members may guide and design the research goals and methodology of the project over the next few years.

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Figure 9: Billy and Maggie share a personal message after spreading mussel shells at the location of House 5, his family home at Hebron.

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2017 Excavations at Double Mer Point (GbBo-02), Labrador

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The summer of 2017 saw a continuation of archaeological excavation at Double Mer Point, near Rigolet, Labrador. 2017 marked the fifth consecutive year of excavation under the direction of Lisa Rankin of Memorial University of Newfoundland (MUN), and the third to be conducted under the SSHRC-funded Tradition & Transition Research Partnership between the Nunatsiavut Government and MUN. Double Mer Point (GbBo-02) was first recorded in 1968 by William Fitzhugh, and was tested in 1974 by Richard Jordan. The site dates to the later 18th century, and is composed of a row of three Inuit semi-subterranean communal winter houses (from west to east, Houses 1, 2, and 3). Excavation between the houses in 2016 revealed that Houses 2 and 3 are contiguous, while there is a sizable gap between the walls of House 2 and House 1 (which was occupied most recently, into the early 19th century).

The small field crew of Robyn Fleming and Deirdre Elliott arrived in Rigolet from Hopedale aboard the MV Northern Ranger the morning of August 25th. After a day of sorting field gear, securing boat transportation (from Fred Shiwak) to and from the site each day, we resumed work at Double Mer Point on August 26th. After a quick site inspection following the cruise ship tours the site hosted over the summer of 2017 (guided by MUN archaeology graduate student Kayley Sherret), we continued excavation from previous years. During our short time at the site, we also hosted a visitor who seemed keen to inspect our activities (Figure 1). Anticipating poor weather during our short stay, we cautiously opened a single 1m² unit in the midden to the west of the en-

Figure 1: Surprise site inspection by a grouse (and baby grouse, not pictured). Apparently everything was up to snuff.

trance tunnel of House 1 (the most westerly house at the site). Though the weather cooperated, this proved a fortunate decision, as the density of artifacts in this unit made for slow digging. Excavation was halted at a depth of 25cm, before reaching sterile soil, after 5 days of excavation, and the unit and the rest of the site were covered for the winter. A total of 439 artifacts were recovered this season, which, in line with previous seasons' findings, consisted of glass trade beads, nails, lead shot, ceramics, kaolin pipe fragments, hide, and portions of soapstone vessels (Figure 2), as well as lithic materials (predominantly Ramah chert debitage) hinting at previous occupations of the site. Recovered faunal remains have yet to undergo formal analysis, but consisted primarily of seals, followed by dogs and foxes. These artifacts are currently undergoing cleaning, cataloguing, and conservation at MUN, before an in-depth analysis can be conducted. Each season of excavation at this site has brought new and exciting information, and no doubt future excavations, particularly of the midden areas, will continue to shed light on 18th and 19th century Inuit life in Hamilton Inlet.

Figure 2: Portion of a small soapstone lamp (kudlik) recovered from the midden of House 1.

Newfoundland and Labrador Archaeological Society 2017 Field Trip to visit the Curiously Late Middle Dorset Site at Bordeaux Head (Permit # 17.26)

John Erwin
Newfoundland and Labrador Archaeological Society (NLAS)

Figure 1: Location Map.

On the morning of Saturday September 2, 2017, the NLAS led a small but enthusiastic group of members to Arnold's Cove in an attempt to relocate the Bordeaux West (CkAm-05) site, to assess its condition, and to test for a suitable 14C sample to re-date the site. After relocating the site by GPS coordinates, the group began the investigation by conducting a visual survey of the area looking for surface features, old test pits and excavation areas.

Background

Bordeaux West (aka Bordeaux II) was initially reported by Urve Linnamae in her 1971 *Preliminary Report of an Archaeological Survey of Placentia Bay, Newfoundland*. Revisited in 2005 by the Provincial Archaeology Office, it was believed that the site remained largely intact some 35 years after it was first reported. The site is located on the west side of a broad sandy point that separates Come-by-Chance and Arnold's Cove, known locally as Bordeaux Head.

Originally reported as a small Dorset campsite that contained a hearth from which a charcoal sample was dated to 1090 ± 90 BP (Gak-3275), Bordeaux West remains the latest Dorset date on the Island of Newfoundland (see Linnamae 1975:69-73). Dated on charcoal from a hearth feature (under peat at 38 cm depth), this late date has long been controversial. In fact, the latest Dorset dates in the region, or even on

Figure 2: Surface Finds from Bordeaux Head Beach.

the island, are generally no later than about 1200 years before present. The reanalysis of GAK results in a number of regions, including the Great Plains (e.g. Blakeslee 1994), suggests that a number of the samples processed by the Gakashuin Lab (GAK) in Japan during the 1970s are unreliable (Christopher Wolff Pers. Comm. 2017).

Unfortunately, we could find no physical evidence of Linnamae's archaeological investigations. However, a number of surface finds, consisting of water rolled lithic materials were located along the active beach. It is interesting to note that surface finds were collected along the entirety of the active beach from headland to headland in the vicinity of the site and were fashioned from a variety of materials, including the white weathered chert best known from the Stock Cove site in Trinity Bay.

The specimens pictured in Figure 2 include three bifacially worked preforms (b, d, e), three flakes (a, c, f) and a core fragment (g). While none of these are culturally diagnostic, they represent the remaining evidence of the Bordeaux West site. With the exception of b, the heavily water-rolled nature of these specimens also suggests that they were eroded from the site some time ago.

Testing of the site (Figure 3) was conducted with shovel, trowel and screen. Test pits were excavated to depths ranging from 30 to 70cm below surface to sterile (bedrock or the water table). Test pit 6 contained amounts of angular bluish-grey fine rock that appeared to have qualities similar to rhyolite. A sample of this material was taken for closer examination and while it has some flaking properties, it does not appear to match any of the recovered lithic materials from the beach. Unfortunately, no in-situ deposits or cultural materials were recovered in any of the six test pits.

Like an increasing number of exposed coastal sites, it appears that erosion has taken what was left of this important site out to sea. Despite the negative test results, it was a great day to be outdoors for the participants who, had the opportunity to dig a test pit, and to learn about basic archaeological field recording procedures, site protection and provincial heritage legislation.

Finally, as part of its attempt to provide outreach to both NLAS membership, and the larger community, the NLAS also created a YouTube video of our trip to Bordeaux West site, which can be seen

Figure 3: Shovel Testing at Bordeax Head.

Figure 4: Test Pit and Surface Find Locations. KEY: Test pits are labelled 1-6; Spot finds are unlabeled points. Yellow line: GPS track log.

here:https://www.youtube.com/watch?v=ULN9i_1WiIA

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Sabbath Point (DeBd-08) Unmanned Aerial Vehicle (UAV) Mapping Project

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Provincial Archaeology Office
Memorial University of Newfoundland/Saint Mary's University
CREAIT Network, Memorial University of Newfoundland

Figure 1: Locations of Sabbath Point and Beothuk Site Clusters in the Exploits Valley.

Summary of Results

Site mapping that relies on land-based surveying instruments takes considerable time and expense to conduct. Likewise, available aerial photography and satellite imagery is generally an ineffective substitute due to scale and tree cover. The 2017 project at Sabbath Point (see Figure 1) is the first successful endeavor to utilize recent advancements in UAV technology and advanced computing to facilitate accurate mapping of an interior tree-covered archaeological site in the province. The project also tested the utility of using Real Time Kinematic (RTK) satellite navigation without a clear view of the sky. As a pilot project, this work has demonstrated both the challenges and the practical nature of combining low-level "under-the-canopy" photogrammetry with precision measurement of geographical location.

Background

Apart from some early reconnaissance by the likes of Lloyd (1875, 1876), Speck (1922), Howley (1915) and Jenness (1929), Beothuk sites received little attention from an archaeological perspective until the 1960s with the exploration of the Exploits Valley by Don Locke. An amateur archaeologist who was predominantly interested in collecting Beothuk iron objects, Locke left few records of his collecting activities (e.g. Locke n.d., 1974). Despite the somewhat questionable nature of his "research", Locke made some interesting observations and developed a hypothesis regarding Beothuk subsistence and settlement patterning relative to the clustering of sites.

The first modern professional archaeological work in the Exploits region was generally limited in success, and included Taylor's (1964) survey work; Madden's reconnaissance of Victoria Lake and Lloyd River (Madden 1975) and Thomson's 1982 survey from Red Indian Lake to Grand Falls (Thomson 1983). Of note, however, are Devereux's investigations at Indian Point (Devereux 1970) and LeBlanc's excavation of the Wigwam Brook site (1973), which were instrumental in defining the late interior Beo-

Figure 2: Discovery of the Sabbath Point House Pit. Source: McLean 2017 (cover)

thuk occupation along the Exploits. Further work undertaken by Thomson during the late 1980s aimed at understanding the provenience of the large collection of Beothuk artifacts that Locke had donated to the Provincial Museum. Despite Thomson's efforts, this work fell short in relocating many of the house pits that Locke had originally reported. Consequently, he concluded, as did the majority of researchers before him, that many of the house pits were lost to erosion, or overtaken by forest growth, making them virtually impossible to find.

The next survey of the Exploits River, undertaken by Fred Schwarz in 1992, attempted to test the extent to which Locke's Beothuk settlement cluster hypothesis was real. It also was the most ambitious single season archaeological survey of the Exploits River to-date. While 84% of the planned survey area was covered, resulting in the location of 51 archeological sites (34 of which were not previously recorded), evidence for previously unrecorded Beothuk sites was scant, suggesting that the clusters of Beothuk occupation were real, and as Locke had suggested, were focused on caribou hunting (Schwarz 1992:37-38).

Since 2010, the Provincial Archaeology Office (PAO) has funded Directed Research projects in the Exploits Valley focused on the re-location of Beothuk sites, house pits and related features. This work has confirmed that while many of these historic resources have been lost to rising water levels on Red Indian Lake and development along the Exploits River, almost half are intact. Through this program, researchers have relocated 52 of 106 previously discovered house pits at 21 sites (McLean 2015). This work also resulted in the discovery of the Sabbath Point (DeBd-08) house pit on Red Indian Lake.

Sabbath Point House Pit

Discovered in 2015 by Laurie McLean and Don Pelley, the house pit at Sabbath Point (DeBd-08) is believed to be the same large "square structure" that was originally reported by John Cartwright in 1768 (see Howley 1915:44) (McLean 2017b:27-28). This feature, which is hexagonal in shape, measures approximately 14m X 18m in size and is the only known undisturbed Beothuk house pit within the Exploits Valley (see Figure 2).

Archaeological site locations and descriptions of Beothuk houses have at best, been limited to GPS coordinates attained from basic handheld units and measurements utilizing traditional survey techniques. Likewise, owing to a variety of factors, including dense vegetation and a history of research that has

valued the recovery of artifacts over architectural studies and the analysis of site features, there are only a handful of accurate maps of Beothuk sites and house pits. Apart from a few graduate theses and unpublished technical reports (e.g. Devereux 1970; Gilbert 2002; LeBlanc 1973; McLean 2016), there are even few published plans of Beothuk house pits and associated features (e.g. Pastore 1992).

Recognizing this deficiency, the PAO's 2017 Directed Research Project identified the need to support the detailed mapping of Beothuk sites, house pits and features. Originally conceived as a task that would employ traditional surveying techniques and equipment, the idea of utilizing emerging UAV technology became an option after discussing the possibility with Marc Bolli and Amanda Crompton, who were planning to undertake a low-elevation aerial survey of historic fisheries sites in Crémaillère Harbour during the summer of 2017. Upon completion of their work on the Northern Peninsula (see Crompton and Bolli 2017), the PAO planned a one-day aerial survey in conjunction with Crompton and Bolli. The Sabbath Point house pit was selected because it is a well-defined and largely undisturbed feature, and because it had recently been cleared of vegetation by McLean and Pelley in 2015.

Methodology

During the initial planning stage, it was believed that sightlines would be sufficient to allow photography from above the trees, and that the Global Positioning System (GPS) signals would be of sufficient strength in the woods to serve both the RTK unit and the GPS-guided drone. With the aim of undertaking detailed photogrammetry as a means to produce accurate orthomosaic mapping, an autonomous flight path was designed to deploy the drone above the tree canopy in a regular grid pattern. This pre-flight planning aimed at maximizing photo coverage while minimizing flight time. Aerial photography would be undertaken using a DJI Mavic Pro drone, equipped with a gimbal-attached Sony Exmor R IMX377, 1080p camera (owned and operated by Marc Bolli).

The RTK portion of the project included the use of a series of ground targets that would serve as surface control points. These points, which would be measured with an RTK unit (consisting of an Emlid Reach RTK kit, a portable Wi-Fi router, and a base station and rover designed and built by Bolli) are to provide accurate geographical positioning of the mapping that would be produced from the photography. A standard measuring tape was used to record the distance between the Ground Control Points.

Figure 3: Sabbath Point House Pit with RTK Targets.

Technical Challenges

Upon arrival at the Sabbath Point site, it was determined that the tree cover would preclude the use of drone mounted camera from above the canopy, and that the strength of a GPS signal was too weak to allow the drone to operate autonomously. Considering these challenges, it was determined that a stronger GPS signal would be required to permit the deployment of the drone (which was locked down by its own software) and, that the drone would have to be flown manually, below the canopy.

Survey team members, John Erwin, Stephen Hull and Stefanie Lode served as spotters around the perimeter of the site to ensure that drone operator Marc Bolli maintained sufficient distance between the drone and the trees. Subsequently, a Wi-Fi hotspot, created using a cell phone allowed the deployment of the drone and a seemingly sufficient signal for the computer controlled RTK equipment. Within an hour or so of resolving these issues, Bolli successfully conducted two low altitude (<5m) manually controlled drone flights of approximately 20 minutes each (see Figure 3).

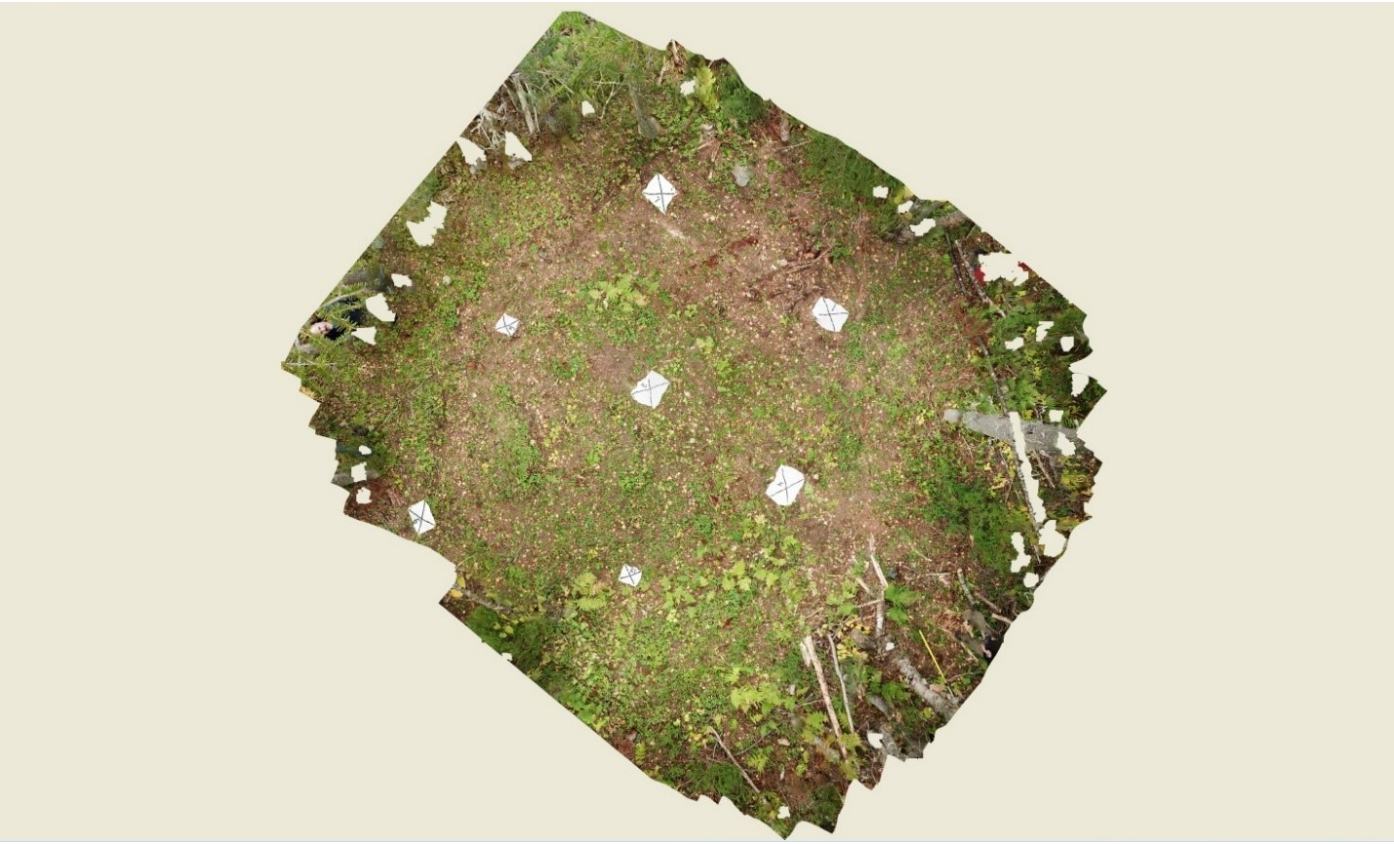
Survey Results

In total, 302 Images @ 4000 X 3000 resolution (Ground resolution: 0.931 mm/pix) covering an area 59.2 m² in size were shot. The photos were transformed into a point cloud consisting of 113,953 points and rendered into a 10,540 x 10,708 pix orthomosaic map using Agisoft Photoscan software (see Figure 4). Bolli undertook the initial computational work using Agisoft Photoscan software and produced the first accurate mapping of this archaeological feature.

The aerial imagery in Figure 4 is a low-resolution proof of a photomosaic produced in Agisoft Photoscan software that corrected for camera angles and photo heights to produce this aerial photo of the Sabbath Point house pit. While low-level overhead photography of a site has long been a technique in archaeology using handheld and mounted cameras on ladders, bipods etc., such images generally suffer from lens distortion, and have limited use for research.

The images derived from the drone flights were stitched together and corrected using computer software that provides highly accurate and scalable

Figure 4: Aerial Imagery Photomosaic of the Sabbath Point House Pit.



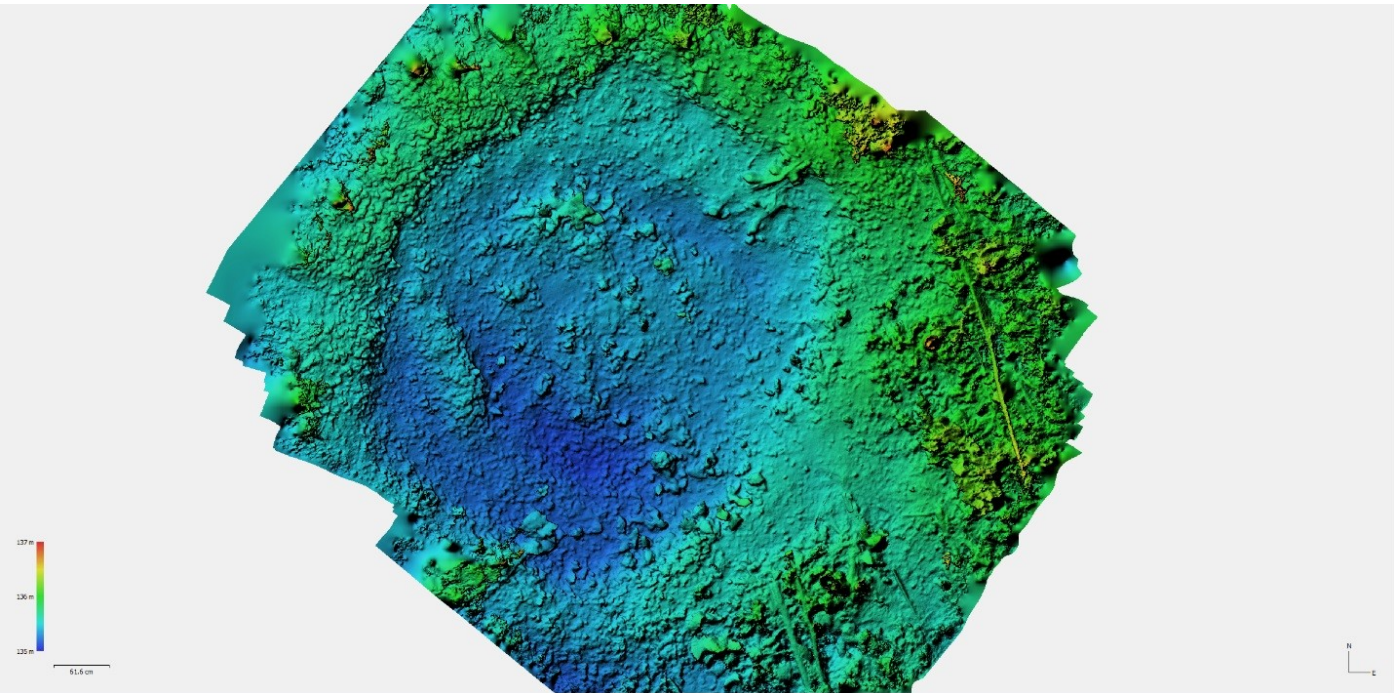


Figure 5: False Colour Elevation Image of the Sabbath Point House Pit.

images that were further processed as orthographic images representing three-dimensional objects in two dimensions. Figure 5, for example, is a low-resolution proof that provides a relative depth dimension through false colour imaging - with the dark blue range representing the lowest elevation and the green and yellow, the highest points on the site. Not only is this image an accurate representation of the feature in two dimensions, but it provides elevation details otherwise not visible to the naked eye.

The Agisoft Photoscan software was also used to render a traditional topographic map of the Sabbath Point house pit. Figure 6 is a low-resolution contour map with a one-centimeter contour interval. Utilizing this kind of rendering software, contour maps such as this are easily rendered at virtually any contour interval in a matter of seconds.

Discussion of Results

The mapping of archaeological features is not only an important part of the preservation of site information, but can play an important role in their analysis, excavation and interpretation. UAV technology is rapidly becoming adopted by archaeologists for a variety of purposes, including mapping and remote sensing (e.g. Prentiss 2016). The use of UAV assisted photogrammetry can be a superior method of mapping archaeological sites and features that can decrease field time and associated costs. It also has the added benefit of producing photomosaic images not produced with traditional survey techniques. However, standard commercially available UAVs (that have not been retrofitted with LIDAR) are optimally used in areas that are not covered by dense forest; heavy tree cover obscures the underlying topographical detail of the ground surface. The use of UAV technology in the case of the Sabbath Point Beothuk house pit provides proof of the utility of this technology on a wooded (and thus obscured) archaeological site that otherwise would have required traditional methods of surveying to produce similar mapping.

Considering the varying locations, terrain and vegetation along the Exploits, UAV assisted photogrammetry does have limitations and challenges. As noted, tree cover is probably the biggest hurdle in successfully conducting this type of work. In the case of Sabbath Point, the house pit was relatively free of vegetation under the canopy, which permitted a low-level flight. In many cases, low tree growth, and brush would require extensive clearing prior to drone flight. Though UAV assisted photogrammetry may not be useful in every situation, its effectiveness is largely dependent on local environments. In the case of Sabbath Point, the unusually low-level flight was a necessary condition that yielded incredibly detailed results. While the amounts of data generated by this project far exceeded what was necessary to produce useful

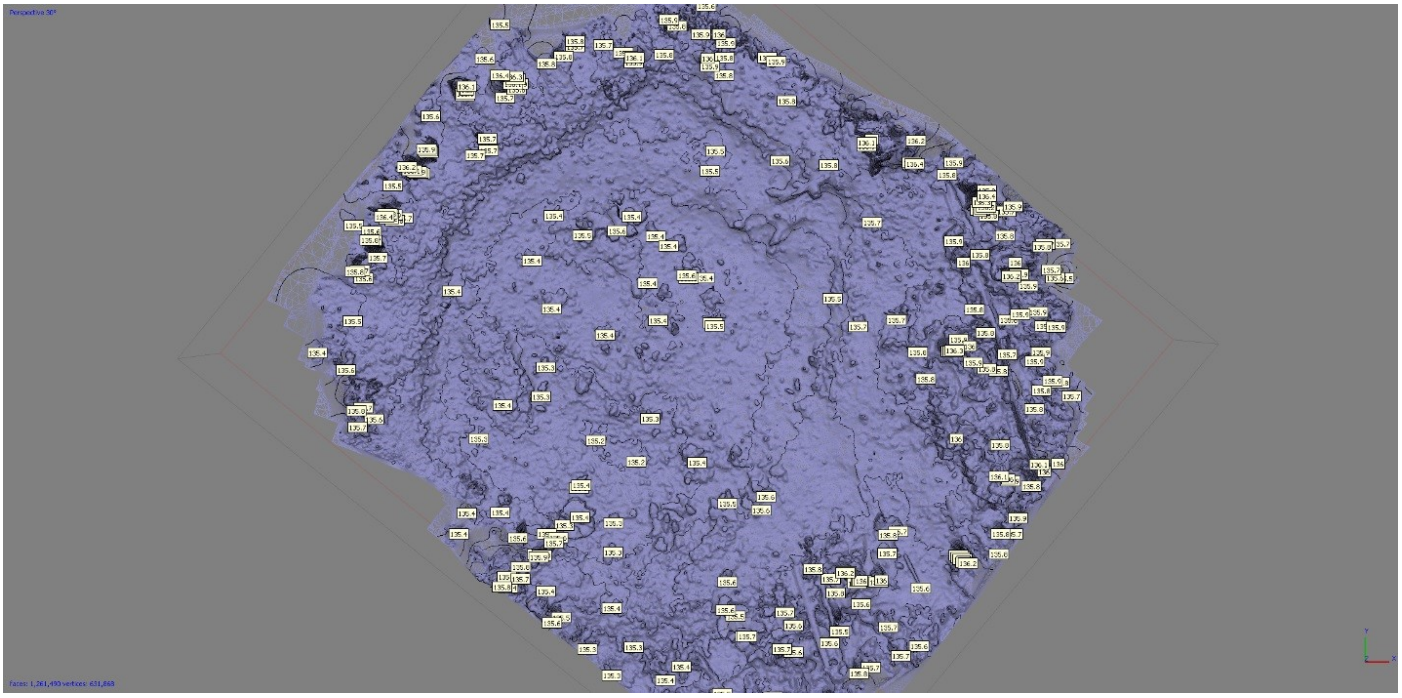


Figure 6: Topographic Mapping of the Sabbath Point House Pit.

mapping, it did prove to be a successful test of the technology in an environment which seemingly should have precluded its use.

The RTK data, which is being further processed, may help us refine the positional accuracy of our photogrammetry, though the absence of a wide view of the sky at the Sabbath Point site may yet remain a limiting factor on the confidence of our results. Nevertheless, the UAV mapping method that we describe here is still useful in the absence of reliable RTK results. We can still incorporate the mapped landscape into the PAO's GIS database—which is the official repository of archaeological site data for the province. Ultimately, high detailed site mapping which is orthographically corrected will extend the depth and utility of the site records database both as a permanent record of the provincial inventory, and as a research tool for academic and non-academic purposes.

Aside from the flight requirements (e.g. the drone, associated flight software, flight training and regulatory permits), the computation of aerial data is the key to producing accurate mapping. Several software packages (both proprietary and open-source) can process aerial data. However, their computational requirements are CPU, memory, and I/O intensive, which can produce a substantial computational bottleneck that a standard workstation may well struggle to resolve (e.g. Crompton, Bolli and Stueker 2017). As a result, post-processing of Sabbath Point field data (using Agisoft Photoscan) was made possible by the computational resources at Memorial University's Computing, Simulation and Landmark Visualization Facility (CSLV), part of the CREAIT network (https://www.mun.ca/research/resources/creait/physical-sci/cslv/). We also made use of the Advanced Research Computing (ARC) resources of ACENET (http://www.ace-net.ca/, a regional partner of Compute Canada) to further examine our data. In this case, we used Open Drone Map (ODM) software running on a Compute Canada cloud instance to generate a second point cloud image for a validity check on our results with Agisoft Photoscan.

Future Work and Research Potential

This exercise has provided an accurate record of the Sabbath Point house pit and serves as a permanent record of this important archaeological feature. More importantly, the generation of similar data at other sites in the Exploits Valley will permit the future analysis of Beothuk architecture to a degree not previously possible. UAV assisted photogrammetry currently has limitations, and is not likely to prove useful on every site. If combined with traditional survey methods, however, a clearer picture of Beothuk architecture and settlement patterning is attainable. In this regard, the results of this pilot project suggest that the

PAO should explore the means by which to facilitate UAV assisted photogrammetry and mapping of Beothuk sites through Directed Research in the Exploits Valley. Likewise, there are potential uses at many other archaeological sites where mapping is currently limited in scope and accuracy.

Acknowledgements

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Provincial Archaeology Office 2017 Field Activities

John Erwin & Stephen Hull
Provincial Archaeology Office

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Crown Land	929	1225	1449	1972	1559	2046	2178	1818	1774	1466	2542
Environmental Assessment	54	38	59	88	27	60	51	40	54	48	73
Mineral Exploration	261	278	211	224	214	288	213	301	285	339	355
Quarry	164	143	218	246	242	243	217	306	455	618	207
Aquaculture	14	16	16	14	7	10	10	7	8	1	1
ILUC	39	37	26	33	44	60	39	38	45	71	51
Archaeology Permits	44	53	51	51	47	46	55	56	49	39	45
Export Permits	1	1	1	4	0	2	3	2	1	1	5
TCII Proposals	14	8	1	2	3	6	3	2	5	3	1
Research Grants	11	12	8	12	7	7	10	8	8	6	8
Roads & Water and Sewer Plans	26	29	43	20	33	20	21	35	13	9	36
Other Projects	10	18	8	31	20	17	15	10	10	8	7
Palaeontology Permits	0	0	0	0	0	8	2	3	4	4	5
Zoning Regulations (Service NL)	0	0	0	0	0	0	0	0	4	2	0
Total	**1567**	**1858**	**2091**	**2697**	**2203**	**2813**	**2817**	**2626**	**2715**	**2615**	**3336**

The Provincial Archaeology Office (PAO) reviewed more than 3300 land use applications, 45 Archaeological and five Palaeontological Permit Applications in 2017. We also reviewed and processed eight Grant Applications and five Cultural Property Export Permit Applications. A large part of our job is to process land use applications in the province to determine whether the area being applied for has known archaeological sites or has archaeological potential. For a complete break down of the numbers over the last 10 years, see the table above. Outside the office, the PAO had a bust 2017 with field surveys in support of its mandate to protect archaeological resources. These surveys most often result from reviews of where there are development pressures, revisits to sites where information is out of date or incomplete, and to areas where there are threats to archaeological resources such as rising lake levels and coastal erosion. In addition, we will routinely follow up on reports made by the public about potential historic resources that they have encountered. The summer of 2017 was no exception, with three multi-day regional surveys including: (1) Central Newfoundland, (2) Eastern Newfoundland, and (3) West Newfoundland / Southern Labrador and three day trips to Bristol's Hope, Ship Harbour and Heart's Content. The results of this work are presented chronologically.

1. Central Newfoundland (Permits 17.13)

Whitehorn Cove Reconnaissance - June 12, 2017

The first day of investigations on the Central Survey involved the testing of lands adjacent to a small peninsula at Whitehorn Cove, north of Point Leamington. Situated in an area of high archaeological potential and accessible via a walking trail and woods roads, the area received only cursory attention during an assessment for a nearby trail development (Penney 2002). While no significant historic resources were previously reported, enhanced access and land development pressures in this area were cause for PAO investigation.

Based on the known archaeological sites including a strong Beothuk tradition in the region, combined with favourable physiographic attributes, such as a local fresh water source and an accessible beach, there seemed to be good potential for historic resources in this area. From Point Leamington, the nearest large community, we accessed Whitehorn Cove via a woods road that extended from Main Road. The lands surrounding the cove are relatively low lying, but well drained, sloping toward water and are bounded by a boulder ridge to the southwest and

by two streams (though recently directed through culverts) to the north, further supporting the area's potential for historic resources.

Survey Results for Whitehorn Cove

Work began with a cursory inspection for evidence of any cultural materials within a clearing in the forest along and under a number of recent tree falls. This preliminary foot survey extended to an adjacent ridge (to the southwest) that was heavily treed. This area also contained loosely compacted peaty soils that gave way under foot, revealing an uneven boulder terrain. An inspection of the beach, which consisted of water sorted gravels and large boulder outcrops, was also conducted. None of these areas contained any evidence of historic or pre-contact activities. Considering the exposure provided by the uprooted trees, archaeological testing was limited and consisted of the excavation of six 40X40cm test pits (two in the area of a recent clearing), and four more at 10 meter intervals toward the water's edge. Test pits were excavated to depths of 20-30 centimeters. The soil matrix consisted of a thin black organic layer just below surface that overlay reddish brown sandy soils with pebble inclusions. No cultural materials were noted.

The Woodworth Site (DiAu-03)

The Woodworth Site is a multicomponent site containing Maritime Archaic, Dorset and a possible Beothuk component. Site features include pits, two mounds (a possible burial) and a fish weir. A reported date of 1680+/-100 (GaK-2343) presumably belongs to the Dorset component. Initially entered into the Borden System in 1984 as Woodward's Cabin (DiAv-01), this site was discovered in 1966 by Helen Devereux and identified in her handwritten field notes as "Woodward or Wardens Cabin Site" (Devereux 1965:67). In a revised manuscript Devereux renames this location as "The Woodworth Site", after Joseph Woodworth, a Fisheries Officer from Point Leamington "and in whose family the point had been for several generations" (Devereux 1969:6). Accordingly, census records confirm the Woodworth family in Point Leamington (http://ngb.chebucto.org/C1935/35-point-leamington-tw.shtml).

Since the initial recording error in 1984, which failed to pick up on Devereux's correction, there has been considerable confusion relating to both the Borden number and the site name. Though the Borden number (DiAu-03) was corrected on a later Site Record Form, the site name was further confused by references to it as Wardens Cabin and Western Arm Site. Two subsequent reviews of site records during the 1990s continued to refer to this site as Woodward's Cabin, and has remained so until the writing of this report.

Our site visit was a consequence of the fact that there was no official record of a return site visit. As such, we took the opportunity to attempt to relocate the site, and to determine to what extent it remained intact. As the location of the site was initially based on geographic coordinates that were calculated by hand from 1:50,000 topographic maps, the coordinates were not accurate. Rather, we relied upon site descriptions, which stated that the site was "located on a point of land on the northwest bank of the mouth of West Brook where it debouches into the bottom of West Arm, New Bay" (Devereux 1969). A site plan from the 1969 report, reproduced here as Figure 1, positively identifies the location of this site.

Figure 1: Devereux Site Plan Survey Results for the Woodworth Site. (1969)

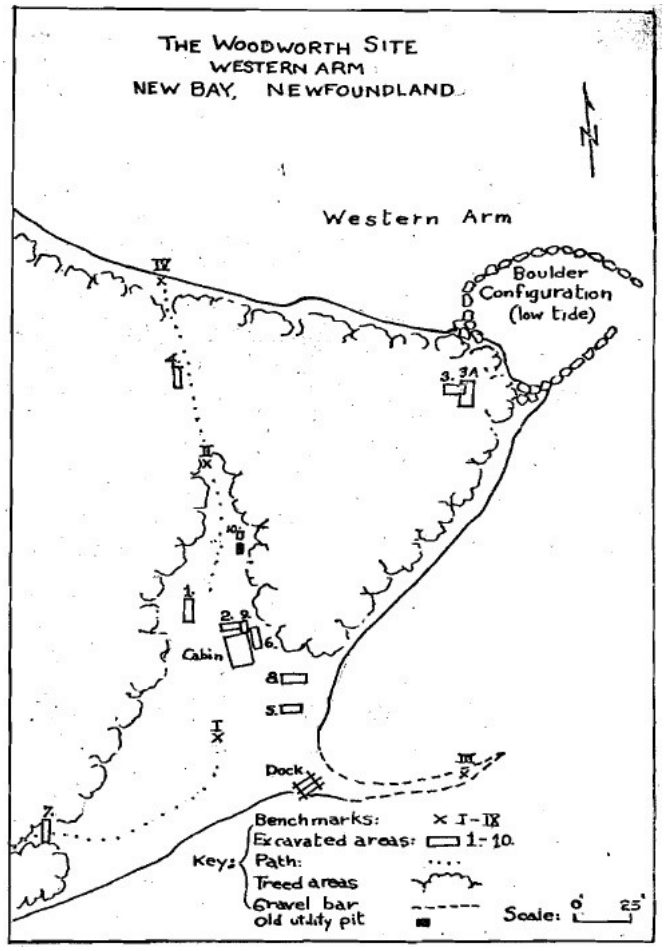


Figure 2: Woodworth Site - 1969.

Although we initially failed to identify the exact location of the site, owing to the fact that we did not have access to the Devereux site plan while in the field, we did take notice of the large boulder configuration, which was visible during our visit. Likewise, we tentatively identified the "cabin" associated with the site – as seen in the 1969/2017 photographic comparison (Figures 2 and 3).

Confined to public lands along the shoreline, we also lacked the time to seek permission from the

Figure 3: Woodworth Site - 2017.

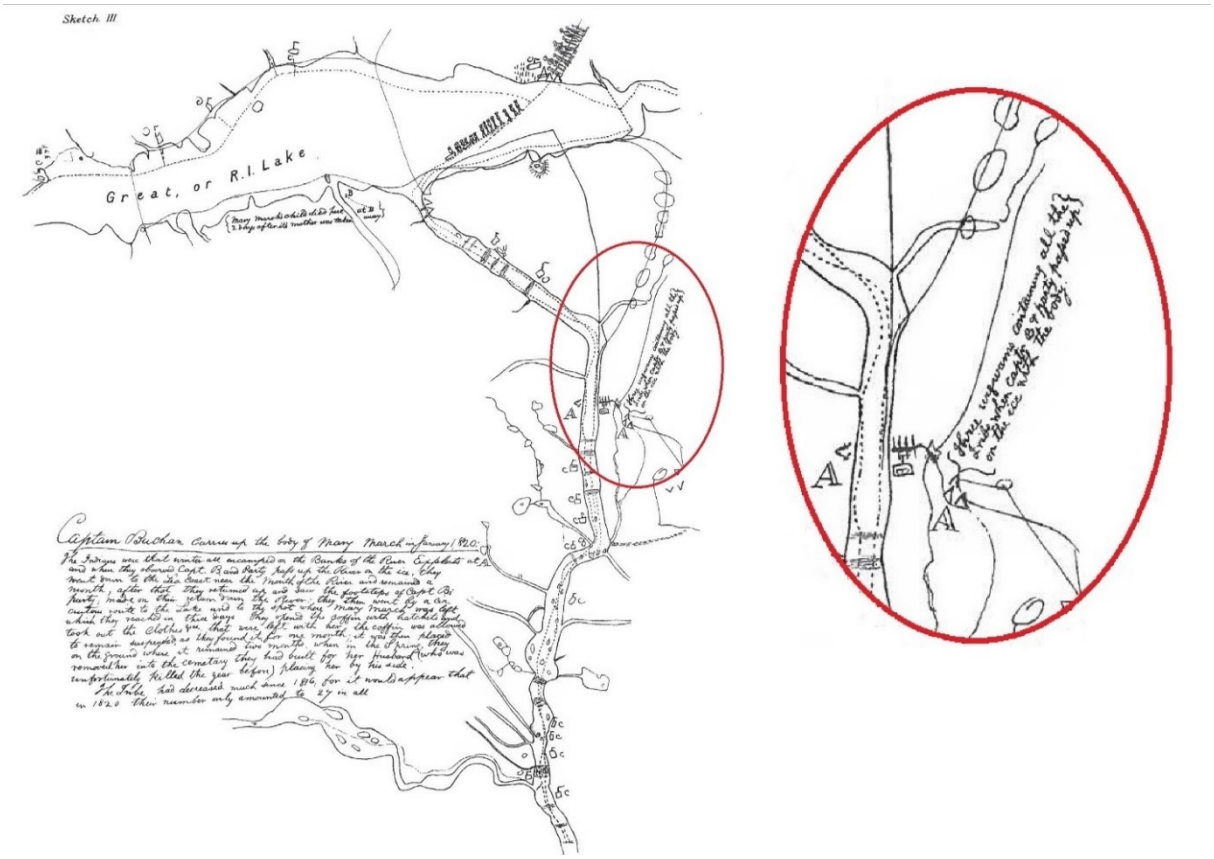


Figure 4: Possible Location of Beothuk Camp on Little Red Indian Pond. Source: Howley 1915:240

current landowner to undertake any testing. Despite the limited nature of our visit, it appears that interior portions of the site remain intact, but that shoreline erosion has taken away the tip of the site and the boulder configuration. In reviewing the site's research history for this site revisit, we have also corrected a long-standing error regarding the site name – confirming it as the Woodworth Site.

Little Red Indian Pond Reconnaissance – June 13, 2017

According to Marshall (1996:177, 231) Little Red Indian Pond is believed to be the possible location noted in Sketch III (Howley 1915:240, 242) and described by Shawnadithit via Cormack's notation as the: "Three wigwams containing all the tribe when Capt. Buchan and party passed up on the ice with the body" (see Figure 4).

The transportation of Demasduit's body by Buchan up the Exploits in January 1820 is one of the most referenced historical events which occurred during the final years of the Beothuk, and marks the period in which the entirety of the Beothuk tribe was said to have "only amounted to 27 in all" (Howley 1915:242). Considering the importance of this event (which likely identifies one of the last documented Beothuk sites), it is surprising that no professional archaeological work had been conducted to test this possibility. The lack of interest in this area may well reflect knowledge in the archaeological community that Don Locke apparently made an unsuccessful attempt to find this site (*Pers. Comm.* Don Pelley 2017).

Survey Results of Little Red Indian Pond

The PAO investigation of Little Red Indian Pond consisted of largely non-intrusive work that focused on a walking survey for suspected features such as house pits, limited metal detection, and very limited subsurface testing. Our access to the pond was via a woods road that was too rough to continue by car past the power line corridor. Walking the remaining distance to the pond, we noted significant tree cutting within 200 meters of the pond, which gave way to boggy conditions at lower elevations.

Little Red Indian Pond is approximately three kilometers in length and one kilometer wide and is located in a fly-infested low lying boggy area that seemingly is an unlikely location for a camp spot,

Figure 5: Little Red Indian Pond Topography and Survey Area.

temporary or otherwise. The topographic line, highlighted in yellow in Figure 5 represents the "dry" edge of the lands surrounding the current pond. The red line within the circle is our GPS track log, and the areas where we conducted our survey. As noted, our work focused on the northwestern edges of the pond in a forested area. Though the forest floor contained a number of depressions, there was no evidence of cultural activity. In these areas, our metal detector signaled a number of low-level readings. After limited shovel testing, these readings were attributed to the iron content of the underlying cobbles. All test pits were shallow, measuring 10 to 20 centimeters in depth with a stratigraphy consisting of a thin organic layer over a reddish brown sandy matrix that contained occasional waterworn cobbles, overlaying a greyish coloured sterile subsoil.

The lack of any positive results in Locke's previous search for the three wigwams, and our negative results may have something to do with the changing environment. As such, it is important that we understand something about pond formation and ecology. The current patchwork of ponds, barrens, forests and bogs, which make up the Island of Newfoundland's current physiography, is a direct result of post-glacial processes. While cultural activities, such as hydroelectric dams, pulp and paper operations on the Exploits River and Red Indian Lake have surely impacted these environments, there are natural processes which also cause local ecologies to change over time. In this regard, ponds have a natural life cycle (see Wetzel 2001) that generally begin with mostly water, few nutrients and little aquatic life. Over time, these waterbodies naturally accumulate nutrients through the growth, death and decay of vegetation growth and aquatic life. This natural cycle of growth (which can occur from decades to centuries) eventually results in an overabundance of material that resists decay and results in the formation of dry land.

Considering the nutrient-rich state of Little Red Indian Pond (as evidenced by jumping trout), it is suggested that pond size has shrunk over the last two hundred years, and that the "Three Wigwams" site described by Shawnadithit might be located at a higher elevation. Based on these conclusions, further investigation of Little Red Indian Pond is warranted, provided one has sufficient amounts of insect repellent and a pair of high rubber boots!

Comfort Cove and Indian Point – June 14, 2017

The lands situated northeast of Campbellton in the vicinity of Comfort Cove and Indian Point were identified by the PAO during the winter of 2017 as an area that has archaeological potential and is easily accessible by car. Identified as an area with archaeological potential in The Beothuk Project (Thomson 1980), there are no known historic resources in the

immediate vicinity, the region contains numerous archaeological sites, has a physiographic proximity and access to the sea, and the local nomenclature is suggestive of indigenous land use.

Comfort Cove Survey Results

Shoreline survey work along Comfort Cove consisted of walking the coastline from Indian Point to a small un-named point about two kilometers south. Wherever possible, the roots of tree falls and the exposed areas beneath them were also examined for evidence of cultural activities. Limited test excavations were also conducted on an ad-hoc basis on level lands and near the beach. Test pits of up to 50 centimeters in depth had a stratigraphy that consisted of a black organic top layer of about 10 centimeters in depth that overlay a reddish brown sandy cobble layer to a depth of about 30 centimeters, which overlay a grey sandy subsoil that was increasingly compact with depth. All test pits were sterile. Unfortunately, much of this area has poor drainage and uneven topography. While a few areas in this vicinity had been grubbed, a number of old cut lines were noted that provided us access through the woods to the beach (see Figure 6).

Figure 6: Comfort Cove Topography.

It is further noted that this area had no immediate fresh water source, and that while the beach was sandy and accessible, there were numerous large boulders located just offshore that could make watercraft landing dangerous, particularly in view of the prevailing on-shore winds and the exposed nature of the coastline. The garbage-strewn beach of recent debris is evidence for the strong prevailing onshore winds.

Indian Point Survey Results

A portion of the area known as Indian Point is partially sheltered from the prevailing winds, and seemed to have a higher potential for cultural resources. Testing, however, revealed no evidence for this. A visual inspection of the beach noted a few eroding areas which were carefully inspected, but no cultural materials were found. Test pits excavated at Indian Point within 10 meters of the beach yielded similar results to those in Comfort Cove. Likewise, the boulder headland was littered with recent debris. Other than the headland at Indian Point, there is no obvious place to land a boat, or easily identifiable reason to locate oneself in a camp in this area. Based on this work at both Comfort Cove and Indian Point, there seems low potential for historic resources in this immediate area.

Badger Chute Site Reconnaissance

Following the Comfort Cove and Indian Point survey, we made an effort to re-locate the Badger Chute site that Don Locke described in his unpublished field journal as consisting of a single house pit located atop a high ridge "near the chute on the Exploits". Described as a Beothuk observation point on the Exploits River that "gave an excellent view for miles downstream", Locke's field notes, which contain a small sketch of the site located on a ridge adjacent to the Badger "chute", is the only evidence we have for this site. Assigned a Borden number (DfBa-11) and entered into the Provincial database of archaeological sites, there is yet to be confirmation of its precise location or its condition.

A desktop assessment of the site's location suggested that the actual location of this site might be about one kilometer northeast of the currently plotted position. In fact, the sketch map of the "point" of land provided in Locke's field notes, nearly matches

Figure 7: Badger Chute track log.

size and shape with a contour on the 1:50,000 map. This proposed location, perched atop the highest contour overlooking the river at this location, seemingly provides an excellent vantage point as a lookout.

Badger Chute Survey Results

Access to the Badger Chute site was surprisingly arduous, owing to steep topography and abandoned tree cuts. Following our GPS coordinates for the "revised" site location, we trekked along a power line corridor to avoid tree falls and through a mature forest with an easily traversed mossy ground cover (see Figure 7). Though many locations within this forested area looked to have some potential, it proved too large to locate anything in the brief time that we had budgeted. Covering a distance of approximately 300 meters toward the revised site coordinates, we eventually located the area demarcated by the spoon shaped contour on the 1:50,000 topographic map.

It is noted that the revised site coordinates brought us into a heavily wooded area with mature trees. Visibility was limited by the forest, and there were no views of the river from this vantage point. As such, Locke's description did not coincide with what we were seeing. Though tree growth over the last 40 years could have obscured the views which Locke had originally reported, the trees which were standing would have predated Locke's visit. Despite the inherent logic of our desktop-based assessment, this result seems to indicate that our revised site location was not the vantage point from which Locke had described from the Badger Chute site. As such, the precise location of the Badger Chute site remains unresolved.

Sabbath Point – June 15, 2017

A survey conducted in 2016 by Laurie McLean of the south shoreline of Red Indian Lake revealed the presence of a previously unrecorded depression. This hexagonal-shaped structure is suspected to be one of the features reported by Cartwright in 1768 (McLean 2016a:3, 2017:27). McLean (2016:4) described the structure as a house pit that is in "excellent condition, exhibiting definite corners, raised walls, and internal features".

Initial testing by McLean in 2016 included ten test pits within the feature, including: two into the hearth that revealed calcined and "brown" bone fragments and a few fire-cracked rocks; and eight throughout the feature, which yielded fire-cracked rocks and bone. Mclean also recovered calcined bone, unburned bone, charcoal and possible bone mash from the house pit's south corner - in an area of a possible second doorway. Additional test pits excavated outside of the feature also contained caribou bone (McLean 2016a:6-7). Though there were no apparent signs of disturbance, the lack of artifacts remained somewhat puzzling, particularly if we accept the proposal that this is an undisturbed site.

In view of the possibility that it is an undisturbed Beothuk house pit, the PAO's 2017 plans were to: 1) further assess the condition of the site, 2) map the site, and 3) conduct non-invasive subsurface testing for iron objects using a metal detector. The use of a metal detector also would serve as a means to plan the future excavation of the site. Any "hits" would be pinned and measured-in and mapped. The PAO completed tasks 1 and 3 on this visit, and undertook mapping with an Unmanned Aerial Vehicle (UAV) on a later site visit in October (see Erwin et al. this volume).

Sabbath Point Site Condition Assessment

Following our work at Little Red Indian Lake, we conducted a visual assessment of the Sabbath Point

site and concluded that the house pit was a very well defined and impressive feature that appeared to be in excellent condition. Though tree growth had undoubtedly disturbed the site's stratigraphy, the overriding concern was the height of Red Indian Lake (which was less than a meter below the top of the shore), and its close proximity to the house pit (about five meters from the edge of the feature). As such, the continuing erosion of the shoreline, as documented by Mclean 2017a:15-22, poses a very real threat to the site. We noted further evidence of erosion during our mapping project in October. At that time, the riverbank immediately adjacent the house pit was undercut up to two meters, which severely threatens the stability of the bank.

Figure 8: Metal detecting the Sabbath Point house pit.

Sabbath Point Metal Detection

On June 15th, 2017 we returned to Sabbath Point to conduct the metal detection portion of the survey. This use of a metal detector on a Late Beothuk site was the first by a professional archaeologist under permit. Considering the lack of any formal artifacts from McLean's extensive testing, there was some doubt as to the undisturbed nature of the site, as late Beothuk house pits generally contain modified iron objects. If iron objects were to be identified in-situ, we could tentatively conclude that metal detectorists such as Locke were not aware of this site. Conversely, while a lack of iron may be evidence for looting, it may relate to site type, age and function.

Metal Detection Survey Methods

The metal detection survey began with the laying of two tape measures extending across the house pit in a north-south and east-west directions (see Figure 8). Using the PAO's Garrett AT Pro International, we made two separate sweeps of the depression on "Iron Mode" at 50 centimeter intervals to ensure overlapping coverage. To minimize possible human error, we conducted two sweeps of the feature, the first by Stephen Hull and the second by John Erwin. In comparing the results, we could revisit any differences in the results. It was planned that any "hits" would be flagged, measured and recorded on a sketch map of the site.

Results of Metal Detection at Sabbath Point

From these efforts, not a single "hit" was received that could be interpreted as a metallic object, iron or otherwise. Based on these negative results, there are a number of possible conclusions: 1) that any iron objects were buried too deeply to be detected; 2) the objects were too degraded and lacked sufficient iron content to be detected; 3) that the instrument malfunctioned; or 4) that no iron objects are buried within the house pit.

In view of these possibilities, we concluded that the detector functioned correctly based on instrument tests conducted before and after use. Considering the effective depth of the instrument is at least 30cm, and that an iron object found outside of the house pit was in excellent state of preservation, we concluded that there are no iron objects buried within the feature.

Based on McLean's extensive testing around the house pit, and the fact that only two of his 100+ test excavations contained evidence for cultural activity (both bone deposits), it seemed unlikely that further investigations outside of the feature would yield positive results. Despite the seemingly low probability of success, we turned our detection efforts outside of the feature to determine if there might be another house or a related feature that evaded McLean and Pelley's previous observations. Working in a largely ad hoc fashion, we swept the area within 10 to 20 meters of the house pit, resulting in a positive "hit"

Figure 9: Spear point in-situ at Sabbath Point.

about eight meters northwest of the edge of the house pit.

In view of the paucity of cultural evidence, we decided that a single test excavation was warranted, on the basis that if successful, we might better establish the age and cultural affiliation of the site. To this end, we requested a permit extension from our office to permit a single test excavation. The test, which we conducted by hand with a trowel resulted in the discovery of a complete Beothuk iron spear point (see Figure 9), which was uncovered approximately 10 to 15 cm below surface. A quarter was buried in its place (at its mid-point), so that it can be accurately located in reference to a permanent datum for the site which has yet to be established.

Mindful of the need to maintain a stable environment for the specimen prior to conservation, we wrapped the spear point in polyethylene that contained the earthen and peat matrix from the excavation, and placed this into a large plastic bag to maintain humidity. In advance of our return to St. John's, we notified The Rooms Conservator Rose Smart that we would be delivering this rare object the following day. Likewise, The Rooms Collection Manager Lori Temple facilitated a loan agreement to permit the temporary housing of the specimen while undergoing treatment. On June 16, 2017 the spear point was delivered to The Rooms, where it is currently in conservation.

Object Description and Significance

Very well crafted, the spear point is one of the best-preserved Beothuk iron objects yet discovered. Comparable to a specimen on display at the Mary March Museum, it measures approximately 38.5cm in length, has a blade with of 2.5cm, and a shaft diameter of 0.9cm (See Figure 10). A more precise measurement and a detailed physical analysis is to follow post-conservation.

In McLean's "A Guide to Beothuk Iron", it is noted that 3723 Beothuk iron artifacts had been collected from 35 sites up until 2003. Of this total, 1571 were from 28 known interior sites, and 98% of these from sites on Red Indian Lake and the Exploits River. As the most common formal artifact fashioned by the historic period Beothuk, projectile points are fashioned from re-cycled European objects such as nails, spikes and trap parts. The re-working of these iron objects included techniques such as cold hammering, scoring and grinding. As illustrated in Figure 11, a typology of iron projectile points was proposed by McLean which includes four main Types and nine Sub-Types based on material, method of manufacture, and relative age (McLean 2003:7).

Identified as an "A-min" or "A-mina" the Sabbath Point specimen is the type of projectile point illustrated by Shawnadithit in sketch VIII (Howley 1915: 249), and identified as a "Deer Spear", which corroborates its distribution, as Mclean (2003:11) suggested, to Newfoundland's interior. From an archaeological perspective, the deer spear is also a defining characteristic of historic Beothuk sites (Devereux 1970:65) which are found in the island's interior re-

Figure 10: Sabbath Point Deer Spear. Photo: Lori Temple, The Rooms Museum

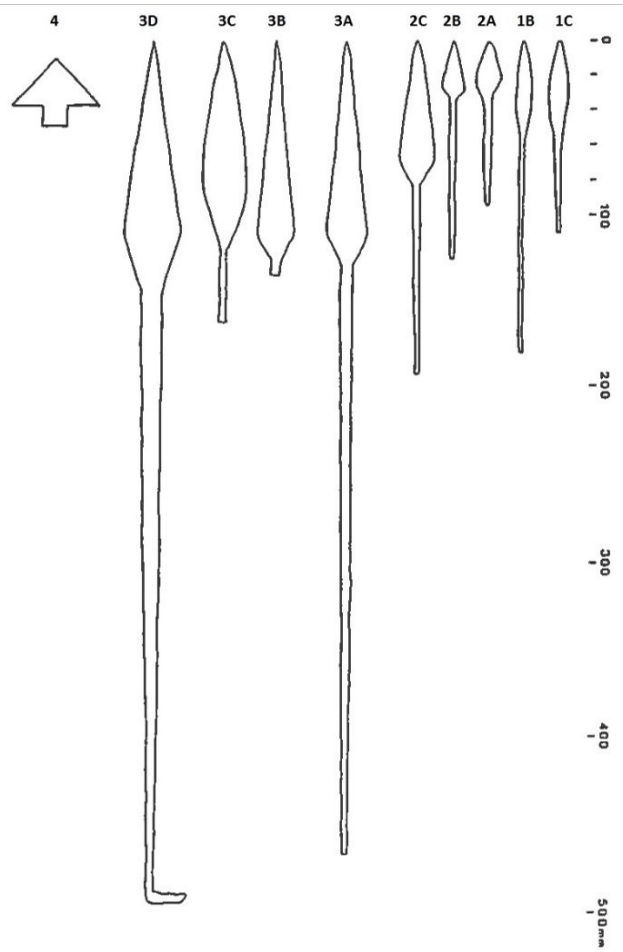


Figure 11: Types of Beothuk iron projectile points.
Source: McLean 2003:6

gion and at key locations where caribou could be intercepted.

Based on a preliminary review of the literature and The Rooms database, similar specimens were reportedly recovered from June's Cove 1 (DeBd-03) and Red Indian Falls III (DfBb-02) (The Rooms database); Pope's Point (DfBa-01) (see Plate 16 Devereux 1965, 1969b:4); North Angle aka Wigwam Brook (DfAw-01) (Devereux 1969b:3-4); Beaches (DeAk-01) (Devereux 1966, 1969b:6); and Indian Point (Devereux 1970:22, 63). Upon a brief visit to examine Type 3 projectile points in the Provincial collection, I noted that Type 3D specimens (which have the squared tang preserved) are limited in number . While there are a greater number of incomplete Type 3 projectile points in the Provincial collection, poor preservation makes it impossible to determine their subtype.

Aspen and Boom Islands - June 15, 2017

Located within the most-easterly concentration of Beothuk sites on the Exploits River (aka part of the Nimrod's Pool Complex), Aspen Island 2 (DfAw-05) and Boom Island (DfAw-03) have been the subject of recent salvage work undertaken by Laurie McLean through the PAO's Directed Research program (see McLean 2015, 2016b, 2017b). Though initially not part of the PAO's 2017 plans, we took the opportunity to visit both sites as offered by Mr. Don Pelley, who graciously provided boat transportation to these island sites. The site visits provided us the opportunity to assess the conditions of both sites, and to conduct a brief metal detection survey of the easternmost cluster of Beothuk house pits on Aspen Island.

Aspen Island (Groswater) component

Aspen Island 2 (DfAw-02) is a large multi-component site located on the south side of Aspen island and is reported to include Maritime Archaic, Groswater, Dorset, Little Passage and Beothuk occupations. The eroding shoreline (see Figure 12) and the exposure of fire-cracked rocks and a hearth feature prompted the PAO to sponsor salvage work in 2016 through its Directed Research Program. This work confirmed a Groswater Palaeoeskimo cultural affiliation and produced a radiocarbon result of 2220+/-30BP (Beta-422460) reported by McLean (2016b:76).

Our visit to Aspen Island confirmed continuing erosion of the shoreline at this location, and that remnants of the Groswater component continued to produce flakes and lithic artifacts, including the distal portion of a finely worked planoconvex endblade salvaged by Don Pelley in the spring of 2017. As one of the few known interior Groswater sites, Aspen Island 2 provides an interesting Palaeoeskimo adaptation meriting further study.

Metal Detection of Aspen Island Beothuk House Pits

Based upon our success at Sabbath Point with metal detection, we revisited the Beothuk house pits at Aspen Island 2 to determine if any iron objects escaped Don Locke's collection efforts – as it was widely believed that all of the sites that he had visited in the 1970s and 1980s were now largely devoid their iron artifacts. The readings obtained in our survey of the Aspen Island house pits were similar in depth and strength to that of the deer spear recovered from Sabbath Point. In total, there were a few positive

Figure 12: Aspen Island Shoreline Erosion.

readings, with at least one "hit" from each of the ten pit features surveyed. Although we did not undertake any test excavations to confirm the nature of these objects, it seems likely that some iron may have eluded Locke's collection activities. Architecturally, many of the house pits also seem to be in good condition, and combined with these results, suggest that there remains good potential for excavation of some of these features. The prospect of excavating Beothuk house pits previously visited by Locke may be a more fruitful endeavor than many had previously believed. Accordingly, the integrity of these sites should be re-evaluated based upon these preliminary findings.

Boom Island Reconnaissance

Along its eastern edge, Boom Island (DfAw-03) contains a series of often-flooded fire-cracked rock Beothuk and Little Passage features that McLean recently mapped, assessed, tested and excavated (see McLean 2015, 2016b). We conducted a short reconnaissance along the eastern edge of the island in an area where McLean worked in 2016. Except for some evidence of cultural materials along the water's edge, the vast majority of the features were under approximately one meter of water – which was an exposed terrace in 2015.

All of this area was under water, and a portion of the bank was eroding, with a mix of historic and pre-contact materials being lost to the river. The monitoring of water levels and the ability to conduct salvage operations at a moment's notice are keys to any future work that might be possible on Boom Island. In this respect, NL Hydro's proposed work at Goodyear's Dam (SEM 2017) offers a scenario in which further work might be possible in the near future.

Conclusions

The Central Region Survey was the first of three planned trips conducted by the PAO to undertake archaeological work in the summer of 2017. These surveys are an important part of the work that the PAO conducts and can influence the direction of future research. Though our efforts on Little Red Indian Lake were unsuccessful, our observations suggest that one of the last known Beothuk sites has yet to be found.

In revisiting previously recorded sites, we are not only able to correct previous recording errors, but we can identify the current state and condition of sites. This is of particular importance with regard to climate change, coastal erosion and protection of these resources. Likewise, these surveys allow us to follow-up on reports made by the public about potential historic resources that they have encountered.

Our use of a metal detector on Red Indian Lake and on Aspen Island proved successful. These results suggest that some Beothuk iron eluded Locke's efforts, and that such sites may have more archaeological potential than previously believed. As erosion along Red Indian Lake and the Exploits continues to threaten the historic resources of this region, it is essential that more work be conducted at these sites before they are lost

2. Eastern Newfoundland (Permit 17.17)

The first day of activities on our Eastern Survey included work in the Towns of Trinity and Champney's West. Assisted by Gerry Osmond, Director of Arts & Heritage in the Department of Culture, Tourism, Culture, Industry and Innovation (TCII), this work was in response to reports of disturbance by metal detec-

torists who had been active in both of these communities.

Trinity Beach - June 20, 2017

A brief survey was conducted along the south side of Southwest Arm, Trinity Harbour, where a metal detectorist had reported finding a coin and pipe stems. We examined three areas along this stretch of shoreline and found evidence of recent disturbance at the first of three areas from which we reported three new sites: Trinity Beach 1 (DcAi-37); Trinity Beach 2 (DcAi-38) and Trinity Beach 3 (DcAi-39).

Trinity Beach 1 (DcAi-37) is situated on a high sloping area of land that contains only a few level areas suitable for building. Our work was limited to visual inspection, and no shovel testing was necessary due to widespread disturbance from recent shovel excavations. Ground disturbances were visible near a stone foundation and possible root cellar features. Based upon the presence of refined white earthenware, wire nail fragments and pieces of sheet metal, these features date to the late 19th, early 20thC. No artifacts were collected.

Trinity Beach 2 is located near an intermittent stream and consists of a garden, a hillside midden, and a rectangular levelled area that was likely the location of a structure. Tobacco pipe stems, a tobacco bowl fragment, as well as some refined white earthenware were collected from the midden. The pipe bowl contains a Masonic symbol consisting of a compass and divider with the letter "G "at the center – a fairly common 19thC decorated bowl form (Barry Gaulton 2017 Pers. Comm.). These materials date the site to the late 19th –early 20th century.

Trinity Beach 3 (DcAi-39) site contains the greatest number of visible features from the surface, including a well-defined rectangular root cellar, a possible second root cellar, garden areas and a level area of ground that looks to have been the location of a structure (possible house). This area also has a diverted water source that flows through a culvert that has made much of the upper area of the site boggy. No artifacts were collected.

Champney's West - June 20, 2017

Upon completion of our work in Trinity, we made our way to Champney's West, where we met with members of the Champney's West Heritage Group Inc. (http://champneysisland.net/) Wayne Freeman and Martin Hiscock. They had reported to the PAO earlier in 2017, that the site of Fox Island 1 (DcAn-01) had suffered further looting. Located on a high plateau some 35masl, the Fox Island 1 site is suspected to be an English civil fort constructed during Queen Anne's war 1702 – 1713. Most likely first occupied during the winter of 1711.

Historically, Prowse (1896:271) makes a brief mention of "Foxe's Island" in Trinity Bay in his publication of "Captain Crowe's Laws" of 23rd October 1711: "5th. Inhabitants, fishermen, and servants to repair to winter quarters allotted them by 1st of October, and be under command of several governors for better security against the enemy in small bodies to particular places (to wit): – …Trinity Bay, on Foxes Island and Dildo Island".

Previous Archaeological Work at Fox Island 1

Initially reported by Gerald Penney in a 1978 report entitled: *An Archaeological Survey of the North Side of Trinity Bay, from Cape Bonavista to the Isthmus of Avalon*, Fox Island 1 was revisited in 1995 as part of The Trinity Bight Archaeology Project which noted "the remains of approximately fifteen earthen features or structures at the site" (Skanes and Reynolds 1996:26). Despite its potential significance, the site has yet to receive little more than a cursory look, probably because of the scale of the potential undertaking, not to mention its location, which demands some serious strenuous physical activity to reach.

The PAO made two previous visits to the site. The first was by Ken Reynolds in 2008, and the second by Stephen Hull in 2014. Though the site was reported to be in good condition, evidence of illegal digging was noted. As such, it was recommended that the site should be monitored regularly. To this end, members of the Champney's West Heritage group became unofficial custodians of the site, keeping an eye on it and reporting to the PAO any signs of disturbance.

Fox Island Reconnaissance 2017

Upon our ascent to Fox Island 1 (see Figure 13), we undertook a brief visual survey of the more obvious features, including, cellars, depressions and the remains of two wells. There was also evidence for gardening activities and possible residential land use that seemingly post-dated the fort. There were no obvious signs of significant disturbance, and considering the enormous size of the site, it appears that the vast majority of the deposits remain intact. Of particular in-

Figure 13: Fox Island 1 (DcAh-01).

terest were earthen wall features, which previously had been interpreted as an earth parapet wall.

There seems to remain a good deal of archaeological potential at the Fox Island 1 site. However, there are a couple of major challenges, including the vast size of the site and the possibility that later land use (residential/gardening activities) may have disturbed the site. Accordingly, a Directed Research project has since been initiated to undertake a desktop assessment that will review historical and archival records as well as an assessment for future archaeological work.

Banting Wreck - June 21, 2017

The Banting Interpretation Centre is located in Musgrave Harbour and is the location of the wreckage from the 1941 aviation crash that claimed the life of Sir Frederick Banting, one of the men responsible for the discovery of insulin. Airlifted in 1990 from Seven Mile Pond (where the crash occurred), the wreckage was deposited adjacent a small pond in Banting Park (See Figure 14). This relocation operation was conducted prior to the designation of the crash site as an archaeological resource. As such, there is no known record of provenience information, nor were any conservation efforts undertaken to preserve or protect this historic resource. Over the years, the wreckage, which was open to the elements had been salvaged and further stripped down (see Figure 15 and 16). Additional damage, in the form of recent graffiti, was noted on the relocated portions of the wreckage at its current location.

The text that accompanies the University of Toronto photograph of the 1941 Banting wreck (MS. COLL. 76 Banting), Box 67, Folder 1 states: "Banting was en route to England when his plane, a Lockheed Hudson bomber, crashed on the east coast of Newfoundland on February 20, 1941. Shortly after take-off from Gander the plane had developed mechanical problems. The pilot, J.C. Mackey, attempted to bring the plane down near Musgrave Harbour but hit a tree on landing. Both the radio operator and the navigator were killed on the impact and Banting was fatally injured. He died the next day. The pilot survived"

Now recorded in the PAO inventory as part of the 2007 Newfoundland and Labrador Aviation Resource Inventory, the Banting crash site is a registered archaeological site known as Lockheed Hudson T9449 (DhAl-01). The site's exact location, which is not currently known, undoubtedly contains vestiges of the crash and other archaeological evidence that have yet to be documented.

Upper Saltwater Pond (DiAl-01)

The site of Upper Saltwater Pond, according to Thomson (1980:13), is located roughly "northeast of

Figure 14: Relocated Banting Wreckage.

Figure 15: Banting Wreck In-Situ (1941). Source: http://heritage.utoronto.ca/fedora/repository/default%3A11874

Saltwater Pond (west of Musgrave Harbour)". However, it is plotted on the PAO's 1:50:000 topographic maps northwest of Upper Saltwater Pond. In view of this discrepancy, the PAO visited an area northwest of Saltwater Pond to see if this might be a better match with the limited information that is currently available.

Site Background

The only written description of this site comes in the form of a draft report written by Callum Thomson, who described it as follows: "In 1949, Mr. Mouland's father and brothers had dug into a depression near their turnip garden northeast of Saltwater Pond (west of Musgrave Harbour). This was one of a number of depressions which Mr. Mouland had noted along this beach. The three men had dug down some five feet and had encountered a skull which was complete but had a lesion on one side. They reburied the skull "very carefully" and in the process found three bone pendants, one bone needle and three shell discs" (Thomson 1980:13-14).

In 1978, archaeologists Brenda Clarke and Clifford Evans were taken to the area by Mr. Mouland Jr. (the son of one of the three men who found the site thirty years earlier) and excavated one of the depressions. Although Thomson states that they conducted this work in 1979, and that they had "…excavated one of the depressions and surveyed the area without result" (Thomson 1980:14), it seems, in fact, they did relocate the 1949 excavation as evidenced by the stratigraphic association of the

Figure 16: Banting Wreck 1970s.
Source: http://www.ganderairporthistoricalsociety.org/_html_war/Banting.remnants.htm

Figure 17: Saltwater Pond (1978).

light grey sand in the middle of the dark brown surrounding soil.

Thomson also stated that as part of The Beothuck Project, that Anna Sawicki and Ken Reynolds "dug a few test pits in the area and walked the beach to Main Point, finding nothing" and though these results were negative, that Sawicki recommended "excavating the other depressions at Saltwater Pond" (Thomson 1980:14) as they "may contain undisturbed Beothuk Burials" (Thomson 1980:19). In both of these instances, Thomson states that the location is Saltwater Pond (not Upper Saltwater Pond).

In reviewing the 1978 photographic evidence from Clarke's visit, it was suggested by Stephen Hull that the site location on the current PAO mapping seems to be in error, particularly the lack of houses, which should be visible in the background if the photo was taken at Upper Saltwater Pond. For a comparison of past and present photograph, see Figures 17 and 18.

Based on Thomson's report, and the comparable landforms in the photographic comparison, the presence of vegetation – which was lacking in 1978 seems contrary to what one might expect. While it is possible that barring disturbance, grasses could have re-taken the beach, it is also important to note that there was no evidence for the depressions once said to have been present in this area. Notwithstanding the lack of any remaining evidence for the depressions, the Saltwater Pond Location does seem the more likely location for this site.

Reconnaissance Results and Recommendations

The goal of our visit to Saltwater Pond was to see if this was the likely location of the Mouland Burial site, and to determine, what, if anything remained visible. As such, we made a careful visual survey of the beach area, once we were confident that this was the location of the site. Unfortunately, the coastal environment has changed significantly over the last 39 years, and while the burials may remain intact below the beach surface, there are no longer any obvious visual clues from the surface. While excavations still might yield positive results, non-intrusive survey methods, such as UAV mapping or ground penetrating radar could provide evidence that is not visible on the surface with the naked eye.

A follow-up search for reports and other records (such as field notes) of the 1978 and '79 field work proved negative, as neither the Clark/Evans report or Sawicki/Reynolds notes could be located. Likewise, Lori Temple, the Collections Manager for Archaeology and Ethnology confirmed that there is no record of any artifacts in The Rooms collection.

Boyd's Cove - June 22, 2017

A brief inspection of Boyd's Cove (DiAp-03) was conducted at the request of Provincial Historic Sites (PHS) staff, who reported finding stone flakes eroding from a trail that leads to the archaeological site. As a Provincial Historic Site, Boyd's Cove is both an Interpretation Centre and an archaeological site that attracts a great number of visitors. As such, it is important to continually monitor and manage the ar-

Figure 18: Saltwater Pond Location (2017).

chaeological resources that remain preserved in-situ. In the spring of 2017 it was reported to the PAO that erosion had occurred in an area along a walking trail near Indian Brook that had exposed lithic materials. In examining a number of these objects, that were collected by PHS staff, we confirmed that it was lithic debitage. Upon arrival to the area of the site where staff had found the lithic debris, we noted a few additional flakes near exposed tree roots which appeared to be responsible (along with frost heave) for the exposure of this material. As disturbance was minor, we recommended that additional wood chips be added to the surface of the trail to keep materials in-situ.

A brief walking inspection was made around the remainder of the site, and it was noted that the site was in good condition, and that the area of the tree fall which the PAO excavated and had repaired recovered nicely, and that no further action was required. It was also noted that the trail that leads down to Indian Brook, where there was a tree fall and subsequent cut does continue to erode, and that while it does not look to negatively impact the site any time soon, PHS staff should regularly monitor this area.

Loon Bay - June 22, 2017

Upon completion of our work at Boyd's Cove PHS, we discussed some recent finds that a local resident had made during land clearing and construction activities associated with the construction of his house near Loon Bay. To this end, he showed us a small collection of artifacts, which included lithic and ceramic materials. Located at the bottom of Loon Bay, the property is bisected by a local road that runs down to and along the beachfront.

We confirmed that the specimens which included a ground stone Maritime Archaic axe or adz, a number of flakes, a core, a thin triangular biface and a decorated iron object (possible stove part). While all of the objects, with the exception of the Maritime Archaic ground stone specimen, were recovered in the area of the house construction, the axe/adz was a spot find on the opposite side of the road during grubbing activities.

Our survey activity at this location was limited to a surface inspection of recently exposed areas, and only few additional materials were noted. The original precontact site was disturbed by a later European occupation as evidenced by 19th-20thC historic artifacts, including ceramics and tobacco pipes. During a brief walk along the beach (northeast of the property), a couple of possible root cellars were noted, but not inspected, as they were situated on private lands.

Conclusions

The Eastern Survey was the second of three planned trips by the PAO during the summer of 2017. While only lasting three days, four new sites were reported, including a Maritime Archaic spot find at Loon Cove. Continuing to support Provincial Historic Sites, we returned to Boyd's Cove to assess past and current erosional activities at the site and to make further recommendations to ensure that historic resources are protected and preserved. With the growing interest in metal detecting in the Province, the PAO has noticed an increase of illegal activities and will continue to investigate finds and educate new detectorists whose enthusiasm for the past can lead to the damage of important historic resources.

Western Newfoundland and Southern Labrador (Permit 17.19)

Stock Cove - July 10, 2017

In making our way to conduct the Western and Southern Labrador portions of our 2017 work, the PAO took the opportunity to visit the ongoing investigations of Wolff and Holly at Stock Cove (CkAl-03), Trinity Bay, where they were completing their second season of excavations into the Maritime Archaic occupation of this deeply stratified site. In addition to seeing their work first hand, we took the opportunity to undertake a brief metal detecting survey with the aim of identifying any iron objects that might demonstrate the long-presumed Beothuk occupation of the site.

Originally found by Gerald Penney in 1978 as part of his archaeological survey of the north side of Trinity Bay, Stock Cove (CkAl-03) has long had an important role in the interpretation of pre-contact cultures in this province. From Robbins' investigations of the site in the early 1980s, the concept of Dorset regional variation on the Island of Newfoundland was recognized. Likewise, Robbins's tentative identification of a possible Dorset longhouse at the site remains the only known structure of its kind on the island. The current research at Stock Cove, led by Wolff and Holly (see Holly, Wolff & Erwin 2010, 2015; Wolff, Erwin, Holly & Nomokonova 2011) has continued to demonstrate the uniqueness and importance of this site. Not only is Stock Cove one of the richest Dorest sites on the island, but it is a deeply stratified multi-component site that begins with a Maritime Archaic occupation – some 5000 years ago, and continues with Groswater, followed by Dorset, and ending with Little Passage, and perhaps Beothuk.

Taken by boat to Stock Cove from Sunnyside by Warrick Seaward, we met with Wolff, Holly and crew at about 10am to tour the sites of Stock Cove and Stock Cove West and to begin our metal detecting endeavors. As with our initial use of this device, during our Central Region Survey, it was our intention to pinpoint potential areas that might contain iron that could confirm the presence of a Beothuk occupation. In this regard, Stock Cove is considered the probable site where John Guy observed "nine savage [houses]" in 1612 (Gilbert 1990), however, this has yet to be confirmed in the archaeological record (Holly, Wollf & Erwin 2010)

Stock Cove (CkAl-03) Iron Detection

The metal detecting survey at Stock Cove and Stock Cove West was limited to one afternoon, and was conducted without an established grid. Rather, we took GPS coordinates and used steel pins that could be more precisely located if we found anything of significance. Beginning at the bottom of the Stock Cove site (nearest the beach), our detection activities proceeded to the rear portion of the site. We paid particular attention to earthen depressions and areas situated near partially exposed stone features. There were a number of positive readings in areas of the site nearest the beach, however, Robbins had already excavated this area. It also has long been the focal point for a number of related activities, including visitation, which we concluded were responsible for the positive signals. In total, only one positive reading, nearest the rear portion of Stock Cove produced a positive test result that had some promise.

A small test pit measuring 20cm X 25cm in area (identified as TP1) was excavated by hand to a depth of 10 to 15cm, revealing four thin pieces of copper laying together at an oblique angle just under the root layer. A few small chert flakes of unidentified cultural origin (although likely Little Passage) were found in association with the copper strips. However, despite this physical association, the copper strips do not appear reworked by the Beothuk. Likewise, the small stone flakes could have brought to the upper portion of the site through natural formation processes such as frost heave or cultural disturbance yet recognized. Considering the ephemeral presence of other historic European materials (such as bottle glass

Figure 19: Copper strips.

and nails) at Stock Cove, the copper strips are inconclusive evidence for a Beothuk presence.

These copper pieces (see Figure 19) are similar in thinness to four small thin pieces of copper found at the Stock Cove West site (see Figure 26 in Holly, Wolff & Erwin 2011:25), and interpreted as likely associated with the European activities at the site.

Two other test pits at Stock Cove West yielded iron objects. Both test pits measured approximately 20 X 20 centimeters in size and were excavated by hand with a trowel. TP2 is located at the northerly limit of the Stock Cove West site about one meter north of the unit N113 N100, and TP3 on the "Hill" north of Stock Cove West, approximately ten meters north of the Stock Cove West site.

Test Pit 2 yielded a thick and heavily corroded square iron object at approximately 10 to 15cm below ground surface. The object is clearly linked to the Stock Cove West site and is associated with chert flakes and small pieces of calcined bone that were noted in the 2011 excavation of the site (see Holly, Wolff & Erwin 2011:21). Heavy corrosion precluded identification of this object at the time of excavation. Post-conservation analysis is required.

Test Pit 3 was excavated to a depth of about 20 cm below ground surface and produced lithic debitage and a biface preform. It also produced a steel blade approximately 25 cm in length with "Weldon" embossed into it (see Figure 20). The iron object had no signs of modification that otherwise might be attributed to Beothuk. Having the appearance of a draw knife, it appears to have been broken and abandoned in an area that was known for historic lumbering activities. Hummel (1965:45-46) lists the Weldon mark of William Weldon a Sheffield toolmaker, first appearing as W. Weldon as early as 1774, and by 1787 simplified to Weldon –which continued in use for fifty years.

Romaines River - July 11, 2017

In the fall of 2016, the PAO received a report from a local resident of Stephenville of a possible site in a tributary of Romaines River, near Stephenville. Included were photos of a stone feature that he suggested resembled a "destination marker or a fire pit with an oven attached" (see Figure 21). Situated in a river valley, the feature is bounded by hills on either side. Rich in vegetation, the area has a number of picturesque settings that include waterfalls, lichens, and numerous species of ferns.

Meeting our local informant in Stephenville, we were led to an area that was located in a dry diverted riverbed that contained evidence of recent flooding, including tree falls and erosion. Based upon a comparison of the original photos and what we saw, there had been a good deal of disturbance this past spring. Though the arrangements of rocks in the original photos appeared to be cultural, and perhaps even

Figure 20: Draw knife from Stock Cove West Photo: Lori Temple (2017).

Figure 21: Romaine River stone feature Photo: Jonathan Myers (2017).

Figure 22: Location of "Spearpoint" spot find.

reminiscent of a fish weir, our inspection of what remained was heavily disturbed, and upon closer inspection, appeared to be the result of a significant flood event that had badly disturbed this area.

Continuing our survey of the area approximately 200 meters further up the narrowing river valley, our informant noted that he had found a large waterworn side notched spear point at the location in Figure 22. We have yet to confirm this find.

Labrador Straits – July 12, 2017

The remainder of our work during this trip was in the Labrador Straits. Our aim was to revisit a number of early and important sites known to be the target of local collectors and subject to erosional activities. In view of their importance, and the possibility that lithic materials are likely to have eroded from the site, and that new localities might be exposed, the PAO continues to undertake periodic monitoring of these sites. In 2017, we revisited the following thirteen sites: Graveyard (EiBf-06); L'Anse Amour 3 (EiBf-57); L'Anse Amour 4 (EiBf-58); L'Anse Amour (EiBf -04); Cox Points (EjBe-72); Juniper (EjBe-15); L'Anse au Diable (EjBe-03); L'Anse au Diable 4 (EjBe-35); Cowpath (EjBe-07); Pinware Hill (EjBe-10); Arrowhead Mine 3 (EjBe-84); Iceberg (EjBe-19); and L'Anse au Loup Brook South (EjBe-57).

Graveyard (EiBf-06)

Located west of English Point, this is a multicomponent site containing Maritime Archaic, Palaeoeskimo and Recent Indian lithic materials that was found by McGhee and Tuck in 1973 and excavated in 1974. Described as a small site, 25 square meters of in situ deposits were excavated, and that "only small areas of excavatable deposit remained" (McGhee and Tuck 1975:56). Besides an all-terrain-vehicle (ATV) path that cuts through a portion of the site, which has exposed a small number of light and dark grey chert flakes, there was no evidence of any new site disturbances in 2017. Based upon our brief visual survey, it is also noted apart from a small potentially undisturbed area of trees that might hold some intact cultural materials there is very limited potential for further work at this site.

L'Anse Amour 3 (EiBf-57) and L'Anse Amour 4 (EiBf-58)

Two relatively new sites, L'Anse Amour 3 and L'Anse Amour 4 found by the PAO in 2015 are located in the vicinity of an active quarry operation (aka Jim's Garage) that is located 500 meters east of the L'Anse Amour Burial Mound (EiBf-04). Located in an area of high archaeological potential, any further expansion of quarrying activities is likely a threat to cultural resources. At the time of our survey, neither the L'Anse Amour 3, nor L'Anse Amour 4 sites appeared to be disturbed. Adjacent areas outside the perimeter of the quarry area and covered in tuckamore, also appear to have some potential.

L'Anse Amour (EiBf-04)

A brief visit to the burial mound was conducted after our survey of the L'Anse Amour 3 and 4 sites. Notably, views of the surrounding landscape are disturbed by the proximity of the quarry – a concern that was brought up by a local resident who stopped by to voice his opinion on this matter. Our visit to the site included a brief walkover of adjacent sand dunes and blowouts in which flakes were noted, but not collected.

Cox Points (EjBe-72)

The Cox Points site is located in a large sandy blowout that appears to have been the result of past quarrying operations. Reported in 2003, by Steven Cox, a surface collection was made that consisted of two stemmed points (see Figure 23), a biface preform, a biface tip and edge fragments and retouched flakes – all fashioned from high quality clear and white quartzite. Described as mid-period Maritime Archaic, Cox Points site is perhaps 5,000 to 6,000 years old.

Figure 23: Cox's Points Photo: Steven Cox.

Upon discovery, Cox noted that he did not collect most of the flaking debris that was associated with the site. While the PAO had documented remaining evidence for the site during previous visits, there was, unfortunately nothing left in 2017 – beyond a sterile eroding soil horizon.

A brief reconnaissance was also made of the lands adjacent to the Cox Points site in nearby blowouts and on lands proposed for the L'Anse au Diable Quarry expansion. From this brief survey, only recent historic debris was observed in areas that were recently cleared of vegetation. Previous survey work in this area (e.g. Auger and Stopp 1986; Temple 2003) did not identify any large intact sites, which suggests that there is low potential in this immediate area

Juniper (EjBe-15)

Discovered in 1973, Juniper was reported as a Maritime Archaic site dating to about 4000 years BP. Covering an area of only about ten meters in diameter, the site was largely destroyed by looting by the time of its discovery (McGhee and Tuck 1975:50). Located about 100 meters north of the brook flowing north of the abandoned settlement of L'Anse au Diable and 50 meters northwest of the road, the site was excavated in its entirety in 1974. Our inspection of the area was limited to an actively eroding area south of the site and immediately adjacent the stream, where cultural materials had been noted by PAO during previous visits to this area. After a brief visual inspection of this area, we noted a single flake of grey chert which was not collected.

L'Anse au Diable (EjBe-03)

Discovered by Elmer Harp in 1949, L'Anse au Diable is located in a complex series of dunes and blowouts in a valley floor studded with granite outcrops. The site includes Maritime Archaic and possible Recent Indian cultural material found in a single turf horizon 4-6 inches thick that runs through the dunes. This is a widely known site that has suffered from looting. Our survey efforts included a surface inspection of a large granite outcrop where a good number of white chert flakes were noted during previous PAO visits.

Flake scatters were also noted in areas previously not identified, suggesting that the extent of the site is greater than previously noted. Track logs (see Figure 24) outline the full extent of the area containing lithic scatters – which covers an area of approximately 12,800 square meters. Systematic testing would prove useful to determine the extent of preserved in-situ deposits.

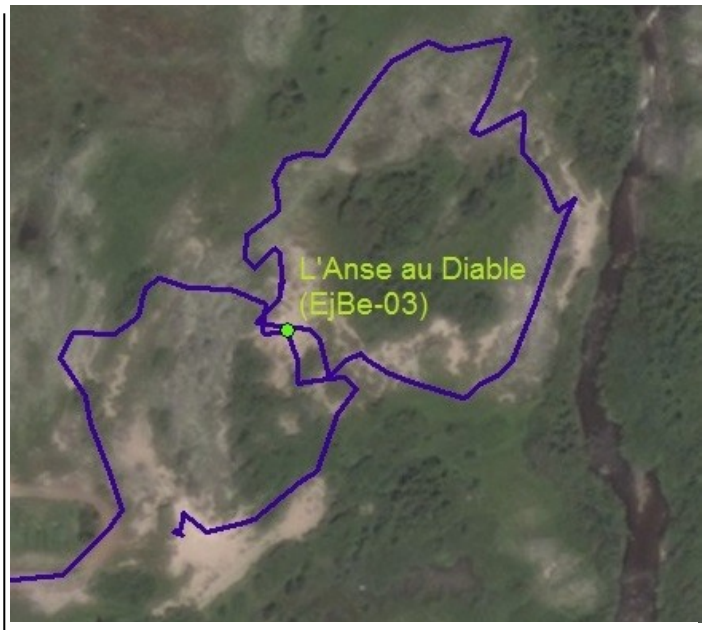


Figure 24: L'Anse au Diable Track Logs.

L'Anse Au Diable 4 (EjBe-35)

Also known as the Marine Services Centre site, L'Anse Au Diable 4 was originally reported as a multicomponent lithic scatter that has long suffered from erosion and looting. Surveyed and tested by 1986, the site was reported to have in-situ Dorset deposits within a peat layer (Auger and Stopp 1987). The site contains much recent debris, and looks to be further disturbed by recent activities. A small scatter of Ramah chert was noted in the exposed sands. A single Ramah flake was also found on the opposite side of the road (see arrow in Figure 25), suggesting that the original site was at one time, much larger, and was

Figure 25: L'Anse Au Diable 4 (EjBe-35).

bisected by the road that leads down to the dock facility.

Cowpath (EjBe-07)

Originally named Modeste 1 by Harp in 1963, the Cowpath site is approximately 8000 years old, and as such is one of the earliest known sites in the Archaic sequence in Labrador. Known for its triangular quartzite projectile points, this site and Pinware Hill (EjBe-10) are situated at about 27 meters above sea level (McGhee and Tuck 1975:111). In 1975, Renouf undertook excavations at Cowpath in eight areas of the most extensively occupied portions of the site and discovered three in-situ hearth features. Cowpath remains one of the most important archaeological discoveries in the province. It also contains potential for further research.

Previously revisited in 2011, the PAO noted that the Labrador Pioneer Foot Path ran through the site (Reynolds, Mercer & Hull 2012:141). That visit also noted considerable disturbance from ATV use. Our 2017 work included monitoring of the remaining historic resources and looked to provide a more precise GPS location for the entirety of the site. Covering a huge area, there are likely tens of thousands of quartzite flakes that litter the exposed excavation areas and disturbed areas throughout the main portion of this site. It is also noted that the Labrador Pioneer Footpath has since been rerouted, but now passes through the more northerly part of the site, causing both ground disturbance and continuing to bring people into contact with these important and rare resources.

Survey Results

Our efforts consisted of visual surveys of the exposed areas, and the excavation of a single test pit. The test pit was excavated in the center of a circular depression that is located about 40 meters south of Renouf's most southerly excavation. Measuring approximately five meters in diameter, the depression had the appearance of a cultural feature, but testing proved inconclusive.

Our surface inspection of the site, however, provided a number of positive results, including a biface fragment and a complete triangular point (see Figure 26), suggesting that the site retains further historic resources, and that there remains good potential for further work between the previously excavated areas of the site.

Pinware Hill (EjBe-10)

First documented by Elmer Harp (1963:200), who made a surface collection at this site, which he originally named Pinware W-3 (MchGee and Tuck 1975:23), Pinware Hill is generally believed to be the oldest site in the province (8855±100 BP (SI-2309)). The triangular quartzite point forms found here are similar to those found at the Cowpath (EjBe-07) site. In 1973 and 1974, a total of 12 m2 of the site was excavated, leaving a small area of "less productive" in -situ deposits. In a 2005 revisit to the site, the PAO recorded an intact hearth with charcoal and white quartz and quartzite flakes.

A sample of the charcoal returned a date of 7400 ± 130 BP (Beta–210314). In 2009, as part of its Directed Research Program, the PAO contracted archaeologist Fred Schwarz to undertake the salvage of what remained of the eroding hearth and a second area with in-situ deposits. Schwarz's salvage of the site resulted in the recovery of over 200 artifacts and almost 4,200 pieces of debitage (2010:19-22). Four

Figure 26: Triangular "Cowpath" Point.

Figure 27: Pinware Hill Erosion.

additional radiocarbon dates from recovered charcoal samples were consistent in age with the PAO's 2005 result. Our 2017 visit to Pinware Hill found numerous pieces of debitage in the blowouts as well as in the area excavated by Schwarz, which continues to be eroding. Though few, if any, in-situ deposits were visible (see Figure 27), further site monitoring is warranted in view of the possibility that previously unrecorded areas become exposed.

Arrowhead Mine 3 (EjBe-84)

Originally discovered in 2009 by PAO archaeologists, Arrowhead Mine 3 is located about one kilometer north of the Iceberg (EjBe -19) site. It is described as a large lithic workshop consisting of scatters of quartzite flakes and cobbles over an area of approximately 1200 m2. Our site revisit intended to establish the cultural affiliation, which was presumed to be early Maritime Archaic, based on material type and elevation at about 30 masl.

Due to the lack of any diagnostic artifacts on the surface, the PAO had previously concluded that the site had been disturbed by collection activities. While surface collections might have this effect, there is no evidence of any ground disturbance or shovel tests. Other than natural shallow blowout areas, the site appears relatively undisturbed with likely in-situ deposits. The discovery of a small knapping station (see Figure 28) containing a large cobble of worked quartzite, a hammerstone and numerous quartzite flakes further attests to the nature of this site.

Based upon a careful hands and knees search for culturally diagnostic tools in the many blowouts associated with this site, the result was a single piece esquillee and a handful of retouched flakes (possibly bifacially-worked) and a few cores. The majority of the lithic debitage consisted of mostly white quartzite (though pink and brown were also present). Arrowhead Mine 3 is located in a similar geographic setting as Cowpath (along the edge of a raised ancient

Figure 28: Knapping station at Arrowhead Mine 3
1) Anvil; 2) Quartzite core; 3) Hammerstone.

Figure 29: Madden's Iceberg Excavations.

beach ridge) and as such, may have a comparable early age.

The abundance of material and large size of the worked cobbles suggest that this material occurred naturally at this location. As a lithic workshop, the lack of diagnostic material on the surface supports this interpretation insofar as opportunistic toolmakers tested the material here and undertook primary stage lithic reduction, leaving few finished formal tools behind.

Based on our 2017 observations, the size of the site was revised, and is now estimated to be about 10,000 m2 in area. Apart from the blowouts, there appears to be large areas where there is potential for excavation of in-situ cultural resources.

Iceberg (EjBe-19)

As the site reported as Diable-2 by Harp (Madden 1976:7), Iceberg is a shallow site situated at about 7 masl. In 1974, a possible hearth feature and some 40 artifacts were unearthed in the preliminary excavation that totaled 19 m2 in area. The artifact assemblage, fashioned largely from Iceberg chalcedony, is assigned to the last period of the Archaic sequence in southern Labrador and dating to about 3000 BP (McGhee and Tuck 1975: 97, 116). Formally excavated in 1975 by Madden, an additional three loci extending over 50 meters to the south was investigated, supporting its place in the late period of the Maritime Archaic sequence in southern Labrador.

During our site revisit, we noted three open excavation areas (see Figure 29 for one of these areas) that contained a small amount of lithic debitage of varying types, including Iceberg and Ramah cherts. No recent cultural disturbances were noted. As with a number of these fully excavated sites, there does appear to be limited potential for further investigation between the open excavation areas – though these areas are unlikely to be as productive as the original units.

Wrinkle (EjBe-20)

Discovered in 1974, the Wrinkle site was identified as a Dorset Palaeoeskimo site located on the most prominent point of land between L'Anse au Diable and Capstan Island. Two vaguely defined boulder and sod ruins were also reported a few meters above sea level in the sandy cove to the west of the site (McGhee and Tuck 1975:73). From the identification of side notched endblades, the site is now also known to contain a Groswater component. Following a number of failed attempts to relocate the site in the 1980s, 90s and 2011, the Palaeoeskimo component of Wrinkle was rediscovered in 2014 as part of the Historic Resources Management Program for the Lower Churchill Project (Schwarz et al. 2014:157).

Our follow-up in 2017 was to verify the location of the 2014 testing and to have another look for the boulder features. Concluding our reconnaissance of the Wrinkle site, we were successful in relocating the 2014 test pits that marked the location of the Palaeoeskimo portion of the site, but failed to find the sod and boulder ruins.

L'Anse au Loup Brook 1 (EjBe-57)

Located on the south bank at the mouth of L'Anse au Loup Brook, this site is attributed to Recent Amerindian cultural designation based on known artifacts in the possession of a local collector. First visited by Auger and Stopp in 1986, no artifacts were found. Subsequent visits since the 1990s have reported historic artifacts at the south end of the site, towards the beach in the ATV trail, and pre-contact material identified over a wider area. Our 2017 revisit noted a sin-

Figure 30: Panoramic View of Ship Harbour Pond (view north).

gle chert flake in an area of significant ATV disturbance. Based on these observations, it would appear that little if any in-situ deposits remain.

Ship Harbour, Placentia and Chapel Cove, Harbour Main Reconnaissance (Permit 17.23)

The Provincial Archaeology Office conducted a day-long survey on August 10, 2017, visiting areas in Ship Harbour, Placentia and Chapel Cove, Harbor Main.

Ship Harbour Hiking Trail

A proposed upgrade to a walking trail around Seal Pond by the Ship Harbour Recreation Inc. was the basis for a PAO survey of a trail which was previously funded by a Provincial grants program (see Figure 30). Now largely overgrown around much of the pond's perimeter, the only the portion of the previous trail that was visible was the area along the active beach (on the western side) which was badly disturbed by erosion and covered in recent debris. Activity was limited to a visual survey. It was noted that areas of the shore along the northern portion of the pond were heavily treed and steeply sloped, rising to a height of 3 to 5 meters; and the grassy area at back of pond was low lying and flooded, as were areas along the south side as evidenced by grass growing out of water. No cultural resources were noted.

Chapel's Cove Root Cellar and Garden Wall (CiAg-05)

In response to a request by the land owner to assess potential historic resources on their lands, PAO staff visited the property on Point Road in Chapel's Cove, Harbour Main. The land owner had originally contacted the Newfoundland and Labrador Archaeological Society (NLAS), and indicated that local residents had told them that the stone structure on their property was a French or English defensive wall dating to the 1700s. The NLAS suggested that they contact the PAO, who indicated that they might be able to visit the area later in the summer of 2017.

Subsequent to receiving further information, photographs and an invitation to conduct a reconnaissance of their property, PAO archaeologists visited the property and met with the owners who showed us the extent of the wall and a stone-lined feature that was subsequently identified as a large root cellar. Combined, these features were registered as a single new archaeological site, namely Chapel's Cove Root Cellar (CiAg-05). The property on Point Road is comprised of undulating and boggy land with a linear stone structure that extends intermittently along its western boundary. Exposed near the house, the wall consists of five to seven courses of tabular stones which lack any evidence of mortar. In areas further north, the feature is less formal, consisting of a linear rubble pile, in keeping with the clearing of land for gardening purposes. No testing in the vicinity of the wall was conducted.

Located about 270m from the road is a large stone lined root cellar measuring about 3.5m X 3.75m, with a maximum wall height of 1.3m (see Figure 31). Lower courses of stone consist of boulders,

Figure 31: Chapel's Cove Root Cellar.

which appear to have been held with mortar. Upper course are constructed of flagstones and are dry laid. The cellar floor had accumulated some recent debris, including a rusty 45-gallon drum. Clearing some of the debris, a barrel hoop with rivets was found, but not collected. A large well-preserved spike was also recovered by the resident, which appeared not to have been used.

A brief walking survey of the property also revealed the remains of a more recent shingled structure held together with wire nails near the northern perimeter of the property, not far from the cliff that overlooks the water's edge. Other trace amounts of 19th-20thC cultural building materials (concrete and brick) were found at various locations across the property were also noted.

Bristol's Hope Reconnaissance (Permit 17.43)

On November 8, 2017, we undertook a one-day reconnaissance at Bristol's Hope with the aim of confirming the location, nature, extent and cultural affiliation of stone constructions reported by a local resident.

Historical Background

Located on the west side of Conception Bay, Bristol's Hope was part of a Colony established in 1617 with headquarters in Harbour Grace (Cell 1969:87). Historically reported as one of the locations for John Guy's colony, this settlement at Mosquito Cove was reportedly thriving as early as 1631 (Newfoundland Encyclopedia, p.264-65). Known as Musketta Cove in 1675 (and later Mosquito Cove), the community was re-named Bristol's Hope in 1910. Though Guy's colony at Cupids is now well established, the early occupation of the Colony of Bristol's Hope remains notable. Despite the colony's limited early success; by "1676 Harbour Grace (which included Bristol's Hope) contained only four planter families" (Handcock 1989:54). Records of Bristol ships working in Newfoundland waters in 1700 suggest a flourishing fishery, accounting for 320 tons out of Musketta Cove and Carbonear (Minchinton 1957:6).

Of note to this investigation is a structure that purportedly was the first Protestant school in Newfoundland. Constructed on the "Southside of the brook in Mosquito and inside the head of the pond" sometime between 1818-1828 (Bristol's Hope Historical Society pamphlet), it was later moved adjacent to the Wesleyan chapel after 1856. In use for more than one hundred years, and now beautifully restored, the structure is a Registered Heritage Structure and serves as a rare example of how wooden schools were constructed during the 1800s in outport Newfoundland http://heritagefoundation.ca/heritage-property/mosquito-school-house-registered-heritage-structure/.

At its height in 1884, the community of Mosquito had a population of over 500 persons, shrinking to 111 by 1976. A residential resurgence in recent years has seen the population rise to 271 in 2011. Evidence in new construction activities during our visit suggests that this growth trend is likely to continue.

Report of Stone Features and Previous Archaeological Research

A former local resident of Bristol's Hope contacted the PAO in the spring of 2017 to report stone constructions and suggested that the features were "very similar to that found at Cupids" and "encompass an area of similar dimensions." Notwithstanding the comparison to Cupids, the photographs that Mr. Buglar provided (see Figures 32 and 33) were of stone

Figure 32: Bristol's Hope Stone "Constructions" Area A. (Photo Source: Ernest Buglar)

Figure 33: Bristol's Hope Stone "Constructions" Area B. (Photo Source: Ernest Buglar)

Though the area of Pope's testing was on the opposite side of the harbor from this location, Buglar's site description and photographic evidence suggested that these ruins were of European construction and that they may be related to these archaeological finds.

Returning to Bristol's Hope as part of a larger survey in 2012 and 2013, Pope noted that limited settlement (until recently), "may mean that early evidence is more accessible archaeologically than in Carbonear itself" and that further archaeological research in the community is warranted (Pope 2016:11).

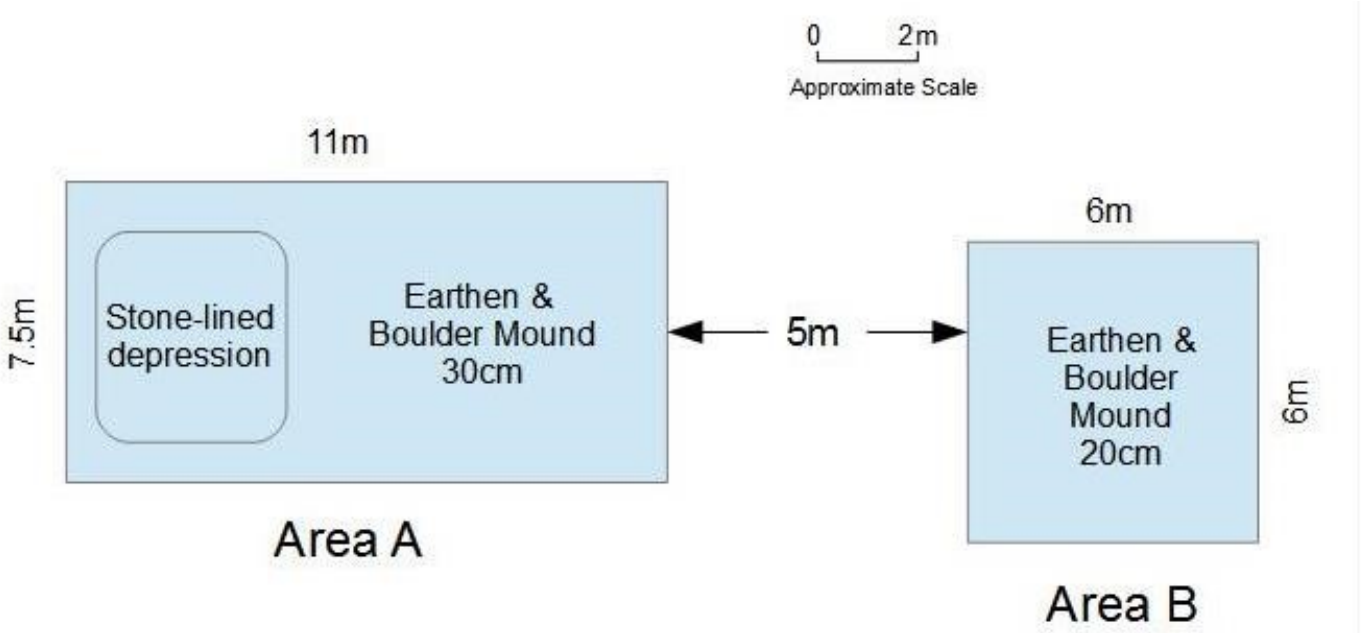
foundations for which the PAO had no previous record.

As a matter of background, archaeologist Dr. Peter Pope conducted an archaeological survey in the community of Bristol's Hope in 1986. Pope reported a number of archaeological sites in the community, including a massive dry stone wall and a site which "proved to be remarkably rich in artifacts, producing about 300 finds, of which 65% appear to be of seventeenth century manufacture" (Pope 1989:274).

Survey Results

On the morning of November 8, 2017, we made a brief visit to the site where two stone and earthen constructions were located in a mature woodlot that extends from the main road, northward toward the brook that feeds Mosquito Pond. Identified as Areas A and B, the stone constructions are oriented in a linear arrangement roughly parallel with Mosquito Brook and cover an area of approximately 160 square metres.

Figure 34: Sketch Map of Stone Features.



This is what the old school house in Bristol's Hope used to look like before the community's Main Road was paved.

Figure 35: Old Schoolhouse and Outbuilding Source: The Compass, February 3, 2015. https://www.pressreader.com/canada/the-compass/20150203/281479274828975

Feature Descriptions

Area A: The feature within this area consists of a level raised rectangular earthen and boulder platform measuring approximately 11 X 7.5 metres in size (see Figure 34). Elevated approximately 30cm above the surrounding land, this feature is almost certainly European in origin and interpreted as a building foundation. Except for some rusty stove parts and a metal hoop found in the southwestern corner of the site, there were no artifacts that could be used to determine the age of the feature. Notwithstanding the lack of temporally diagnostic materials, the large size and long rectangular shape of the platform, along with the informal construction methods (including the presence of a cellar-like pit feature) is consistent with early and/or conventional construction methods found in rural Newfoundland communities.

The virtual lack of cultural materials or even simple refuse that one might normally associate with an abandoned structure of this size is conspicuous, and seems a likely result of the post-depositional history of this site - which might provide clues to its original use.

Area B: The feature within this area consists of a roughly square earthen and boulder mound and measures approximately 6 X 6 metres in size. Rising in height to approximately 20 cm above the ground surface, this feature is not as well defined as the structure in Area A. Similar in construction to the feature in Area A, the feature in Area B also appears to be a platform that served as the foundation for a structure. As with Area A, there is a noticeable lack of any refuse or related construction materials.

Discussion

The notable lack of cultural materials and surface debris within Areas A and B suggests that structures that sat at this location were removed in their entirety. This is consistent with the possibility that this was the original location of the 1818-1828 Mosquito Cove schoolhouse, relocated to the main access road in Bristol's Hope sometime between 1850 and 1870. Further, the footprint of the refurbished schoolhouse, which measures approximately 14m X 8m, is comparable in shape and size to the rectangular platform in Area A. Likewise, the smaller platform is consistent with a second building, a square-shaped three door outhouse, which was situated a few metres to the side and rear of the schoolhouse (see Figures 35 and 36).

Figure 36: Old Schoolhouse, Bristol's Hope. Source: Heritage Newfoundland and Labrador 1989 Serigraph, 28/56 http://www.heritage.nf.ca/articles/arts/images/shepherd-old-schoolhouse.jpg

Further evidence suggesting that the original location of the schoolhouse was at this site includes:

- The consistent written description of the original location of the schoolhouse – on the south side of Mosquito Brook and inside the head of the Pond (Bristol's Hope Historical Society Pamphlet).
- The orientation of the boulder and earthen foundations in Areas A and B parallel to the brook, and not the current road.
- The tidiness of the site, which is consistent with the removal of whole buildings – leaving little evidence other than the boulder and earthen foundations on which they originally resided.
- The location of the outhouse (in Area B) is consistent with historic photographs of the reconstructed structure, insofar as it would have been nearest the door of the schoolhouse – as oriented toward the brook.

Admittedly, this case would prove more convincing if there existed a map or some other archival record of the schoolhouse's original location. However, in lieu of such documentation it appears that these foundations are a good candidate for the original location of the 1818-28 Mosquito schoolhouse. In view of the significance of the schoolhouse, and the possibility that the foundations are related, further work could prove useful in testing this hypothesis.

Other Observations in Bristol's Hope

During the afternoon of November 8, 2017, we accompanied local resident Cal Penney who gave us a tour of the Mosquito schoolhouse. As a committee member of the local historical society and the Project Supervisor for the Mosquito Cove Schoolhouse project, Mr. Penney led us to a number of sites in town that had historic interest, including "Guires Rock" –which local lore suggests was the landing spot for the first missionary to Newfoundland. Additionally, Mr. Penney took us to a small unattended cemetery that he noted was once affiliated with a religious group known as The Gospel Readers.

The Gospel Readers Cemetery

The cemetery covers an area approximately 20m X 27m in size and contains a single toppled grave marker that held a stone plaque indicating the identities of two deceased individuals: Walter and Francis Vaters (sons of Edward and Leah Vaters). A number of other (unmarked) graves in this location are evidenced by shallow depressions in the soil in an area that had recently been cleared and marked by members of the local historical society.

Other areas of potential historical interest, which Mr. Penney noted, included the "Old Well" and a roadside spring, though we did not have sufficient time to visit. In view of our preliminary findings, and Pope's recommendations, Bristol's Hope has considerable potential to yield further evidence of the early European use and occupation of the Island of Newfoundland.

Heart's Content 17.34

As part of the application process for World Heritage status, Provincial Historic Sites staff (PHS) approached the PAO about searching for the shore end of the first successful trans-Atlantic telegraph cable that landed at Heart's Content which connected to Valentia, Ireland.

Between the 7th and 10th of August 1857, the USS Niagara and the HMS Agamemnon managed to lay 385 miles of cable before it broke. The organizers decided to pull the ships back and regroup to figure

Figure 37: Landing the Atlantic Cable of 1866, Heart's Content, Newfoundland. https://upload.wikimedia.org/wikipedia/commons/a/a6/Landing_of_the_Atlantic_Cable_of_1866%2C_Heart%27s_Content%2C_Newfoundland.jpg

Figure 38: Two telegraph cables protruding from a bank, near where the original station once stood.

out how best to proceed. On August 5th, 1858 the USS Niagara landed the first Atlantic telegraph cable at Bay Bulls Arm in Trinity Bay. While the USS Niagara lay the Newfoundland shore end, the HMS Agamemnon lay the Ireland section. Both ships met in the Atlantic, spliced the cable together and headed in their intended directions. The first few days of operation were confined to testing equipment and sending congratulatory messages. The first public message was sent 16th August. Trouble set in shortly thereafter and by September 3rd they had stopped transmitting commercial messages. The line still had some life in it as they worked on trying to get it back but it completely died October 20th.

In July 1865 the ship Great Eastern made the first attempt to lay a new cable from Valentia to the relocated western cable terminal at Heart's Content. This cable broke and was not able to be recovered. On July 27th, 1866, another cable was landed by the Great Eastern at Heart's Content and connected to the station (Figure 37). The Great Eastern headed back out to sea on August 9th to join the search for the broken end of the 1865 cable. They found the cable end on September 2nd, and landed it in Heart's Content September 8th. The 1865 cable was spliced to the end of some of the 1866 cable they had left over. So the first wooden telegraph station at Heart's Content, which was just up (north) the road from the current station, was connected to two telegraph cables. Both would have been 1866 shore ends.

PHS staff had been told previously about two cables protruding from a bank under the road, near where the original station once stood, slightly north of the current cable station. In September PAO and PHS staff investigated these cable ends (Figure 38).

After relocating the two cables we were able to dig a series of test pits tracing them in the ground

Figure 39: Tracing the cables in a series of test pits for at least 15 metres.

Figure 40: End of the cable protruding from the bank. Like the 1866 cable it has a twelve-wire outer armouring and when tightly packed would be about two inches.

for at least 15 metres (Figure 39). Along the whole length they gently turned to the east going under the road but heading towards where the original wooden telegraph station once stood. The two identical cables run parallel to or on top of each other and laying them together appears to be deliberate. The 1866 cable shore end had a twelve-wire outer armouring and its overall diameter should be just about two inches. Both of the cables we traced fit this description (Figure 40).

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The Rigolet Project IV: Mason Island, Snooks Cove, and Lake Melville

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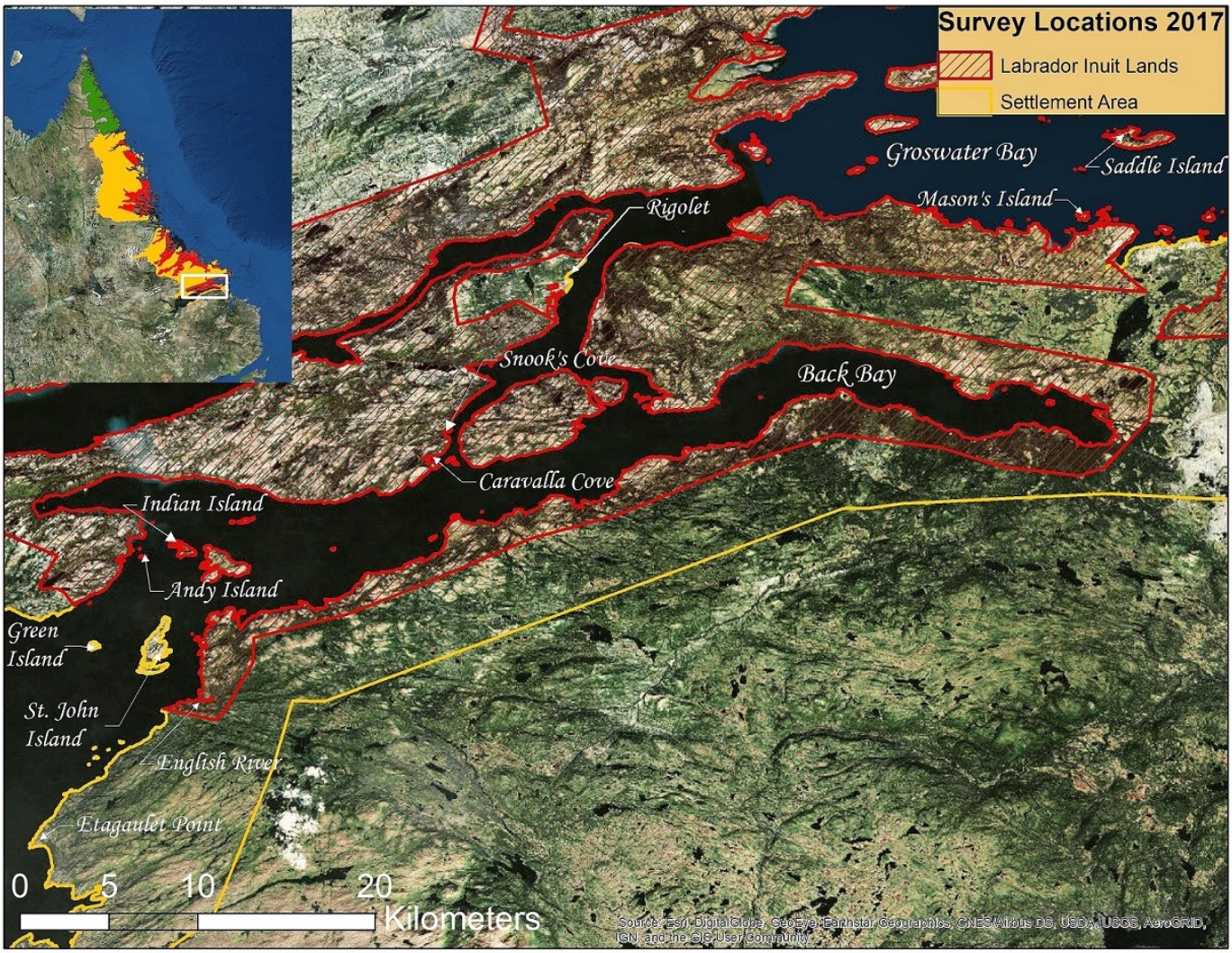

Figure 1: Map of 2017 research area. (J. Brake)

The Rigolet Project completed a fourth season (6-18 August) of surveys in the Rigolet region that included excavation of an unusual cache on Mason Island, investigation of the archaeological potential of Snooks Cove, and surveys at the eastern end of Lake Melville from Etagaulet Point to St. John Island and Valley Bight (Figure 1). The Smithsonian and the Nunatsiavut Archaeology Office supported the project.

Mason's Island

In 2015, we met Levi Wolfrey and Ruth Pottle at their cottage on a cove on the south side of Mason Island, also known as Tinker Harbor. Behind their cottage is a broad, partially blown-out terrace 3.0-3.4 m above sea level. The terrace has archaeological features dating after this feature emerged from the sea 2000-3000 years ago. Spread widely across the wind-blown surface we found a stemmed point of dark grey translucent chert and a thin scatter of flakes, two

Figure 2: Mason's Island-1 excavation.

small 1-meter diameter "Indian Island" hearth pavements, many tent rings, and a 4m diameter, slightly mounded feature with a depressed center surrounded by a ring of narrow, in-pointing slabs. It appeared that several Indian culture groups camped here during the past. None of the features indicated Palaeoeskimo or Inuit connections.

The proximity of the stemmed point and the mound (GbBk-03) suggested an association with the David Michelin or Sid Blake sites in Northwest River that have stemmed points of this type but lack other cultural descriptions. The entire feature was mapped, and four square meters around the pit were excavated to sterile soil (ca 10 cm) without encountering cultural finds. Excavating the central pit revealed it to be conical in shape, one meter wide at the top, and 67 cm deep (Figure 2). Its sides were lined with rock slabs, and the pit fill was beach sand mixed with stains of peat and organic material. Alternating lenses of turf/peat and sand extended down from the blackberry bushes on the surface to a depth of 50 cm. This lensing resulted from a long process of sand infill and vegetation re-growth, so the pit must have been left open for a long time to accumulate these lenses. Two poorly preserved pieces of wood were found 10 cm above the pit bottom, and at its base 67 cm below the surface a piece of charcoal was recovered that provided a c14 date of 1246 - 1302 cal AD (Beta 481306). No bones, red ochre or charcoal stains were found, and the only two artifacts were a flake of dark chert and a flake of tan quartzite found in the fill and likely chance inclusions from the terrace surface. The radial arrangement of surface rocks around the pit was unusual for a cache (normally just a pile of stones). They may have been placed to hold down a skin or birch bark covering over a special type of cache for storing food or other material.

Two other sites were surveyed in 2017. One was a site with several Inuit tent rings, an opened cairn grave, and U-shaped Inuit hearth features at the northwestern tip of the island, first reported by M. Michelin and L. T. Willett in 1987. The other was a new site on the southern side of the island at the southeast end of the 3.4m terrace: an Inuit tent ring with a central hearth on the south side of the inlet to a tidal pond that once made a protected small boat harbor when sea levels were a meter higher than at present. Caches and other tent rings are visible through the vegetation along the north shore of the harbor.

Saddle Island

A brief survey of the southwestern shore of Saddle Island in 2016 showed this mid-bay island has both Innu and Inuit occupations, so we returned to survey the western part of its northern shore. Saddle Island is known for bears and bakeapples, but both were absent this year. Numerous tent rings and boulder

Figure 3: Snooks Cove Hunt and Henley/HBC Structure 1 foundation. View NW.

caches were found at five locations in small coves and on promontories; both Inuit and recent Settler sites were identified while others may be Innu.

Snook's Cove (GaBp-07)

Snook's Cove was first investigated in the early 1970s by Richard Jordan as a by-product of his excavations at Eskimo Island and other sites in the Narrows. Jordan identified two Inuit house foundations on the shore south of the peninsula separating the river from the cove; he excavated one house and sampled the other. Brian Pritchard returned in 2009 and excavated House 4 (Pritchard and Brandy 2010). We found one of Pritchard's survey stakes near a pit in the forest northwest of the present settlement area, facing the river. Two sides of a low sand and gravel building foundation (S1) enclose the pit, and a test pit at the nearby terrace edge produced 19th century artifacts (Figure 3). We located a second similar rectangular foundation (S2) about 50 m to the west. These structures appear to be new additions to the settlement inventory of the Hunt and Henley trading post that operated here starting in the 1830s and which became a Hudson's Bay Company post in 1865. The combination of Inuit settlement and components of a mid-19th century trading post make Snooks Cove a location of special archaeological, historical, and local interest and a potential development opportunity should its resources be thoroughly explored and published.

Caravalla Cove

A brief survey of Caravalla Cove identified two rectangular sod foundations near the shore west of the point dividing the two embayments of the cove. A broad grassy and bramble-filled meadow exists where the forest has been cleared. Tests in the sod foundations produced 19th and 20th century artifacts (Figure 4). Vegetation was too thick to identify other potential features in the meadow, and a survey of the shore south of the river was unproductive.

St. John Island

Lying at the eastern end of Lake Melville where the lake becomes a broad passage leading to the Narrows, St. John Island holds a strategic location, but until this year, it had never been surveyed archaeologically. We found sites on both sides of the tickle separating St. John from Haines Island to the south. Three site loci occur on the north side of the tickle (SJI Tickle-1) about 100 m northwest of the narrows. Structures 1 and 2 are located in two clusters of midden vegetation, and test pits produced clay pipe fragments in both. The third structure is a tent ring on a gravel patch at the high tide line that produced several large iron spikes. SJI Tickle-2 lies on a low tombolo beach extending into the tickle from the north side of

Figure 4: Caravalla Cove Structure 2 annular ware.

Figure 5: St. John Island Tickle-2 Inuit tent ring. View W.

Haines Island. This site was used for summer hunting and travel camps and is strewn with intact and cannibalized tent rings and hearth features, mostly of relatively recent age; a circular Inuit tent ring with outlying stone guy-rope anchors (Figure 5) probably dates to the mid-19th century.

The most important new site of the season, St. John Island-1, is on a high, elevated promontory at the northern tip of the island. This exposed location has a rectangular Labrador Inuit winter sod-house dwelling with two lateral sleeping platforms and a central work area (Figures 6, 7). Large rocks buttress each side of the inner doorway, and a 4-5 m long slab-paved entrance passage extends downslope to the southeast, opening onto a patch of midden vegetation. Tests inside the house produced large amounts of birch bark, food bone, a white seed bead and a lead piece resembling the figure of a human. The site is perfectly preserved. Its exposed location was a mystery until we learned from Charlie Tooktoshina of Rigolet that the current-swept north end of SJI is a great place for netting seals under the winter ice. This site fifteen miles west of the large Inuit site concentration on Eskimo Island is the western-most Inuit winter settlement known in Hamilton Inlet.

St. John Island-2 is a large series of boulder beaches on the west side of the island north of Haines Island Tickle. The six boulder features identified included non-diagnostic tent rings, a possible Inuit grave cairn, and an Inuit fox trap. Some of these, and the trap were probably associated with the nearby winter settlement. As at other raised beach sites in this region, there was no sign of Palaeoeskimo activity; nor was there evidence of boulder pit and caches that are ubiquitous on high beaches on the outer coast.

Figure 6: St. John Island-1 Inuit sod house and midden. View E.

English River North

The mainland coast north of English River has two large boulder beach series that are nearly devoid of vegetation. Like the boulder beaches on St. John Island and Green Island, the raised beaches north of English River seemed ideal for developing Innu and Inuit settlement chronologies from structure types. At ERN-1 we found three tent structures: S1 an oval feature with lateral sleeping areas and a central hearth, reminiscent of 17-18th century Inuit fall/spring dwellings; S2 was a round tent ring with no cultural diagnostics; and S3 was a small rectangular structure of modern recent vintage. Both S1 and S2 were on the first habitable beach above the shore, while S3 was on a beach in the middle of the uplift series.

Indian Island

Neveisik (Pelter), Bear, and Indian Island lie north of St. John Island near the southern entrance to Valley Bight. These islands have many protected coves and skerries and are known for being excellent hunting grounds as well as serving as summer and winter camp locations for travelers moving between western Lake Melville and the Narrows and Groswater Bay. This area has also been a transitional zone for Innu and Inuit peoples. In 2016, we found Inuit sites on Neveisik, and this year, Inuit sites on St. John. Our 2017 survey found two groups of tent rings on a small islet extension at the eastern end of Indian Island (Figure 8). Many were cannibalized and vegetated and none could be identified positively as Inuit, Innu, or settler because they were incomplete or covered with vegetation. The nearby waters here teem with bird life and seals.

Andy Island

Lying south of Burnt Head at the southern entrance of Valley Bight, west of Bear and Indian Islands,

Figure 7: Possible human figure made of lead from St. John Island-1.

Figure 8: Indian Island-1 tent rings. View W.

Andy Island is treeless with high knobs at its north and south ends connected by a low saddle. Three loci were identified: a tent ring (L1) on the south side of the saddle, a cairn/stone feature on the terrace edge to the north (L2), and a possible tent ring on the south side of the saddle (L3). These features are likely from recent times when it becomes difficult to determine cultural identity from tent rings and hearths due to culture blending and the common use of modern technology.

Green Island

Green Island is in the middle of Lake Melville's eastern end and has unusual geology consisting of soft red-purple sandstone rather than granite-gneiss complex of the surrounding areas. Flying over or passing this round island by boat elicited archaeological envy because its treeless raised beaches march from the current shoreline nearly to the forested crest of the island. Despite the ideal setting for developing archaeological site chronology, we found only four small features, and all were recent. L1 is a tent ring with scattered firewood on the northwestern shore on the first prominent terrace. L2a is a cache on the SW corner on a rocky ridge above a seal hunting camp (L2b) containing sealskin stretchers, wood pegs with notches for supporting a tin trapper's stone, and a few tent ring rocks. L3 is a hearth and slab rocks on the first terrace, east of the sealing camp. The use of slabs gave the site a Palaeoeskimo look, but there was no stone tools or debitage, and no charcoal in the central hearth feature. L4 is a tent ring on the first terrace at the extreme east end of the island. None of the higher beaches showed any sign of cultural activity. Early travelers and hunters seem to have avoided Green Island until the advent of outboards and snowmobiles made it safely accessible to goose and seal hunters.

Etagaulet Point

Located midway along the south shore of Lake Melville, Etagaulet Point is known to Rigolet people as "Deer Point." According to Charlie Tooktoshina, this site used to be an important spring seal hunting camp as well as a place to hunt young caribou. Fitzhugh visited Etagaulet briefly in 1968 and again in 1986, when tent rings, komatik parts, sealskin stretcher frames and other materials were visible signs of active use. Today none of this evidence is visible. We found three tent rings containing 19/20th century artifacts,

Figure 9: Etagaulet Point campground. View W.

but most of the site was too heavily vegetated to discern cultural features (Figure 9). Organic deterioration and robust forest and shrub encroachment partially account for the site's transformation. However, the most obvious observation was the absence of recent settlement. As seen in other locations, Etagaulet Point has fallen out of use as a hunting and travel camp because of the advent of rapid outboard and skidoo transportation.

Summary

The 2017 Rigolet Project documented many new sites, with a concentration in eastern Lake Melville. At Snooks Cove, we revisited the Hunt and Henley/ HBC post location where Richard Jordan, Brian Pritchard, and Eliza Brandy excavated 19th century Inuit houses. Here we located two 19th century foundations connected with the post. The combination of a sequence of Inuit dwellings containing material culture and zooarchaeological remains adjacent to trading post facilities offers a good opportunity for studying 19th century Inuit-European interactions that could be used for economic and tourism development. A similar opportunity exists for the site cluster at the eastern end of Lake Melville, of which the foremost prospect is the new Inuit winter site on the northern tip of St. John Island. This site probably served as the basecamp for Inuit sites we identified at the Haines Island Tickle and the SJI-2 boulder beaches, and perhaps others on Neveisik, Bear, and Indian Islands. Nearly all of the raised beaches and points between SJI and Etagaulet Point have evidence of Inuit activity in the 19-early 20th century and were used for a variety of activities, especially spring sealing and caribou hunting in the Mealy Mountains. All are within range for future tourism development connected with the Mealy Mountains national park. We were not able to visit Swallow Harbor, and English River still may hold Viking mysteries concerning their

saga report of a visit to a river flowing from east-to-west (very rare in Labrador!) where Thorvald Erikson was wounded and purportedly buried at a keel-shaped ness, perhaps on the Port Disappointment peninsula. Our surveys demonstrate a major change in settlement patterns related to the traditional use of the eastern and southern shores of Lake Melville by the Inuit through the 19th and mid-20th century. The introduction of rapid outboard and skidoo transport has resulted in abandonment of these traditional locations and replacement by daily forays from Rigolet or the growing cottage community at English River. As usual, there is difficulty in assessing Innu settlements because Innu tend to utilize less visible site locations, some of which we may have found but could not identify as Innu. Finally, the Mason's Island cache adds a useful marker for a type of excavated pit cache not known previously, dating ca. AD 1200s, and likely of late precontact Amerindian affiliation.

The Gateways Project 2017: Hart Chalet, Grand Plain, Grand Isle, and Belles Amours

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Introduction

Over the past 16 years, the Smithsonian's Arctic Studies Center (ASC) has sought to clarify the archaeology of the North Shore of the Gulf of Saint Lawrence. During 2017, the ASC finished excavations at Hart Chalet (EiBh-47) House 3, began work on a qarmat-style Inuit dwelling at Grand Isle-2 (EiBk-54), partially excavated a Groswater camp at Grand Plain (EiBj-41), and surveyed new sites around the west side of Belles Amours Harbor.

The purpose of the Gateways project, begun in 2001, has been to investigate the Indigenous and European archaeology of the Quebec Lower North Shore (LNS) with special attention to the interactions between these cultures and their economies (Fitzhugh 2014, 2015, 2016, 2017a). In recent years, attention has focused on excavations at the Hart Chalet Inuit winter site. House 1, a rectangular sod-walled dwelling with a short entryway was sampled with two cross-trenches that revealed a wood-paved floor and an absence of a stone-edged sleeping platform, cold trap, and stone lintel doorway. The front end of this house was disturbed during construction of the Hart Chalet cottage. Both traditional Inuit and European materials were present, and a large collection of faunal remains, mostly caribou, was recovered. House 2 is a similar-size rectangular Inuit winter dwelling whose entry and doorway were tested and produced soapstone vessel fragments and a walrus ivory needle-case. Most of this structure remains intact and is covered with spruce trees. House 3 was selected for complete excavation because it appeared intact and had a different form than Houses 1 and 2. We assume all three houses were occupied at the same time based on the symmetrical spacing and orientation of the houses, and artifact finds generally support this view. Previous work took place at House 3 in 2015-2016 (Fitzhugh 2017b).

Hart Chalet (EiBh-47), House 3

Like other Inuit winter structures on the Quebec Lower North Shore, House 3 had a short 3-4 meter long entryway that was more like a porch than a tunnel, was floored with planks rather than stone slabs, and had an external cooking hearth on the left as one exited the structure rather than inside the dwelling. A mound of sand, rock, and turf mixed with food bone, tile fragments, and a few artifacts, including an early 17th century French coin, bordered the east side of the doorway. The inner floor was paved with wood planks, as demonstrated by charred surfaces and numerous small nails, plank remnants, and charred wood. Around the central floor of the house, the interface between the cultural level and sterile soil sloped up to the wall without the stone-fronted sleeping platform found in Inuit houses in Labrador (and at Little Canso Island in Jacques Cartier Bay); so House 3 must have had a wood sleeping platform. This architecture is reminiscent of an 18th century structure excavated by Auger (1991) in the seal islands, which also used plank flooring, and exhibited a pronounced "porch." This style of dwelling seems to represent an adaptation of the 17th century Inuit "communal house" to the subarctic environment, and perhaps Hart Chalet represented an early innovation of this architecture.

In addition, the house did not have the usual rectangular shape but was slightly oval; it lacked well-defined wall boundaries, and stone was present only along the sides of the entry and around the door area. A bone and artifact midden was dumped around the outside wall, mostly around the front of the structure. The lack of clear wall definition and the three superimposed hearths found in the cooking alcove in 2016 suggest the structure had multiple re-building episodes. The re-excavation episodes disturbed the stratigraphic layer, making it difficult to interpret the occupation sequence. Features that distinguish House 3 from others excavated on the LNS are its oval shape, lack of a stone paved floor, and absence of a lintel doorway.

Excavations in 2017 explored part of the hearth mound and southwest, northwest, and northeast walls (Figure 1). Close attention was paid to the northeast wall, where earlier work had uncovered Pal-

Figure 1: Hart Chalet House 3 units excavated in 2017. View north. (photo: A. Castellanos and J. Marchman)

aeoeskimo and prehistoric Innu lithic artifacts (Figure 2). In total, 8m² was excavated this summer. The cultural deposits in the walls were as deep as 1 meter in some areas. A thin coniferous hummus layer overlay a podzol deposit, with an average depth of about 10cm. Below this was a deep, mixed deposit of light and dark layers impregnated with charcoal. The soil in the site also appears susceptible to cryoturbation, further complicating stratigraphic analyses. Especially in the northern end of the house, the stratigraphy in the sand layer was mixed, and no clear sequence of occupation could be discerned. All artifacts were discovered in the mixed, charcoal-rich sand layer which contained iron nails, ceramics, and other Inuit artifacts. Caribou bones appeared most frequently in the upper layers, near the sand/podzol interface, as was the case in previous excavations. A peat layer, representing the original forest floor, was encountered beneath the mixed sand around the margins of the house pit. Sterile sand was encountered directly beneath the peat, and while some artifacts were found near the ancient forest floor, none were found beneath it.

Finds were relatively few. As usual, nails, tile fragments, and glass dominated the artifact assemblage. Nails appear in all levels of the mixed cultural layer. Finds of indigenous production include a whalebone knife handle, a bear tooth toggle (both badly preserved), the lead wrapping for a codfish jigger hook, and an iron deer spear (Figures 3-5). Some European ceramic material was discovered, including fragments of a large orange stoneware vessel with interior ridges, smaller pieces of grey Normandy stoneware, and blue, white, and orange painted faience earthenware, probably from a teacup or some other delicate dish. A copper coin was excavated

Figure 2: Unit 16N22W showing wall profile at northeast corner of House 3. View northeast. (photo: A. Castellanos and J. Marchman)

from the mound in the southeast corner of the house, near the entrance passage and hearth area. The coin was a French 1643 'double tournois,' minted in the last year of Louis XIII's reign (Figure 6). This type of coin was used in France starting in the 1200s, under Phillipe the Fair, but production ceased under Louis XIV in 1647, and the coin fell out of use after that. Our coin, although slightly tarnished and spalled from age, showed little sign of wear from extended use. Its presence helps explain the absence of clay pipes and Basque earthenware – the site was too early for common use of clay pipes, and too late for most types of early Basque earthenware. A Ramah chert Groswater box-based end blade was discovered, as were two ovoid knives, likely of Late Prehistoric Indian origin. Tools of undetermined origin include a crude side-notched flake knife of dark glassy chert, a biface blank, and light, chalky endblade preform. Finds from earlier seasons (see Fitzhugh 2017b) suggest the presence of extensive prehistoric occupation at Hart Chalet. Two microblades, and two small bifaces attributed to early Dorset and Groswater also attest to Palaeoeskimo presence. The prehistoric Indian evidence is more prominent, and includes side-notched and corner notched arrow points, as well as biface knives. Surface finds around the site suggest continued use by cultures dating as early as late Maritime Archaic, but no specific dwelling locations have been identified.

Grand Isle-2 (EiBk-54)

For many years, we considered the St. Paul River region as the most likely territory for Inuit settlement on the LNS, especially after discovering and excavating Inuit winter dwellings at Petit Mecatina, Jacques Cartier Bay, Belles Amour, and Brador. Why would Inuit have chosen not to occupy one of the richest resource zones on the LNS? When our 2016 survey failed to reveal Inuit winter settlements or any sign of graves or summer tent-rings, it seemed that the region might have been avoided because Europeans already occupied it when Inuit appeared here in the early 1600s. Our 2017 excavations forced us to reassess this view when a rectangular house foundation found in 2016 (Grand Isle-2, Fea. 1) that we believed was an Innu site, upon excavation, turned out to be Inuit. The structure was eroding at the edge of a shore-side terrace on the north side of Grand Isle and had lost its north wall and part of the interior to the sea. Its low foundation made it barely distinguishable from the surrounding tundra. The foundation encloses two lateral sleeping benches and a slightly lower central floor area into which beach stones had been dumped when the site was abandoned (Figure 7). When discovered in 2016, the house was interpreted as an early Innu dwelling based on the presence of dark chert flakes, bits of rusted iron or tin sheeting, and a c14 date on charcoal of AD 1415-1455. This suggested the site might have been occupied by an early European-contact Innu site. However, excavation of three 2x2 meter squares in the center of the structure in 2017 produced clear evidence that it and most of its contents were Inuit: Basque roof tiles, Inuit soapstone pot fragments (Figure 8), iron sheet metal, and large iron spikes similar to those found in other LNS Inuit sites. These materials were found on the partially preserved remains of a wood floor. Below the floor a thin peat-

Figure 3: Assemblage from Hart Chalet H3, 16N22W.
(photo: W. Fitzhugh and J. Marchman)

Figure 4: Hart Chalet H3 Inuit bone knife handle.
(photo: W. Fitzhugh and J. Marchman)

Figure 5: Hart Chalet H3 bear tooth drag handle.
(photo: W. Fitzhugh and J. Marchman)

Figure 6: a, b. French King Louis XIII double tournois coin dating to 1633. (photo: P. Colbourne)

Figure 7: Grand Isle-2 (L1) showing low, sod-walled rectangular qarmat and partially excavated interior. (photo: W. Fitzhugh)

Figure 8: Grand Isle-2 Inuit soapstone pot fragment drilled and repaired with lashings and iron nails. (photo: W. Fitzhugh and J. Marchman)

humus level representing the original vegetated ground surface contained flakes of dark chert, Ramah chert, and charcoal (producing the c14-date). Apparently, an Inuit group had built a small rectangular dwelling at a location previously occupied by prehistoric Innu. The rectangular shape of the structure, its low sod walls, and its excavated interior suggested that it was an Inuit qarmat-type structure used during the fall when summer tents did not provide sufficient protection, but before winter pithouses were occupied. Charcoal from under the house floor dated 1240±30 BP (Beta 481305) and probably dates the early Innu occupation with its abundance of Ramah chert debitage.

In 2017 we also discovered a second Inuit structure (Grand Isle-2, Fea. 2) on a raised beach about 75 meters up-slope and south of GI-2, F1. Tests in this roughly circular feature about 10 meters in diameter revealed an excavated paved entry passage and a hearth pile containing fire-cracked rock and caribou bones. This structure at first seemed to be a typical Inuit semi-subterranean winter house excavated into the raised beach, but when we tested the interior, we found no sign of a floor or cultural level with artifacts, bones, or charcoal. What we thought was an excavated house pit turned out to be a natural declivity in which Inuit had begun building a winter house. The interior had not been excavated, and no walls were present. The site appears to have been abandoned after creating an entryway and hearth. It seems likely that both the rectangular L1 feature and the L2 unfinished winter dwelling were part of an intended multi-seasonal occupation by a single 17th century Inuit group that only occupied the qarmat site. So far, Grand Isle-2 is the first evidence of an Inuit dwelling we have found in St. Paul, and it appears to have been short-lived. This same group may also have contributed to the nearby boulder structures at Kettle Head (Grand Isle-1) where Charles Martijn (1974) reported human remains and an Inuit snow-knife at the top of the hill a few hundred meters south of Grand Isle-2.

Both L1 and L2 need more investigation, but they begin to provide information on the elusive Inuit history in St. Paul River that includes stories of a great battle between the Inuit and Europeans. The lack of multi-house Inuit winter settlements such as found elsewhere on the LNS may result from Europeans having established prior 'ownership' of this important resource region.

Grand Plain-1, L1 (EiBj-41)

Grand Plain-1/L1 (called the "Crossroads Groswater" site in Fitzhugh 2017:74) is located about a kilometer east of the Old Salmon Bay settlement at the southwestern edge of a huge series of raised beaches north of Wild Cove and above Point Scramble. The site was discovered in 2016 from surface indications of Groswater chert in an ATV path. Several other sites were identified at GP-1/L2 in a clearing west of GP-1/L1, including another Groswater site and probable Indian sites exhibiting a variety of chert types but no diagnostic artifacts. Test pits at L1 revealed *in situ* deposits beneath a thin veneer of caribou moss, lichen, and birch shrubs. In 2017, we returned to obtain a sample of tools and charcoal and excavated a 1x8 meter trench in sandy beach sedi-

Figure 9: Grand Plain-1 Groswater site. View north. (photo: W. Fitzhugh)

ment on top of a low rocky ridge (Figure 9). The site seems to have been used as a temporary camp; no internal features were noted, and no organics remained other than charcoal stains and chunks. Two meters west of the excavation trench we found a small 30-centimeter high mound of fire-cracked rock containing chert flakes, but time did not permit excavation.

The lithic collection identified the site as Groswater, probably dating ca. 2400-2200 BP (Figure 10). Due to the small size of the trench, no spatial patterning of artifacts and debitage was detected; for the most part flakes and tools were scattered evenly across the excavation area. As usual, microblades and microblade fragments dominated the assemblage. Several endblades were uncovered, including two box-based, side-notched points. Most other bifaces were fragmentary, but two asymmetric knives were found. Two burin-like tools (one chipped and one ground) occurred, as well as a single burin spall. The most abundant tool apart from microblades were endscrapers (6), including four finely made flared types with and without side notches, suggesting skin-working was an important site activity. Some Ramah chert was present, but most artifacts were made from dark grey or tan chert.

Belles Amours Harbor North (EiBi-23)

Surveys occasioned by bad weather allowed us to investigate the sandy terraces and blowouts on the west side of Belles Amours Harbor where we located three sites. A large field of boulders at the point where the

Figure 10: Grand Plain-1 Groswater assemblage. (photo: W. Fitzhugh and J. Marchman)

Figure 11: Belles Amours Blowout, L1, showing Groswater finds eroding from buried soil. (photo: W. Fitzhugh)

Belles Amours Harbor Peninsula joins the mainland northeast of Isthmus Bay contains numerous boulder pit structures, some of which are caches while others may be dwellings. We photographed some prominent features and took GPS readings but did not have time to make a map or hunt for diagnostics. The boulder field is 10 meters higher than the highest sandy beach terrace between Belles Amours Harbor and Isthmus Bay.

Isthmus Bay (Middle Bay; EiBi-22)

On a grassy point on the south side of a small peninsula at the northeast end of the L'Anse de Isthmus on the Belles Amours Harbor peninsula, we found tent ring structures that contained 18/19th C. white and blue print ceramics and pieces of worked whale and seal bones. Although whale bones might suggest this is an Inuit site, Innu and Europeans also used whale bone for their dog sledge runners, so its identity remains uncertain.

Belles Amours Blowout (EiBi-21)

A foot survey in the blowouts in the raised beaches west of Belles Amour inner harbor produced a small collection of Groswater implements eroding from a buried soil horizon exposed for a distance of 20 meters in the wall of the dune and on the gravel bed below (Figure 11). We collected charcoal from the soil horizon and designated the area as L1. In addition to scrapers, side-notched points, and microblades, we recovered a tiny ground burin-like tool measuring a centimeter on a side (Figure 12). Several hundred meters away in the southern extension of this blowout, a smaller concentration of Groswater implements and fragments of mottled tan-brown chert nodules was found (Figure 13). This chert type resembles the stone used in LNS Groswater technology and could

Figure 12: Groswater finds from Belles Amours L1, including a 1x1 cm chipped and bifacially ground burin-like tool at lower right. (photo: W. Fitzhugh and J. Marchman)

explain the presence of these sites in the blowout. Perhaps the LNS may be an additional source for Groswater lithics besides southwest Newfoundland. The charcoal dated 2430±30 BP (Beta 481304).

Conclusion

Final excavations at Hart Chalet House 3 clarified the nature of its midden-heaped house walls. The hearth mound turned out to be a midden pile containing caribou bones, a knife handle, a bear-tooth toggle, faience, and a 1633 French coin. The early 17th century date of these materials suggests this midden resulted from an early occupation of the house before it was re-modelled, leaving the midden as a bulwark for the east side of the door in the later renovations. The excavations in the east wall revealed the edges of the original house excavation and the charcoal-rich inner floor, but provided no indication of an elevated sleeping platform. The same type of profile was found in the northern wall. Artifacts were consistent with those found in previous years here and in Houses 1 and 2. A few Groswater, Middle Dorset, and Recent Indian finds came from mixed deposits in and outside the house. The northwest side of the house may have been excavated into a sand dune, explaining the difficulty in defining wall structure here, and this may explain the lack of stratigraphic context for most of the pre-Inuit artifacts. Finally, the oval shape of House 3 stands out as qualitatively different from Houses 1 and 2, principally by its lack of clearly defined rectangular sod walls. However, given other similarities (wood-structured doors, plank floors, external hearths, and similar artifacts) this difference may be a result of its construction in a sand dune formation rather than on the flat, spruce-covered beach where Houses 1 and 2 were constructed.

Grand Isle 2 (L1) proved to be the rectangular sod foundation of an Inuit qarmat-type dwelling—the first known so far on the LNS—similar in shape to early Labrador Inuit stone-walled qarmats in central and northern Labrador. The Inuit who lived here had access to Basque tiles, iron spikes and occupied an eroding terrace front previously utilized by prehistoric Innu with access to Ramah chert. The aborted attempt to build a semi-subterranean winter dwelling nearby at L2 suggests a tentative attempt to establish a winter occupation. Perhaps the qarmat was the required alternative. Unlike other Inuit winter sites known on the LNS, Grand Isle-2 was a settlement established by a single family rather than the usual

Figure 13: Belles Amour L2 Grey chert Groswater microcore with cortex, and blades. (photo: W. Fitzhugh and J. Marchman)

three-house settlement pattern seen at other Inuit sites on the LNS and in many places in Labrador. Perhaps the Grand Isle Inuit were a pioneering group whose settlement attempt failed due to European pressure or some other adversity. Further research at Grand Isle-2 and Martijn's boulder pit structures at Grand Isle-1 may provide answers to the unusual nature of Inuit history in the St. Paul archipelago.

In other results, 2017 work further documented the widespread presence of Groswater sites along the LNS during the period 2500-2200 BP with tool assemblages similar to other sites of this period in Labrador and Newfoundland. The cortex-covered nodule of worked grey chert found at Belles Amours Blowout L2 suggests that marine deposits along the LNS may be a local source of chert for Groswater lithic industry.

Acknowledgments

St. Lawrence Gateways research is stimulating interest among LNS organizations interested in developing its cultural heritage resources. This year's field crew consisted of Dr. William Fitzhugh (Smithsonian Institution), Alexandra Castellanos (Notre Dame University), Halley Adams (Notre Dame University), Iris Wang (Dartmouth College), Jacob Marchman (Dartmouth College), and skipper Perry Colbourne of Lushes Bight, Newfoundland. Garland Nadeau, Florence Hart, the Whiteley Museum, and members of the St. Paul Municipality made important contributions. We thank the Quebec Ministries of Culture and Communication and the Ministry of Natural Resources for permits, and Anja Herzog for processing collections.

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Archaeological Investigations at Trepassey

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Independent consultants

Trepassey is a small Newfoundland community located on the southeast coast of the Avalon Peninsula. The history of Trepassey is firmly rooted in the early stages of the European cod fishery in the New World. Following John Cabot's discovery of vast quantities of codfish off the shores of Newfoundland in 1497 a number of European countries set sail to engage in a seasonal fishery. Portugal, France and Spain were the first countries to take advantage of this resource followed by England and what is now the Republic of Ireland (Butt 1998; Wengash and Stockwood 1981). The Sir William Vaughan Trust (SWVT) has been supporting archaeological and archival work in Trepassey since the fall of 2013. This work continued with a weeklong archaeological survey conducted in Trepassey in October of 2017.

Archaeological work carried out in 2013 focused on dry stone fence works located on Trepassey's Lower Coast and a small habitation site known locally as "Valna Fad." The fence works are situated to the east and west of Powel's Point Road. A total of 92 test pits were dug, 82 along the east fences, 6 along the west fences and 4 at Valna Fad. The majority of these test pits were sterile with no recovered cultural material. Twenty-eight artifacts were recovered from the east fences (CeAi-03), 11 from the west fences (CeAi-04) and no artifacts were found in association with Valna Fad (CeAi-05). Sherds of refined earthenware vessels and nails similarly dominated the assemblages from CeAi-03 and CeAi-04. The remainder of the collection is composed of a small percentage of other materials including glass, kaolin pipe pieces, stoneware and plastic. The recovered collection suggests that the fence works on the Lower Coast were constructed by the resident population, many of whom were Irish or had Irish ancestry, around or just after the 1830s.

In October of 2014, a second weeklong survey was carried out on Trepassey's Lower Coast. Of interest to the SWVT was a feature known as Curries Lane (CeAi-06) that stretches from the above mentioned fence works to the beach on the Lower Coast and Trepassey Harbour. Thirty-seven test pits were placed along the lane and 30 contained artifacts. A collection of 205 artifacts was recovered. Refined earthenware sherds with lower numbers of bottle and window glass, nails, kaolin pipe fragments and brick fragments dominate this collection. In addition, a variety of ceramic wares not seen at CeAi-03 and CeAi-04 were recovered. These types included North Devon Sgraffito coarse earthenware, Rhenish blue and grey stoneware, Jackfield type earthenware, English brown salt glazed stoneware, Portuguese coarse earthenware, Buckley type earthenware and Staffordshire manganese mottled earthenware. Unfortunately, due to disturbances in the area it was not possible to distinguish the varying levels of use or occupation.

A second area known locally as Jackson's Plantation (CeAi-07) was also tested during the 2014

Figure 1: Henry Curties headstone.

Figure 2: CeAi-11 eroding bank.

season. Nine test pits were excavated revealing 72 artifacts. This collection was similar to that recovered from CeAi-06 but the site was less disturbed. The collections recovered from the 2014 season were relatively small but production dates of recovered materials indicate that the area was in use as early as the 17th century.

This year, 2017, marked the 3rd year of archaeological survey in Trepassey supported by the Sir William Vaughan Trust. Four areas were recorded or surveyed, two of which are considered new sites. The new sites include the Lower Coast Cemetery (CeAi-12) and the Curtis Property (CeAi-11). CeAi-12 was completely overgrown on arrival but Jackie McCormack cleared the area, after which recording and photography was completed for the site. While there are numerous grave markers, many of them are simple unmarked stones. A single example has a partially legible inscription and reads, "Henry Curties departed this life June 22 1819" (See Figure 1). CeAi-11 is located on the eastern side of the Lower Coast. It includes an eroding bank exposed to tides and storm surges and land currently owned by the Curtis family (See Figure 2). A small surface collection was recovered from the eroding bank as well as numerous artifacts from three test pits. Approximately 200 artifacts were recovered and are currently being catalogued.

Two areas that had been previously tested, CeAi-07 (Jackson's Plantation) and CeAi-09 (Daniel's Point), were revisited. The aim of additional surveying in these areas was to locate building foundations. At CeAi-09 a foundation had been reportedly found during power line work. No evidence of foundations were encountered but from five test pits, 111 artifacts were recovered from CeAi-07 and from the seven test pits excavated at CeAi-09 three artifacts (a nail, a re-

Figure 3: Removal of fill at CeAi-09.

fined earthenware sherd and a glass bottle fragment) were recovered. Shovel testing at CeAi-09 was particularly difficult as there were a number of compacted fill layers followed by large boulder sized rocks. The difficulties experienced at Daniel's Point, and failure to locate building foundations led the SWVT to propose the use of a backhoe to excavate beyond what could be accomplished with shovel testing. With permission from the PAO the permit was extended and a day long survey was completed on November 9th under the supervision of Corey Hutchings. Mr. Wayne Murphy assisted the excavation by operating the backhoe and was the individual who originally reported the foundations to the SWVT. Four trenches were placed along the test area but no foundation/structures were located. Sixteen artifacts were recovered from the additional testing and are being catalogued. Whiteware fragments dominate the collection. However, bottle glass, brick fragments and a locally produced wooden wheel with metal fittings were also excavated. These artifacts point to the area having once had a structure which has subsequently been removed. The lack of evidence for a structure may be due to excavation of fill in the area, which is visible on the surface (See Figure 3). A possible midden, marked by a mix of artifacts from different periods, was located at the far end of the hill and does not appear to be directly related to any visible structures.

The past three seasons of archaeological survey at Trepassey have revealed the area was in use as early as the 17th century and continued use is evident from the more recently constructed stone fence works. Further archaeological and archival research in this area will no doubt add to the knowledge of early European settlement in Newfoundland.

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Archaeology at Ferryland 2017

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The 2017 field season was a busy one for the Ferryland Archaeology Project. Three different teams of archaeologists investigated various parts of the site ranging in date from the 1620s to the early decades of the 19th century. This report discusses the work of two project teams while the excavation led by Duncan Williams is reported separately in the PAO Review.

From June until August, a small team focused their efforts on two recently discovered 17th-century occupations outside the original four-acre settlement. One occupation is located just east of the current kitchen garden (previously designated Area D) and the second is approximately 30 metres to the southeast on a gently sloping hillside (Area J). Both were revealed during a program of test pitting on the Ferryland Downs in the summer of 2016. The occupation nearest the kitchen garden, in particular, was quite unexpected as intensive excavations in 1993, just 5 metres away, revealed no trace of intact cultural deposits or features. This certainly goes to show that at a place as intensively occupied as the Ferryland Pool, very few spaces were left unused over the course of 500 years – whether it be for gardens, fish flakes, pasture, dwellings or outbuildings – and many more discoveries have yet to be made.

Sections of a stone wall collapse and below it a layer of roof slates exposed in Area D in 2016 provided tantalizing clues for a well-preserved Calvert-era structure, the first of its kind discovered outside the original parameters of the settlement (Gaulton and Hawkins 2017). Our goal for 2017 was to expand excavations in an effort to determine the size of this building, what it was used for and how long it was occupied. Despite the limited number of field personnel, we were able to expose and map a 3 x 4 metre area of wall collapse and then remove the rocks to reveal the underlying layer of roofing slates (Figure 1). The slates were photographed in situ and collected by excavation unit and stratigraphic position. Most slates were fragmentary but several dozen were still complete, ranging in size from small 5-inch roof tiles to larger 10-inch pieces once set toward the eaves of a roof. At the western end of the excavation we were fortunate to catch the inside face of a relict stone wall and footing. This feature was exposed along the 3-metre excavation area, ending in

Figure 1: Layer of roof slate fragments representing a roof collapse, Area D, looking west.

Figure 2: North and west wall segments from a 1620s structure located outside the original 4 acre settlement, Area D, looking northwest.

a short section of cobblestone pavement at the southernmost unit. Unfortunately, due to time constraints we were unable to open additional excavation units to determine the full extent of the associated cobblestone pavement.

In a similar stroke of good fortune, we discovered the face of a second stone wall segment while straightening the soil profile at the north end of the 3 x 4 metre excavation (Figure 2). The inside northwest corner of the 17th-century building was thus revealed and, at the northeast, a possible doorway was exposed in the final days of the field season. With sections of both the north and west walls exposed, we knew that the remaining two walls were somewhere to the south and east, and that our 3 x 4 metre excavation area was fully inside the early structure.

Archaeology proceeded below the slate roof collapse but revealed limited traces for a distinct occupation layer. Scattered bits of case bottle glass and coarse earthenware, a handful of clay pipe fragments including one early 17th-century bowl and a maker's mark, and a couple dozen nails were all that remained on the structure's earthen floor. Curiously, at the same stratigraphic level there were scattered patches of fine golden sand – quite different than what is found on Ferryland beaches today – as well as charcoal and small pieces (blobs) of melted glass. Although it is much too early to make any sound interpretations, the presence of few domestic artifacts, combined with the building's unique location and dearth of evidence for a lengthy occupation may point to an industrial or multi-purpose function during the early Calvert period.

Figure 3: 2x4 metre test trench in Area J, looking northwest.

Thirty metres southeast of this early colonial structure is a recently-discovered late 17th- to early 18th-century midden deposit on a hill overlooking Ferryland harbour. Identified by Robyn Lacy in 2016 (Lacy 2017a), and now designated as Area J, our plan was to expand excavations in 2017 so as to learn more about the people who once occupied this location and whether there was any trace of a nearby structure. A 2 x 4 metre north-south trench was established on either side of Lacy's original test pit (Figure 3), allowing for a determination of

the extent of the midden as well as the nature of its deposition. The stratigraphy clearly shows the refuse originating from a levelled area further south and accumulating for several metres down the hill before tapering out. Further excavation to the south will be required if we are to reveal any associated structural remains, but the presence of fire-cracked rock, brick fragments and hundreds of nails and spikes in the midden are certainly suggestive of a nearby building.

The artifact assemblage recovered in Area J in 2017 is quite exceptional in terms of its quantity and variety. The same can be said for the large size of many fragments, suggesting that there was little or no post-depositional disturbance compared to other 17th -century deposits at Ferryland. One could argue that this increases the significance of both the area and its assemblage. Notable objects recovered in 2017 include large pieces of wine bottle glass, complete wine glass stems, dozens of West Country pipe bowls (ca. 1680-1720), a variety of English and French coarse earthenware vessels, decorated tin-glazed plate fragments and many pieces of yet unidentified marbled slipware (Figure 4). The latter was initially thought to be of North Italian origin but its relatively crude manufacture and lack of clear lead glaze on the underside suggest otherwise.

Clothing-related items including a brass buckle, button and several large faceted glass beads were also unearthed. Finally, a badly deteriorated copper half penny minted during the reign of James II (1685-1688) provides a terminus post quem for this occupation and a starting point from which to begin our interpretation. What we currently do not know, however, is whether the occupants residing on this hillside were resident prior to the attack on Ferryland in 1696 and thus displaced with the other settlers; or whether this was one of the families who returned from England in 1697 to rebuild their home and start anew.

Figure 4: In situ 'onion' bottle and tin-glazed earthenware plate fragment, Area J.

During the first six weeks of the 2017 excavations, Robyn Lacy led another team of archaeologists in search for evidence of the early colonial burial ground. These investigations focused on several areas inside the original parameters of the four acre palisaded settlement, specifically in central locations on raised landforms, and in close proximity to where the Ferryland gravestone fragments were found in the 1990s. The central, elevated locations were chosen based on the results of Lacy's (2017b) statistical analysis of 17th-century burial grounds.

The largest trench opened by Lacy's team was directly south of the brewhouse and bakery. These excavations exposed a variety of 18th- and 17th-century strata including early deposits associated with the occupation and later dismantling of the brewhouse and bakery, however no further evidence for gravestone fragments or burial shafts. Subsequent trenches north, west and south of the brewhouse – in previously-excavated areas that had not been carefully checked for the presence of grave shafts in the subsoil – also proved negative. Based on these results, it appears that if one of these areas once contained the early burial ground, it was so heavily disturbed by the Kirke family's reorganization efforts in the 1630s that all traces have been lost, save for the gravestone fragments uncovered in the 1990s.

A final test trench was placed in the massive bastion at the southeast corner of the original fortified settlement. Previous understanding of the construction of the bastion suggested that it was at least partially built of mounded earth, and thus may have been looser and thawed quicker than the surrounding hard-packed earth that makes up much of the Ferryland Downs; therefore, it may have been perceived as an adequate location to place a burial(s). Unfortunately, this was not the case as the bastion was revealed to have been largely built from loose gravel and rock sandwiched between layers of earth and sod (Figure 5). Nevertheless, this excavation provides us with a clearer picture of the composition of the southeast bastion as well as further evidence of the enormous

effort that went into the construction of George Calvert's early colony.

While no burials were identified during Lacy's 2016 or 2017 excavations, an understanding of where the colonists were not putting graves has come to light. Based on current evidence, it is reasonable to suggest that the earliest colonial burial ground at Ferryland was either eradicated during the Kirke era, may remain in some unexcavated location farther from the colony, or perhaps was disturbed by later agricultural activities or construction. Alternatively, it may have been situated on a landform to the northeast and has since eroded into the sea. Despite the dearth of evidence for *in situ* grave shafts, the previous discovery of three gravestone fragments representing two separate markers demonstrates the former presence of an organized 17th-century burial ground.

To conclude this report on a sombre note, I wish to acknowledge the loss of our long-time colleague and dear friend Marilyn Willcott, and her husband Stuart Montgomerie. Marilyn was a dedicated and extremely knowledgeable employee of the Ferryland Archaeology Project for 26 years. We miss her terribly.

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Figure 5: Test trench through the bastion at the southeast corner of the original fortified settlement (Area E). Note thick layer of gravel and rock used in the construction of the bastion.

A brief survey of Bull Arm 1 and Backside Beach 1, Trinity Bay, Newfoundland

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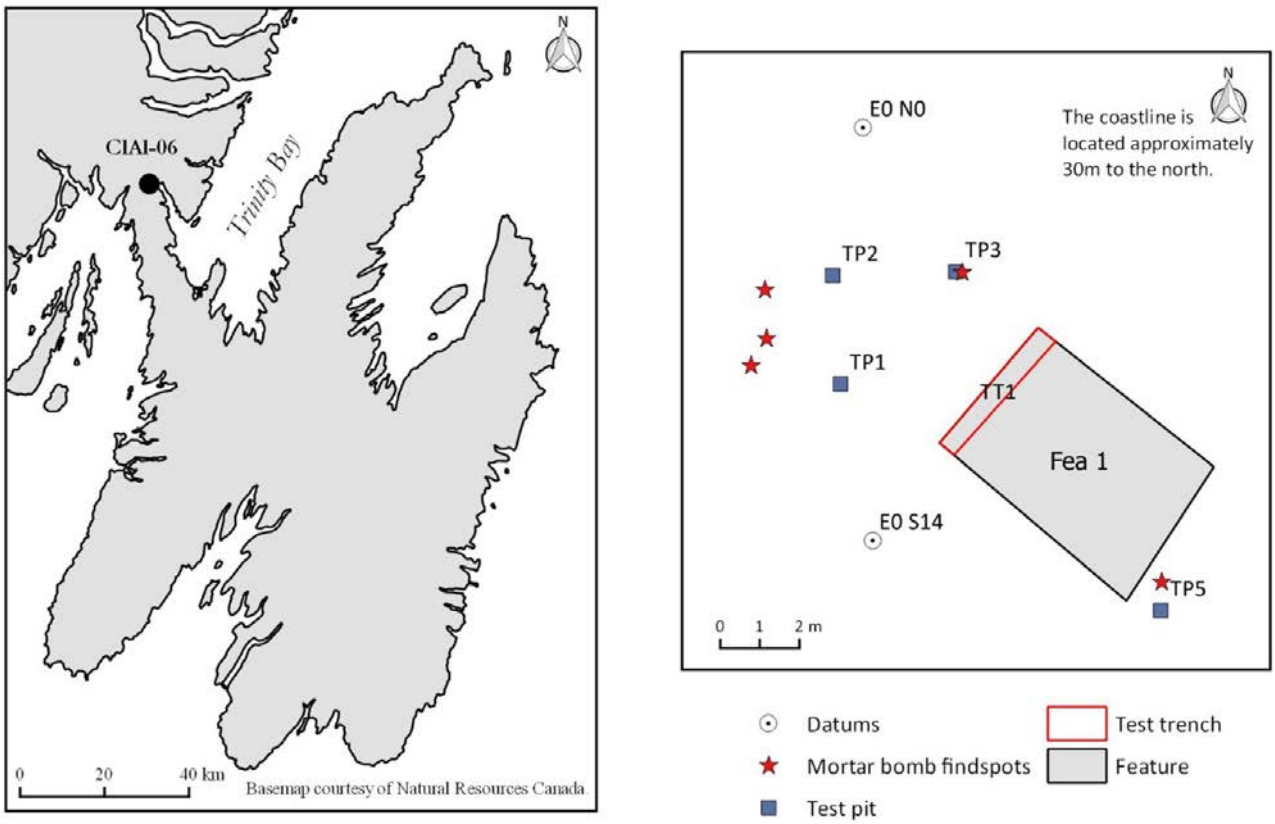

Figure 1: Location and site plan for ClAl-06 (Bull Arm 1).

The following report presents a brief overview of survey work on two sites in Trinity Bay: Bull Arm 1 in Sunnyside (ClAl-06) and Backside Beach 1 in Green's Harbour (CjAj-10). Both sites were investigated in June 2017 for the purpose of assessing the nature, extent and date of occupation.

Bull Arm 1 is located on the south side of Sunnyside harbour and was discovered by local residents Roger Snook and Pat Farrell using metal detectors. In June, Mr. Snook brought the authors to the site so we could record visible features, plot the distribution of a series of mortar bomb fragments that had been previously removed, and excavate several small test pits (Figure 1). The site is situated approximately 30m from the coastline in a large clearing bordered by a long but low rock outcrop running southeast by northwest; centred within the clearing is a large fir tree growing up from a slightly-sunken, rectangular, moss-lined feature (Figure 2). Test pits to the east and west of this rectangular feature revealed a shallow amorphous deposit containing late 19th-to early 20th-century domestic refuse including wire nails, whiteware plate and bowl fragments, window glass and bottle sherds. A test trench dug (more moss removal than excavation) along the western end of the sunken rectangular feature exposed a 5.5m (18ft) long linear stone footing terminating north at the low rock outcrop (Figure 3). Toward the southern end of the test trench was an accumulation of large rocks that con-

Figure 2: Bull Arm 1, looking southeast. Note at bottom of image, a low rock outcrop running along the north end of site.

tinued east into the feature, evidently the remains of a stone chimney collapse. An examination of the eastern end of the rectangular feature showed traces of another linear stone footing of the same orientation as at the west end and butting up against the same natural rock outcrop toward the north.

The architectural evidence and the nearby domestic refuse clearly point to a late 19th- to early 20th-century domestic occupation. This is further supported by small parcels of cleared land to the east and west of the feature, possibly for agricultural purposes and/or outbuildings. The footprint of what was once a timber-framed house, as evidenced by the rectangular feature, measures 5.5m (18ft) wide by 7.3m (24ft) long. A stone chimney was likely set in the western gable end.

The only remaining question at the Bull Arm 1 site had to do with the nearby mortar bomb fragments scattered in all directions, with several (unrecorded) pieces at some distance to the northwest, southwest and southeast of the late 19th-to early 20th-century homestead. The most parsimonious explanation is that these fragments are unrelated to the domestic occupation, instead representing an earlier military event – likely a skirmish or similarly small engagement – from Sunnyside's past. The mortar bomb fragments recovered from the site (as interpreted from images of the artifacts only) are spherical case shot, a type typically used until around 1870, after which point the cylindrical shell became the dominant form. Their positioning in relation to the house further supports the theory of an unrelated episode that likely saw a military force firing into the woods at an enemy combatant. Whether this represented a real battle or military exercise may only be answered through further documentary research.

Backside Beach 1, in Green's Harbour, is situated in the woods approximately 100m from the coast behind a raised cobble beach of the same name. The site was first recorded by Mark Penney in 2006 and revisited by the authors in 2017 to ascertain its function and date of occupation, as well as to record in situ structural remains (Figure 4). As previously stated by Penney (2006), Backside Beach 1 is accessible from the beach via a small bog and situated within what was until recently a dense copse of trees, now rotting deadfalls.

After locating the previously-identified rock and earth mound, we cleared away some of the recent growth so it could be mapped and photographed (Figure 5). A rough outline of rocks were revealed at both the north and west ends but time did not permit

Figure 3: Stone footing delineating the western end of a late 19th- to early 20th- century house, looking west.

Figure 4: Location and site plan for CjAj-10 (Backside Beach 1).

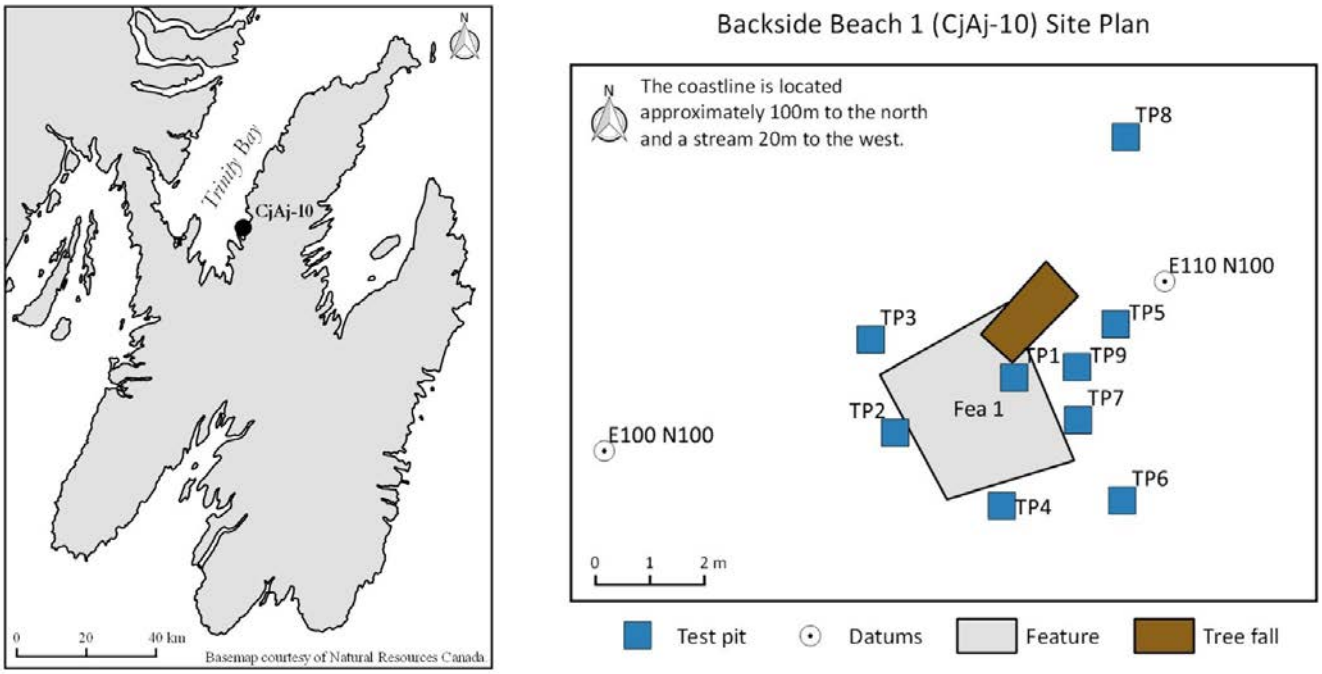

Figure 5: Rock and earth mound feature, looking east.

us to continue around the entire perimeter. These two 'sides' were measured against the southern and eastern ends of the mound, resulting in an approximate dimension of 2.5m (8ft) north-south by 3m (10ft) east-west for the feature. Based upon its size and approximate height in relation to the surrounding land, the overall volume of this feature is around 1.5m^3

A recent treefall at the northeast end of the feature unearthed patches of charcoal, a number of large rocks – some of which were fire-spalled and reddened – and a variety of artifacts including brick fragments, wrought iron nails, transfer-printed and engine-turned earthenware, pipe stems and the top of a copper thimble. The remains of a stone hearth is undoubtedly in the immediate vicinity of the treefall. A series of test pits were dug in all directions out from the rectangular mound so as to identify the presence and extent of additional cultural deposits. None were found at the south, east and west sides, although testing was limited in scope. A test pit to the

Figure 6: Wrought iron nail fragments, a piece of leather boot heel with copper hobnails, and transfer-printed ceramic sherd recovered from test pit northeast of treefall, CjAj-10.

northeast, however, contained more wrought iron nails, transfer-printed earthenware and a leather boot heel fragment with copper hobnails (Figure 6). All artifacts were found in a dark brown loam directly below the moss. A brief metal detector sweep of the site produced further evidence for the presence of cultural deposits immediately north of the rock and earth feature. Metal detector hits were clustered within an approximately 3m (north-south) by 4m (east-west) area. No further subsurface testing was conducted. The rock and earth feature, treefall and test pits were mapped with a total station, and the distances from both the shoreline (100m) and a nearby stream (20m) were recorded.

Our preliminary interpretation is that of a domestic occupation dating to the first half of the 19th century. The low mound, possibly representing a chimney collapse, and associated artifact assemblage is strongly suggestive of a Euro-Newfoundland dwelling. However many questions remain. Was this a year-round dwelling or inhabited on a seasonal basis? If the latter, was it occupied during the summer fishery or only during the winter months? Definitive answers will have to await further excavation and analysis. That being said, if the current environment is any indication of past conditions, then a summer occupation seems unlikely. Between the adjacent bog, blackflies and distance from the shoreline, it is hard to envision CjAj-10 as a suitable summer habitation, particularly if the former occupants were involved in the fishery. The sheltered woodland location, on the other hand, would be advantageous for overwintering, as would the nearby presence of a large body of freshwater to the southeast (Backside Pond, located about 400m distant) in addition to the small stream just adjacent to the site. Backside Beach 1 is also a short boat ride from the fishing communities of Green's Harbour to the south or Whiteway to the north. Either community could have seen its former residents travel to 'winter quarters' in the fall of the year, as was common practice in many rural Newfoundland communities during the early 19th century (Smith 1987). If this site proves to be a 19th-century winter house, it would form a useful comparison with recent investigations at roughly contemporaneous winter house sites in St. Mary's Bay (Venovcevs 2017).

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Excavations at the Cupids Cove Plantation Provincial Historic Site and Survey Work at Dildo Pond, 2017

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Baccalieu Trail Heritage Corporation

Figure 1: Looking north across Structure 9 and the rubble-filled pit, August 16, 2017.

Excavations at the Cupids Cove Plantation PHS, 2017

In 2017 the Cupids Cove Plantation Provincial Historic Site opened to visitors on May 20 and closed on October 6. During this time a total of 3705 people visited the site. Excavations at the site began on July 7 and continued for fifteen weeks until October 20. Most of our efforts in 2017 focused on the pit east of Structure 9.

Pit East of Structure 9

Structure 9 was a 17th century building that extended west and north from the bottom of the terrace in the northwest corner of the site. Today all that remains of the structure is a rock-filled stone footing measuring 4.5m (14 ¾ ft) from east to west and 6.28m (20 ½ ft) from north to south. Although we can't say for certain at this time, it seems likely that Structure 9 was a storehouse located on the edge of the Salt Water Pond at the bottom of Cupids harbour. Infilling over the past two centuries has extended the south bank of the Salt Water Pond north by about 30m. However, originally, Structure 9 would have been located near the edge of the pond, probably in the intertidal zone (Gilbert 2014a, 2014b, 2015, 2016, 2017a, 2017b).

The bank east of Structure 9 rises steeply for about 2m. Sometime during the first half of the 17th century, the colonists dug a pit east from Structure 9 into this bank (Figure 1). This pit was first revealed in 2013 when excavations extending into the bank from Structure 9 (Operations 115 & 119) uncovered its northern edge and a section of it extending south from the edge for about 1m. In 2014 a 2m x 3m unit (Operation 126) was established extending the exca-

vation another 3m to the east. Completed in 2015, Operation 126 exposed the northeast corner of the pit. In 2015 two more units (Operations 127 &128) were established south of and adjoining Operations 115 and 126. Excavations within the boundaries of these units in 2015 and 2016 exposed more of the pit extending south for a further 3m and east from Structure 9 for 2m. That portion of the pit exposed to date runs north to south along the eastern side of Structure 9 for four metres and extends east from the structure for 2m. However, the pit clearly extends south and east beyond the boundaries of our current excavation.

A series of deposits, roughly 50cm thick, had accumulated over the pit since the 17th century. Immediately below the sod was a 20cm thick layer of silt and loam (Level 1) that contained a small amount of 19th and 20th century material and obviously dated to that period. Below this was a 20cm thick deposit of small stones in a silt matrix (Level 2). Containing exclusively 19th century material, this deposit appears to have been dumped here early in the 19th century, probably in an attempt to fill in the depression left by the pit. Below the small stones was a 10cm thick deposit of fine silt that produced no artifacts (Level 3) and appears to have accumulated after the area was abandoned at the end of the 17th century. At some point in the 17th century the pit was filled with rubble (Level 5). That this happened before the end of the 17th century was clear from a 10cm thick layer of silt and beach gravel (Level 4) that had accumulated above the 17th century rubble and below the sterile silt. This deposit contained exclusively 17th century material and clearly had taken some time to build up.

Our main objective in 2017 was to remove the 17th century rubble (Level 5) from the portion of the pit within the boundaries of our excavation. Most of the silt and beach gravel above the rubble (Level 4) had been removed in 2015 and 2016. However, when we returned in 2017, we realized that some of it still needed to be excavated before we could proceed further. This, and work elsewhere on the site, took some time and it wasn't until August 22 that we finally began removing the rubble (Figure 2). It was a slow process. A great deal of silt, containing hundreds of 17th century artifacts, had accumulated in the gaps

Figure 2: Removing a large stone from the first rubble layer in the pit, August 23, 2017.

Figure 3: Base and body fragments from a North Devon Ware tall pot. The base fragment was found in Level 5 and the body fragment in Level 4.

between the rubble. Some of these artifacts probably had been deposited in the pit when it was filled in but some clearly had fallen through the gaps and into the pit at a later date: a base fragment from a North Devon tall pot recovered from the rubble joins with a body fragment found in the overlying silt and beach gravel; and a rim fragment from a Border Ware pipkin, found in the silt and beach gravel in 2015, joins with another rim fragment found 54cm below it in the rubble, in 2017 (Figures 3 & 4).

The rubble was removed in layers and all the artifacts in each layer were properly recorded. Once the silt had been removed from a layer, and the artifacts recorded, the exposed rubble was photographed, elevations were taken, and the layer was removed. Proceeding in this way, three layers of rubble were recorded and removed from the pit between August 22 and October 20 and a forth layer was exposed.

When it was dug in the 17th century, the pit was well over 1m deep. By the end of the 2017 season that portion of the pit contained within our excavation had been dug to a depth below the present-day

Figure 4: Two rim fragments from a Border Ware pipkin. The fragment on the right was found in the silt and beach gravel (Level 4) in 2015, the one on the left was found 54cm below it in the rubble (Level 5) in 2017.

surface of 1.65m, and a depth below the 17th century surface of 1.15m. Although we still have not reached bottom, we appear to be close. When we began digging into the pit it was quite wide. As mentioned above, the rubble in the pit encompassed an area measuring more than 4m from north to south. However, the pit narrowed as we dug deeper and, at a depth of about 40cm, it narrowed to just 2m wide and continued down at that width. The rubble in the pit seems to have been deposited in two stages corresponding roughly to this change in size: the bottom, narrower section was filled with mostly small stones; while the upper, wider section was filled with stones ranging in size from medium to very large. Two or more people were needed to remove some of these stones, and a few were so large we were forced to leave them in place and work around them.

Levels 4 and 5 were both sealed deposits containing exclusively 17th century material. Pottery shards make up the bulk of the material recovered from both levels. However, while clearly of 17th century origin, most of the ceramics are of little help in further narrowing down the dates of these deposits. As is often the case on historic sites, clay tobacco pipe fragments provide our best evidence for dating. To date, 27 clay tobacco pipe stems have been recovered from Level 5 and 28 from Level 4. The bore diameters from these stems are consistent with a 17th

century occupation: the bore diameters from Level 4 were 4-6/64, 18-7/64, 5-8/64 & 1-9/64; and the bores diameters from Level 5 were 5-6/64, 14-7/64, 4-8/64 & 4-9/64. Applying Binford's straight-line regression formula to the 55 stems from both levels produces a mean date of 1657. When we apply this formula to the samples from the two levels separately, we get a mean date of 1660 for Level 4 and 1654 for Level 5. Of course one needs to practice caution when using Binford's formula, especially on such a small sample. Where possible, pipe bowls are a better dating tool (Noël Hume 1969, pp. 296-310). Fortunately, we have recovered two complete pipe bowls and another fragment complete enough to provide a date from Level 5, and these indicated that the rubble was deposited in the pit somewhat earlier. All three bowls have a date range of 1610-1640 (Figure 5). These bowls could not have been deposited while the pit was in use. Instead, they either were dropped into the pit with the rubble or fell through the gaps in the rubble after the pit had been filled. Since this type of pipe bowl was not made after about 1640, the pit must have been filled by around that time. Obviously, Level 4 began to accumulate after the pit was filled and, while a precise date range cannot be determined at this time, probably continued to accumulate until the area was abandoned near the end of the 17th century.

Since all the artifacts recovered from the pit so far either seem to have been deposited with the rubble or slipped down between the gaps after the rubble was in place, they are of little help in determining why the pit was dug. However, the artifacts from both the rubble and the silt and beach gravel above it can provide some clues as to what was happening in the area when the pit was being filled and for some time thereafter. As mentioned above, pottery makes up the bulk of the material recovered from both layers. The ceramics from the 17th century enclosure on the terrace to the south include a wide range of types, from utilitarian to refined domestic wares, from a wide range of countries including England, the Netherlands, Germany, France, Spain, Portugal and Italy. In contrast, the ceramics recovered from in and around the pit east of Structure 9, are mostly utilitarian wares, such as storage jars and tall pots, manufactured mainly in south and southwestern England (Figure 6). These are just the types of vessels one

Figure 5: Clay tobacco pipe bowl (circa 1610-1640) from the rubble (Level 5) in the pit.

would expect to find in a settlement provisioned from West Country ports and reinforces our hypothesis that Structure 9 probably was a harbour-side storehouse. Large numbers of these vessels would have been required to ship and store provisions and many would have broken and been discarded over the years that Structure 9 was in use. Other artifacts recovered from the pit include fragments of case bottle glass, wrought iron nails, trade beads, and an s-shaped wrought-iron hook probably used to suspend a pot over a fire. The pit also produced a number of 17th century brick fragments, some of which are

Figure 6: Artifacts from the rubble in the pit. Most of the ceramics are from storage jars and tall pots manufactured in southwest England.

Figure 7: 17th century brick fragments from the pit east of Structure 9.

charred on one side, suggesting they may once have been part of a hearth (Figure 7).

In 2018, we will return to Structure 9 and the pit. We will complete the excavation of the section of the pit within our current excavation, draw a profile, and extend the excavation south and east to expose the rest of the feature.

Work Elsewhere on the Site

In addition to our work east of Structure 9, some work was also conducted within the 17th century enclosure. In 2011 we uncovered a shallow trench that extended southwest from the inner defensive wall for 4.3m (14 ft) and then turned southeast. Further excavations in 2011 and 2012 revealed that the trench extended southeast for 8.3m (31 ½ ft) and adjoined a circular feature 61cm (24 inches) in diameter on the edge of a rubble deposit. The rubble was removed in 2014 to reveal a shallow four-sided pit. This pit appears to mark the location of the 17th century forge. The circular feature may mark the location of the forge's slack tub and the trench probably is the drainage trench for the tub (Gilbert 2012a, 2012b, 2013a, 2013b, 2015). In 2017, we finished mapping the trench and circular feature, completed the excavation of both, and filled them with a mixture of silt and gravel to both preserve their shape and mark their location.

Excavations in 2011 also revealed a rectangular surface east of the north end of the drainage trench. Measuring roughly 1.8m (6 ft) north to south by 2.8m (9ft) east to west, the surface appears to be the dirt floor of a small building (Gilbert 2012a, 2012b). A 60cm wide baulk runs south across the inner defensive wall, immediately east of the E31 line, and into the area of this feature. The southernmost metre of this baulk covered the western end of the feature. In 2017 this 1m section of the baulk (Baulk N317E31) was removed so that the western end of the feature could be mapped.

Archaeological Survey Work at Dildo Pond, Trinity Bay, 2017

Recently a developer acquired 24.28 hectares of land running for about 1250m along the northwest side of Dildo Pond and extending northwest from it to South Dildo. He plans to develop a 4.45 hectare (11 acre) area in the southern half of this property into 15 cottage lots. This proposed development runs along the shore of Dildo Pond for about 800m. During the fall of 2017 a Stage 1 Historic Resources Overview Assessment of the proposed development area was conducted and some initial survey work was done along the shore of the pond farther north.

No cultural material was found within the boundaries of the proposed development. Aside from a small cove with a gravel beach in the extreme southwest, most of the shoreline in this area is extremely rugged, consisting mostly of large boulders and, in some places, bedrock outcrops. However, about 150m north of the proposed development, the boulder beach gives way to a beach of small stones and gravel which curves around the north end of the pond for about 500m. Beyond the beach in this area the land is lower than farther south, forming terraces in some places before rising gradually to the north and west. Although outside the current development, the area looked promising.

A scattering of lithic material was found beginning about 170m north of the development, just

Figure 8: Looking north towards Dildo Pond 1 (CjAj-11).

Figure 9: Grey-chert core and nodule from the beach at Dildo Pond 1.

Figure 10: Grey-rhyolite flakes from the beach at Dildo Pond 1.

beyond a small brook that flows into the pond, and extending northeast along the beach for about 46m. The bank beyond this section of beach rises about 1m above it to form a terrace. At the north end this terrace is about 6m wide but farther south it widens out considerably. An old woods road opens up onto the beach about 5m south of the northernmost find (Figure 8). The site (Dildo Pond 1, CjAj-11) was discovered on October 14 and visited on another four occasions during the autumn (October 21 & 27 and November 13 & 24). Over that time the following ten items were recovered from the beach: a water-rolled, patinated, grey-chert biface fragment; a patinated, grey-chert biface notched on one side; a black-chert nodule - possibly a scraper preform; a patinated chert flake; a patinated grey-chert core; a small grey-chert flake; two large grey-rhyolite flakes; and two grey-chert nodules (Figures 9 & 10). During a visit to take GPS readings on January 27, 2018, the distal end of a Maritime Archaic stone gouge was found at the end of the woods road next to the beach (Figure 11). This section of road had been carefully examined during all previous visits and nothing had been found. It appears the gouge fragment had been brought up by an ATV passing between the road and the beach sometime between November 24 and January 27.

Documentary and archaeological evidence suggest that the most likely location for the Beothuk camp first seen by Guy and Crout in Dildo Arm on October 24, 1612 is in the southeast corner of the arm, to the north of the river that flows from Dildo Pond into the bottom of the harbour: the place the colonists called Savage Harbour and which we know today as South Dildo. A quick glance at a map of the area reveals that Dildo Pond 1 is located at the terminus of the shortest (800m) and easiest route between

Figure 11: Distal end of a Maritime Archaic stone gouge found on the edge of the woods road at Dildo Pond 1.

this place and the pond. This is not the route followed by Guy and Crout to Russell's Point on October 26, 1612. Guy makes it clear that the entrance to the Beothuk trail they followed was a mile (1609 m) from the pond. Indeed, there can be little doubt that that trail followed much the same route as the highway from South Dildo to Blaketown does today (Cell 1982:70-71; Gilbert 1990:151-154). If an aboriginal trail did run from South Dildo to Dildo Pond 1, it clearly was a different, and, it would appear, much older one (Figure 12).

One or two of the artifacts found at Dildo Pond 1 may be Palaeo-Eskimo in origin, and one is clearly Maritime Archaic, but most appear to be Recent Indian. Nine of the eleven items recovered (including the gouge) are made from a type of grey chert typical of the material used to manufacture the vast majority of stone tools found at Russell's Point. For example, 80.50% of the notched and stemmed bifacial points, 87.8% of the scrapers, 90% of the notched and stemmed flake points, and 95.50% of the cores found at Russell's Point were made from this material (Gilbert 2002: 69-77). A high proportion of the stone tools found at the Little Passage/ Beothuk site on Dildo Island were also made from the same grey chert. However, rhyolite was the preferred material of the earlier Recent Indian people on Dildo Island. The deposits in and around a Recent Indian hearth on the island, radiocarbon dated to circa AD 800, produced 14,436 flakes of which 14,378 (98.91%) were of rhyolite (Gilbert 2006). The two large rhyolite flakes found on the beach at Dildo Pond 1 (59mm & 64mm long respectively) look almost identical to flakes found in and around that hearth.

Based on the evidence recovered so far, it seems likely that Dildo Pond 1 was a camp, or way station, at the terminus of a trail that led from South Dildo (Savage Harbour) to the north end of the pond. Since the Beothuk and their ancestors occupied this area for well over 800 years, it would be surprising if such a trail did not exist. It would have provided an alternate route, on foot and by canoe, to the main camp at Russell's Point and allowed for the closer monitoring of resources – everything from berries to caribou - at the north end of the pond. The discovery of a Maritime Archaic artifact at the site suggests that this route also may have been used thousands of years before the arrival of Recent Indian people.

On October 27, 2017 four 40cm x 40cm test pits were dug on the terrace west of the beach: one to the north of the woods road and three extending along the terrace to the south of the woods road. Although no cultural material was found in these pits, the amount of material recovered from the beach and the discovery of the gouge in the track, suggests an in situ component of the site may await discovery. We plan to return to Dildo Pond 1 in the spring of 2018 to conduct further testing and draw a site map.

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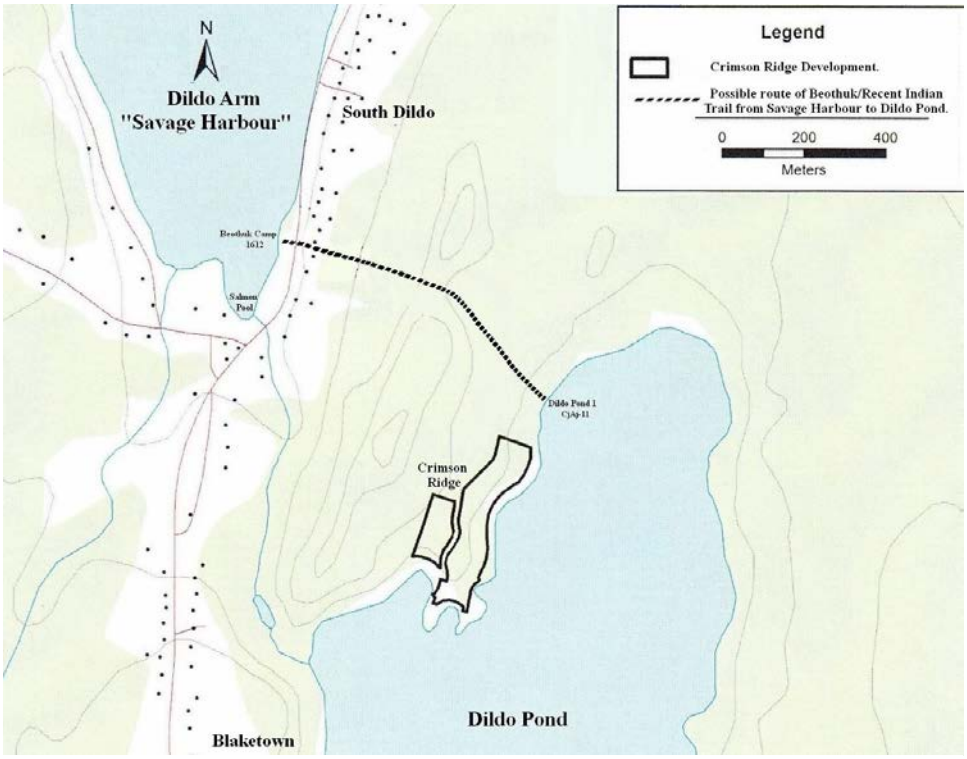

Figure 12: Map showing the location of Dildo Pond 1 and the possible route from South Dildo to the site.

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Excavation and preliminary analysis of a historical burial ground at Foxtrap-2 (CjAf-10), Foxtrap, Newfoundland

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Introduction

Many of the recorded historical period burial ground/cemetery sites in Newfoundland have been archaeologically investigated because of either accidental discovery during construction activities (e.g. Wester Point, Portugal Cove and St. Paul's Churchyard, Harbour Grace), or due to an ongoing threat from coastal erosion (e.g. Tors Cove old cemetery) (Harris 2015; Morry 2015; Pike 2012; Reynolds 2004). As a result, context specific details about the individuals buried are difficult, if not impossible, to reconstruct. Our recent survey and excavation of a European culture historical burial ground in the Conception Bay South community of Foxtrap (Foxtrap-2, CjAf-10) has provided a rare and unique opportunity to glimpse into the lives and mortuary behaviour of a 19th-century Newfoundland population.

Figure 1: Location of the Foxtrap-2 site (indicated by white star) at on Delaney's Road in Foxtrap, Conception Bay South, Newfoundland. (Adapted from Google Earth)

The site of Foxtrap-2 (CjAf-10) is located on Delaney's Road, in Foxtrap, Newfoundland (Figure 1). It consisted of an elevated (~1.5-2m above the surrounding ground surface) piece of land approximately 15m x 15m within a gravel parking area used for storage of equipment by a business on the property (Figure 2). The site was covered with field grass, wild rose bushes, and a small tree located near the western boundary. Based on early 20th-century maps of the area, the surrounding land was owned by the Taylor family and used as a farm until it was sold in 1998 to the current owners. The site was first visually recorded by archaeologists in 1998 (Drs. Sonja Jerkic and Ralph Pastore) at the request of the new landowners due to the apparent presence of an abandoned historic burial ground as evidenced by multiple erect and flat-lying headstones and unmarked potential graves (Figure 3). In 2006, members of the Provincial Archaeology Office, Stephen Hull and Blair Temple, visited the site after the landowners had expressed interest in having the burials removed (Hull 2006). At that time, Hull (2006) recorded several pos-

Figure 2: Panorama photograph of the Foxtrap-2 site. (Photo by authors)

sible marked and unmarked graves, including grave markers (i.e. headstones) that bore partial inscriptions. Based on interviews with the original landowner's descendants (i.e. the Taylor's), it was reported the burial ground was not likely in use since approximately AD 1860 (Hull 2006). It has also been noted the burial ground at Foxtrap-2 likely represents a European culture 'family burial plot' and resembles others located within the boundaries of Conception Bay, such as Wester Point in Portugal Cove and Foxtrap-1, the latter of which is located on the adjacent road to Foxtrap-2 (Hull, Pers. Comm.).

In August 2016, the PAO contacted the first author after the landowners had once again enquired about having the burials investigated and potentially moved to a new location. The authors' first visited the site on 30 August 2016, and for 17 non-consecutive days from 12 September 2016 to 15 August 2017 under PAO archaeology permits 16.36 and 17.08, carried out a surface inventory of features, topographic survey, geophysical survey (ground penetrating radar), and complete controlled excavation of the site. Our crew generally consisted of 3-4 members on any given visit, and for two days in June 2017 we were joined by Dr. Catherine Losier's MUN Archaeology Field School students. Here we present an overview of our archaeological investigations at Foxtrap-2 and preliminary analysis of the site finds.

Topographic and Geophysical (GPR) Survey

The site was cleared of overlying vegetation and the grass cut with the assistance of the landowners. A 13m x 13m grid was set up along North-South, East-West cardinal directions, and an initial metal detector sweep of the grid produced several 'hits' that were noted on the working field map. The excavation grid

Figure 3: Headstone markers laying on the surface and embedded. (Photo by authors)

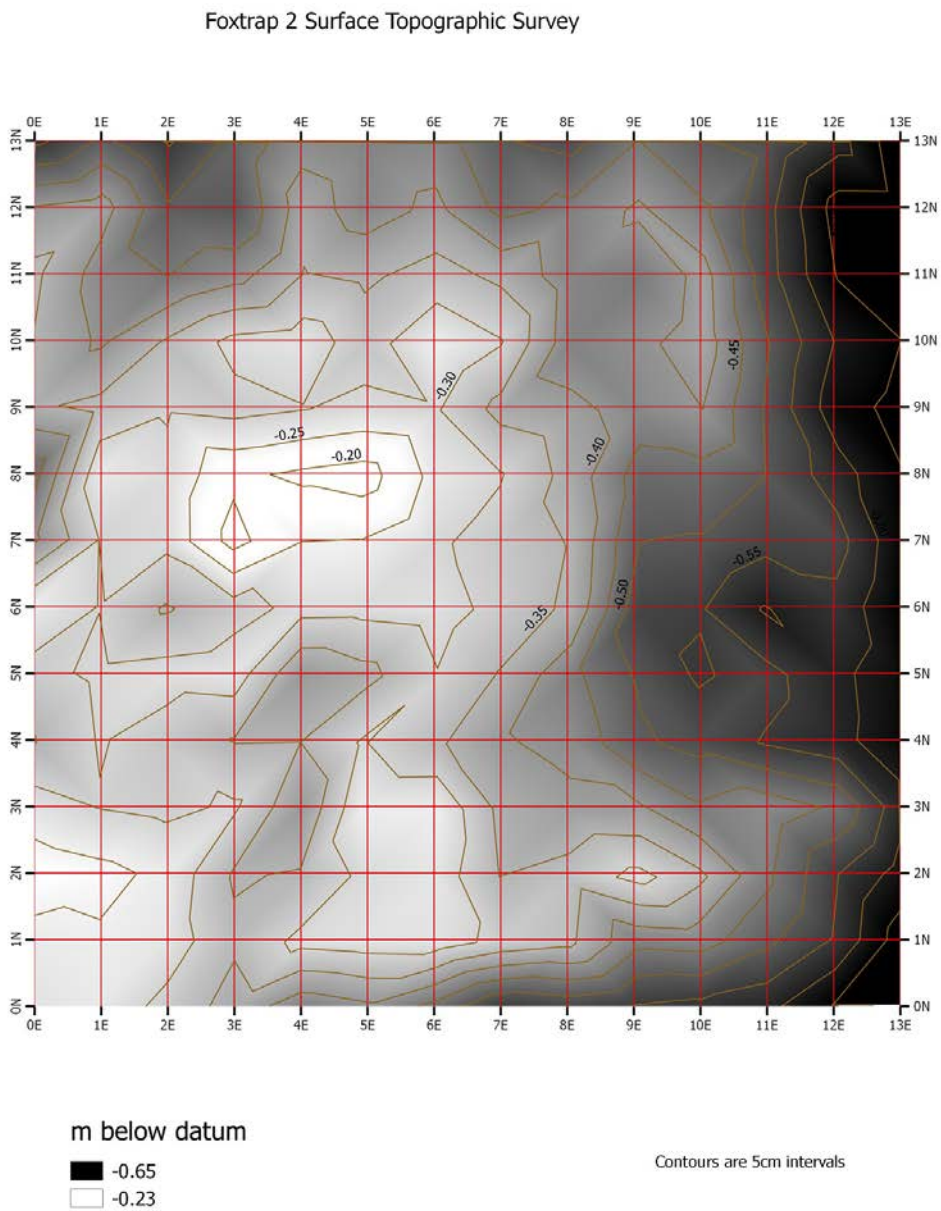


Figure 4: Topographic survey contour map of the Foxtrap-2 site 13m x 13m excavation grid. North is at the top of the figure. (Map prepared by Duncan Williams)

was later extended north to the 15m line. The topographic and geophysical (GPR) surveys were conducted within the 13m x 13m grid at 1.0m and 0.25m interval lines, respectively, along S-N and W-E axes. The topography of the site is consistent with Newfoundland historical cemeteries in which the surface is undulating with periodic depressions, that we initially assumed could be associated with human burials, however, no obvious relationship existed between the contours of the site and the placement of identifiable headstones (Figure 4). This suggested the grave markers may not be in their original positions, and/or the depressions on the site were not always related to a burial and could be due to natural variations in the soil or other non-mortuary related human activity.

The GPR survey was conducted using a Sensors and Software Noggin system with a 500 MHz antenna attached to the SmartCart unit. This configuration allowed for appropriate depth penetration (maximum to 2m) and data resolution of the radar signal within the depth expected for typical European human burials in Newfoundland (~1m below surface). Analysis of the GPR survey data suggested multiple contrasting anomalies consistent with changes in water content, the presence of rocks, and in several areas possible burial features. Of interest are the apparent GPR anomalies that occurred along the 6E survey line (Figure 4) in an area with a concentration of erect surface stone markers. In the GPR profile view of this transect we detected both reversed polarity and hyperbola patterns in the data consistent with burials/graves (Conyers 2004) (Figure 5). When this area is examined in plan or amplitude view at a depth of ~1m, we see distinct contrasts from the surrounding soil in the GPR results (Figure 6). Based on the distribution of surface stones and the results of the GPR survey, our initial excavation efforts were focused in the general area between 4-15N and 1-12E. The remaining site grid areas (1-4N/1-12E and 13-15N/1-12E), which did not show anomalies consistent with burial features in the GPR data or surface burial markers (Figure 6), was slowly removed down to a depth of ~1.5/2m below datum using a mechanical digger operated by the landowner and monitored by at least

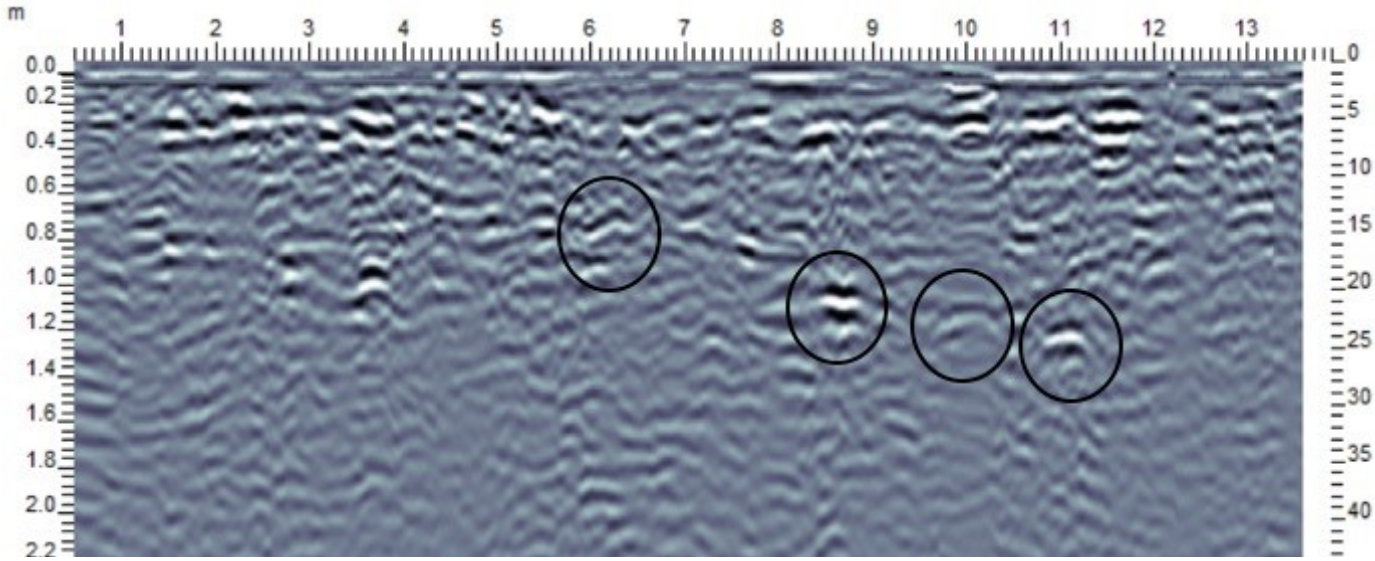
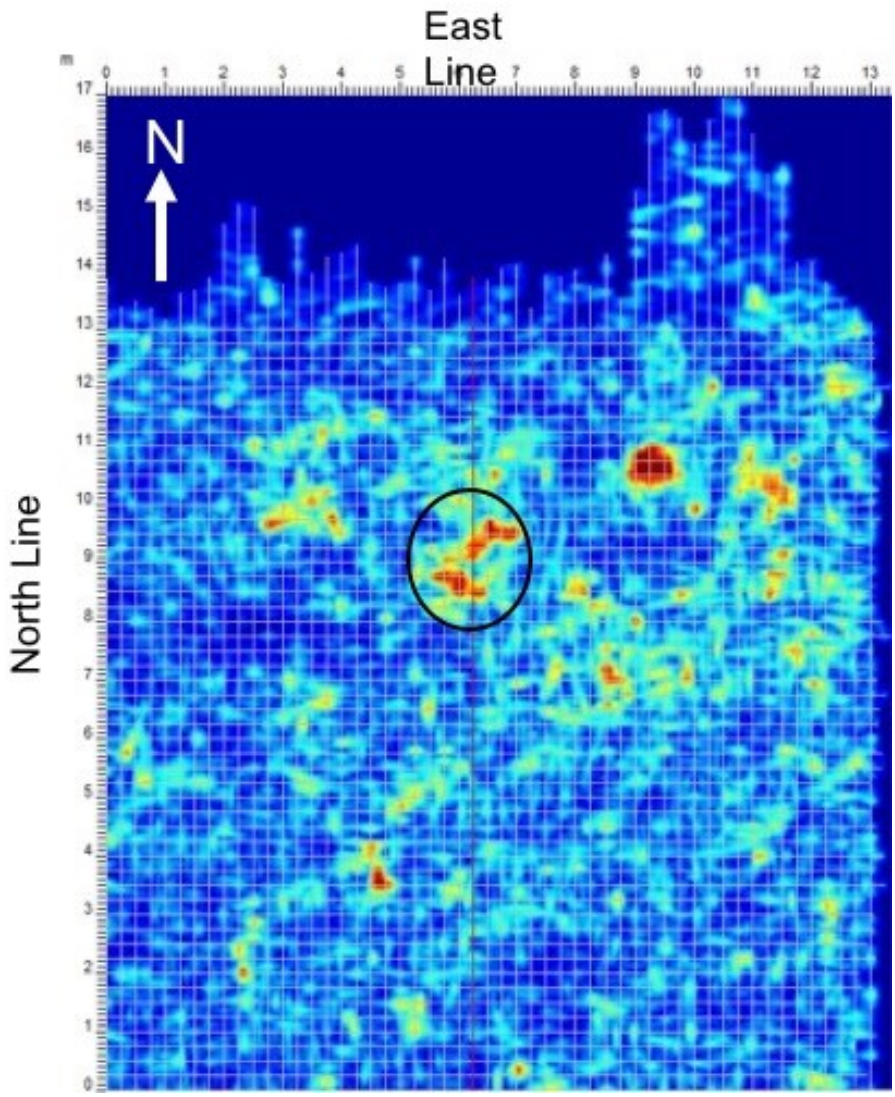


Figure 5: Ground penetrating radar profile view along the 6E line. The x-axis records the GPR path running from South (0m) to North (13m), and the left side y-axis records the depth of the profile. The circles identify GPR anomalies consistent with burial Features 15, 10, 7, and 4 from left to right.

Figure 6: Ground penetrating radar amplitude map (SliceView) of the site at 1.1m depth. The circled area highlights strong contrasts in the data (regions in red) that correspond with the locations of burial Features 10 and 7 within the area of transect lines 5E-7E and 8N-10N.



one member of the excavation crew, including a member of the PAO. The subsequent excavation of the northern most 5 meters of the grid (i.e. from N8 to N13) provided clear evidence of grave cuts, coffin hardware (nails and wood fragments) and, in some cases, human remains. There was no evidence for burials discovered in the remaining sections of the site.

Burial features, human remains, and artifacts

In total 31 burials consisting of east-west orientated single inhumations were recorded and each was given a Feature (F) designation; Feature 2 (possible grave stone), F3 (subsoil), F6 (cobble 'wall') and F9 were not recorded as burial features due to an absence of sufficient evidence, i.e. coffin nails, wood, or human remains (Figure 7). In most cases, all burial features had similar stratigraphic characteristics within the soil profile, however, the specific depth of each layer varied between the features: sod layer, a small to medium sized field stone layer, loose gravel, fine grain dry pebble layer, presence of coffin wood/ nails, and human remains. A summary of the preliminary osteological analysis of the human remains identified at Foxtrap-2 are presented in Table 1.

Based on the size of the grave cuts and skeletal material present, there are eight adults, thirteen subadults, and three of indeterminate age present in the assemblage. Due to poor soil conditions, the preservation of many individuals was negatively impacted such that only 18 burials contained identifiable skeletal material (Figure 8). Of those 18 burials, most adult burials contained only incomplete long bone and skull elements, while the subadult remains consisted of cranial bone fragments and isolated teeth. The sex of the adults was assessed using features that exhibit sexual dimorphism in cranial morphology. Using the methods described by Buikstra and Ubelaker (1994) and Walrath et al. (2004), it was estimated that there were two possible males, one possible female, and four of indeterminate sex. It was not possible to estimate the age of these adults due to the fragmentary nature of the remains. Age was assessed for subadults and those of indeterminate age with preserved teeth by assessing tooth development using Buikstra and Ubelaker (1994) and are presented in Table 1.

Most of the artifacts recovered from the Foxtrap-2 burials related to burial/mortuary hardware, i.e. complete and incomplete coffin nails (over 700) and coffin wood fragments, however, a limited number of other items were found distributed at the site and/or within the burials. These included at least fourteen copper 'shroud pins', six small ceramic fragments, a fibre/textile/thread bundle (in F11), three shards of glass, two clay pipe fragments, one piece of flint, and in F12 a Nova Scotia Halfpenny token with a date of 1832 (Figure 9). Even accounting for poor preserva-

Table 1: The sex and age estimation of human remains from the Foxtrap-2 (CjAf-10) using methods described by Buikstra and Ubelaker (1994) and Walrath et al. (2004).

Feature #	Age group	Sex estimation	Age estimation
1	subadult	-	-
4	indeterminate	-	>9y
7	adult	Indeterminate	-
8	subadult	-	-
9	adult	Indeterminate	-
10	adult	Indeterminate	-
11	adult	possible male	-
12	adult	possible female	-
13	adult	Indeterminate	-
14	adult	possible male	-
15	subadult	-	<12.5
16	subadult	-	-
18	subadult	-	9y+-24mo
19	subadult	-	-
20	subadult	-	4-9y
23	subadult	-	5y+- 16mo
24	subadult	-	3y10mo-11y
25	subadult	-	>3mo
26	subadult	-	>5y
27	subadult	-	-
28	indeterminate	-	>9y
29	subadult	-	-
30	adult	Indeterminate	-
31?	indeterminate	-	-

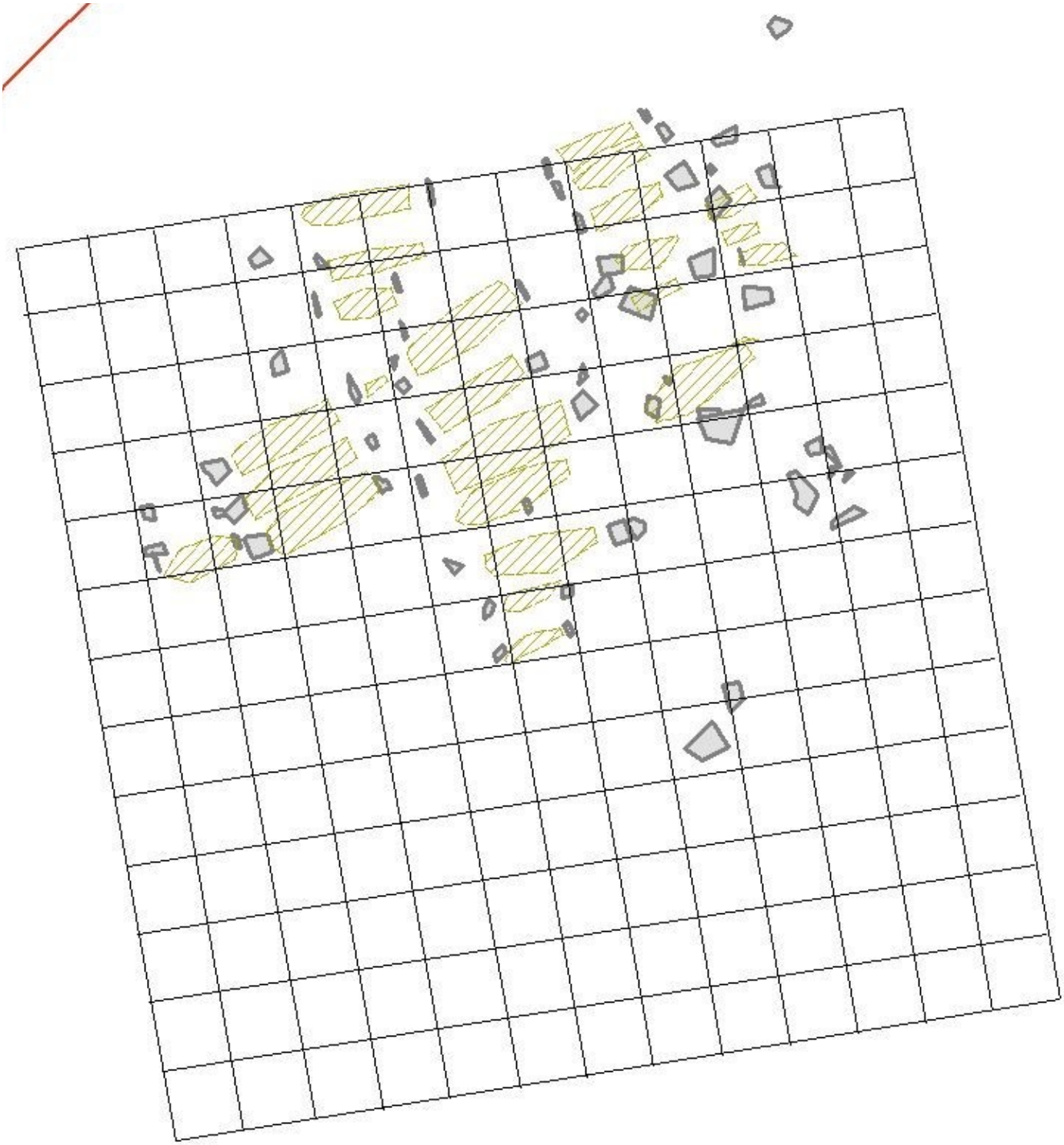


Figure 7: Site excavation plan view map of features (human burials).
(Map prepared by Maria Lear and Bryn Tapper). North is at the top of the image.

Figure 8: Feature 9 burial showing the poorly preserved 'soil shadow' of lower appendicular skeletal remains. North to the right of the image.

Figure 9: Relatively well-preserved human remains in Feature 12 (A). Arrow indicating North. A copper 1862 Nova Scotia halfpenny was found on the left side of this individual's mandible (B).

tion conditions, the limited number of artifacts found within the burials would strongly suggest the individuals were not originally interred with much in the way of mortuary items or clothing.

A stroke of good fortune occurred with the recovery of additional pieces from the fragmented engraved headstone originally described by Hull (2006), recovered from the surface as well as below ground. While key pieces of the headstone are missing, much of the engraved script could be deciphered and indicates the identity of one individual buried at Foxtrap-2 as Bridget Greeley (Figure 10). A possible confirmation of her burial at Foxtrap-2 can be found in the Vital Records 'Returns of Deaths for the District of Harbour Main' (1892-1897) document in which a Bridget Greeley is listed as having died of typhoid fever in Greelytown on 16 September 1896 at the age of 54 years, and was interred at the 'Church – Foxtrap – Yard'.

The Greeley headstone can be characterised as having a curved lunette and flanking finials, with no decoration. The stone's inscription contains four scripts; Gothic Revival, modern roman, modern roman italicised, and bold Sans Serif, all common sights on 19th-century gravestones. It was carved from limestone, which was likely imported from England or Ireland as it does not occur naturally near the site, and the inscription was most likely carved overseas as was typical of the period (Pocius 1975, 1981).

Along with the single inscribed stone, of which 18 fragments were recovered, the burial ground contained many uninscribed shaped stones made from locally-sourced material. Acting as both head and footstones, these grave markers were

Figure 10: The reconstructed engraved headstone from Foxtrap-2. The inscription includes text from the third stanza of the poem 'Parted Friends' by James Montgomery (1771-1854): "There is a world above, where parting is unknown; A whole eternity of love, formed for the good alone; And faith beholds the dying here, translated to that happier sphere!"

roughly shaped tablets used to indicate the location of the grave, and were erected very close to the head and feet of the coffins. The use of shaped stones in this manner shows the development of funerary traditions, as well as speaking to the economic status of the people being interred at the burial ground. They wished to mark the graves, but could not afford to have gravestones carved and shipped from the British Isles, or brought over the emerging gravestone carving industry in St. John's (Pocius 1981), but rather looked to local sources and used what they could find. It is possible that there were other inscribed stones at the burial ground, however they are no longer present.

Summary

The site of Foxtrap-2 (CjAf-10) represents one of the few historical period burial grounds to be completely surveyed and systematically excavated, and offers a rare glimpse into the lives of 19th Newfoundlanders. While the complete analysis of the artefacts and human remains recovered from the site is ongoing, we have evidence of 25 burials and osseous/bone material remains of 18 individuals. Due the poor preservation conditions at the site, a limited number of individuals have bone remaining to allow for sex and age determinations, but it would appear from these data and grave dimensions that 8 adults, 13 subadults and 3 individuals of indeterminate age were interred at Foxtrap-2. Further research of these remains using stable and radiogenic isotope analyses will provide additional information about the health and diet of the individuals.

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Archaeology in the Torngats Mountains National Park and the Ramah Bay Mission Site (231A)

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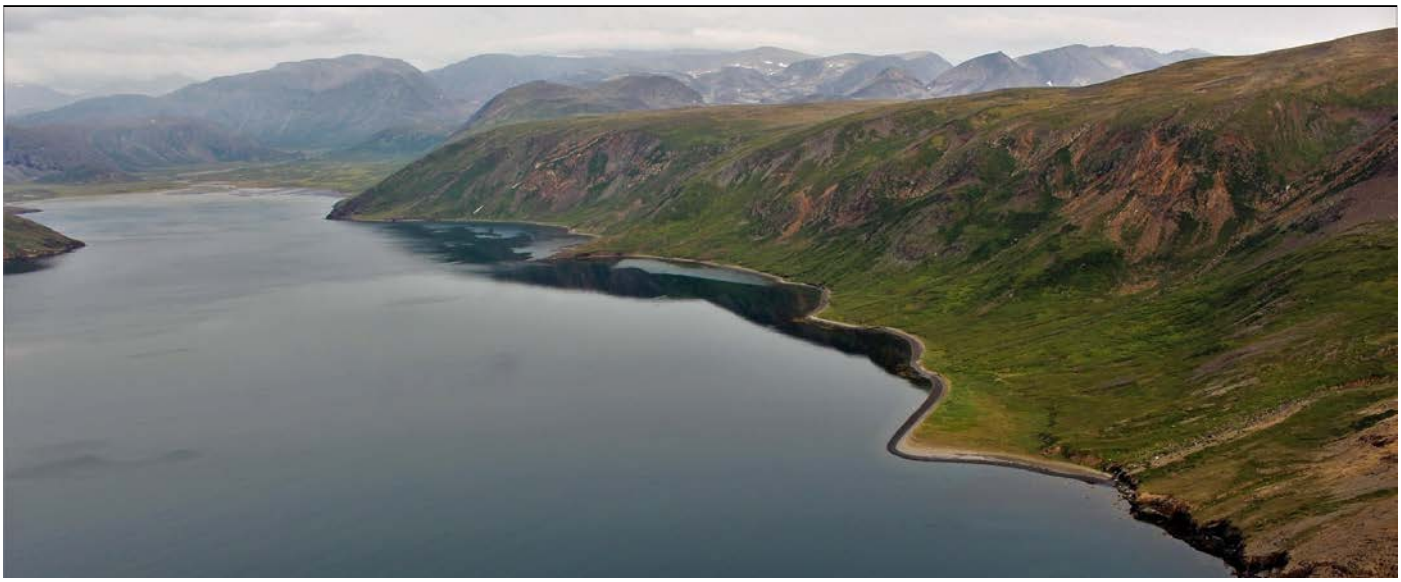


Figure 1: The Ramah Bay Mission site is located on the broad flat terrace in the bottom right of the image. Facing west toward the mouth of Ramah Bay (Weatherbee 2017).

Introduction

Located in northern Labrador, Torngat Mountains National Park became a park reserve in 2005, with the implementation of the Labrador Inuit Land Claims Agreement and officially obtained national park status with the ratification of the Nunavik Inuit Land Claims Agreement in 2008. From the Inuktitut word Torngait, meaning "place of the spirits", this area has been home to Inuit and their predecessors for thousands of years. This rich cultural heritage is reflected in oral and written histories, as well as by the 414 known archaeological sites documented throughout the park.

New visitor experience programs are currently being developed to showcase the cultural and natural richness of the park. As such, archaeological impact assessments were conducted to ensure that these resources are protected for Nunatsiavut and Nunavik beneficiaries, as well as visitors, for generations to come. The two projects assessed in August 2017 include: an archaeological survey of Ramah Moravian Mission Site (231A) and archaeological impact assessments of five satellite camp locations. Located in the mountains between Ramah Bay and Saglek Fiord along planned hiking routes, the principle goal is to develop a network of hiking routes to open up the interior of the park to visitors and researchers alike.

231A – Ramah Bay Mission (IfCt-03) Survey

Located on a broad, flat terrace on the north side of Ramah Bay (Figures 1, 2 & 3), Ramah Bay Mission Site was in operation from 1871 to 1908. Lack of archaeological evidence and available marine and terrestrial resources suggest that the area may not have been used prior to the founding of the mission (Curtis 2012:8, Kaplan 1983: 280, 651). Established to "attract the last bands of heathen Inuit out of their abodes in the Torngat Mountains" (Cabak and Loring 2000: 15), there are numerous cultural resources / features still visible at the site, these include: a number of old foundations from the Moravian and Inuit house structures, countless tent rings, a graveyard, a large boulder with Inuit names etched into it from the

Figure 2: Aerial view of Ramah Bay Mission site (231A), facing northwest.

Figure 3: Black and white photograph of mission station, steamboat and surrounding bay at Ramah, Labrador, circa 1900 (Moravian Archives 2000b). Note the heavily used path ways in the foreground and the Inuit house foundations in the center right of the images.

Figure 4: Parks Staff, Nancy Kooktook, Jobie Unatweenuk and author, Wesley Weatherbee recording feature location using GPS/ GNSS receiver and Android tablet. Facing east (Parks Canada 2017).

late 1800s to present, and numerous unidentified features and spot finds. With increasing interest in the park, the Ramah Bay Moravian Mission site is quickly becoming a popular visitor destination.

Methodology

Building off previous archaeological surveys of the area (Curtis 2012 & 2011, Fitzhugh 1980 & Kaplan 1983) an archaeological impact assessment of the Ramah Bay Mission site was conducted in late August 2017. Aerial and terrestrial surveys were undertaken at the Ramah Bay Mission (321A) to identify and assess potential impacts on cultural resources as well as helping to inform interpretation of the site. Terrestrial surveys included walking five metre transects of the survey area, noting the location, extent and features associated with new and previously recorded archaeological sites. Features were flagged during the survey, were then recorded digitally using photography, a Juniper Geode GPS/GNSS receiver wirelessly connected to an Android tablet using a mobile GIS application (MapIt Pro) (Figures 4 & 5); and the use of a UAV to produce a high-resolution digital elevation model (DEM), and orthomosaic of the site (Figure 6). This method facilitated a thorough and expedient collection, organization, and aggregation of data collected in the field by automating production of a CSV spreadsheet with many attributes, and sub-metre accuracy for each recorded point. Use of the mobile GIS application allowed for the data to be collected as point, line, or polygon each with many associated attributes (Figures 6 & 7). To collect comparable datasets, each polygon and line also had an associated point feature, which permitted the collection of a point class that held attributes for every feature or artifact flagged.

Initial Survey Results

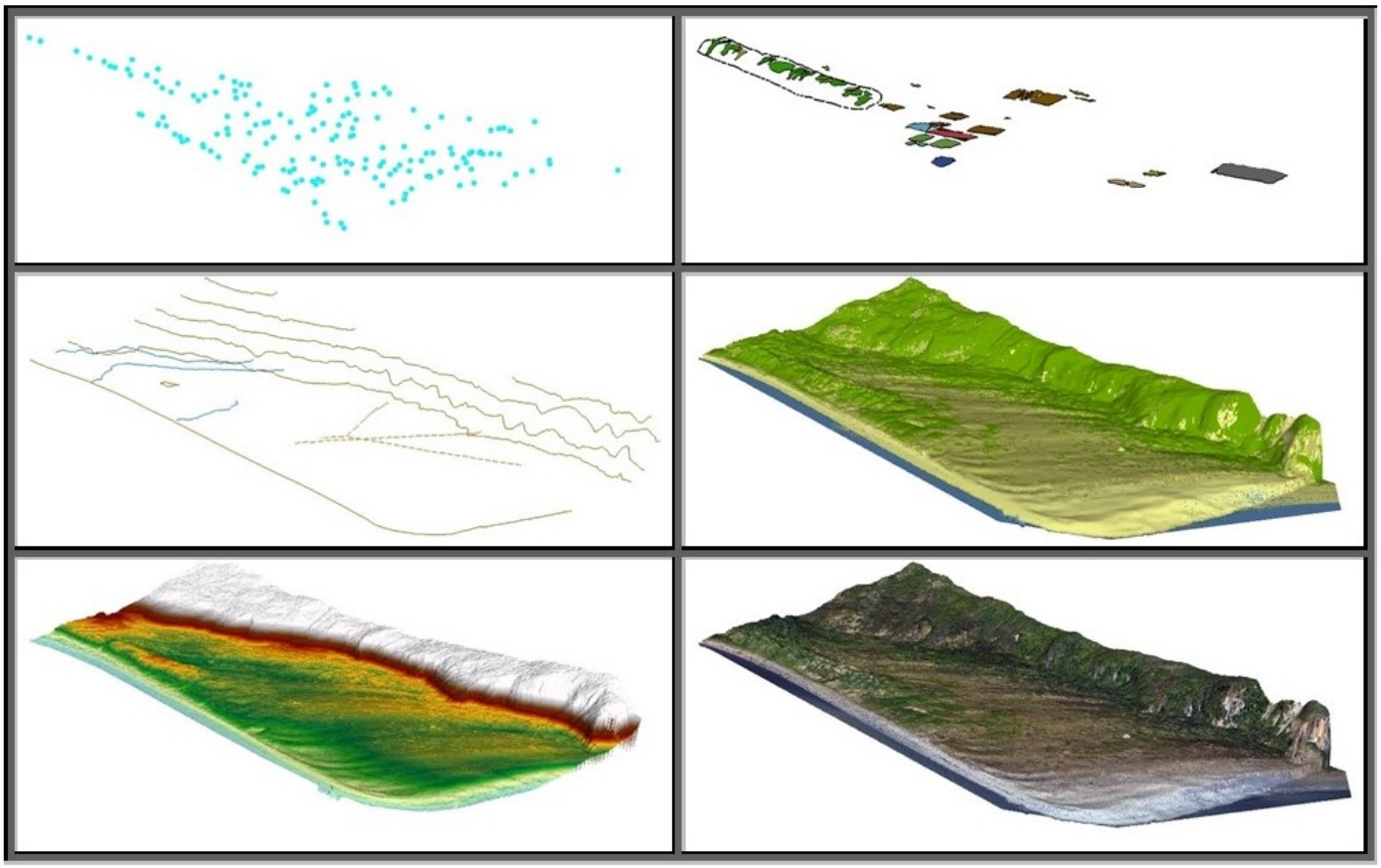
The survey began at the eastern edge of the site using five metre transect lines with a team of 3 – 4. Upon completion, a series of high-resolution static maps were produced of the area as reference for future researchers. The terrestrial surveys recorded at total of 210 features (Table 1) each with 26 recorded attributes (Figure 7).

Table 1: Table showing the count of point feature types recorded at Ramah Bay Mission site.

Feature Type	Total
Point	168
Polygon	38
Line	4
Total	**210**

Figure 5: Surveying Inuit house foundations with GPS/GNSS and MapIt GIS running on an Android tablet at Ramah Bay Mission site. The perimeter of the feature is walked and recorded in real time in the GIS application.

Figure 6: The above images depict some of the vector and raster format data that was expediently produced from the surveys performed at the Ramah Bay Mission site. From the top, left to right, the data displayed are: point features; polygon features; line features; ground surface classification; digital elevation model; and, orthomosaic. These products will supply future researchers of and visitors to this site with an essential set of data to enhance interpretation of the area.



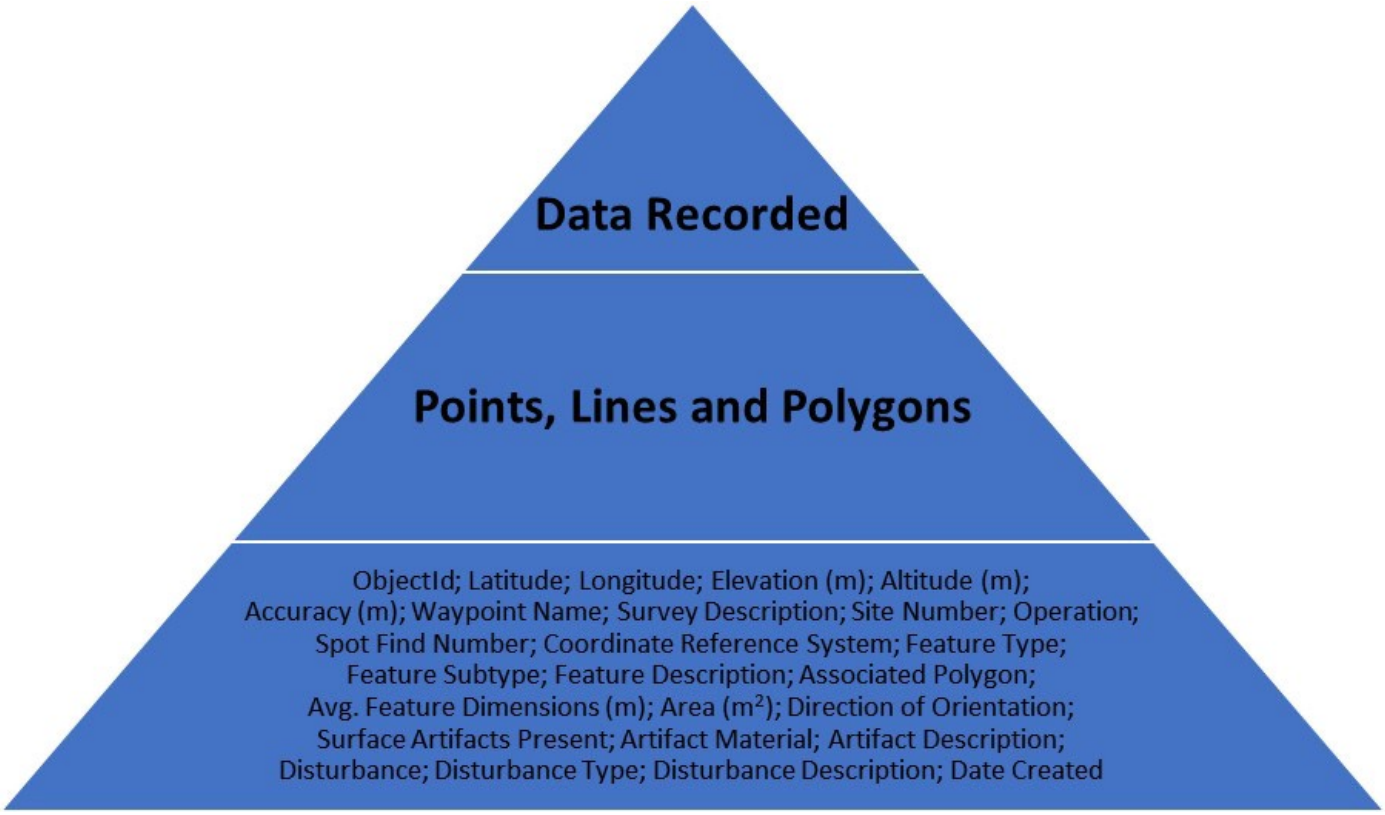


Figure 7: Pyramid hierarchical diagram showing the relationship between attributes and recorded data types.

Table 2: Totals of data types of features recorded. This total is larger than the total in Table 1, as there was one point recorded for each polygon and line feature. Limitations of the application required joining attributes from associated point and polygon/ line classes to retain consistency between data types.

Feature Type	Total
Object	55
Other	22
Scatter	23
Structure	68
Grand Total	**168**

Data Collected and Products

The survey methodology applied facilitates the creation of datasets that can be used to enhance interpretation of the Ramah Bay Mission site for researchers and visitors alike. This methodology was adopted in order to efficiently collect high resolution data of the site, both geographical and cultural as high resolution geographical data is integral to archaeological analyses for research and impact assessments. The aerial survey efficiently collected much of the physical landform and terrain data using grid-patterned geolocated photos and 11 ground control points (GCPs) located on the ground and recorded with GPS/GNSS. Each GCP was constructed of two, one metre long sections of highly visible orange ribbon that intersected each other at the centre point. These GCPs were also used as one metre scale bars to check the accuracy of the products in post-field processing using Agisoft Photoscan and ArcGIS.

Features of Nuance and Historical Photos

The Ramah Bay Mission site holds very well preserved features. Throughout the survey, historical photos were referenced to identify subtle features which may not be readily visible. Examples of these types of features were the divergent paths fanning out from the east side of the mission, the water collection area, and the fenced in gardens behind the mission house (Figures 3, 8 & 9). The paths were roughly delineated on site with the help of historical photos, then post-field correction was applied with the assistance of the DEM of the site (Figure 6). Along the path to the water collection area, the DEM displayed slight linear relief in which the soil had been built up to provide a flat surface to drag barrels of water by means of komatik to the occupants of the site (Figure 8). In the gardens, historic photos were used to gain

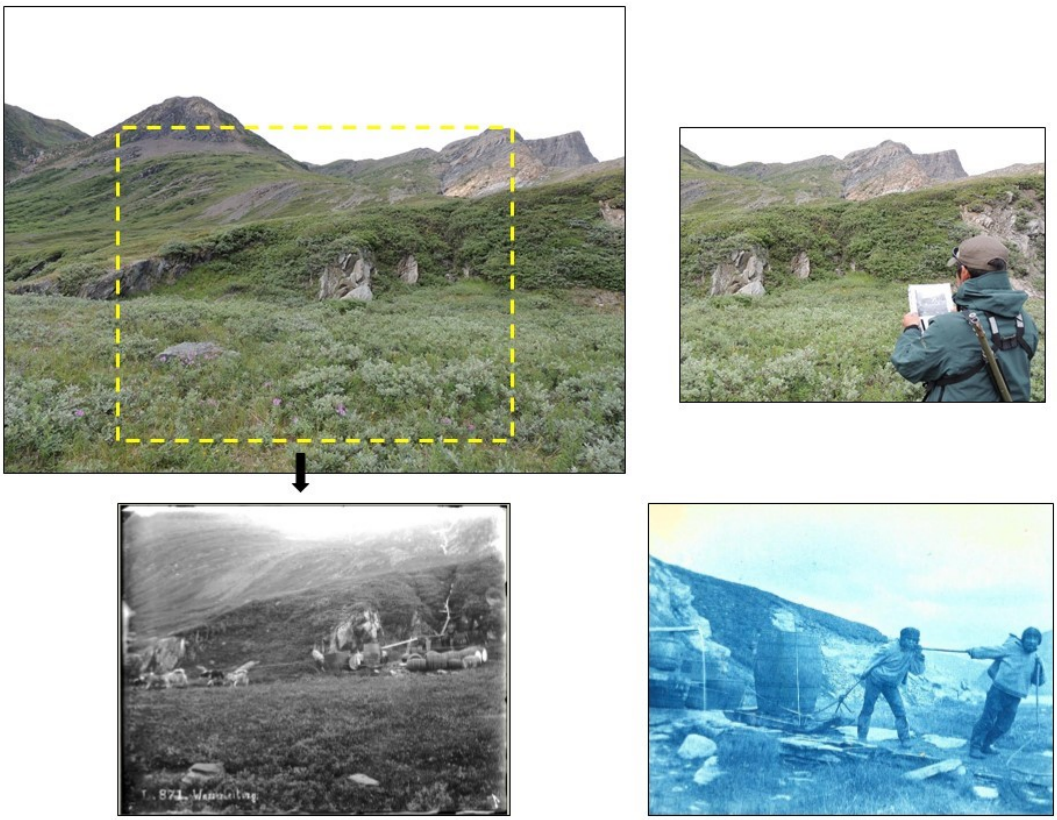


Figure 8: Relocating the water collection area. From top to bottom, left to right. 2017 Image of water collection area; Jobie Unatweenuk matching up the historical photo with features on the landscape; ca. 1900 historic photo showing intricate water storage system with pipes bring water from the stream to barrels (Moravian Archives 1900d); ca. 1900 historic photo showing two Inuit hauling a barrel on a small komatik, note the built up pathway (Moravian Archives 1900a).

Figure 9: Ramah Bay Mission house and church (Moravian Archives 1900c).

Figure 10: Aerial view of eastern extent of Ramah Bay Mission site with house and church foundations and rectangular vegetation plots in southeast corner, cemetery in top right corner and vegetation / tent rings throughout.

insight into the spatial arrangement of the features. The garden features were visible on the surface as rectangular areas of healthier vegetation than the surrounding areas, while a chicken coop or shed was placed in between two of these features (Figures 9 and 10). Historical photos were a valuable resource for the interpretation of these features.

Vegetation Rings and Tent Rings?

Patches of vegetation were noted to be in circular formations ranging in diameter from approximately 1.5 – 4 metres with some occurrences of two vegetation rings overlapping at their edges (Figures 10 & 11). These features were initially recorded as vegetation patches, noting in the features description they may be tent rings. However, upon aiding in the closing of the basecamp the same patches of vegetation were clearly visible under the footprint of our tents (Figure 12). These features have been tenatively designated as evidence of more recent camping in the area. A date for these activities have not yet been estimated though the similarities between vegetation circles at the Ramah Bay Mission and TNMP basecamp suggest a waterproof footprint may have been used to line the underside of the tent. Due to time constraints and the abundance of vegetated tent rings in the area, these features were not all recorded with points, yet a classification of the vegetation types performed on the newly created orthomosaic in ArcMap, allowed for a polygon feature to be created which outlines the area of tent ring concentrations on the site (Figure 6). The ability for these features to be identified and numbered remotely is a possibility facilitated by the data collected on site. We present this information as

Figure 11: Close up of possible tent ring with vegetation, comparable to the base of the tent shown in Figure 12 and foot print similar to tent in Figure 13.

Figure 12: Vegetation associated with tent rings at Torngat Mountains Base Camp and Research Station.

Figure 13: Black and white photograph of an Inuit summer camp at the base of a mountain near Ramah. In the center of the photograph fish are being dried on wooden racks next to animal skin tents. A group of people sit posed in front of tents (Moravian Archives n.d.).

it may be useful to help reconstruct temporal use patterns in future archaeological impact assessments.

Satellite Camp Survey

Satellite camp surveys began with an aerial survey of the proposed camp site area. Park staff members, Martin Lougheed, Andrew Andersen, Jacko Merkeratsuk and Eli Merkeratsuk were then consulted to determine the best place for the camp, namely in areas next to water with good visibility. With the camps located at regular intervals to allow hikers to travel between camps in one day, it was also imperative that the domes be located in places to limit possible damage from wind, ice, water and rock slides. With this, potential camp sites were then surveyed by walking five metre transects, to ensure that cultural resources would not be negatively impacted by visitor activity. Due to time constraints and the nature of the survey, areas of interests were recorded with photos and GPS coordinates and not with the Juniper Geode and tablet.

Of the five satellite camps surveyed, only one site had to be relocated due to the presence of cultural resources. With the proposed campsite slated to be built adjacent to a previously undocumented Ramah chert outcrop and possible working area (570A-IdCt-05), we worked closely with park staff to find a new location. The new camp was subsequently relocated next to a large lake and low-grade vein of unworked Ramah chert (Figure14). While visitors can camp in the area, they will not be permitted to disturb the cultural resources in the area. Due to the expedient nature of the survey, the new site was recorded quickly with GPS coordinates and images, so that we could return to the site, as time permitted. Unfortunately, time didn't allow for a more in-depth survey of the site. A more in-depth survey of the site and area is required before visitors will be able to camp in the area.

Acknowledgements

During the course of the 2017 fieldwork, we were accompanied by Parks Canada's Martin Lougheed, Andrew Andersen, Jacko Merkeratsuk, Jobie Unatweenuk, Nancy Kooktook, Lindsey Moorehouse; and Nunatsiavut Group of Companies Bear Monitor's, Herman Merkeratsuk, Ryan Merkeratsuk and Eli Merkeratsuk. This project was made possible by the support of park Superintendent, Gary Baikie, Visitor Experience Manager, Martin Lougheed, and Administration Assistant, Rosie Lyall. Thanks also to the staff of the Torngat Mountains Base Camp and Research Station (https://thetorngats.com/) who kept us safe and well fed. Co-author, Wesley Weatherbee participated in the fieldwork as a Parks Canada Archaeological Field Technician hired through the Federal Student Work Experience Program (FSWEP).

Aerial footage of the Ramah Moravian Mission survey was posted on the Parks Canada Archaeology Twitter Page in October 2017 (https://twitter.com/PCArchaeology/status/921938050137186304).

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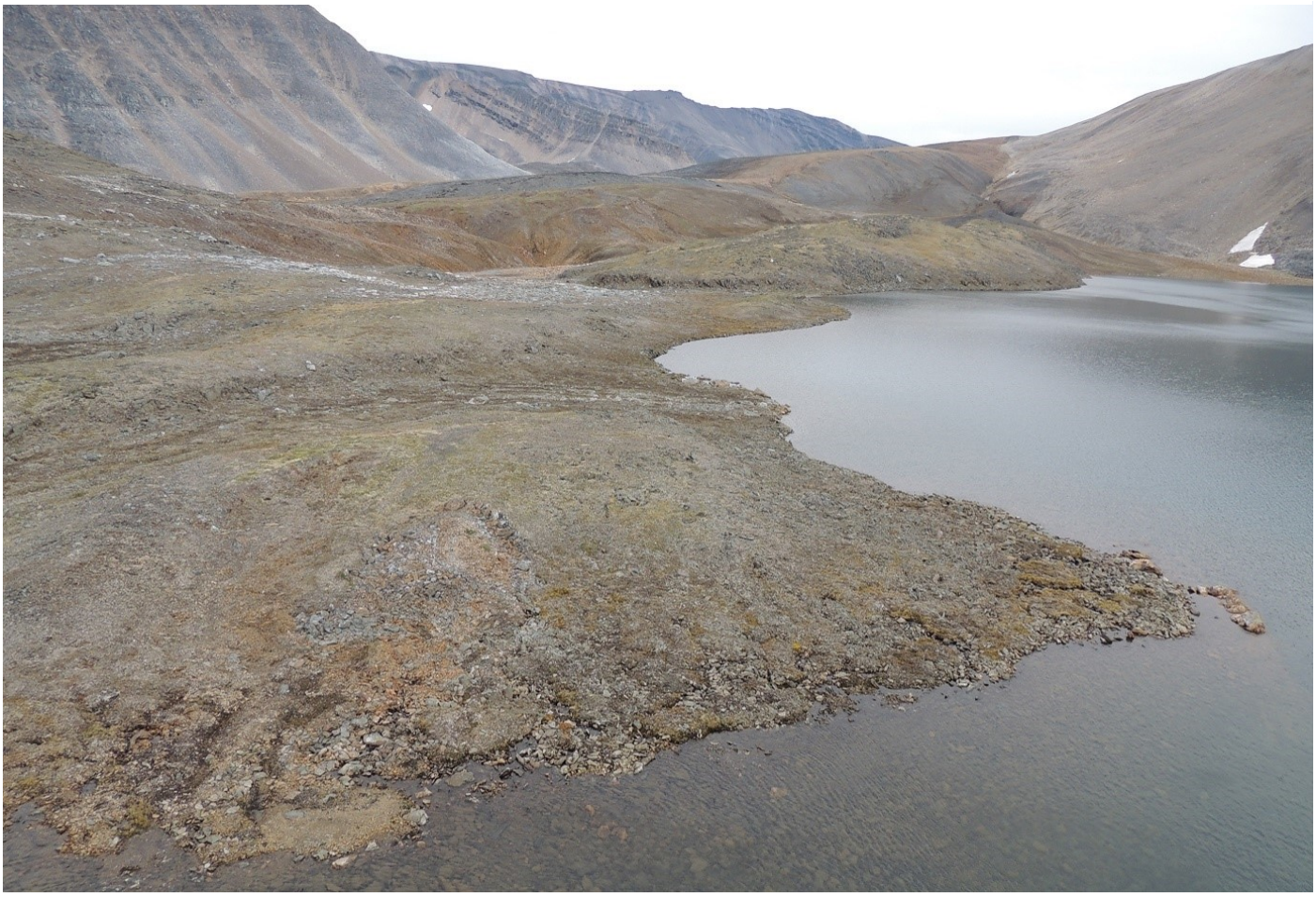
Figure 14: Aerial view of satellite campsite 2 with low quality vein of Ramah chert in foreground and potential quarry site in the background.



Between the Mountains and the Sea: Tshikapisk Archaeology in Nitassinan 2017 (17.03, 17.28)

Anthony Jenkinson
Tshikapisk Foundation

Introduction and Summary

Since 1998 the Tshikapisk Foundation, a cooperative Innu experiential education initiative, has conducted archaeological surveys and excavations centered at Kamestastin in the interior of northwestern Labrador (Loring 2009, 2011; Arbour, Jenkinson and Loring 2013; Jenkinson 2011, 2015, 2016; Jenkinson and Loring 2012; Jenkinson and Arbour 2014). The Tshikapisk mandate, to celebrate and promote Innu cultural heritage, seeks to involve Innu in the discussion (and production) of their history through participation in fieldwork and by participant observation –creating opportunities for discussion and contemplation of Innu history—in the country but also, increasingly, in the village of Sheshatshit as housing construction impacts old Innu sites. Tshikapisk archaeological fieldwork in 2017 had three components: a canoe-based survey from Shapeiau to Hopedale, survey and excavation work at Kamestastin principally at Mistamunik-Mistanuk (GlCs-08); and salvage excavations in Sheshatshit at Pakan, a locus of Sheshatshiu 22 (FjCa-71).

Figure 1: Map showing location of Ushikuish and Mistanuk sites on north side of Kamestastin outflow narrows.

Between September 17th and October 10th a canoe borne archaeological survey took place between Shapeiau Lake (Shapio) and Hopedale. Stephen Loring, Anthony Jenkinson, a canoe and gear were flown into the north end of Shapeiau and in the following 3 weeks we travelled all around Shapeiau stopping to walk promising looking locations and setting up camp at several locations. Later we set off down river to where Shapeiau waters joined the Ashuapunshipu (Adlatok River) which we followed to the sea (see Loring and Jenkinson, this volume, for a detailed account of the Shapeiau portion of Tshikapisk fieldwork.)

In Sheshatshit plans to build a private garage and clear an area for this purpose behind a residence on Masseuk Street led to testing on a surviving portion of a terrace, a large part of which had earlier been destroyed during the creation of housing lots. [The exemplary responsibility and patience of the homeowners of 8 Masseuk, Annie Okkuatsiak and Philip Michel, is hereby acknowledged with thanks.] It was on this terrace that a combustion feature with quartzite shatter, calcined bone and an associated pit were identified in 2009. Unfortunately the site (FjCa-71) was only recognized after the surface vegetation and spruce forest had been stripped away prior to new housing construction. Lying close to the pit feature, on badly disturbed ground, were fragments of a

Figure 2: GlCs-08 Area A of the Mistanuk Site at Kamestastin with Kamestastin River outflow in the background. Kamestastin May 2017.

ground slate channel gouge and a celt (see Figure 8). As the location chosen for the garage was a more southerly part of the same terrace on which FjCa-71 sat, it was considered prudent to subject it to archaeological test pitting.

At Kamestastin fieldwork focused on excavation at the Mistamunik-Mistanuk Site (GlCs-08) where it was hoped that sediment run off from a moraine immediately above the site may have created a stratified site. In 2016 limited test pitting at GlCs-08 had identified buried cultural components at 25 cm below the modern surface. Four square metres opened around the 2016 positive test pit revealed an interesting feature where hundreds of small Ramah chert flakes had been deposited on and around a small mound and then liberally scattered with red ochre.

Fieldwork at Kamestastin:
Mistamunik-Mistanuk Site (GlCs-08.)

The Mistamunik-Mistanuk Site (GlCs-08) is located at the eastern end of a high terrace which lies between two brooks on the north side of Kamestastin outflow narrows. The site sits upon a terrace between a glacial moraine and the west bank of a gully which parallels Mistanuk Brook. The latter drains a sizable lake to the north east and it and the gully are separated by a ridge of higher ground. The site actually sits mostly on a bluff with the ground dropping away abruptly on three sides. The bluff commands views of the eastern part of the outflow narrows and of the two major caribou paths which emerge onto the narrows on the southern shore. The Ushikuish Site (GlCs-57) is approximately 75 metres to the south west of Area A of Mistamunik-Mistanuk (GlCs-08) and is linked to GlCs-08 by caribou paths which run between the two sites.

Mistamunik-Mistanuk was originally identified on the basis of surface showings of Ramah Chert, white quartz debitage and slate fragments in caribou paths. A test pit to 25 cm below surface in 2016 came down on fire cracked rock with calcined bone and flakes of Ramah chert. Small retouch flakes of Ramah were present from the surface and they increased in number to where the calcined bone lay amongst fire cracked rock at the 25 cm depth. In the spring of 2017 an initial 8 by 12 metre area (Mistamunik-Mistanuk Area A) was gridded with the 2016 test pit lying in its western section. Subsequently a second area (Mistamunik-Mistanuk Area B) was gridded out. It formed an additional 10 by 6 metre excavation area to the southwest of Area A on the same alignment. Four square metres were opened around the 2016 test pit in Area A. The calcined bone, Ramah chert and fire cracked rock in the test pit proved to be part of a small combustion feature in N3W7 alongside which lay a diminutive oval biface of light coloured Ramah chert. In the process of excavating this unit a dramatic lens of red ochre appeared in the western wall.

The red ochre lens grew thicker and more intense from north to south suggesting that the ochre deposit was focussed on a feature near the intersection of four 1 by 1 metre units. 3 additional units were opened creating a 2 by 2 metre excavation which revealed another and larger combustion feature around, and upon which, profuse quantities of small Ramah chert flakes had been deposited and then generously covered with red ochre. Virtually all of this Ramah was of a size and character classable as waste material from tool maintenance and re-sharpening. The distribution of the Ramah debitage in concentrations with piles of flakes lying one upon the other,

Figure 3: Apparent ritual feature within 2 by 2 metre excavation at Area A GlCs-08 with Ramah flake deposit covered with red ochre. Kamestastin, May 2017.

combined with the dramatic anointing of the piles with red ochre strongly argued for their interpretation as acts of ritual deposition rather than random scatters accumulated during tool manufacture and maintenance. Loring (2002, 2017) has argued that the use and consumption of Ramah chert (often associated with red ochre in mortuary contexts) could be a spiritual practice as tools manufactured from it were so intimately involved with the killing and processing of animals whose guardian deity must be appeased. The debitage from the Mistamunik-Mistanuk "ritual" feature in Area A suggests that tools were being re-sharpened as opposed to manufactured and that this "recharging" of tools was a ceremonially charged practice requiring ritual treatment of the waste flakes (perhaps analogous to the treatment Innu afford crushed caribou bones involved in the mukushan and the elaborately prescribed treatment accorded to bears and bear parts. Both are considered to be watched over by powerful forces and therefore "dangerous" if not accorded proper treatment. It is also possible, and maybe, in light of the extraordinary lengths that those who favored Ramah as the material from which to fashion hunting weapons and animal processing tools went to obtain it (Loring 2017), probable, that the tool stone itself - and not just its association with the taking of the lives of animals whose guardian deities were revered and feared - was believed to be a spiritually charged material perhaps with its own attendant guardian deity.) Evidence of the same practise of disposal of small Ramah flakes covered in red ochre has been noted at the nearby Ushikuish site which sits 75 metres away on the western end of the same terrace as Mistamunik-Mistanuk.

These sites sit aside and just back from the water at a major caribou-crossing place, and the plethora of tiny pressure flakes that appear to be ceremonially deposited suggest that these sites are caribou hunting sites where hunting families rejuvenated their stone tools while waiting for the caribou to come.

Apart from the material in the 2016 Test Pit, clearing of willows, dwarf birch, Labrador tea and other flora revealed 3 features apparently of cultural origin protruding through the surface vegetation. Two of these were in Area B and one in Area A. Excavation of a feature in the western section of Area B produced only a handful of quartz and Ramah flakes while rocks protruding through the surface in units S3W17 and S2W17 proved to be part of a hearth with abundant charcoal and surrounded by copious amounts of Ramah debitage. Also present were lesser amounts of white quartz and one large flake of rhyolite. In the north western section of Area A both surface scatters of Ramah chert and pieces of fire cracked rock protruding through the modern surface led to the opening of a further 4 units. Two features were revealed during this exercise: the first consisted of a combustion feature built atop a small sand mound with no fire-cracked rock and backed by a densely deposited plume of charcoal. It was accompanied on one side by several small calcined bone deposits arranged in a rough semi-circle around its eastern flank. Modest amounts of Ramah and white quartz debitage lay scattered about. A second feature in Area A consisted of a small combustion feature associated with heavy charcoal deposits. Concentrated on the eastern side of the "hearth" were copious amounts of Ramah chert debitage. Though the north western units lie close to the limits of the habitably level section of Area A there is more than a metre of level ground beyond, after which the surface and a caribou path running over it begin a pronounced descent to the gully below. Although the two areas excavated in 2017 in Area A are approximately on the same latitude the occupation floor in the area where the red ochre covered feature lay is markedly more deeply buried than its neighbour nearer the terrace edge to the north. In addition to the aforementioned positive Test Pit dug in 2016 seven other test pits were dug in 2017 of which four were positive. Lithics in these were heavily dominated by Ramah chert with small amounts of white quartz and slate also present in trace quantities.

Faunal remains in the form of calcined bone which were collected in 2016 and 2017 at GlCs-08 (Area A) were submitted for analysis to Meghan Walley, an archaeology Masters student at MUN. In addition to the large mammal bone fragments, expected at a site quintessentially associated with the interception

Figure 4: view from Mistanuk GlCs-08 looking towards SW. A small ovoid bifacial tool of Ramah chert and a large Ramah flake were found on the small beach where the canoe is pictured. This beach was likely the access point to the terrace for occupants of the sites as it affords an approach with a gentler gradient than the steep banks which drop away abruptly at the Mistanuk brook end of the terrace.

of caribou, Meghan also identified bird and small mammal bone (Walley 2017).

Mistamunik-Mistanuk is a complicated site which may, like its neighbouring site Ushikuish GlCs-57, host occupations from more than one time period. Field work in the spring of 2017 confirmed that run-off from the moraine above has repeatedly deposited material over most of the GlCs-08 area. However, the impacts of this process are not evenly applied over all of the site: some components are quite deeply buried while others lie under only a shallow cover. Furthermore chaotic wall profiles show that in some parts of the site the ground has been subjected to severe cryoturbation. A notable feature of the cultural materials in the units excavated around the 2016 Test Pit was that the vast majority of them lay not in the grey sand or black humic layers just under the surface but in the deeper iron rich rusty sands, which is why most of the assemblage from the 2017 work at Area A is heavily stained by the rusty matrix in which the materials lay. Calcined bone samples at neighbouring GlCs-57 (Ushikuish), a site on the same high terrace as Mistamunik-Mistanuk and also distinguished from most of the early sites at Kamestastin by the preponderance of Ramah chert in the lithic assemblage, returned uncalibrated dates on calcined bone of 5560 +/- 30 BP and 3300 +/- BP, and a third on wood charcoal from a pit of 890 +/-30 BP. The ritual disposal of Ramah chert flakes noted at Mistamunik-Mistanuk may also have taken place at Ushikuish where the densest deposits of small Ramah chert flakes lay in a discrete area of red ochre stained

Figure 5: Small flake and screenings production from unit N3W7 by quadrant, Mistanuk Area A ritual feature and surrounds. All the debitage pictured is of Ramah chert, except three small pieces of slate and the single fragment of large mammal calcined bone included with the flakes from the SW quad (does not include larger catalogued flakes and tools or tool fragments.)

Figure 6: Pakan Terrace behind 8 Masseuk Street in Sheshatshit, combustion features/hearths.

ground. Unfortunately, from the point of view of establishing the relationship with the Mistamunik-Mistanuk Site, the widely divergent dates and other evidence from the site suggests Ushikuish may be a palimpsest of occupations so teasing out the relationship of one or more of these occupations to features so far revealed at Mistamunik-Mistanuk is difficult.

I had planned to systematically test the area around Mistamunik-Mistanuk Area A with a soil corer but the degree of natural disturbance and uneven distribution of redeposited material from the moraine made the proposed exercise less useful than I had hoped. At the site of the 2016 Test Pit 1 a core was taken from the base of the test pit to determine if further buried cultural levels lay beneath the 25 cm below surface floor on which the fire-cracked rock and calcined bone was noted. No further humic layers were apparent in the core taken at this spot which revealed undifferentiated sand beneath the 25 cm below surface level. The 2017 investigations were essentially exploratory but have established the richness and importance of GlCs-08 in the Kamestastin sequence. As no clearly diagnostic artefacts have yet been found at GlCs-08 and neither the relationship between the various cultural features identified nor their spatial extent is yet determined it would be premature to overly interpret the cultural material so far exposed. This site merits a major excavation project with a multidisciplinary team. In the interim more work (shovel testing, test pitting, and mapping) is required to establish the character and spatial extent of the cultural components present at this large and complex site.

Fieldwork at the Pakan Terrace in Sheshatshit: (FjCa-71 Locus 2)

The pressing need for new housing in Sheshatshit has precipitated an archaeological crisis of sorts. The raised marine terraces on both sides of the outlet to Lake Melville may contain the most complete and continuous record of Innu history as is to be found anywhere in Nitassinan. It is nearly impossible to move earth anywhere in Northwest River or Sheshatshit without revealing (and destroying) evidence of Innu heritage. Over the last century house

Figure 7: FjCa-71 Pit feature exposed by grubbing. The surviving portion of the terrace, the edge of which runs obliquely across the top of this photo, hosts the area tested in 2017, the Pakan Terrace remnant behind 8 Masseuk Street. A gouge and 2 celt fragments lay close by amongst disturbed ground to the right of this photo. This grubbed area no longer exists, as the ground was removed to create housing platforms. FjCa-51 lies in the distance in the top left portion of the photo.

construction along with roads, an airstrip, and commercial development have irrevocably destroyed a myriad of former camping places and archaeological sites. The threat to Innu heritage is compounded by the increased need in Sheshatshit for housing space (and the attendant electrical, water and sewerage services) brought about by population increase. Tragically, funding for an aggressive, sustained commitment to archaeological research and recovery in Sheshatshit has not been forthcoming. Community sponsored fieldwork by Scott Neilsen (2014) and by Tshikapisk researchers represent a valiant attempt to recover knowledge from some of the old sites before they are destroyed but it has been far too little considering the irrevocable losses being sustained all about.

Tshikapisk research in Sheshatshit during the summer of 2017 was a voluntary emergency salvage project involving volunteers Marcel Ashini and Anthony Jenkinson. In front (i.e. to the south west) of the "at risk" Pakan Terrace parcel of land bull-dozers preparing an area for housing construction in August 2009 revealed the remains of a sizable fire pit around which were probable celt and gouge fragments, quartzite debitage and calcined bone (Figure 7 and 8.)

The calcined bone from the margins of this pit was submitted for dating and returned a conventional radiocarbon age of 3450+/- 30 RCYBP (Beta-433113) When calibrated this dates the occupation on this terrace to 3830 to 3635 calendar years before the present (95% probability.) The FjCa-71 fire pit was revealed in the course of grubbing for housing lot preparation after 4 negative test pits, 5 metres apart and coincidentally arranged equidistantly around the feature, had unfortunately missed it and its accompanying cultural materials. This experience served to remind us how discrete and localized archaeological features can be in the boreal forest.

Much of the site at FjCa-71 and the area adjacent to the fire pit no longer exists as it was destroyed in the course of housing lot preparation. The latter work removed a considerable portion of the terrace in order to reduce and level the space for housing construction. Further damage was sustained when, without prior notification, a strip atop the bank was pulled down by heavy equipment to create a gentler gradient behind the house platforms. During a follow up visit to FjCa -71, after construction of the housing platforms had removed a substantial chunk of the terrace, other probable features were noted along the top of the newly fashioned man-made bank.

The terrace in question is 5 to 6 metres above the elevation of FjCa-51, the large Shashish Innu ("Intermediate") site below (Figure 6). The remaining portion was therefore considered to be of high potential and of major archaeological importance as it was thought likely that it might host elements of a period which, barring the feature and artefacts exposed during grubbing, is not properly documented in the Sheshatshit archaeological sequence. Testing of the terrace in August and September of 2017 consisted of digging of three rows of test pits to sterile beach sands. Each test pit was of a minimum 40 by 40 cm square and set out on a grid of 4 by 4 metre blocks. Certain test pits which were ambiguous as to the presence of cultural materials (e.g. possible anthropogenic features or portions of possible features) were enlarged in order to attempt to clarify their character.

Supplementary testing within the 4 metre blocks was also occasionally necessary and in almost all cases these were dug at 2 metres from the positive or quasi-positive test pits. The site now sits on a portion of a terrace which has been truncated by earth moving activities in the course of housing lot preparation, the installation of water and sewerage pipes and the building of the road which became Masseuk Street. The terrace edge once ran off obliquely from the present bank, the latter a man made and not a natural feature, and it crossed at a sharp angle the right of way for what would become Masseuk Street. Housing lots and the road thoroughfare now occupy and have replaced all of this section of what was once the landscape feature on which the surviving Pakan terrace portion sits. Pakan Test Pit 25 was enlarged to 3 metres by 2 metres towards Test Pit 24 (Area D) in order to determine whether cultural features noted at the bank edge when the housing platforms alongside Masseuk Street were initially being prepared, had survived both the original removal of much of the terrace and subsequent work to lessen the steepness of the bank gradient behind 8 Masseuk Street. Opening of this area revealed that the earlier noted cultural features had been destroyed but removal of the grossly disturbed material pushed up in a low berm atop the 2017 surviving terrace portion revealed four small quartzite cobbles and considerable quantities of what is unambiguously fire-cracked rock. The former may have been used as seething stones. A second area was also opened between Test Pits 17 and 27. This portion was further back from the terrace edge, and therefore undisturbed by the earth moving which happened in the course of bank steepness remediation work. What began as an enlargement of Test Pit 17 concluded as a test excavation of 3.5 metres by 2.5 metres. The purpose was to determine whether charcoal lying amongst rock aggregations were natural features or of anthropogenic origin. In spite of the presence of only one piece of quartzite shatter, it was concluded that the features, the features (two combustion

Figure 8: tool fragments from FjCa-71.
On left are two celt fragments; on right a gouge fragment.

Figure 9: Fire pit at FjCa-71 (October 2009) exposed by grubbing prior to housing platform construction. The fire pit contained calcined bone, quartzite shatter and fire cracked rock. The Pakan terrace remnant, tested in 2017, is part of the same topographical feature upon which this pit was built. The gouge and celt fragments were found in ground disturbed by heavy equipment just above center field in this photo.

features with charcoal embedded amongst `hearth` rocks) were indeed of cultural origin. Pakan Test Pit 9 produced profuse quantities of charcoal and one fragment of grey to off white slate, Test Pit 11 contained small pieces of quartz shatter, and Test Pit 18 a large discoidally shaped piece of grey quartzite shatter. Test Pit 19 came down on a small combustion feature. It is not surprising that apparently cultural features should have been encountered on the Pakan terrace behind 8 Masseuk Street. Sheshatshit seems to have been continuously occupied, at least seasonally, for close to 6000 years, rendering almost the entire area in which today's community is located, one a very large archaeological site. Written on its stepped terraces (created by post glacial rebound) is much of the long and elaborate story of the Innu and their ancestors.

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Avertok Archaeology Project, 2017

Laura Kelvin, Maria Lear, Jacinda Sinclair & Lisa K. Rankin
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The Avertok Archaeology Project had an eventful inaugural field season this past summer in Nunatsiavut, Labrador. The Inuit Community Government of Hopedale initiated the project with the Tradition and Transition: Piusitukaujuit Asianguvalliajuillu Research Partnership. The 2017 field season had several aims:

1. to communicate our findings to the community and use the research to facilitate knowledge transfer between youth and Elders in Hopedale, Labrador;
2. to undertake ground-penetrating radar (GPR) survey of the Moravian Cemetery in Hopedale to identify the locations of graves, enabling the community to properly mark and care for the cemetery; and,
3. to locate, excavate, and learn more about the original Inuit settlement of Avertok (Agvituk, Arvertok) which underlies the present Hopedale community, as well as investigate other nearby sites.

The field crew included Lisa Rankin (Project lead), Laura Kelvin (Postdoc), Maria Lear (GPR specialist), Jacinda Sinclair (MA Student) as well as several other students from Memorial University, and the University of Chicago. The team was rounded out by Hopedale students Ida Semigak, John Piercy, and Rosie Edmunds, who brought local knowledge and youthful energy to the season.

Community Engagement

The Hopedale community articulated that they wanted community involvement in our research, preferably in ways that facilitate knowledge exchange between Elders and youth, and open access to meaningful research results. Local students, Ida Semigak, John Piercy, and Rosie Edmunds were hired with funding provided by Inuit Pathways. The students worked primarily with Laura Kelvin, cleaning and cataloging artifacts in our temporary archaeological lab set up in the Moravian Mission buildings in Hopedale. Ida Semigak also wrote a post for the Day of Archaeology blog (http://www.dayofarchaeology.com/the-avertok-archaeology-project/), which highlights the activities the students took part in. The students also created a series of videos pertaining to archaeology and Inuit heritage that can be found on the Avertok Archaeology Project's YouTube page (Figure 1). For these videos the students developed research ques-

Figure 1: Hopedale student John Piercy shooting video.

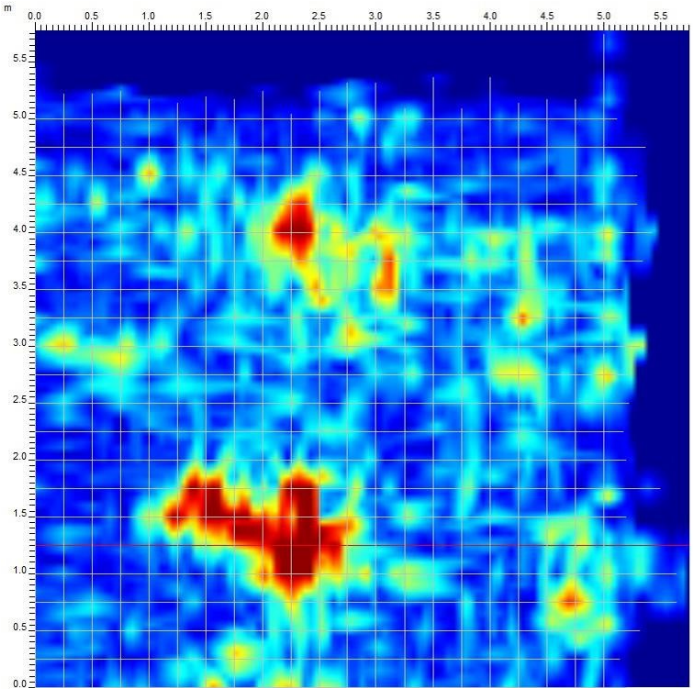

Figure 2: GPR image of the surveyed portion of the Hopedale Moravian Cemetery.

tions and interviewed Hopedale community members and archaeologists. They also learned to use video and photo editing software. These videos are an important contribution toward Laura's postdoctoral research, which will create a digital community archive of the archaeological work.

The Avertok Archaeology Digital Archive will feature archaeological and traditional knowledge of Avertok and the Hopedale area. This past fall, Laura visited the Rooms Museum and Archives in St. John's, The Robert S. Peabody Institute of Archaeology in Andover, The American Museum of Natural History in New York, and the Field Museum in Chicago, to document their collections from Avertok and Hopedale. This winter she will return to Hopedale to record community knowledge of the collections for the archive, as well as seek community input on the design and knowledge sharing policies related to the archive.

Ground-penetrating Radar Study of the Moravian Cemetery

The community requested a non-invasive study of the Moravian cemetery in Hopedale because the locations of all of the individual burials associated with the cemetery are no longer known. This past summer, Maria Lear conducted a partial GPR survey of a section of the Moravian cemetery without headstones to locate some of the burials so that they can be protected, marked and fenced. The results are still being analyzed but preliminary analysis is promising and further survey is planned for the future. The students involved with the project created a video (http://bit.ly/2AEPvNg) that explains the GPR process on the site in Hopedale.

Ground-penetrating radar is a non-destructive geophysical technique that uses radar to identify differences (or contrasts) in the subsoil. These contrasts can be then analyzed to make interpretations regarding the composition of the subsurface both in terms of natural variations and the archaeological potential of the area. For the GPR survey in the Moravian cemetery, we used a Sensors and Software Noggin system with a SmartTow™ and a 500MHz antenna. One survey grid was completed that measured 5m x 5m with transects spaced at 0.25m. This gave very good coverage of the grid and allowed the antenna to pass over the surface and record the subsoil both along the X and Y axes. The grid was located within the upper portion of the cemetery within an area flanked by high natural rock elevation to the south, and near a line of headstones and among overgrown vegetation. Once the vegetation was trimmed to ground level, several oblong surface undulations were observed and thought to be indications of possible burial locations.

The post-processing image suggests that several possible grave locations were recorded by the GPR (Figure 2). One possible unmarked grave (yellow/red) was identified in this area at a depth of 1.25m, measuring width along the X-axis of 2m-2.5m. The semi-oblong feature is consistent with a depression visible at ground level located roughly above the position of this image. Its shape, size, depth and W-E alignment is consistent with interments recorded within the historical context. As can be seen, other areas of interest were recorded at this depth as well, namely the rough-oval shaped contrast located just north of the aforementioned target that is a few meters away.

Archaeological Survey and Excavation

Avertok

Avertok is a large Inuit whaling settlement that played an important role in the Labrador Inuit coastal trade network between the 16th and 18th centuries. This large settlement prompted the Moravian missionaries

Figure 3: Soapstone figurine recovered from excavations in Old Hopedale village.

to establish the Hoffenthal (Hopedale) mission nearby in 1782. Avertok is located within the present borders of Hopedale and remains culturally important to the community. The site has been subject to many archaeological investigations, most notably Junius Bird's excavation of nine Inuit houses in 1934. Modern homes, road construction and water and sewer work have all negatively affected Avertok; much of the site has unfortunately been destroyed. Nevertheless, the community was hopeful that some portions of the settlement remained. This past summer, Jacinda Sinclair and the students excavated test pits in locations identified by community members and Nunatsiavut archaeologists as potential house remains. Unfortunately, no evidence of house remains were located by the excavation. However, it is likely that there are house remains located under concrete debris deposited at the edge of the village. This area has not been impacted by sub-surface construction and the town has decided to move this rubble to allow archaeological exploration in 2018.

Old Hopedale

After the Hoffenthal mission was established, Inuit families who had been converted to Christianity began moving away from Avertok, closer to the mission. The distance to the new settlement was no more than a few hundred metres, but this symbolic relocation separated those Inuit who were Christianized from those who were not. This past summer, the crew excavated a test trench in the north end of Hopedale where early Inuit Hoffenthal residents settled. Because this site has been continuously occupied, the deposits are disturbed and contained 19th century European-manufactured artifacts alongside contemporary material. Additionally, a few soapstone artifacts were recovered including a small carving of a man and a small vessel (Figure 3). Our students interviewed Hopedale carver, Edmund Saunders, about his interpretation of these artifacts in a video (http://bit.ly/2zMuDDW). In 2018 we hope to return to this area for further excavation.

Karmakulluk

The crew also re-visited the Karmakulluk site, which was excavated by Junius Bird in 1934. Although his excavation helped establish a cultural history of the region, the site warranted re-examination because the original excavation and interpretation did not meet current theoretical and methodological standards in the field of archaeology. The crew re-excavated and fully mapped all features in an Inuit winter sod house and put in test units to try to find the middens that Bird was unable to locate (Figure 4). This data should allow us a much more fine-grained picture of Inuit life around Hopedale in the 18th century.

We had a great first field season in Hopedale and look forward to continuing our research over the next several years. Please check the Avertok Archaeology Project's Facebook page (@avertokarchaeology), or follow us on Instagram and Twitter (@avertokarch) for regular research up-

Figure 4: Ida Semigak excavating at Karmakulluk

dates. We would like to thank the Hopedale community for their support, especially the Moravian Church for letting us take over the manse for the summer. The Social Sciences and Humanities Research Council of Canada, the Institute of Social and Economic Research, the J.R Smallwood Foundation, Inuit Pathways, Young Canada Works in Heritage, the NL Provincial Archaeology Office and the Northern Scientific Training Program have provided funding for this project.

Archaeology at Anse à Bertrand, Saint-Pierre et Miquelon 2017

Meghann Livingston, Catherine Losier, Mallory Champagne & Maryssa Barras
Memorial University of Newfoundland

Saint-Pierre et Miquelon (SPM), France's only overseas territorial collectivity in the North Atlantic today, was once essential to colonial expansion throughout the New World. Saint-Pierre's sheltered harbour among other advantageous geographic features made this small archipelago off the southern coast of Newfoundland an ideal place for carrying out fishing activities. Our project marks the first long-term historical archaeology endeavour on the islands and previously only two short-term archaeological efforts regarding SPM's colonial past had been realized (Chaplot 1987; Martinot 2009). Until Summer 2017, the material world of colonial SPM remained unknown but our ongoing investigation at Anse à Bertrand has allowed us to begin uncovering the historic occupations on these small yet significant French islands.

While the eventful past of SPM has been researched by historians, the main focus of the historiography has been its later history (from the 19th century onward). We believe this interest is triggered by SPM's current inhabitants who are descendant from the waves of immigration that followed the islands' final retrocession to France in 1815. Perhaps another aspect preventing historians from working on SPM's 17th and 18th century is a relative lack of resources. Before 1713, the archipelago fell under the stewardship of Plaisance (Placentia, Newfoundland), meaning

Figure 1: An aerial map of Anse à Bertrand outlining survey and excavations conducted during the 2017 field season.

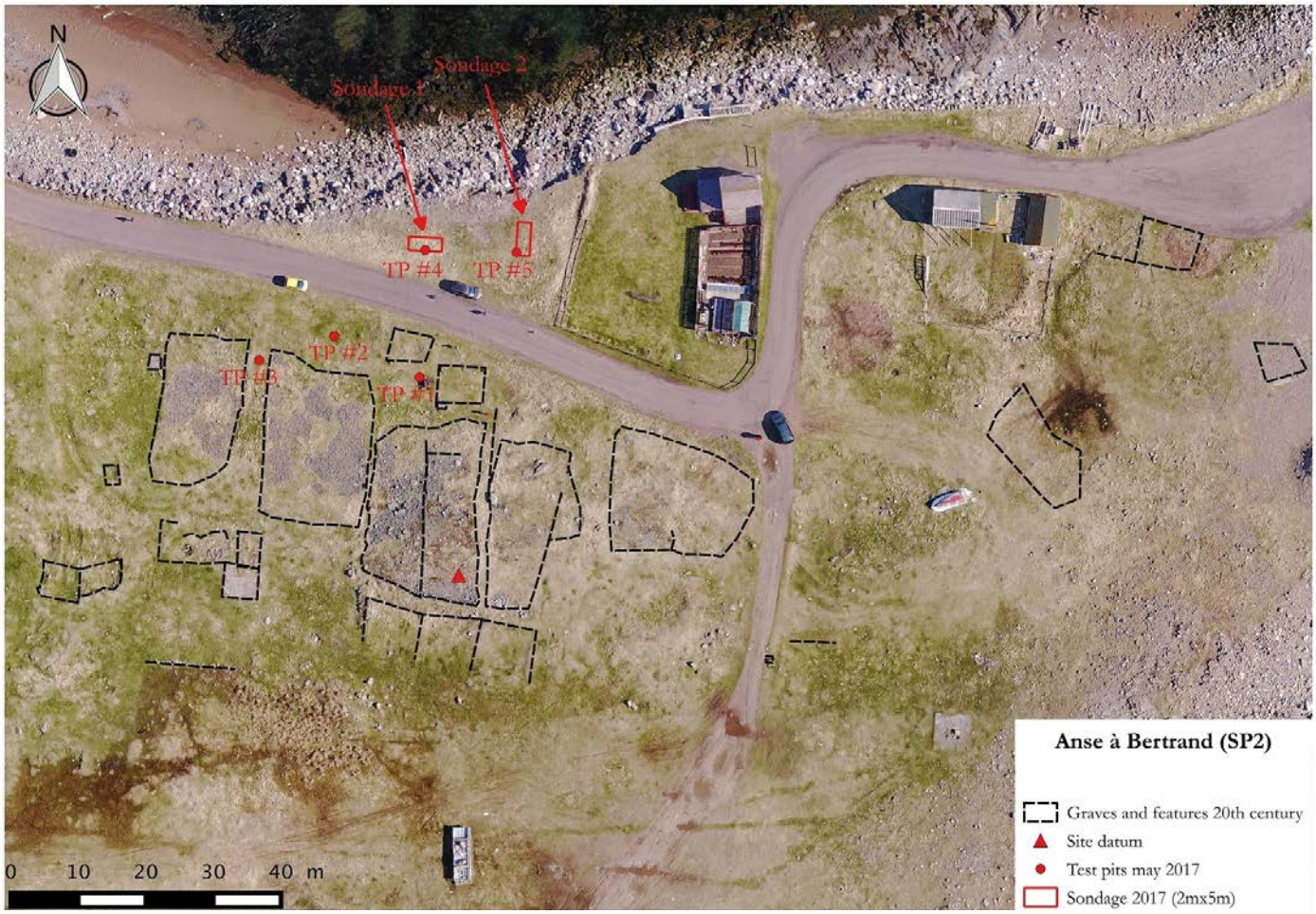

Figure 2: Meghann (purple) and Maryssa (green) excavating small test units at Anse à Bertrand in May 2017.

most of the surviving records pertain to this larger French settlement instead. Moreover, the archipelago fell under British governance several times throughout the 18th century (significantly from 1713-1763), and French historians interested in SPM have not researched those occupations. Our objectives specifically aim to fill in the gaps of the historiography. Our goal is to better understand the settlements of SPM throughout the colonial era and this includes both its French and British occupations.

In addition to the 200th anniversary of French settlers' final return to SPM, 2016 also significantly marked the beginning of our project. That summer, we travelled to SPM to assess the islands archaeological potential and choose our current study area: Anse à Bertrand (a known fisher's worksite on the southeastern edge of the Saint-Pierre harbour). The 2017 field season began in May with a 3-week survey of the site. The team, Catherine Losier, Meghann Livingston, Maryssa Barras, and Bryn Tapper, took this time to conduct a topographic survey and excavate 5 small (30 x 30 cm) test units. The spring was an opportunity to begin physically identifying archaeological features on the site, establishing an understanding of the stratigraphy, and a chance to collect a sample of material culture. Test units #4 and #5, located nearest to the coastline, both revealed artefacts dating to the 18th century. A trench (*sondage*) was later placed along each of these units during the summer excavations and the topographic points taken were added to our GIS heritage database to help interpret historic maps and inform future excavations at the site. This preliminary geospatial analysis is equally important to our subsurface investigation due to the ever-changing nature of the SPM landscape. We use GIS to pinpoint archaeological resources threatened by coastal erosion and development and to strategically plan our future archaeological endeavours.

The summer excavations took place under one of Memorial University's Department of Archaeology 2017 Field Schools. A team of 10 students, and lab assistant Mallory Champagne accompanied Catherine and Meghann on this month-long dig. As this was the first year of excavation, two 2 x 5 m trenches were dug as a means to further assess the stratigraphy and begin documenting the historic occupations present at the site. Three distinct periods of occupation were detected: 18th century; 19th century; and 20th

century. These periods are not only associated with major geopolitical events that took place on the archipelago, but with major shifts in cod fishing practices over these centuries as well.

From the historiography, it is known the fisheries during the 17th and 18th centuries were run by *armateurs*, and that the islands see a shift from seasonal exploitation to permanent European settlement (La Morandière 1962-66). It is however, unclear whether or not we have evidence of permanent 18th century settlement at Anse à Bertrand. We did not find the remains of any heavily built structures, though parts of the *graves* (large areas of stone and cobbles used to dry the fish) that remain intact in Anse à Bertrand's landscape today could have initially been built during this period. We did find an undisturbed 18th century occupation layer, beautifully littered with sherds of stoneware, pipe stems, and honey-coloured gun flints. The team also uncovered a disturbed 18th century context, very rich with artefacts. These layers contained primarily French ceramics (e.g. Domfront, Bessin-Cotentin, Saintonge, and green-glazed French coarse earthenware), many pipe stem fragments, gun flints, and flint flakes. Some of the artefacts can be dated to the first half of the 18th century but we are not yet certain if the artefact deposition dates prior to 1713 or after 1763. This material culture overall bares a strong resemblance to that of the Petit Nord (Pope 2008). The objects are strongly associated with a working environment, not with families or year-round occupation. The hypothesis is also supported by the features identified in Sondage 1, which were very lightly built and likely not suitable for wintering, especially at a site that is so exposed. Even in the later history, Anse à Bertrand never saw year-round occupation due to its harsh environment (Artur de Lizarraga et al 2016).

According to local historians, the *graves* located around the harbour became the property of big *negociants* during the 19th century; meaning there is a distinct shift in the organization of the fisheries and a departure from what was happening in the 17th-18th centuries (Claireaux 2013). After 1763, it is known that the Southeast point of the harbour becomes the property of Dallair, Bertrand, and Phillibert but after 1816, it seems the *negociants* come to settle there (Claireaux 2013). We found many artefacts dating to this period (e.g. whiteware, glass bottles, and fish hooks) and Sondage 2 contained a 19th century rock feature probably associated with the reorganization of activities from this time. The 19th century has been the subject of research for French historians and local historians alike. Catherine, Meghann, and Maryssa, also completed a survey of the records available at the local *Musée de L'Arche*, and many records stored there pertain to this period. While the team has a strong understanding of what was happening across the archipelago at this time, further research is going to be

Figure 3: A sample of 18th century artefacts collected at Anse à Bertrand in July 2017. (From left) Bessin-Cotentin stoneware, Westerwald stoneware, pipe stem fragments, gunflints, and a French lead customs seal.

required in order to fully understand how the site, Anse à Bertrand, was being used in the 19th century. We are confident a study of SPM's later maps and the upcoming 2018 field season will help us with this task.

The final period of occupation detected at the site was from the 20th century. We also found many artefacts (e.g. ceramics, cod bones, and even carbon rods (used to power motorized dories)) dating to this time. In Sondage 2, students found where the shoreline had been built up (to combat erosion) in 2000 and Sondage 1 contained the remains of an old *saline* (salt house) dating to the 20th century and possibly before (Artur de Lizarraga et al 2016). Buildings such as this were part of the *petit pêcheurs*, so again, evidence of a shift in SPM's organization of fishing activities is present at the site. By the 20th century, the organizational units at Anse à Bertrand were no longer the *armateurs* or the *negociants* but rather families. The artefact assemblage contained nice plates, teaware, and even doll fragments, further demonstrating the "settled" nature of an otherwise seasonally occupied site. Families who were part of the small fisheries would winter in town and move out to smaller areas such as Anse à Bertrand for the duration of each fishing season (Artur de Lizarraga et al 2016). During the 2017 field season, we found the 20th century occupation layers were actually very meaningful to the Saint-Pierre community. The public's positive reaction to digging through these modern layers was completely unanticipated and we were able to connect with locals and learn a lot more about the later occupation and use of the site as a result. Some locals, particularly youths, even joined in on our excavations and the team was very pleased to have reached that level of public engagement within the project's first year.

The 2017 field season revealed Anse à Bertrand is a very rich site. In just two 2 x 5 m *sondages*, more than 6,000 artefacts were uncovered. Our investigation remains ongoing and the team is already busy gearing up for the coming 2018 field season. As our excavations continue, we look forward to refining our understanding of the historic occupations at the site as well as further developing our relationship with SPM's contemporary community.

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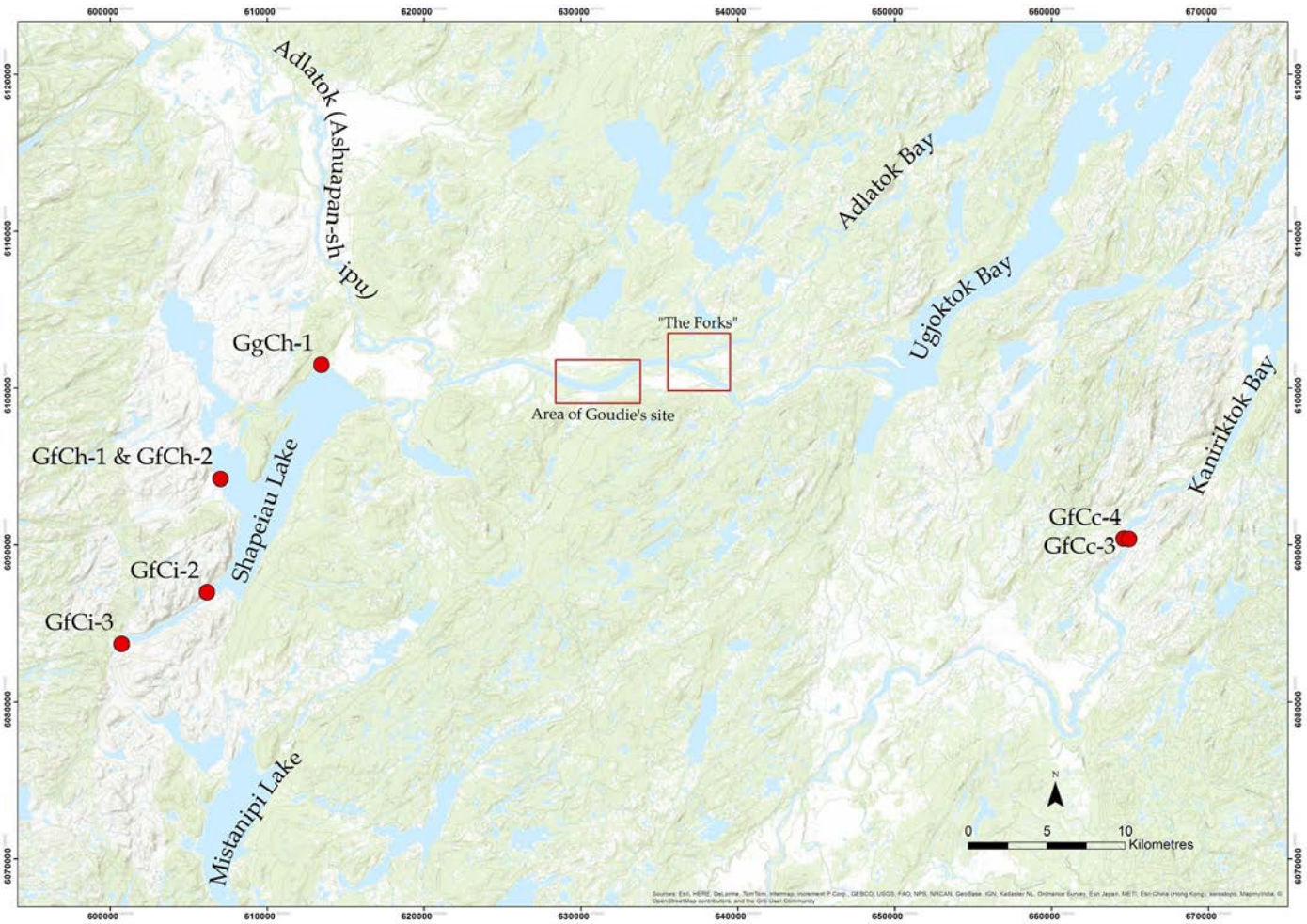
The Toad-Man's Estate: An Archaeological Reconnaissance of the *Shapeiau* (Shapio) Lake region, *Nitassinan*

Stephen Loring & Anthony Jenkinson
Smithsonian Institution & Tshikapisk Foundation

Figure 1: The Hudson Bay Toad (*Bufo americanus copei*) at an abandoned Innu camp (GfCi-3) at the western-end of the 6 kilometer long narrow lake that flows into the southwest corner of Shapeiau. Very near its northern limit, the toad called to mind Innu stories of *Anikapeu* –the Toad Man—and served as a poignant reminder of the intangible features of Innu land tenure and occupancy.

Introduction

Anikapeu –the Toad Man—lives in his house *Petshishkapishkau*, far to the west of *Shapeiau* (Shapio) (Map 1) , yet his tenure, his estate, extends beyond the shores of *Michikamau*, throughout much of the forested regions of *Nitassinan* (Figure 1). The country is a web of stories and legends (*atanukana),* place names*,* Innu oral histories *(tipatshimuna*), traveler's accounts and memories. To travel through *Anikapeu's* estate is at once an adventure, a scientific discourse, a pilgrimage and a privilege. There are many reasons for traveling; the modest archaeological reconnaissance recounted here is a continuation of a Tshikapisk initiative that seeks a concordance between archaeology, as practiced by the academy, and Innu history (Arbour, Ashini, Jenkinson and Loring *in press*). One of the more significant tenets of the Tshikapisk-Smithsonian collaboration has been an interpretation of Innu history that celebrates the continuity of Innu occupancy through-



Map 1: 2017 Tshikapisk fieldwork centered on Shapeiau Lake and the Ashuapun-shipu (Adlatok River), Nitassinan (adjacent the central coast of Labrador). Cartography courtesy Chelsee Arbour.

out much of the forested regions of the Quebec-Labrador peninsula and adjacent Labrador coast from the time of the disappearance of glacial ice to the present day. Archaeologists working in Quebec-Labrador have, for the most part, retained a tripartite division of the regions pre-Contact Innu history that interprets the changes in indigenous settlement-subsistence practices, choices of lithic raw materials and tool forms and styles as the appearance and disappearance of different groups of people over time. While we recognize these changes we resist the notion that change is equivalent to population extinction and replacement rather than the *in situ* evolution of culture over time.

Since 1998 the Tshikapisk-Smithsonian collaboration has been centered in and about Kamestastin, a dramatic meteorite-impact crater situated near the height-of-land approximately 130 kilometers west of the coastal village of Natuashish (Loring 2009, 2011; Jenkinson and Loring 2012; Arbour, Jenkinson and Loring 2013). Systematic survey and excavation has documented over 260 sites that attest to the significance of the area during times of caribou abundance when large numbers of caribou could be speared while swimming across the lake narrows in the fall and ambushed in the spring when crossing on the ice. To date the archaeological work at Kamestastin reveals that ancient Innu hunters – the *Tshiash Innu* ("the old Innu from a long time ago", equivalent to "Archaic") arrived in the Kamestatin region around 7000 years ago. Surface collections of stone tools and excavations of a number of small camp sites attest to the presence of small *Tshiash Innu* groups hunting in the region over the next several millennia. Almost certainly the sites at Kamestastin represent a seasonal round during periods of caribou abundance when groups, who also exploited coastal-maritime resources, travelled to known ambush

Figure 2: A Ramah chert quarry blank recovered at the *Tshumushumapeu* (GlCs-01) complex of *Tshiash Innu* sites situated adjacent the narrows at the northeast corner of Kamestastin. Ramah chert from northern Labrador and local milky-white quartz comprise the principle lithic signature of these early Innu assemblages in striking contrast to the multi-colored cherts and red quartzites favored by the succeeding *Shashish Innu* groups.

points in anticipation of caribou. A conspicuous feature of the later *Tshiash Innu* stone tool assemblages is preference for the distinctive Ramah chert (Loring 2002, 2017) from which to craft hunting and butchering tools. The earliest sites at Kamestastin are dominated by white quartz and have only very modest to residual amounts of Ramah. The Ramah chert quarries, in the Torngat Mountains, are over 260 kilometers north of Kamestastin. The recovery of a Ramah chert quarry blank at *Tshumushumapeu* (GlCs-01) and an even larger quarry blank of Ramah by local people in Kegaska on the Quebec Lower North Shore (Scott Neilsen, pers. com. 2/2018) attests to ancient pathways that connected dispersed groups throughout Nitassinan (Figure 2).

Archaeology in Hamilton Inlet, Lake Melville, and along the central Labrador Coast reveals that sometime after 3800 B.P. Innu cultures exhibit a number of changes that evidence a retreat from northernmost Labrador coupled with an intensification of the exploitation of inshore and interior resources (Fitzhugh 1972, Nagle 1978, Brake 2006, Neilsen 2006). These *Shashish Innu* sites ("old Innu") are referred to in the archaeological literature as the "Intermediate Indian Period" with the Saunders Complex –along the central Labrador coast—and the related Brinex/Charles and Northwest River complex of sites in Hamilton Inlet. *Shashish Innu* stone tool assemblages are quite distinct from the earlier *Tshiash Innu:* tools of Ramah chert and ground-slate are almost non-existent, instead a variety of multi-colored fine-grained opaque cherts (grey, green, brown, purple and maroon)–purportedly from the Seal Lake/Pocket-Knife Lake district near Snegamook—and quartzites are favored; stemmed projectile points are replaced by a variety of broad side-notched forms, and new tools including lanceolate bifaces and large unifacial scrapers predominate. Very few *Shashish Innu* sites have been identified at Kamestastin and only a single diagnostic projectile point has been recovered (Figure 3).

Shashish Innu archaeology, a selective review

The apparent paucity of *Shashish Innu* sites in the Kamestastin region is in marked contrast to the numbers of earlier *Tshiash Innu* sites and the very prolific 19th-century Innu footprint that testify to times of caribou abundance. While not abandoning the region completely, it is apparent there is a major shift in Innu settlement and subsistence strategies that focuses more intently on forest and interior lacustrine resources. Along the Labrador coast a few *Shashish Innu* sites have been found on the exposed outer coast

Figure 3: A *Shashish Innu* side-notched projectile point found on the beach at Kāstiuāpiskāstshipis (GlCu-5) along the north shore of Kamestastin in 1998.

Figure 4: "Upper Marshall Falls" on the lower Kanairiktok River (Ashtunekamiku-shipu), view to north from a high terrace overlooking the cove and the sandy foreshore flats in front of Marshall Falls South (GfCc-3). "Lower" Marshall Falls lies just beyond the far bend and plunges directly into the narrow fiord-like Kanairiktok Bay.

(notably Thalia Point and Hillsbury Island near Nain), but most sites are situated in sheltered forested bays and adjacent inside passages and at the head of Lake Melville on the beach terraces at Northwest River and Sheshatshit. Recent archaeological research along the lower Churchill River and adjacent Muskrat Falls, done in conjunction with massive hydro-electric development, have dramatically enhanced our perception of *Shashish Innu* sites (Schwarz and Skanes 2014; Schwartz et al. 2016). The density and complexity of *Shashish Innu* sites at Muskrat Falls (and, as well, at Northwest River) testifies to their importance as seasonal staging grounds for passage to and from the interior and for social rendezvous and interaction. It seems likely that runs of anadromous fish, salmon and char, but also trout and whitefish in the lakes above salt water, would have provided a secure and predictable resource to support large seasonal gatherings.

Further confirmation of the *Shashish Innu* preference for camping at the heads of forested bays, adjacent the mouths of rivers, is evidenced by a pair of sites (Marshall Falls South GfCc-3 and Marshall Falls North GfCc-4) flanking Upper Marshall Falls discovered during a canoe trip in 2004 (Figure 4). Upper Marshall Falls is a kilometer above the Lower Falls where the Kanairiktok River (Ashtunekamiku-shipu) plunges into the sea. Previously Kevin McAleese (1992-1993) had conducted a canoe-based survey of the region locating a few sites in the nearby vicinity. Upper Marshall Falls is divided by an island; portaging along the north side of the falls brings one down to a shallow cove where a small collection of stone tools and debitage, for the most part manufactured from red quartzite, was found eroding out of the heavily forested bank (Figure 5). An alternative portage route, along the south side of the falls, brings one out to a broad sandy cove at the head of which was once a sizable *Shashish Innu* camp as attested by

Figure 5: Stone tool assemblage from Upper Marshall Falls North (GfCc-4), found eroding out of the forested bank at the beginning of the portage trail around the falls. (Top row: lanceolate bifaces of red quartzite and grey chert; Bottom row (left) two blocky bifaces, (right) two unifacial endscrapers,

remains to be determined. The Marshall Falls sites seem analogous to sites at Northwest River and Muskrat Falls in that they appear to serve as gateways to accessing interior travel routes and resources. In addition to using fine-grained quartzites to fashion their stone tools, *Shashish Innu* favored a variety of colorful opaque cherts believed to be from outcrops south of Snegamook Lake. Snegamook (Ashtunekamik[u]) is approximately 100 kilometers upstream from the mouth of the Kanairiktok, whose valley would provide an obvious pathway for parties moving back and forth from the coast.

It has proven difficult to find sites along the river banks in the scattering of tools and debitage found eroded out on the shore (Figure 6). Both of the Marshall Falls sites are backed by a dense growth of spruce that effectively guards any traces of former camps beneath a thick overburden of fallen trees, moss and lichen. A significant percentage of the tools and debitage found at Marshall Falls is made from a distinctive red quartzite which occurs as large erratic boulders on the hills above the falls. Several large –fist size— blocks of red quartzite –early biface preform rejects—were found indicative of the importance of the locality for acquiring stone to fashion tools. This "Kanairiktok red quartzite" frequently appears in *Shashish Innu* assemblages but whether it was obtained from erratic boulders and river cobbles or from yet unidentified bedrock sources

Figure 6: Stone tool assemblage recovered from the sandy shore in front of Upper Marshall Falls South (GfCc-3). Top row, left-to-right: two side-notched projectile points, an asymmetric biface, biface preform of red quartzite, two small triangular end scrapers; Bottom row, left-to-right: whetstone, two large red quartzite cores.

Figure 7: Punas Nuke's cabin overlooking Ashuapamatikuan (Shipiskan). View to north.

central Labrador as they are closely guarded by thick spruce forests and deep layers of moss and lichen. Aside from the occasional eroded site or isolated artifacts recovered from a sandy beach it is only with intensive sampling (as has occurred with the Lower Churchill development) or urban expansion (as has occurred in Northwest River and Sheshatshit) that the forest gives up its secrets. Even recent and contemporary Innu land-use can be difficult to document, especially for winter camps and travel routes situated back from the river's edge, invisible but for the chopped and sawn stumps of trees cut for tent poles or harvested for firewood. Conversations with Innu families in Natuashish and Sheshatshit affirm that the Kanairitok drainage has long been a travel route and a destination for Innu winter and spring camps (as attested to by Armitage 1989, Mailhot 1997, and William Duncan Strong [Leacock and Rothschild 1994]). At Ashuapamatikuan (Shipiskan), upstream from Ashtunekamik^{u} (Snegamook), there is a broad level terrace adjacent the outflow that has, for centuries, been a prominent Innu camping place (Figure 7). Ashuapamatikuan was probably the end of upriver canoe travel as beyond it the Kanairiktok flows through a steep turbulent valley. It too is a staging area of sorts, near the edge of the barren grounds, a good place for caribou hunting with travel routes radiating-out in all directions. Punas Nuke and his family have a cabin adjacent the outflow at the eastern-end of the lake. As attested to by the remains of recent tents and 19th century shaputuans, and its name which means caribou waiting spot, it is and has been a popular camping place. Punas had a small collection of historical material from scratching about in an old tent-ring beside his cabin (Figures 8-9) and Kevin McAleese (1992-1993) found traces of *Shashish Innu* artifacts on the beach (Figure 10).

William Duncan Strong was an anthropologist and archaeologist with the Rawson-MacMillan Sub-Arctic Expedition to Labrador in 1927-1928 (Leacock and Rothschild 1994). Strong spent the winter with several Innu families trading out of Nain and Davis Inlet and accompanied them to their winter camps west of Vosiey's Bay. With the return of warmer weather, Strong turned his attention to archaeology. Jim Saunders (1909-1987), the son of an independent trader and trapper at Davis Inlet, had made a collection of stone projectile points that he had found exposed in sandy beach terraces on Tunungayualok Island just north of Davis Inlet (Figure 11). Saunder's collection figured significantly

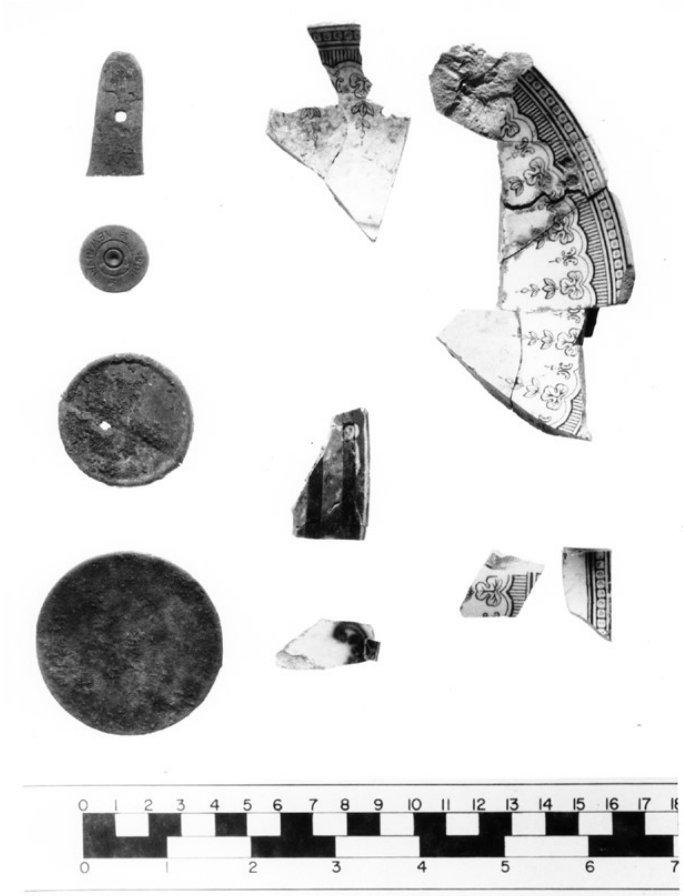


Figure 8: Punas Nuke's collection from an early 20th century tent ring at Ashuapamatikuan (Shipiskan).

in Strong's archaeology report (1930) and was the first attempt at interpreting Labrador's Innu history.

During the summer of 1928 Duncan Strong made a canoe trip up the Hunt River, a tributary of Flowers Bay south of Davis Inlet, to a prehistoric archaeological site that his Innu informants had told him about (Strong 1930, Fitzhugh 1986). Strong's "Northwest Corners" site, a *Tshiash Innu* (Archaic) encampment, was the first recognition of a large archaeological site in the interior of northern Labrador. Although he was unable to visit it, Strong learned of another archaeological site in the interior. In his diary for July 18, 1929 (at the National Anthropological Archives), he references a site on the Adlatok River south of Hopedale where Charlie Goudry [Goudie] had "located a lot of flint points in a sandy bank one day's canoe trip up the Adlatuk [Adlatok] River, just beyond the forks and this side of Sapiou [Shapio]."

In this section we have pulled together a number of disparate references that contribute to an

Figure 9: Puniss Nuke's collection from an early 20th century tent ring at Ashuapamatikuan (Shipiskan). Stone *mitunishan* for pounding caribou bones in anticipation of the *makushan*.

Figure 10: Stemmed biface of brown chert found on the beach at Ashuapamatikuan in 2004.

enhanced awareness of the *Shashish Innu* presence in northern Labrador. The difficulty in locating sites in the forested interior coupled with the logistical challenges that travelers must overcome have made revelations few and hard to come by. The possibility of finding a potentially large and important *Shashish Innu* site such as alluded to in Strong's diary has proved a tantalizing memory that has finally sought resolution with an archaeological reconnaissance, which we turn to for the remainder of this paper.

The Shapeiau-Adlatok-Ugjoktok Survey, 17 September-10 October

The 17th of September dawned clear and calm and we were soon underway in Jim Burton's taxi-yellow 65 year old de Haviland Beaver for the flight into Shapeiau Lake. Our route paralleled the old Innu travel route between Northwest River and Davis Inlet as mapped by Innu informants for William Duncan Strong in 1928 (Leacock and Rothschild 1994): Grand Lake-the Naskaupi-Namaycush and Pocket Knife Lakes-Snegamook-Mistinippi-Shapeiau (Figure 12). Along the entire northeast end of Shapeiau there

Figure 11: Jim Saunder's collection of *Shashish Innu* stone tools from Tunungayualok Island now at the Robert S. Peabody Museum of Archaeology in Andover, Massachusetts. Recognition of Saunder's contribution to Innu archaeology led to his name ---the Saunders Complex of the Intermediate Indian Period—being applied to sites from this period along the Labrador coast (Nagle 1978). Photograph by Stephen Loring, 1983.

Figure 12: View to east overlooking the Shapeiau River oxbow with the Adlatok (Ashuapun-shipu) River in the middle background. A vast glacial outwash delta forms a broad level terrace to the north and east of Shapeiau and high steep sandy banks where the rivers have cut down through it.

is a broad sandy beach, the eroded face of a glacial outwash delta that covers the intervening land between Shapeiau and the Adlatok River (Ashuapun-shipu). We set up our base camp adjacent to a cabin and out buildings that Winston White had built around 1980, the only structure in the vicinity.

A close inspection was made of the entire beach and the terrace edge looking out over the lake. According to Napes (Jean-Pierre Ashini) and Richard Nuna in Sheshatshit Innu families had camped here as recently as 1990 but we were chagrined not to be able to find any traces of former tent sites beyond the suggestion of a few cut stumps. Innu campsites, especially winter-spring ones built atop snow, can disappear easily back into the forest they were shaped from. This is especially true for sites dating from before about 1960, when transporting food and equipment into the country by canoe and sled precluded the use of easily disposable canned or bottled products.

At the northwest corner of the beach, a small stream enters from the east creating an eroded gulley that is one of the few breaks in the sandy bank. A cluster of small fire-cracked rocks, the remains of a hearth, was found on the east side of the stream and near-by, but on the other side of the stream, were found a single large flake of banded-grey chert and a maroon-colored utilized flake (Figure 13 center). An intensive search of the exposed beach in the vicinity of the hearth and on the terrace above it failed to locate any additional cultural materials.

With the exception of the remarkable sand beach and terrace at the northeast end Shapeiau Lake is nestled in about low rocky hills whose steep slopes are covered with a dense stand of spruce and tamarack. Where streams enter the lake there is often a shallow sandy delta and beach built up and level

enough to have provided suitable camping places if weather, or other contingencies, made them acceptable. However, these little beaches paled in comparison to the logistical advantages (adjacent travel routes) and amenities offered by the more expansive camping areas at both the north and south ends of the lake. Nevertheless, we stopped to investigate all the potential camping areas–basically defined as space enough for tents and canoes—as we worked down the east side of the lake. On two occasions we found eroded stone features that had a "hearth-like" appearance but the complete absence of any cultural materials precluded a definite attribution of these features as cultural (Figure 14).

At the south-east corner of the lake there is a lovely cove fronted with a broad sandy beach and backed by a stand of sizable white spruce and a large stream draining the low-lying country to the south. Behind the cove there is a broad level sandy terrace with a wonderful prospect overlooking the south end of the lake. This site is at the terminus of a well-known Innu travel route from Mishtanipi (Mistinippi Lake) that cuts off a particularly difficult and treacherous river section. That this was indeed a significant Innu travel route is affirmed by Sylvester Rich, a mushuauinnu man who traversed the route in the company of a large group of people travelling from Utshimassits to Sheshatshit in the mid 1960's. A map of this portage route (now at the Peabody Essex Museum in Salem, Massachusetts) which was drawn by an Innu informant from Sheshatshit for William Brooks Cabot in 1921 and a similar one that was made for William Duncan Strong by Innu at Voisey's Bay (see the frontispiece in Leacock and Rothschild

Figure 13: *Shashish Innu* stone tools recovered during the Shapeiau Lake Survey, 2017. Left-to-right: red quartzite lanceolate biface GfCi-02; linear blade-like flake, mottled purple chert GfCi-02; utilized flake, maroon-colored chert GgCh-01; utilized small block of dark grey chert GfCh-02.

Figure 14: A possible stone-hearth found exposed on a beach along the east shore of Shapeiau, view to SW.

1994) provide further evidence. We located the remains of a large summer camp on the level ground behind the cove. Neatly stacked piles of cut wood and cleared out former tent sites were present and small nails and mosquito-coil holders were found scattered about. The absence of any domestic debris or hunting/fishing paraphernalia or architectural features usually associated with Innu camps (tent rings, central hearths, caribou antler offerings) and the general orderly appearance inclines us to interpret this as the remains of a prospecting camp from the heyday of mineral explorations following the discoveries at Voisey's Bay in 1994. However, we wouldn't completely preclude an Innu attribution as briefly occupied camps by transient hunters and their families might also leave such parsimonious remains. To our surprise we were unable to identify any historic Innu features or prehistoric sites in the area adjacent to the cove.

Two kilometers to the west, around a prominent headland, at the southwest corner of Shapeiau Lake, is the outlet of the river that drains Mishtanipi Lake. On both sides of the outlet are broad sandy terraces that seemed to offer excellent prospects for camping (as indeed we did). A single linear flake of purple chert was recovered from the beach on the north side of the narrows (Figure 13: 2nd from the left). Such linear flakes are a diagnostic marker of *Shashish Innu* sites (Nagle 1978). The beach find-spot and the sandy terraces above it were designated Shapio-04 (GfCi-02) and thoroughly inspected. A curious arrangement of four round boulders was discovered at one edge of the highest terrace overlooking the outlet (Figure 15). Thinking that these might cap a buried feature we opened an excavation unit that bisected the surface arrangement. Clearing off a floor at 25cms below the surface, it was apparent that the boulders rested on undisturbed bedded sands as no pit outline or disturbance was present.

Figure 15: The high terrace on the north side of the narrows at the SW corner of Shapeiau. An odd feature of four clustered boulders was found along the edge of the terrace and can be seen next to Anthony Jenkinson. View to northeast with Shapeiau in the background.

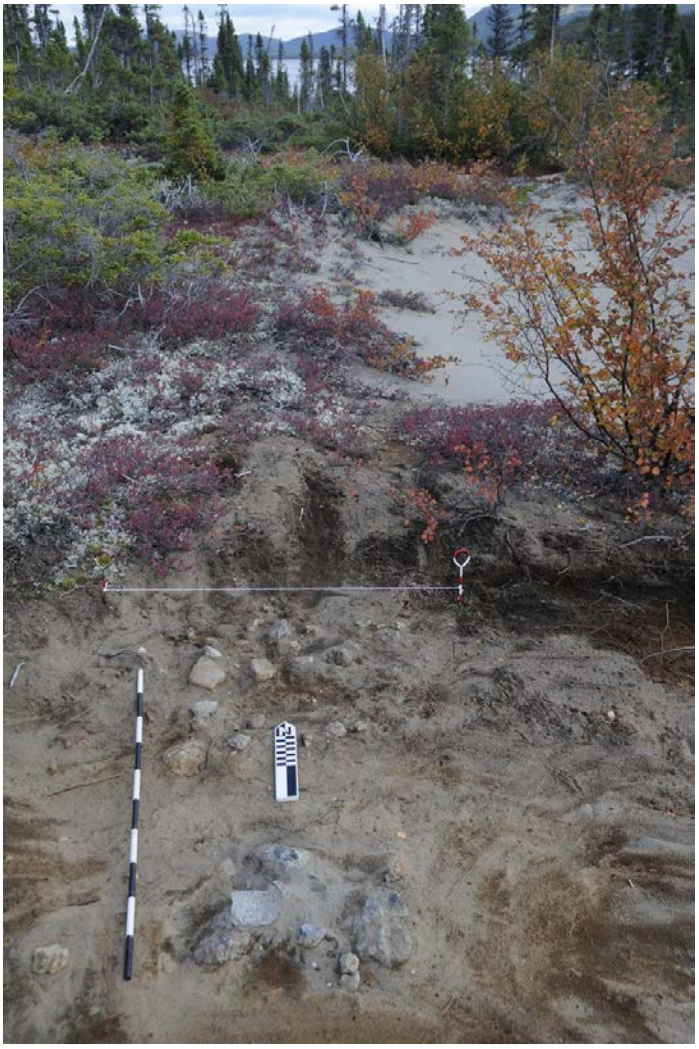


Figure 16: The presumed *Shashish Innu* hearth at the Mishtanipi River outlet (GfCi-02).

About 25 meters south of the boulder feature a single lanceolate biface of red quartzite was recovered (Figure 13: left). A careful search of the terrace, much of which was exposed, located only a single large chert flake of banded purple chert. We did locate two small piles of fire-cracked rock that lay exposed on the surface. Neither was associated with any lithic debris but one was observed to have small pieces of calcined bone scattered about. This hearth (Figure 16) was about 7 meters from the spot where the biface was found. It lay partially exposed, but by carefully troweling away the aeolian sands that surrounded it we were able to recover in situ calcined bone and tiny bits of charcoal, enough for an AMS radiocarbon date. We suspect that all the cultural materials observed at GfCi-02 are derived from *Shashish Innu* but whether from a single visit, or more likely several, is impossible to determine. But it is worth noting just how intangible a presence is revealed even when, as at this site, most of the area is either completely exposed or covered by a very thin mossy vegetation mat. The conventional date obtained from the large mammal (presumably caribou but perhaps bear) calcined bone fragments from the hearth feature was 3320±30 B.P. (Beta 488082) –3632-3470 cal BP--very much in line with dates from *Shashish Innu* sites on the coast as reported by Nagle (1978:127).

Continuing with the survey, we proceeded up the narrow six kilometer long lake south of Shapeiau to its terminus where the rapid-filled river draining Mishtanipi comes in from the south. We found much evidence, on both sides of the river, to indicate that this was a favored Innu camping ground in former times. On the north side of the river Innu camping places, revealed by cleared tent areas, caribou antlers placed in trees, discarded hunting artifacts (shot-gun and rifle casings), cut trees, and stove parts were found at several localities. While on the south-side moss covered stone fire-rings and a tin lard bucket around which a tree had grown (Figure 17) appear to be from the early decades of the 20th century.

Figure 17: Tin lard bucket found at an old Innu camp (GfCi-03) overlooking the outlet of the river draining Mishtanipi Lake.

Figure 18: Terraces on the west shore of Shapeiau, view to east. Shapio-7 (GfCh-02), the find-spot of the grey chert flake is in the center of the photograph. Shapio-6 (GfCh-01), the cluster of Ramah chert retouch flakes, was found on the upper terrace just to the right of the photograph.

Returning to Shapeiau, we continued our survey up along the lake's west shore. There are several tiny peninsulas that jut out from beneath the towering rocky cliffs, but neither these, nor the boulder strewn shore, held much inducement for camping. It is not until about halfway up the lake that there is any promise of good camping prospects. Here there is a set of broad sandy terraces, an outwash delta that has been bisected by a large stream entering from the west. We camped on the south side of the delta about a kilometer south of the river's mouth where Innu (and maybe geologists) had camped before. All along the south side of the river were two distinct sandy terraces that had been recently burned over and were for the most part exposed. Given the delightful prospects the area afforded we expected to find evidence of earlier occupations. However, our exhaustive search of the terraces all along the lake shore up to the south bank of the river located only(!) a single blocky flake of dark grey chert (Figure 13: right) on the lower terrace and a small scattering of very small Ramah chert debitage on the upper terrace (Figure 18). The choice of raw material suggests that the isolated flake is from the same ephemeral *Sashish Innu* presence that we encountered elsewhere on Shapeiau; the Ramah chert debitage on the other hand is probably from a much later Ancestral Innu visit (given their preference for Ramah chert and their conservative flaking practices).

Unbeknownst to us at the time, the terraces on the north side of the river had been surveyed by Gerald Penney in 1995 as part of an overview assessment done in conjunction with mineral explorations (Penney 1999). He reports recent Innu camps on the terrace and further north at the end of the lake where the stream draining Shapeiass enters from the north. Richard Nuna (Sheshatshit) tells us this later place was where his family and others camped in the spring of 1990.

Figure 19: The high sandy banks on both sides of the Adlatok (Ashuapun-shipu) about 5 kms above The Forks. View is downstream to the east.

Having circumnavigated Shapeiau, we returned to our base camp adjacent Winston White's cabin and prepared for the trip out to the Adlatok River and down to the sea at Ugjuktuk Bay. We left Shapeiau on September 25, portaging the canoe and gear along the north side of the falls at the outlet of the lake. We followed the river around the dramatic ox-bow (Figure 12) to the top of the beginning of a set of rapids and falls that plunge about 50 meters into the Adlatok River. We found Innu camp sites everywhere we stopped: at the bottom of the Shapeiau Lake falls; at the mouth of a tributary lake about half-way around the Shapeiau River horseshoe bend; and at the top of the Shapeiau River falls, but no evidence of earlier occupations (perhaps unsurprisingly as we did not have the time or person power to conduct extensive test pitting in the thickly forested river valley).

Having portaged down to the broad Adlatok River (Labrador's 4th largest) we reached the confessed goal of the survey trip, the vicinity of Goudie's purported find of arrowheads around 1925: "in a sandy bank one day's canoe trip up the Adlatuk [Adlatok] River, just beyond the forks and this side of Sapiou [Shapio]." A curious feature of the Adlatok River is that about 17 kilometers below Shapeiau Falls the river forks with the northern branch flowing an additional 21 kilometers into Adlatok Bay, while the southern branch flows 14 kilometers to reach saltwater in Ugjoktok Bay, the two mouths being about 14 kilometers apart. Between "The Forks" and Shapeiau Falls the river flows gently past high sandy banks (Figure 19). Back of the sand banks is a thick forest of spruce with an understory of lichen and moss. As noted earlier, the dense forest vegetation is very effective at hiding most traces of previous land-use and occupancy. We sought out animal trails and blowouts and occasionally tested particularly attractive spots with a trenching shovel but for the most part we walked the river banks in the assumption that any significant sites would reveal themselves with eroded hearths, debitage or artifacts. In addition to walking the river we made sorties to likely looking camping areas on lakes and streams north of the river. Disappointingly, as luck would have it, we failed to identify any cultural features or recover any artifacts on the Adlatok aside from portions of the old portage trail that led around the falls to Ugjoktok Bay, which we reached on October 4th, ahead of the first snow of the season.

While we had hoped to conduct an archaeological survey of the islands at the head of Ugjoktok Bay—a similar canoe survey of Adlatok Bay in 1976 had discovered an important early Maritime Archaic site (Fitzhugh 1978: Figure 8)—our dwindling supplies and the lateness of the season precluded such,

Figure 20: Innu camp at Mistanippi, 1992. Photograph by Anthony Jenkinson.

and we proceeded on into Hopedale, dodging weather, and arriving late in the evening of the 10th simultaneously with *The Northern Ranger,* our transportation south.

Some Final Thoughts

From an archaeological/cultural heritage perspective our traverse of a small portion of *Anikapeu's* estate had only modest results. The hoped-for discovery of a large *Shashish* Innu site proved a chimera. It is possible that some sites may have disappeared over the years from erosion or having been picked over by Innu, by geologists and prospectors or visitors to White's cabin. But the absence of hearths and debitage has us puzzled over the lack of more conspicuous traces. Still, our observations and collections contribute to the incremental accretion of knowledge that moves us ineluctably towards a greater awareness and appreciation of Innu history as it is played out through the forested interior of Nitassinan. The few cultural traces we did recover are indicative of a central tenet of the Innu way of life: extraordinary mobility. Mobility that leaves a very faint, almost ephemeral, trace. With the knowledge at hand it appears that larger *Shashish Innu* social gatherings occurred at coastal (or near coastal) rendezvous with highly mobile parties moving about the interior in the course of procuring resources. Mobility as a key tenet of Innu adaptations past and present informs the practice of an Innu archaeology that has archaeologists moving through the land with canoe and tent in the course of procuring their particular sorts of resources (both material and immaterial). It is a profound experience to follow the trails that generations of Innu ancestors have pioneered and contribute to a revelation and an appreciation of Innu cultural heritage. It is about respect.

(Jenkinson) I found that the exercise of walking and paddling through the Shapeiau area in the fall of 2017, a locale I knew to have been lived in recently by Innu groups, contrasted with the elaborate tapestry of stories and memories from people I know who lived there. The same places viewed only through the material lens of archaeological survey seemed empty and silent. The experience left me pondering the sometimes exaggerated importance and value we attach to such surveys when they are disconnected from the memories of living descendants of those whose stone tools and old fireplaces which, if we look hard enough, we find all around. In 1992 our family and several other related ones spent the spring months at Mistanippi, the next large lake above Shapeiau. For those who were there, the time at Shapeiau populates the place with memories and animates the stories of older relatives who hunted here and who travelled through this place on the way to Shapeiau and the north. When old Innu are coming to the end of their lives they will frequently say that their surviving family should understand that after they die, they will still be with them. This I think applies also to places which populated with memories and stories are never empty (Figure 20).

(Loring) It was quite a surprise to find a stoic toad standing in the still frosty lichen that covered an old Innu tent-site at the camping place where the Mistinnipi River comes down to the lake (GfC-03). It was a cold morning and he didn't move or flinch when I picked him up to move him out of the shade to a sunny spot that he might warm up. I couldn't help but be reminded of the story of Anikapeu stealing an Innu woman for his wife. Yet he promised to make her happy and to provide for the girl's father as long as he dwelled in the country near-by. And I remembered the words of an Innu tshishennu Dominique Pokue when–in 1995, not far from Anikapeu's house at Petshishkapishkau—we reinterred some ancestral remains that had eroded out of a hillside, "We have taken care of you, we ask that you to please take care of us."

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As always it is with humility and deep respect and appreciation to the Innu who have shaped and guided our appreciation of the country and in whose footsteps we follow. And special thanks to Martha Drake and Stephen Hull for helping facilitate the permitting process and to Jim Burton for flying us into Shapeiau.

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Summary of Archaeological Research Performed by Laurie McLean/ Consulting Archaeologist in 2017

Laurie McLean
Archaeological Consultant

Introduction

The author directed two surveys requested by Newfoundland and Labrador's Provincial Archaeology Office (PAO) in 2017. One week, during late August, was spent surveying Thwart Island and the Point of Bay shoreline in the Bay of Exploits. Two sites were re-visited and 15 new localities were identified. Part of one week in late September-early October was invested re-visiting Slaughter Island (DfBa-05) and Little Red Indian Brook (DfBa-06), two inland Beothuk sites located near the town of Badger. This survey also examined the Exploits River's north shore between Badger Brook and Junction Brook, resulting in the discovery of one new site. The Badger area survey represents the PAO's continued re-assessment of Exploits Valley archaeological sites that was initiated in 2010 (McLean 2010). A series of research projects since then has compiled a list of 60 Beothuk housepits from the Exploits Valley that mostly consists of features reported in the 1960s, although a few new housepits have been added to the set (Locke Field Notes; McLean 2017b:26, 48). This research has re-identified and discovered other Beothuk features as well as significantly contributing to our understanding of precontact occupation of the Exploits Valley (McLean 2016:1; 2017c:10).

A Summary of Two Surveys Assessing Portions of the Bay Of Exploits and the Exploits River, Newfoundland

Results of Survey

The survey of Thwart Island and part of the Point of Bay shoreline was conducted from August 23-31, 2017. Two days were lost to rain and/or high winds during this period. High winds were experienced on a third day that prohibited travelling by boat, but the dry conditions permitted a walking tour of Indian Cove on the north end of the Point of Bay study area. At least 592 test pits were excavated at 67 locations while another 12 places were examined without testing. Most of the latter offered reasonable landing conditions, but upon close examination did not possess associated areas deemed suitable for human occupation or related activity. Cabin locations, other than abandoned structures, were not subject to test pitting and two large earthen/rock mounds were not disturbed (see below). Twenty-four cabins, two abandoned ones and one set of wooden cottage ruins were counted on Thwart Island. Another abandoned cabin was observed on a nearby small island. One extant cabin and two abandoned ones were present on the Point of Bay shoreline. One of the latter abandoned cottages occurred on a small point designated a place of special interest by the PAO. This attractive level terrace also features a brook running to the sea. Despite this having relatively high archaeological potential, 27 test pits dug here were sterile.

Fifteen new archaeological sites were identified and two were re-visited during the survey. One of the re-visited localities was Indian Cove (DhAt-12) where PAO archaeologist Ken Reynolds visited in 2005 and recovered one flake and three artifacts made from European materials (Site Record Form). This site contains a cabin and a well-maintained lawn which was not tested in 2017. Cultural material was not present on its surface this summer. A rectangular feature with a perimeter mounded of earth and rock, suggesting a foundation of an historic house, was found on the north side of the private road linking the cabin to Highway 360. GPS coordinates were recorded for the feature, but it was not tested. Testing of a forest-covered area 172 metres south from the cabin produced cultural material that was recorded as Indian Cove-2 (see below).

The second re-visited site is located on the west side of the entrance to Rendell's Cove where two pits found in 1965 at the top of a sloped cobble beach were tentatively attributed cultural significance (Rendell's Cove-1 (DiAt-01)) (Devereux 1965). One

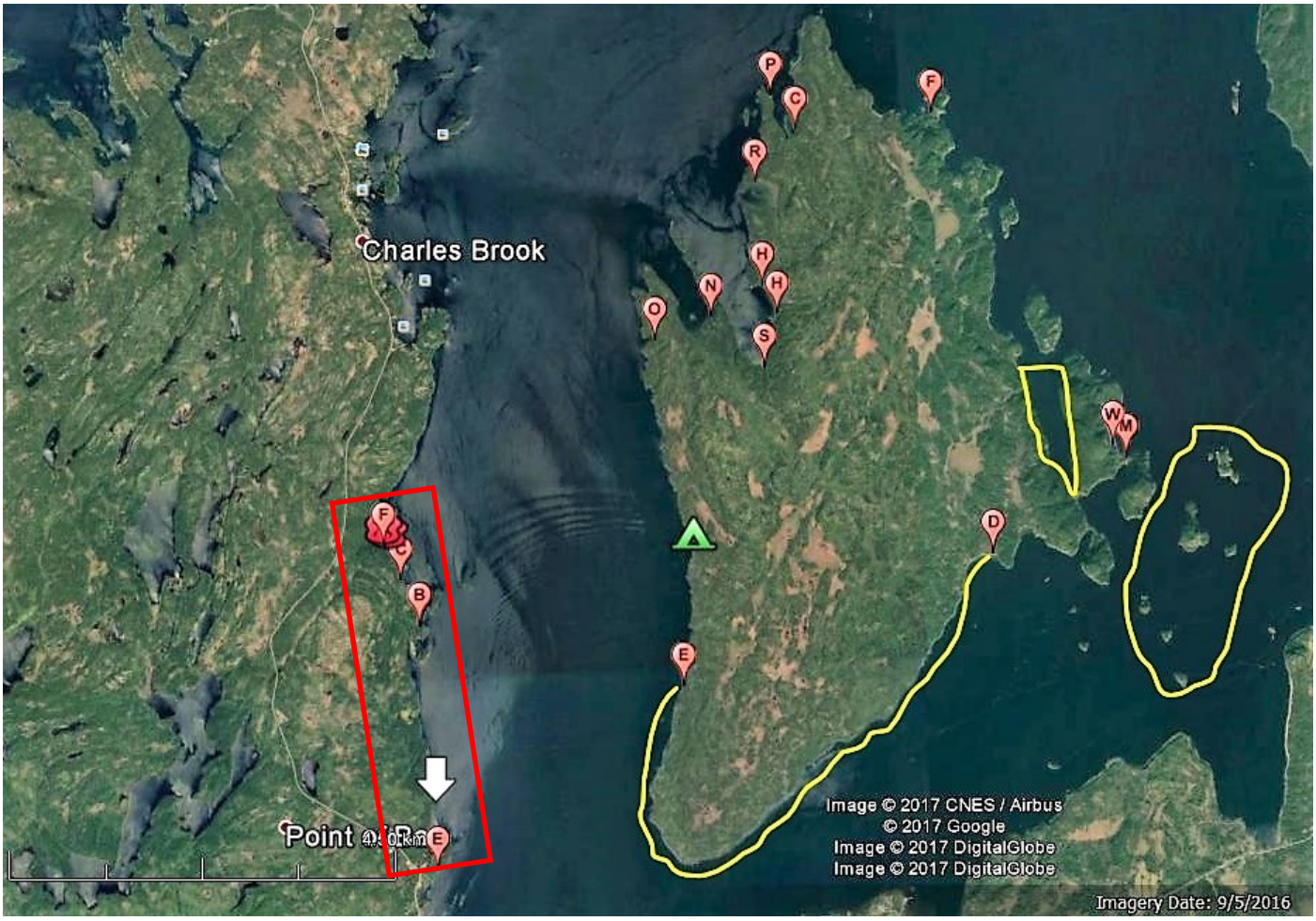

Figure 1: Point of Bay and Thwart Island survey area.

	Surveyed Portion of Point Of Bay Shoreline
	Untested Portions on Thwart Island and Adjacent Small Islands
F	Thwart Island Northeast (Unknown Aboriginal)
W	Thwart Island-East (Unknown Aboriginal)
M	Thwart Island (Burial?) Mound
D	Thwart Island-South (Dorset)
E	End of Survey Area
	Old Cabin Site
O	Thwart Island (Argillite) Outcrop (Unknown Aboriginal)
N	Cabbage Cove Site (Beothuk)
S	Wild Bight Sawmill (Historic)
H	Wild Bight Loggers' Camphouse/Bunkhouse – 2 Locations (Historic)
R	Hoskin's Harbour (Unknown Aboriginal)
C	Rendell's Cove-East (Unknown Aboriginal)
P	Rendell's Cove Cobble Pits (Diat-01) (Unknown Aboriginal)
Point Of Bay Section	
F,	Indian Cove-South (Beothuk?)
C	Rimmer Site (Unknown Aboriginal)
B	Wells Site (Unknown Precontact)
	Designated Place of Special Interest (Abandoned Cabin/Sterile)
E	End of Survey

Figure 2: Previously identified housepit-like depressions at Rendell's Cove (DiAt-01).

of these ovate pits, which now measures 2.2 x 1.9 metres (3.25 m²) has largely filled in since then and its' ovate, 1.5 x 1.6 metre (1.87 m²) neighbour is mostly hidden by dense scrub vegetation (Figure 2). These pits are much smaller than the smallest, 7.68 m², of 81 recently tabulated Beothuk housepits which average 30.27 m² (McLean 2017b:48). Both of these pits are barely discernible now. Two smaller ovate pits, with a maximum diameter of 95 centimetres, are present west from the two previously reported ones. Cultural material was not found on the surface of the Rendell's Cove pits this summer and was not present in four test pits dug in vegetation south from the pits.

Indian Cove-South (DhAt-15) is one of four sites where flakes made on fine-grained chert or slightly coarser, but high quality rhyolite were found in 2017. Thirty-six flakes were found in two test pits at Indian Cove-South (McLean 2017d: 64, 65). Fire-cracked rocks were present in three test pits distributed over a 90-metre distance. Seven of the flakes were found in a test pit dug inside a housepit-like depression that is mostly hidden by vegetation (Figure 3). A second test pit within this feature produced fire-cracked rocks suggesting a possible hearth. Two other test pits dug inside the tentative housepit were sterile, indicating a small assemblage. Full excavation might produce artifacts made from European materials, a defining criterion for most Beothuk housepits. Housepit 7, partly excavated at the Beaches site (DeAk-01) in 1995, is the only Beothuk housepit assemblage that does not contain artifacts made from European materials (Deal and McLean 1995:24). It is possible that such objects are present in the unexcavated half of this feature. Indian Cove-South's housepit encompasses 30 m², which is within the range of sizes for Beothuk housepits. Twenty-two coastal housepits are between 12.75 and 54.15 m², averaging 26.18 m². Fifty-nine interior housepits range between 7.68 and 60.00 m² in total size, averaging 31.81 m². Mean size for all 81 housepits is 30.27 m² (McLean 2017b:48). Earthen walls are not discernible on the Indian Cove-2 depression, but dense vegetation covering the feature prohibits a complete surface examination at this time. It is also possible that this could be a housepit possessing low elevation earthen walls, or lacking this attribute, as these traits were observed among a small number of Exploits Valley housepits (McLean 2014:34).

(Figure 3)

Thwart Island-Northeast (DiAs-13) is a new locality in a small cove near Thwart Island's northeast corner (Figure 4). Twenty-five flakes, including four of Ramah Chert, were found in four test pits dug there. The other flakes suggest chert or rhyolite raw materials. Charcoal was scattered throughout some of the pits, but fire-cracked rocks were not present. Cultural material was confined to a 3.5 m² area here, suggesting a brief precontact/early Beothuk visit. An occupied cabin is within 100 metres of this site. The cottage's inhabitants had no knowledge of archaeological resources occurring near their dwelling.

Thwart Island-South (DhAs-06) is a new site that produced five pieces of a soapstone pot and nine flakes of Bloody Bay Cove rhyolite, or a similar material, from a test pit. Ten rhyolite flakes, along with one of white chert and one of possibly patinated rhyolite, were recovered from two other test pits (McLean 2017d: 64). Cultural material was distributed over 1.36 m², but this Palaeoeskimo site is possibly larger as there was insufficient time to completely test the low terrace containing it (Figure 5). A charcoal sample was collected from cultural soil on top of an in situ boulder. Similar partly open terraces occur along the Thwart Island coast southwest from

Figure 3: Penny Wells excavating a test pit inside a housepit depression at Indian Cove-South (DhAt-15).

Figure 4: Thwart Island-Northeast (DiAs-13).

Figure 5: Thwart Island-South (DhAs-06).

Thwart Island-South, but unfortunately these were not tested due to insufficient time.

The Wells site (DhAt-19) was discovered in a small cove between Indian Cove and Point of Bay (Figure 6). One-hundred-thirty-seven lithic artifacts, including a large biface fragment and a smaller one, were recovered from seven test pits (Ibid: 65, 66). Five of the cultural pits were clustered at the north end of a low terrace and two cultural test pits were dug sixteen metres away near the terrace's south end. A few test pits dug near the middle of this terrace were sterile but a detailed examination of this site is warranted. The biface fragments and almost all of the flakes are made from Bloody Bay Cove rhyolite or similar material (Figure 7). Unfortunately, the large, nearly complete biface is not helpful in dating the site or identifying its cultural manufacturer. Similar bifaces have been interpreted as Early Palaeoeskimo at Factory Cove (Auger 1986:116), as Dorset Palaeoeskimo at the Beaches (DeAk-01) (Carignan 1975:190) and attributed to the Cow Head Complex at Peat Garden (EgBf-06) and at the Hunter's Rest site (CjBk -10) (Hartery 2007:26, 40). In situ fire-cracked rocks were uncovered at the north end of the terrace, suggesting a hearth. A charcoal sample was collected. Further research is needed to firmly establish the cultural identity and related significance for the Wells site.

The previously described assemblages, other than Thwart Island-Northeast, contained a few coarser-grained flakes along with a majority of fine-grained lithics. This suggests slight usage of local shale, or similar medium-grained stone, by precontact/early Beothuk occupants of Thwart Island. Two new sites are characterized by these medium-quality lithics. The initial evidence for the Cabbage Harbour site (DhAt-

Figure 6: The Wells site (DhAt-19).

Figure 7: Biface fragment found in a test pit dug at the Wells site.

01), located in the southeast corner of the small inlet bearing this name, was a waterworn quartzite core protruding through its surface. Three shale flakes and a Rosehead wrought iron nail fragment were subsequently found in two test pits. This site is tentatively interpreted as a small Beothuk deposit. A retouched/utilized flake and a flake, both made on shale, were found in Hoskins Harbour (DiAt-15), a small shallow inlet between Wild Bight and Rendell's Cove (Figures 1, 8).

The survey also produced evidence for usage of locally occurring fine-grained lithics. Small chert outcrops are reported on Thwart Island's eastern side (O'Brien 2006), but the survey did not identify these lithic source areas. Fine-grained argillite bedrock, a metamorphosed sandstone, containing evidence for heavy hammering and flake removal was discovered on the island's west coast (Figures 9, 10). This material occurs in a small unnamed cove slightly south from Rice Head. The site was recorded as the Thwart Island Outcrop (DhAt-18). Twenty-seven sterile test pits were dug on low terraces at the north and south ends of the cove. Rendell's Cove's bedrock shoreline contains light grey, medium bedded sandstone interstratified with grey-green argillite and other minor inclusions (Ibid) and although a worked outcrop was not identified, good quality lithic material exhibiting faint flake scars was found in the cove's tidal zone. This material contrasts with the local gabbro bedrock, suggesting it originated from elsewhere in Rendell's Cove, or it was carried there by humans or through natural processes (Figure 11). A sample was collected and its location was designated Rendell's Cove-East (DiAt-16). Testing the nearby shoreline resulted in sterile test pits.

Waterworn conchoidally broken lithics were encountered at two locations. A core was recovered from a test pit excavated in a small cove north from the Wells site (Figure 12). This was recorded as the Rimmer site (DhAt-17). Corroborating artifacts were not present in 23 test pits dug along a two-level stepped terrace north and south of the core, suggesting the latter was naturally formed or resulted from a brief occupation. Waterworn cores and large flakes were observed in the tidal area midway along Thwart Island's east shoreline (Figure 1). A sample was not collected, but in hindsight, should have been. This location was recorded as Thwart Island-East (DhAs-05).

Four historic localities were recorded during the survey. The decaying remains of a collapsed twentieth century cabin were found along southwestern Thwart Island (DhAt-16). Waterworn conchoidally broken lithics from one test pit suggest a small pre-contact/early Beothuk component here. Seven sterile pits were dug in the small associated clearing. Occupants of a cabin in Wild Bight told the survey crew that a saw mill once operated at the mouth of a brook at the bottom of this harbour. Test pits dug in this vicinity were sterile, but wooden slabs, debris from the mill, were strewn over the tidal area at the mouth of the brook. This material was recorded as the Wild Bight Sawmill (DhAt-22). The cabin occupants also reported that a cookhouse/bunkhouse associated

Figure 8: Retouched flake (left) and shale flake from test pits in Hoskin's Harbour (DiAt-15).

Figure 9: Worked argillite outcrop found on Thwart Island's western shoreline (DhAt-18).

with the mill had been located in a large meadow on the east side of Wild Bight. Twenty-two test pits were dug throughout the meadow, but all were sterile, suggesting that the former camp stood on the site of a cabin at the south end of the meadow, an area which was not tested. Alternatively, the former cookhouse/ bunkhouse may not have been a substantial structure and/or was efficiently salvaged following the closure of the mill. This meadow constitutes the Wild Bight Loggers' Camp (DhAt-20). The survey crew was also informed that other structures associated with the mill had been built in a clearing near the mouth of Wild Bight. This location coincided with an area of special interest designated by the PAO (Figure 13). Fifty-one sterile test pits were dug throughout this area suggesting a small-scale camp that was responsibly dismantled, similar to its complementary structures in Wild Bight. This location was nonetheless designated the Wild Bight Loggers Camp-2 (DhAt-21), based on the historic information. The cabin occupants also reported that the person who had applied for title to this area had lost interest due to the difficulty in landing a boat there.

Report for an Archaeological Survey of Slaughter Island, the Mouth of Little Red Indian Brook and the North Side Of the Exploits River between Badger Brook and Junction Brook: Permit No. 17.31

The Slaughter Island-Little Red Indian Brook survey was conducted over six days starting on September 25 and ending on October 2, 2017. Two days were lost to rain. Don Pelley assisted the author for five days and Penny Wells for 1.5 days. Memorial University Ph.D. student James Williamson helped on one day. In addition, the author and Williamson visited Indian Point (DeBd-01), June's Cove (DeBd-03) and Sabbath Point (DeBd-08) on one of the rainy days. These three sites are located on Red Indian Lake. The interior of Feature 18, a housepit re-identified at Indian Point (DeBd-01) in 2016, was measured (McLean 2017a:28). Three fragments of weathered caribou bone were seen on the beach and eroding bank in front of June's Cove (DeBd-03). These bone fragments were not collected.

Slaughter Island (DfBa-05)

Avocational archaeologist Don Locke reported finding two housepits and two storage pits on Slaughter Island in 1967 (Locke Field Notes). This island is located in the Exploits River, 800 metres downstream from the town of Badger. Significant brush cutting was required to expose features and establish a grid over Slaughter Island in 2017. The 2017 survey found a heptagonally-shaped housepit, representing Locke's Housepit 2, on Slaughter Island and tentatively identified a vague rectangular-shaped one, Locke's Housepit #1 (Figure 15). The heptagonal feature's 14.1 m^2 size constitutes a small housepit, ranking 76th among 82 coastal and interior housepits (McLean

Figure 10: Argillite sample from Thwart Island's outcrop (DhAt-18).

Figure 11: Fine-grained lithic sample from Rendell's Cove-East (DiAt-16) sitting on local bedrock.

2017b:48). This feature was not tested during the survey. A shallow depression suggesting Housepit 1 is four metres southeast from #2. This possible housepit is slightly larger than Housepit 2, the heptagonal feature. Five test pits dug inside Housepit #1 were sterile, but two flat anvil stones were partly visible on the surface. The majority of their upper surface was exposed, revealing evidence of hammering, presumably resulting from their use as anvil stones by Beothuk recycling European iron objects into projectile points. These anvil stones were collected (Figure 16).

Figure 12: Waterworn core from a test pit at the Rimmer site (DhAt-17).

2017's survey re-identified two possible storage pits seven metres west from "Housepit" 1 (Figure 17). These appear to be the storage pit depressions reported by Locke in 1967. Leaves and other debris were removed from the pits during the survey, but they were not excavated to sterile. It is not clear whether or not they are rock-lined as many similar Beothuk features are (McLean 2015:35). Both of the pits are oval shaped. One measures 1.7 x 1.1 metres x .5 metres deep and the second one is 0.9 x 0.6 x 0.20 metres. Both pits may have originally been deeper and slightly larger, considering they were not fully excavated during the survey. Slaughter Island's housepits and storage pits are located on a terrace that rises two metres from an alder-clogged border just above the river. The upper terrace narrows in a southeast direction. Four sterile test pits were dug along this southeast transect. A stand of tall trees along the island's southeast border is rooted in a narrow ridge that is slightly higher than dense alders to the northwest. This outer ridge was not tested, nor was the alder-covered border.

Little Red Indian Brook (DfBa-06)

Little Red Indian Brook flows into the Exploits River at the western end of the town of Badger. Locke reported five unusual housepits at the mouth of the brook in 1967. The features were described as "...almost not pits, but just a bit of piled rim". They were 10 to 12 feet in diametre. Locke's field notes claim that many wrought iron nails, trap parts and glass fragments were taken from the housepits although his catalogued collection lists only two iron fragments (Locke Field Notes; McLean 1990). The catalogued Locke collection includes 69 iron objects lacking provenience, which possibly accounts for at least some of the missing artifacts from the Little Red Indian Brook site (McLean 1990). Locke also reported that central hearths and caribou bone were found inside the housepits. Fresh water clam shells were present in some of them. The 2017 survey corroborates the alleged unusual housepits at Little Red Indian Brook, identifying three faint possible features and one potential storage pit (Figures 18, 19). Two of the possible housepits are semi-circular, encompassing 24.6 m^2 and 24.1 m^2 respectively, while a rectangular one is smaller. This places the features within the range of recorded housepit size although the lack of corroborating morphological attributes and scarce

Figure 13: Entrance to Wild Bight, Thwart Island, showing an occupied cabin and area of special interest (Wild Bight Loggers' Camp-2 (DhAt-21). Photo was taken from the meadow reported to be the location of a loggers' cookhouse/ bunkhouse (Wild Bight Loggers' Camp (DhAt-20)).

Figure 14: View of Slaughter Island and the mouth of Junction Brook.

Figure 15: Housepit 2, heptagon-shape, at Slaughter Island (DfBa-05).

Figure 16: One of two anvil stones found at Slaughter Island (DfBa-05) in 2017.

Figure 17: Slaughter Island (DfBa-05) storage pits.

artifacts question their status as housepits, unless they represent unusual morphologies and/or have suffered damage. Test pits dug inside the suggested housepits in 2017 were sterile except for a small chert flake from one. Test pits dug outside the housepits were also mostly sterile, other than producing recent historic artifacts from two test pits and flakes found on the surface and in sub-surface context adjacent to a small sandstone/shale outcrop (Figure 20). This feature represents precontact/early Beothuk activity at the site although it is unclear if this is the location of a previously identified sub-surface flake deposit, or a new discovery.

Surveying the North Shore of the Exploits River between Badger Brook and Junction Brook

John Cartwright's 1768 map shows a deer fence spanning much of the 950 metre distance between Badger Brook and Junction Brook (Cartwright 1768). Two Beothuk houses are shown next to Badger Brook and another two are shown at the mouth of Junction Brook. The author and Penny Wells surveyed this section of river bank on foot. The majority of the area is covered with impassable alders growing from wet terrain. Dry sections, usually coinciding with prominent forest growth, were test pitted, all yielding sterile results, except for a site found at the mouth of Junction Brook (see below). It appears that the deer fence and the two Beothuk houses seen by Cartwright near Badger Brook are covered by the former Newfoundland Railway's rail bed which skirts a steep forest-covered bank along the inner margin of the wet alder thicket.

The author and Don Pelley identified a new nineteenth-century site, Junction Brook-2 (DfBa-17), on the western bank of the mouth of Junction Brook. Artifacts were recovered from sub-surface context

Figure 18: Don Pelley inspects the interior of "Housepit 2" (Locke's numbering), at Little Red Indian Brook (DfBa-06).

and on the surface. Although this location appears to be where Cartwright saw two Beothuk houses in 1768, most of the recovered artifacts suggest an association with the former Newfoundland railway. Thirteen iron objects were found in four test pits and a composite textile fragment occurred in a fifth pit (Figure 21). These objects occurred ten to 12 centimetres below surface near the bottom of a black humus level. Three corroded nails, 74.88 to 83.68 millimetres long, recovered from a 5.8 m² ovate depression, initially suggested a Beothuk affiliation, but wrought iron nails were rarely recycled by Beothuk living in interior Newfoundland after 1750 (McLean 1989:109). These three nails are also smaller than those typically recycled by Beothuk (Ibid:49). Nonetheless, the distribution of cultural material over 140 m² at Junction Brook-2 (DfBa-17) leaves the possibility some of the unidentifiable iron fragments represent a Beothuk occupation.

A 155.22 millimetre-long x 18.84-40.72 millimetre-wide iron coupling and a flat 129.24 x 79.27 x 28.84 millimetre-thick piece of iron, or steel, appear to be fragments of large machinery, such as a locomotive or other train cars. The apparent railway association for this material is supported by the crew's discovery of an intact length of railway track on the site's surface 35 metres north from the pit containing the nails (Figure 22). Nine metres of the track section are visible, with the rest being covered by soil and vegetation. The gravel rail bed is located 39 metres north from the track fragment which seems a large distance for this large, heavy object to have been accidentally or randomly deposited. Considering that the railway was dismantled 29 years ago, it seems more likely that the track section and at least some of the other artifacts unearthed in 2017 resulted from a temporary late-nineteenth century camp used in the building of the railway. A dense charcoal layer, lying five to 19 centimetres below surface in another test pit suggests a partially burned piece of wooden railway tie. A rectangular piece of charred wood found on the surface four metres from the thick charcoal layer appears to be the partially burned end of another railway tie. A number of possible features present on the dry level terrace that continues west from Junction Brook-2 (DfBa-17) were tested with negative results. Judgementally placed test pits also were not productive. Similarly, two narrow islands running parallel to this riverbank were also assessed, with negative results.

Figure 19: "Housepit 5" (Locke's number), Little Red Indian Brook (DfBa-06).

Figure 20: Retouched flake (lower) and cortical flake (upper), from the Little Red Indian Brook site (DfBa-06).

In summary, the Slaughter Island-Little Red Indian Brook survey provided more evidence for extant archaeological resources throughout the Exploits Valley. It is apparent that detailed excavation and associated research will significantly enhance our understanding of Beothuk and precontact occupation of the region. Continued surveying also promises to contribute to the Newfoundland settler and Mi'kmaq archaeological data base as well. Pending the implementation of specific research projects, close monitoring of Exploits Valley archaeological resources is warranted. Similarly, 2017's brief survey of Thwart Island and the Point of Bay shoreline, in the Bay of Exploits, shows there are significant archaeological data to be added to the record of human activity for that area. Bay of Exploits archaeological resources are especially threatened by cottage construction and related impacts, meaning that serious site monitoring is needed, ideally in association with specific research initiatives.

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Figure 21: Junction Brook-2 site (DfBa-17). Exploits River is in the foreground and the entrance to Junction Brook is shown in the photo's right-hand corner.

Figure 22: Inner end of a section of railway track found at Junction Brook-2 (DfBa-17).

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Community Archaeology and Cultural Resource Management in Sheshatshiu, Labrador

Scott Neilsen, Chelsee Arbour, Meghan Walley, Leena Bethune, Riley Winters, Sophia Campion, Mary Denniston, & Gayle Quehe
The Labrador Institute Field School crew, Memorial University of Newfoundland

Figure 1: Map indicating location of Sheshatshiu, Labrador, in relation to Lake Melville and the Town of Happy Valley-Goose Bay (indicated by red square).

The archaeological investigations summarized in this preliminary report were undertaken between July 3rd and October 31st 2017, in Sheshatshiu, Labrador (Figure 1), under two separate, but related, archaeological permits from the Newfoundland and Labrador Provincial Archaeology Office. Permit 17.04 was an archaeological research permit specific to the work undertaken by the Labrador Institute Field School crew, between July 3rd and August 4th 2017, while permit 17.24 was a Historic Resources Impact Assessment permit, and was specific to the work undertaken by Dr. Scott Neilsen and Anthony Jenkinson between August 28th and October 31st, following completion of the field school.

All the archaeological work undertaken and reported here focused on the significant Intermediate period archaeological site FjCa-51, and was part of the ongoing archaeological investigation in the Phase 1 housing development area in Sheshatshiu, which have been the focus of previous reports in this newsletter in 2009, 2010, 2011, 2013, 2014, 2015, and 2017 (Figure 2). Although, as part of the field school learning objects, visits were also made to known archaeological sites at Sunday Hill in North West River, and at Birch Island and the Corte Real Road area in Happy Valley-Goose Bay (Figures 3, 4, 5, and 6). These visits were used as teaching opportunities, to pass on information related to cultural resource management, landscape change, site location prediction and identification, cultural and heritage values, and site commemoration, and no field investigations were undertaken.

The field school crew included teaching assistants and students from Memorial University's, St. John's campus and students from the Grenfell campus, the University of Toronto, and high school stu-

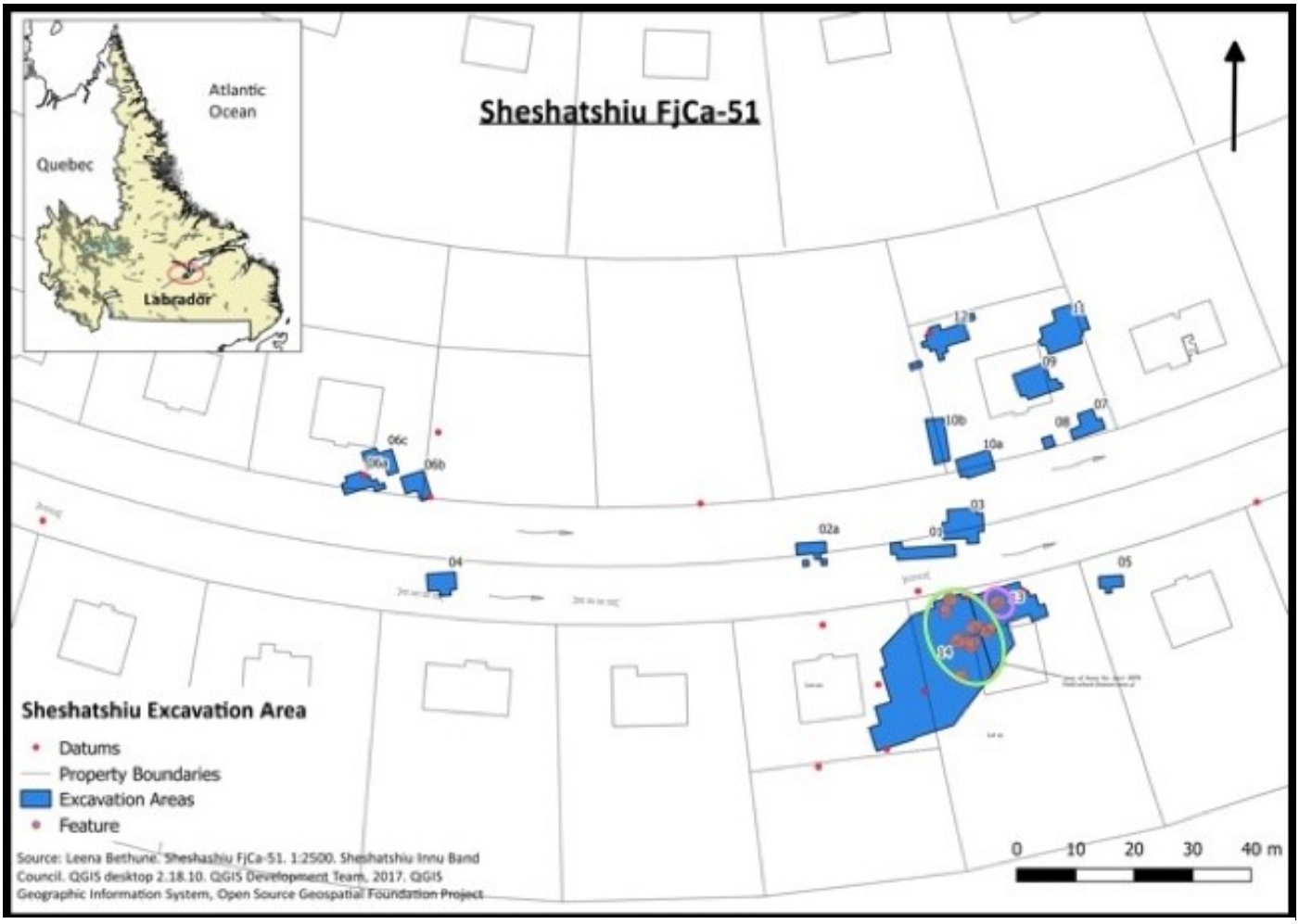


Figure 2: Map showing the location of the Phase 2 housing development area in Sheshatshiu, indicating location of the work undertaken in 2017, under archaeological permits 17.04 (circled in green) and 17.24 (circled in pink).

Figure 3: Map showing locations of archaeological site FjCa-51, and Sunday Hill, Birch Island, and Corte Real road site area (indicated by red triangles), in relation to Lake Melville.

Figure 4: Photo of field school crew at Sunday Hill, North West River, Labrador.

Figure 5: Photo of field school crew at Birch Island, Happy Valley-Goose Bay, Labrador.

Figure 6: Photo of field school crew at area of Corte Real road site locations, Happy Valley-Goose Bay, Labrador.

Figure 7: Photo of field school crew at work, archaeological site FjCa-51, Sheshatshiu, Labrador.

Figure 8: Photo of field school crew at work, archaeological site FjCa-51, Sheshatshiu, Labrador.

dents from the Sheshatshiu Innu First Nation. Fieldwork activities associated with the field school focused on Feature Area 4 in excavation area 14, on housing Lot 19. The overburden and the majority of artifacts had been removed from this area during mitigation work in 2012, while the archaeological features present had been left intact, and covered with tarps since that time. The goal of the field school was to learn archaeological excavation techniques and data collection (including site photography, site notes, soil and charcoal samples, profile and feature drawing, and artifact recording and recovery) through excavation of the archaeological features present (Figures 7 and 8).

The archaeological features excavated included one pit that consisted of a layer of cobbles, overlying a large amount of charcoal, and baked soil (Figure 9). Based on preliminary interpretations in the field, this pit appears to have had a large amount of fire coals within it, and then covered with a course of medium sized cobbles, which would have then created radiant heat for cooking or another activity, such as creating steam or keeping something warm. The remaining features excavated by the field school were all constructed from cobbles. They included charcoal, and appeared to be used for cooking (based on the presence of minuscule faunal remains). They were also in association with tool production/repair (based on the amount of lithic debitage present, and in a variety of sizes, as well as red ochre). In total the field school excavated seven archaeological features. Units surrounding the features were also excavated in order to ensure that all the archaeological material was recovered. Twenty-five 50cm^2 test-pits were also excavated over the duration of the field school, in the wooded area to the south of Lot 19 and in the berm that existed between Lot 19 and the roadway immediately north (Figure 10). The 23 test pits excavated in the wooded area identified a small amount of quartzite debitage (less than 10 pieces), and thus confirmed that the significant site concentration does not extend in this area, as it did on housing Lot 21 to the west. However, one test pit in the berm immediately north of Lot 19 and

Figure 9: Photo of pit feature in Feature Area 4, Excavation Area 14, FjCa-51. Excavated by field school student Riley Winters.

20 did identify approximately 10 specimens of fine-grained chert debitage, and may require additional investigation prior to construction at this location.

In addition to participating in the excavation of archaeological features and units, the field school participants also undertook lab work, which included cataloguing artifacts they recovered, data entry of the catalogued material and photo records, filing and organizing the excavation records, maintaining equipment, and tutorials in GIS and artifact drawing (Figures 11 and 12). As a result of the students efforts Lot 19 in Sheshatshiu is now clear of archaeological material, and will be available for housing construction in summer 2018. Additional information on the activities of the 2017 field school are reported on the Archaeology in Sheshatshiu Facebook page, and information on the upcoming 2018 Labrador Institute Field School can be found here: https://www.mun.ca/labradorinstitute/programs/LIFS.php.

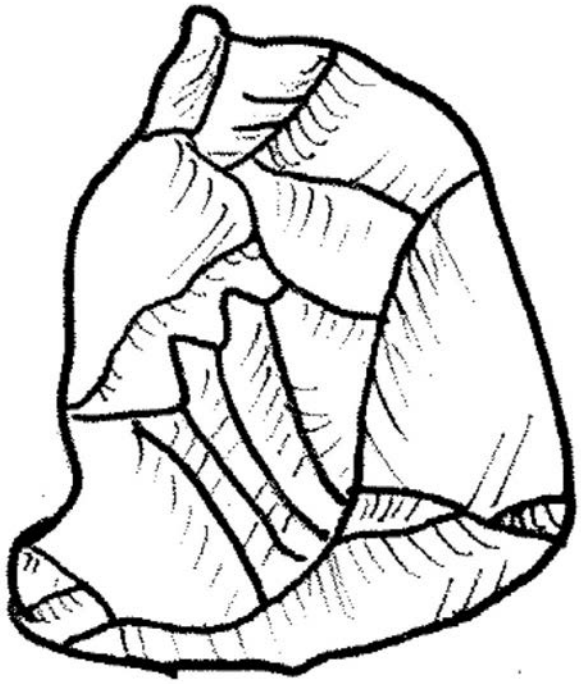
Upon completion of the field school in early August one archaeological feature of those uncovered in 2012 remained unexcavated. In order to complete the excavation of this location, which had begun in 2012, an additional permit application was submitted to the Provincial Archaeology Office. Permit 17.24 was then received and Scott Neilsen and Anthony Jenkinson completed excavation of the feature and the four surrounding units between August 28th and October 31st. Although nearby the features in excavation Area 14, this feature is technically in excavation Area 13, and is located on Lot 19. Like some other features excavated at FjCa-51, this feature consisted of a small mound of soil, which included charcoal, cobbles, fire cracked rock, and lithic debitage. These features have typically been interpreted as being asso-

ciated with activities such as cooking and stone tool repair, rather than the heating function that has been interpreted for some of the features that consist of a single course of cobbles lying flat on the ground.

With completion of the fieldwork undertaken under permits 17.04, by the Labrador Institute Field School, and the work undertaken by Neilsen and Jenkinson under permit 17.24 housing Lot 19 is believed to be clear of significant archaeological resources, and will be available for housing construction in summer 2018. A small area, approximately 1x5 m, along the northern boundary of Lot 19/20 and the exiting roadway has some archaeological material remaining and will be investigated in spring 2018, to determine if detailed excavation is required.

In conclusion, the Sheshatshiu Innu First Nation Band Council needs to be commended for the significant efforts they have overseen in relation to the Intermediate period archaeological site FjCa-51, and housing Lots 19 and 20. In a community where housing is at a shortage, and which is not provincially regulated land, they have upheld the agreement they signed when the reserve was created in 2003 to recognize and implement the provincial heritage regulations, and have undertaken a significant amount of archaeological work over the last 5 years. In this regard they are a shining example for other municipalities in the province where significant archaeological resources are present and do not undertake efforts to protect them, or mitigate impacts to them resulting from community and infrastructure development.

Figure 10: Mr. T, one of the high school students from Sheshatshiu, excavating a test pit in the wooded areas south of Lot 19/20.



Chert scraper recovered from Archaeological site FjCa-51. (Drawing Credit: Lena Bethune)

Figure 11: Sketch of chert mitshikun (scraper) recovered from Feature Area 4, Excavation area 14.

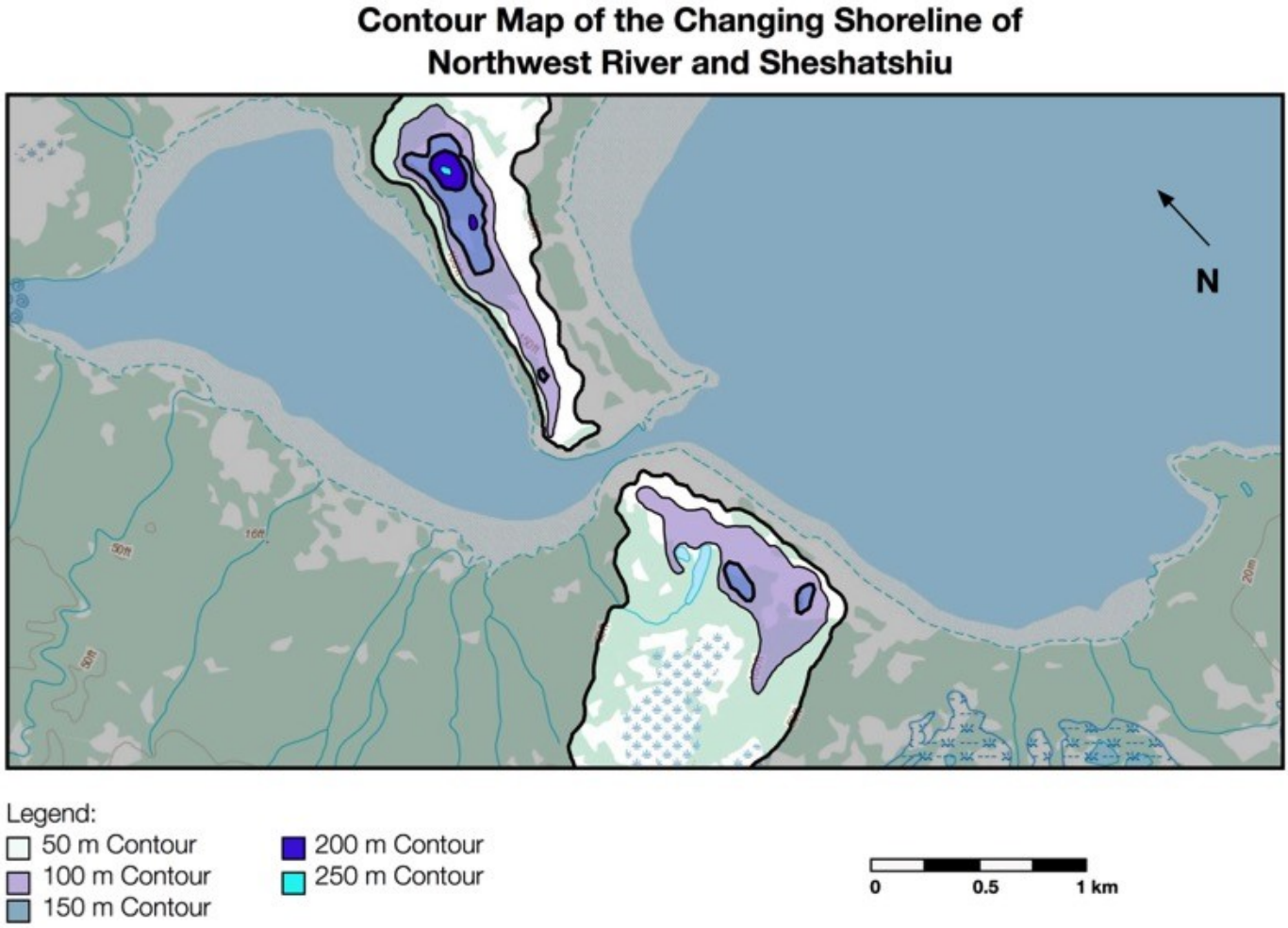


Figure 12: Map of North West River and Sheshatshiu, indicating landscape change over time.

The Birch Island Archaeological Project, 2017 Investigation

Scott Neilsen & Julia Brenan
Memorial University of Newfoundland

Figure 1: Map showing location of Birch Island in relation to the modern community of Happy Valley-Goose Bay. Dots indicate the approximate location of known archaeological sites.

The archaeological work and research undertaken in the spring, summer, and fall of 2017, in association with the Birch Island Park development in Happy Valley-Goose Bay, Labrador (Figure 1), occurred under archaeological permits 17.06 and 17.07, issued by the Provincial Archaeology Office of Newfoundland and Labrador. This work included archaeological research associated with Julia Brenan's Masters research project "Archaeology and Memories of Birch Island" (permit 17.06), and Cultural Resource Management work undertaken by Neilsen is associated with development of the park's infrastructure (permit 17.07) (Figure 2). Previous work associated with the project was reported in the 2016 newsletter (Neilsen 2017), while the results of the most recent work are summarized in the remaining sections of this report, and in the piece by Anatolijs Venovcev at the end of this newsletter.

Archaeology and Memories of Birch Island

The objective of the Masters research undertaken in 2017 was to record and create a representation of the former community utilizing Real Time Kinematic (RTK) and GIS mapping techniques further informed by community interviews and to put this work to-

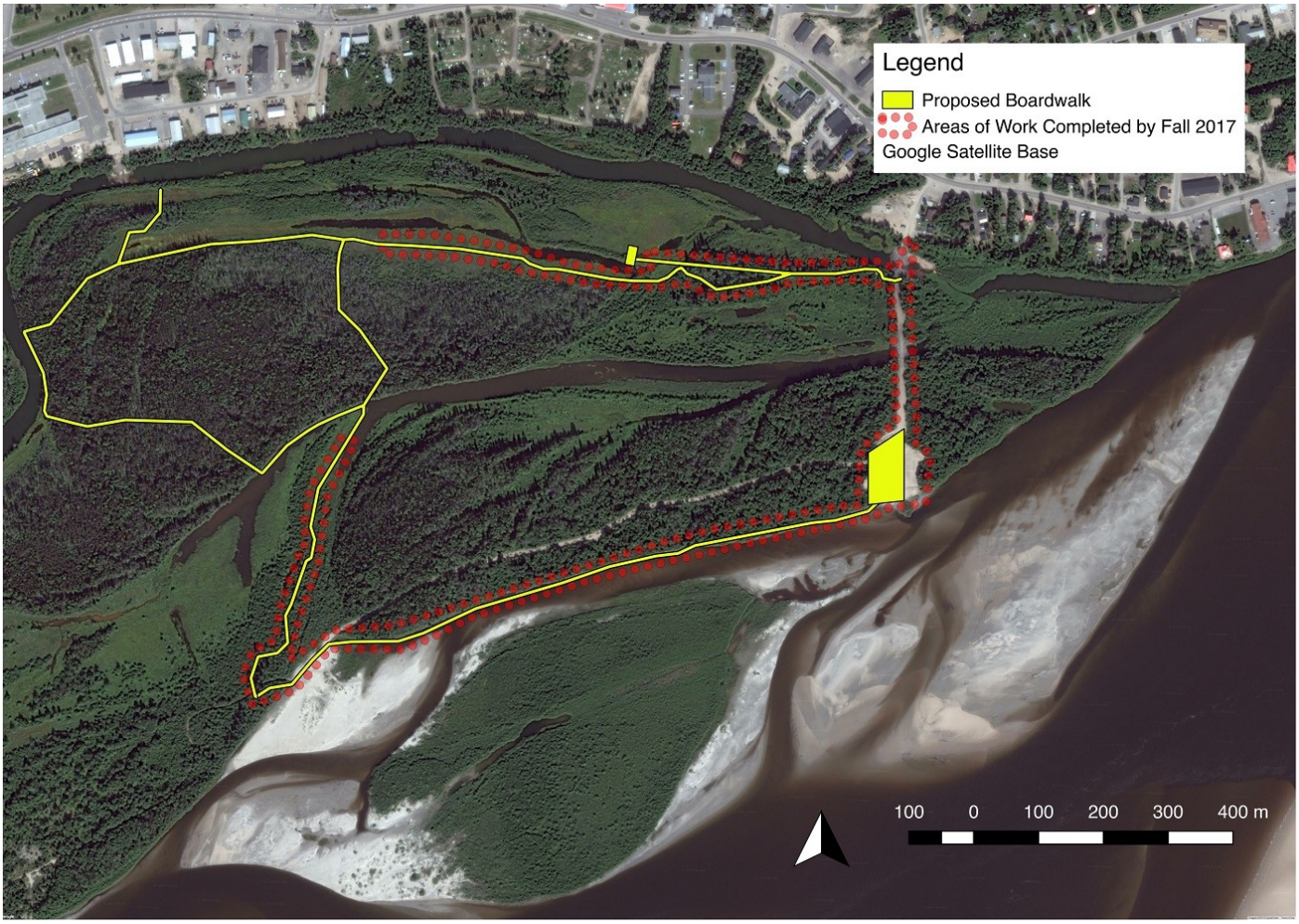


Figure 2: Map of Birch Island showing the location of completed and proposed park infrastructure, as of Fall 2017.

Figure 3: House being moved off Birch Island (Courtesy of Henry Rich).

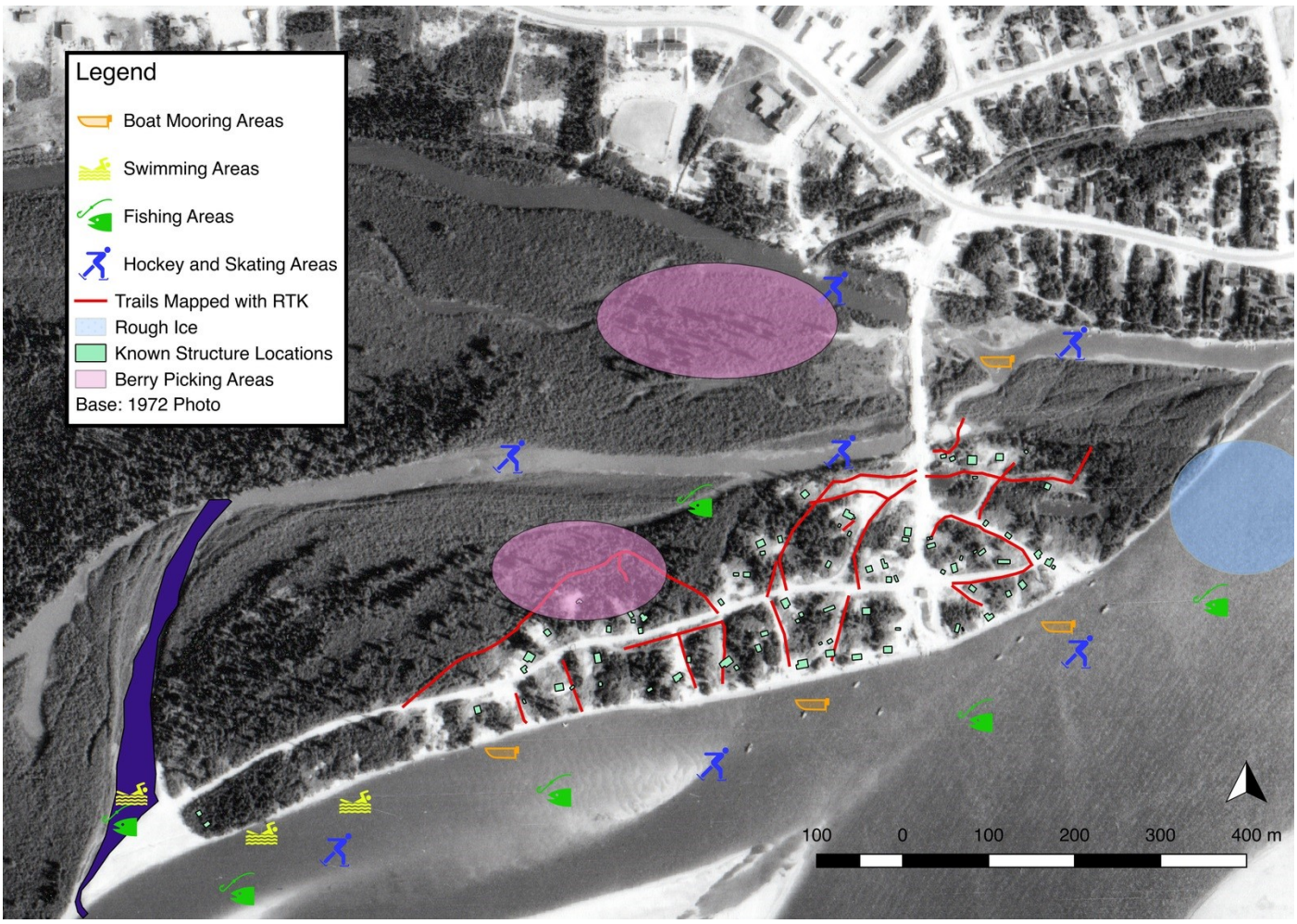


Figure 4: Preliminary Use Map of the Birch Island area based on interview data.
(Credit: Julia Brenan, Scott Neilsen, Anatolijs Venovcev, Hector Blake, Walter Perrault, interview participants).

wards the interpretation and commemoration of the former community being done by Healthy Waters Labrador (HWL) (Figure 3). Throughout this project it has become abundantly clear that Birch Island is an important place to everyone who lived there. The often frequent visits and interaction with the island has reinforced memories of the former settlement for some (Knapp and Ashmore 1999:13).

Methods

The methods employed for this research were pedestrian survey, test pitting, mapping, and interviews. Prior to the pedestrian survey and test pitting in 2016 aerial photos and maps were digitized and georeferenced utilizing GIS, and LiDAR data obtained from HWL and the Town of Happy Valley- Goose Bay was processed with the assistance of Anatolijs Venovcev (GIS Technician for the Town of Happy Valley Goose Bay and Masters in archaeology from MUN). One of the maps acquired from HWL, and created by Hector Blake and Walter Perrault, had structure locations copied from an aerial photograph taken by the US military in the 1950s. Once the maps were georeferenced, the house center points were entered into a GPS and the pedestrian survey of known structure locations was conducted. In 2016, this information was used to determine possible locations for test pits, which were subsequently dug in the vicinity of the mapped locations of structures 10 and 71. The test pit results were used to assess the possibility of more detailed excavation. These locations were chosen based on characteristics observed during the pedestrian survey such as trails, clearings, and surface debris. The artifacts excavated are reported on in detail at the end of this newsletter by Anatolijs Venovcev. As a result of the shovel testing concern was raised about possible soil contamination within the former settlement area due to fuel and paint cans, electronic components and plastic found. This was one of the factors

Figure 5: Julia learning how to use the RTK from Christina Robinson, Spring 2017.

that led to the decisions to conduct an overall survey of the settlement as opposed to a detailed excavation in one or two locations. Further details on the 2016 work can be found in Neilsen (2017).

RTK Survey and Interviews

The detailed mapping portion of the project began in spring 2017. With the assistance of Christina Robinson (PhD Candidate at the University of Calgary), the survey crew learned how to use a RTK instrument, which is a GPS system involving a rover and base station that can be accurate to +/- 2 centimeters. Unlike other systems, the RTK does not need a direct line of sight. It allowed the surface debris and features of the island to be precisely mapped during the spring and fall of 2017 (as the RTK is best utilized with as little vegetation as possible the season was split between early spring and late fall to maximize visibility) (Figure 4). The data was then imported and represented with the use of GIS. Along with mapping the surface debris, photos for possible further identification of objects post-fieldwork were also taken.

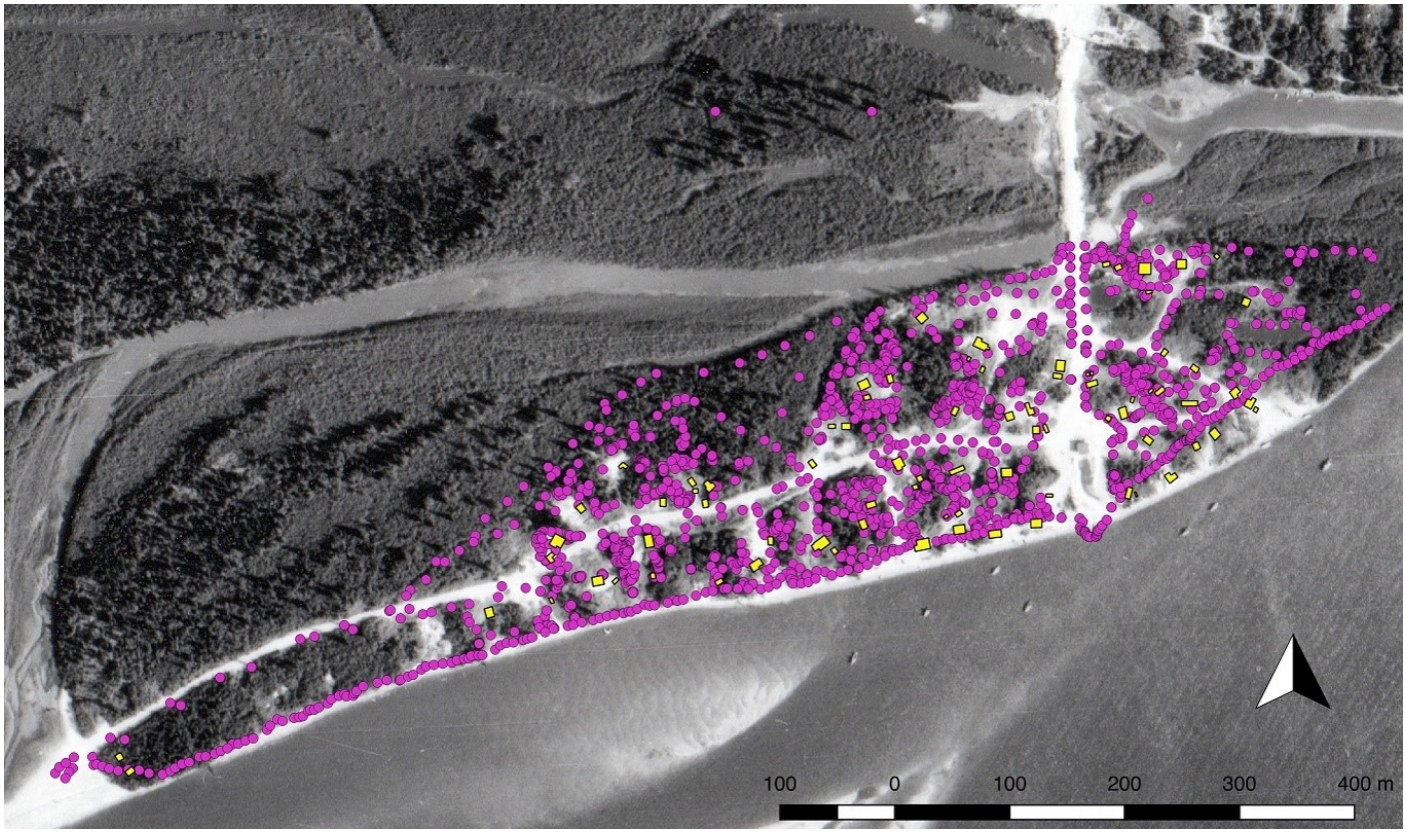
The base station for the Magellan Promark 500 RTK device was set up in a clearing mid-way down the island, and the datum point is a large spike sunk into the ground (Figure 5). The RTK was set to enable a point to be taken if the device was accurate within 5 centimeters. Unfortunately, due to the forest currently growing on the island, accuracy often became compromised as the rover portion of the device had difficulty in densely wooded areas and at specific times of day. We would often wait a couple minutes for a reasonable signal when mapping in pits and other stationary features, but as many of the artifacts move with the annual flooding of the island, wind, animal activity, etc. less accuracy was accepted at times. The settlement area is bounded and divided by wetland, the river, old roads and footpaths making a systematic search of each area possible. To map the surface debris the crew proceeded to the mapped structures used the previous field season and flagged the visible debris by walking transects through the area.

The first step in the interview portion of the project was to obtain ethics clearance from the Interdisciplinary Committee on Ethics in Human Research (ICEHR) at Memorial University. From there an online survey was created to identify individuals who wanted to participate in the interview process. This allowed for a wide range of people to be contacted and individuals did not have to be currently living in the Upper Lake Melville Area. Within Labrador, social media is a well-established source of community communication, and the survey was promoted on Facebook and through posters around Happy Valley-Goose Bay.

The survey was completed by 15 individuals who were asked a variety of questions about their interactions with Birch Island. The mapped structures from the pedestrian survey were included in the survey so that people could identify structures with which they were familiar. Those who were interested in participating in the interviews through the survey and other methods were contacted and 17 people were interviewed in the 2017 field season. The interviews were recorded and research participants were asked about their lives on Birch Island, the material culture associated with every day activities, and the physical environment they remember. The interviews were the most important aspect of this project as virtually no structural evidence was found on the island and there are few official documents concerning the settlement and resettlement of the island.

Figure 6: Julia mapping in artifacts with the RTK, Spring 2017.

Figure 7: Map of Birch Island with every RTK point (in pink) taken in 2017 representing artifacts, roads, trails, shoreline and outline of study area. Base map from 1972 photo, structures geo-referenced from 1950s map. The known structures are in yellow.



Results of RTK Survey and Interviews

The mapping component of the fieldwork resulted in the identification of artifact concentrations, pit features, former roads and trails on the island (Figure 6 and 7). These results were compared with earlier georeferenced aerial photos and allowed for the identification of change through time. The context of the surface debris is somewhat problematic from an archaeological standpoint as pre-resettlement objects were buried due to seasonal flooding. At abandonment some areas appear to have been leveled and/or buried by heavy equipment, and the area has been used for more recent dumping (see Venovcevs this volume for additional information).

The majority of the information concerning the site came from the interview and survey process. Information was collected on the physical landscape, the traditions of the Birch Island Community and information on a variety of life experiences. For example, information on the landscape usually involved how much the river has changed since the time of the community, where people lived, and where certain outdoor activities took place on the island (Max Blake, Interview, October 19, 2017). The traditions of the island were spoken about in reference to a specific holiday and extra effort put in by individuals in the community, such as the fond memories of the bonfire on Guy Fawkes Night (Margaret Parsons, Interview, October 25, 2017). Life experience is the most diverse category; it captures how individuals thought or felt about their community, the town as a whole, and the military base. It is only through interviews that we were able to record the feelings and sentiments of the people around resettlement. Most of them still feel saddened by it, "Some people to day still tear up when they talk about it, that's why my mother in law didn't want to talk about it. We all love our childhood homes, and like to go visit, but we can't, only in our memories." (Henry Ike Rich, Personal Communication Dec. 27, 2017). Mr. Rich's sentiments are an important, intangible aspect of this project that would not have come from the material remains alone. Interviewing individuals allows for increased meaning around the Birch Island site. At the conclusion of this project all interviews will be deposited in the local archives for community access and future research.

The Masters research undertaken in 2016 and 2017 on Birch Island demonstrates the valuable archaeological record left on the island along with the keen interest of the community who remember the island fondly and wish for it not to be forgotten. The goal of collecting information for the newly developed park and mapping surface artifacts were met. During the field season the crew was fortunate to be able to attend community events and share the research informally as well as through the Labrador Institute Speaker Series. The positive preliminary work done on Birch Island has identified possibilities for further future research on the island, and into the recent past in Upper Lake Melville and Labrador, more generally.

Cultural Resource Management on Birch Island

Cultural Resource Management work associated with the Birch Island Park development occurred in 2015 (permit 15.41) and 2016 (permit 16.16). That work is described in an Interim Report submitted to the provincial archaeology office (Neilsen 2016), and in the Provincial Archaeology Office 2016 Annual Review (Neilsen 2017). Work continued in 2017 as a result of recommendations made during the 2015 and 2016 field seasons. The infrastructure work undertaken in 2017 included construction of a significant portion of the boardwalk, further marking and clearing the boardwalk route, and repairs to the access road and parking lot that resulted from unusually high spring flooding in the lower Mishta-shipu (Churchill River) river valley. The following paragraphs provide details on the archaeological assessment work that occurred in association with these tasks, and the recommendations for future archaeological work.

The Boardwalk

The general route of the Birch Island trail network was identified in 2015 (Neilsen 2016), when trail clearing first began. The practice since that time has been to survey the proposed trail route prior to any major clearing and construction activity to ensure that it is possible to clear the trail and construct the boardwalk without negatively impacting heritage resources. To date, the combination of this practice, the cooperation of Healthy Waters Labrador, and the flexibility of the trail design and the contractors have maintained the existing integrity of the archaeological and heritage resources present at Birch Island, while allowing park development to occur.

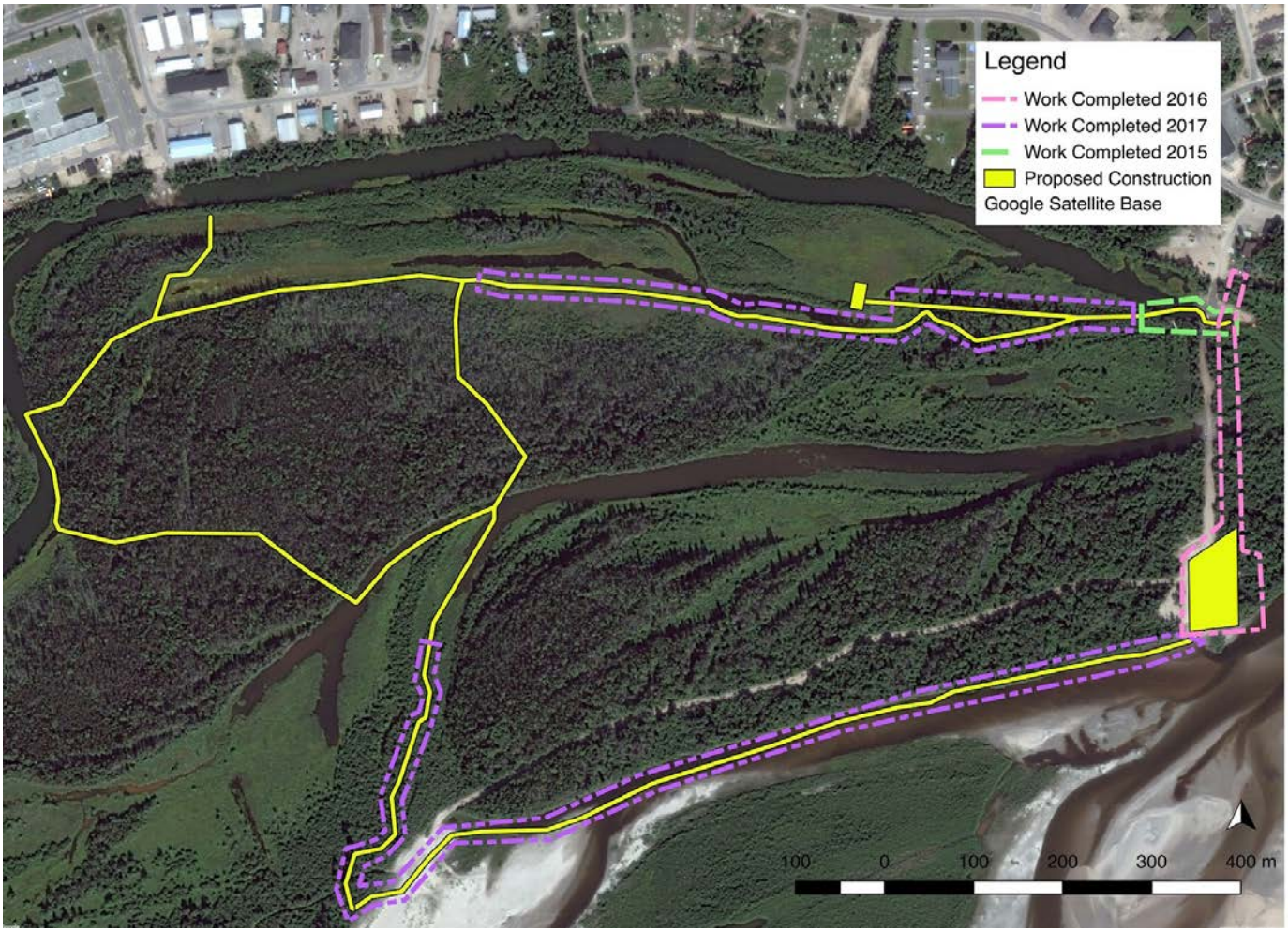


Figure 8: Map of Birch Island Project trail system, highlighting sections of the trail constructed in 2015, 2016, 2017, and to be constructed in 2018.

Figure 9: Photograph of the constructed boardwalk on Birch Island. Note the size of the boardwalk supports, the railing, and the height of trail above surface of the ground.

Figure 10: Photograph of the boardwalk looking westerly, from the location of the outdoor classroom.

The trail work undertaken in the 2017 season included the portion along the bank of the Mishtashipu (Churchill River), which was surveyed, cut, and mapped in fall 2016, and reported on in last years news letter (Neilsen 2017). As well as the continuation of the section of boardwalk which began in summer 2015, along the Birch Island Creek, and the northern boundary of the island. Essentially these two portions of the boardwalk were being constructed towards one another, and when connected in summer 2018 will complete the island loop of the project (Figure 8).

As in previous years the boardwalk construction included removing the trees and shrubs in the path of the boardwalk, and then constructing the trail in sections, with supports that sit on feet on the ground surface, rather than being sunk into it. Additionally, along the riverbank the boardwalk is raised in the air to protect against flood damage, and includes a high railing to keep people safe along the river. The limited footprint of the support posts (Figure 9) and these other elements of the trail design also serve to limit impacts to archaeological and heritage resources on the surface. Outside the river section of the boardwalk, and therefore the former community, this is less an issue as there are very few archaeological or heritage resources present. Throughout most of this area the boardwalk is less elevated above the surface of the ground and does not include a railing. These areas are also boggy and people are less likely to leave the trail (Figure 10).

There is one section of this trail loop left to construct (Figure 8). This area was surveyed in the fall of 2017, and Healthy Waters Labrador's plan is to complete this section in the summer of 2018. The landscape in this section of trail mimics what has been described for the trail to date. The remaining section of the boardwalk coming north from the river is being constructed in a boggy area, comparable to what is pictured in Figure 5, west of archaeological site FhCb-11. The section being constructed south of the boggy area west of archaeology site FhCb-10 is being constructed through a higher elevated forested area. The two sections will connect via a small foot-

Figure 11: Photograph of the location where the forested and boggy zone meet, in the western extent of the loop.

Figure 12: Photograph of trail, likely trap line, running along the northwestern bank of the seasonal channel pictured in Figure 11. The southeastern portion of the second loop, which is proposed for future construction, will follow this path before turning north.

Figure 13: Photograph of a metal bucket lying on the surface along the trail pictured in Figure 12.

bridge over the pond/seasonal channel that lines the border between these two zones (Figure 11).

The northern edge of this channel appears to be a former riverbank, and may be older than the riverbank that fronts the location of the former community. There is also evidence of human activity at the location, and nearby. This includes what appears to be a trap line/hunting trail and some surface debris, and nearby infrastructure features including a circular pit, 1.5-2m wide and over 3m deep, and a large rectangular depression (Figure 12 and Figure 13). Due to the nature of the landscape and the initial evidence of human activity more detailed archaeological investigations are required prior to construction of the footbridge or any other ground disturbing activities at this location (see recommendations below). Once this archaeological work is completed and construction of the footbridge occurs, the inside loop of the Birch Island trail system will be complete. The assessment of the outside loop has not been undertaken to date, and will occur once the route of this portion of the trail system is identified (i.e. flagged) in the field (see recommendations).

Infrastructure Repairs

The other assessment related activity that took place in 2017 resulted from the significant flooding that occurred on the Mishta-shipu in the spring of 2017. At this time the entirety of Birch Island and the infrastructure constructed in 2015 and 2016 was underwater (Figure 14). The water that was flowing over the landform resulted in the deposition of soil and debris across Birch Island, and caused some erosion along the access road. The deposition of silt and debris as a result of flooding is not a new event at Birch Island. This is evident from the silt build up observed in the 2016 shovel tests, and the stories of former residents, who were sometimes flooded out of their homes. The persistence of this process is not related to the park development and in some ways its continuation is connected to the sites authenticity.

Originally there was some concern that the newly constructed park infrastructure could have interacted with the flood waters to cause erosion and impact archaeological and heritage resources beyond the typical movement of surface debris and artifacts, and the deposition of silt, organic debris, and modern garbage that occurs yearly, to varying degrees, across the surface of the island. Inspection of the infrastructure constructed in 2015 and 2016 did identify areas of erosion along the Birch Island access road, which impacted the stability of portions of the fence, and along the bank of the Mishta-shipu. Upon inspection it was determined that the erosion on the road merely moved fill that had been placed on the road in 2016, and that the erosion of the river bank was not associated with any park infrastructure. Rather, natural erosion occurs every year, and has washed away a portion of the community since it was abandoned at the end of the 1960s. As similar flooding and erosion is likely to continue into the future and could get worse with fluctuating water levels, it is crucial that the integrity of the archaeological and heritage resources be considered when the necessary repair activities are being planned (see recommendations)

Recommendations

As a result of the archaeological work undertaken at Birch Island in 2015, 2016, and 2017 two archaeological sites have been recorded and entered within the provincial archaeological sites database, and the potential for additional archaeological and heritage resources has been identified. As a result, there are mitigation measures that need to be put in place and adhered to during the remaining infrastructure development activities and the ongoing operation of the park. The following recommendations should be adhered

Figure 14: Photograph showing the entrance to the Birch Island Park and flooding that occurred in spring 2017. (image credit: Healthy Waters Labrador)

to during future construction activities, and during Park operation and maintenance.

Survey – all locations considered for future developments of any kind on Birch Island or in association with the development of infrastructure related to the Park need to undergo preliminary survey prior to any ground disturbing or major clearing activities. This work must be done under archaeological permit, and any recommendations following from this work should be adhered to.

Removal of Debris – in conversations with former residents of Birch Island and with citizens of Happy Valley-Goose Bay the removal of surface debris from Birch Island has been raised. If this is a goal of the Park development the proponents of the Park will need to initiate a conversation with the Provincial Archaeology Office of the Government of Newfoundland and Labrador, prior to any such activity. There is no question that a lot of the debris visible on the surface across the landform is more recent than the community, and would be considered garbage by many people. The difficulty in this process would be in determining which objects are in fact artifacts of the former settlement and which objects are more recent debris. This recommendation is not intended to impact upon or stop the collection of modern garbage such as chip bags, pop bottles, Tim Horton's cups, etc. that are often visible on the surface, or items such as wood and plastic that are deposited by flood waters each spring. If these sorts of clean ups are planned, it will be necessary to explain the situation to participants prior to the clean up, in order to ensure that they discriminate between modern garbage and older items associated with the community.

Signage – it is recommended that signage be erected at Birch Island to indicate that there are archaeological and heritage resources present, and that people should not remove objects from the island, which are not modern garbage. The plans to erect interpretive signage for the community should be re-

viewed by the Birch Island Heritage Committee, and the general public prior to being erected. If the plans for commemoration related to a specific family property or history, living members of that family should be contacted for their approval, prior to the commemoration. This will help to ensure that no one is surprised or negatively impacted by the site commemoration activities.

Conclusion

The work undertaken at Birch Island in the summer of 2017 was a combination of archaeological research and cultural resource management. Given that the two projects were undertaken in tandem and have an impact on one another, they have been reported here together. Reflecting on the combination of these practices it is important to note that the two lines of inquiry have benefitted one another. In particular the level of community engagement that was undertaken as part of the Masters research project has been a huge benefit to the Cultural Resource Management assessment. The significance of heritage resources related to the recent past are often overlooked in Cultural Resource Management activities, as is the need for extended periods of public consultation. Without this aspect of the Masters research project it would have been difficult to determine the high level of significance attached to the former Birch Island settlement, or to even understand the various degrees of change that have occurred to the landform over the last six decades.

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2017 Archaeological Activities – Gerald Penney Associates Limited

Gerald Penney, Blair Temple & Robert Cuff
Gerald Penney Associates Limited

17.01 Signal Hill Road

Under Archaeological Investigation Permit #17.01, Gerald Penney Associates Limited (hereinafter, GPA) conducted archaeological monitoring of construction excavations (April-July 2017) for the replacement of a primary water main along Signal Hill Road. Excavations extended downhill approximately 400 m, from Memorial University's Battery facility (the former Battery Hotel), to a five-way intersection at the top of Temperance Street. Generally, water main excavations occurred in the east (uphill) lane of Signal Hill Road. Additional excavations – including connections for side streets, hydrants, and services – allowed crosscutting of the primary profile. Seven new archaeological sites were recorded, as well as deposits associated with a previously-recorded site:

- CjAe-49 (Lindberg Brewery) – re-exposure of a stone foundation feature first identified in 2002;
- CjAe-151 (Duckworth Street 2) – remains of a stone bridge, which once carried Duckworth Street over Dunscombes Brook at the top of Temperance Street, known as Brines or Plough Bridge, after a nearby tavern and its owner;
- CjAe-152 (Signal Hill Road 1) – a stone sewer and drain, features associated with primary drainage and sewage disposal on the lower portion of Signal Hill Road. This site also includes smaller household (?) drainage features, including a stone drain and a wooden box drain; as well as a portion of a mid-19th century secondary deposit;
- CjAe-153 (Signal Hill Road 2) – evidence of landscape transformation in the form of a thick re-deposit of soils, early to mid-19th century in date. This overlies a boggy turf stratum, with a possible mid-19th century retaining wall feature, and brick and stone drainage features;
- CjAe-154 (Signal Hill Road 3) – sections of a stone drain or sewer, associated with drainage and sewage disposal of the middle and upper portion of Signal Hill Road – early- to mid-19th century secondary strata;
- CjAe-155 (French's Lane 1) – a mid-19th century secondary deposit, resulting from modification associated with the creation of a laneway;
- CjAe-157 (Signal Hill Road 4) – stone and concrete foundation features, and various debris, associated with structures that once fronted the former line of Signal Hill Road above Frenchs Lane before the road was re-routed during the late 1960s;
- CjAe-158 (Powers Court 1) – section of mortared stone feature, either a retaining wall or part of a former structure on the west corner of Powers Court and Signal Hill Road, and a section of a mortared stone retaining wall opposite Anderson House, facing the road. An early 19th century deposit.

As anticipated, sewerage and drainage features were regularly encountered and, taken together, shed light on the various stages of sewage disposal and drainage of Signal Hill Road. Early domestic drainage, constructed during the early to mid-19th century, were followed by a series of "civic" constructions. One during the 1840s, was merely for drainage, likely replacing (or supplementing) an existing, rudimentary stone and wood drainage system. In the early 1870s, a proper sewer was constructed – relatively late in the game for downtown St. John's. This was replaced by a clay pipe system, probably in the early 20th century. Evidence was also identified of the various landscape modifications that occurred in order to transform the slope into a domestically-occupied roadway. These were typically in the form of secondary, infill depositions, with signs of extensive cutting. There are two main phases evident, one during the early-19th century, and another during the mid-19th century. Both retaining wall features identified are in association with these deposits.

Structural evidence included elements of the former Bavarian/Lindberg Brewery and the foundations of a dwelling along the former route of Signal

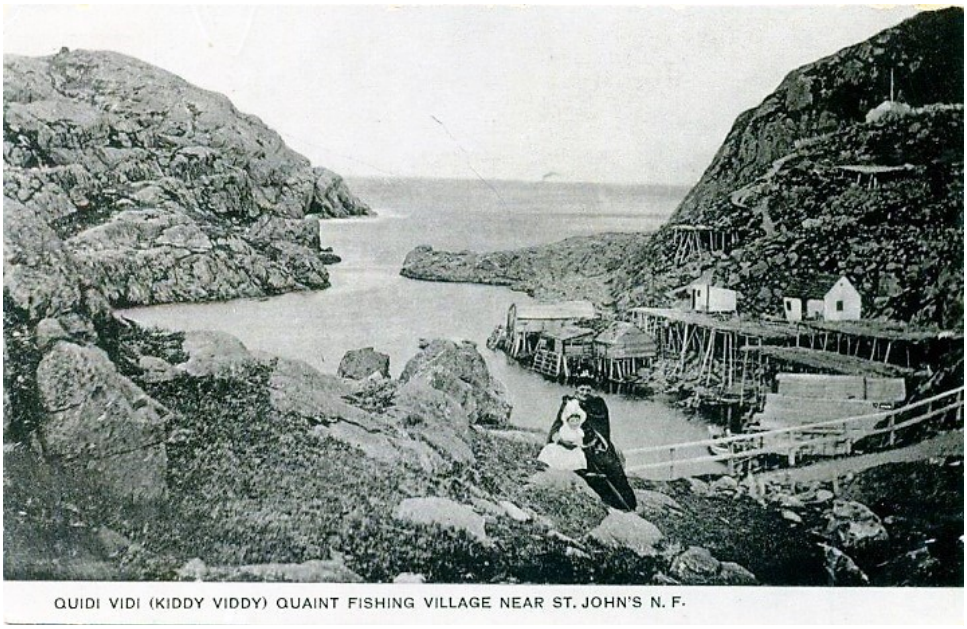

Figure 1: Undated postcard showing eastern portion of study area at Barrows Road, Quidi Vidi.

Hill Road – east of (above) Frenchs Lane to adjacent to the MUN Battery facility parking lot.

17.12 New Gower Street

Under Archaeological Investigation Permits #17.12 and #17.12.01, GPA conducted archaeological monitoring of construction excavations for a Hilton Garden Inn hotel development at the northwest corner of New Gower Street and Springdale Street. The property is the site of the former Horwood Lumber Company storage yard, with additional domestic, religious and commercial structures facing Springdale Street and the former line of New Gower Street, constructed during the mid-19th to late-20th century. The area had lain vacant since 1980, and was used for unsurfaced parking at the time of excavation.

Site excavation involved the removal of all soils down to sterile ground, and its replacement with clean stone fill through the majority of the project area. The footprint of the hotel structure was excavated significantly deeper, to bedrock.

Extensive disturbance cause by 20th century occupation and modern destruction was observed throughout the property. Additionally, New Gower Street was widened northward in the early 1970s as part of the Harbour Arterial/Pitts Memorial Drive project, during which structures facing New Gower were razed, and soils removed down to sterile or bedrock. Despite this, the remains of five structures were recorded: two of concrete, two of mortared stone, and one of both. The southeast portion and southern edge (along New Gower Street) of the site was most rewarding with most of a complete structure identified – a stone structural foundation, pre-1880 – as well as contemporary mid- to late-19th century deposits located along the southeast and south portion of the project area. A clay pipe sewer running through the property, dating to the late-19th century had been partially replaced with concrete sometime during the 20th century. Evidence of mid-19th to late 20th century occupation, and extensive modern disturbance, was found through the site. The property is recorded as CjAe-156 (New Gower Street 2).

17.22 Barrows Road, Quidi Vidi

Under Archaeological Investigation Permits #17.22 and #17.22.01, GPA conducted archaeological monitoring of construction excavations for a domestic structure at # 46-48 Barrows Road, Quidi Vidi. The study area is located on the landward side of Barrows Road, within a part of historic Quidi Vidi Village (Figure 1) that has never been investigated archaeologically. The assessment was required as the property is in close proximity to an area thought to contain (though yet unidentified) burials of French soldiers from a 1762 battle (CjAe-149; Quidi Vidi French Soldier's Graves), as documented by Aaron Thomas in 1794.

The proposed structure is a two and 1/2-storey dwelling, measuring 23.3 m × 10.7 m, oriented northwest/southeast. Excavation involved the removal of all soils down to bedrock, followed by the removal of a significant quantity of bedrock through hydraulic busting, which proved quite time consuming. The quantity of soil was insignificant, no more that 5-10 cm in places, and was typically modern fill or brush cover (alders and blueberries) on sterile ground.

Excavations for a utility trench along the west side of the driveway encountered modern material

overlying bedrock. Large quantities of fill had been placed there by previous owners, as well as during this ongoing project. Excavation for the connection with City mains under Barrows Road encountered infill resulting from their installation.

Except for modern cultural material and a couple 19th century ceramic sherds from mixed contexts (Figure 2), no historic resources were found. The surface was entirely void of any indication of former usage, signaling that the study area had long lain dormant. The location of French graves, and thus CjAe-149, remains unknown.

Figure 2: Plate fragments from CjAe-153. A rare ceramic ladle and other fragments with the same pattern were also found, but the pattern is unidentified.

17.39 Bellevue, Trinity Bay

Under Archaeological Investigation Permit #17.39, GPA conducted a historic resources impact assessment of a proposed rental cabin development in the community of Bellevue, Trinity Bay.

Two lots of Crown Land, as well as a small portion of recently acquired/purchased interior private land, were assessed. The entire shoreline adjacent to the Crown Land lots, as well as additional shoreline to the north and south, was investigated, and 33-test pits excavated throughout the area. Other than 1900s to 1960s historic occupation visible at surface, and scant artifactual evidence from a couple nearby test pits, no significant historic resources were identified.

Figure 3: Aerial photo from 1951 showing approximate location of Crown Land lots at Bellevue (red rectangle) and the clearing (red circle) in the inset (A13259-109). The complex of structural features to the northeast is now removed and covered by a cabin and its property.

17.42 Cathedral of St. John the Baptist

Under Archaeological Investigation Permit #17.42, and a License granted by the Department of Justice and Public Safety under the *Exhumation Act* (1990), GPA monitored the mechanical excavation of four geotechnical test pits at the site of a proposed structural annex, within the Anglican Cathedral/Parish of St. John the Baptist property, Duckworth Street.

The Parish proposes to construct a 15 m × 27 m annex within the northeast corner of the former "Burial Ground," a large open-space yard between the Cathedral and Duckworth Street. Emergency excavations in 1999 in response to a furnace oil spill identified human remains in three of four locations along the east end of the property, adjacent to Cathedral Street, between the Cathedral and Duckworth Streets.

Figure 4: Excavation of geotechnical Test Pit 2, Anglican Cathedral "burying yard."

Geotechnical test excavations in 2017 exposed a variety of fill layers related to the Great Fire of 1892 and building debris from either the 1840s-50 or the 1885-90 construction phase. One test excavation had a thick layer of angular rubble from a stonework phase. Eight bones and bone fragments were collected from backdirt, seemingly originating from the infill strata. In all instances, they have been identified as non-human. No "burials" – undisturbed, secure or otherwise – were identified

Historic Resources Management Program Lower Churchill Project, Central Labrador 2017

Fred Schwarz, Corey Hutchings & Vincent Bourgeois
Stassinu Stantec

Introduction

Nalcor Energy (Nalcor) is presently developing the Lower Churchill Hydroelectric Project in central Labrador. Extensive Historic Resources Assessment to identify archaeological sites within the Project footprint, including the reservoir and associated transmission infrastructure, has been undertaken since 1998 (e.g. IED/JWEL 2000). Following release of the Project from the environmental assessment process in 2011, construction of the Project commenced with an Early Works Program in 2012, followed by bulk excavation at the Muskrat Falls dam-site beginning in 2013. Preparation of the reservoir, encompassing the lower reaches of the Churchill River between Muskrat Falls and Gull Island, commenced in 2013-2014.

Stage 2 assessment, particularly since 1998, has identified numerous precontact and early historic archaeological sites within the Churchill Valley, in particular, a dense cluster of sites on both the north and south sides of Muskrat Falls itself, another significant cluster of sites at Gull Lake, at the western end of the Muskrat Falls reservoir area, and a third cluster of sites at Sandy Banks, midway between Muskrat Falls and Gull Lake. In addition to these clustered precontact and historic sites, there are several dispersed later historic tilt and cabin sites (Figure 1).

Previous Work in 2012-2016

The Historic Resources Management Program included Stage 1 and Stage 2 field assessment, both within the Churchill Valley, and along transmission corridors as far south as the Strait of Belle Isle. Stage 3 recovery work in 2012 and 2013 was focused on the large cluster of sites at and around the Muskrat Falls dam site.

The recovery program in 2012 and 2013 (see Stantec 2014a; 2014b) involved excavation of 32 archaeological sites (23 on the south side of Muskrat Falls and nine on the north side). One site was clearly historic, containing a small cobble hearth with carbonized bone and an assemblage of historic-period artifacts. However, the remainder were precontact sites, dating to the Intermediate and early Late Precontact periods. These sites yielded numerous precontact cultural features, including cobble hearths, linear hearths and pits, along with boulder alignments and boulder-filled pits interpreted as the remains of canoe-building activities. The complex of sites on the south side of Muskrat Falls is interpreted as a precontact-period staging area for seasonal (spring and fall) moves up and downstream. Some 70,000 artifacts and pieces of lithic debitage were recovered in association with these features. The lithic assemblages consisted of flakes and artifacts primarily of quartzite, available locally and all along the Churchill River and upper Lake Melville, as well as rhyolite, known to be available in cobble form further upstream along the Churchill River. Less common but still present in quantity at these sites was Saunders chert, available from an as-yet unidentified source likely in the interior of northern Labrador. The tool types represented in the collection reflected a wide range of domestic tasks, including hunting and food preparation, as well as tool manufacture. In several sites there appeared to be an emphasis on tool blank preparation and tool sharpening. In addition to the lithic artifacts, grit-tempered precontact Aboriginal ceramics were found at four sites on the south side of Muskrat Falls.

In 2014-2016, the focus of recovery work moved upstream to the reservoir area, in particular to the cluster of sites at Sandy Banks, approximately midway between Muskrat Falls and Gull Lake (Stantec 2015, 2016, 2017). Recovery was undertaken at eight sites in the Sandy Banks area, five of which yielded significant early historic and/or precontact artifacts and features. Three were relatively small, sin-

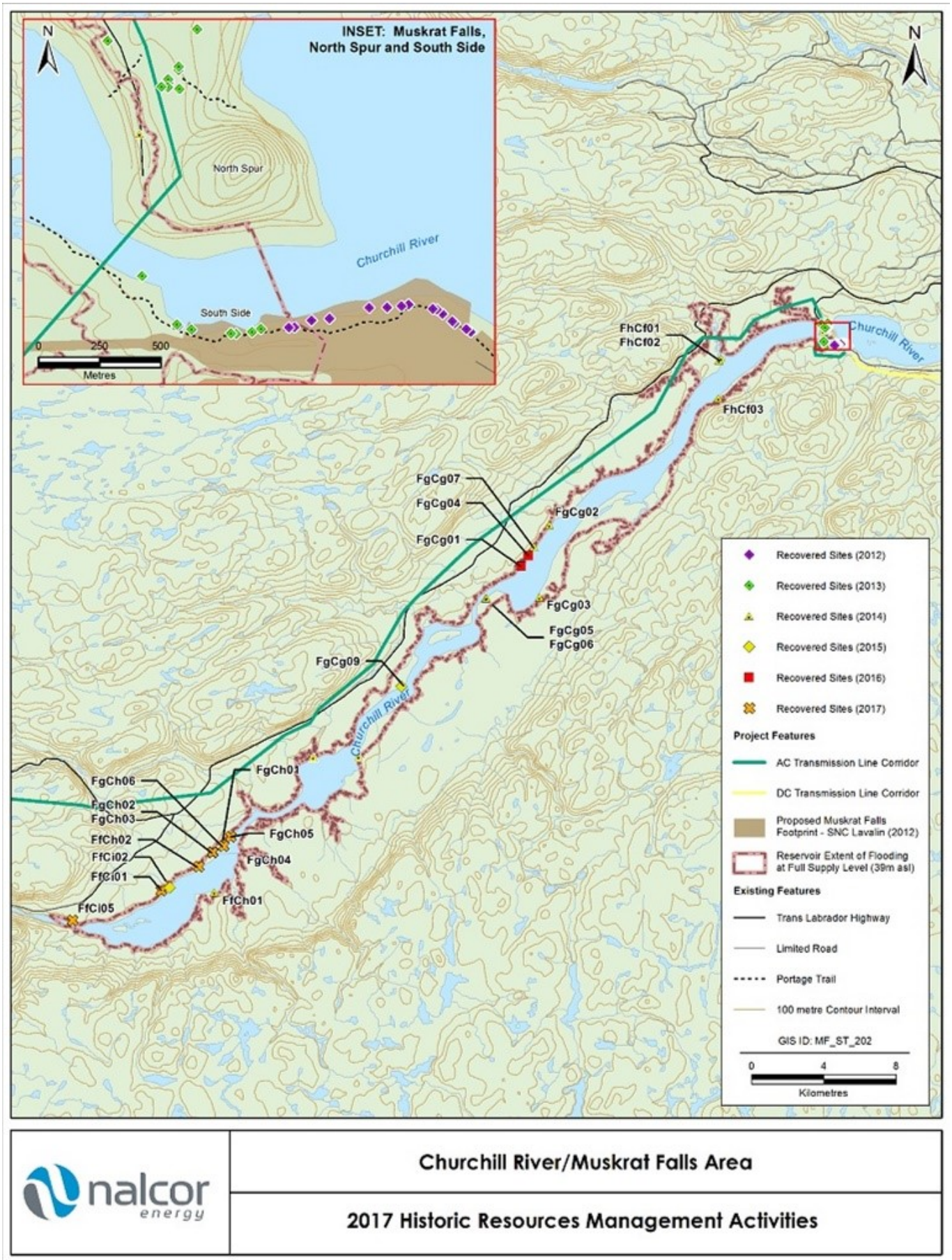

Figure 1: The 2017 Historic Resources Management Program for the Lower Churchill Project

gle-component precontact sites with diffuse hearth features and associated scatters of lithic artifacts and debitage, principally quartzite. One of these sites also yielded a small collection of Aboriginal grit-tempered ceramic sherds.

The largest site in the Sandy Banks area was Sandy Banks itself (FgCg-01), a large multi-component site consisting of four distinct loci excavated between 2014 and 2016. Excavations at Locus A at the west end of the site revealed a small precontact assemblage, including grit-tempered ceramics, along several more substantial 19th-century historic hearth features tentatively interpreted as reflecting historic-period, Aboriginal campsites associated with the trading post. Excavations at Locus B, to the east, yielded a large quantity of lithic debitage and artifacts, principally of quartzite but including some Ramah and black chert, recorded in association with two large, somewhat linear, hearth features embedded in a complex series of sand and clay deposits. Locus C is the remains of a 20th-century historic trapper's tilt with associated surface midden deposit. The largest and easternmost of these loci, Locus D, consisted of the remains of the 19th-century Hudson's Bay Company (HBC) trading post at Sandy Banks. Excavation at Sandy Banks Locus D uncovered the remains of four principal 19th century HBC buildings, along with a privy. A small, localized precontact occupation area was also identified in the southwestern corner of the site. A large collection of historic artifacts was recovered during excavation. The collection is broadly comparable to assemblages recovered from excavation of contemporary HBC posts elsewhere in Canada, and includes many artifacts manufactured by companies known to have been suppliers of goods to the HBC. Also excavated in 2016 was FgCg-04, situated 700 m downstream from FgCg-01 and interpreted as the remains of an early Settler trapping cabin, most likely constructed by Joseph Michelin in the 1890s. This site therefore appears to attest to the evolution of Settler trapping in central Labrador, as former

Figure 2: View Southwest across the Archaeological Sites on the North Shore of Gull Lake. A wooded buffer zone surrounds each site. Not visible is FfCi-05, situated further west along Gull Island Rapids.

Figure 3: Aerial View of FgCh-01, Top of A Horizon. The central hearth is situated at the intersection of the two cross-baulks.

Figure 4: Aerial View of FgCh-02 (Right) and FgCh-03 (Center and Left) at the Top of the A Horizon.

HBC employees and their families came to operate as independent trappers.

The 2015 program also included the recovery of a large multi-component site on Gull Lake, the largest site in the Gull Lake site cluster. Six more-or-less discrete occupation loci were identified at the site, most characterized by diffuse cobble hearth features associated with dense scatters of precontact lithic artifacts; as with all the precontact components excavated to date within the Muskrat Falls reservoir area, the lithic raw material assemblages were overwhelmingly dominated by quartzites, but the assemblage also included very small sherds of grit-tempered and apparently very low-fired Aboriginal ceramics which appear to reflect fragmentation of a ceramic vessel during firing. Also noteworthy was Locus B, the remains of a late 19th-century Innu earth-walled tent-ring.

2017 Historic Resources Management Program

The 2017 Historic Resources Management Program for the Lower Churchill Project, undertaken under Archaeological Investigation Permit 17.15 issued by the Provincial Archaeology Office (PAO), was focused on the cluster of eight unexcavated sites in the Gull Lake area, at the southwestern end of the Muskrat Falls Reservoir area (Figure 1, Figure 2). The results of this work are summarized in the following sections. Analysis and artifact cataloguing are in progress, cultural interpretations are provisional, pending completion of analysis. A detailed final report on this work is presently in preparation.

Kaku (FgCh-01)

FgCh-01 was initially discovered in 1998, when testing led to the recovery of over 600 pieces of quartzite debitage and tools from several testpits. The site belongs to a cluster of quartzite-dominated precontact sites situated along the north shore of Gull lake, just upstream from the outflow. Unlike the other sites in that cluster (and unlike the other precontact sites excavated to date in the Muskrat Falls reservoir area), FgCh-01 is located not along the banks of the Churchill River, but 300 m inland, alongside a relict river channel.

Excavation of 99m² around the location of the 1998 testpits (Figure 3) revealed an extremely dense, well-defined scatter of quartzite debitage, preforms and split cobbles reflecting primary reduction of quartzite at this location. The quartzite scatter was unusually sharply-defined, presenting as an approximately polygonal concentration 5 m in diameter, which may correspond to the limits of a dwelling structure. The lithic concentration was centered on a subsoil earth mound with a small central depression filled with a sparsely charcoal-stained illuviated soil interpreted as the remains of a central hearth. In addition to debitage, quartzite biface fragments were recovered, along with a small rhyolite flake scraper.

Gull Lake 1 (FgCh-02)

FgCh-02 is one of a pair of adjacent sites (the other being FgCh-03) situated on the northern shore of Gull Lake, approximately 800m above the outflow (Figure 4). Some 300m offshore, a low sandbar in the lake serves as a staging area for ducks and geese in the fall (Figure 2).

Both sites were originally discovered in 2000. Both sites exhibited poorly-drained clayey soils with sinuous subsurface drainage channels, which contrast with the well-drained sandy sites more characteristic of precontact sites along the Churchill River.

In all, 176 m² were excavated at FgCh-02, revealing two discrete scatters of quartzite cobble fragments, debitage and tools reflecting considerable primary reduction of quartzite at the site. Both scatters were ellipsoidal in outline, and oriented approximately perpendicular to the bank of the Churchill River. Firecracked rock was extremely sparse and there were no clearly-defined hearth features. The larger westernmost scatter (measuring 4x8m) was extraordinarily dense and yielded one of the largest lithic collections recovered from any site excavated in 2017. Lithic material continued at some depth into the clayey subsoil, and many flakes were positioned vertically, suggesting some form of secondary deposition or re-working of the clay deposits on site.

Gull Lake 2 (FgCh-03)

FgCh-03 was situated immediately adjacent to FgCh-02, and the two sites were excavated using a common grid (Figure 4). In all, 128m² was excavated at FgCh-03, and like FgCh-02, FgCh-03 presented as a pair of relatively discrete ellipsoidal scatters of quartzite cobbles, debitage and tools oriented approximately perpendicular to the riverbank. As at FgCh-02, the yield of quartzite pieces was extremely high.

In contrast with FgCh-02, however, the quartzite scatters at FgCh-03 were clearly associated with features. The eastern scatter at the site, measur-

Figure 5: View Toward the East of the Two Excavation Loci at FgCh-05 at the Top of the A Horizon.

ing 2x5m, was associated with a small cluster of firecracked rock interpreted as a hearth. Lithic material from this scatter was primarily composed of blocky quartzite shatter, with formal flakes only present near the hearth itself. The larger (4x10m) western scatter, which contained quartzite debitage representing all stages of production and some quartzite shatter, was associated with a series of well-defined buried burn layers alongside a large boulder. Both features are tentatively interpreted as features related to heat-treating quartzite during or prior to primary reduction.

Tshiashkunish 6 (FgCh-05)

FgCh-05 was situated on the north shore of Gull Lake, overlooking the Gull Lake outflow. The beaches below the site are characterized by an abundance of large quartzite cobbles. Initial testing in 2006 indicated that the site may be composed of two discrete loci situated approximately 20m apart. Based on the previous shovel testing results in 2006, two separate grids were staked out to encompass the two discrete locations where positive test pits were located.

In all, 194m^2 were excavated at FgCh-05, confirming the presence of two discrete loci; each locus was characterized by a large, ellipsoidal lithic scatter composed primarily of quartzite cobbles, shatter, and debitage, and oriented approximately perpendicular to the edge of the terrace overlooking the water (Figure 5).

A total of 122 m^2 was excavated in the eastern locus. Excavation revealed a 3x15m debitage scatter composed primarily of quartzite but with some speckled chert and Ramah, along with a small, localized concentration of calcined bone fragments. The small collection of worked tools consisted primarily of preforms. The distribution of lithic material extended downslope toward the water as a sparse scatter of firecracked rock and firecracked quartzite fragments with lesser quantities of quartzite tertiary flakes.

At the western locus, excavation of 72m^2 revealed another elongated scatter of lithic materials measuring 4x7m and similar to that recovered to the east. One unusual piece recovered from the western locus is a tiny ground and polished beveled-edge tablet of patinated material, possibly chert, which appears to be a burin-like-tool.

Tshiashkunish 7 (FgCh-06)

FgCh-06 (see Figure 2) was initially identified in 2006 as the site of a contemporary camp dating to the 1980s or 1990s backed by regenerating clearings that appeared to be anthropogenic and were potentially several decades older than the contemporary camp.

Figure 6: Aerial View of the Eastern (Left) and Western (Right) Loci at FfCh-02 at the Top of the A Horizon.

Testpitting within the clearings in 2006 did not yield any artifacts, historic or otherwise. Since historic occupation may be characterized by very sparse artifact scatters not readily identifiable in testpitting, a metal detector survey was undertaken at the site to determine whether archaeologically-significant remains were present. The assessment was completed using a Schonstedt GA-52Cx magnetic locator set at sensitivity 3, one level above "normal." The entire upper terrace within the forested buffer corresponding to the site was surveyed in eight transects oriented parallel to the shoreline of Gull Lake. Five metallic anomalies were detected and (if subsurface) were excavated with shovel and trowel: a paint can, a cluster of three tin cans, a fragment of a fuel drum, a large rectangular can with a circular opening, and another tin can. All findspots were aligned along the edge of the terrace behind the previously-recorded contemporary camp. None are archaeologically-significant, and all appear to be debris associated with the contemporary camp. Assessment of the site is considered to be complete, and no further work is recommended at FgCh-06.

During the course of recovery work at FgCh-02 and FgCh-03, a scatter of quartzite shatter was noted on the surface of a forwarder path not far from FgCh-06. Subsurface testing was therefore undertaken along the undisturbed margins of the path to determine whether this material derived from an archaeological site, or was a product of heavy equipment use. Fourteen testpits were excavated in undisturbed former lichen woodland alongside the path in this area to determine whether quartzite shatter or flakes were also present in sediments that had not experienced heavy equipment traffic. No flakes or quartzite shatter was encountered during testing, indicating that the pieces observed along the trail were not archaeological materials.

Tshiashkunish 8 (FfCh-02)

FfCh-02 was situated on a low point of land projecting from the northern shore of Gull Lake. The site was initially discovered in 2006, when test-pitting results suggested the presence of two discrete loci approximately 14m apart.

Excavation of 269m² at the site in 2017 confirmed the presence of two adjacent but discrete loci, one to the east and one to the west (Figure 6), and led to the discovery of a third locus to the northeast, a short distance upslope from the eastern locus.

Excavation of 34m² at this northeastern locus revealed evidence for a small, localized and shallow quartzite-chipping activity area associated with a large boulder.

The next-largest excavation area at the site was the eastern locus, where 94m² was opened and excavated to sterile in 2017. The eastern locus presented with a gently-sloping, very rocky substrate. Lithic debitage was relatively sparse but the lithic scatter in the eastern locus also yielded a relatively high proportion of finished artifacts in a variety of materials, including quartzite, chert, and Ramah; these included a stemmed biface and an endscraper of dull black chert, a wide-stemmed biface of unusual opaque white quartzite, and unifacial tools, likely scrapers, of fine-grain brown banded chert.

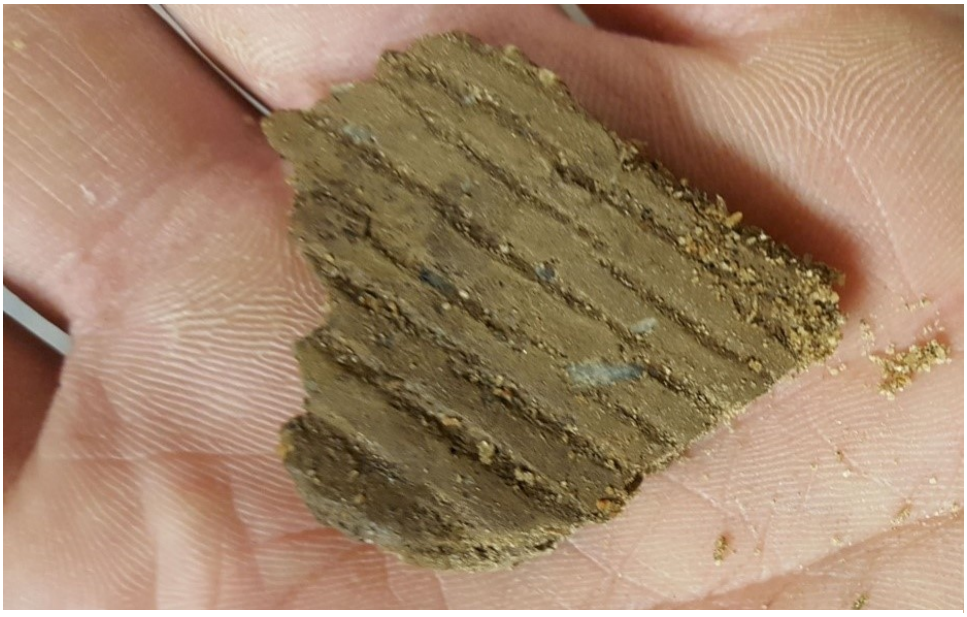

Figure 7: Dentate-Decorated Ceramic Sherd from FfCh-02.

The western locus at FfCh-02 was by far the largest, and also the most complex. Excavation revealed three discrete lithic scatters within the 141m² excavation area. These high-density sharp-edged artifact concentrations are separated by distinct voids. These voids correspond to redeposited earthen berms overlying compressed buried duff in the northern portion of the locus, and collections of cobble-sized stones elsewhere within the locus. The berms resemble the earthen walls of structure perimeters, the first possible examples of such construction to be encountered at a purely precontact site in the region, although further analysis of mapping and profile data is required to determine whether these deposits do indeed form structure perimeters.

In general, the contents of the three lithic scatters defined in the western locus resemble those encountered at other sites in the Muskrat Falls reservoir area, consisting primarily of quartzite, and including cores, flakes from all stages of production, preforms and a small number of completed tools. However, the assemblage also includes a collection of dentate-decorated grit-tempered precontact ceramics (Figure 7); while precontact ceramics have been recovered from other sites in the Muskrat Falls reservoir area, the ceramics from FfCh-02 are the first significant collection of decorated pieces to date. Many of the dentate-decorated sherds were associated with a conspicuous 1 x 2 m red ochre deposit.

Figure 8: Aerial View Toward the Northeast of FfCi-01.
FfCi-02 (excavated in 2015) lies across the brook to the right.

Tshiashkunish 1 (FfCi-01)

FfCi-01 is situated across a deep gully from FfCi-02, the very large precontact and historic site excavated in 2015 (Figure 8). Recovery work at FfCi-01 established that this site is much smaller than FfCi-02, with a total excavation area of 94m².

Figure 9: Aerial View Toward the Southwest of FfCi-05.

Although the site is small, FfCi-01, like the much larger FfCi-02, proved to have multiple components. The principal component is a precontact occupation represented by a dense localized 2x3m cluster of quartzite debitage centered on a small sand mound underlain by an orange-red subsoil containing fire-cracked rock and calcined bone fragments, which appears to be a hearth feature. This feature also yielded several finished tools, including an unusual chert end-of-blade scraper. This hearth feature was flanked to the south and east by several lenses of sediment underlain by buried sod suggesting earth-walled construction although these lenses do not clearly define a structure perimeter.

The buried sod was in turn underlain by a 3m -diameter dense lithic scatter embedded in the B Horizon, beneath some 10cm of loose beach sand. This lithic scatter, centered on a small circular lens of bright red-pink-coloured burnt subsoil, consisted primarily of quartzite but included relatively high frequencies of black chert, red chert, and Ramah. Several charcoal samples were recovered from the burnt subsoil. The stratigraphic separation and the unusual raw material frequencies suggest that this scatter may represent a separate precontact component, separate from the quartzite scatter centered on the mounded sand hearth.

In addition to the precontact component, excavation at FfCi-01 yielded a small collection of historic artifacts, including tin sheet, a musket ball, and several clay tobacco pipe fragments. As at FfCi-02, these may reflect 19th-century Innu occupation. There is also evidence for later twentieth-century occupation, including several tin cans on the surface or in the duff, brass cartridge cases, .22-calibre bullets, and a small surface feature of rocks associated with a (no longer evident) 1990s Innu tent-frame structure that was initially observed in 1998 when the site was first recorded.

Tshiashkunish 5 (FfCi-05)

Unlike the other sites recovered in 2017, which were all situated on Gull Lake, FfCi-05 was located further upstream on the edge of a high terrace along Gull Rapids. FfCi-05 was originally discovered in 2000, when testing indicated the site was an extremely small and localized precontact site, but one characterized by an unusual diversity of lithic raw materials.

Recovery work in 2017 confirmed the indications from previous testing. The site was small, with 60m² excavated in all (Figure 9), and most artifacts

recovered from within a small 4m² area. There was little evidence for rock features of clearly cultural origin, although a small diffuse hearth of decomposed granite and some fire-cracked rock was identified (no charcoal was recovered from this feature). In addition, a centrally-located postmold was identified, this being 10 cm in diameter and 20-25cm deep.

The artifact assemblage recovered from the site was also small, but distinctive. Unlike the other sites excavated within the Muskrat Falls reservoir area, the lithic assemblage from FfCi-05 was dominated by vari-coloured Saunders cherts, rather than quartzite. Flakes and a limited number of tools were recovered, made in cherts ranging widely in colour and texture. The flakes were all small and lacked any cortex, likely representing debitage from late production, retouching or re-sharpening activities. Finished tools recovered included a stylistically-uniform collection of small, thin, finely-made lanceolate bifaces of blue/grey chert with parallel sides and no evidence of notches.

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2017 Archaeological Activities

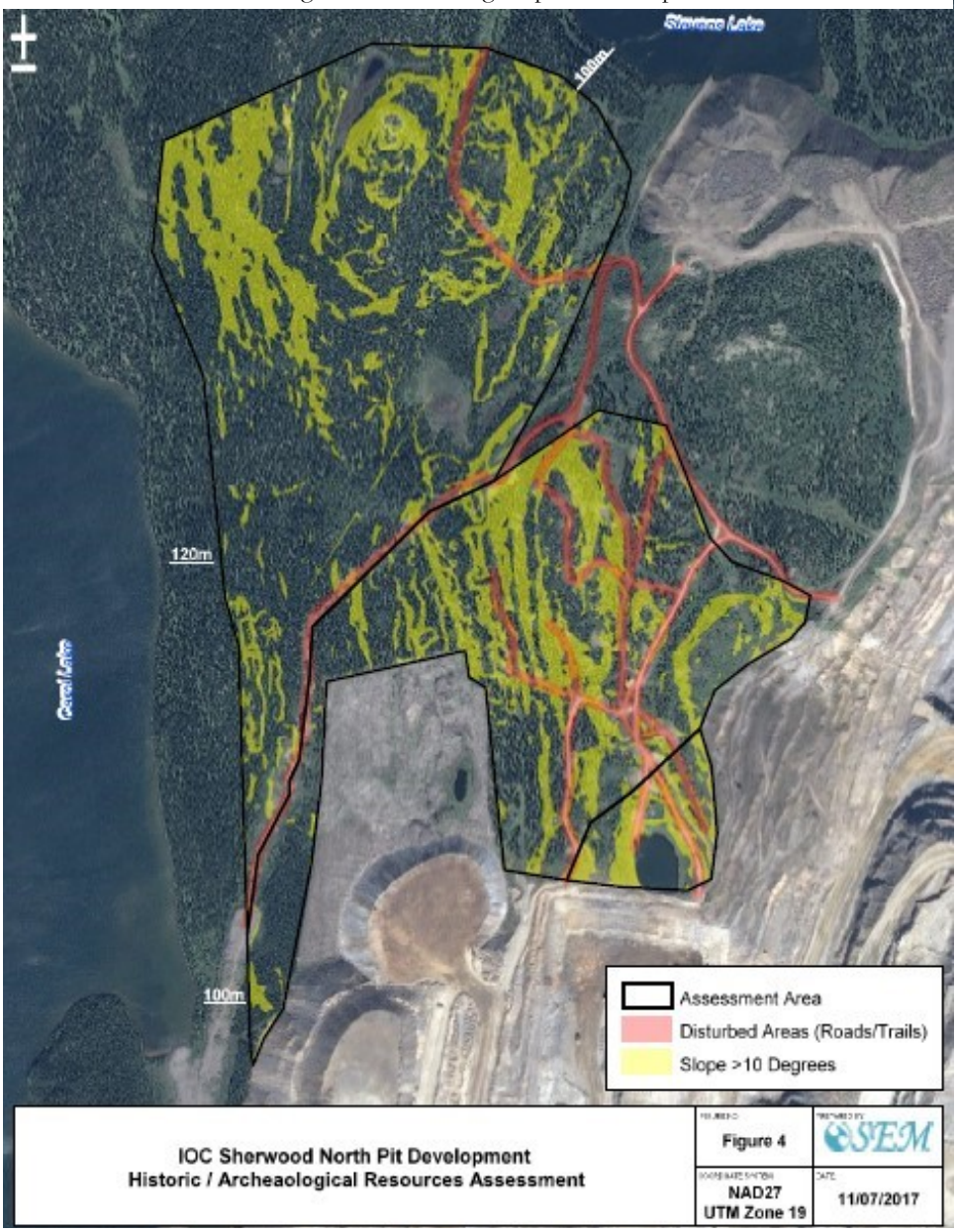
Roy Skanes
Sikumiut Environmental Management & Independent Archaeological Consultant

In 2017, Roy Skanes of Sikumiut Environmental Management Limited (SEM) complete two historic resources impact assessments and one information review related to hydro infrastructure and mining projects in Labrador and on the Island on Newfoundland. As an Independent Consultants, he completed one Assessment at Embree on the Island for a proposed housing development.

Information Review for Proposed Mine Site, Labrador West (Sikumiut Environmental Management)

The Iron Ore Company of Canada (IOC) plans to develop a new open pit mine as an extension to its existing operations in Labrador West (the Project). To better understand the historic resources potential of the development area and whether the proposed work could result in impacts to archaeological materials, SEM (on behalf of IOC's consultant Gemtec Consulting Engineers and Scientists), conducted a review of background information. Material reviewed included: a) the Provincial Archaeology Office's (PAO) Archaeological Site Record Inventory and Site Record Forms that provide cultural, temporal and locational data for all sites registered for the area; b) archaeological reports and other relevant documentation specific to western Labrador and; topographic mapping and aerial imagery of the Project Area. The focus of the information review was to establish the overall cultural / historical sequence of the region, the nature and extent of the past historic resources assessment or directed archaeological research projects completed there, and a listing of any pre-contact, historic or contemporary sites recorded. The information obtained, combined with the analysis of Project mapping and imagery, was used to predict the archaeological potential of the proposed mine site based on the past settlement and land-use patterns in the region, the specific geographic location of the de-

Figure 1: Archaeological potential map



velopment area within the broader landscape and its hydrographic and topographic attributes.

The results of the review indicated that while many archaeological and contemporary sites are registered for the western Labrador region and throughout adjacent parts of Quebec, only one Pre-contact Period artifact of Maritime Archaic Indian origin of uncertain provenience is known for the Labrador City/Wabush area. No Historic Period sites have been identified. All other sites recorded and registered with the PAO for western Labrador are "contemporary" and associated with harvesting activities along road and railway corridors over the last 50 years.

It was determined from the map and imagery analysis that the proposed Project area is predominantly a heavy wooded landscape, with some wetlands on elevated points of ground. Moreover, approximately 30% of the terrain has a relatively excessive slope (i.e., > 10 degrees), and many locations have seen disturbance through trail and road construction (Figure 1). It was concluded, therefore, that the proposed mine site would not have been well suited for past human settlement by small groups of Indigenous hunters/gatherers or by non-Indigenous peoples prior to the Contemporary Period. A final key factor confirmed by the mapping and imagery review is that the Project area is located at least 100 m from the shorelines of the area's principal waterbodies where any past occupation would typically be expected to occur. Consequently, the combined results of the review indicated that the historic resources / archaeological potential of the proposed mine site is Low.

Permit 17.32 Historic Resources Assessment Embree, Newfoundland

A contractor in Lewisporte, NL, is proposing to develop a residential subdivision on property being applied for through a Crown Lands application. The proposed development area encompasses approximately 27 hectares of primarily wooded terrain located on a small peninsula in the Town of Embree (formerly known as Salt Pond), 7 km north of Lewisporte (Figure 2). The southeast portion of Notre Dame Bay (where the property in question is located) has long been recognized as a region rich in archaeological resources, with a record of Indigenous settlement and land-use dating back to at least circa 3,000 years ago (Pastore 1982; Schwarz 2010). Because the project could result in impacts to any extant archaeological materials, a Stage 1 Historic Resources Assessment of the proposed development area was requested by the PAO. The field component of the study was conducted over a three-day period between September 22 and September 24, 2017.

Background research for the Assessment indicated that no archaeological research has been com-

Figure 2: Proposed development area, Embree, NL (Assessment was within red polygon).

Figure 3: North end of proposal development area – 1946 (north is to top of page)

pleted at Embree, and a search of printed sources failed to locate any material citing a Beothuk or early Historic Period Euro/Newfoundlander presence in the area. The earliest reference to people residing at Salt Pond was obtained from 20th century census reports, which indicated that by the late 1880s a permanent population was starting to be established, with many of the residents having moved south to the bottom of the bay from places like Exploits. Another key information source examined as part of the background research included a series of aerial photographs of Salt Pond. Photographic Services of Montreal, Quebec took the earliest image showing the proposed development area in 1946, as part of a photographic survey of Notre Dame Bay being undertaken by the then Newfoundland Government for forest harvesting purposes. Two later images (1964 and 1976), though less useful as proxy indicators of archaeological potential, were also reviewed as they show the decline of land usage after circa 1950. To assist with the interpretation of the aerial photographs, two brothers from Salt Pond (Brooklyn and Enurchas Bursey, in their 70s and 80s respectively) who had lived during part of their youth on the peninsula where the proposed development area is situated were contacted for information. They provided useful details specific to not only the community's overall history, but also the ownership and use of the properties and structures present on the peninsula in 1946. The aerial photograph from that year is included here as it highlights the maximum extent of cleared land and the locations of several dwellings and outbuildings (apparently at the peak of the area's population curve), and where shovel-testing would be required to establish if older cultural materials were present. According to the informants, circa 1950, the houses in the photo were hauled across the ice in winter to mainland Salt Pond and several of the outbuildings were dismantled, with the wood used elsewhere for construction. After 1950, some of the cleared land continued to be used for vegetable and hay production and for grazing animals. In summary, the background research suggested that the area proposed for development at Embree had seen relatively limited occupation that probably spanned a period of no more than 50 or 60 years (i.e. circa 1900 until circa 1950).

Figure 4: Typical intertidal zone conditions fronting the proposed development area.

The field study for the Assessment involved a walkover and visual inspection of the inland and shoreline components of the proposed development area, and subsurface shovel testing at locations with known or suspected historic resources potential. This included, for example, locations where dwellings, outbuildings and other cultural features were shown on aerial photography and where the topographic conditions appeared suitable for past habitation by Indigenous and/or non-Indigenous people. Despite the field effort, no artifacts or associated cultural materials confirming an Indigenous or pre-1900 Euro/Newfoundlander occupation of the proposed development area were found and the potential for them is considered Low. This conclusion is based in part on the physical characteristics of most of the area's beaches and intertidal zone, which is extremely rocky, boulder-strewn and shallow at low tide, and not well-suited to landing or docking small or large craft (Figure 4). It also derives from the historical record mentioned above, which suggested a sparse, short-lived Euro/Newfoundlander occupation that was likely limited to the first half of the 20th century. Because the dwellings and outbuildings were, in one way or another, removed to the mainland, this would account for the notable lack of iron nails, window-glass and other types of material culture encountered during testing – artifact classes one would expect to find on historic sites.

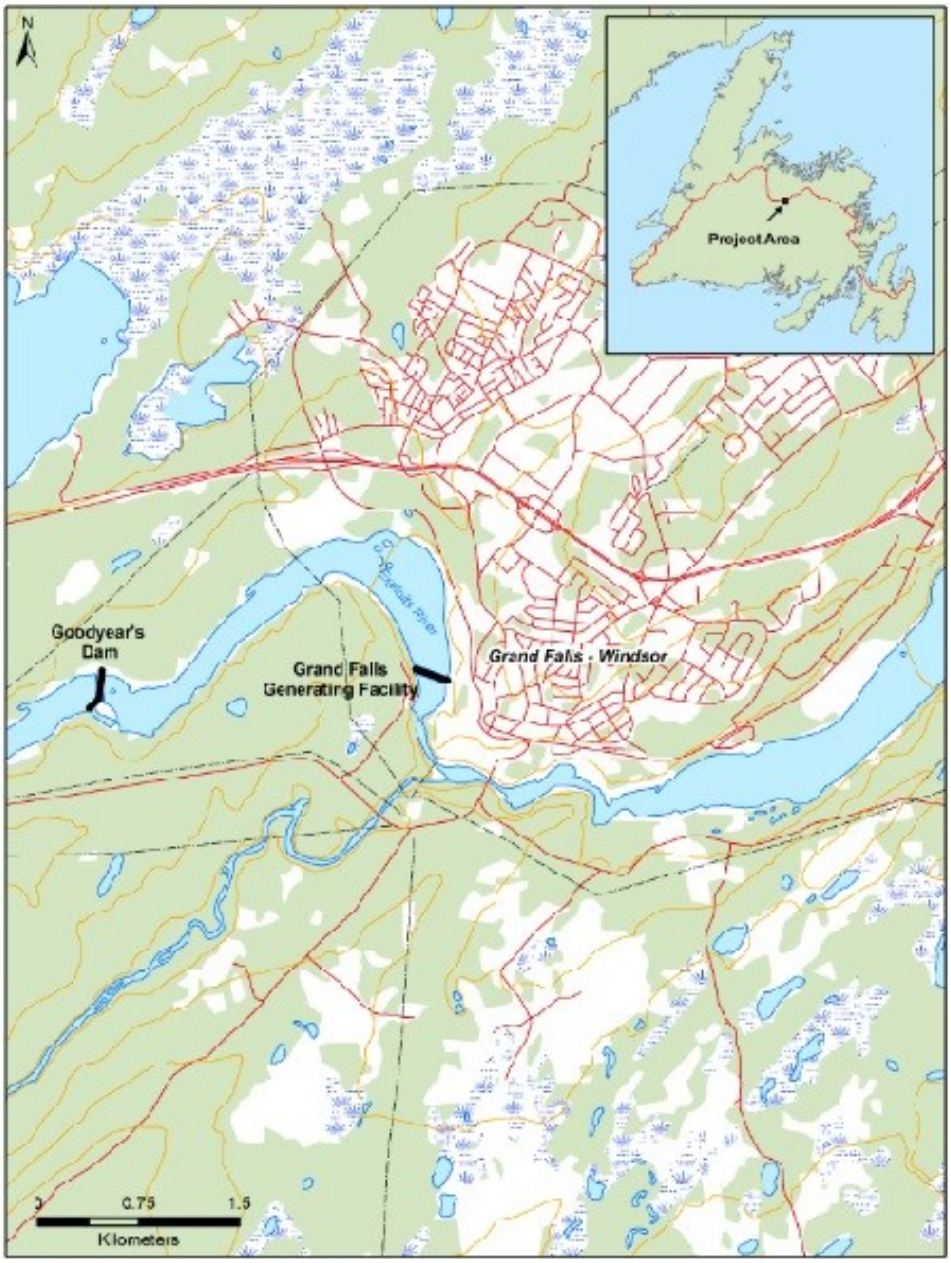


Figure 5: Goodyear's Dam location map (AWFEI image)

Permit # 17.44 Goodyear's Dam Historic Resources Assessment – SEM

Newfoundland and Labrador Hydro (NL Hydro), a Nalcor Energy Company, in association with its primary consultant Amec Foster Wheeler Environment and Infrastructure (AFWEI), is assessing options for the repair or replacement of the aging Goodyear's Dam situated on the Exploits River approximately 4 km west of the community of Grand Falls-Windsor, NL (Figures 5 and 6). Originally built in 1911 by the Anglo Newfoundland Development Company to regulate water and ice-flow in the river, Goodyear's Dam experienced significance damage in 2015 requiring emergency stabilization. Options for repair or replacing the dam could involve tree and brush clearing, surface grubbing, excavation of the existing ground and removal of a quantity of underlying bedrock.

Figure 6: Aerial view of Goodyear's Dam project area, looking northwest (NL Hydro image).

Since the 1960s, several historic resources assessments and directed archaeological research projects have been completed along the Exploits River waterway, resulting in the identification of a long-standing record of interior settlement and land-use by Indigenous and non-Indigenous peoples during the Pre-contact and Historic Periods (Devereux 1965; Gilbert 1996; LeBlanc 1973; Madden 1975; Thomson's 1981, 1983; McLean 2014a, 2014b, 2015a, 2015b, 2016a, 2016b, 2016c, 2016d; Schwarz 1992). Even though one survey did encompass the shoreline adjacent to Goodyear's Dam and led to the discovery and registration of one relatively recent archaeological site approximately 200 m downstream of the structure (Schwarz 1992), there still existed the possibility that other historic resources deriving from one or more of the documented interior occupations may be extant within the Project Area. If so, the construction work could result in adverse site interactions. Consequently, NL Hydro, in consultation with the PAO, concluded that as a precautionary measure a focused Stage 1 Historic Resources Assessment of the Project Area should be completed prior to commencement of any future ground-disturbing activities.

Background research undertaken in preparation for the Assessment field study suggested that the archaeological potential of the Project Area was Low. This conclusion derived primarily from the analysis of aerial imagery and photography, which showed that large segments of shoreline where any extant archaeological materials would most likely have been situated, had undergone substantial alterations during past construction and maintenance work, and from inundation and seasonal ice-scouring following the building of the dam in 1911 and creation of the upstream reservoir. More specifically, when the configu-

Figure 7: Aerial photography and current aerial imagery analysis (note location of the archaeological site DfAw-11 downstream of project area on the north side of the river).

ration of the shoreline obtained from relatively low-altitude aerial photography taken in 1946 was digitized and superimposed over current aerial imagery, it was apparent that water levels are now considerably different than they were 70 years ago. Upstream of the dam, for example, on both the north and south sides of the river within and west of the Project Area, significant inundation has occurred to the point that most of the former shoreline is now well underwater. Moreover, two prominent points of land on the north side of the river visible in 1946 just west of the "Previous Trail" (i.e., topographic features that may have held archaeological potential prior to inundation), are now largely flooded and inaccessible for investigation. Not surprisingly, similar yet less dramatic shoreline conditions exist below the dam (Figure 7). In summary, it was reasonable to conclude from the aerial imagery and photography analysis that if any archaeological materials were in situ close to the shoreline within the Project Area prior to 1911, they would likely have been disturbed, displaced or destroyed during dam and/or trail construction and maintenance, or from frequent high water-levels and the seasonal ice-scouring that has undoubtedly been ongoing over the past 70 years.

An additional finding of the background research was information regarding the relatively recent archaeological site recorded in 1992 on the north shore of the Exploits River approximately 200 m downstream of the dam. This site, registered with the PAO as DfAw-11 (Goodyear's Dam 1), consisted of a small, largely eroded, boulder alignment thought to be a footing or building foundation, presumably dating to the 19th or 20th century and possibly used for logging, hunting, fishing and/or trapping activities. If the position of the find described on the Archaeological Site Record Form is generally accurate, this would place it outside the current Project Area by at least 70 m (Figure 7).

Other background information for the Assessment was provided by Mr. Donald Pelley of Grand Falls-Windsor, a retired outfitter who has worked in the past with Archaeologists Laurie McLean and Ken Reynolds. Don indicated that to his knowledge, no Pre-contact or Historic-Period arti-

Figure 8: North Side of Exploits River looking east toward Goodyear's Dam (note extensive shoreline inundation)

facts, structures or other types of material culture, beyond that which is associated with logging activities on the river during the 20th century, have been found within the Goodyear's Dam Project Area (personal communication: D. Pelley).

The field study for the Stage 1 Assessment conducted over a four-day period between November 19 and November 22, 2017 involved an investigation of six discrete study areas (including a new proposed trail), and the monitoring of four mechanically-excavated, geotechnical test-pits (Figures 5 and 6). Despite a thorough visual inspection of each study area and excavation of 186 shovel test-pits, no archaeological materials were identified and the potential for any to be encountered within the Project Area during future construction activities is considered Low due to the factors outlined above (i.e., past construction-related ground disturbance and inundation and seasonal ice-scouring of the shoreline – Figure 8). Regarding the registered archaeological site DfAw-11, despite a thorough search of the general location where it was reported to be, no evidence of it was found. Therefore, it is possible that the site is located further downstream, which seems unlikely based on the site description and location described on the Archaeological Site Record Form, or it has been further impacted since 1992 by high water and ice-scouring, and consequently has been destroyed or dispersed to the point that it is no longer readily recognizable.

Archaeological Monitoring, Southern Labrador Permit # 17.35

In early 2017 Newfoundland and Labrador Hydro (NL Hydro) was developing plans to replace 190 aging and/or unsuitable power line poles in southern Labrador within and close to the communities of L'Anse au Loup, West St. Modeste and Red Bay

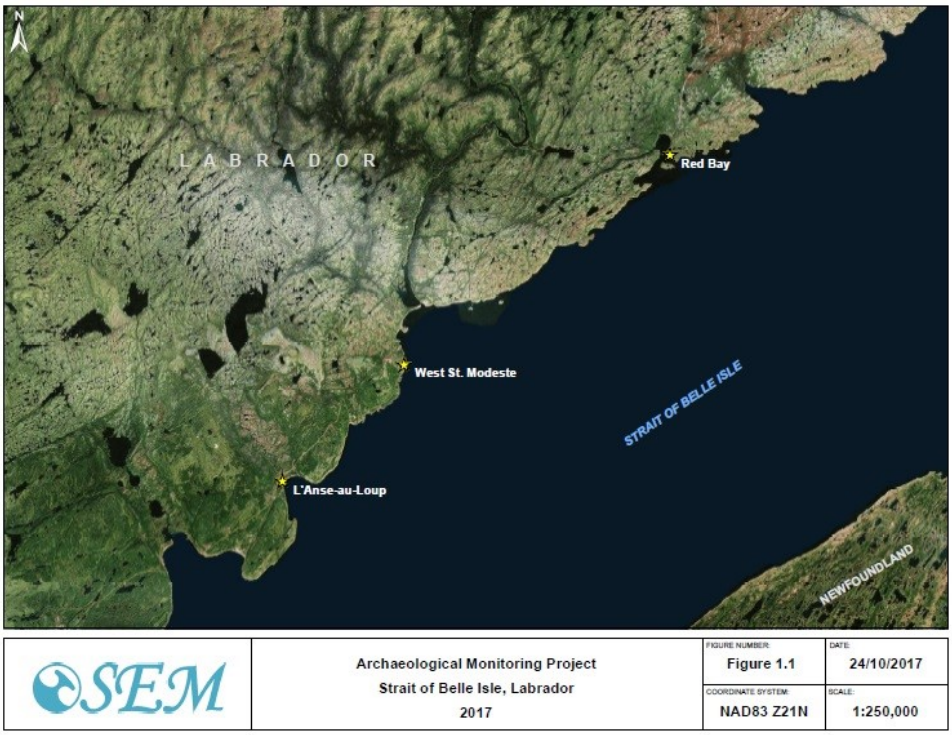


Figure 9: Southern Labrador project location map.

(Figure 9). Accordingly, project details were forwarded to the PAO for input into whether the excavations required for situating the new poles could result in impacts to historic resources. Because several of the poles would be positioned relatively close to registered archaeological sites, the PAO requested that archaeological monitoring of the mechanical excavations be conducted at 16 pole locations – three at L'Anse au Loup, three at West St. Modeste and 10 at Red Bay. Eventually, two poles at West St. Modeste were removed from the list, reducing the number to 14.

During the monitoring of the excavations required for replacing the 14 power line poles (conducted over a three-day period between October 2 and October 4, 2017) archaeological materials were encountered at only one location in L'Anse au Loup (Pole LAL-47). The site of the findings is situated approximately 45 m back from the edge of a north to south-oriented terrace, approximately 20 m above sea level (asl) and in a small grove of trees on the side of a driveway leading to a private residence. The general area where the materials were unearthed had been the focus of field research in the early 1970s that resulted in the recording of approximately 2,000 lithic objects of Maritime Archaic Amerindian origin, as well as several features and associated data thought to date to between circa 7,000 and 8,000 years BP (Tuck 1993). The age of the site was not derived through radiocarbon analysis of organic materials, but rather from the seriation of projectile point forms developed using other Maritime Archaic examples from southern Labrador, the raw material types used for tool manufacture and the site's elevation asl ((Tuck 1976: pgs. 50 & 51; McGhee, R. 1989; McGhee, R. and J. Tuck. 1975; Tuck 1993; Tuck and McGhee. 1975). Registered as EjBe-18 in the 1970s – the Barney Site - the Borden designation was subsequently changed by the PAO to EjBf-08 (S. Hull, PAO: personal communication).

Though the assemblage of cultural materials recovered from EjBf-08 in 2017 was small, the single 70 cm-diameter hole excavated for the pole (in this

Figure 10: NL Hydro personnel completing manual excavation for pole LAL 47.

Figure 11: Artifacts recovered from EjBe-08 - 2017.

case, initiated manually and unsupervised by the landowner to avoid the removal of any trees, but completed by the Archaeologist and NL Hydro personnel – see Figure 10), did contain four artifacts, including a relatively large retouched quartzite flake (Figure 11, top left), a palm-sized segment of a fine-grained porous sandstone cobble exhibiting wear consistent with use as a whetstone or abrader (Figure 11, top right), what appears to be a quartzite scraper preform (Figure 11, bottom left), and what may be a small preformed (and possibly discarded) clear-quartz triangular-shaped projectile point that is partially seriated along one lateral edge and has an incipient concave base with evidence of longitudinal basal thinning (Figure 11, bottom right). It appears from the report on the 1970s research, and from an analysis of the artifact assemblage from the site at The Rooms, that no other artifacts of this form were recovered from the section of EjBf-08 researched at that time (Tuck 1993: McGhee, R. and J. Tuck. 1975). The points recovered, referred to as the "Barney Form" (Tuck 1993), are described as triangular-shaped with straight and often serrated lateral edges and sharp to slightly rounded shoulders, with short, narrow and "slightly contracting stems" (Figure 12). The artifact recovered in 2017 clearly differs from the Barney Form and is more reminiscent of findings from other sites situated to the east of L'Anse au Loup along the Strait of Belle Isle in southern Labrador (Tuck 1993).

Other materials recovered from EjBf-08 in 2017 included 24 flakes and other lithic debitage, all of which is consistent with the raw material types identified at the site in the 1970s (Figure 11). As an additional point of interest, a selection of artifacts reported to have been found on the same property by the landowner in recent years includes projectile points of different forms and potentially different ages (Figure 12), raising the possibility that this large, though substantially disturbed site, may yet encompass various distinct, in situ cultural components.

Now that all the 14 new power line poles have been situated, and all potential interactions with archaeological materials have been addressed, once the overhead wires are transferred, the older existing poles will be sawn at the base and removed. In proceeding in this way, no additional ground disturbance at the identified locations of concern will occur, and

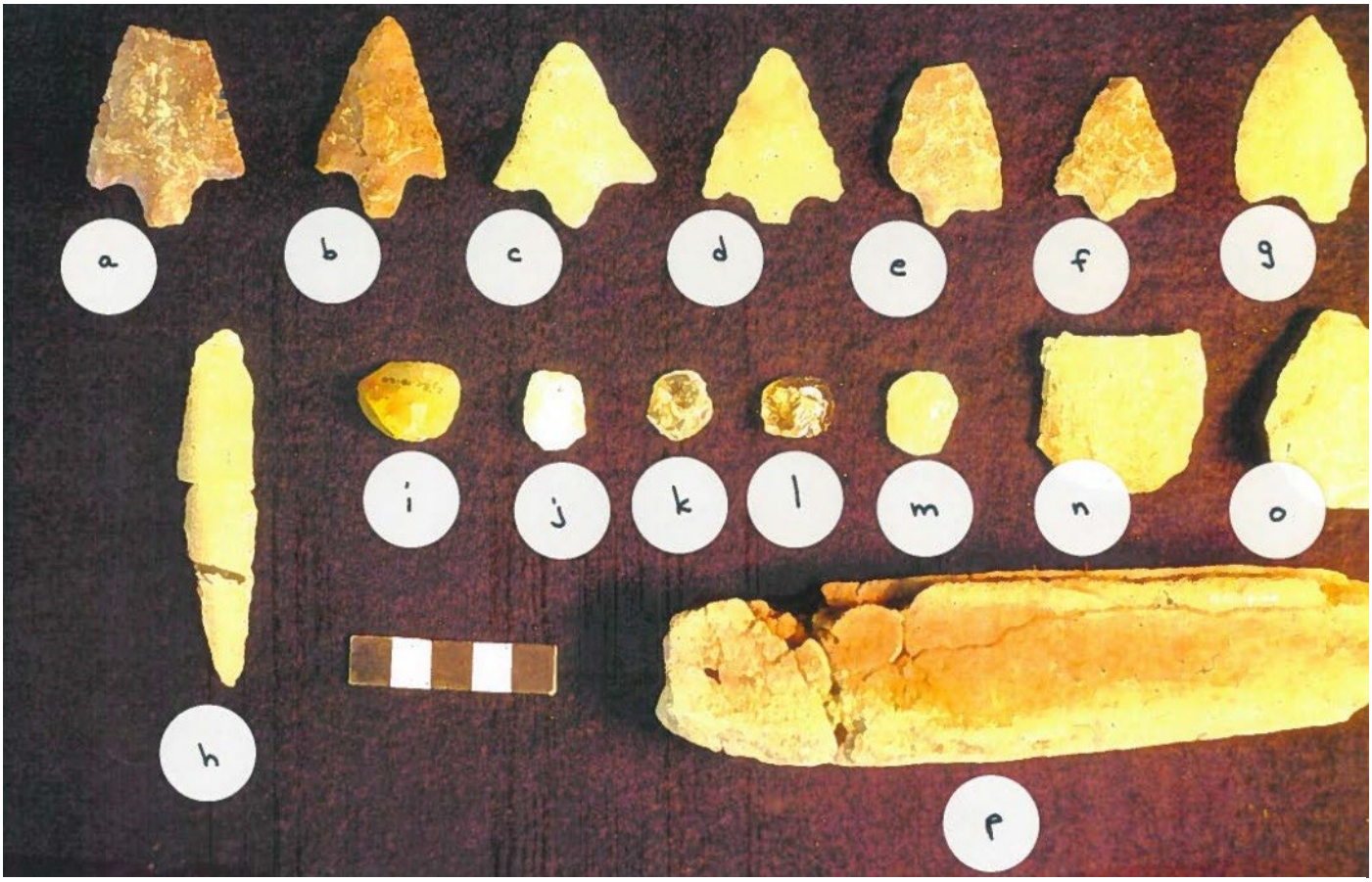


Figure 12: Projectile points (Barney Form – a-f) recovered from EjBe-08 in the 1970s (taken from Tuck 1993; Plate 24).

no impacts to registered or unknown archaeological materials are anticipated.

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Figure 13: Artifacts recovered by the landowner at or near EjBe-08.

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Personal Communication

Mr. Donald Pelley: Archaeological Assistant, Grand Falls-Windsor, NL.

P53 Project: The Research and Conservation of Pattern 1853 Enfield Rifle-Muskets

Alexa Spiwak & Donna Teasdale
Memorial University of Newfoundland

Figure 1: The crate of P53s as they appeared before conservation. Photo credit: Martha Drake.

In 2011, a partially intact crate of Pattern 1853 Enfield rifle-muskets was recovered off the coast of Newfoundland by a fishing trawler. Since then, conservation work has been ongoing by the Department of Archaeology's Conservation Laboratory at Memorial University. This is a large-scale project of both research and conservation treatment that has been continually supported by the Provincial Archaeology Office within the Tourism, Culture, Industry and Innovation Department.

Recovery and Early Conservation

As mentioned above, the crate was recovered in 2011 when it became caught in a trawler's net roughly 150 nautical miles east of Cape Freels at an approximate depth of 800m. The assemblage consists of twenty P53 Enfield rifle-muskets within a partially intact crate. These weapons, which were muzzle loading and fired .577 calibre Minie balls using percussion ignition, were ubiquitous across the British Empire and highly regarded at the time for their long-range accuracy (Bilby 1996). While the walnut stocks of all

Figure 2: Before (left) and after (right) clearing away the mass of concretion on the underside of the crate. Note the newly uncovered brass trigger guards.

20 rifle-muskets were present, the softwood crate was only partially intact and exhibited tell-tale signs of shipworm damage. The brass fittings that had been exposed to the elements appeared to be in excellent condition, minus some buttplates and trigger guards which were missing. Unfortunately, all of the iron barrels, bands and lock mechanisms had completely corroded. As a result, the crate was essentially a solid mass of silt, packing grease and concretion, weighing in at over 600lbs at the time of recovery (see Figure 1).

After consultation with local institutions, it was decided that the crate be brought to Memorial University's Conservation Lab for treatment. Due to the difficulties in conserving composite artifacts, the current treatment was designed to focus on preserving the wood and brass components as very little iron remains. A custom 675 L tank was fitted and the crate was soaked in successive saltwater baths of decreasing salinity to slowly draw out salt. The rifles were then placed in a solution consisting of 20% v/v polyethylene glycol (PEG) 400, which is a bulking agent used to prevent the wood from collapsing, and 1% v/v Hostacor IT, an industrial corrosion inhibitor intended to prevent flash rust from staining the wood. This solution was changed at regular intervals to prevent bacterial fouling. The crate has remained in solution since, with the mechanical removal of silt and concretion occurring at varying points during treatment. Conservation work has been ongoing with approximately 1000 hours invested prior to this year's funding.

Recent Progress

Within the 275 hours allotted by the Provincial Archaeology Office for this project, roughly 10kg of silt and grease were mechanically removed from the rifles. In the course of this cleaning, the rifles were packed out with foam and the whole assemblage was flipped on its side to allow for a much-needed cleaning of the crate's underside (see Figure 2). In the

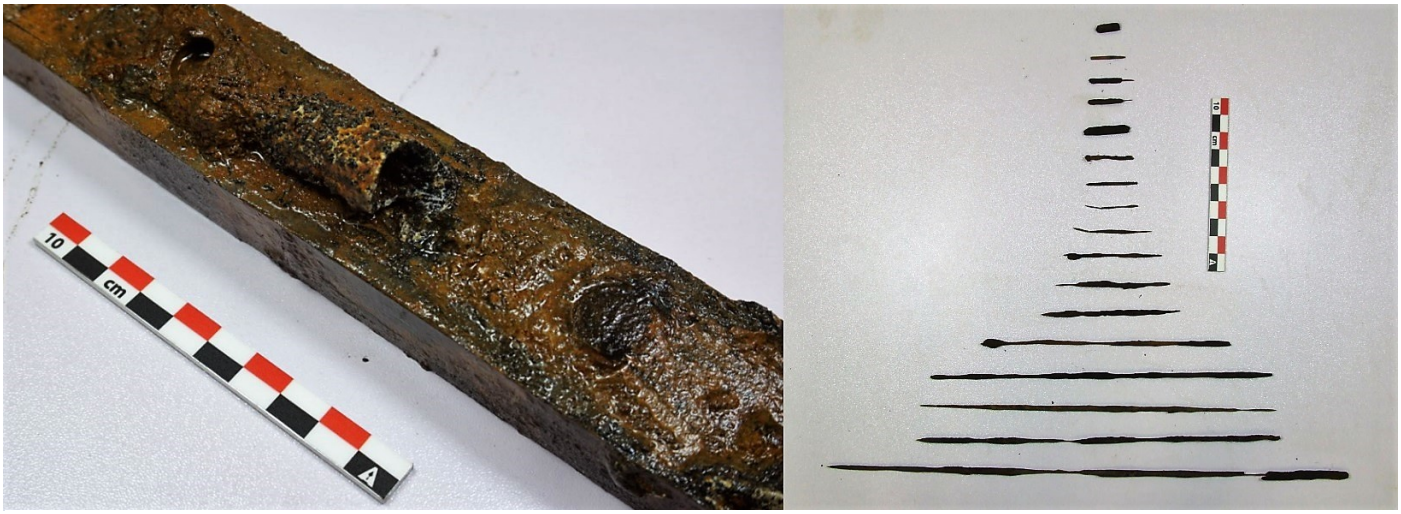

Figure 3: Some of the components discovered during the course of our cleaning: a piece of the lead crate liner stuck to a wooden spacer (left), and the ramrod fragments recovered from channels on the underside of the rifles (right).

course of cleaning we made numerous exciting discoveries: brass trigger guards, with legible inspectors' marks, which were previously encased in concretion; remnants of the crate's lead liner, which had been curled and crushed up against the stocks by the pressures at depth; a number of enigmatic marks (which will be discussed below); and the very exciting discovery of ramrod fragments, which represent the only pieces of magnetic iron remaining in the crate (see Figure 3). The ramrods were removed from the channels underneath the rifles and treated separately in a 1% w/v solution of sodium hydroxide (NaOH) to remove chlorides.

During the course of our cleaning, all removed concretions were cleaned and inspected under the microscope to ensure there were no marks or diagnostic features that were missed. We also did a complete changeover of the PEG tank: it was drained, meticulously cleaned and then re-filled with 20% v/v PEG 400, 3% w/v PEG 3350 and 1% v/v Hostacor IT solution. The hoisting system was also re-rigged to facilitate easier and safer removal of the rifles.

Research

A significant chunk of the hours allotted by the PAO were dedicated to research, driven in large part by the discovery of marks and stampings uncovered during the process of cleaning. To summarize, our research suggests that these are 4th model unconverted Pattern 1853s which came to rest on the seafloor during or after 1866, likely used in Canada for some time and then lost in transit during their voyage back to Britain. After testing multiple apparati, the British government decided in 1866 that P53s across the empire should be returned to arms factories in London for conversion into breech-loading Snider-Enfields (Smithurst 2011). In the absence of any iron parts, which typically bear the most definitive markings, we were forced to do quite a bit of detective work. The following clues, along with help from collectors and experts across the globe, have informed our current theory:

1. The presence of Enfield factory roundels stamped on the stocks, denoting these rifles as being of first-class quality (Figure 4)
2. Diagnostic features visible on removed concretions, verifying that these are indeed unconverted muzzle-loading firearms and not Snider-Enfields (Figure 5)
3. The machine-cut ends of the butts, as well as machine-cut rounded lock nut wings (Figure 6)
4. The presence of an enigmatic "bird" marking present in the area of one rifle's lock, likely associated with the London Small Arms Company (Figure 7)
5. Differing inspectors' numbers between the rifles, although they all bear the typical "E over crown" mark of the Enfield company (Figure 8)

The machine-cutting of the stocks is a tell-tale sign of a later model rifle, and such advanced manufacturing techniques allowed not only for more expedient fabrication but also the ability to easily replace or exchange components (Pritchard and Huey 2014). The "bird" marking located within the lock mecha-

Figure 4: The Enfield factory roundel stamped into the stock of the rifle, with the vertical line underneath the circle being part of a "1" which denotes a first-class weapon.

Figure 5: A concretion removed from the crate which shows the shape of the percussion cap system. The hammer and a section of the barrel are clearly visible, as is their junction at the nipple/cone.

Figure 6: The machine-cut ends of the stocks, with indentations and screw holes for the brass buttplates.

Figure 7: A side-by-side image of the "bird" impression discovered during cleaning (left), compared against a non-archaeological example found on a 4th model P53 believed to have been converted into a Snider-Enfield by the London Small Arms Company (right; photo credit Grant van Zeumeren).

Figure 8: The mirrored positive impression of a maker's mark left behind by a stamping on the interior of the lockplate. It bears the typical "E" for "Enfield" over a crown with an inspectors' number.

nism of one of the rifles resulted in an international goose chase, with some of our contacts suggesting that it may be French or Belgian in origin. In the end, the discovery of similar marks on converted Snider-Enfields in Canada has led us to believe that the "bird" is associated with the London Small Arms Company, which was established in 1866 and subsequently contracted by the British government to assist with the conversion of Pattern 1853s (see Figure 7; Skennerton 1993).

It seems unlikely that the Enfield factory would be shipping first-class arms with substituted parts from other makers, especially at such a late date in the P53's use-life. If these were refurbished or "sold out of service" arms, the Enfield inspectors' marks (see Figure 8) would be stamped over or obliterated in some way, suggesting these rifles were still in service at the time they were packed (Pritchard and Huey 2014). The "bird" mark and the different inspectors' numbers suggest that these rifles had parts swapped out to keep them serviceable right up until the British recalled them for conversion.

Work to be Completed

By our estimation, the rifles have soaked long enough to take on as much PEG as possible, and the recent addition of PEG 3350 will help to finish the process of bulking the wood to prevent warping and shrinking. Ultimately, these rifles will be vacuum freeze-dried to safely remove any remaining moisture, but this cannot occur until they are fully and properly cleaned. While it is difficult to ascertain where the stopping point of cleaning lies, we estimate a further 200 hours of concretion and silt removal before we can progress to the final stages of conservation. Continued research is also necessary to strengthen our current theory and verify the origin of the mysterious "bird" mark. Our recent efforts to identify a shipwreck associated with this find have proven unsuccessful, as there are no recorded shipwrecks which match our proposed date ranges within a 100 nautical mile radius of the point of recovery.

Conclusion

While there is a great deal of work still left to be completed, with the generous allocation of paid graduate student work hours we have recently made great strides in preserving this one-of-a-kind discovery (see Figure 9). The marks and features uncovered in the process of cleaning have brought to light new information about the history of these rifles and have led to the formation of new and fruitful partnerships with antique arms experts across the globe. Despite these triumphs, further investigation is necessary to

Figure 9: The crate of rifles as they appeared at the end of December 2017, having been flipped on their side for cleaning.

determine what connection they have, if any, to Newfoundland and Labrador. We look forward to a continued partnership with the Provincial Archaeology Office as the project progresses.

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2017 Report on The Rooms Provincial Museum Division's Archaeology and Ethnology Collection

Lori Temple
Collections Manager, Archaeology & Ethnology
The Rooms Provincial Museum Division

Work continued to progress throughout 2017 with use of our EMu collections management software which has greatly improved our ability to manage our collections data. Formatting submitted databases from archaeologists into the EMu system and adding photographs and locations for key artifacts in the collection was the focus of the past year and will continue into 2018.

Another project to focus on in 2018 will be finding ways to use our collections storage space more efficiently. As the collections grow, storage continues to be an ongoing challenge.

In March and again in November of 2017, we partnered with Memorial University's Archaeology 4153 Lithic Analysis class under the instruction of Tim Rast as 23 students used the Provincial Museum Division's archaeological collections as part of their coursework.

The Rooms continues to support community museums around the province by loaning artifacts to them through our summer loans program. As well we support exhibitions both in and out of the country, including facilitating the loan of a selection of Norse artifacts from L'Anse Aux Meadows for display at The Royal Ontario Museum as part of their exhibit "Vikings: The Exhibition" open from Nov.5, 2017 to April 22, 2018.

Some statistics for The Rooms Provincial Museum Division, Archaeology & Ethnology unit in 2017 include:

- Ninety-three requests received for information, loans, research visits, tours and photograph use.
- Forty different researchers including undergraduate, MA and PhD students from MUN, universities across Canada and the United States and both affiliated and independent researchers from Canada used the archaeology collections and lab space.
- Over 20 museums throughout the province displayed archaeology artifacts from our collections through our Community Loans program. As well, our artifacts are also on loan to the Canadian Museum of History (formerly the Canadian Museum of Civilization), the National Gallery of Canada, and several Parks Canada locations.
- Archaeology artifacts were transferred to The Rooms via the Provincial Archaeology Office

Figure 1: Lori Temple (The Rooms) and Oleg Sokruto (Lead Preparator, Royal Ontario Museum) installing the L'Anse Aux Meadows artifacts at The Rom in October.

through nine submissions from archaeologists representing over 29,003 artifacts from 59 sites.

- Two volunteers provided 57 hours of their time helping with various projects in the Archaeology lab.

Anyone wishing to access our collections for research can contact Lori Temple, Collections Manager for Archaeology & Ethnology at (709) 757-8076 or by email at LoriTemple@therooms.ca

Twentieth Century Matter: Material Culture from the Birch Island Site (FhCb-10) & The 2016 Community Collections Archaeological Research Project (CCARP) On the Carol Brice-Bennett Collection, Happy Valley-Goose Bay, Labrador

Anatolijs Venovcevs
Labrador Institute/The Town of Happy Valley-Goose Bay

Introduction

Whether explicitly discussed, legislated, or not, one of the biggest quandaries of archaeology is the ontological separation between "heritage" and "just garbage" and, even if it is "just garbage," whether or not that garbage is still worth studying à la William Rathje and similar garbological approaches (Rathje and Murphy 2001). The Birch Island site (FhCb-10) in Happy Valley-Goose Bay straddles this dividing line whereby the definitions of its material objects are constantly being transgressed between the two extremes of trash and treasure by the archaeologists and the residents themselves. Thus, when Dr. Scott Neilsen asked me to analyze the small collection he and Julia Brenan collected on Birch Island the previous year, I could not resist and plunge into those murky waters of twentieth century archaeology and explore a little bit of history of the community where I live and work (Neilsen 2017:196-202).

The Birch Island archaeology project has been covered elsewhere (see Neilsen 2017:196-202 and Neilsen and Brenan, this volume) along with the history, methodology, and research questions associated with the project and shall not be repeated here. Suffice it to say, Birch Island represents the location of a former community within the municipal boundaries of Happy Valley-Goose Bay that was first settled in 1943 and resettled by 1969 to the mainland portion of Happy Valley. Afterward, the area was the site of boating, swimming, ATV and snowmobiling, and, for a while, the location of the town's wastewater discharge station. Over the last few years the area received renewed interest as a nature conservation area and a location of a multi-million dollar boardwalk, outdoor classroom, and park developed by Healthy Waters Labrador with generous contributions from my employer, the municipal government of the Town of Happy Valley-Goose Bay. The project is not yet complete but it has received a great deal of positive feedback from most of the community. Though it has not been without controversy as some of the former residents felt that they have not been consulted and some of the long-time users disagreed with the closure of the main and long-used road through the centre of the island.

Analysis

The artifacts analyzed here were recovered by Neilsen and Brenan in 2016 as part of their preliminary research on Birch Island and the impacts of the upcoming boardwalk construction project. In total, they recovered 789 artifacts through test pitting and monitoring on the Birch Island site (FhCb-10) and 7 artifacts from a near-by former tilt they recorded as Birch Island 1 (FhCb-11). The Deitz kerosene lamp recovered from it clearly dates the cabin to a period contemporaneous to the main Birch Island settlement thus expanding the occupancy area of the Birch Island braided stream network outside of the former settlement (Figure 1).

Most artifacts (42.3%) from the Birch Island community (FhCb-10) site were architectural in nature consisting of things like shingles, wall paper, and linoleum, as well as a variety of nails of various sizes in length and modification in keeping with the 25 years of settlement on the island. Other domestic items consisted of furnishings like tacks and lantern

Figure 1: Deitz No. 2 Blizzard lamp from the Birch Island 1 site.

Figure 2: A knitted child's mitt.

Figure 3: Shell casings in the collection.

Figure 4: Burley and Bright Half and Half tobacco tin.

Figure 5: RAU-KLIKIT, RAU-CANADA fastener.

parts, coal and charcoal, electric parts, and hardware items.

The assemblage contained a variety of interesting tools and personal items including a toy sword, a child's mitt (Figure 2), a wrench, a canvas tent grommet, nail clippers, a tobacco tin, a fabric fastener, and shell casings. Of these, shell casings could be dated to 1942 and 1945 made by Winchester Repeating Arms Company of New Haven, Connecticut and Remington Arms of Bridgeport, Connecticut (Penry n.d.) (Figure 3). These represent the earliest datable artifacts in the collection linking these directly to the foundation of the United States airbase at Goose Bay. The date and provenience of the tobacco tin and the snap fastener could also be ascertained. The tobacco tin came from Kentucky and was popular in the 1940s and 50s while the fastener was made after 1952 in Montreal (Half and Half 2017; Rau Fastener Canada Inc. n.d.; Vintrowear 2015) (Figures 4 and 5).

A quarter (26.0%) of the assemblage consisted of food and drink material. This included bottle glass fragments in a variety of colours including bluish-green, brown, clear, dark green, and green; bottle caps, five cans and can fragments, one plastic carrot bag, five jar fragments, one jar lid, two table fragments, a salad dressing container, and a base fragment from a glass tumbler. Most of the datable material came in the form of glass fragments from three manufacturers – the Dominion Glass Company, the Consumers Glass Company, and the Owens-Illinois Glass Company.

Two of the Dominion Glass Company bottles were clearly labelled with the words "NO DEPOSIT NO REFILL" and "NOT TO BE REFILLED." One of them was a Coca Cola bottle (Figure 6). All three Dominion Glass Company bottles were produced at the Point St. Charles factory in Montreal in 1954, July-August 1956, and September-October 1957 (Miller and Jorgensen 1986).

The Consumer Glass Company bottles also came from Montreal out of Ville St. Pierre with the trademark indicating dates from 1920 to 1962 (Lockhart n.d. 473-474). One of the bottles was a Pepsi container (Figure 7). The last identifiable glass bottle was an Owens Illinois Glass Company whose maker's mark revealed that it was produced in Fairmont, West Virginia between 1940 and 1964 (Lockhart and Hoening n.d.).

Figure 6: July-August 1956 Dominion Glass Company Coca Cola bottle.

Out of the recovered tin cans, two could be identified. The first was a Double Cola can that predates 1965 since it lacks a self-opening pull tab (Maxwell 1993:105). Double Cola itself was a product of the Seminole Flavor Company of Chattanooga, Tennessee which first started being produced in 1933 (The Double Cola Company 2017). The other can is Canada Dry. On top it has a tear-drop shaped pull tab with the words "DISPOSE OF PROPERLY" and "PLEASE DON'T LITTER" (Figure 8). The can was collected on the surface but the tear-drop shaped pull tab indicates a 1965 to 1980s date after the community was resettled (Maxwell 1993:105-111). The can presented a cautionary note in assuming that everything visible on the surface of Birch Island dates to the period when the island was occupied.

The final identifiable item was a lid from a Habitant Pea Soup jar from Montreal, Canada. The style and labelling suggested a pre-1958 date.

Conclusions

The analysis of the Birch Island artifacts supplied some tantalizing new data for the ongoing research at the historic settlement of Birch Island. For instance, the diagnostic artifacts in the collection provide important information on how the settlement was provisioned. Interestingly, no Newfoundland-made items were identified in the assemblage (though some were observed in this season's fieldwork). Instead, the materials at Birch Island either came from one Canadian city – Montreal, likely obtained through the Hudson Bay Company – or from a variety of American places including West Virginia, Tennessee, Kentucky, and Connecticut displaying the influence of American goods coming

Figure 7: Consumer Glass Company Pepsi bottle.

Figure 8: Canada Dry can.

from the base. This opened up new questions for Brenan and Neilsen to explore.

The presence of a variety of disposable North American foods and drinks like Coca Cola, Pepsi, Double Cola, and canned pea soup paints a picture of life that was radically different from the ones the residents of Birch Island and their parents were familiar with only a few decades earlier. The influx of consumer culture and cash based economy into Labrador with the arrival of the military industrial complex radically transformed the region as can be seen from these material remains – "NO REFILL" embossing stands in stark contrast to the reuse and frugality of the previous generations and might help to explain the ongoing issues of poor waste management and illegal dumping in the community.

Finally, the identification of a more contemporary can in the collection and the presence of similar such specimens scattered around Birch Island goes back to my earlier point. While the community of Birch Island was resettled in the late 1960s, the place itself did not stop being used. Historic aerial photographs we have at the Town from the 1970s and 80s reveal Birch Island as an occupied space with pathways, cars, boats and houses dotting Birch Island. The remains of the former wastewater dumping station stood on Birch Island until only late last year when it was demolished because it was "trash" to make way for a brand new parking lot and park.

Evidence of such purification and conservation management proliferates as archaeologists, Healthy Waters Labrador employees, and community members actively decide on what is and what is not heritage (Latour 1993). Many times, through discussions and meetings, concerns were raised by community members about the "garbage" and "junk" scattered around Birch Island. Even when informed about the area's designated archaeological site status, people brought up other concerns regarding public safety and differentiating between what is and is not archaeology.

Could such a distinction be drawn? The current Birch Island archaeology project explicitly excludes items that are deemed too recent for consideration. Though, in the field, it is often difficult to make those distinctions; while a pull tab may separate a post-abandonment object from a pre-abandonment object, cars, buckets, glass bottle fragments, and rusted tin cans often muddy such clear designations. The entire island is in flux as human and non-human agents move and shape the items that lie on or just beneath the surface. Even when clear distinctions can be made between "old" and "recent", the more contemporaneous items display continuous engagements with a place that, much like the Hamilton River next to it, is constantly changing its form.

Birch Island is clearly a palimpsest (Lucas 2005). It is a landscape evolved over many decades where hybrid assemblages proliferate. The items there are hybrids of multiple functions and meanings. What makes the project so interesting is that through the current restorative and archaeological work these messy hybrids are cleaned up and categorized into neat groups of "heritage" and "garbage." Thus the site at Birch Island is in the state of becoming – a place where the definition of heritage is getting negotiated and archaeological knowledge is being constructed. It is truly, a marvellous place which, on behalf of the Town of Happy Valley-Goose Bay, I hope you will visit in the future.

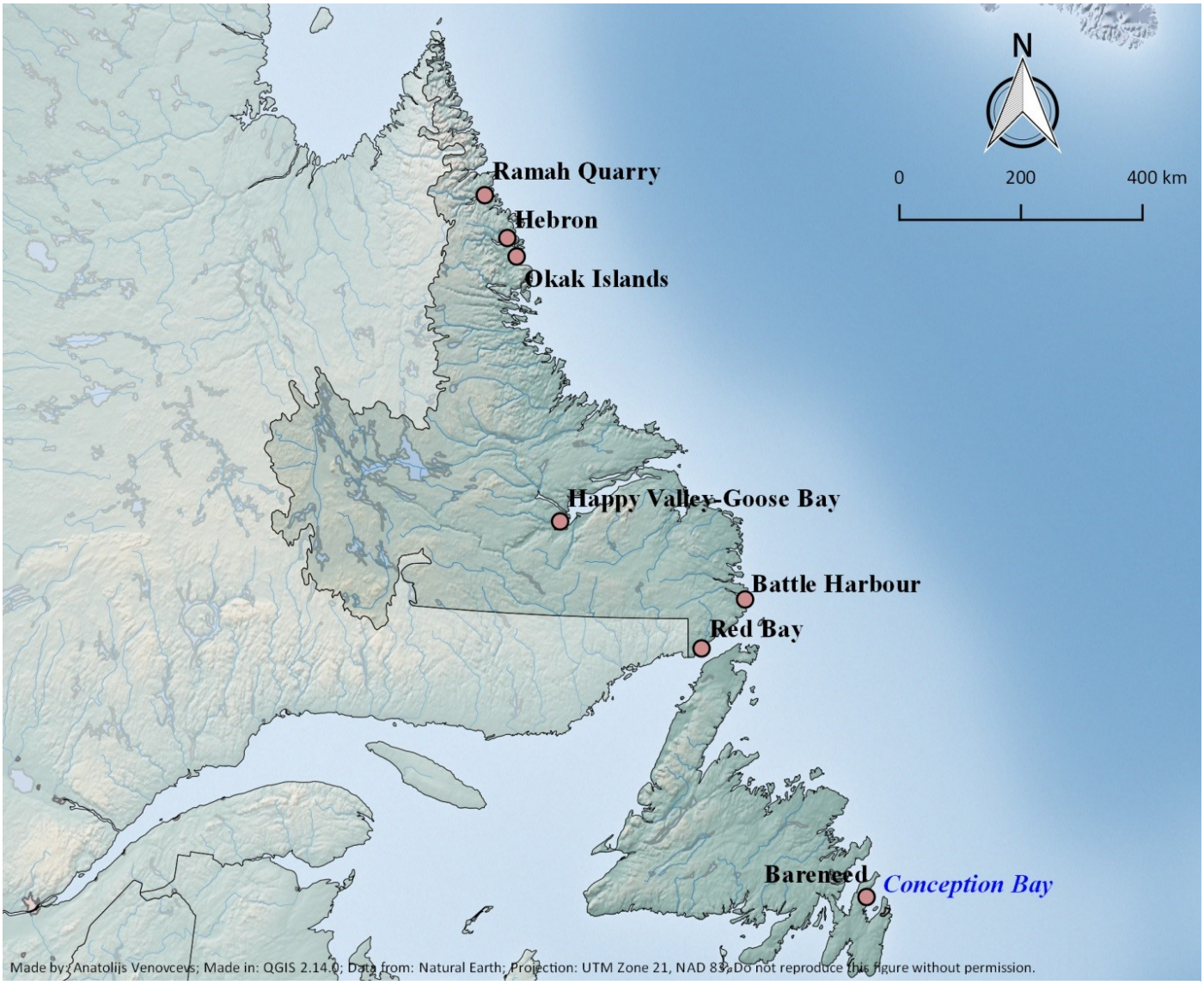

Figure 9: Locations of the material from the Carol Brice-Bennett Collection along with the location of Happy Valley-Goose Bay and the Ramah Quarry which was the origin point of much of the lithic material in the collection.

The 2016 Community Collections Archaeological Research Project (CCARP) On the Carol Brice-Bennett Collection, Happy Valley-Goose Bay, Labrador

This year, it was both an honour and a pleasure to help bring the CCARP to Labrador. CCARP (Community Collections Archaeological Research Project) is NLAS's (Newfoundland Labrador Archaeological Society) premiere outreach program that seeks to engage with archaeological material stowed away in lockers, sheds, attics, and shoeboxes of the province (NLAS 2014; Anstey 2014; Campbell 2016; Rast et. al. 2016). With funding through the Cultural Economic Development Program from the Department of Tourism, Culture, Industry and Innovation, Government of Newfoundland & Labrador, the goal of the project is to locate and engage with individual collectors of archaeological remains thus fostering a trusting relationship and allowing archaeologists to catalogue and analyze private collections, building on archaeological knowledge, and facilitating great public awareness of the value of archaeological resources.

This year's collection was rather esoteric as it was a mix of material collected throughout the province (Figure 9). It came from Carol Brice-Bennett, the former director of the Labrador Institute in Happy Valley-Goose Bay, who gathered this material over thirty years and supplied it to the institute in 2016.

The material consists of 35 artifacts – seven pipes from Conception Bay, Newfoundland; eight

Figure 10: Maritime Archaic point from Okak Bay.

Figure 11: Dorset artifacts from the Battle Harbour site. Top, left to right: biface, scraper, endblade base, side-notched biface or knife, biface. Bottom: Biface, microblade, endblade, biface, endblade.

Figure 12: One of two Red Bay Basque tiles.

Figure 13: HICKMAN & CO brick from Hebron.

spoons, two forks, and four lead line weights from Bareneed, Port de Grave Peninsula, Conception Bay, Newfoundland; one stone point from Okak Bay, Labrador; ten lithic artifacts from Battle Harbour, Labrador; two tile fragments from Red Bay, Labrador; and one brick from Hebron, Labrador.

Through intensive correspondence with Ms. Brice-Bennett in conjunction with the Provincial Archaeology Office, the Nunatsiavut Archaeology Office, and The Rooms, it was possible to narrow down most of the artifacts to specific sites. However, given the uncertainty of the provenience of some of the artifacts, like the smoking pipes and the silverware, the project serves as a cautionary note for would-be collectors – if they were to collect any material thought to be archaeological, they should at least properly label the bag with the location in which it is stored and, ideally, take a GPS coordinate of the area. For instance, the early twentieth century silverware and line weights were most likely retrieved from a house in Bareneed at Port de Grave but there was some confusion on the provenience of some of those. The handmade line weights were in a bag labelled "Okak" and, given the lack of distinct features on these items, the reclassification of their provenience relied on Ms. Brice-Bennett's recollection alone.

The Labrador material in the collection could be assigned to a site with relative confidence. This include a Maritime Archaic point from Okak Bay (Figure 10), Dorset lithic material from Battle Harbour (Figure 11), ceramic tiles from Red Bay (Figure 12), and a brick from Hebron (Figure 13).

Given the known provenience, these artifacts offer a greater degree of interpretability. As one example, the brick from Hebron deserves some attention because it reminds us that sometimes the greatest stories can be found in the most mundane of objects. The brick is wedge-shaped and hand-manufactured which indicates that it was used for a specific architectural purpose like building an arch of a circle instead of being part of a wall (Gurcke 1987:119-120). No evidence for mortar indicates that it was not used in building a chimney and the lack of abrasion discounts the brick being used as ballast – indicating that it was purposefully brought to the site. The brick is impressed with the maker's mark "HICKMAN & CO" over "STOURBRIDGE" which points to a common firebrick manufacturer (Gurcke 1987:66-67). The maker's mark and method of manufacture suggests that the brick dates to between 1865 and 1929 from Stourbridge, England (Gurcke 2017).

As the name suggests, firebricks are made from special clays, called fire clays, and have a much greater resistance to heat as well as physical and chemical abrasion. With the ability to withstand as much as 3,000 degrees Fahrenheit (1,659 Celsius), they were meant for industrial kilns, blast furnaces, smelters, and boilers and were far more expensive than regular bricks. This poses a question of what the Moravians in northern Labrador were doing with an industrial-grade brick. The likeliest theory is that it was brought to the site for a cool-heat operation, like a smithy, that would only require a few dozen bricks at best and even then might be considered overkill given that regular bricks would work just fine. Unfortunately, the smithy has not yet been investigated in detail but, if it was, it could be possible to understand the extent to which the Moravians went through to build a self-sustaining mission-colony.

The full report was published at a local printshop, thus providing business to a Labradorian service and has been made available on the NLAS website. A presentation on the artifacts was held on April 27th at the Happy Valley-Goose Bay campus of the College of the North Atlantic and a reception afterwards gave the public an opportunity to view and handle the artifacts. Over 25 people were in attendance, including a former Hebron resident, and the discussion after the talk allowed a Labradorian audience to tackle a variety of issues and concerns including the people's perceived failings of the current provincial heritage legislation when it comes to recent Labrador developments and the need for a local repository for Labrador artifacts instead of the exceedingly distant one in St. John's.

The project also received a great deal of coverage. An article was written about the collection in *The Labradorian* newspaper, Jamie Brake, the President of the NLAS, was interviewed about the project on OK Radio in Nain, and two segments about the project were featured on the *Labrador Morning* show on CBC with Matt McCann and Bailey White. The first was a discussion in the studio with me and the NLAS board of directors member, Scott Neilsen, about the project and some of the artifacts from the collection. The second was a story by the reporter John Gaudi

Figure 14: Temporary repository of the Carol Brice-Bennett archaeological collection.

who came out to the presentation to gather people's thoughts and reactions to the artifacts. Copies of these interviews were provided to the NLAS. Stories about the collection also received radio coverage in Newfoundland which resulted in a person reaching out to the NLAS with a large collection of Dorset material which is now being studied for the society's 5th CCARP report. This underlies the importance of outreach and good public relations when conducting society business, especially its CCARP work.

The final aspect of this project was the development of a display case for the artifacts in front of the Labrador Institute's offices at the Happy Valley-Goose Bay's campus of the College of the North Atlantic. The display case was installed with the assistance of Ms. Jennifer Stratton and Mr. Morgon Mills and showcases all of the artifacts and their associated information behind a poster backdrop which was printed for free as a generous contribution by the Town of Happy Valley-Goose Bay (Figure 14). The display case was well received by the students and faculty and will be in place until the end of the 2017 school year. After which, the material will be packed up and sent to The Rooms for storage making this the first CCARP collection sent to provincial storage after analysis.

Given the success of the public outreach stimulated by this project, it is hoped that more private archaeological collections will emerge for analysis by the NLAS CCARP outreach.

Acknowledgements

I would like to thank Dr. Scott Neilsen for hiring me to analyze the artifacts in the Birch Island collection. Also thank you to Scott and Julia Brenan for excavating the original material and looking over this write up. Thank you for keeping me involved, it has been a lot of fun!

I would like to extend my gratitude to Carol Brice-Bennett for sharing her collections with the Labrador Institute and, in turn, with the Newfoundland and Labrador Archaeological Society and for willing to engage in email correspondence to better inform me of where, when, and how the items in this collection were recovered. This project would not be possible without the Community Collections Archaeology Research Project which was funded through the Cultural Economic Development Program of the Department of Tourism, Culture, Industry and Innovation by the Government of Newfoundland and Labrador.

I would also like to extend my gratitude to Dr. Scott Neilsen of the Labrador Institute/Department of Archaeology of Memorial University of Newfoundland for organizing and facilitating the analysis of these items, facilitating the public lecture, and helping me with the radio interviews. Jamie Brake and Michelle Davies of the Nunatsiavut Archaeology Office, Stephen Hull of the Provincial Archaeology Office, and Lori Temple of the Rooms Provincial Museum for sorting out Borden numbers, catalogue numbers, and supplying background information and GPS coordinates of the sites in question.

Additionally gratitude is extended to the NLAS board for helping to identify the lithic material in this collection and to Dr. Karl Gurcke of the American Parks Service for a helpful correspondence as America's leading historical archaeology brick expert. Sometimes the most interesting stories are found in the most mundane objects.

Finally, I would like to thank Jennifer Stratton and Morgon Mills for assisting me with the artifact display case.

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Investigating Gentry Life in 19th-Century Ferryland: 2017 Excavations at the Carter House Site

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Figure 1: The Carter House Site, looking northwest. The sheltered harbor known as the Pool, where the main component of the Ferryland archaeological site is located, is visible in the top left portion of the image. Note the piles of stone rubble visible on the surface.

Excavations were conducted during the 2017 field season in a new area of the Ferryland archaeological site on a meadowed headland known as the Downs, located approximately 350m east of the sheltered harbour known as the Pool, which has been the main focal point of archaeological work in Ferryland over the past 25+ years (see also Gaulton's and Lacy's reports, this volume) (Figure 1). This work comprised the field component of my MA research conducted at Memorial University. In addition to investigating a new area of the site, this project had quite a different temporal focus from previous work in Ferryland. Namely, my thesis seeks to explore some of the changing lifeways occurring in Ferryland in the late 18th and early 19th centuries, a time which saw rapid changes associated primarily with the collapse of the migratory fishery and its replacement by the family-based resident fishery.

The Carter House site had been known to archaeologists for some time, largely due to the prominent traces of stone rubble visible on the surface. The first clue linking it to the Carter family is a ca. 1837 map which shows a prominent two-story Georgian-style structure in the approximate location of the stone rubble with an associated caption linking it to a William Carter (Figure 2). The Carters were a prominent merchant family residing in Ferryland dur-

Figure 2: Detail from a ca. 1837 map showing a large structure associated with William Carter (marked 'L'). PANL MG 247 File 1.

ing this time; they immigrated to Newfoundland from southwest England in the mid-18th century. William Carter was a vice-admiralty judge and the eldest son of the seven first-generation Carter children born in Ferryland. Subsequent archival research established a chain of occupation and leases by various different merchants and government officials. The last documentary reference to the structure occurs in an 1865 grant, at which point the property appears to have been subdivided and owned by various different stakeholders (though the structure itself may have been abandoned by this point). Oral history and local knowledge of the structure appears to be quite limited compared to other contemporary mercantile structures such as the Holdsworth House on Ferryland's North Side. Thus, while the documentary record sheds some light on the structure and its occupants, it is incomplete and vague.

Excavations at the site began with a test pitting survey at regular 10m intervals expanding outwards from the stone rubble piles. The rubble piles are concentrated on a terrace measuring approximately 10x15m which does not seem to have been disturbed by recent agricultural activity (in contrast to many other areas of the Downs). Test pitting confirmed that higher artifact concentrations were present on and in close vicinity to the terrace and that ploughing had resulted in some disturbances to the north of it. Test pitting to the south of the terrace was limited due to the vicinity of the present-day road and what appeared to be significant disturbances from recent agricultural activity. One of the test pits, located just on the southern edge of the aforementioned terrace, revealed an interesting feature that prompted further excavation: a large rubble-filled trench that contained some diagnostic items dating back to the mid-late 18th century.

A series of units were excavated to further expose this feature and it soon became clear that it was not connected to the structure itself but was rather a rough retaining wall associated with a slot trench stockade wall meandering along the base of the terrace. On the terrace to the north, no evidence of the building was recovered; instead the area appears to have been used as a secluded courtyard or possibly a garden feature. Various domestic items including several refined earthenware teacups and clay tobacco pipes point to the leisure activities taking place in the space. A complete iron sickle also indicates that some work-related activities took place in the near vicinity. Vast quantities of cylinder-style window glass, however, pointed to the presence of a nearby structure. Much of the material from the terrace appears to date to around the mid-19th century, which seems to represent the terminus of occupation at the Carter House site. Diagnostic material recovered from the slot trench associated with the stockade wall suggests that it may have been constructed initially in the late 18th century, with subsequent modifications including the addition of further fill and the stone retaining wall throughout the 19th century. One of the more evocative artifacts from the project was uncovered in the fill associated with the slot trench: a small lead comb used for darkening hair (Figure 3). The use of lead combs to darken hair (through the deposition of lead sulfides) has been reported to date back as far as the Roman period, and was especially popular amongst men during the Restoration period in England (Sherrow 2006: 88). Such an item demonstrates a clear preoccupation with personal appearance on the part of its owner.

The next test trench was situated to bisect one of the stone surface features to better determine

Figure 3: A lead comb recovered from a slot trench associated with a wooden stockade retaining wall.

its form and date. It was soon revealed that the feature was quite shallow and contained only unconsolidated rubble. The same sod/topsoil horizon encountered elsewhere on the site was found beneath the rubble pile. Thus, it would appear that the surface mounds do not relate to the collapse of a structure in situ but rather to the more recent clearance of stones (some of which do originate from a structure, as evidenced by dressing and mortar traces) for enclosure and agriculture. Given the presence of the surface mounds on a 1951 aerial photo, their accumulation must have taken place earlier in the 20th century. At the eastern end of this trench, a large stone retaining wall measuring 4' thick at its base was discovered just at the eastern edge of the aforementioned terrace (Figure 4). A rich organic midden deposit had accumulated on the outside of the wall butting up against it. Beneath this, a fill layer and builder's trench containing material dating to the late 18th and early 19th centuries attest to the early date of the feature. It appears that a considerable landscaping operation was undertaken to raise the grade on the exterior of the wall and perhaps to create the terrace heretofore described. This retaining wall and landscaping provide further evidence of the labour involved in creating the estate landscape of the Carter House.

After proving that the structure was not located on the lower terrace or amongst the visible surface rubble, attention was turned towards an upper terrace located closer to the modern road which was revealed when some of the long vegetation was cleared from the site. Two large mounds approximately 13m apart were revealed on this upper terrace which was just adjacent to an area of recent cultivation to the south. A test trench was excavated through one of the mounds to reveal its internal construction. During the final few days of fieldwork, a substantial stone foundation (measuring 4' wide) was uncovered (Figure 5). This was interpreted as the base of a large hearth feature situated at the gable end of the structure. A rich midden was located just to the east of the feature butting up against its outside face. This midden contains significant domestic refuse (including a vast quantity of faunal material currently undergoing analysis) that appears to span the entirety of the occupation of the structure (i.e., from the terminal decades of the 18th century through to the mid-19th century). Items of note from the midden include an 1843 Nova Scotia halfpenny token, tiny seed beads and straight

Figure 4: Dry-laid rubble retaining wall with associated builder's trench on the eastern border of the lower terrace. The unconsolidated rubble associated with one of the clearance cairns is visible at top right.

Figure 5: Partially exposed foundation of a dressed stone fireplace. The associated midden was located just to the east (right).

Figure 6: A selection of items recovered from the midden associated with the hearth feature shown in Figure 5. Clockwise from top left: a transfer-printed bowl from a Scottish series titled 'Triumphal Car', an 1843 Nova Scotia halfpenny token, a copper alloy finial possibly from a set of fireplace tongs, and a copper alloy straight pin.

pins, lead shot, a brass cloak pin, a possible fireplace tongs finial, and hundreds of tableware ceramics of various forms that are a testament to the elaborate meals enjoyed by the occupants of the structure (Figure 6). Though time did not permit the testing of the other mound feature, it almost certainly contains a similar hearth foundation on the other gable end mirroring the one described here.

In all, the first season of excavation at the Carter House site was very successful. Excavations confirmed the location of a substantial domestic site with various associated landscape features and have allowed for the construction of a more detailed chronology to complement the documentary record. A large sample of material culture has been recovered from several different contexts which is currently undergoing analysis and will further our understanding of early 19th century life in Ferryland.

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The Peopling of Stock Cove: Digging Deeper into the Archaic, Groswater, and Dorset Occupational History of the Site

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Introduction

In the summer of 2017, we expanded our investigation of the earliest inhabitants of the Stock Cove site (CkAl-03), on the southern coast of Trinity Bay in southeastern Newfoundland (Figure 1). This was the second year in a project that is focused on the processes of settlement and adaptation by the Maritime Archaic in eastern Newfoundland. The first year of the project involved the excavation of a portion of the site to ground-truth geophysical results that suggested a deeply buried, intact Archaic feature. This was accomplished (Wolff and Holly 2017), and excavation was extended west from the 2016 units. The focus of our 2017 fieldwork was to learn more about the nature of the Archaic deposits and attempt to get a clearer picture of the extent of their occupation of the site and its chronology. Along with much more evidence of the Maritime Archaic, we recovered relatively high frequencies of artifacts from two other cultural components of the site, Dorset and Groswater Paleoeskimos, and a handful of Recent Indian materials, adding even more information about the importance of Stock Cove to our understanding of Newfoundland's prehistory. Below is a brief summary of our recent research, some of our findings, and a discussion of ongoing studies related to this work.

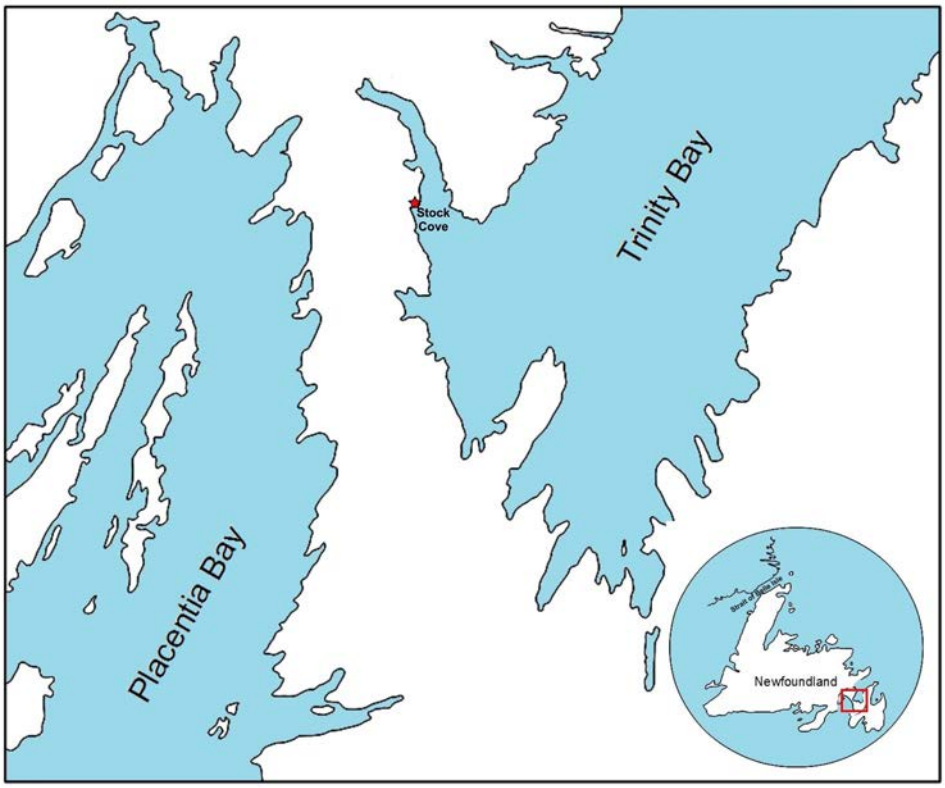

Figure 1: Map of Stock Cove Site Location.

Methodology and Results

Our excavation in 2016 focused on an area that a previous geophysical survey (Wolff and Urban 2014) suggested would provide the best evidence for an Archaic-era occupation of the site. Ground penetrating radar (GPR) and magnetometry surveys indicated what appeared to be a relatively large rectangular feature at roughly 80 centimeters below the surface. The 2016 excavations confirmed the existence of a deeply buried Maritime Archaic feature. The feature appears to consist of a vertically discriminate, densely-packed stratum of soil, likely resulting from a combination of human trampling, saturation by sea mammal oil, and redeposition of extant clays in the soil through fluctuating groundwater levels and leaching due to precipitation. The surface of this feature, appears to be, or be proximate to, the Archaic living surface. In fact, the clearly delineated perimeter of the feature does

suggest it was a rectangular structure, although no unequivocal postholes have been documented and the north east portion of the feature was not fully revealed in our excavations. The higher concentration of diagnostic Archaic artifacts, including many woodworking tools and a handful of hunting implements, suggests this was a base camp that was occupied by an Archaic group for a significant period (Wolff and Holly 2017). Seasonality and economic activity data are still lacking, mostly owing to the poor preservation of organic materials at the site; however, it is probably safe to assume based on site location that coastal and/or marine resources were an important component of their subsistence practices. The only unequivocal artifactual evidence of this, however, are a few grooved-cobble net weights.

In an attempt to learn more about the environmental and social context of the earliest inhabitants of Stock Cove, in the summer of 2017 we extended our excavations to the west of the 2016 units. Like in 2016, this was in part to take advantage of Robbins' (1982, 1985) original excavation area at the site to avoid collecting an overabundance of Dorset Paleoeskimo material because he did not backfill his units. While the Dorset period has been the focus of our earlier work (Wolff et al. 2009; Wolff et al. 2010a; Wolff et al. 2014), our questions were centered on the Archaic occupation and, therefore, in an effort to reduce collateral (and extensive) research and unnecessary curation of thousands of artifacts we chose to utilize Robbins' previous excavation area. Despite these precautions, we still recovered over 177 Dorset endblades, 71 microblades, 46 tip-flute spalls, 31 scrapers, 9 Groswater endblades, 6 Groswater knives, and many other formal artifacts associated with the Paleoeskimo occupation of the site. More will likely be documented as we continue to analyze the thousands of pieces of debitage related to those deposits. The extensive Paleoeskimo materials further attest to the intensity of occupation of Stock Cove by those groups and will be presented in great detail in forthcoming publications.

Our 2017 excavations also uncovered significantly more Archaic artifacts, including more net weights, bipoints (Figure 2), scrapers, adzes, axes (Figure 3), gouges, stemmed points, and a large nipple-based spear point (Figure 4), along with other formal artifacts and a high frequency of debitage; however, overall this part of the site seemed to be less intensively used by the Archaic groups that occupied the site, particularly relative to the feature we excavated in 2016. The initial typological assessment of the 2017 Archaic assemblage suggests they were roughly contemporaneous with the 2016 materials, which is not surprising with their proximity. Samples of charcoal collected from the Archaic strata to test this assessment will be sent to the AMS radiocarbon dating lab at the University of Georgia's Center for Applied Isotope Studies (UGAMS). Currently, six samples (all charcoal) collected in 2016 from the Archaic strata have all dated between 4990 ± 25 BP (Cal BP 5863-

Figure 2: Two Rhyolite Bipoints from Stock Cove.

Figure 3: Three Axes from Stock Cove.

5651, 2-sigma, -25.9 δ13C ‰, UGAMS-28002) and 4370 ± 25 BP (Cal BP 5033-4860, 2-sigma, -26.0 δ13C ‰, UGAMS-28003).

We also now have an almost unbroken sequence of dates, with only a single reversal, that appear to date the recolonization of the island by Paleoeskimo peoples following its centuries long abandonment by Archaic groups. Currently, the earliest Paleoeskimo date we recovered at Stock Cove is 2590 ± 25 BP (Cal BP 2760 to 2716, 2-sigma, -24.9 δ13C ‰, UGAMS-27683) and the latest is 1320 ± 30 BP (Cal BP 1070 to 940, 2-sigma, -15.9 δ13C ‰, Beta-3629901), but the latter was on sea mammal bone and the marine reservoir curve has not yet been determined. However, Robbins (1985) reported two dates for the Dorset as late as 1280 ± 60 (Beta-4062, Beta-4065), which may be a better assessment of the end of their occupation. During his work, he noted that there might be an occupational gap between that time and around 1500 BP (Robbins 1985:89), but we have since found evidence that there was no such long hiatus, with dates that fall within that period, but there may have been shorter abandonments of the site, or a less intensive occupation, since there are fewer dates from that time. Our dates do suggest an earlier hiatus between around 1,800 BP and 2,100 BP, which may coincide with the Groswater abandonment and subsequent colonization by Dorset peoples, although there is no clear stratigraphic separation between the two, and this may be a sampling error.

Discussion and Early Conclusions

We have recovered much more evidence of the various cultures that occupied Stock Cove, including the Archaic groups that first inhabited the region. All chronometric dating suggests that this occupation began sometime between 5,600 and 5,800 years ago. The presence of a "nipple-based" spear point, usually a type thought to date to as much as 6,000 years or older, may suggest that they arrived earlier. Regardless of the exact timing, Stock Cove was an attractive settlement location for the earliest peoples to colonize eastern Newfoundland. The possibility they abandoned it around 4,300 years ago, long before they abandoned the western parts of the island, may suggest that whatever the causation that led Archaic groups to leave the island, perhaps it started in the east and made its way westward across the island;

Figure 4: John Garbellano (Graduate Student from University at Albany) Holding Up Nipple-Based Spear Point from Stock Cove.

however, at this time we can only speculate why that may be the case, and until enough Archaic sites in eastern Newfoundland are located and/or excavated that would provide us with a large enough sample size we cannot make more meaningful assessments.

The timing of the Paleoeskimo arrival in eastern Newfoundland may also be recorded at Stock Cove. From at least 2,500 years ago, they camped at Stock Cove. We now have extensive Groswater deposits suggesting they utilized the site area for centuries, with a possible hiatus of around 300-400 years beginning around 2,100 years ago. As mentioned above, the stratigraphy does not reflect such an extended hiatus, so there may be sampling bias in our radiocarbon samples, or the island was experiencing cold, Arctic-like conditions that did not allow much soil formation to occur during that period, reducing stratigraphic separation of the two cultures. This needs to be investigated more closely in the future, and more charcoal samples from the transitional strata will be sent for radiocarbon dating. After about 1,800 years ago we have near continuous occupation until approximately 1,300 years ago or shortly thereafter. The archaeological record at Stock Cove dating to this period is one of the richest collections of artifacts per square meter, if not the richest, of anywhere else on the island. The intensity of the Dorset occupation was at times very great, and we have years of lithic analysis ahead of us to account for it all.

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