

APPENDIX C

HISTORIC RESOURCES IMPACT ASSESSMENT CRÉMAILLÈRE HARBOUR, NOVEMBER 2018

Crémallière, Great Northern Port
Historic Resource Impact Assessment, Stage 1
Archaeological Investigation Permit #18.31



*Penneys Beach and archaeological site Crémallière, Observation Point [EiAv-7]
(GPA image CH 447, 26 August 2018).*

Submitted to
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6 November 2018

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Letter of Transmittal

6 November 2018

Martha Drake
Provincial Archaeologist
Provincial Archaeology Office
Department of Tourism, Culture, Industry and Innovation
Confederation Building, St. John's, NL
A1B 4J6

Dear Martha,

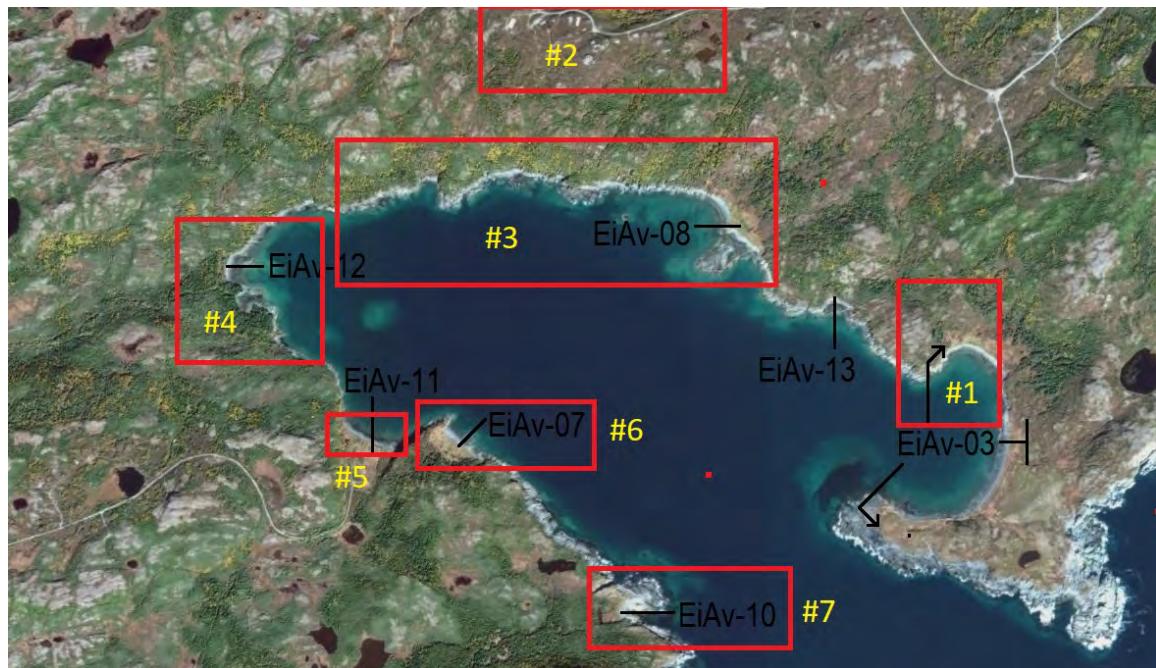
Please find enclosed our report: "Crémallière, Great Northern Port, Historic Resource Impact Assessment, Stage 1."

Sincerely,

A handwritten signature in black ink that reads "Gerald Penney".

Gerald Penney
President

/encls



Crémallière Harbour archaeological sites (Google earth, with labels added by GPA).

Executive Summary

Seven areas of interest (AOIs), which Gerald Penney Associates Limited (GPA) had identified through desk-based archaeological assessment (GPA 2018), were assessed in the field on 26-29 August 2018. As a result of field assessment, the Provincial Archaeology Office (PAO) has determined that there are four new archaeological sites in Crémallière Harbour. However, only one of these (AOI#5/EiAv-11) is in an area where project groundworks are proposed.

A mitigation strategy will ultimately be determined by the PAO and transmitted as terms of reference. However, it is a rule-of-thumb that the best strategy is site protection/preservation through avoidance, if possible. GPA suggests establishing a “buffer” around each site, as delineated during test-pitting and surface survey. (See Appendix D pp. 80-83 for preliminary mapping of a 50 m buffer around principal sites.) At a 15 October 2018 consultation meeting with representatives of Wood plc and GPA, Great Northern Port principals expressed general agreement with the buffering approach, with exact dimensions to be determined by the PAO.

Recommendations from fieldwork include the following:

AOI#1 – Grand Rochelle/North Point

- Establish coordinates for EiAv-03 site west boundary. Buffer distance (50m?), request guidance from PAO and adjust chain-link fence accordingly;
- Exclude NP Hill daymark from GNP fenced compound; and
- Buffer based on waypoints 528-534 a partial perimeter of uninhabitable landforms (open to the east). [Hereinafter the abbreviation “wpt” will be used for waypoints.]

AOI#2 – St. Anthony Air Station

- The projected fuel tank farm will take in a 1968 dump/military equipment landfill site. This dump is not of archaeological interest, but its presence may be taken into account by GNP as an environmental factor.

AOI#3 – Northwest Shore

- At Russells Cove, the Thomas Penney land grant/enclave may be sufficient to protect archaeological site EiAv-08, but should be precisely mapped in relation to wpts 506-524—a perimeter of uninhabitable landforms.

AOI#4 – Crémallière Bay

- The establishment of new site EiAv-12 is based on minor findings of ballast flints (stones, typically from English Channel ports, which were brought over as ballast and dumped when loading fish for the return journey), iron, and vegetable garden drills. Buffer 50 m from shoreline? Note that the projected new road around the harbour is +500 m inland.

AOI#5 – Batteau Cove

- New site EiAv-11 was established based on minor findings of ballast flints, ceramics, and iron. Most of these materials were found on the west side of the cove, which is excluded from GNP’s Crown land application based on a pre-existing land grant per land grant.
- The projected Port Authority and warehouse building footprints are in a previously-disturbed area, resulting from the burial of fish offal from the St. Anthony fishplant.

AOI#6 – Observation Point/Penneys Beach

- The suggested strategy is avoidance during the construction period and after, a buffer zone to be determined by PAO based on wpts 491-503, a perimeter of uninhabitable landforms.
- The projected Warehouse and Distribution Facility may be too close to archaeological site EiAv-07 and its buffer. Once development plans are finalized the placement of this facility should be reviewed and adjusted if necessary.

AOI#7 – Low Point

-New site EiAv-10 (iron and lead materials 70 m inland, previously unearthed by a metal detectorist) should not be impacted by the proposed development and could be protected by buffering/avoidance.

Our field investigations confirm that AOI #6/EiAv-07 has both the greatest potential and greatest potential disturbance from the proposed development. In consultation with regulator, GNP should commit to a specific mitigation strategy for this site.

See also “Recommendations” at pp. 58-61.

Participants

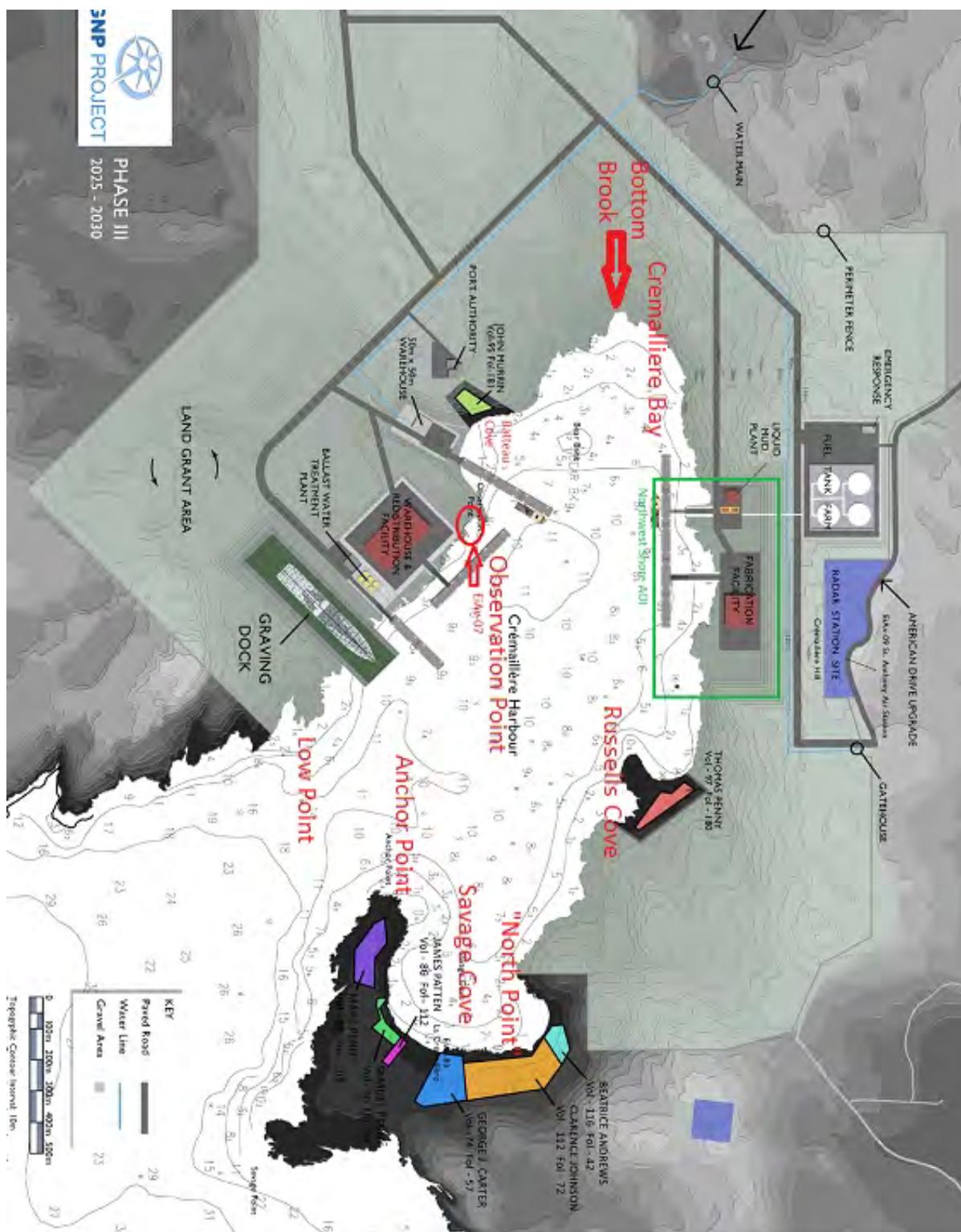
Gerald Penney, M.A.	Principal investigator
Blair Temple, M.A.	Field archaeologist, archaeological research
Toby Simpson, B.A.	Drafting, digital mapping
Robert Cuff, M.A.	Field assistance, historical research, report preparation



Looking south across Savage [Big] Cove from Grand Rochelle, towards Anchor Point and Cape Haut-en-Bas (CH.566).

The assistance of Amanda Crompton and Marc Bolli, boat operator Dwayne Cull, John Erwin and Stephen Hull of the PAO, Frank Ricketts of Wood plc, as well as John Simms, Cyril Simmonds and Maude Simmonds of St. Anthony, is greatly appreciated.

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Projected works for the Great Northern Port by Phase III (2030), with field names added by GPA. Added red oval indicates archaeological site EiAv-07 at Observation Point. We use a field name "Northwest Shore" for the area enclosed by a green box at right (Great Northern Port).

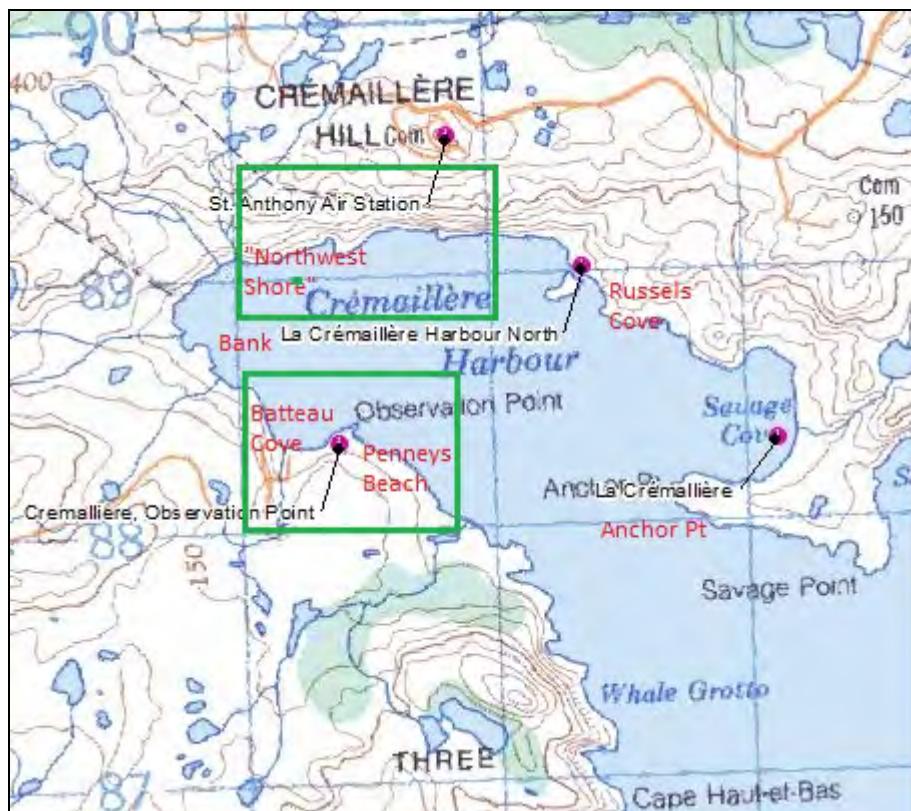
Introduction

In July 2018 GPA was contacted by Wood plc requesting a desk-based historic resources assessment for the proposed Great Northern Port project at Crémallière¹ Harbour, near St. Anthony, Newfoundland and Labrador. Great Northern Port (hereinafter GNP) proposes to develop a marine base to service emergent offshore industry in the Labrador Sea. Our report “Great Northern Port (Crémallière) Desk-based Archaeological Assessment” (hereinafter, DBAA) was submitted on 20 August 2018. It proposed a field assessment of seven areas of interest and formed the basis of an Archaeological Investigation Permit application, under which assessment was conducted 26-29 August 2018 – Permit #18.31. This report combines GPA’s research from the DBAA with results from field investigation and a meeting held with GNP on 15 October 2018 to discuss possible mitigation strategies.

Crémallière was a summer base for the French migratory fishery in the 16th, 17th, 18th and 19th centuries (Tapper 2014), and was a small inshore fishing settlement from the late 19th century until approximately 1915. There are six known French fishing rooms, which are represented by three registered archaeological sites. Four of these rooms are encompassed by archaeological site La Crémallière (EiAv-03, designated 2007; Pope et al 2007). One La Crémallière room,² historically known as *Grand Rochelle*, is very close to GNP’s proposed eastern boundary. A fifth room, *Petit Rochelle*, at Russells Cove, archaeological site La Crémallière North (EiAv-08, designated 2013; Tapper and Pope 2014) is roughly equivalent to an enclave or excluded area, not included within GNP’s Crown grant application area as it is private property. On the south side, a sixth French room, archaeological site Crémallière Observation Point (EiAv-07, designated 2013; Tapper and Pope 2014), is in an area which encompasses most of the proposed GNP facilities, including two buildings, three piers, a container yard and a graving dock. EiAv-07 is the only archaeological site within the Crown grant application area.

¹ Local pronunciation, roughly, cr-MEAL-ya.

² This fishing room was included in archaeological site EiAv-03 based on a brief survey in 2007, but is physically removed from the other three.



Cr  mailli  re Harbour, with approximate locations of previously-known archaeological sites as red dots. Field names are added in red. Green boxes indicate two primary work areas: Northwest Shore at top and, below it, Observation Point (PAO, with additions by GPA).

In addition to Observation Point and area the second principal area proposed for development is the northwest side of Cr  mailli  re Harbour, where there will be a marginal wharf, possible liquid mud plant, fabrication facility and fuel tank farm. The “Northwest Shore” of Cr  mailli  re (see above) is steep-to the salt water and was not used by French fishers or Newfoundland settlers. A proposed fuel tank farm is proximate to a 1953-68 radar station on Cr  mailli  re Hill, which is also a registered archaeological site, St. Anthony Air Station (EiAv-09, designated in 2016).

This report reviews previous archaeological investigations in the Cr  mailli  re area, and summarizes the results of GPA documentary research and field investigations, with a view to developing mitigation strategies in order to identify, protect, and possibly remediate historic resources.



Typical coastline of the “Northwest Shore” of Crémallière Harbour, a small peninsula between MP Cove and FF Cove, off which there will be access to a marginal wharf. Possibly a Liquid Mud Plant will be located at centre (GPA image CH.537).

Study Area/Natural Features

Crémallière Harbour is on the east coast of the Great Northern Peninsula, approximately 2.4 km southwest (SW) of the town of St. Anthony, which is the regional service center for the area. Typical of the eastern or White Bay side of the Peninsula, the land about Crémallière is a hilly barren on the higher ground, punctuated by scrub forest in the hollows, with a rocky coast steep to the shore.

The harbour measures about 2.5 km east and west and 1.2 km north and south and is entered on the southeast through a 550 m-wide passage, of which about 400 m is the navigable ships' channel. Although much of the shoreline is rocky and sheer, there are several cobble and/or coarse sand beaches, the largest and best sheltered being on the east side at Savage Cove (locally, Big Cove³). With the best small-boat landings, closest access to fishing grounds, and ample shore space to dry salt fish, Savage Cove was the focus of most fishing activity at Crémallière in the historic era. There were four French fishing rooms here, designated archaeological site La Crémallière (EiAv-03). West of Savage Cove, there are several much smaller coves, the closest of which is about halfway between Savage Cove and Russells Cove, for which GPAs fieldname is “HW Cove.”

³ GPA employs local nomenclature by preference. However, the cartographic record for the name Anse aux Sauvages/Savage Cove is well established historically, was repeatedly employed by other archaeologists, and so is adopted here.



Savage Cove and archaeological site La Crémallière (EiAv-03), with approximate locations of the principle French fishing rooms added in yellow and GPA field names in red, HW Cove at top, left (Google earth).

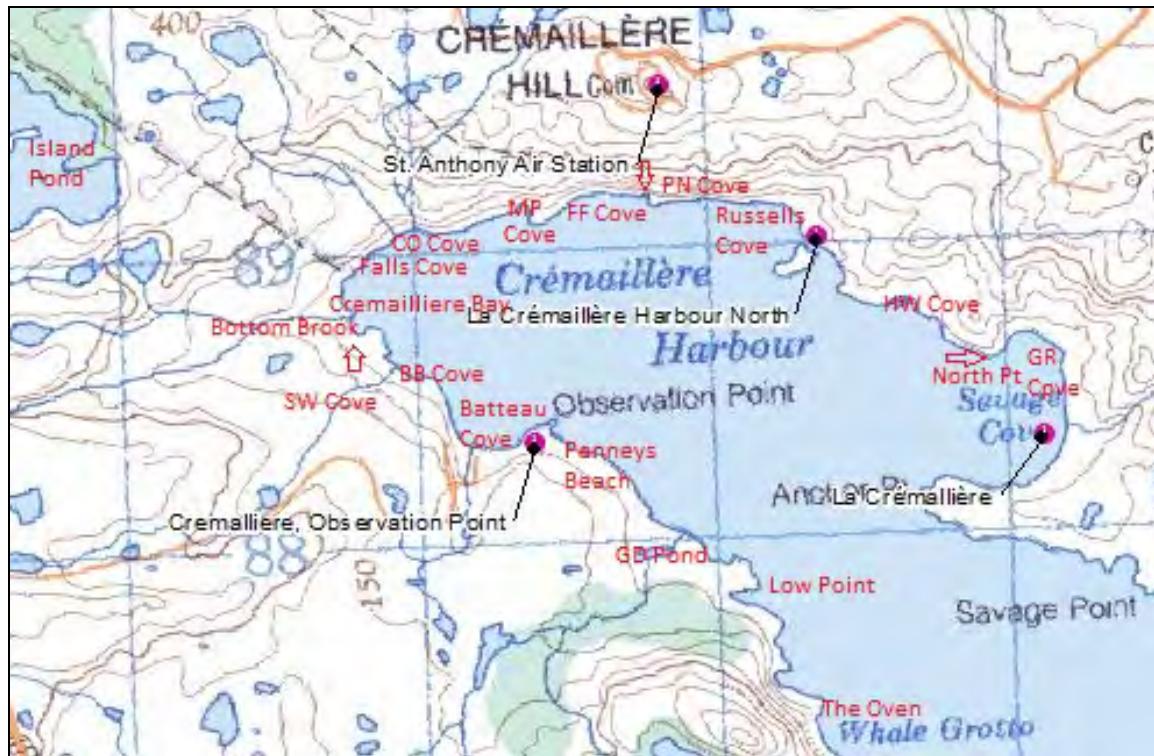
Going west, the next major landing is “Russells Cove,” once a French fishing room, Petit Rochelle. This room is registered as archaeological site La Crémallière North (EiAv-08).



At left, the Petite Rochelle fishing room, from a French chart of 1792. Right, a Google earth image of Russells Cove, its name probably an Anglicization of “Rochelle.”

West of Russells Cove, there are several small beaches (field names moving west: PN Cove, FF Cove, MP Cove and CO Cove), which were assessed in the course of a boat survey as being marginal landings, with virtually no level backing ground. One, “PN Cove,” was identified by boat operator Dwayne Cull as being a place where he

sometimes landed for family picnics, but the beach here was completely boxed-in by surrounding cliffs. The survey team also attempted to visit “CO Cove” overland from Crémallière Bay, but it is blocked by cliffs.



GPA field names around Crémallière Harbour (base map by PAO, additions in red).

The west end of Crémallière Harbour is locally known as Crémallière Bay. Here, a beach approximately 70 m long provides a landing for occasional picnics and mussel-boils, as there is an extensive mussel-bed in adjacent “SW Cove,” as well as sources of fresh water at “Bottom Brook” and “Falls Cove.” There are also small beaches either side of Crémallière Bay: at Falls Cove to the northeast and “BB Cove” to the southeast.

On the south side of the harbour there are larger beaches either side of Observation Point: an approximately 150 m beach at Batteau Cove on the west, and approximately 140 m at Penneys Beach, just east of the Point. A hydrographic feature of interest is a shallow about 350 m north of Batteau Cove, known as the Bear Bank. The French fishing room at what is now Penneys Beach was known as *Banc à l'Ours* – registered as Crémallière, Observation Point (EiAv-07). It will be most directly affected by GNP’s development.



SW Cove mussel beds, looking north. “CO Cove” is right of centre, just left of Mr. Cull’s boat (GPA image CH.619).



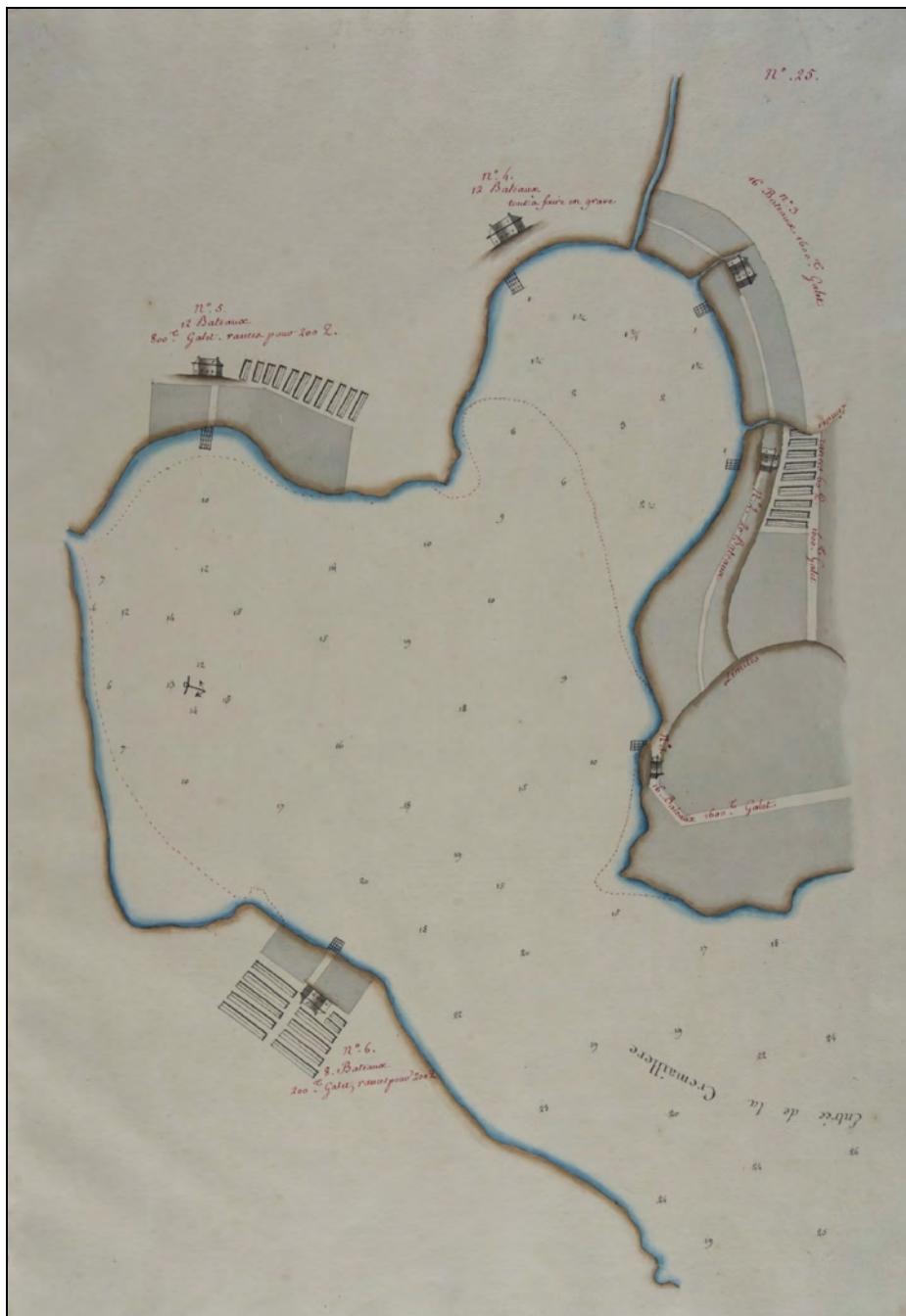
Field names of natural features on the south side of Crémallière Harbour. The Banc à l’Ours fishing room at Penneys Beach was registered as archaeological site EiAv-07 in 2013 (Google earth image with labels added by GPA).



Aerial view of Observation Point (yellow box), Penneys Beach to its left and Batteau Cove to its right, showing vegetation and topography typical of Crémallière Harbour (after Great Northern Port 2017:24).



This view of the west end of Russells Cove show typical rugged country surrounding the major beaches and their anthropogenic clearings, to 50 m asl within 100 m from the high water mark, as at far left (GPA image CH.548).



A chart of Crémallière harbour, Letourneur [1784]. The Banc à l'Ours fishing room and Batteau Cove are at bottom, left, with a structure backed by ten rances⁴ and fronted by two galets, judged sufficient for eight boats. The other five fishing rooms in the harbour are judged 12-20 boats' room, for a total capacity of 84 boats.

⁴ The French distinguished between “galets” and “rances.” *Galets* (Breton; sometimes referred to as *graves* by Normans) are artificial or augmented cobble surfaces where fish can be spread for drying directly on the rocks, generally known in Newfoundland English as “bawns.” *Rances* (literally, “boughs”) may be thought of as low flakes, often with the boughs resting directly on the ground in order to provide for air circulation. A *vigneaux* or *flagues*, is a feature more like a traditional flake. Another term, *cailloux*, refers to pebble, as opposed to cobble (*galet*) beaches.



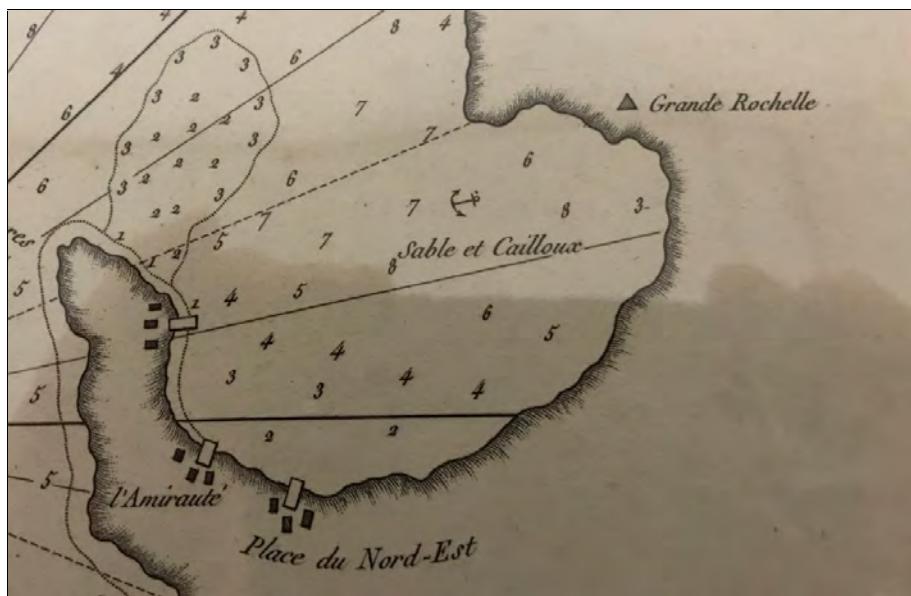
Looking southwest across Crémallière Harbour in 1857. Anchor Point, with its three French fishing rooms, is at centre and the Three Mountain Summits at top, right. Above the bill of Anchor Point, a schooner sails by Low Point (by Rev. William Grey, Centre for Newfoundland and Labrador Studies, MUN).

Historic Context

The potential for either pre-contact or historic-era aboriginal use of Crémallière Harbour is discussed below, under “Previous Archaeology.” Historic-era European use began in the 1500s, with most scholars suggesting that a French migratory fishery to the Petit Nord began about AD 1510. Certainly fisherman from Brittany, and particularly from the ports of St-Malo and La Rochelle, were established on the tip of the Northern Peninsula by 1534, when Malouin explorer Jacques Cartier visited St. Anthony and Quirpon.

Crémallière was likely an established fishing station by 1540, when it was first mapped. It is one of eight French stations at the headlands of Hare Bay, which between them were used by 1500-2000 fishermen each summer. St. Anthoine, Crémallière, Trois Montagnes [locally, Back Cove] and Petite Oie [Goose Cove] are near the north headlands of the Bay. Fischot, Islets Harbour [Zealot], Grandois, and St. Julien are on the south side. In 1640 a Breton petition listed Crémallière’s annual capacity as 300 men making it, with Quirpon and Fischot, one of the largest fishing stations on the Petit Nord. In various

surveys of the Petit Nord from 1640 to 1872 its capacity is listed as being from 40 to 94 boats (Tapper 2014:51).



Detail of the Savage Cove rooms from de Combis (1792). At top, right, a triangle indicates that the Grand Rochelle room was formerly inhabited, but had been absolutely destroyed.

By 1678 the French fisheries at the Petit Nord and the Strait of Belle Isle were estimated to employ 300 ships and as many as 20,000 men annually. The mid-to-late 17th century was the most productive period for the French-Newfoundland fishery, which declined 1689-1713 due to a series of wars between France and England. It revived after 1713, but again ceased temporarily 1756-63, during the Seven Years' War. This French hiatus coincided with the initial English "northern fishery," whereby fishers from the West Country of England and northern Newfoundland occupied many of the former French stations. Crémallière was so occupied, but on a small scale, being used by a single English ship, with four boats and 24 men in 1764. By 1766 the French had returned and had 50 boats working out of Crémallière.

Two detailed charts of Crémallière were produced in the late 18th century: Letourneur (1784?⁵) and de Combis (1792, based on observations taken in 1786). There is also a

⁵ This collection of roughly-drawn charts was dated by Pope to around 1780 and by Tapper to 1784. Note that Letourneur indicated two active fishing rooms which were noted as being "*habitée autrefois... absolument détruit*" in 1786.

near-contemporary (1785) inventory of shipping, which shows eight vessels of St-Malo fishing out of the port, its ship tonnage was exceeded by only three other harbours of the 32 surveyed: Quirpon, St. Juliens and Crouse.

From 1795 to 1815 French activity was again curtailed by war. Crémallière was noted as being a focus of fishing activity early in the 19th century, and seems to have been visited by three to six French vessels in some years. Noted as being fished in 1821, 1832, 1848 and 1857, by 1872 St. Anthony and Crémallière were the only harbours in the Hare Bay area still frequented by the French. Their use of Crémallière probably continued to about 1880. As the French fishery to the Petit Nord declined, English/Newfoundland year-round settlement became established at many of their fishing stations. Some of the first settlers were families of *gardiens*, Newfoundlanders engaged to protect French fishing establishments during the winter months. They also traded with the French crews in timber, boats, and bait. The *gardien* system was in use by the 1820s, and there were *gardiens* in most principal harbours by 1850.

Crémallière first appears in a Newfoundland *Census* in 1857, with a population of nine, comprising a single family headed by a man over 70 years of age – perhaps an aging *gardien*. This was the same year that English missionary Rev. William Grey visited and sketched its fishing rooms: “mostly large tents, set up for the summer fishing season and taken down when the fishermen return to France in the autumn.” In the 1860s a boom in the population of Twillingate and western Notre Dame Bay (where the Tilt Cove copper mine was established in 1864) led to a Newfoundland-based migratory fishery at the former French stations. The Newfoundland-French Shore fishery has been little documented, but it was probably the source of most fishers recorded as living in Crémallière in the late 19th and early 20th centuries. The earliest documented residents were John Patey⁶ and family in 1872. In 1874 there were 18 people, three houses and three fishing rooms in use. Other *Census* records 1884-1911 indicate three or four

⁶ In 1926, when Thomas Penney was granted the former Petit Rochelle room at Russells Cove, the land adjacent to the north was noted as being occupied or claimed by John Patey (see p. 52). This family name, common at St. Lunaire, St. Carols, and St. Anthony, does not appear in the business directories for Crémallière.

resident families and a population which fluctuated between 12 and 26. From business directories and church records we know who these families were.

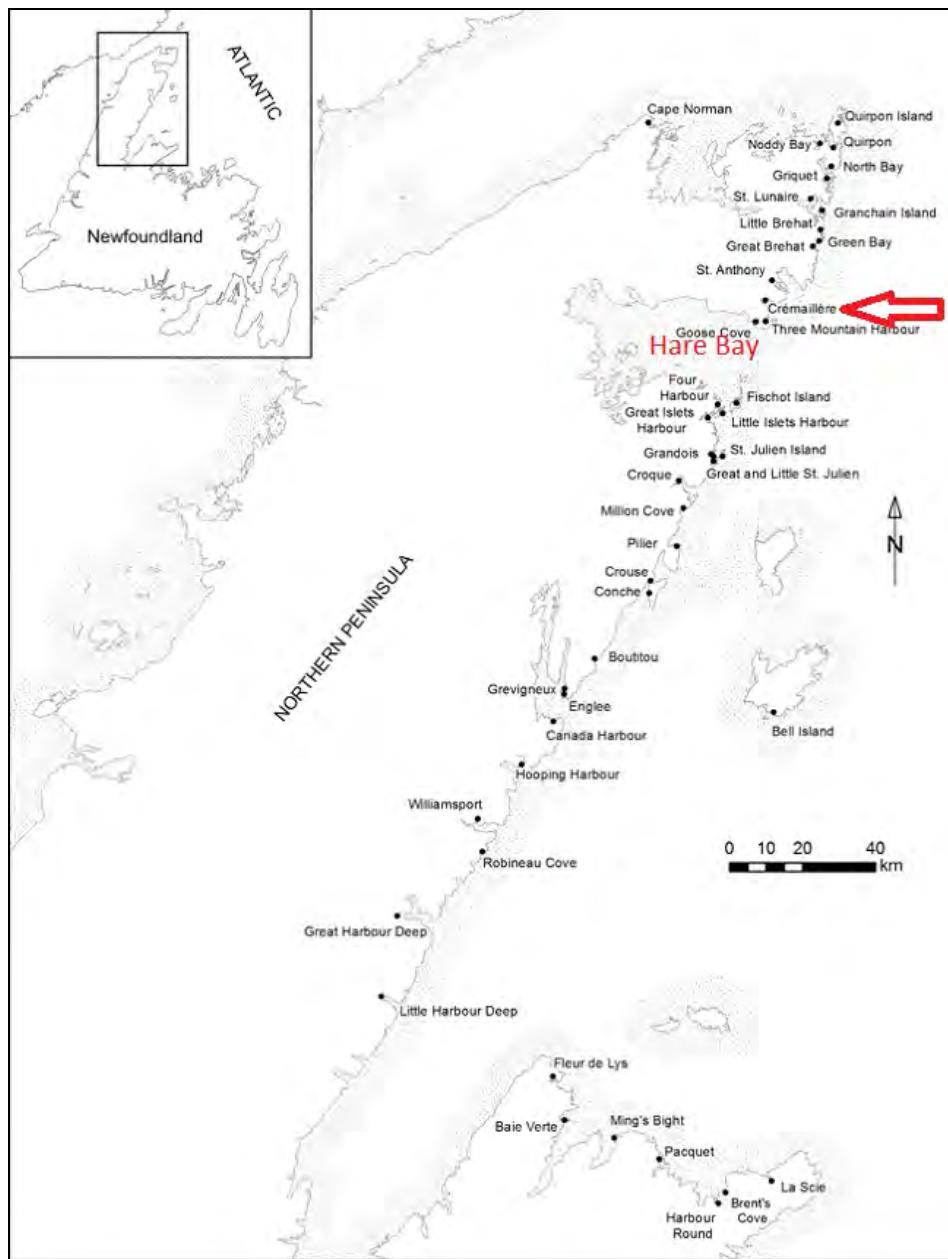


Detail of Savage Cove from Pierre (1860). There are three numbered French rooms on the south side of the cove. Three structures on the north side may represent the homes Newfoundland settlers. They are indicated by an added red arrow, with a red circle showing a wharf or stage, very near where Mr. Cull chose to land the survey team (wpt "Wfpt"). Note the path ("sentier") at top, right, connecting both the French rooms and northside structures to St. Anthony.

George Cadwell (1854-1917) and George Frampton (1845-1932) came from Harbour Grace and Carbonear respectively, marrying women from the French Shore, likely of the Patey or Rose⁷ families. Alfred Rice (1849-1912) was born at Twillingate, while the French-born Louis Pasma (1837-1898) had married a Newfoundland woman at St. Anthony about 1867. Crémallière last appears in the *Census* in 1911. By the next *Census* (1921), Pasma, Rice and Cadwell were all dead and Frampton was living at Norris Arm. Alfred Rice's son, John Rice, moved to Back Cove [Three Mountain Harbour] in 1915, this being the last certain record we have of year-round settlement.

⁷ The principle family name of Three Mountain Harbour.

Very likely the “abandonment” of Cr  mali  re in 1915 was followed by a new influx of summer fishers. Crown land grants were obtained at Anchor Point 1915-18 by residents of St. Anthony, Freshwater (Carbonear) and Flat Islands, Bonavista Bay, while John Murrin of Goose Cove and Thomas Penney of St. Anthony obtained grants at Batteau Cove (1924) and Russells Cove (1926), respectively. It continued in use as a summer fishing station until about 1935.



French fishing stations of the Petit Nord (from “Newfoundland’s Petit Nord: An Historic Maritime Cultural Landscape” / http://niche-canada.org/member-projects/petit-nord/fishing_stations.html).

Previous Archaeology

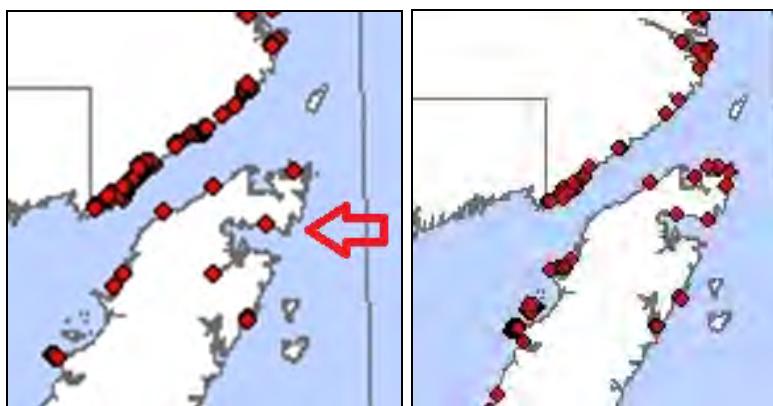
While there is no documented pre-contact or historic aboriginal presence at Crémallière Harbour, the Great Northern Peninsula has a wealth of archaeological sites, including multi-component sites (exhibiting evidence of more than one culture). The best known of these are near Port aux Choix, about 140 km to the SW of Crémallière, designated a National Historic Site. Another concentration of pre-contact sites is in the Cape de Grat-Quirpon area, about 30 km to the north and proximate to another National Historic Site, the Norse settlement at L'anse aux Meadows.

Pre-contact cultures of Newfoundland. The first recorded cultural group on the Island were the Maritime Archaic Indians (MAI), who arrived about 4000 BC, the earliest evidence coming from the Gould site at Port au Choix. This is also the location of the well-known MAI cemetery site excavated in the 1960s after it was accidentally discovered during mechanical excavations for a building foundation. The closest MAI site to Crémallière is at Ireland Bight, about 10 km west of the GNP Project Area.

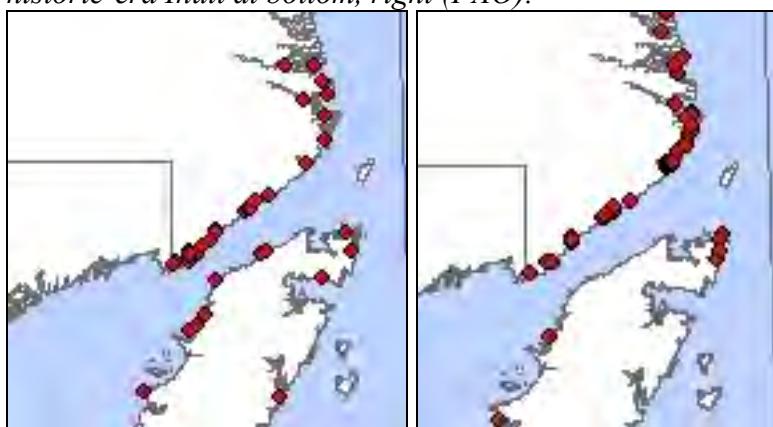
MAI sites have not been found after approximately 3200 BP [1300 BC], and it may be that the Island was not peopled for the next 200-300 years. It was repopulated approximately 2990 BP [about 1000 BC] by Groswater Paleoeshkimos, who also arrived from Labrador, where they had existed for two centuries previous. During the last centuries of Groswater occupation, two additional groups arrived from Labrador: Dorset Paleoeshkimo, and the first Recent Indians groups.

Dorset, who first arrived approximately 2000 BP, became the most populous and widely distributed pre-contact group in Newfoundland. They had an even greater marine-oriented subsistence than Groswater, focusing on seals, supplemented by birds and fish. Seal procurement occurred at sites located along the coast, often at highly exposed headlands. The closest Palaeoeshkimo sites are at Goose Cove, about 4 km to the SW of Crémallière, while there are many others in the Quirpon-L'anse aux Meadows area.

Meanwhile, a wave of Amerindians – referred to as Recent Indians – arrived approximately 2100 BP. The last pre-contact Recent Indian culture, known as the Little Passage complex, may be thought of as ancestral Beothuk. Little Passage culture had a mixed interior-coastal subsistence pattern. Encounters with Europeans in the 16th century had a gradual effect on their material culture through the adoption of metal. It is these European materials, primarily acquired by pilfering from fishing stations during the winter, which distinguish Beothuk sites from pre-contact. From the 16th century onward, the expansion of the European fishery and eventually settlement resulted in a contraction of the area typically inhabited by the Beothuk. They would become concentrated in the Notre Dame Bay area and eventually forced into the interior. The Recent Indian site closest to the study area is Ireland Bight (EiAw-01), about 10 km west. The only proximate Beothuk site is at Four Harbour, near Fischot and the south headland of Hare Bay, about 20 km SSW of Crémallière.



Distribution of archaeological sites (as of 2015) at the tip of the Great Northern Peninsula: MAI at top, left; Palaeoeskimo at top right; Recent Indian at bottom, left; and historic-era Inuit at bottom, right (PAO).



In the midst of this dual (Dorset and Recent Indian) occupation, the Norse arrived. Their arrival is a significant contact event between North Americans and Europeans, while the 1960s discovery and excavation of L'anse aux Meadows, 30 km NE of the study area, was a landmark in the history of archaeology.



Proximity of the pre-contact (Dorset) sites at Goose Cove (added red arrow) to Cr  mailli  re, indicated by a green arrow (PAO).

Very little is known about Beothuk presence on the Northern Peninsula, as it may be that by the time of contact they were already focused on the Exploits River system and western Notre Dame Bay. This concentration increased as the Beothuk withdrew from the areas most frequented by European fishers, including the Petit Nord, which was the part of Newfoundland most frequented by Europeans in the 16th and 17th centuries. There is also evidence that the Petit Nord fishery encouraged visits to the tip of the Great Northern Peninsula by aboriginal groups from Labrador, who engaged in both trade and winter pilfering. Inuit and Innu presence may have further encouraged the Beothuk to go

elsewhere. Inuit were recorded from the late 1500s to late 1700s, while Innu persisted into the late 19th century. There is vague report of a continuing Beothuk presence in Hare Bay in the late 17th and early 18th centuries, with the primary documented instance 1718-20 being based on report of the Innu (Marshall 1996:40, 53, 57), which is not located more specifically than *Baie des Lièvres* [Hare Bay]. Both Inuit and *sauvages rouges* looted rooms at Hare Bay during the winter, and sometimes burned boats to obtain nails.

Pre-contact site potential

Although there has not yet been a focused archaeological investigation of the north side of Hare Bay concentrating on pre-contact and historic presence of native peoples, an inventory of Petit Nord fishing stations indicated a Palaeoeskimo presence at nearby Goose Cove, 4 km SSW of Crémallière. This brief survey of French stations found a Dorset-style end blade and a worked core from shovel test at Goose Cove North (EhAv-02), as well as a possible Dorset rock and sod dwelling foundation at Goose Cove South (EhAv-01). Other than its proximity to known pre-contact sites and a vague documentary reference to Indians in Hare Bay, there are some further indications of pre-contact site advantage at Crémallière, particularly so for the Dorset culture, which favoured headlands and exposed situations on the outer coast. It should also be noted that GNP's proposed development is based on Crémallière Harbour being naturally ice-free, which may be presumed advantageous for hunting marine mammals. Certainly the highest expectation based on pre-contact site advantage is at Anchor Point/Savage Cove, which has the best access to headland marine resources. Further, the place name L'anse aux Sauvages/Savage Cove likely had its origins in some post-contact aboriginal presence. Another headland location of interest is opposite Anchor Point, at a point on the SW side of the entrance, which GPA has given the field name "Low Point." It is about 200 m SE of the footprint of the proposed graving dock.

Archaeology of the Petit Nord

In 2004, to commemorate the 500th and 100th anniversaries of French arrival and departure from the Petit Nord, the Social Sciences and Humanities Research Council of Canada funded a multi-year project headed by Memorial University's Peter Pope to

investigate and document the archaeology and maritime cultural landscapes of the east coast of the Great Northern Peninsula. The purpose of the study was to inventory, and register as archaeological sites, approximately 40 locations where French presence was known from documentary sources.

In 2007 Crémallière was visited at Savage Cove and registered as La Crémallière (EiAv-03), following a brief survey finding “decisive artefactual evidence of French presence and some interesting features” (Pope et al 2008). It was suggested that further archaeology on this site could be productive. The following year Pope’s team also visited nearby Goose Cove and Three Mountain Harbour, again briefly (Pope et al 2009). In 2013 a supplementary field survey of French fishing rooms visited other areas indicated by the cartographic evidence assembled for the larger project. This resulted in identification of further evidence of the historic French fishery at Three Mountain Harbour East and at Observation Point and Russells Cove (Tapper and Pope 2014).



The main beach on the east side of Savage Cove as it appeared in 2007, looking north from Anchor Point. At left, an area of outcrop/cliff forms a physical boundary between the principal French rooms and Grand Rochelle (after Pope 2008).

Field Investigation

AOI#1 – Grand Rochelle/North Point (field investigation 28 August 2018).

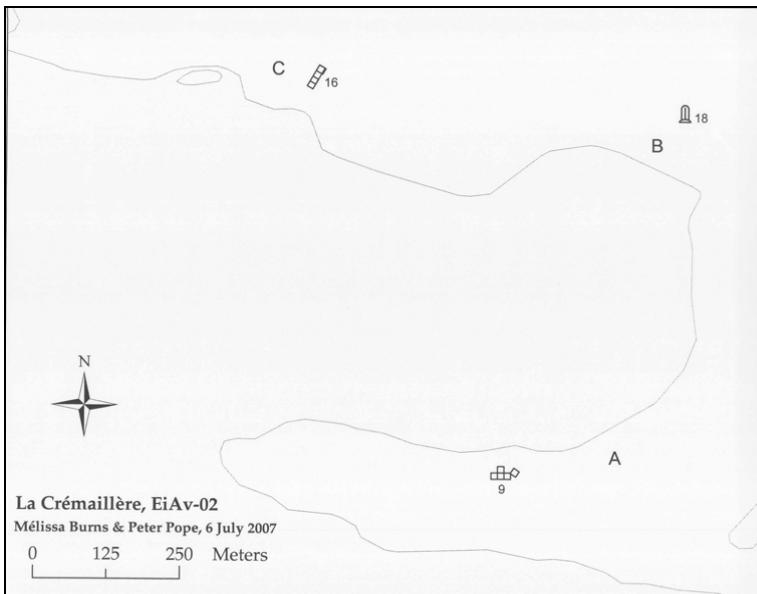
The former Grand Rochelle fishing room is the portion of EiAv-03 adjacent to GNP's Project Area, which is approximately 100 m to the west and north of the west end of Grand Rochelle beach (wpt "Groch"). Although there are no wharves or buildings being proposed here, GNP preliminary sketches anticipate building a chain-link perimeter fence running north from the bill of North Point and running east from "NP Hill." In this light, the headland and hill at North Point were surveyed for pre-contact historic resources and French "daymarks" in proximity to Project Area boundaries, and in light of the fact that minimizing project impact on EiAv-03 is one of GNP's primary commitments. For figures illustrating waypoint and test-pit locations, see Appendix C.

The La Crémallière/Savage Cove/EiAv-03 site includes the entire cove, a curving beach approximately 1200 m long and terraces 100 m and more inland. GPA's field survey concentrated on the northern cove (field name "GR Cove") for two related reasons. Firstly, it was obvious from desktop review that a map included in the 2007 report which resulted in EiAv-03 being designated a site was either erroneous, or the data present in text was not consistent to that depicted on the map (see overleaf).⁸ Second, the north portion of Savage Cove borders on the south boundary of the proposed marine base Crown land grant application, so delineating the site was a prime purpose of the field investigation.

Upon landing at the beach at the far NW end, investigation by Mr. Temple began with a surface survey of the beach eastward and southward, to a rocky cliff along the east end of

⁸ The 2018 testing and investigations found an error in either the mapping and/or recording of EiAv-03. Pope's map of EiAv-03 (Pope et al 2007, overleaf), illustrates the location of three primary finds (or concentrations of finds): Area A, B, and C. The present issue lies with the depiction of Area C: the limited discussion in the report, and the more detailed discussion in the site's Site Record Form, indicate that this Area is located on the north side of Savage Cove. However, the report map illustrates Area C as further NW, in our "HW Cove." Due to the high and thick vegetation growth during our visit in late August, the features identified by Pope – a linear stone feature, and a possible sod foundation – could not be discerned. The map accompanying the original SRF shows that the site is contained within Savage Cove, and the map in the report erroneous.

the harbour.⁹ Ballast flint was identified primarily at the furthest north part of the harbour (wpt “BALL11”, “BALL12” and BALLOTS”); a pipe stem fragment (wpt “STEM”; not collected) was identified near the SE end of the survey area; and two sherds of coarse earthenware – one unidentified, and another possible Breton – were collected along the NE shore (wpt “CEW” and CEW2”).



Site plan, illustrating some of the features identified at EiAv-03 [not 02] in 2007 (Pope et al 2007:n.p.). Just left of “C” is the small cove given the field name “HW Cove” by GPA.



GR Cove, EiAv-03. The newly-recorded finds-area indicated within the red block. The fenced lot is visible at centre.

⁹ This can be viewed as a physical separation between Grand Rochelle and the other French rooms represented by EiAv-03.



Surface survey specimens (EiAv-03): unidentified coarse earthenware (left); possible brown faience hollowware vessel (right; inset shows opposite side of sherd).

Investigation inland above the beach began at the south end of GR Cove. Here, the area contains two terraces, the upper covered in knee- to waist-high brush. It was well beyond the boundary of the proposed marine base Crown land application, and lay partly within a swath of private land grants, thus no test pitting was conducted along the north and east end of GR Cove. The ground was investigated for surface features to assist in correcting Pope's map, but nothing conclusive was identified. Traces of a potential *galet* (extensive cobble and pebble) were identified underfoot on the lower terrace, for a length of approximately 55 m along the base of the upper terrace (wpt "059" through "067"). Foliage was largely raspberry bushes. During the boat ride to the beach a series of wooden posts were visible on the upper terrace, determined to be a post and rope "fence". They are clearly modern, presumably placed by an individual to mark an existing land grant or claim (marked portion is approximately 20 m × 20 m), perhaps in response to the proposed development (wpt "FENCED", "056", "057" and "058").

Bearing in mind the presumed changes in vegetation overlying any former structures and other features as noted by Crompton and Bolli during prior consultation (and observed at EiAv-07), two anomalies were observed. One is located on the outer edge of the upper terrace (wpt "STR?"), and is a noticeable change in vegetation, approximately 4 m × 6 m

in size, with a depression in its centre. The other is on the lower terrace (wpt “STR2?”), visible as a roughly square patch of cow parsnip, approximately 4 m x 4 m in size.



EiAv-03 (GR Cove), showing vegetation changes and a possible structure or feature on the lower terrace.



Dismantled cairn or daymark, at the crest of NP Hill, wpt “Noprhill” (CH.587).

Mr. Cuff proceeded around our “North Point” toward the proposed GNP boundary. The top of “NP Hill” has a lichen-encrusted and dismantled rock cairn or daymark (wpt “Noprhill”). It was during this investigation that a cleft was identified, heavily used by the local moose, which allowed overland travel between the Petit Rochelle room at Russells Cove and the main French establishments of Savage Cove.

GR Cove is the presumed location of “several rock alignment and sod foundations” identified by Pope (Pope et al 2007:5). The Site Record Form for EiAv-03 states: “Feature 16 is a north-south rock alignment in the meadow of Area C with the associated square sod foundation immediately to the west of it. Feature 17 is 3 or 4 tabular rocks on a promontory above Area C.” Due to the height of ground cover and foliage, no such features were identified, though a roughly flat platform-type area was observed and a single test pit excavated (wpt “C80”), with no cultural material identified. A possible ramp was recorded to the immediate east (wpt “RAMP”), likely a cultural modification of a natural cut in the terrace edge.

Testing along the furthest west portion of the lowest terrace at GR Cove, immediately above our landing area at wpt “Wf Pt,” proved most productive. Ten test pits were excavated along an approximately 70 m stretch of shoreline immediately above the beach. Two contained cultural material, evidence of French occupation. Test pit C86 contained two nails, a sherd of TGEW, a sherd of REW (possible creamware), and a sherd of possible Breton CEW. Another test pit at “GR 5” approximately 20 m NE, produced two nails and another sherd of possible Breton coarse ware. Test pit C86 is the closest to the proposed GNP boundary/perimeter fence, approximately 75 m away. These finds point to a 19th century (possible 18th century) component, warranting mitigation, possibly in the form of avoidance (discussed below).



Tin-glazed earthenware (left, test C86) and possible Breton coarse earthenware sherds (centre, C86, and right, GR5).

With a view to possible mitigation, a survey of each of the known French fishing rooms included a “perimeter survey,” whereby Mr. Cuff made a series of forays inland to points where the “grass-grounds” petered out into scrub and the land was judged unsuitable for habitation, either from slope or wet ground. The west and north perimeter of the GR Cove portion of site are represented by wpts 529-534.



GR Cove, looking southeast from wpt 529, the approximate location of perimeter wpt “532 pic” added (CH.594).



Perimeter photo, the base of an uninhabitable scree slope, wpt “532 pic” (CH.598).

In order to further investigate the possible 2007 recording error, Mr. Temple proceeded to the indicated cove west of “Area C,” for which GPA’s field name is “HW Cove.” Surface survey along the beach identified ballast (wpt “FLINT”); subsurface testing (n=7) recorded nails in two test pits (wpt “CV02” and CV04”). These isolated finds are not especially diagnostic, but the situation of HW Cove halfway between EiAv-03 and EiAv-08 is certainly suggestive of possible traverse. The site has been registered and designated EiAv-13.



HW Cove, barred by a shoal at low tide.



St. Anthony Air Station (1953-68) on Crémallière Hill (after GNP Project 2017).

AOI#2 – St. Anthony Air Station (field investigation 29 August 2018).

The site boundaries of EiAv-09 are based on land granted for a United States Air Force radar station in 1953, and are excluded from the GNP Project Area. Many foundations were readily observed at surface and historic aerial photography assists in delineating this site, which consisted primarily of a radar array to the east of a central peak and barracks and service buildings to the west. We visited the Air Station by road and conducted a walkover in order to assess site condition and facilitate GNP's commitment to additional buffering, if necessary. No test-pitting was conducted.

The ruins are easily accessible by gravel road and much visited for their view of the surrounding area and Crémallière Harbour in particular, with attendant graffiti on remnant concrete walls, while the more accessible areas are polka-dotted with the pot holes of metal detectorists. The Air Station was systematically dismantled, so that what remains are primarily concrete structural foundations, which are being progressively invaded by alders. We also visited a large disturbed area about 300 m west of the Air Station (wpt "Ddump"), where we had been informed a large amount of equipment (reputedly including entire vehicles) had been buried when the base was de-

commissioned. We concluded that this dump site is likely included in an area proposed by GNP for its fuel tank farm. Being post-1960 it is not of archaeological interest, while the main site is confined to a previously identified enclave. It does not seem to be at risk from GNP's project.



Proposed development areas and the excluded grants on the Northwest Shore of Crémallière Harbour (GNP, with labels added by GPA).



From the St. Anthony Air Station, looking southwest towards Crémallière Bay, across the area proposed as a fuel tank farm, at centre and right (CH 710).



Looking southeast from St. Anthony Air Station ruins, towards Savage Cove. Cape Haut-en-Bas at far right, with Goose Island (NTS Notre Dame Island) beyond it. About 3 km south of Savage Cove, Goose Island is a well-known cod-fishing ground (CH.717).

AOI#3 – Northwest Shore (field investigation 28 August 2018).

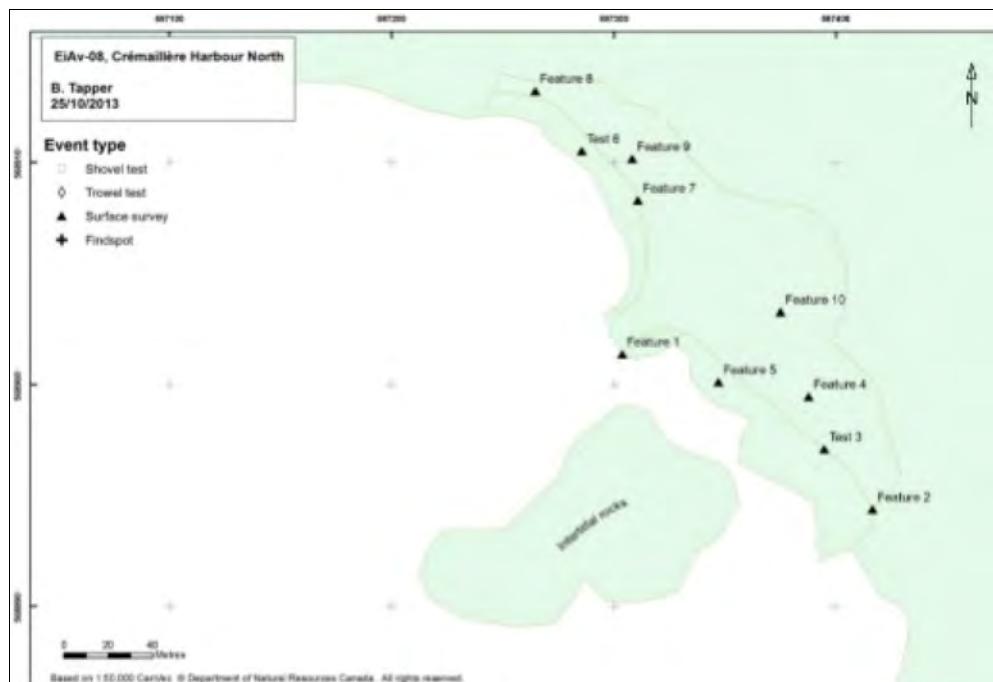
During our 28 August boat survey, GPA assessed EiAv-08 at Russells Cove, and possible landings at four small coves to the west which were given the field names PN Cove, FF Cove, MP Cove and CO Cove. The two central coves will be impacted by the projected building footprints of the Fabrication Facility (“FF Cove”), the possible Liquid Mud Plant (“MP Cove”) and associated wharves.



Russells Cove, looking east from wpt 507 (CH.550).

To the southeast of the Air Station, EiAv-08 at Russells Cove includes the Petit Rochelle fishing room. This site is excluded from Project Area, as granted to Thomas Penney in 1926. The nearest work area is the projected Fabrication Facility, about 350 m to the NW. However, further delineating this small site was undertaken in order to determine whether the allotted buffer is sufficient (approximately 360 m along the shore, and a minimum of 80 m from the beach and shoreline). To this end a “perimeter” was walked around the site, represented by wpts 506-524. Each of these points denotes either an uninhabitable slope or bog, the farthest inland being wpt 510, at about 160 m inland and 26 m asl.

Surface survey commenced at the NW end of the beach (foreground, p. 35). Between this end and the rocky, drying shoal at centre, several ballast flint find spots were recorded over an approximately 80 m length of the inter-tidal zone (wpts “BALL”, “BALLL”, “BALL2”, “BALL3”, “BALL4”). Immediately SE of the shoal, ballast flint was again recorded on the beach (wpt “BALL6”).



Site plan, illustrating features recorded at EiAv-08 in 2013 (Tapper and Pope 2014:Map 7).

Subsurface testing above the beach was kept to a minimum, due largely to the fact that it is a known French fishing room from previous archaeology and has since been identified by GNP as private property. Limited testing along the periphery at either end of the beach

identified no artifacts, other than a nail and an unidentified iron fragment from a test pit at the far SE end, on a low terrace (wpt “C67”).



Petit Rochelle/Russells Cove, looking west from wpt 521. In the foreground, above the shovel blade, Mr. Temple and test C67 (Ch.554).

AOI#4 – Crémallière Bay (field investigation 28 and 29 August 2018).

While there is no indication of French/livyer fishing rooms in the western part of the harbour, locally known as Crémallière Bay, there is a small cove/beach which could have been used for access to the interior, or to winterhouses. “Bottom Brook,” which runs out into a shoal- and mussel encrusted cove to the south (“SW Cove”) is also a potential indicator of site advantage. The main beach was investigated, as was a small cove to the NE (“Falls Cove”), but we were “cliffed-out” without reaching “CO Cove,” further NE. Another small beach, with close access to the Bear Bank shallows (“BB Cove”) was also investigated by traverse from Batteau Cove.

Most testing in AOI #4 was conducted on a terrace above the “main beach” at Crémallière Bay, although the beach itself yielded a single locus of ballast flint (wpt “BALCH”). Surface survey of the flat shoreline above determined that much of the area is wet, and it became moreso during our return visit, when it rained most of the morning.

Testing resulted in limited cultural material. A single test pit (wpt “C95”) produced two nails and a fragment of unidentified iron. Testing exposed evidence of possible *galet*, but it was concluded that this was likely natural (wpt “C96COBBLE”). Cultural usage of the cove was confirmed however, during a final surface survey of the southern end of the shore, when probable vegetable garden drills were identified underfoot at the far south end of the grassy area, measuring approximately 5 m × 5 m (wpt “CGARDEN”). This cove is registered as EiAv-12.

NE of this main cove, a small cobble beach backed by a falling brook (field name, “Falls Cove”) yielded two pieces of ballast flint at surface (wpt “BALL10”), but two test pits yielded no cultural material. The cove does have an ideal fresh water source, so offloading of ballast for taking on water could account for the flint. On the north side of Falls Cove a small cave was observed in the cliff.¹⁰ Three test pits within the cave yielded no cultural material.



Terraces at Batteau Cove, looking west from Observation Point over the outlet of a brook. The fields at left contain numerous large pits (CH.483).

¹⁰ This cave was observed while traversing the beach and rocky shoreline in an unsuccessful attempt to access a small cove visible along the north shore of Crémallière Harbour, our field name being “CO Cove.”

AOI#5 – Batteau Cove (field investigation 29 August 2018).

To the west of Observation Point, Batteau Cove was judged in the DBAA to have site advantage as a small-boat landing and access point to the interior. Although it was not a French fishing room, it was identified in 1792 as a good place for habitation. This area on the west side of the cove was incorporated in a land grant issued to John Murrin of St. Anthony in 1924. Local information is that Mr. Murrin actually lived at Goose Cove, where he died in 1949 and where his descendants may still be found. While the Murrin grant is excluded from GNP's application, much of the remainder of Batteau Cove will be developed for a Port Authority building, warehouse and finger pier. Batteau Cove can be accessed by what is locally known as the "Japanese Road," constructed to access a proposed whaling station that was never built because of the international ban on commercial whaling in 1972. This project caused significant ground disturbance at Batteau Cove, including the pouring of a concrete foundation.

Investigation began with a surface survey of the entire beach, east to west. Ballast flint was observed on the beach at six locations, from end to end. A sherd of unidentified refined ware (possible a stone china cup) was identified (wpt "RSW"), and a small sherd of Normandy stoneware was collected (wpt "CEW3"), both towards the western or "John Murrin" end, proposed in 1792 as a house site.

Test pitting and traverse of the large fields above the beach was truncated by extensive disturbance. Traverse through the waist- to chest-high foliage encountered numerous large pits, apparently excavated by Fishery Products during the 1970s for dumping fish offal from their plant at St. Anthony. These pits are located throughout the entire width of the field (excluding a narrow strip east of the brook), and as far inland/south as the upper gravel road, approximately 145 m from the beach. Limited test pitting did record cultural material (such as nails in test pit "CBC2") though the obvious and extensive signs of disturbance negated any further testing.

The east side of Batteau Cove, south of the beach and east of the brook – is comprised of beach rock for approximately 30-35 m from the beach, a possible *galet*. Above this is

evidence of garbage dumping, including large sections of structural concrete which may be remnant of the abortive whaling station (wpt “CONCC”). Regardless of these disturbances, evidence supports the interpretation of the cove as a former French station. The site is designated EiAv-11.



Penneys Beach, Observation Point, and Batteau Cove, looking south from the St. Anthony Air Station. The south side of Hare Bay is visible at horizon (CH.696).



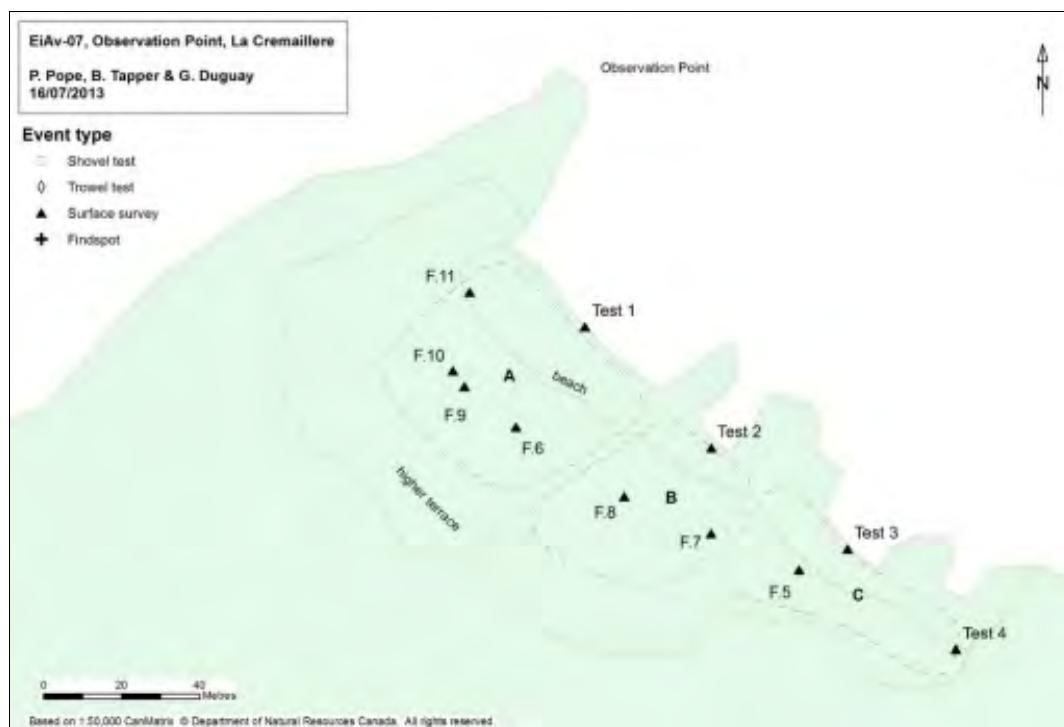
Ceramic fragments and a cut nail resting on rock/galet, directly beneath the sod, at Penneys Beach, wpt “Bop 17,” see artifact photo at p. 44 (CH.508).



Positive test “Bop 14” on a seeming “ramp” providing access between Penneys Beach and galets (CH.502).

AOI#6 – Observation Point/Penneys Beach (field investigation 26 and 27 August 2018).

As Observation Point, EiAv-07 and area will be the most impacted by construction activities, including a warehouse/distribution centre and a marginal wharf which, coupled with the Batteau Cove finger pier, will surround this archaeological site, which was the first priority of the HRIA. GPA proposed a day to survey and test EiAv-07 (in the event, a day and a half), in order to gain a better understanding of the site's preservation and extent, and to recommend appropriate site buffers and a mitigation strategy if warranted. Investigation by Tapper and Pope (2014) and Crompton and Bolli (2016, 2017) had posited EiAv-07 an “undisturbed” French fishing site, dating to the 17th to 19th century. This, coupled with its proximity to proposed development, indicated that disturbance could occur, and site delineation was necessary.



Tapper and Pope's results had bearing on the methodology and focus of GPA's 2018 test pitting. Their investigation identified features such as a stone-lined (?) well (Feature 7), *galets* (Feature 6) and a possible ramp from the lower to upper terrace (Feature 11). Also recorded were surface evidence of two possible structures: one in the centre of the lowest terrace, and another westward on the same terrace. The western feature (Feature 7; wpt "PF7") is described as measuring 5 m × 12 m. Northeastward, Feature 8 (wpt "PF8") measured 5 m × 6 m and "is more obviously enclosed by slight earthwork banks" (Tapper and Pope 2014:13). Crompton and Bolli's aerial (drone) investigation of the site, and subsequent infra-red imagery, identified three possible structural features, two consistent with those recorded by Tapper and Pope, and another further to the NW (ESE of the well). While our testing was intended to cover the entire open space, and primarily, its periphery in order to delineate the site, acquiring evidence of these possible features was an additional goal. "Perimeter" wpts 491-503, generally 75-100 m inland, represent an uninhabitable slope. Investigation began with a surface survey of the beach and exposed bank, west to east

(accurately, NW to SE). A concentration of ballast flint was identified at the far NW end, nearest Observation Point (in Tapper and Pope's Area A); no other finds were observed.¹¹ Test pitting began at the far SE portion (Tapper and Pope's Area C) of the shoreline above the beach, next to a rocky ridge. The first test pit (wpt "C20"), produced two nails and several sherds of Normandy stoneware. Continued testing (n=6) along this narrowest portion of the field encountered no more cultural material. Further NW, the field widens inland, to as much as 50-60 m from the beach; here lies the first of three possible structural foundations. Testing adjacent to "PF7" found cultural material in six test pits (for example, wpt "C311", "C321", and "Bop17"). Finds include window glass, Normandy stoneware and refined ware sherds, but most prominent were iron nails.



Initial test pits along SE end of the site. A test pit circled in red ("C20") contained several fragments of Normandy stoneware (see below).



Normandy stoneware sherds from test pit C20.

¹¹ In 2007, Pope and crew identified and collected all visible ceramics sherds observed during beach surface survey.

Testing to the NW, proximate to Tapper and Pope's Feature 8 structure (wpt "PF8"), exposed similar finds. For example, sherds of hand-painted whiteware (post 1835) were collected from test pit "C37", and a fragment of red coarse earthenware collected from test pit "C41"; test pit "Bop14" contained several artifacts including refined earthenware, CEW and bone. All positive test pits contained nails.



Ceramics sample from test pit "Bop17": unidentified red coarse earthenware (left) and a rim sherd from a blue printed whiteware jug (right). See p.40 for an in situ photo.

Testing proximate to a third possible structure (tentatively identified by Crompton and Bolli), identified cultural materials including a nail, a sherd of REW and an unidentified iron fragment from test pit "C42" and a nail from test pit "Bop24". Test pits around its periphery produced small quantities of artifacts (mainly nails). Similar to results from the other two possible structures, no clear difference in soil conditions was observed between the suspected interior and exterior. In order to truly determine whether these are structural remains or not (particularly the latter, western example), larger excavations must be opened. Initial drone footage collected by Crompton and Bolli illustrated two possible gardens along the upper terrace. These features were not visible via vegetation changes, but with the knowledge that something did exist there, garden drills could be discerned

underfoot. Testing (wpt “C43” and “C44”) identified evidence of possible soil mixing (i.e. gardening), but no cultural material.

The upper limits of the second terrace (against the tree line) contained a large *galet*, approximately 12 m x 40 m (wpts “041” to “054”). This is partially visible underfoot, as cobble beneath the foliage. Related, and of future interest, this feature is covered almost exclusively with raspberry and dewberry bushes.¹²

Subsurface testing at EiAv-07 equaled 58 test pits, of which 21 produced cultural material. Finds were spread throughout the site, though concentrations of positive test pits are consistent with the location of three presumed structures or features.



Part of a large patch of Monkshood, an escaped garden plant found about 100 m inland, wpt “Monkshood” (CH.520).

¹² Either the presence of the cobble and stone, or soil conditions below this rock, have affected the growth of these specific plants. A possible *galet* identified at EiAv-03 (Area C) is covered with the same abundance of raspberry brush. Generally, Crémallière had, by a considerable margin, the most and tastiest dewberries [standard name, Hairy Plumboy, *Rubus pubescens*] ever seen by either field investigator.



The bill of Observation Point (left of centre) from wpt “Llo,” showing typical vegetation and landforms of the southern side of Crémallière Harbour (CH 493).



Low Point, with GD Pond glimpsed at top, left and Low Point Cove at bottom, right (Google earth).

AOI#7 – Low Point (field investigation 26 August 2018).

The headland at the southwest side of the entrance into Crémallière Harbour (field name “Low Point”) was identified as having archaeological potential from close access to marine resources, and from the observable tendency of pre-contact cultures (especially Dorset Palaeoeskimo) to favour such unlikely places. Were Crémallière’s relative absence of winter sea ice on the south side of the harbour to extend 3000 years into the past, it is possible to envision Low Point as a sealing station, having access to a polynya –

a stretch of open water which appears from year to year as a result of the interaction of landforms and ocean currents (sometimes referred to in Newfoundland speech as a “rent” in the ice).¹³

Low Point was accessed by walking along the coast from Batteau Cove, about one kilometer southeast as the crow flies. From Penneys Beach to Low Point the coast is rocky and backed by barrens and tuckamore. About halfway there is small pond (about 120 m long) in a hollow which is proposed as the eventual site of a graving dock, our field name “GD Pond.” Other than a small cobble beach in a gorge which lies between GD Pond and Low Point the only tenable landing is at a small cove south of the point, field name “Low Point Cove.”



Low Point, looking northeast, with Anchor Point at top, left and the cove at far right (CH.458)

This is a small beach/cove located at the far SE end of the Project Area, and as such, could potentially be impacted by groundworks associated with the pending marine base, specifically the proposed graving dock to the immediate NW. Low Point Cove has an approximately 50 m long beach, with a grass and sparse brush covered shoreline ranging between 25 m to approximately 50 m inland. Initial surface survey determined that much of the open area contains short grasses and shrubs growing on a bed of beach rock. While

¹³ In context of a discussion of use of Crémallière by residents of St. Anthony, Mr. Cull spoke of the primary winter activity being eider duck hunting from Anchor Point.

testing did not determine whether this platform was natural or man-made, it was posited a possible *galet*. On the shore above the beach, nine test pits were excavated (wpt “C04”-“C12”). In all instances, vegetation lay on a shallow layer of soil, which overlay beach rock of varying size. No artifacts were recovered from any test pit. However, in the approximate centre of the beach, a large length of sawn timber (likely driftwood) lay on the surface, and had an iron spike, a cut nail, and a scrap of melted lead laid on it (not collected), likely from a nearby metal detectorist hole (wpt “Lphole”). Adjacent test pits found no artifacts and no other metal detector holes were identified; the beach material below the surface proved difficult to excavate. The spike and nail may well have been brought into the cove embedded in driftwood, though it warrents mention that no modern nails were identified. This cove was one of three identified by Mr. Cull as used for family boil-ups. The site is designated EiAv-10.



Testing on the rocky ledge north of the beach. The cobble beach is visible at right.



A lump of lead, a spike and a cut nail, likely laid on this driftwood post by a metal detectorist (CH.470).



Anchor Point from the cairn at wpt "Noprhill" (CH.593).

Discussion

Archaeological sites at Crémallière were initially identified based on references in historic documents and from cartography. Their significance and level of preservation was assessed in the field on a preliminary basis in 2007 and 2013. Moving forward, GNP committed to developing a Historic Resources Preservation and Management Plan which will detail “assessment, development, and remediation,” as well as site access and public interpretation (GNP 2017:26).¹⁴

Upon completion of a DBAA, we suggested that a Stage 1 Historic Resources Impact Assessment include field assessment of seven areas of interest, numbered counter-clockwise from Anchor Point.

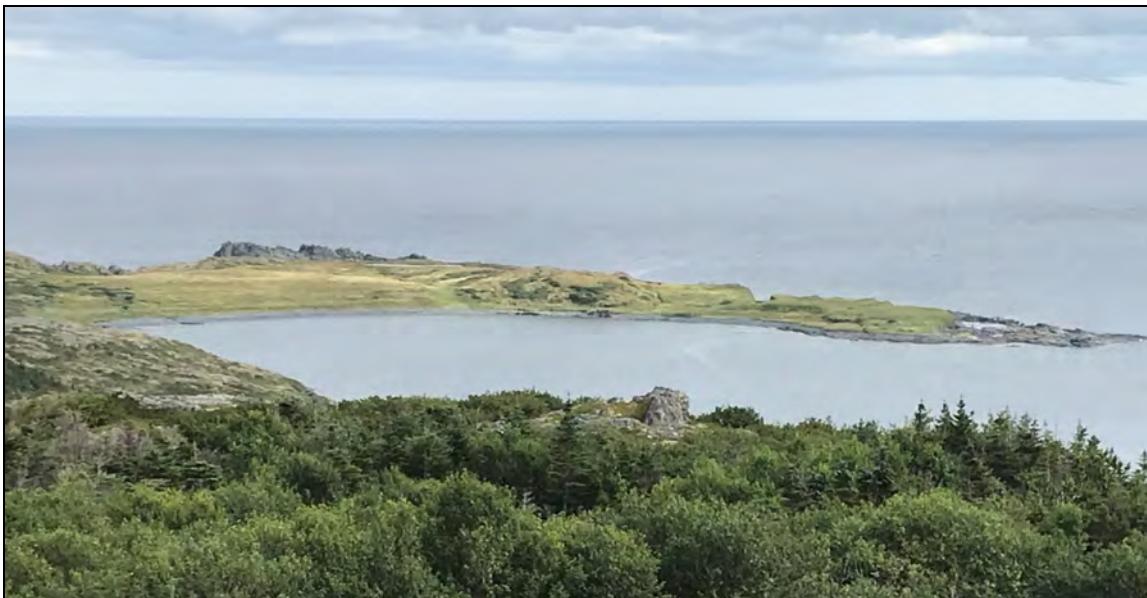
¹⁴ In particular the three largest French rooms at Savage Cove/Anchor Point warrant further study and, based on proximity to St. Anthony and ease of access, EiAv-03 should be considered eligible for full archaeological investigation. In such event the proponent states that “active archaeological sites will be supported and promoted by GNP to realize economic and social benefits of these historic resources” (GNP 2017:24). At present it seems clear that the best mitigation strategy for EiAv-03 is avoidance.



Recording a rock alignment, and an associated square turf foundation, at Grand Rochelle in 2007. This feature was assessed in the field as probable 19th-century. It may represent the 1857-1915 livery occupation of Crémallière (after Pope 2008).

Area of Interest [AOI] #1 – Grand Rochelle/North Point

The recording of historic cultural material at the far west end of the cove's north side extends this site's boundaries. This is within approximately 75 m of the development's proposed eastern boundary. A buffer is appropriate to protect this historic resource. Likewise the recording of a new site (EiAv-13) requires mitigation, typically and most suitably, avoidance through the enactment of a buffer zone.



A view of Savage Cove from the St. Anthony Air Station (CH.687).

AOI #2 – St. Anthony Air Station

This archaeological site is not at risk from the proposed GNP development. A proposed fuel tank farm will take in a 1968 dump/military equipment landfill site. Although this is not of archaeological interest, its reputed presence may be taken into account by GNP as an environmental factor.

AOI#3 – Northwest Shore

The registered archaeological site (EiAv-08) at Russells Cove lies on private land, and no impact is expected in this specific area from the proposed development. Given its proximity to EiAv-13 and EiAv-03, to the SE, there is an approximately 950 m length of shoreline containing three archaeological sites.

A number of small coves proved inaccessible by boat, due to poor landing prospects and choppy sea. Visual assessment from the boat suggests that each of CO, MP, FF and PN coves are poor prospects for archaeological sites, encumbered with sunken, with small beaches and limited dry ground between the high-water mark and steep backing cliffs.



“MP Cove” (at centre, below the communications tower on the horizon) as viewed from the water.



“FF Cove” as observed from boat (CH.538).

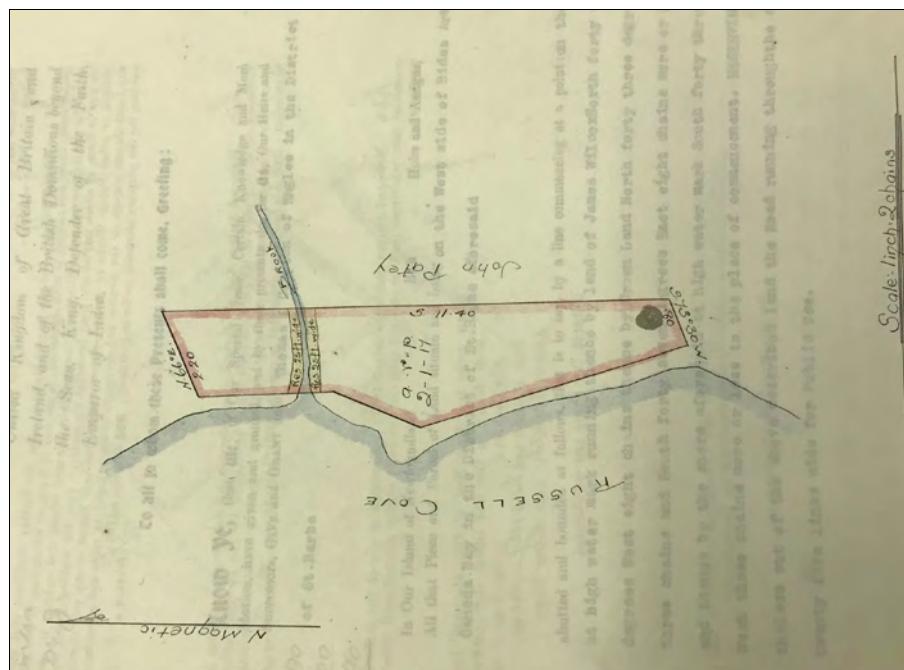


Diagram from the Thomas Penney Crown land grant at Russells Cove (CH.179).



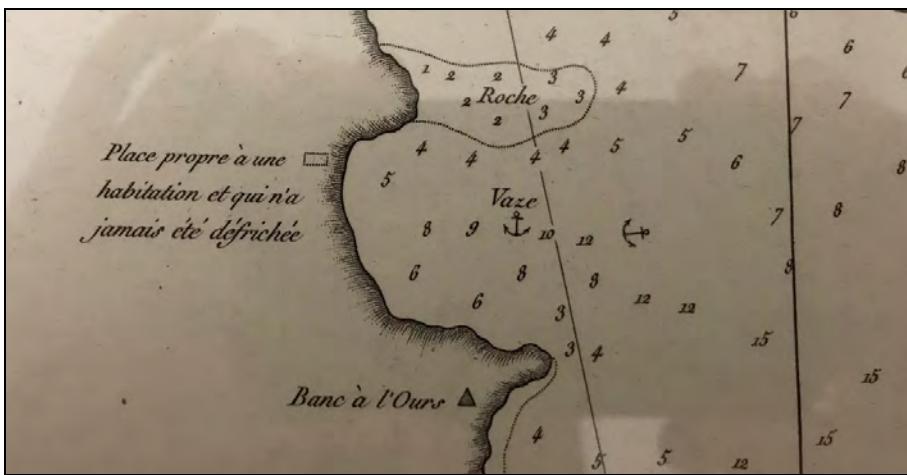
A view of the aspect of the country about the proposed Liquid Mud Plant, looking west from St. Anthony Air Station (CH.711).



Test C96 at Crémallière Bay, showing the bed of cobble immediately below the sod.

AOI#4 – Crémallière Bay

Evidence of cultural use was scant compared to other areas of Crémallière Harbour, however a ballast flint find on the main beach, nails from a test pit, and in particular, a vegetable garden, taken together provide sufficient reason for designation/registration (EiAv-12).

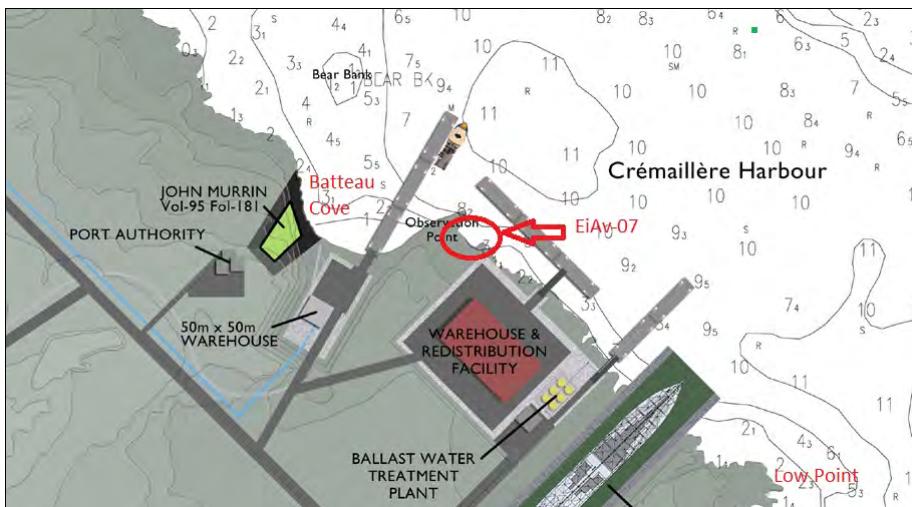


Batteau Cove (centre) and Banc à l'Ours [Penneys Beach] in 1786 (De Combis 1792).

AOI#5 – Batteau Cove

The presence of ballast flint and ceramics on the beach of Batteau Cove, as well as its French name, suggest that the cove was likely used during the 19th century (and possibly earlier) by fishers, perhaps for building and/or mooring of boats. However, we conclude

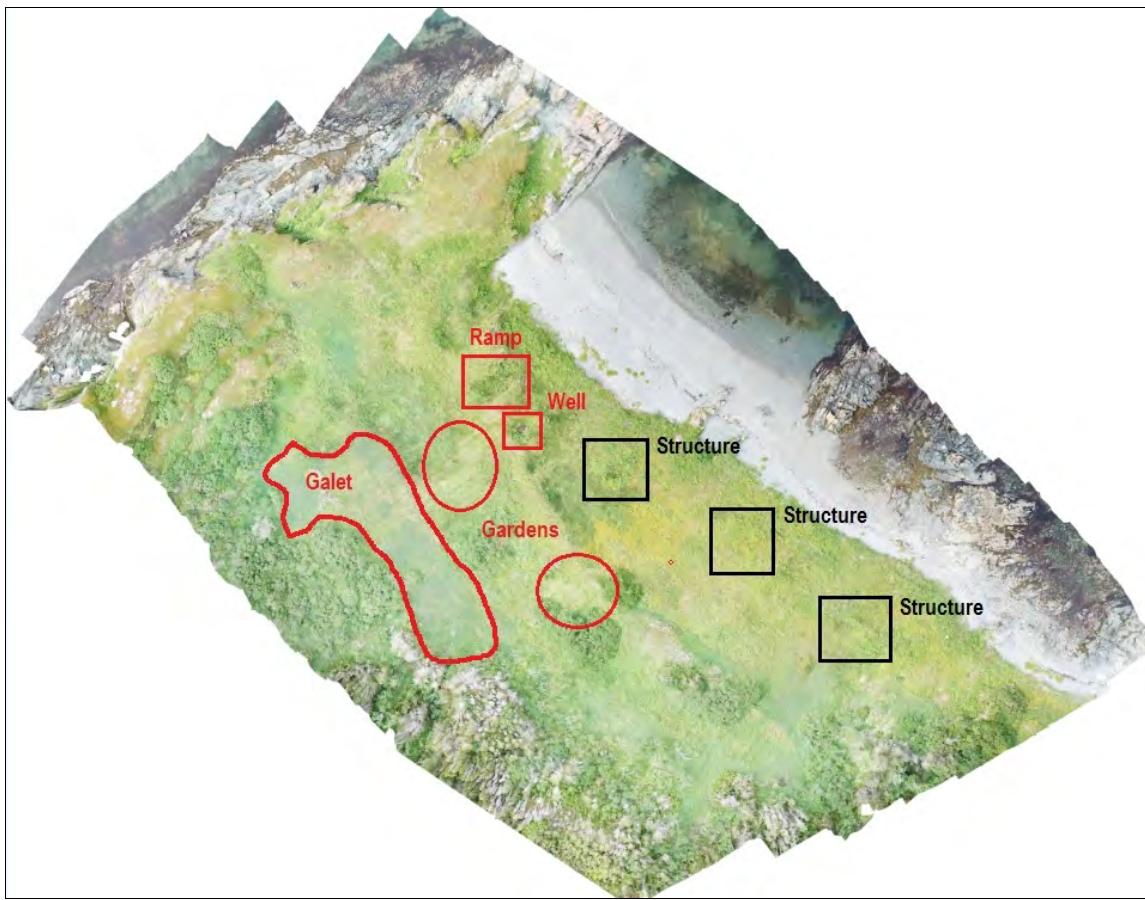
that most evidence of this, as well as a posited early 20th century livery occupation, has likely been destroyed. Beach margins in the west and east could contain undisturbed deposits. However, the presence of private property inland of the shoreline/ Crown reserve in the west, and accumulations of concrete debris in the east, suggest that there is little to be learned here in comparison to Savage Cove, Russells Cove, and Penneys Beach.



Projected works on the south side of Crémallière Harbour. A warehouse and finger pier proposed for the east side will be a primary impact of the GNP project on Batteau Cove.



Penneys Beach, with posited structural remains circled.



Drone image of EiAv-03, with cultural features illustrated (base image courtesy Amanda Crompton and Marc Bolli).

AOI#6 – Observation Point/Penneys Beach

Testing EiAv-07 indicated that site boundaries extend to the edge of the entire open and cleared portion(s) of the cove. Findings range from one end to the other, and extend back to the edge of tree growth, for a site dimension of approximately 160 m × approximately 50 m. Field results allow for a couple of observations that are relevant for future investigations. Consistently within positive test pits most material cultural came from the same part of the profile: at the bottom of the upper sod/soils layer, immediately above/on the underlying pebble and cobble layer. There were areas along the eastern half where the cobble stone appears to lie on a buried sod layer, implying that the cobble/pebble is added and cultural (wpt “C251”, “C271”, and immediate vicinity). Related, excavation of test pits proved difficult and cumbersome due to the cobble and pebbles. Future investigation should bear this in mind, and consider the possibility of opening larger (thus fewer) units. EiAv-07 remains a rare example of an undisturbed French fishing site, containing

evidence of all hallmark elements: cobble beaches for drying fish, structural evidence, a well, and access ramps (Pope 2008; 2009). Related, confirmation of the proposed structural features as true structures is still wanting; soil difference between the interior and exterior test pits was minimal.



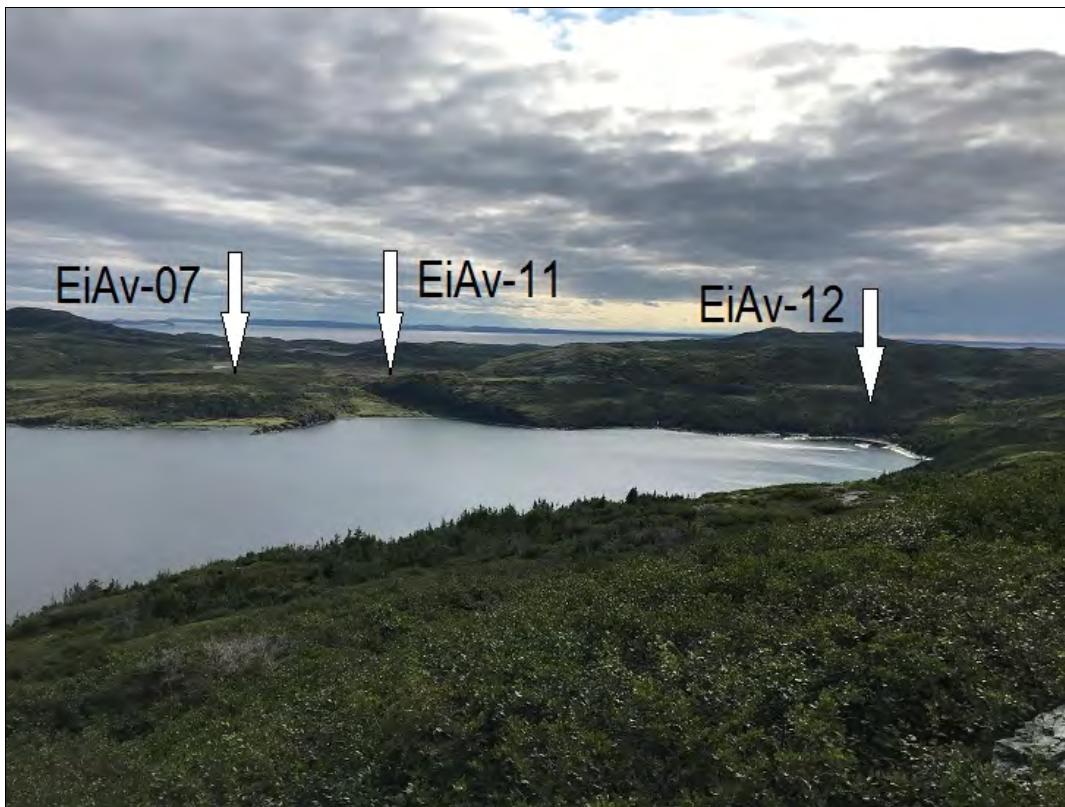
Low Point, as viewed from Grand Rochelle in 1857 (detail of a coloured ink drawing by Rev. William Grey, Centre for Newfoundland and Labrador Studies, MUN).

AOI#7 – Low Point

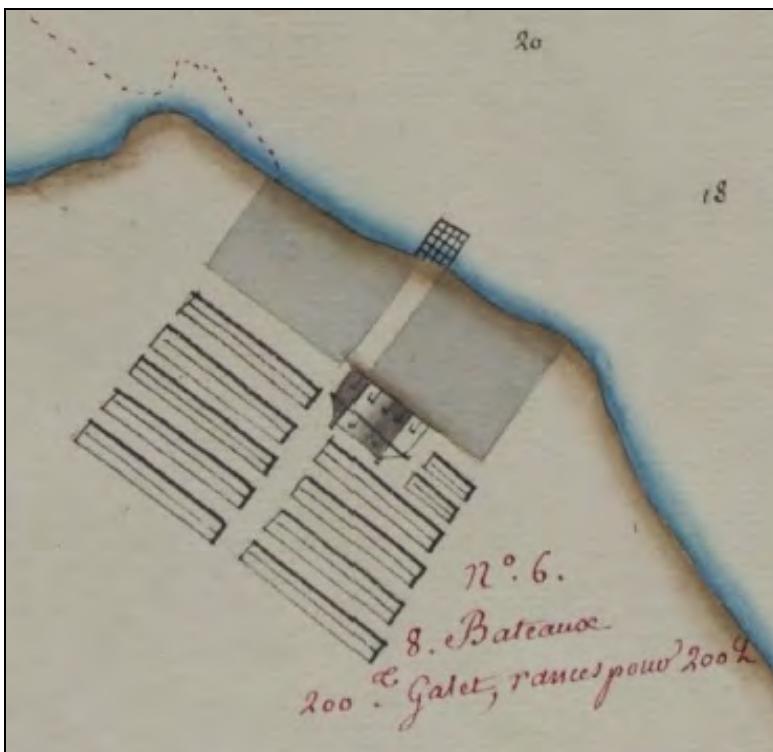
Two iron nails from a metal detector excavation imply cultural presence and usage, although they could have reached this beach embedded in driftwood from the principal French rooms at Savage Cove, about one km to the northeast. This does not, however, explain the presence of lead. No ballast flints were identified on this beach. The beach could have been employed by fishers making and or drying salt fish, or for hunting seals and/or seabirds, thus designation of Low Point as EiAv-10. Future investigation may be warranted.



A spike in a piece of driftwood at Low Point, about 50 m inland (CH.469).



EiAv-07, 11 and 12, from the air station.



Detail of *Le Tourneur* [1784], showing the *Banc à l'Ours* fishing room.

Recommendations

GPA suggests that an acceptable and ultimately successful mitigation strategy should include the following:

AOI#1 – Grand Rochelle/North Point

The western-most positive test pit is approximately 50 m east (and 76 m NE) of the proposed GNP boundary. A 50 m buffer thus lies outside the project boundary. While adjustment of the official boundary (for Crown Land application purposes) is not an option at this stage, GNP officials have determined that this boundary could be adjusted for site usage, and an additional site buffer length added. We suggest an additional 20 m buffer.

- Establish coordinates for EiAv-03 site west boundary. Buffer distance (50-100 m?) request guidance from PAO and adjust chain-link fence accordingly;
- Exclude NP Hill daymark from GNP fenced compound; and note that
- Wpts 528-534 are a partial perimeter of uninhabitable landforms (open to the east).

More detailed mapping of project groundworks as construction plans are finalized should be provided by the proponent. Then buffering is an appropriate mitigation strategy, in that the only projected structure is a chain-link fence.

EiAv-03 Boundary	
<i>Coordinates (NAD 1983)</i>	<i>Location and discussion</i>
597931E 5688593N	West end of buffer, nearest the shoreline
597931E 5688775N	West end of buffer, inland; north buffer
597889E 5688775N	North buffer; eastward continuation

EiAv-13 – the entire cleared portion of the cove is taken to be the site boundaries. A 50 m buffer zone should suffice.

EiAv-13 Boundary	
<i>Coordinates (NAD 1983)</i>	<i>Location and discussion</i>
597562E 5688804N	West end of buffer, nearest the shoreline
597562E 5688888N	West end of buffer, inland
597704E 5688888N	East end of site, inland
597704E 5688813N	East end of site, nearest the shoreline

AOI#2 – St. Anthony Air Station

-Tank farm will take in a 1968 dump/military equipment landfill site, which is not of archaeological interest, but its presence may be taken into account by GNP as an environmental factor.

No mitigation likely required. All historic resources are visible above surface, and can serve as visible markers for avoidance.

AOI#3 – Northwest Shore

-Two coves were not visited as poor landings unlikely for human habitation
 -At Russells Cove the Thomas Penney land grant/enclave may be sufficient, otherwise buffering may be suggested by PAO
 -Wpts 506-524 a perimeter of uninhabitable landforms at Russells Cove.

More detailed mapping of project groundworks is indicated as construction plans are finalized. Then buffering is an appropriate mitigation strategy. At the GNP/GPA meeting of 15 October there was some discussion of whether “enclaves,” such as the Thomas Penney land grant, should be enclosed by fencing, with this issue being left for further discussion.

EiAv-08 Boundary	
Coordinates (NAD 1983)	Location and discussion
597190E 5689178N	Northwest buffer, nearest the shoreline
597207E 5689213N	NW buffer; inland
597404E 5689189N	NE buffer; inland
597456E 5689047N	NE buffer, inland
597459E 5688920N	SE buffer, nearest to shore

AOI#4 – Crémallière Bay

-New site EiAv-12, based on minor findings of ballast flints, iron, vegetable garden drills;
 -Buffer 50 m from shoreline? Projected new road around harbour is +500 m inland.

EiAv-12 Boundary	
Coordinates (NAD 1983)	Location and discussion
595749E 5688779N	South buffer, nearest the shoreline
595677E 5688779N	SW buffer; inland
595677E 5688962N	NW buffer; inland
595758E 5688962N	North buffer, nearest the shoreline

AOI#5 – Batteau Cove

Here a buffer may not be practical, in that finds on the east side of the cove may be within 50 m of the base of a projected finger pier. Further field investigation could well establish that disturbance at EiAv-11 is so profound as to diminish or eliminate concern about this site. GPA suggests that if further field investigations and/or monitoring activities are required at EiAv-07, then this particular issue could be resolved at that time. We consider it unlikely that the PAO will require further fieldwork to resolve this one point.

- New site EiAv-11, based on minor findings of ballast flints, ceramics, iron;
- Most early materials on west side, which is excluded per land grant;
- The projected Port Authority and warehouse building footprints are in a previously-disturbed area (burial of fish offal from St. Anthony plant); note also that
- If the John Murrin land grant is to be included in the development proposal at some future date, it would require field investigation, based on proximate finds and the possibility of structural remains.

AOI#6 – Observation Point/Penneys Beach

GNP needs to indicate clearly whether construction plans and methods require either ground disturbance or traverse of this site.

- Avoidance during construction period and after, a buffer zone to be determined by PAO;
- Any proposed development, or traverse, of this excluded area in the future should be reported to the PAO for a determination of what level of Historic Resources Impact Assessment will be applicable;
- The projected Warehouse and Redistribution building footprint may be too close to EiAv-07 and/or within the projected 50 m buffer;
- This site, described as “pristine” by previous researchers, will be surrounded by GNP development; note also that
- Wpts 491-503 comprise a perimeter of uninhabitable landforms

More detailed mapping of project groundworks will assist in resolving this issue. GNP may consider an “exclusion zone” to protect this site. In consultation with regulator, GNP should develop a specific mitigation strategy for this site and the PAO develop a terms of reference based on their review of this strategy.

EiAv-07 Boundary	
Coordinates (NAD 1983)	Location and discussion
596332E 5688330N	NW buffer, inland portion of Observation Point
596510E 5688172N	SW/SE buffer junction; inland
595606E 5688271N	SE buffer, nearest the shoreline

AOI#7 – Low Point

New site EiAv-10 (iron and lead materials 70 m inland, previously unearthing by a metal detectorist) will require no mitigation other than avoidance, unless some further survey of the south side of Crémallière Harbour is indicated by PAO in relation to an AOI #6 mitigation strategy. Only projected structure/groundworks (fence) is 100 m + from site.

EiAv-10 Boundary	
<i>Coordinates (NAD 1983)</i>	<i>Location and discussion</i>
596898E 5687887N	North end of west buffer, near the shoreline (at end of gorge)
596898E 5687744N	SW buffer; inland
597117E 5687744N	East end of south buffer, near the shoreline

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Appendix A: Archaeological Investigation Permit #18.31

	Government of Newfoundland and Labrador Department of Tourism, Culture, Industry and Innovation
ARCHAEOLOGICAL INVESTIGATION PERMIT	
granted by: Provincial Archaeology Office Dept. of Tourism, Culture, Industry and Innovation P.O. Box 8700 St. John's, NL A1B 4J6	
PERMIT NO.	<u>18.31</u>
NAME	<u>Gerald Penney</u>
ADDRESS	<u>Suite 104, Caledonia Place, 40 Quidi Vidi Road, St. John's, NL – A1A 1C1</u>
INSTITUTION	<u>Gerald Penney Associates Limited</u>
Is authorized to conduct archaeological investigations at the location(s) stated below, subject to the terms and conditions of the Application for Permit and the <i>Historic Resources Act</i> , RSNL 1990, c. H-4	
LOCATION(S)	<u>Crémaillièvre Harbour</u>
All material recovered is the property of the Province.	
VALID FOR THE PERIOD	<u>August 26, 2018 – September 1, 2018</u>
NOTE:	<u>All material recovered during excavation is to be recorded using three dimensional provenience unless permission to do otherwise has been granted from the Provincial Archaeology Office</u>
Minister of Tourism, Culture, Industry and Innovation	
Date:	<u>August 24, 2018</u> per: <u></u>

ARCHAEOLOGICAL INVESTIGATION PERMIT HOLDER DEADLINE CHECKLIST

According to Newfoundland Regulation 143/97 Archaeological Investigation Permit Regulations under The Historic Resources Act (O.C. 574-91), the following deadlines should be adhered to. Any requests for extensions should be cleared with the Provincial Archaeologist in the Provincial Archaeology Office.

PERMIT NUMBER: 18.31

PROJECT AND/OR LOCATION: Crémaillièvre Harbour

START DATE: August 26, 2018 EXPIRES: September 1, 2018

PERMIT HOLDER: Mr. Gerald Penney

ADDRESS: Suite 104, Caldonia Place, 40 Quidi Vidi Road PHONE: 739-7227

St. John's, NL - A1A 1C1 Email: Gerald@geraldpenneyassociates.com

INSTITUTION OR COMPANY: Gerald Penney Associates Ltd.

ITEMS DUE 30 DAYS AFTER PERMIT EXPIRES:

Item	Date Due	Date Received
1) Completed Site Record Form(s) (including one for each revisited site)	October 1, 2018	
2) 1:50,000 scale map(s) noting the site location, areas surveyed and methodology (i.e. areas test pitted, surface walked, etc.)	October 1, 2018	

ITEMS DUE 180 DAYS AFTER PERMIT EXPIRES:

Item	Date Due	Date Received
1) Archaeological Record Forms from Field Work	March 1, 2019	
2) Site Plans, sectional drawings	March 1, 2019	
3) A Sample of Photographs	March 1, 2019	
4) Interim report	March 1, 2019	

ITEMS DUE 1 YEAR AFTER PERMIT EXPIRES:

Item	Date Due	Date Received
1) Site Report following the requirements outlined in the Regulations *if project is more than one season long then the final report is due 2 YEARS after the final permit expires, however an interim report is still required 180 days after each permit expires	September 1, 2019	

ITEMS DUE 2 YEARS AFTER PERMIT EXPIRES:

Item	Date Due	Date Received
1) Artifact Catalogue sheets, complete with measurements	September 1, 2020	
2) Artifact Treatment sheets	September 1, 2020	
3) Artifacts, catalogued and treated according to the regulations	September 1, 2020	

Appendix D: Preliminary mapping of suggested buffer zones

EiAv-03 – showing approximate location of Crown lands application boundary.



EiAv-03 – showing 20 m buffer/ “extension.”



EiAv-07.



EiAv-08.



EiAv-10.



EiAv-12.



EiAv-13.

