# An archaeological analysis of the distribution of French fishing rooms on the Petit Nord, Newfoundland

by

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A thesis submitted to the

School of Graduate Studies

in partial fulfilment of the requirements for the degree of

**Master of Arts**

**Department of Archaeology**

Memorial University of Newfoundland

**October 2014**

St. John's, Newfoundland and Labrador

# ABSTRACT

The analysis of the spatial distribution of fishing rooms demonstrates that French fishing crews preferentially exploited certain parts of the Petit Nord during their prosecution of the historic cod fishery between 1500 and 1904. This research investigates the environmental and cultural factors that influenced where sites were selected and subsequently established. Fishing harbours were the hubs of wider networks, both physical and cognitive, of resource acquisition and navigation. A system of landmarks, daymarks and anchorages warded a network of sailing routes linking fishing rooms to cod grounds and resource areas. Seasonal occupation led to the intense exploitation of natural resources and necessitated the installation of a landscape-based infrastructure to negotiate the division of shore space and allocation of timber and fresh water. The concept of the maritime cultural landscape is used to link the terrestrial sites of the fishery with the region's network of marine exploitation, land use and navigation. Effects of cultural processes in the past persist in the patterns and character of land use, both cultural and semi-natural, on land and at sea, that are observable in the region today.

# ACKNOWLEDGEMENTS

Financial support for this research has been provided by the Institute for Social and Economic Research, the Newfoundland and Labrador Provincial Archaeology Office, and Memorial University of Newfoundland's Dean of Arts, School of Graduate Studies and Graduate Students' Union.

I would like to show my appreciation to my supervisor Dr. Peter Pope who has provided continuing enthusiasm, encouragement and advice whenever I needed it. The guidance, opportunities and resources made available to me have been essential to my research. Thank you.

Thank you to Geneviève Duguay for her valuable assistance during the course of fieldwork, especially in the identification of artefacts recovered during survey. Thank you also to Keir Knudsen, of the Dark Tickle Company and the Granchain Exhibit in Griquet-St. Lunaire who gave valuable assistance in the field, providing transport to sites accessible only by sea, as well as sharing important local knowledge of regional archaeology and history.

I would also like to recognise the assistance of Mélissa Burns during the course of my research, particularly for the generosity which she has shared her knowledge and insights. I also thank Hilary Hatcher and Marie Curtis for their diligent conservation and cataloguing work on the artefacts retrieved during fieldwork in 2013.

I extend gratitude to Frédéric Dussault and Amanda Crompton for their help in checking some of the trickier French translations I made of historic French documents.

Finally, I would like to thank Chelsee Arbour for her continuing support throughout the course of the last 2 years.

## Table of Contents

ABSTRACT ..... ii

ACKNOWLEDGEMENTS ..... iii

Table of Contents ..... iv

List of Tables ..... vii

List of Figures ..... viii

List of Abbreviations ..... xi

Chapter 1: Introduction ..... 1

1.1 Project overview ..... 1

1.2 Research aims ..... 1

1.2.1 Spatial distribution and organisation of fishing rooms ..... 4

1.2.2 Networks of navigation and resource acquisition ..... 5

Chapter 2: Historical, archaeological and environmental context ..... 7

2.1 History of the French fishery in Newfoundland ..... 7

2.1.1 The sedentary fishery ..... 13

2.2 Archaeological context ..... 16

2.3 Marine and terrestrial environments of the Petit Nord ..... 17

2.3.1 Distribution and ecology of Atlantic cod ..... 17

2.3.2 Terrestrial ecoregions ..... 19

Chapter 3: Theoretical approach ..... 22

3.1 Landscape archaeology ..... 22

3.2 Maritime cultural landscape ..... 25

Chapter 4: Methodology ..... 30

4.1 Fieldwork ..... 30

4.2 Historic landscape analysis (HLA) ..... 32

4.2.1 HLA assessment ..... 34

4.2.1.1 Geographical Information System (GIS) ..... 36

4.2.1.2 Documenting fishing harbours and rooms ..... 37

4.2.1.3 Historic fishing room divisions ..... 42

4.2.1.4 Navigation hazards, landmarks and routes ..... 42

4.2.1.5 Timber and freshwater resources ..... 45

4.2.1.6 Toponymy ..... 47

Chapter 5: Historic surveys of fishing harbours ..... 49

5.1 Historic censuses and surveys ....50
5.1.1 17th century ....52
5.1.2 18th century ....54
5.1.2.1 François-Thomas Le Tourneur ....60
5.1.3 19th century ....64
5.2 Discussion ....68
Chapter 6: The geography and distribution of fishing rooms .... 77
6.1 Coastal geography and geology ....78
6.2 Topography ....83
6.2.1 Aspect and local environmental conditions ....90
6.2.2 Drying fish: materials, patterns and distribution ....93
6.2.2.1 Galet/Grave ....99
6.2.2.2 Rances ....106
6.2.2.3 Flakes ....111
6.3 Hydrography ....115
6.3.1 Location and prosecution of inshore fishing grounds ....117
6.3.1.1 Distance to cod grounds ....124
6.3.1.2 Landing stages ....134
6.4 Contested shore space and the division of rooms ....142
6.4.1 Coastal features ....144
6.4.2 Terrestrial features ....150
6.4.3 Watercourses ....152
6.4.4 Measurements and cardinal directions ....155
6.4.5 Sharing shore space ....156
Chapter 7: Networks of navigation and resource acquisition .... 158
7.1 Navigation, survey and charting ....159
7.2 Navigation routes and landmarks ....164
7.2.1 Vessels of the fishery ....166
7.2.2 Navigation hazards ....167
7.2.3 Natural landmarks ....168
7.2.4 Cultural daymarks ....173
7.3 Anchorages ....183
7.3.1 Shared anchorages ....189
7.3.2 Coastal mooring sites ....193
7.4 Sustaining the fishery: resource acquisition ....197
7.4.1 Timber ....198
7.4.2 Fresh water ....206
Chapter 8: Conclusion .... 212
Bibliography .... 224
Appendices .... 248
Appendix 1: List of 198 fishings rooms across the Petit Nord ....248
Appendix 2: List of 79 fishing room historic divisions ....257
Appendix 3: List of 140 daymarks and landmarks ....260
Appendix 4: List of 216 anchorages and mooring sites ....263

Appendix 5: List of 41 historic timber resource areas ..... 269
Appendix 6: List of 135 water sources within each harbour ..... 270

# List of Tables

Table 1. Simplified database structure used to record the location and topographic profile of each fishing room. ..... 41

Table 2. Simplified database structure used to record the location and type of topographic landmark used to historically divide shore space. ..... 43

Table 3. Simplified database structure used to record the location and type of landmark or feature used for navigational purposes. ..... 44

Table 4. Simplified database structure used to record the location and type of natural resource required to sustain a fishing room. ..... 46

Table 5. Number of boats recorded for each fishing station listed in historic censuses and surveys between 1640 and 1872. ..... 51

Table 6. The contribution made by the largest harbours to the total number of boats recorded or estimated across the Petit Nord. ..... 71

Table 7. Number of boats recorded in the harbours grouped according to broad ecoregions (see also Figures 2 to 9). ..... 76

Table 8. The location, landforms, topography, landcover and elevation of rooms across the Petit Nord. Where percentages total 99% or 101%, this is due to rounding. ..... 81

Table 9. The types of drying areas (averages) indicated at fishing rooms listed in surveys of c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832). ..... 95

Table 10. The relationship between size of *galet* and topography, using *galet* figures recorded in the surveys of c1784 and 1821. *Toise carrée* (t) = 1.95m². ..... 103

Table 11. The relationship between weight of fish that could be dried on *rances* and topography, using *rances* figures recorded in the surveys of c1784 and 1821. ..... 107

Table 12. The relationship between weight of fish that could be dried on *vigneaux* and topography, using *vigneaux* figures recorded in the surveys of c1784 and 1821. ..... 113

Table 13. Number of fishing rooms by approximate distances to the open sea. ..... 128

Table 14. Number of rooms with approximate water depths at historic stage locations, with adjustments for tidal range. ..... 140

Table 15. Number of rooms distinguished by various types of topographic landmarks. Many rooms used multiple landmarks to mark the limits. ..... 145

Table 16. Number of cultural daymarks and natural landmarks used by mariners to negotiate inshore sailing routes across the Petit Nord, by type. ..... 165

## List of Figures

Figure 1. The historic French fishing harbours of the Petit Nord, between Cape Norman and Cape St. John (see Table 5 for current place-names). ..... 3

Figure 2. Distribution of fishing harbours categorised by number of boats in 1640 (Anon. 1640)..... 53

Figure 3. Distribution of fishing harbours categorised by number of boats in 1680 (Birard et al. 1680)..... 55

Figure 4. Distribution of all fishing harbours categorised by number of boats in 1765 (Anon. 1765a, 1765b). N.B. Percentage total 99% due to rounding. ..... 57

Figure 5. Distribution of all fishing harbours categorised by number of boats in 1784 (Anon. 1784)..... 59

Figure 6. Distribution of fishing harbours categorised by number of boats estimated by Le Tourneur in c1784 (Le Tourneur c1784). N.B. Percentage totals 101% due to rounding.62

Figure 7. Distribution of fishing harbours categorised by number of boats estimated in 1821 (Anon. 1822). ..... 65

Figure 8. Distribution of fishing harbours categorised by number of boats estimated in 1832 (Anon. 1832). ..... 67

Figure 9. Distribution of fishing harbours categorised by number of boats estimated in 1872 (Anon. 1872). ..... 69

Figure 10. Distributions of the types of coastal locations in which fishing rooms are found. (A) Rooms located in bays and coves. (B) Rooms on exposed pelagic coasts and deeper fjords. (C) Rooms located on or incorporating offshore islands and islets. (D) Rooms found in channels. ..... 82

Figure 11. Three examples of the extensive flat terrain favoured by French fishing crews for the sites of their rooms, at Crémaillère Harbour, Noddy Bay and Granchain Island..... 84

Figure 12. Three examples of the restricted, sloping and steeper terrain least favoured by French fishing crews for the sites of their rooms, at Quirpon, Three Mountains Harbour and Fleur de Lys Harbour..... 86

Figure 13. Map of distribution of types of landforms on which fishing rooms are located. (A) Rooms that are predominantly sited on cobble beaches. (B) Predominantly rocky shorelines. (C) Rooms located on extensive level ground. (D) Rooms incorporating raised beaches as low beach terraces immediately above the foreshore. (E) Rooms incorporating escarpment terraces above lower shoreline beach terrace. (F) Rooms located on promontories and points of land. ..... 89

Figure 14. François-Thomas Le Tourneur's plan of the rooms of Cape Rouge Harbour (c1784, plan 37). Note the general pattern of drying areas, with *galets* arranged along the shoreline lower beach terraces and *rances* located on upper terraces. ..... 97

Figure 15. Distribution of rooms categorised by estimated *galet* capacity in c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832). 1 *toise carrée* = 1.95m². ..... 102

Figure 16. (t) Drying fish on the extensive *galet* at Southwest Crouse (EfAx-10), Cape Rouge Harbour, 1857-8 (Paul-Émile Miot Collection, LAC, PA-202293). (b) *Vigneaux*

and *rances* arranged over the rocky ground at Paquet, Baie Verte Peninsula, 1857-9 (Paul-Émile Miot Collection, LAC, PA-202297). ..... 108

Figure 17. Distribution of rooms categorised by estimated capacity of area of *rances* in c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832). ..... 109

Figure 18. Distribution of rooms categorised by estimated capacity of *vigneaux* and *flagues* in c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832). ..... 112

Figure 19. (t) Detail of drying fish on flakes on a terrace above the shoreline at a fishing room on the Petit Nord, 1858 (Paul-Émile Miot Collection, LAC, PA-202294). (b) Extensive arrangement of flakes located upslope and behind galet area along the shoreline to bottom-right of the image, Petit Nord, 1857-9 (Paul-Émile Miot Collection, LAC, PA-202295)..... 114

Figure 20. Distances of fishing rooms to the open coast, with simplified bathymetry, by ecological region. ..... 119

Figure 21. Examples of fishing room locations within the harbours of St. Anthony, Crémaillère and Goose Cove between 1680 and 1872. Note the general tendency for rooms to be located as close as possible to the harbour entrances, and for larger rooms to be similarly distributed. ..... 125

Figure 22. Examples of fishing room locations within the larger harbours of Quirpon, Griquet-St. Lunaire, Fischot-Little Islets, Croque, Cape Rouge, Conche and Canada Harbour in 1821. Note the general tendency for rooms to be located as close as possible to harbour entrances, and for larger rooms to be similarly distributed. ..... 126

Figure 23. Example of fishing room locations within the larger harbours of Hooping Harbour, Great Harbour Deep, Fleur de Lys, Baie Verte, Ming's Bight, Pacquet and La Scie from Le Tourneur's plan of c1784. Note the general tendency for rooms to be located as close as possible to harbour entrances, and for larger rooms to be similarly distributed - except for La Scie where the steep ground of the outer part of the harbour prevents the easy establishment of rooms. ..... 127

Figure 24. Examples of stage area locations surveyed and observed at five fishing rooms. 137

Figure 25. (t) Historic stages at the rooms of Southwest Crouse, 1857-9. Note how the pier of the stage serving the room (EfAx-10) at the bottom of the bay extends into the water to reach sufficient depth for landing chaloupes (Paul-Émile Miot Collection, LAC, PA-188223). (b) Detail of fishing stages at Croque Harbour at low tide, 1857-9 (Paul-Émile Miot Collection, LAC, PA-188225). ..... 141

Figure 26. Examples of the types of natural coastal and terrestrial topographic features used to mark the historic limits of fishing rooms. ..... 148

Figure 27. Topographic features used to mark historic divisions between fishing rooms in Conche Harbour, overlaid onto a modern vertical aerial photograph (2008) of the harbour..... 151

Figure 28. Examples of watercourses which served as historic boundaries between rooms and provided fishing crews with fresh water during the seasonal occupation. ..... 153

Figure 29. Examples of natural landmarks used to determine the general location of fishing harbour, and the precise alignments of safe anchorages or submerged hazards. ..... 170

Figure 30. Natural landmarks used to identify sailing routes in St. Lunaire Bay and Great St. Julien's Habour, as recorded on coastal profiles annotated on historic hydrographic charts with comparative modern views. ..... 172

Figure 31. Extracts from coastal profiles annotated on historic hydrographic charts show that stages and flagstaffs served as daymarks for vessels, large and small, sailing closer inshore. ..... 174

Figure 32. Examples of cultural daymarks and the former sites of cultural daymarks used by fishermen to navigate inshore waters. ..... 176

Figure 33. Mapped examples from Quirpon and Fischot Harbours demonstrate how natural landmarks and cultural daymarks were used to determine historic sailing routes and anchorages. ..... 181

Figure 34. Distribution of landmarks and daymarks, anchorages and shared anchorages across the Petit Nord. ..... 185

Figure 35. Examples of historic anchorage areas, an anchor and types of coastal mooring sites found within fishing harbours. ..... 188

Figure 36. Harbours and bays in which documents indicate timber was found or sought by fishing crews in the first half of the 19th century. The proportion of harbours with documented construction quality timber resources decreases the further north they are located. The arrows indicate major timber areas used by crews. ..... 200

Figure 37. Examples of fresh water sources used, excavated or adapted by fishing crews. . 208

# List of Abbreviations

| | |
|---|---|
| AC | France, Archives des Colonies |
| BnF | Bibliothéque nationale de France |
| CD | Chart Datum |
| CHS | Canadian Hydrographic Service |
| CNS | Memorial University of Newfoundland, Centre for Newfoundland Studies |
| DEM | Digital Elevation Model |
| ESRI | Environmental Research Systems Institute |
| FEK | Fish Harvester's Ecological Knowledge |
| GIS | Geographical Information System |
| GPS | Global Positioning System |
| HW | High water level |
| LAC | Libraries and Archives, Canada |
| masl | metres above sea level |
| MW | Mean water level |
| PANL | Provincial Archives of Newfoundland and Labrador |
| PAO | Provincial Archaeology Office, Newfoundland and Labrador |
| SSHRC | Social Sciences and Humanities Research Council |

# Chapter 1: Introduction

## 1.1 Project overview

This research analyses the maritime cultural landscapes associated with the French inshore salt-cod fishery, located on the Atlantic seaboard of the Northern Peninsula (Petit Nord) of Newfoundland, during the period between 1500 and 1904. The primary objective of this study is the spatial analysis of the distribution of fishing rooms, and the investigation of how environmental and cultural factors, both marine and terrestrial, influenced where sites were selected and subsequently established. Seasonal occupation led to an intense exploitation of natural resources (for bait, wood and water) and necessitated the installation of a navigational and cognitive infrastructure to sustain the industry.

The concept of the historic *maritime cultural landscape* is used to link the terrestrial sites of the fishery with their wider networks of marine exploitation, land use and navigation – to those landmarks and landscapes that extend beyond the boundaries of each fishing room. Effects of cultural processes in the past persist in the form, fabric and character of land use, both cultural and semi-natural, on land and at sea, observable in the region today. Principles found in landscape archaeology and techniques of historic landscape analysis are used to frame the investigation and assessment of 198 fishing rooms recorded archaeologically and historically across the region, as well as the associated landmarks and landscapes that extend from them and link them.

## 1.2 Research aims

A systematic landscape investigation and analysis of how the fishery and its component parts was organised has yet to be undertaken at the regional scale across the Petit Nord. To achieve this, I investigate the wider landscapes of French seasonal occupation through the spatial and chronological analysis of the individual fishing room sites within their broader

environs of resource acquisition and navigation. The identification and mapping of the wider maritime cultural landscapes, which can be expected to extend inland and offshore from the fishing stations and rooms, provides the physical and cognitive context for the activities undertaken at the fishing rooms.

Important questions remain as to how the locations of fishing rooms were selected, particularly in terms of a site's accessibility, productivity and sustainability. The ways in which shore space was measured, organised and allocated among the competing crews of adjacent rooms within stations, and among competing stations along the coast, particularly in terms of the appropriation and division of resources required during each fishing season, are similarly important considerations. In the present thesis, I focus on the detailed spatial analysis of the fishing rooms that are distributed along the coasts of the Northern Peninsula, White Bay and the Baie Verte Peninsula, from Cape Norman, on Pistolet Bay in the north, to Cape St. John, on the Baie Verte Peninsula, in the south (Figure 1).

The basic geographic unit of study is the fishing room. This was the shore space needed by a migratory crew (usually one ship's crew) for processing fish. It included natural features such as cobble beaches as well as the temporary structures such as stages, cabins and drying apparatus built for each summer's fishery. Several rooms within a harbour would together comprise a fishing station (Pope 2008: 43, 51). In this sense, my focus is not on the internal landscapes and taskscapes of the fishing room, but an emphasis on the types of historic landmarks and landscapes that extend from them. Through the identification of trends, patterns and anomalies that are evident in the landmarks and landscapes found in the coastal, inter-tidal and inshore marine zones associated with each fishing room the main objective of this thesis is to examine and test the following inter-related questions.

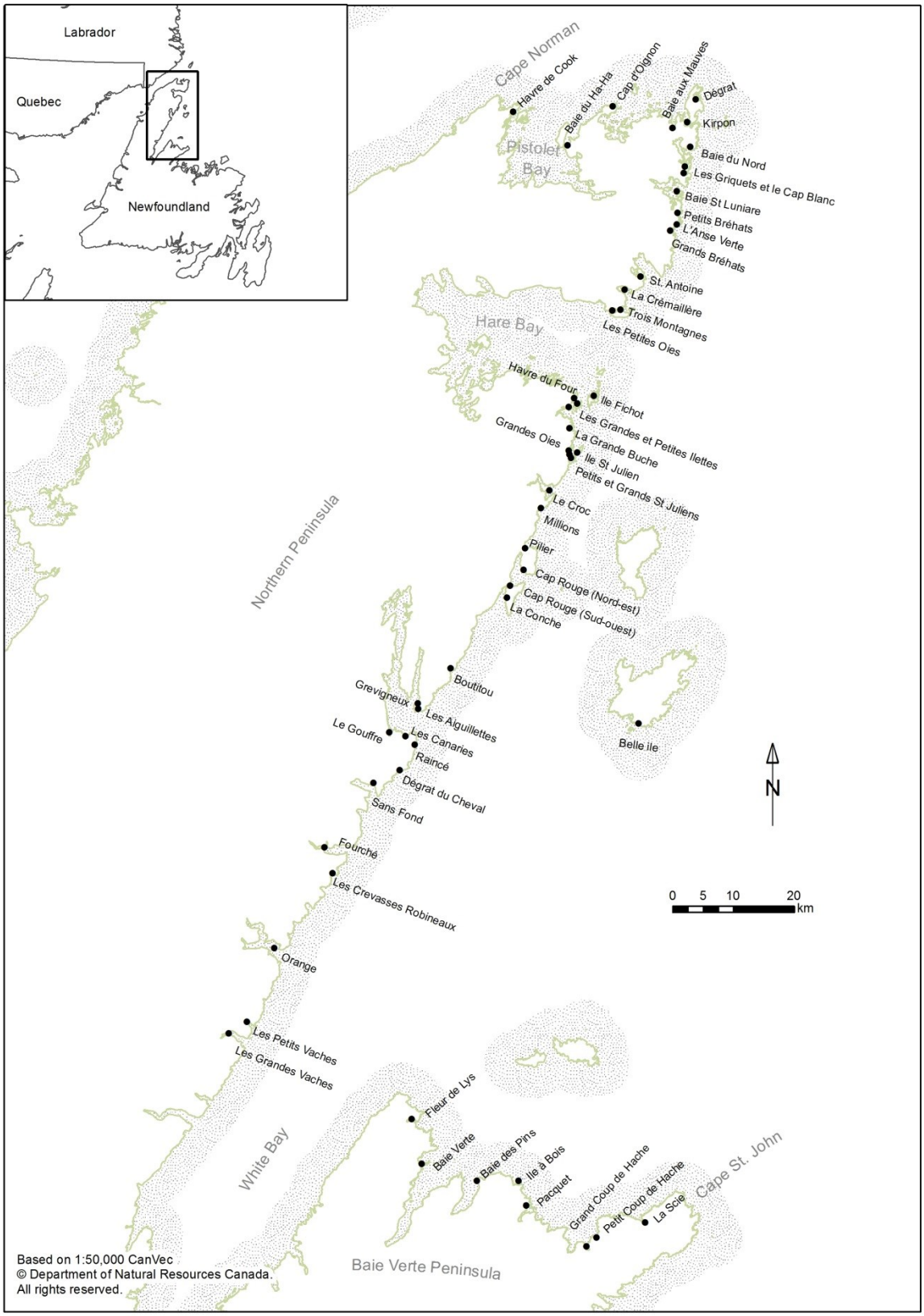



Figure 1. The historic French fishing harbours of the Petit Nord, between Cape Norman and Cape St. John (see Table 5 for current place-names).

### 1.2.1 Spatial distribution and organisation of fishing rooms

The first research question treated here is how the spatial and chronological distribution of fishing stations and their rooms reflect the evolution of French exploitation of the fishery across the Petit Nord. The spatial relationships are analysed at two scales, 1) at the regional level, regarding how fishing stations are arranged and relate to each other along the coast, and 2) at the local scale, concentrating on the ways in which fishing rooms are arranged within stations (usually a single harbour).

The physical topography and hydrography of the coast largely dictated where fishing rooms could be physically established and re-used seasonally. It is known that fishing rooms were selectively sited along the coast; the prerequisite characteristics for a successful room comprise (but were not limited to): a sheltered but accessible harbour, proximity to the richest inshore cod grounds, adequate space and materials for curing cod, and access to the resources required to establish and sustain the room during the season, such as timber, fresh water and availability of fish bait. The desirability of these environmentally constrained characteristics led to intense competition amongst French crews for the best sites (Pope 2006a, 2008, 2009a, 2009b).

The assessment of how these various criteria were applied by fishermen when they determined the location of their fishing rooms, and the extent to which this process was environmentally determined or achieved through the agency, the decisions and choices of the fishermen themselves, is a main aim of this research. In order to achieve an understanding of the physical environmental constraints and opportunities afforded by the Petit Nord, a systematic analysis of the key criteria affecting the choice of site location is undertaken - from recording the physical topography and hydrography of each room to identifying the accessibility and proximity of each to the environmental resources required for sustaining it.

The topography of the eastern coastline of the Petit Nord means that only a finite number of places offered the conditions and particular combination of features necessary for setting up a fishing room (Pope 2008: 49). Inevitably, the industrial scale of the fishery led to the intense exploitation of particularly productive harbours, and competition and rivalry between crews working in increasingly restricted spaces (Martin 2013: 33). The negotiation of space between adjacent fishing crews was of considerable importance and this concern is reflected in the efforts colonial administrators took to record such divisions in the detailed surveys of each fishing room, particularly in the late 18th and early 19th centuries (eg. Le Tourneur c1784, Plans 15-57; Anon. 1822; Anon. c1832, Plans 7-66). Seeking practical solutions, fishing crews used their knowledge of the local topography to help delimit the extent of their enterprises – employing a range of topographic features as boundary markers. Many of these topographic markers are still observable in the landscape today and their identification and survey allows for a detailed analysis of the ways in which space was organised.

### 1.2.2 Networks of navigation and resource acquisition

The fishing rooms, with their stages serving as nodes connecting land and sea, were also part of an extensive network of movement, transport and communication throughout the inshore waters of the Petit Nord. Fishermen negotiated these waters as they searched for harbours to occupy, grounds to fish, bait to catch, timber to cut and fresh water to store. Strong winds and currents, a complex coastal topography of islands, headlands and coves, and a hydrography of channels, submerged shoals, rocks and reefs, necessitated the installation of a physical and cognitive infrastructure of navigation routes, anchorages and berths - themselves warded by a system of natural and cultural landmarks - aligning to ensure safe passage and harbour for ships and boats. The current research will analyse the

form and distribution of these networks of routes, hazards and navigational aids and seek to tie these landmarks together as a series of inter-related links comprising wider maritime cultural landscapes.

The fishing rooms were not isolated entities stranded in an unfamiliar wilderness expanse, but rather economic hubs with spokes extending across large tracts of the coastal and inshore marine zones, particularly to places of known resources. The widespread exploitation of seabirds, for bait and food, is well attested and is thought to have been a contributory factor in the dramatic collapse of once teeming colonies along the coast (Pope 2009b; Noël 2010). However, while the need for timber, fresh water and bait fish is widely recognised, significant questions about the relative importance of these natural resources in the choice of fishing room location have yet to receive systematic analysis (Pope 2008). The importance of wood for fishing room construction, shipbuilding and firewood, and the need to secure fresh water for fishing crews receive specific attention in this thesis.

# Chapter 2: Historical, archaeological and environmental context

## 2.1 History of the French fishery in Newfoundland

The inshore and offshore waters of Newfoundland have been the focus of European seasonal migratory prosecution of Atlantic cod fish (*Gadus morhua*) since the early 16th century (Pope 2004: 15; 2006a; La Morandière 2005: 26). The scale and importance of the North Atlantic cod fishery to the early-modern European economies of Spain, Portugal, the Basque Country, France and England is well documented (Hersart de la Villemarqué 1995; Hutchings 1995; Pope 2004; 2006a, 2008; La Morandière 2005; Barkham 2009; Loewen and Delmas 2012). It was by far the most important commercial activity western European nations pursued in northern North America, outstripping by far even the fur trade, and was undoubtedly, to France, one of the most important of all its fisheries (Pope 2004: 14; La Morandière 2005: 9). In the New World, Newfoundland in particular was the most important part of a wider network of French cod fisheries prosecuted throughout Atlantic Canada: off Nova Scotia (Acadia) and Cape Breton extending south to the Gulf of Maine, around Gaspé and along the Quebec North Shore in the Gulf of St. Lawrence, and southern Labrador (Candow 2009b: 416-7).

Estimates of cod catches calculated for the 16th century until the beginning of the 20th century provide a perspective on the stable and productive nature of the cod fisheries across Newfoundland's waters over four centuries. Estimates for early modern annual catches of 150,000 to 250,000 tonnes can be compared to catches of 200,000 to 300,000 tonnes of cod taken annually in the 19th century (Pope 2006a: 28). Until the late 18th century, the French fishery was generally a far larger concern, economically and geographically, than its competitors (Pope 2004: 19).

There were two types of cod fishery – the sedentary fishery conducted from the coast along the inshore waters of northeastern North America and producing dried salt-cod, and

the Banks fishery conducted at sea over the vast shallow banks extending offshore and producing *wet* or *green* pickled salt-cod. Initially, all the fisheries in North America were conducted inshore before the offshore banks were exploited from the mid to late 16th century onwards (Candow 2009b: 419). The cod was transported and sold to European markets, where growing industrialisation and urbanisation, particularly in textile and industrial regions, led to a widening of commercial food production. Dry salt-cod was a cheaper staple alternative to more expensive types of fish, and was marketed principally in the Iberian Peninsula and the Mediterranean, where it withstood the warmer climate better than the *wet* cod produced by the offshore Banks fishery (La Morandière 2005: 27; Turgeon 2005: 28-35).

The historic European fisheries of Newfoundland, though international in scale, were vernacular industries undertaken by crews and ships from particular European ports who returned to preferred harbours in Newfoundland year after year (Pope 2006a, 2009a). Ships from France and the Basque Country, and probably Portugal too, dominated the early Newfoundland migratory fishery during most of the 16th century, before English involvement increased around the beginning of the 17th century (Pope 2006a: 10; 2009a: 125; Barkham 2009: 237; Candow 2009b: 416). Bretons and Normans were certainly fishing across Newfoundland as early as 1504, closely followed by French and Spanish Basques in the 1520s and 1530s (Turgeon 2005: 4; Pope 2008: 39; 2009a: 125; Barkham 2009; Candow 2009b; 416). While Basques traditionally occupied the southern and western coasts of Newfoundland, Bretons and Normans had been exploiting the rich cod grounds in the north of Newfoundland, on the Atlantic coast of the Great Northern Peninsula, known to the French as the Petit Nord, as early as 1541 and probably before (La Morandière 2005: 43; Turgeon 2005: 22; Pope 2008: 39-41, 2009a: 129). Archaeological ceramic analysis has demonstrated the strong provisioning links between many fishing rooms of the Petit Nord

and the ports of Brittany and Normandy, in northern France (Pope and Batt 2008; St. John 2011). Even by 1580, French crews greatly outnumbered their competitors and France's Newfoundland fleet may have reached 500 ships, carrying 12,000 fishermen, compared to 200 to 300 ships sent by the Iberian countries and about 150 from England (Turgeon 2005: 6).

Early historic accounts of the fisheries document an intensely competitive industry, traditionally organised on the internationally recognised *admiral* system of first-come first-serve (Pope 2014a). In the Petit Nord, the fishing room of *le Petit-Maître* located at Croque Harbour was the historic administrative centre of the fishery and the first captain to reach it became the *amiral*[1] of the entire French fleet gathered along the coast (Martin 2013: 33). Nevertheless, the intense competition for fishing rights was often punctuated by violent conflict between rival nationalities vying for shore-space along the Newfoundland littoral. In the 16th century this was concentrated about the Avalon Peninsula – the closest part of Newfoundland to the fishing ports of Western Europe (Pope 2006a: 10). Although not the only factor, the proximity of English ports to Newfoundland, albeit by fine margins of a day or two sailing, led to the displacement of the Portuguese from the Avalon Peninsula by 1620, and then the French, at least on the eastern Avalon, by the later 17th century. As a consequence of English expansion across the Avalon and northwards towards Bonavista Bay, crews coming later to the island, including those from France and the Basque Country who had to travel further distances, were forced westwards along the coasts of northeastern North America (Pope 2006a: 13). Nevertheless, the French continued to maintain a considerable presence on the western Avalon around Placentia Bay until 1713 (Pope 2009a:

[1] A fishing master or admiral was, until the early 19th-century, usually the fist captain to reach a harbour. He could determine the arrangement of the fishing room thereafter and arbitrate conflicts. From 1584-1681 the admiral was required to have at least 5 years fishing experience and to have succesfully completed an exam; by 1725 he had to have served in royal navy and by 1725 to be at least 25 years of age (La Morandière 2005: 23). This changed after 1803 when the admiral was usually the oldest and most experienced captain of all the rooms within a station (Le Pelley Fonteny and Desire dit Gosset 2001:124-5).

130). By 1664, 360 French ships were involved in the Newfoundland fishery, of which 132 were conducting the sedentary fishery, accounting for approximately 6,000 to 7,000 men (La Morandière 2005: 33; Pope 2009a: 125). By way of comparison, it is estimated that the French sedentary fishery landed as much as twice the catch of its English counterpart in 1686, and that the output of the Petit Nord alone was, in 1680, comparable to the English resident and migratory fisheries combined (Pope 2006a: 19-22).

Intermittent warfare between France and Britain persisted throughout the 17th and 18th centuries, with a net result of increasing pressure on France's ability to conduct its North American fisheries, including those off Newfoundland (Hersart de la Villemarqué 1995: 76, Table 10). Despite its waning colonial influence and muted aspirations in North America during the later 18th century, France nevertheless succeeded in defending its fisheries (La Morandière 2005: 4). In an effort to protect its economic interests in Newfoundland, France negotiated the terms of three peace treaties with Britain that markedly changed, detrimentally in two instances, the access it had to areas it had fished historically (Pope 2008: 38).

Following the War of the Spanish Succession (1702-1713), the Treaty of Utrecht (1713) recognised Newfoundland as a British possession and restricted the French to the northern coasts of the island between Cape Bonavista and Point Riche (Port au Choix) – an area that became known as the French Shore. The coastline between Cape Bonavista and Cape St. John on the Baie Verte Peninsula, was less actively exploited by French crews who concentrated their efforts further west and north between La Scie and Quirpon (La Morandière 2005: 55-56). Critically, the islands of St. Pierre and Miquelon were also lost to France at this time, depriving them of their major base in the south. Nevertheless, the comparatively large scale of French activity in Newfoundland continued and by 1754 about

390 ships were fishing in Newfoundland waters, half of which were prosecuting the sedentary fishery (La Morandière 2005: 36).

The Treaty of Paris (1763) closed the Seven Years' War (1756-63) and left France with little of its once extensive territories in North America. Again, France went to great lengths to negotiate and hold onto its access to the sedentary fishery of Newfoundland – only signing the peace treaty because Britain recognised its right to fish there (La Morandière 2005: 59). There was also partial compensation through the return of St. Pierre and Miquelon, thus providing the French with a secure base from which to organise what remained of their sedentary fishery (La Morandière 2005: 35; Pope 2008: 38). However, while the French understood the Treaty granted them exclusive rights to the French Shore, the English thought otherwise and considered the fishery concurrent, that is, also open to their fishermen. The absence of French fishing ships during the Seven Years' War had allowed the English or at least Anglophone Newfoundlanders to make inroads along the eastern part of the French Shore – particularly in Bonavista and Notre Dame Bays (La Morandière 1967: 56). During the second half of the 18th century English expansion continued; settlers were established in White Bay and appeared to have used it as a base from which to venture further northwards. For example, an English presence was noted on Bell Island and in Great Buse Bay in 1764, and English settlers were accused of damaging French fishing stations and property in Quirpon during the winter of 1783-4 (Le Tourneur 1765, 1773, 1785a; de Bouclon 1866: 409).

Following the end of the American Revolutionary War (1777-1783) with the signing of the Treaty of Versailles (1783), the terms and extent of the French Shore shifted once again. This realignment suited both the French and British parties since the eastern part of the French Shore between Cape Bonavista and Cape St. John was largely neglected by the French and had been increasingly settled by the English (La Morandière 2005: 70). The

French preferred to extend the French Shore westwards, from Point Riche southwest to Cape Ray. Importantly, the treaty established an exclusively French monopoly to the fishery along the French Shore, legally preventing not only further British incursion into the area but also permanent settlement. Despite the fluctuating limits of the French Shore, France's commitment to the Newfoundland fishery persisted and concentrated. In 1784, the Newfoundland sedentary and offshore fisheries represented 60 percent of the tonnage and 45 percent of the crew of all the domestic and foreign French fisheries combined (La Morandière 2005: 37). In 1785, approximately 9000 men were employed in the sedentary fishery, and by 1786 about 194 ships were involved carrying almost 11,000 men (La Morandière 2005: 75). By 1788, the Newfoundland cod fishery accounted for almost half the monetary value of the entire French fishing industry (La Morandière 2005: 38).

The immediate benefits of the Treaty of Versailles were unfortunately short-lived. For almost 25 years, from the start of the French Revolution (1789), through the French Revolutionary Wars (1792-1802) that followed, and during the Napoleonic Wars (1803-1815), French participation in its Newfoundland fisheries was severely curtailed (Hersart de la Villemarqué 1995: 76, Table 10; Candow 2009b: 438). Nevertheless, following the end of this period of social upheaval and conflicts, French rights to the French Shore were renewed in 1815 and they had returned in force by 1820 (Pope 2008: 41). It was during this period that the *amiral* system of allocating fishing rooms was replaced by a lottery, undertaken in St. Malo, Brittany, granting crews three-year occupations of the fishing rooms they established (Martin 2013: 33-4). Although it appears crews invested in the infrastructure they built at fishing rooms before this date, the three-year system served to encourage medium-term investment in permanent structures such as stages (Pope 2009a: 137).

During the relative peace and stability of the remainder of the 19$^{th}$ century the demand for cod fell and with it came the steady decline of the sedentary fishery. The economic and

political incentives to invest and subsidise the fishery were no longer strong enough to prevent a continual drop in sales and consumption (La Morandière 2005: 78). Combined with the steady influx of English, or rather Anglo-Newfoundlander settlers across Newfoundland's northern and western seaboards and the increasingly forceful nature of Newfoundland's own nascent legislature established in 1835, the place of the sedentary fishery assumed an ever more marginal position in French foreign affairs (La Morandière 2005: 85). The 1783 definition of the French Shore remained in place until 1904 when the French abandoned their rights to the sedentary fishery altogether as a result of the Entente Cordiale (Pope 2008: 41). By this time the number of French ships fishing in Newfoundland had fallen to a paltry seven or eight vessels (La Morandière 2005: 91).

### 2.1.1 The sedentary fishery

The sedentary fishery was conducted along the coastlines of Newfoundland, close to shore. Leaving France in April, the transatlantic voyage to Newfoundland took about a month, and crews timed their arrival in late May or early June to coincide with the melting of the ice floes that often blocked the fishing harbours during the winter months (Hersart de la Villemarqué 1995: 21). The fishing season usually lasted until August or September before the return voyage landed in Europe in November (Josse and Martin 2013: 26). After the Treaty of Utrecht, the French season ran from April 5$^{th}$ until October 5$^{th}$ (Thoulet 2005: 103).

On arrival at the coast of Newfoundland crews moored, unloaded and derigged their ships in sheltered harbours and coves, where hazards were at a minimum (La Morandière 2005: 10; Turgeon 2005: 42). The ships would remain at anchor for the four to five months of the fishing season. It could take crews up to a month to prepare and set up their fishing rooms – to build the stage and cabins, to repair boats and prepare tools, and to clear and

prepare drying areas of cobble *galets* and to construct flakes (Candow 2009a: 392; Pope 2009a: 133). The rooms were located in specific places that offered the fishing crews the most favourable conditions for accessing cod grounds, building and laying out their infrastructure and sustaining their occupation. From these rooms, the fishery was carried out by men in small open boats (*bateaux*), who would make daily voyages to nearby coastal fishing grounds, perhaps a mile or so offshore – often leaving early in the morning and returning in the late afternoon (Pope 2004: 25). The *bateau* was invariably a *chaloupe*, ranging between 6 and 10m in length and equipped with a mainsail and oars, with a carrying capacity of 5 to 6 tons (Candow 2009a: 393). There were generally five men per boat: three fishing and two working on shore (Pope 2004: 24; Pope 2006a: 20). According to Liberge de Granchain writing in the late 18th century, a single *bateau* with a crew of 3 men could be expected to take 7 or 8 quintals, equivalent to ¾ of a metric ton, of cod fish per day (de Bouclon 1866: 409).

The fishing and processing techniques of the sedentary fishery had their origins in the medieval period and remained largely unchanged until the widespread adoption of steam trawling in the late 19th century (La Morandière 2005: 11). The principal method employed hand-lines up to 30 fathoms (about 50m) in length which were lead weighted to reach the demersal zone (Moussette 1979: 54). The hooks were baited to lure a bite or the line was jigged to strike and catch a cod on part of its body. Each fisherman would use two hand-lines, one in each hand to increase the rate of productivity. It has been suggested that the sheer abundance of cod in Newfoundland's waters obviated changes in hand-lining techniques, since fishermen could catch as much fish in a day as could expected to take in a month on the coasts of France (Turgeon 2005: 38).

Once a *chaloupe* was laden with cod it returned to the stage where the fish was unloaded, headed, gutted, split and salted in preparation for curing. The temperate climate of

Atlantic Canada suited the dry salt-cod curing process and the fish were usually laid out on extensive natural cobble beaches (*graves*), on man-made cobble *galets*, on racks of wooden flakes (*vigneaux* or *flagues*) or on beds of fir and spruce boughs (*rances*) (Pope 2004: 14). The fish was left to dry and cure over several weeks in the sun and wind before being packed ready for shipping at the end of the season. The production of dried cod was carried out on an industrial scale since the limited fishing season enforced a "rationalisation of production", in which increased efficiency was required to ensure the completion of the numerous tasks involved and a healthy return of profits (Turgeon 2005: 39). Nevertheless, while the scale and structure of the fishery may have been industrial, its methods and techniques remained proto-industrial until their mechanisation in the 20th century (Brière 1990: 261).

Besides its economic value, the sedentary cod fishery was also of martial importance to France. It served as a nursery of seamen, training and supplying a steady stream of sailors who could be pressed into naval action during times of war (La Morandière 2005: 40). Many of the tasks involved in the sedentary fishery did not require professional fishermen, and could be undertaken by men and boys drawn from the agricultural hinterlands of the home ports in France (La Morandière 2005: 28). Indeed, of the three men operating a *chaloupe* only one was usually a seasoned fisherman, the remaining two often apprentices learning their trade (La Morandière 2005: 11). Politically, the cod fishery was an extension of French foreign policy (La Morandière 2005: 42).

French and British contestation of Newfoundland's inshore fisheries throughout the 17th and 18th centuries led both countries to compile detailed censuses and surveys documenting the state of their respective interests on the island (Pope 2006a: 16; 2008: 41). The French surveys, including those of the 19th century, are of particular importance to this research because they record over time the harbours worked across the Petit Nord. As a

result of frequent warfare, French rights to Newfoundland's shorelines were continually re-negotiated through political treaties, which were often closely followed by detailed inventories of the fishing stations and their rooms.

## 2.2 Archaeological context

Despite the fluctuations in the extent of the French Shore over time, the Petit Nord was the heart of historic French migratory shore-based fishing activity in Newfoundland (Pope 2008: 39; La Morandière 2005: 31). It therefore represents one of the earliest European archaeological landscapes in Canada, having been extensively and intensively commercially exploited by seasonal migratory crews since at least the 1540s (Pope 2009a: 129). The economic, political and social drivers which affected the establishment and distribution of fishing stations throughout the region have been the subject of ongoing archaeological research (Pope 2008, 2009a). Since 2004 the SSHRC-funded project, *An Archaeology of the Petit Nord*, has, under the direction of Peter Pope, conducted seven seasons of survey, testing and excavation across the Northern Peninsula, White Bay and the Baie Verte Peninsula. This research has been able to establish the arrangement and organisation of the morphological, functional and ideological components of many of the historic French fishing rooms across the Petit Nord, from which the seasonal fishery was prosecuted (Pope 2005, 2006b, 2007, 2011; Pope et al. 2007; Pope et al. 2009; Tapper and Pope 2014). Together with sites identified during earlier archaeological coastal surveys in these areas, about 56 percent of the known 198 fishing rooms of the Petit Nord[2] have been investigated archaeologically (eg. Bell et al. 2000; Bell et al. 2001; Renouf and Bell 2003).

Extensive excavations in Cape Rouge Harbour, at the fishing room known historically as *Champ Paya* (EfAx-09), have produced a considerable body of archaeological evidence

[2] Between Cape Norman and Cape St. John.

which has been the subject of a number of MA theses at Memorial University under Dr. Pope's supervision. These studies have thrown new perspectives on the archaeological structures, remains and material culture that constitute a typical fishing room. They include the analysis of structural features associated with the processing and drying of cod fish such as stages, cabins and drying areas, a study of the crosses and calvaries erected at fishing rooms, the excavation of a 19th-century bread oven, the faunal analysis of foodstuffs consumed in cookrooms and cabins, as well as detailed analyses of French and English ceramics (Burns 2008, Burns n.d.; Godbout 2008; Noël 2010; St. John 2011; Hatcher 2013). Elsewhere, the role of over-wintering Anglo-Newfoundlander *gardiens* at a seasonal French fishing room has also been investigated (Jones 2009).

## 2.3 Marine and terrestrial environments of the Petit Nord

The archaeological analysis of the distribution of fishing rooms across the Petit Nord requires a discussion of the ecological environments found across the region. Marine and climatic conditions dictated where and when cod appeared during their summer migrations inshore and by extension had a direct influence on the choice of site location of fishing stations. On land, the three distinct ecoregions found along the coast between Cape Norman and Cape St. John help to frame the geological, topographical and ecological nature of the coast and the availability of materials and resources fishermen exploited over time (Newfoundland and Labrador 2013).

### 2.3.1 Distribution and ecology of Atlantic cod

Cod *(Gadus morhua)* are a demersal fish found in the cold seas of Europe, the Baltic Sea and the Northwest Atlantic. Typically, adult cod are found at depths of 40-130m, rarely beyond 200m, and favour coarse sediments and rocky, pebbly and gravelly ground (Fahay et

al. 1999: 3). Cod are particularly sensitive to changes in water temperature and fluctuations can significantly influence their distribution and movement. They are usually found in temperatures under 10°C and particularly favour the range between 3 and 5°C (Hersart de la Villemarqué 1995: 67). In average years, cod patrol the colder waters beneath seawater temperatures of 8-10°C (above 30m) in which their favoured prey concentrate. However, their intolerance to higher temperatures may mean that in warmer years (12°C above 60m) they may avoid shallower waters altogether, while in colder years the absence of prey species intolerant to colder water may also limit their appearance inshore (Hersart de la Villemarqué 1995: 17).

Off Newfoundland and Labrador, the Newfoundland cod stock pursues an annual cycle of inshore-offshore migrations induced by changing water temperatures (Pinhorn 1984: 79; Rose 1993). From their offshore deep water wintering grounds, schools of cod, led by mature scouts, make springtime spawning and feeding migrations across the Newfoundland Shelf to the shallower waters of the island's coast to feed in the nutrient-rich waters brought south by the Labrador Current (Templeman 1974: 1073; Rose 1993: 458). The summer feeding disperses the schools of cod along the eastern coast of the island, where they chase favoured prey, such as spawning capelin, small crustaceans, squid and shrimp drawn to the abundant plankton blooms found in the colder water upwelling as it comes into contact with the numerous promontories, shoals and islands (Templeman 1974: 1087; Head 1976: 21-23; Pope 2004: 24; 2006a: 9). As the coastal waters cool in late summer the cod move northwards along the Newfoundland coast before retreating to their deeper overwintering areas during the autumn (Pinhorn 1984: 79; Fahay et al. 1999: 1).

The lack of spatially referenced marine geological sediment data for the inshore waters of the study area has prevented the GIS modelling of the spatial relationship between fishing stations and rooms and inshore cod habitats in this thesis. However, the bathymetric

limits of historic cod fishing techniques are discussed in section 6.3.1.

### 2.3.2 Terrestrial ecoregions

The Northern Peninsula, White Bay and the Baie Verte Peninsula are characterised by three ecoregions. Each ecoregion is characterised by repeating patterns of distinctive soil and vegetation coverage, determined by local climate and geology (Newfoundland and Labrador 2013). The distinctive characteristics of the ecoregions provide a convenient means by which to discuss the distribution the fishing harbours and rooms at the regional scale.

In this spatial analysis, the fishing harbours and rooms are grouped into four distinct areas to facilitate comparison between different parts of the Petit Nord. These four areas broadly accord with the following ecoregions and sub-regions.

1) The almost treeless tundra of the Strait of Belle Isle Barrens ecoregion characterises the study area between Cape Norman and St. Anthony. Very shallow soils and outcrops of limestone and marine sandstone bedrocks are common throughout. Forest coverage is restricted to the bottom of deeper bays and more sheltered valleys inland; in exposed areas near the coast tuckamore predominates and White Spruce and Balsam Fir occur as krummholz (Newfoundland and Labrador 2013).

2) The Northern Peninsula Subregions ecoregion comprises four sub-regions found across the lower elevations of the Northern Peninsula. The vegetation season is shorter than elsewhere on the island and rainfall generally lower. Along the eastern coast, acidic rocks underlie mostly marine sandstones, siltstones and mudstones. Balsam Fir dominates forest coverage with Black Spruce at higher elevations. Two sub-regions found on the eastern coast are of interest to this research:

- Between Crémaillère Harbour and Canada Bay the Northern Coastal Subregion is dominated by exposed, rocky dwarf shrub barrens and areas of unmerchantable forest (Newfoundland and Labrador 2013).
- From Canada Bay to White Bay, the Eastern Long Range Subregion includes productive but inaccessible Balsam Fir-Black Spruce mixed forest up to elevations of 450m (Newfoundland and Labrador 2013).

3) The Baie Verte Peninsula falls within the North Shore ecoregion. Black Spruce and Balsam Fir form a continuous coverage although the quality of tree growth diminishes with proximity to the coast, where barrens dominate on the headlands. The summers are relatively dry and warm (Newfoundland and Labrador 2013).

Several general characteristics emerge for the Petit Nord region. The predominant sandstone geology of the northern half of the Northern Peninsula gives way to the igneous mass of the Long Range Mountains in the southern half, while the Baie Verte Peninsula is largely characterised by metamorphosed schists and volcanic rocks (Newfoundland and Labrador 2014). Soils improve and forest coverage significantly increases in the southern half of the region, excepting on exposed windswept headlands on the coast. Compared to other parts of Newfoundland the summers along the coasts are drier and cooler (Newfoundland and Labrador 2013).

The advantage of using ecoregions to help frame the spatial analysis is twofold. First, the environmental characteristics of the Petit Nord are a considerable factor in determining where fishing rooms were established. Geology and ongoing marine coastal processes, including glaciation and changes in relative sea level over time, have shaped the topography and geomorphological characteristics of the bays, coves and islands along the coast. In turn, these characteristics dictate where fishing crews could harbour safely, build conveniently and find the materials such as the extensive cobble beaches to dry fish efficiently. Similarly,

soil and climate determine and control the types of plant communities and forest coverage found – forest being of particular importance to French crews seeking timber to build their rooms, repair their ships or simply keep warm.

Second however, the environmental determinism insinuated above provides the base against which to contrast the agency and decision making of fishermen as they chose the locations of their fishing rooms. As becomes apparent, the specific combination of environmental factors required for a room did not necessarily mean that one was established - the available options were assessed and chosen through a cultural lens.

# Chapter 3: Theoretical approach

## 3.1 Landscape archaeology

The origins of modern landscape studies can be found in ideas and attitudes that arose out of the European Renaissance and which were distilled during the Enlightenment (Cosgrove 1984; Johnson 2007). Originally a technical term used by 16th-century painters, *landscape*, from the Dutch *landschap*, was initially used to denote the predominantly visual and artistic representation of "rural sceneries that incorporated reference to changing conditions of [human] life"; however, it also represented a physical unit of human occupation (David and Thomas 2008: 27).

Early explorations of landscape archaeology, specifically within culture-historical frameworks, conceived landscape as a neutral natural environment backdrop against which studies of human culture and their material traces were set (Anschuetz et al. 2001: 168). In this guise, landscape was simply the arena or theatre in which human action took place. With the advent of New Archaeology in the 1960s, the environmental context of archaeological material culture assumed a more active role as the focus shifted to analyses which were framed in evolutionist and ecological terms (Trigger 2006: 386; David and Thomas 2008: 28). The methodological rigour that accompanied New Archaeology encouraged deductive and positivist approaches in which generalising statistical and spatial analyses, particularly in studies concerned with settlement patterns and systems, were expressed in terms of cross-cultural similarities and adaptations to ecological factors (Trigger 2006: 394). Within this approach, landscape remained synonymous with the natural environment - objectified as an external force responsible for cultural change.

While New Archaeology renewed interest in the environmental and spatial context of archaeological material culture it also provoked a critical response from archaeologists who challenged its positivist tendencies. From the late 1980s onwards, postprocessualists

challenged the separation of theory and method and instead pursued a discourse concerned with the nature of knowledge creation, and particularly the social and political generation of scientific truth (Shanks and Tilly 1992; Hodder and Hutson 2003; Trigger 2006: 444). This manifested as an increased interest in the role of past people's agency, their ideologies, thoughts and values, and was accompanied by an emphasis on the hermeneutics of archaeological interpretation in the present. In this vein, postprocessualism moved away from materialist and rationalist notions of landscape towards positions that recognised that landscape is understood differently, both spatially and temporally, by different people. Landscape is therefore not simply an abstract idea objectified over there, but culturally constituted by people, and subjectively by individuals, in their everyday practice (Johnson 2010: 107). Importantly this has led to a distinction between the notion of quantifiable, abstract and depersonalised space and qualitative, historicised and humanised place. Landscape in the latter sense is a "way of seeing, a way of thinking about the physical world" (Johnson 2007: 4).

A fundamental premise of landscape archaeology is that landscape is a place of engagement, one that is constructed through sets of relationships and acts between people, places and things (Thomas 2001; Casey 2008). Landscape is not considered a cultural void filling the spaces between sites but viewed instead as inhabited, with an emphasis placed on the recursive relationship between sites and their broader settings. These notions are influenced by humanistic elements of the New Geography, in which cultural landscapes are lived in and lived through, incorporated, mediated, worked on and altered, whether actively or passively, physically or cognitively (Relph 1976: 122).

When landscape is understood as a cultural process - as history, it resists being regarded simply as geography. As such, landscape can be regarded as a "cultural product [whereby] through daily practices, beliefs, and values, communities transform physical

spaces into meaningful places" (Anscheutz et al. 2001: 160-1). As a cultural structure, landscape mediates peoples' interaction with their environments while also serving as the setting in which people sustain themselves materially and cognitively (Knapp and Ashmore 1999). It is in the context of these interpretations that landscape is considered an appropriate framework for investigating social life in the past. In this regard, landscape becomes a unifier – between the physical and cognitive perceptions of people's relationships and activities in places and spaces. However, like history it can also be considered a representation – something that is mapped, acculturated and interpreted continuously over time and from many different perspectives. The cultural construction of landscape raises important issues of how *place* is created and signified, as well as experienced and mediated. Specifically, the varying and/or competing conceptions of place by people in the past, as well as archaeologists in the present, have been highlighted (Darvill 2008). When landscapes are constituted by people who differ in age, ethnicity, gender and cultural tradition, and who can experience the same landscapes differently, there is an inherent acknowledgement of the creation of multiple or fragmented landscapes (Thomas 2001). In many ways landscape is like a palimpsest, comprising many layers of multiple temporalities, each with different resonances in the present (Lucas 2005: 41). Conceptualising landscape as a dynamic cultural process means that multiple temporalities can be read from its physical fabric, particularly when informed by the archaeological record, historical documents and oral history (Rippon 2004).

Landscape is not simply static, but can be mobile or moved through and as places of human practice are temporal and in perpetual process (Ingold 1993; Bender 2001). Temporality is an important component of landscape archaeology and has been used to frame landscapes as points of intersection and trajectory, with uncertain and mobile futures, rather than as static and fixed constructions (Bender 2002). The temporality of dynamic

landscapes has been articulated by Ingold (1993) who identified the need for archaeologists to consider landscapes as lived places, continually constituted by the experiences of people who actually spend time in them. The moving body and travel introduces the notion of the mobile landscape, which has been examined by the British anthropologist Barbara Bender. She assesses the various scales, individual to social, local to global, at which people move through places. Citing ethnographic examples of migrant workers and people in exile, and how such people relate to unfamiliar and hostile worlds, Bender argues that people are always in some form of relationship to the landscape they move through; non-places or in-between places do not exist – all experiences are what she terms "being in place" (Bender 2001: 85). She goes on to suggest that forms of mobile place, which are often intangible and immaterial, can be founded in personal biography, memory, mementoes and the "ego-centred adventure". Concluding that people's sense of place extends out from their familiar locales and present encounters, yet is surrounded and conditioned by larger temporal and spatial relationships - unfamiliar places - she argues that places may be carried by the body during acts of "migration, exile, return or relocation" (Bender 2001: 81-83). As Mélissa Burns (2008) has argued in her analysis of Breton crosses and calvaries installed as landmarks across the Petit Nord, similar attempts to acculturate a foreign landscape and draw them into more recognisable and familiar spheres of understanding occur within the maritime cultural landscapes of the historic French sedentary cod fishery.

### 3.2 Maritime cultural landscape

The principles and ideas found in postprocessual landscape archaeology are equally useful for understanding the maritime cultural landscape. The concept of the maritime cultural landscape was first articulated by the Danish marine archaeologist Christer Westerdahl (Westerdahl 1980, 1992, 2011). Proposing a more holistic approach to maritime

archaeology - one that unites the archaeology of the marine zone with its associated terrestrial expressions - he suggests such landscapes are places of engagement that "comprise the whole network of sailing routes, old as well as new, with ports and harbours along the coast, constructions and remains of human activity, underwater as well as terrestrial" (Westerdahl 1992: 6). Critically, and for the first time, this allowed archaeologists studying maritime environments to engage with key concepts found in the discourse of landscape archaeology - namely the cultural construction of place through human activity (eg. Cooney 2003; Flatman 2011; Ford 2011b: 1).

Discussing the management of coastal cultural landscapes, Flatman (2011) notes the need for increased theorising in maritime archaeology and, in particular, the elaboration of agency theory. Citing the various ways in which people in the past and the present experience maritime cultural landscape in their everyday lives, Flatman asserts that one of the defining characteristics of these places is the way people are challenged yet compelled to physically and cognitively navigate and negotiate their way through them. Similarly, Sturt (2006), in his examination of the liminal clarity of sea-land boundaries and the human responses to rhythmical processes of prehistoric sea-level rise in a fenland environment, suggests that maritime archaeology actually "forces a more sensitised approach to space, temporality and change than occurs in terrestrial archaeology" (Sturt 2006: 120).

Westerdahl identifies a number of ways such approaches can be undertaken archaeologically. He articulates the inter-relationship of physical and cognitive understandings of landscape, one that it is created by the "mapping and imprinting of the functional aspects of the surroundings in the human mind. Man in landscape, landscape in man" (Westerdahl 1992: 5). Using this concept he suggests that both material and immaterial remnants of the maritime cultural landscape can be revealed – tying, for example, the physical remains of boats, harbours and seamarks to the more archaeologically

invisible acts and processes that generated them, such as pilotage, trade, and navigation. Furthermore, he argues that the establishment of links between the material and immaterial also creates networks of sailing routes and transit points influenced by natural topography and reflected in maritime-based place-names (Westerdahl 1980, 1992: 5-9).

In the context of the Petit Nord, the concept of the maritime cultural landscape has been articulated in terms of the relationship between landmarks, the specific places where human activities occur, and the broader landscapes which are constructed by knitting these landmarks together spatially and temporally, physically and socially (Zedeño 2000; Pope 2009a, 2014b). This relationship between landmarks and landscape is concisely demonstrated in the way navigation aids are used. As individual monuments and places, built or acculturated in the physical topography, they are only legible when linked as one part in a series of inter-dependent components. Only then, when used in alignment with one another, and mediated through the cultural practice of seafaring do they frame a coherent network of linked sailing routes and anchorages. Modern analogies for this type of behaviour and practice can be found in recent studies of fish harvesters' ecological knowledge (FEK) which have shown how Newfoundland fishers in the present construct detailed cognitive maps in order to exploit favoured fishing grounds inshore (Wells 2006; Murray et al. 2008).

The notions of temporal and mobile landscapes are particularly pertinent to the maritime cultural landscapes of the Petit Nord – where the seasonality of the rooms ensured their temporary use during the year. Similarly, the voyages required to reach them from across the Atlantic, and then fish daily along their coastlines, meant that fishermen were likely to have had a very mobile sense of place. That they brought sentiments and notions of Brittany, Normandy and elsewhere with them is apparent in the place-names given to many of the harbours, coves and landmarks or the structures that they built or erected (Seary 2000;

Burns 2008; Pope 2009c; Story 2012). In her discussions of the social action of seafaring in the Neolithic central Mediterranean, Helen Farr explores notions of mobile maritime place (Farr 2006). Arguing that specialist knowledge and skill of people's surroundings was gained through their practical and cognitive mastery of the ever changing seascape, and a spatial and temporal awareness of weather and current conditions, she asserts the importance of travel in the creation of social alliances, identity and knowledge, emphasising how the latter was preserved and reinforced through oral traditions and shared memories (Farr 2006: 92-93). In the historical context of the Petit Nord, similar processes can be observed in the shared knowledge of navigation hazards and the landmarks used to ward them, created and used by fishermen, and historically documented through the sailing directions of early transatlantic explorers and pilots such as Jacques Cartier and Martin de Hoyarsabal, and later culminating in the detailed sailing directions and hydrographic charts produced by the French Navy (eg. Barkham 2003; Le Tourneur 1766, 1773, 1785a; Richard 1829, 1830a and b; Anon. c1832, Plans 7-66; Le Roche-Poncie 1847; Cloué 1854a and b, 1856, 1857a and b, 1858, 1860, 1861, 1862, 1863a and b; Pierre 1856, 1857, 1859a and b, 1860 a-d, 1861a and b).

The environmental locales used to describe, explain and frame the archaeological and historical analyses of human activity forms a critical and integral part of this landscape study. This necessitates the incorporation of historical ecological approaches which emphasise how socio-historical structures in combination with the natural environment - seasonality, geology, topography, vegetation, erosion processes - also create landscape (Balée 1998). Such an approach recognises that biodiversity and semi-natural environments are also the consequence of historic human activity. The fishery has left tangible effects of its practices and these are observable in the landscape of many fishing rooms as changes in

the variety and density of vegetation and tree coverage, and starkly demonstrated by the intensive exploitation of once extensive seabird colonies (Pope 2009b).

The maritime cultural landscapes of the Petit Nord are also representations of cultural structures. They were described, mapped and charted from the earliest years of the French fishery. The significant use of historic documents in this research raises important issues of how *place* was created, perceived, signified, mapped and acculturated (Johnson 2007). In this regard, the role of the French colonial administrators and the French Navy is of particular interest because many of the accounts, censuses, surveys and hydrographic charts used to identify and map the fishing rooms analysed in this research were compiled by administrators and surveyors of the fishery, rather those directly prosecuting it.

# Chapter 4: Methodology

This study contributes to the ongoing research project *An Archaeology of the Petit Nord*, directed by Dr. Peter Pope of the Department of Archaeology at Memorial University, and its goal to investigate the maritime cultural landscape of the French, seasonal, inshore salt-cod fishery in northern Newfoundland (Pope 2008, 2009a). Among the immediate objectives of the 2013 research programme was an assessment of site choice by French migratory fishers within the broader landscape, and following the methodologies of earlier field seasons, involved recording and dating the surviving visible features or those identified archaeologically. For the purposes of this study, fieldwork concentrated on the selective landscape assessment of several specific fishing harbours that would help the author to better understand the distribution of fishing rooms and clarify the landscape-scale organisation of fishing harbours more generally.

The Memorial University field survey team consisted of the author, accompanied by Dr. Pope and Geneviève Duguay, an expert on French and English early-modern material culture. The team of three made a summer field trip, between 8th and 19th of July 2013. The author returned to the study area for a further landscape survey between 23rd and 30th October 2013.

## 4.1 Fieldwork

The field survey undertaken in July focussed on the archaeological testing of 17 sites to confirm the presence and form of historic French fishing activity. It also served to provide the author with the invaluable opportunity to discuss the nature of the landscape-scale organisation of each fishing station and their component rooms with Dr. Pope. This landscape assessment involved the survey of several major fishing rooms in Noddy Bay, Quirpon, St. Lunaire-Griquet, Croque, Conche, Crouse and Fleur de Lys harbours. Prior to

fieldwork, the author had identified certain sites through the analysis of 18th- and 19th-century French hydrographic charts and plans of fishing rooms, which facilitated field identification of new sites. The survey thus also provided the opportunity to visit a number of fishing rooms not previously studied. Archaeological testing involved implementing several established techniques. Surface collection was undertaken where artefacts were visible on the ground with artefact scatters and significant findspots recorded by handheld Garmin 62s GPS. Rapid walkover survey was employed to identify visible archaeological features and structures; these were recorded by sketch-survey, digital photography and GPS. Additionally, selective shovel test-pitting targeted and sampled archaeological structures and features identified during the walkover survey. Test-pits measured 0.5m x 0.5m in size and were photographed and sketch surveyed in profile. Selected samples and all finds were recovered, bagged and labelled according to site code and context excavated. Non-diagnostic artefacts of minimal interpretive value, such as iron nails or fragments, were sampled, with most simply reported, recorded and left *in situ*. Subsequent laboratory analysis, carried out by Memorial University students Hilary Hatcher and Marie Curtis, ensured that all artefacts retrieved were cleaned, re-identified and catalogued. All artefactual material recovered has been added to *An Archaeology of the Petit Nord* project's excavation and archival database.

The second field trip was undertaken by the author and involved the non-invasive photographic landscape survey of 20 sites in several harbours. The author returned to the major harbours of Quirpon, St. Lunaire-Griquet, Conche and Crouse, but also visited several more including St. Anthony, Crémaillère, Grandois and St. Juliens, Goose Cove, Englee, Pacquet and La Scie. Several minor harbours were also visited including Cape Onion Cove, Great Brehat, Three Mountains Harbour, and Harbour Round and Brent's Cove on the Baie Verte Peninsula. The principle aim of this trip was the further assessment of the landmarks

and landscapes extending from fishing rooms. These include the natural and cultural landmarks associated with navigation and the identification of various types of coastal mooring features associated with historic anchorages. Furthermore, it allowed the author to visit, identify and record a range of physical coastal features such as prominent rocks, escarpments and streams that were historically used to mark and negotiate the division of space between rooms. Similarly, the fieldwork provided further opportunities to undertake assessment of the proximity of rooms to natural resources, such as fresh water and timber.

In total, over both field surveys, 37 sites (in 26 harbours) were visited, of which 11 were confirmed as new sites belonging to the historic fishery; a further 8 known sites were substantially updated and revised. The results of the archaeological field survey and testing were reported to the Provincial Archaeology Office of Newfoundland and Labrador (Tapper and Pope 2014).

### 4.2 Historic landscape analysis (HLA)

The results of the 2013 fieldwork season, and those generated from field surveys undertaken by *An Archaeology of the Petit Nord* project since 2004, have provided the archaeological evidence required to underpin the historic landscape analysis (HLA) pursued by this research. Principles and techniques of HLA provide the method used to investigate the spatial distribution of fishing rooms and their associated landscapes. HLA, in various programmes and practical applications, has been used extensively by archaeologists, historians and historical geographers in Britain and Europe, to analyse, interpret and present the history and character of physical cultural landscapes for the purposes of landscape management, spatial planning, research and outreach (Herring 1998; Aldred and Fairclough 2003; Clark et al. 2004a; Clark et al. 2004b; Rippon 2004).

The physical fabric of the historic landscape is a significant record of past human activity - it is itself a source. It also provides the spatial and temporal framework for integrating, in an interdisciplinary manner, other evidence - primarily archaeological material and historic cartographic and documentary sources (Rippon 2004: 3). The even and systematic application of HLA across all parts of the study area, from Cape Norman to Cape St. John, allows repeating patterns of land use, at a regional scale, to be observed and interpreted with a greater level of confidence than might otherwise be achieved at more localised scales (Rippon 2004: 4).

In most HLA exercises, establishing a chronology for part of the landscape being studied is achieved through retrogressive analysis, from the present into the past, and is pursued until "the period when the origins and fundamental features of the historic landscape came into being is reached" (Rippon 2004: 3). For the French fishing rooms of the Petit Nord, this presents a significant challenge – they are quintessential palimpsests, inscribed and overwritten almost continuously over a period of about 400 years. In this sense, the HLA approach has a limited application within the landscape of individual rooms – certainly within the immediate working areas associated with the stage – where archaeological excavation is often the only method by which the complexity, chronology and evolution of a fishing room can be even tentatively ascertained. Nevertheless, in this study which takes the landmark of the fishing room as the basic and non-reducible unit of analysis, the HLA approach offers potential to articulate the relationships between rooms and their wider landscapes, despite the reliance on fragmentary archaeological material and historic documents to provide chronological depth at most sites.

The key tenet of the HLA approach is the ability of the researcher to understand cultural process from the form of the physical landscape. The identification of generic types of historic landmarks and components, which together comprise landscapes, is based on

shared morphology and character attributes, "for which research elsewhere may by analogy suggest origins and development" (Rippon 2004: 4). While many parts of the physical landscape of the Petit Nord have not been visited or directly accessed (eg. underwater contexts) as part of this research, the HLA approach provides a means by which to identify the cultural processes that also occurred in these places. Using exemplars, trends and patterns surveyed and observed at the sites investigated by *An Archaeology of the Petit Nord* project, such an understanding of process can be used to interpret the form of the historic landscapes – both physical and cognitive – across the Petit Nord as a whole.

This research focusses on Scales 2 and 3 presented by Pope as a way in which to frame how landmarks and landscape fit together (Pope 2014b: 13). At Scale 2, the fishing room is treated as the non-divisible unit of analysis although discussion of the relationships between rooms extends the focus onto Scale 3, in which the entity of the harbour or fishing station is the principal unit of analysis. These nested scales are repeated in the analysis of navigation landmarks which come together to form the landscapes of navigation routes and areas.

### 4.2.1 HLA assessment

The archaeological analysis of the physical remains surveyed and observed during fieldwork and the ensuing documentary and cartographic research informs on the typical or atypical landmarks and landscapes, types of sites, features and finds that are found across the Petit Nord. The deconstruction of historic landscapes can be achieved by analysing its composite parts. Using the analogy of agricultural field systems Stephen Rippon discusses how this may be achieved:

> Different landscape character results from variations in the form and spatial arrangement of a wide range of features reflecting the different means by which [people] achieved subsistence, communications, recreation, and security at various periods in the past. One way of thinking about landscapes is as a series

> of individual elements, eg. a field, which [functionally] combine in various ways to form discrete components or 'themes' within the landscape (e.g. a field system). The form of each component, and the way they articulate with other components, determines historic landscape character, and a distinctive and repeated combination of components define a generic historic landscape character type (Rippon 2004: 19).

Using this model, a number of historic elements and components have been identified and developed for the Petit Nord, some pertaining to landscapes of the fishing rooms and others to the processes of navigation and resource acquisition that historically extended from them. In the Petit Nord, this equates to the identification of the individual fishing rooms as discrete parcels of cleared ground cut into the boreal forest at the coastal edge and the discussion of particular (not all) elements found within them – but with some focus on the areas set aside for drying fish, the locations of stage areas at the shoreline and the types of topographic landmarks that served to administer shore space; even then, the emphasis is concerned with the way in which these features influenced site choice and bounded work space. Away from the fishing rooms, elements located in prominent parts of the topography are identified as recurring types of navigation landmarks, used to delimit wider landscapes of sailing routes and anchorages linking harbours and rooms to fishing grounds and resource areas of timber and freshwater. Each element (or landmark) is classified on the basis of a number of descriptive attributes, principally drawn from archaeological survey and historic and cartographic documents, and which include site location, site type, the date where known and the principle sources used to inform the interpretation and classification. This schema has been applied evenly and systematically during the HLA assessment stage.

In addition to the analysis of the results of archaeological survey, this study has involved the identification, transcription, and interpretation of numerous historic documentary and cartographic sources. The information derived from these sources is represented at many different scales, ranging from accurately recorded features surveyed during fieldwork to the

approximate locations of sites based on schematic historic plans. As such, the spatial accuracy and precision of the data produced during this research is governed by the resolution of the source data. The source of the data is consistently recorded enabling the research to establish the confidence with which interpretations dependent on spatial analyses can be made. For all the types of historic sites identified, the most accurate source available has been used to locate the site. Generally, the spatial accuracy is based on the following sources, representing in descending order the confidence associated with each:

- results of archaeological fieldwork and excavation;
- map regression of modern and historic sources from large-scale to small-scale. The site of a fishing room is located using modern maps and charts while its time-depth (chronology) is obtained through map regression to earlier sources;
- historic documentary sources. These often provide only loose approximations of the locations of sites of interest – unless corroborated by cartographic sources.

#### 4.2.1.1 Geographical Information System (GIS)

The research has been primarily undertaken within the framework of a Geographical Information System (GIS), which has functioned both as a data management and analytical tool. With foundations in processual studies of patterning, quantification and predictive modelling, the application of GIS in landscape archaeology introduces theoretical problems concerning Cartesian reductionism, environmental determinism and the perpetuation of the "western gaze" of impersonal and objectified space as exemplified by maps and aerial photographs (Thomas 2001: 169; Johnson 2007: 85; Conolly 2008: 583-4). These concerns can be attenuated when the application of GIS is understood to be more than a simple representation of reality - thereby some form of unreal simulation - but also a product that is part of reality. Wickstead suggests that geospatial technologies are subject to localised,

messy, adapted, and contested practices of knowledge creation, and as such, contribute to the ongoing constitution of realities rather than fixing an external and objective cartographic hegemony (Wickstead 2009: 256). Several authors have contributed to this debate by suggesting a middle-ground solution that marries interpretive landscape sensibilities with hard methodological models, where GIS is a heuristic tool rather than a concrete application (eg. Llobera 2012: 506). The application of GIS during the course of this research has been applied in this regard, as a heuristic tool, serving principally as a management device to facilitate spatial analyses rather than forming the basis and means by which complex computer-generated spatial analyses have been automated.

The regional analysis pursued required the ability to collate, assess and analyse information from various repositories and archives, and in multiple formats. To facilitate the complex data management, storage, preparation and manipulation, the ESRI ArcGIS software package has served as the principle GIS platform and linked to a Microsoft Access 2010 relational database. All data has been captured in the projected coordinate system NAD1983 CSRS UTM 21N[3].This research has produced a series of GIS-based layered datasets that map the archaeological and historic dimensions of the maritime cultural landscapes of the Petit Nord and which form the samples on which the analyses presented in this thesis are based.

#### 4.2.1.2 Documenting fishing harbours and rooms

The locations of fishing harbours and rooms have been principally identified from a combination of archaeological field survey and 18th-and 19th-century hydrographic charts, maps and plans (see Appendix 1). Modern hydrographic charts, acquired from the Canadian Hydrographic Service (CHS), have also been widely used to check spatial accuracy inshore

[3] http://georepository.com/crs_26921/NAD83-UTM-zone-21N.html (Accessed 21 September 2013).

(CHS 1998, 2002a-d, 2003a-g, 2006). The locations of 183 fishing rooms (92 percent of all) have been accurately plotted within GIS using 1:10,000 scale orthorectified vertical aerial photographs, and the remaining 16 using 1:50,000 Toporama topographic maps (Newfoundland and Labrador 2008; Natural Resources Canada 2014a).

In addition to the archaeological evidence, the time-depth of fishing harbours and their rooms has been ascertained from eight historic French censuses and surveys dating from between 1640 and 1872, which record the fishing effort prosecuted from each harbour and by the late 18th century from each room (Anon. 1640; Birard et al. 1680; Anon. 1764; Anon. 1765a; Anon. 1765b; Anon. 1784; Le Tourneur c1784; Anon. 1822; Anon. 1832; Anon. c1832; Anon. 1872). These surveys were selected on the basis of their completeness, since most describe the majority of harbours (and rooms) recorded across the region. Similarly, they offer reasonable chronological coverage for the 17th, 18th and 19th centuries which form the core period of study in this thesis. They are also amongst the most accessible sources available for study, either obtainable through internet enabled archives or having been transcribed and previously analysed by Dr. Pope (Pope 2006a). Nevertheless, these sources represent only a partial picture of fishing effort during the period as a whole and their respective coverage and limitations are discussed in Chapter 5.

Building and adapting on a Microsoft Access 2010 database setup by Mélissa Burns (a PhD candidate investigating the taskscapes of the French fishing room of *Champ Paya* (EfAx-09), under the supervision of Dr. Pope) which was generously provided to facilitate this research, each harbour and fishing room's appearance is recorded throughout the different censuses and surveys with the number of boats recorded at each date (see Chapter 5). The author's research has made considerable amendments to the database, including the addition of further historic fishing rooms, the accurate recording of NAD83 UTM 21N coordinates for every documented fishing room (either centred on the historic stage area

where that is known or centrally within the known limits of the room), as well as the inclusion of the areas and quantities of drying space and materials available at rooms enumerated on surveys available for c1784 and 1821, and partially for c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832). Substantial additional information has also been recorded for each fishing room in the linked GIS geodatabase, including details of local topography and previous archaeological research undertaken at the site. This information, including a short note on the terminology used within each attribute, is set out in Table 1. Appendix 1 lists the individual records of the 198 fishing rooms that comprise the sample although only a subset of the attribute fields are presented due to limits of space.

| Database Attribute Name | Description and terminology |
|---|---|
| Harbour | Harbour in which the room is found. Modern name. |
| Room | Historic name of the fishing room. Usually taken from early C19 sources eg. Anon. 1822. |
| Alias | The name(s) of the fishing rooms as recorded on numerous historic surveys and charts between 1640 and 1872. |
| Location | The location of the fishing room along the coast and within bays and coves. The point used and expressed by the NAD83 UTM21N coordinates does not reflect the true extent of the fishing room but the approximate position (+/-5m) of the historic stage area where known.<br><br>**Arm** (Inner inlet within a larger bay or cove)<br>**Archipelago**<br>**Bay** (Bottom, Middle, Mouth)<br>**Channel** (An open-ended body of water )<br>**Cove** (Bottom, Middle, Mouth)<br>**Fjord** (Deep, narrow inlet)<br>**Pelagic coast** (Steep coast against deep water) |
| Landform | The predominant landform on which the room is sited.<br><br>**Coastal plain** (Extended area of flat or near level ground)<br>**Headland** (Point of land extending into water)<br>**Island, islet** (Tidal, tied)<br>**Peninsula** (Bordered by water on three sides)<br>**Promontory** (Raised land falling on one side) |
| Geomorphology | The predominant character of the geomorphology found at the fishing rooms (if known). Judgement made by the author from available sources.<br><br>**Cobble foreshore** (Predominantly cobble or stone)<br>**Rocky foreshore** (Predominantly rocky)<br>**Raised beach** (A former beach now lying above water level owing to geological uplift.)<br>**Terrace** (Some form of significant terrace or escarpment)<br>**Sandy foreshore** (Predominantly sand) |
| Topography | Predominant character of local topography on which the room was arranged.<br><br>**Flat** (Predominantly level ground or incorporates substantial level component)<br>**Undulating** (Predominantly uneven ground)<br>**Slope** (Predominantly sloping ground across the majority of the room)<br>**Steep** (Predominantly steep ground across the majority of the |

| Database Attribute Name | Description and terminology |
|---|---|
| | room) |
| Landcover | Predominant character of landcover at the site of the room.<br><br>**Barrens** (Predominantly treeless)<br>**Meadow** (Evidence for grasses and other colonising and invasive plants)<br>**Scrub forest** (Open regrowth, scattered trees)<br>**Settlement** (Developed by modern settlement)<br>**Industry** (Developed by modern industry) |
| Ecoregion | The ecoregion in which the room is located (Newfoundland and Labrador 2013). |
| Bathymetry | The depth of water, at Chart Datum, closest to the historic location of the head of the stage. Estimated from available historic and modern charts. |
| Aspect | Direction(s) to which the ground of the room faces. Manual judgement of author based on 1:50,000 DEM. Expressed as cardinal directions. |
| Elevation | Highest elevation (m) found within a room. Manual judgement of author based on historic extent of the room and 1:50,000 DEM (Natural Resources Canada 2014b). |
| GeologyBS | Dominant bedrock geology and surficial geology recorded at location of the room (Newfoundland and Labrador 2014). |
| Archaeology | Archaeological investigation(s) undertaken at the site of the historic room (where published or deposited with the PAO). |
| Borden | Canada PAO site number. |
| Date | Date of the fishing room as determined from archaeological investigation. |
| Distance to open sea | Approximate distance from the historic stage position at a room to the open sea (understood as entrance of the bay, cove or harbour). |
| Room Location Source | Historic source used to identify the location of the room (not necessarily to plot it accurately) |
| Stage Location Source | Historic source used to identify the location of the stage (not necessarily to plot it accurately) |
| Easting | Easting of the room. NAD83(CSRS) UTM21N |
| Northing | Northing of the room. NAD83(CSRS) UTM21N |

Table 1. Simplified database structure used to record the location and topographic profile of each fishing room.

#### 4.2.1.3 Historic fishing room divisions

The locations and forms of the topographic landmarks historically used to divide shore space in larger harbours have been identified from two major historic surveys of the Petit Nord fishery (Le Tourneur c1784, Plans 15-57; Anon. 1822). The physical site of 53 (i.e. 67 percent) of the 79 historic divisions forming the sample analysed during this research were confirmed during fieldwork in 2013. The remainder have been identified and plotted onto GIS from 1:10,000 scale orthorectified vertical aerial photographs (Newfoundland and Labrador 2008). The information recorded for each historic room division is set out in Table 2. Appendix 2 lists the individual records that comprise the sample.

#### 4.2.1.4 Navigation hazards, landmarks and routes

Many of the same archaeological, cartographic and documentary sources employed to identify fishing rooms have also been used to build the dataset used to discuss historic navigation practices and the routes taken by fishing and naval vessels in the past.

French naval charts identify sites and monuments related directly to the maritime environment or maritime activity. These include historic navigation marks, anchorages and submerged hazards. The information recorded on historic charts is often repeated and duplicated in later editions, frequently persisting into modern versions. A number of landmarks and daymarks (man-made installations used for daylight navigation) are identified from coastal views or profiles, conveying the view from sea, included on historic charts. This information, including a short note on the terminology used within each attribute, is set out in Table 3. Appendices 3 and 4 list the individual records that comprise the samples for daymarks, landmarks and anchorages respectively.

| Database Attribute Name | Description and terminology |
|---|---|
| Name | Name of the location of the topographic division historically used to divide shore space. |
| Type | Type of topographic or artificial division recorded from historic sources and/or ascertained during fieldwork in 2013. |
| Description | Short description of the historic division. |
| Notes | Observations concerning the historic division. |
| Source | Historic source used to identify the nature and location of the historic division. |
| Easting | Easting of the linear midpoint of the historic division. NAD83(CSRS) UTM21N |
| Northing | Northing of the linear midpoint of the historic division. NAD83(CSRS) UTM21N |

Table 2. Simplified database structure used to record the location and type of topographic landmark used to historically divide shore space.

| Database Attribute Name | Description and terminology |
|---|---|
| Name | Name of the landmark or feature derived from available cartographic source. |
| Type | Functional type of navigation landmark:<br><br>**Anchorage**<br>**Anchorage (Major)** (shared anchorage used by the vessels of more than one harbour)<br>**Coastal mooring site**<br>**Daymark** (man-made installation used for daylight navigation)<br>**Landmark** (natural topographic feature used for navigation purposes)<br>**Lookout** (panorama used by hydrographers to survey)<br>**Navigation hazard** (submerged shoal or rocks )<br>**Observation point** (survey location used by naval hydrographers within harbours |
| Mark Type | Specific functional type of landmark or daymark used for line of sight navigation alignments:<br><br>**Bay, Beacon, Cliff, Cross, Flagstaff, Headland, Hill, Island**, **Morne** (distinctive round shaped hill), **Stage** |
| Evidence | The type of evidence indicating the presence of a navigational landmark or feature:<br><br>**Archaeological; Cartographic, Documentary; Photographic** |
| Notes | Observations concerning the landmark or feature. |
| Source | Historic source used to identify the location of the navigation landmark or feature (not necessarily to plot it accurately). |
| Sediment | The sediment conditions recorded on the seabed at anchorage sites. Taken from historic charts where recorded. |
| Bathymetry | The depth of water, at Chart Datum, closest to the historic location of anchorage sites. Estimated from available historic and modern charts. |
| Easting | Easting of the landmark NAD83(CSRS) UTM21N |
| Northing | Northing of the landmark NAD83(CSRS) UTM21N |

Table 3. Simplified database structure used to record the location and type of landmark or feature used for navigational purposes.

#### 4.2.1.5 Timber and freshwater resources

The locations of timber and freshwater resources have been identified from a variety of historic and modern cartographic and documentary sources. The major fishing surveys of c1784 and 1821, along with 19th-century hydrographic charts, provide the historic context for the availability and utilisation of these resources within fishing harbours (eg. Le Tourneur 1766, c1784, 1785a-m; Anon. 1822; Anon. c1832; Cloué 1854a and b, 1856, 1857a and b, 1858, 1860, 1861, 1862, 1863a and b, 1864a and b; Pierre 1856, 1857, 1859a and b, 1860 a-d, 1861a and b). The physical site of 44 (33 percent) of the 135 freshwater sources forming the sample analysed during this research were confirmed during the 2013 fieldwork. The remainder have been identified from 1:10,000 scale orthorectified vertical aerial photographs and 1:50,000 Toporama topographic maps (Newfoundland and Labrador 2008; Natural Resources Canada 2014a). The locations of timber resources is approximated to the level of harbour or bay; the locations of timber resources acquisition areas depicted in Figure 36 are only an indicative representation of accounts derived from historic documents. The information recorded for each timber or freshwater resource site is set out in Table 4. Appendices 5 and 6 list the individual records that comprise the samples for timber and freshwater respectively.

| Database Attribute Name | Description and terminology |
|---|---|
| Name | Location of the resource. |
| Type | Functional type of navigation landmark:<br><br>**Water** (Freshwater river, stream or pond)<br>**Timber (construction)** (Wood suitable for building stages, cabins, flakes etc.).<br>**Timber (firewood)** (Wood suitable only for fuel)<br>**Timber (shipbuilding)** (Wood suitable for masts and boat repairs) |
| Notes | Observations concerning the resource. |
| Source | Historic source used to identify the location of the resource (where known). Indicative for timber areas. |
| Evidence | The type of evidence indicating the presence of resource feature:<br><br>**Archaeological; Cartographic; Documentary; Photographic.** |
| Easting | Easting of the resource NAD83(CSRS) UTM21N |
| Northing | Northing of the resource NAD83(CSRS) UTM21N |

Table 4. Simplified database structure used to record the location and type of natural resource required to sustain a fishing room.

#### 4.2.1.6 Toponymy

Maritime place-names and toponymy have often been employed to help understand the social creation of place – especially where tensions or affirmations of social, political or economic power, or where commemorative, ideological or religious significances are expressed in the physical landscape (Westerdahl 1980, 1992). Matthew Johnson argues that the act of naming places represents a form of agency, particularly where personal names are used to transform a space into a place of individual or social memory and remembrance (Johnson 2007: 148-9). The place-names of the Petit Nord attest to the enormous scale of the French fishery. Many names, especially those used by fishermen for their rooms or given to prominent landmarks and hazards used for navigation purposes describe local qualities, states or conditions of topography, hydrography and ecology or acknowledge incidental or impermanent associations (Seary 2000).

Historic place-names have been selectively used in this study to help articulate the historic land use of the fishery, especially at fishing rooms but also at landmarks associated with navigation. Perhaps one of the most obvious and appropriate remnants of the French utilisation of the Petit Nord is the historic French harbour of Fleur de Lys, so named to evoke the shape of the distinctive local hills that are used to recognise the harbour from out at sea (Richard 1829). Personal commemoration of participants in the fishery is reflected at Herbert Point and the site of a room (EjAu-49) confirmed during the July survey at the southern end of Quirpon Island (Tapper and Pope 2014: 23). Surveyed in 1850, it is likely that the name reflects the association with the fishing captain Jean-Simon Herbert who was the *prud'homme* of the station in 1847 (Cloué 1854a; Martin 2013: 35). Similarly, Broize Point near North Bay may reflect the participation of the Broize family, ship owners from Granville who sent a vessel to Newfoundland in 1856 (Pierre 1859a; Renault 2013: 64). This kind of commemoration is found across the Petit Nord and not only for participants of

the fishery, but also those who surveyed it: *Île de Jacques Cartier* (Nobles Island), Granchain Island, *Îlot Miot* and Miot Point, Lecorre Rock, and Jehenne Point and Jehenne Shoal, all reference individuals who undertook important hydrographic surveys of the Petit Nord, while Fauvette Point, Fauvette Island, Milan Arm and Nymphe Island remember the vessels used by some of the same surveyors (Pierre 1857, 1859b, 1861a; CHS 1998; Cloué 1854b, 1863b; Great Britain Hydrographic Office 1878, 1911).

Place-names for fishing harbours and fishing rooms are treated in the following way throughout the thesis. Harbours are discussed using their current names as recorded on 1:50,000 Toporama maps, and qualified with the historic French equivalent where necessary for clarity. Figure 1 provides the historic French place-names for the harbours of the Petit Nord and their modern equivalents can be found in Table 5. Fishing rooms are discussed using the historic French place-name listed in the *Annales Maritimes et Coloniales* survey of 1821 since the majority have no English equivalent (Anon. 1822). The place-names derived from other sources, such as hydrographic charts, are reproduced as published in the original source. The format of place-names, such as capitalisation of proper names, follows the convention used in the 1821 survey.

## Chapter 5: Historic surveys of fishing harbours

This chapter concentrates on an assessment of the historic surveys and censuses available for the fishery produced between the 17th and 19th centuries. These sources provide the most reliable information for locating the position of each fishing harbour and room and are the obvious starting point for the analysis of the distribution and intensity of fishing activity. However, the evidence they provide represents the end result of a decision-making process taken by crews when establishing the placement of rooms.

Between Cape Norman and Cape St. John, 54 harbours comprising 198 fishing rooms, have been identified and confidently located on the ground. This represents the majority of the known 216 rooms recorded along the entirety of the French Shore in 1821 (Anon. 1822; Martin 2013: 34). About 56 percent (111) of the fishing rooms have been investigated archaeologically through survey, test pitting or area excavation and the vast majority have produced evidence for a historic French presence (Appendix 1). The remaining 44 percent of fishing rooms have been identified and plotted from various historic documentary sources. The stations are not necessarily contemporaneous, and many of their rooms were established at different times and moved in and out of operation over the duration of four centuries of fishing – sometimes being left vacant during certain years.

The majority of the rooms that have been archaeologically tested are found in the northern half of the Northern Peninsula, and are those most easily and frequently accessed by researchers. Confirmed sites tail off in White Bay where the area is less accessible, even by boat. The relative paucity of confirmed sites on the Baie Verte Peninsula can be explained in terms of the heavier impact of modern settlement at the six principal harbours along the coast, which has largely destroyed or at least obscured the archaeology of the French rooms formerly established in these places (but see Erwin 2000; Erwin and Crompton 2002).

## 5.1 Historic censuses and surveys

The results of the spatial analysis of the distribution of fishing harbours and their rooms is based on historic censuses and survey estimates of the number of boats (*chaloupes*) working in these places, compiled between the 17th and 19th centuries. Before the 17th century, few accounts provide the details required to confidently plot the distribution of fishing boats across the Petit Nord (Pope 2006a: 16).

The distribution of historic fishing effort is expressed in terms of the number of boats recorded actually working from a harbour or the estimate given of the number of boats a fishing station had the capacity to support (see Table 5 – the figures provided here are taken and amended from an unpublished transcript provided to the author by Dr. Pope). In later more detailed surveys the capacity of each room was also given. It could be argued that the number of boats working each harbour roughly reflects its economic viability and perhaps even the availability of fish in a particular area. There is a historic correlation between cod landings and the number of ships prosecuting the French fishery, although figures before 1800 include estimates, which makes them less reliable (Hersart de la Villemarqué 1995: Melnychuk and Guénette 2001: 229). The 18th-century colonial administrator François-Thomas Le Tourneur implies a relationship when he remarked: "Je suppose qu'un havre reputé bon lieu de pêche n'ait qu'une place de 16 a 18 batteaux un navire qui en a 20 y vat." (Le Tourneur 1785a). If the number of boats generally reflected catch, then as the historical geographer C. Grant Head suggests, albeit for the cod fishery across Newfoundland generally, an important assumption is that "by the eighteenth century, the average catches had some relation to resources because the fishermen had learned where to find the fish" (Head 1976: 20). For the purposes of this research, the analysis of the figures presented is necessarily brief and is primarily used to provide a generalised historical context for the distribution of fishing stations and rooms.

| Fishing Station *(Harbour)* | 1640 | [1680] | 1765 | 1784 | [c1784] | [1821] | [1832] | [1872] |
|---|---|---|---|---|---|---|---|---|
| Havre de Cook *(Cook's Hr)* | - | - | - | - | - | - | - | - |
| Baie du Ha Ha *(Ha-Ha Bay)* | - | - | - | - | 15 | 15 | - | - |
| Le Cap d'Ognon *(Cape Onion Cove)* | - | - | - | - | 20 | 20 | - | - |
| Baie aux Mauves *(Noddy Bay)* | - | - | - | [40] | 24 | 24 | - | - |
| Dégrat *(Quirpon Island NE)* | 30 | 52 | 27 | [50] | - | - | - | - |
| Kirpon *(Quirpon)* | 28 | 21 | 140 | 85 | 196 | 196 | 204 | 211 |
| Baie du Nord *(North Bay)* | - | - | - | - | 21 | 21 | 27 | 27 |
| Les Griquets *(Griquet)* | 34 | 40 | 52 | [75] | 107 | 107 | 109 | 124 |
| Cap Blanc *(White Cape Hr)* | 30 | 12 | [12] | - | - | - | - | - |
| Baie St. Lunaire *(St. Lunaire Bay)* | 24 | 24 | 50 | [50] | 78 | 78 | 78 | 59 |
| Petits Bréhats *(Litle Brehats)* | - | - | - | - | 12 | 12 | 15 | 12 |
| L'Anse Verte *(Green Cove)* | - | - | - | - | - | - | - | 10 |
| Grands Bréhats *(Great Brehats)* | - | - | - | 10 | 38 | 38 | 51 | 53 |
| Baie d'Antoine *(St. Anthony Hr)* | 8 | 16 | 67 | 36 | 76 | 76 | 83 | 77 |
| La Crémaillère *(Crémaillère Hr)* | 40 | 42 | 78 | 89 | 84 | 75 | 92 | 94 |
| Trois Montagnes *(Three Mountains Hr)* | - | - | - | - | 20 | 20 | 28 | 33 |
| Les Petites Oies *(Goose Cove)* | 16 | 21 | 45 | 78 | 96 | 86 | 98 | 98 |
| L'Île Fichot *(Fischot Hr)* | 70 | 89 | 68 | 64 | 103 | 110 | 130 | 130 |
| Le Havre du Four *(Four Hr)* | - | 18 | 27 | - | 20 | 20 | 16 | 10 |
| Les Petites Ilettes *(Litle Islets Hr)* | 9 | 9 | 10 | 21 | 38 | 38 | 48 | 45 |
| Les Grandes Ilettes *(Great Islets Hr)* | - | - | - | - | 26 | 26 | - | 15 |
| La Grande Buche *(Great Buse Bay)* | 10 | 13 | - | - | - | - | - | - |
| Grandes Oies *(Grandois)* | 24 | 30 | 25 | - | 36 | 36 | 30 | 36 |
| Petits St. Juliens *(Litle St. Julien Hr)* | 28 | 10 | - | - | 22 | 22 | 27 | 27 |
| Grands St. Juliens *(Great St. Julien Hr)* | - | 23 | 59 | 85 | 50 | 50 | 61 | - |
| Ile St. Julien *(St. Julien Island)* | 10 | 10 | - | - | 28 | 28 | 30 | 28 |
| Le Croc *(Croque Hr)* | 42 | 43 | 98 | 30 | 94 | 94 | 74 | 71 |
| Anse aux Millions *(Millions)* | 6 | 6 | - | - | 8 | 8 | 4 | 4 |
| Pilier *(Pilier Bay)* | 8 | 8 | - | - | 8 | 8 | 8 | 8 |
| Cap Rouge (Sud-ouest) *(SW Crouse)* | 28 | 34 | 97 | 110 | 166 | 172 | 206 | 203 |
| Cap Rouge (Nord-est) *(NE Crouse)* | 16 | 20 | - | - | - | - | - | - |
| Belle Île *(Belle Island)* | 20 | 24 | [10] | - | 24 | 24 | 24 | 27 |
| La Conche *(Conche)* | 60 | 69 | 62 | 41 | 152 | 162 | 108 | 102 |
| Boutitou *(Hilliers Hr)* | 12 | 12 | 20 | 12 | 30 | 30 | 30 | 30 |
| Les Aiguillettes *(Englee Hr)* | 20 | 24 | 35 | 9 | 36 | 36 | - | 49 |
| Ile de Grevigneux *(Grevigneux Hr)* | 70 | 71 | - | - | 20 | 20 | - | - |
| Le Gouffre *(Wild Cove)* | 20 | 20 | 15 | - | 6 | 10 | - | - |
| Les Canaries *(Canaries Hr)* | 24 | 26 | 69 | 81 | 94 | 94 | 88 | 97 |
| Raincé *(Little Canada Hr)* | - | 6 | - | - | 10 | 10 | 10 | 15 |
| Dégrat du Cheval *(Cat Cove)* | - | - | - | - | 12 | 12 | - | - |
| Sans Fond *(Hooping Hr)* | 12 | 12 | 33 | 31 | 42 | 42 | 10 | 42 |
| Fourché *(Fourché Hr)* | 10 | 10 | [10] | 30 | 21 | 21 | 21 | 21 |
| Les Crevasses Robinaux* | 6 | 6 | [10] | [10] | - | - | - | - |
| Orange *(Great Hr Deep)* | 10 | 10 | 7 | [25] | 28 | 28 | - | 28 |
| Les Petites Vaches *(Union Cove)* | - | - | - | - | 20 | 20 | - | - |
| Les Grandes Vaches *(Little Hr Deep)* | - | - | - | [30] | 16 | 16 | - | 36 |
| La Fleur de Lys *(Fleur de Lys Hr)* | 26 | 26 | 30 | 7 | 83 | 83 | 89 | 92 |
| Baie Verte *(Coachman's Cove)* | 24 | 24 | - | - | 20 | 20 | - | 25 |
| La Baie des Pins *(Ming's Bight)* | 8 | 10 | [40] | 19 | 21 | 21 | 21 | 21 |
| L'Île à Bois *(Bois Island)* | 11 | 6 | - | - | 10 | 10 | 10 | 10 |
| Pacquet *(Pacquet Hr)* | 32 | 32 | 17 | 20 | 66 | 66 | 66 | 61 |
| Grand Coup de Hache *(Harbour Round)* | - | - | - | - | 23 | 8 | - | - |
| Petit Coup de Hache *(Brent's Cove)* | 9 | 9 | [10] | [30] | 21 | 13 | - | 44 |
| La Scie *(La Scie Hr)* | 40 | 40 | 49 | 45 | 79 | 79 | 97 | 97 |
| **Baie des Grous | 8 | 8 | - | - | - | - | - | - |
| **La Rochelle | 6 | 6 | - | - | - | - | - | - |
| **La Baie de St. Marie | 0 | 0 | 10 | - | - | - | - | - |
| **Total boats** | 889 | 992 | 1291 | 1213 | 2220 | 2205 | 1993 | 2172 |
| ***Average no. boats | 24 | 24 | 41 | 43 | 47 | 47 | 60 | 56 |

[year or figure] the number of boats is an estimate of capacity

* possibly one or several of Robineau Cove, Trouser Cove, Pigeon Cove, Big Cove and Duggans Cove. The latter appears to be a strong candidate based on the analysis of typical historic fishing room landscape characteristics visible on modern vertical aerial photographs (Newfoundland and Labrador 2008)

** unlocated fishing places unplotted on distribution maps included in this research although their figures are included in regional analyses.

*** Average number of boats per harbour.

Table 5. Number of boats recorded for each fishing station listed in historic censuses and surveys between 1640 and 1872.

Detailed analysis of the documentary evidence providing figures for the numbers of boats and men prosecuting the French cod fisheries, including that of the Petit Nord, with estimated cod catches landed, is presented elsewhere (Hersart de la Villemarqué 1995; Melnychuk and Guénette 2001; Pope 2006a).

### 5.1.1 17th century

Unlike the detailed English fishing censuses of the 17th-century, historic French documents provide a "normative indication of how many men and boats could be expected to use the fishing harbours that are listed", rather than a precise inventory of the actual number of vessels and men found prosecuting the fishery from each (Pope 2006a: 19). A Breton survey of 1640 provides a list of 39 fishing harbours (Figure 2) along the Petit Nord, from Quirpon Island in the north, to La Scie in the south (Anon. 1640). A close analysis of this survey suggests that the list prepared, "estimates fishing activity […] in terms of the number of men potentially exploiting each of the reported harbours" (Pope 2006a: 21). The spatial distribution of the 39 harbours shows a distinct core area of activity along the coast between Hare Bay and Conche Harbour, including Bell Island. This stretch of coast, encompassing the historic administrative centre of the Petit Nord – the fishing room known as *le Petit-Maître* at Croque – accounts for 37 percent of all 889 boats estimated across the fishing zone. The distribution of fishing effort is evenly dispersed along the coast in large harbours at Conche, Cape Rouge, Croque, Grandois, Little St. Julien and Fischot.

A later Breton survey of 1680 provides a slightly more detailed list of the capacity of 40 harbours, which generally have a similar spatial distribution (Figure 3) and number of boats as given for 1640 – indicating similar intensities of exploitation (Birard et al. 1680). As with an earlier 1662 survey of French fishing stations in Placentia Bay, on

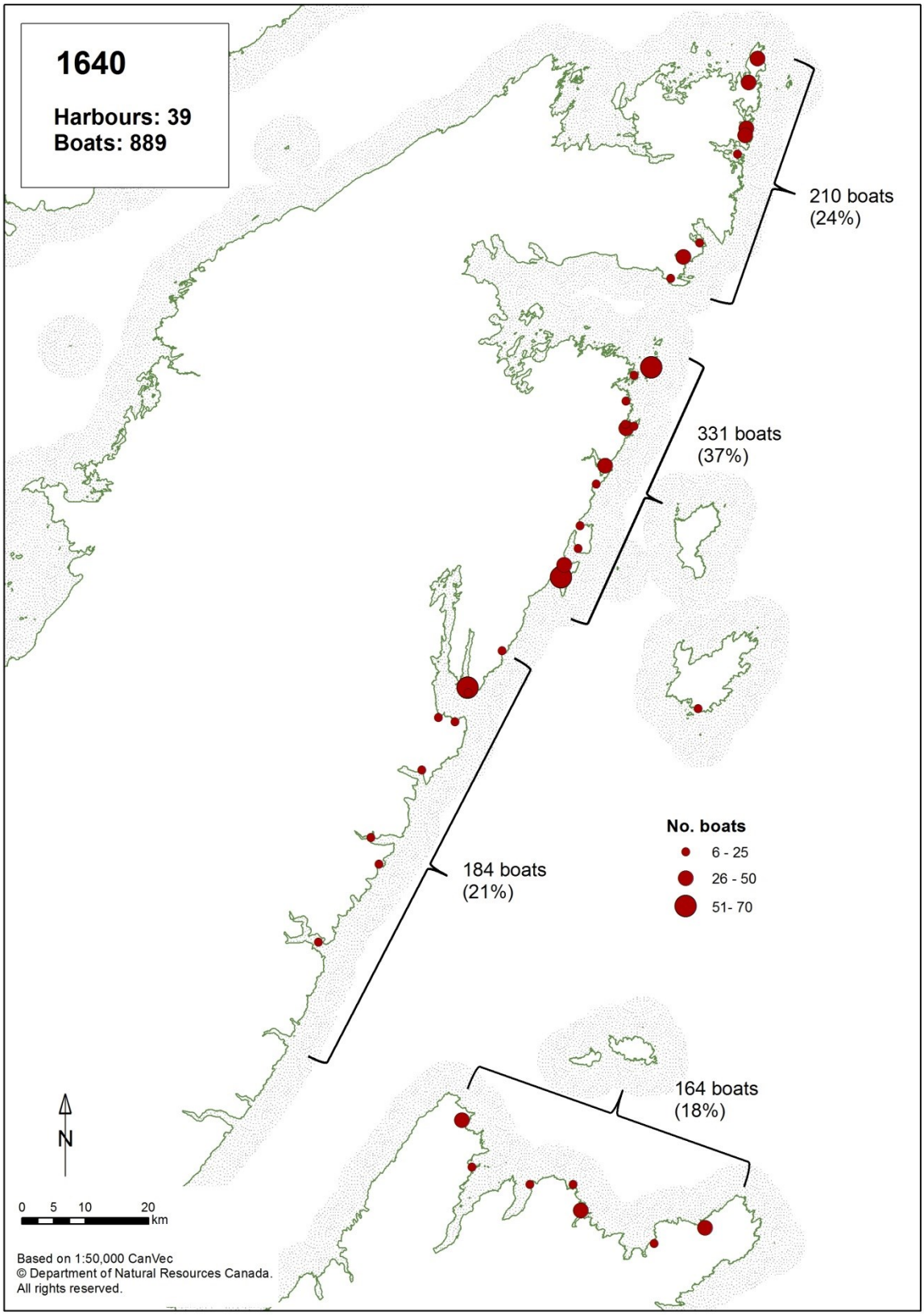



Figure 2. Distribution of fishing harbours categorised by number of boats in 1640 (Anon. 1640).

Newfoundland's south shore, the 1680 survey "seems to be based on an estimate of the number of boats that could reasonably be employed at the specified fishing rooms, since […] manning levels are generally multiples of five" (Pope 2006a: 21). Again, the principal area of activity appears to be along the Hare Bay-Conche Harbour coast which accounts for 41 percent of all 992 boats estimated across the fishing zone. If in the late 17th century, the inshore fishing stations of the Petit Nord are estimated to have produced 160,000 quintals of dry salt fish or a little over 40% of the total French output at that time, this core region centred on Croque and Cape Rouge Harbours, even when based on hypothetical figures, appears to have been of particular economic importance to the fishery during the 17th century (Pope 2006a: 20, Table 2, 26).

The remaining areas of the Petit Nord appear to have, at least on the basis of the figures for 1640 and 1680, very similar shares of the total number of boats. The northern tip of the Northern Peninsula, between Cape Norman and Goose Cove at the mouth of Hare Bay contributes almost a quarter of all boats – with Quirpon and Griquet showing particular concentrations. The southern half of the Northern Peninsula, in the area between Hilliers Harbour and White Bay, show an early intensive exploitation of Englee and Canada Harbour, which draws the main focus of activity towards the northern part of this region and away from White Bay. The north shore of the Baie Verte Peninsula shows a fairly even distribution of effort but with the main concentrations in the larger sheltered harbours of Fleur de Lys, Pacquet and La Scie.

### 5.1.2 18th century

By the 18th century, French surveys begin to report the nature of fishing activity in greater detail – largely in response to the endemic warfare between France and Britain

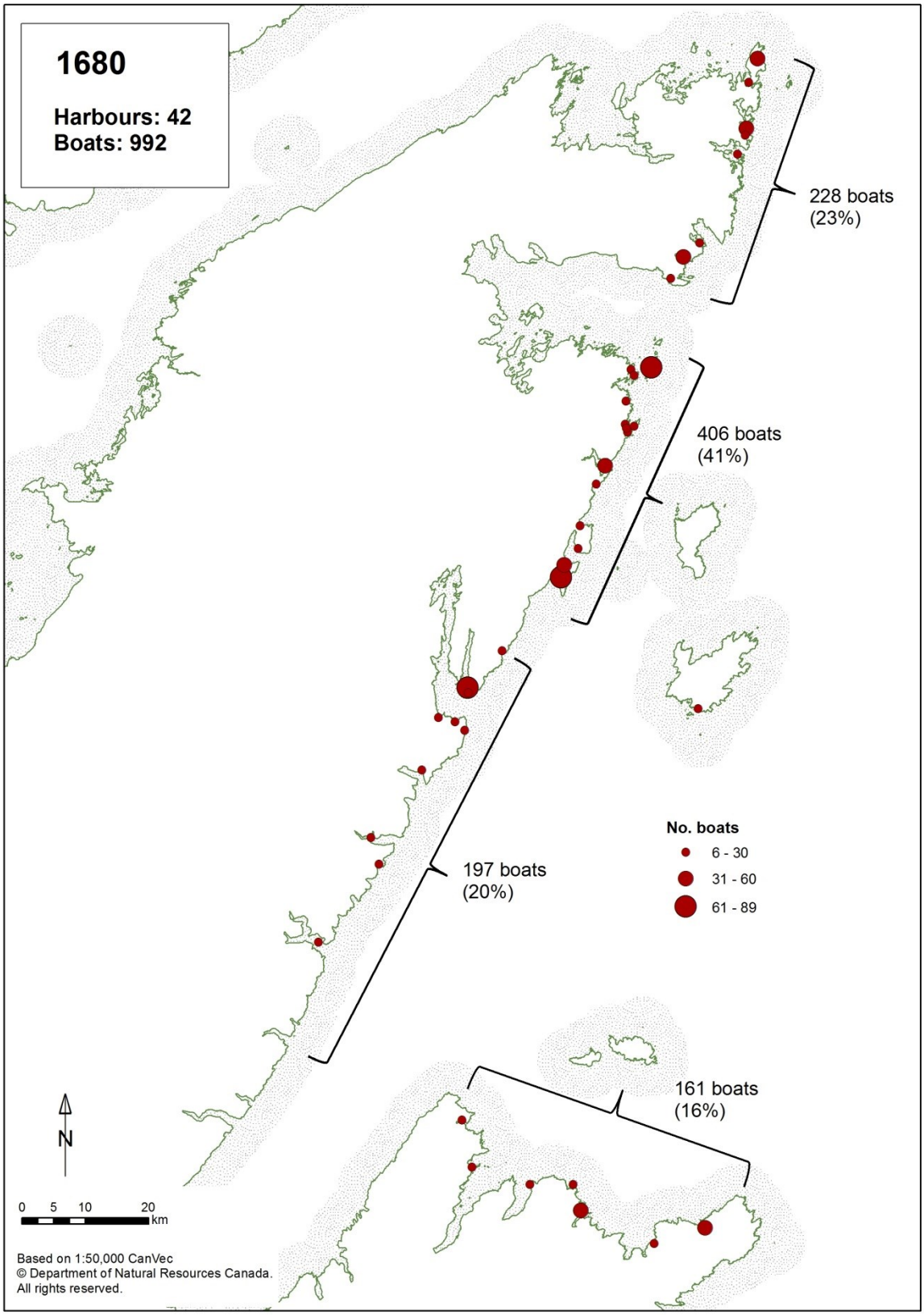



Figure 3. Distribution of fishing harbours categorised by number of boats in 1680 (Birard et al. 1680).

during this period and the consequent shifting of the boundaries of the French Shore. Two surveys survive in Archives des Colonies for the years 1764 and 1765 and cover the coast from Bonavista to Port au Port, taking in the whole of the Petit Nord (Figure 4; Anon. 1764; Anon. 1765a; 1765b; Pope 2006a: 22). These reports, commissioned by the Duc de Choiseul, then Secretary of State for the Navy, record "by harbour, the name, homeport, tonnage, boats and crew sizes of ships actually fishing, along with an estimate of the number of boats that might use each potential fishing post, were it fully occupied" (Pope 2006a: 22).

A general analysis of the figures published in 1765 shows a considerable intensification of fishing effort following the end of the Seven Years' War (1756-63). While the number of harbours worked decreases from about 40 in 1680 to less than 30 in 1765, the number of boats actually increases by roughly 30 percent, from 992 in 1680 to 1291 in 1765. The intensification of fishing effort is characterised by an "increased participation at known fishing rooms, rather than a significant growth in the number of harbours used" (Pope 2006a: 26). However, the intensification of effort is not uniform across the Petit Nord and is principally concentrated in the harbours between Quirpon and Hare Bay, where the number of boats found in the same harbours used 85 years earlier, more than doubles. The numbers of boats in the other regions of the Petit Nord remain relatively stable between the two dates, although, as noted for the 17$^{th}$ century, the northern half of the Northern Peninsula, from Conche northwards, accounts for over 70 percent of the total number of boats operating.

The end of the American Revolutionary War and the signing of the Treaty of Versailles (1783) motivated the compilation of another series of surveys as France again took stock of its interests in the Petit Nord. The 1784 census provides an inventory of 42 fishing stations on the French Shore, 28 of which are found in the Petit Nord, and for each indicates the number of boats present, and where absences were recorded estimates of the

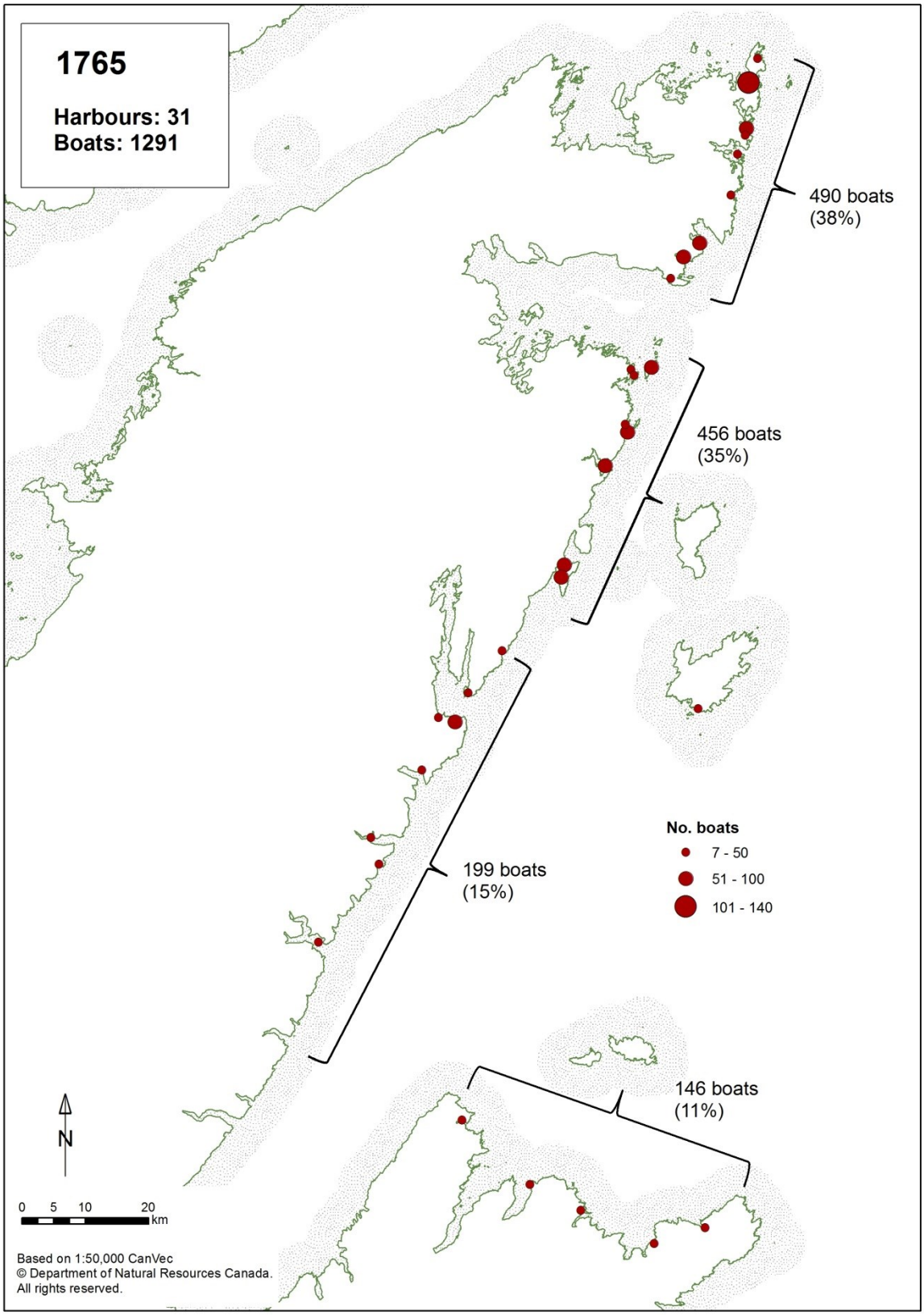



Figure 4. Distribution of all fishing harbours categorised by number of boats in 1765 (Anon. 1765a, 1765b). N.B. Percentage total 99% due to rounding.

number of boats those vacant harbours could potentially support (Anon. 1784; Pope 2006a: 22). The intensity of fishing effort at this date records a slight decrease in the number of actual boats present (903) when compared to 1765 (1229). This is likely to reflect the slow resumption of fishing so soon after the end of hostilities. Traditionally important harbours such as Croque, St. Juliens and Fischot, appear to be operating significantly below full capacity; in Croque's case carrying only 30 boats of an estimated total capacity of 80 (Anon. 1784). Nevertheless the relative patterning and distribution of effort appears similar to that recorded in earlier surveys. The harbours of the Hare Bay-Conche Harbour coast continue to be the main locus of the industry and northern half of the Petit Nord generally continues to far outstrip the zones to the south, accounting for over 70 percent of all boats (Figure 5).

However, when the estimated figures for the harbours left vacant during the 1784 season are included, a slightly different picture emerges (Figure 5). These vacant stations, curiously located at the margins of the Petit Nord, include the significant harbours of Dégrat (Quirpon Island), Griquet, St. Lunaire in the north, three smaller stations in White Bay (*Orange, les Grandes Vaches* and *les Crevasses Robineaux*) and Brent's Cove on the Baie Verte Peninsula (Anon. 1784). The intent shown in the figures given for potential capacity in the northern harbours in particular is revealing - if these stations had been occupied, the pattern observed in 1765 would have continued. The coast between Quirpon and Hare Bay appears to be the favoured destination of fishing crews with an impressive, albeit hypothetical, 42 percent of all available boats prosecuting places on the Petit Nord.

The intent displayed by the administrators of the French fishing industry to exploit certain harbours reveals important clues about the preference for particular locations and the carrying capacity of such locations. In this regard the cartography of the Petit Nord is of

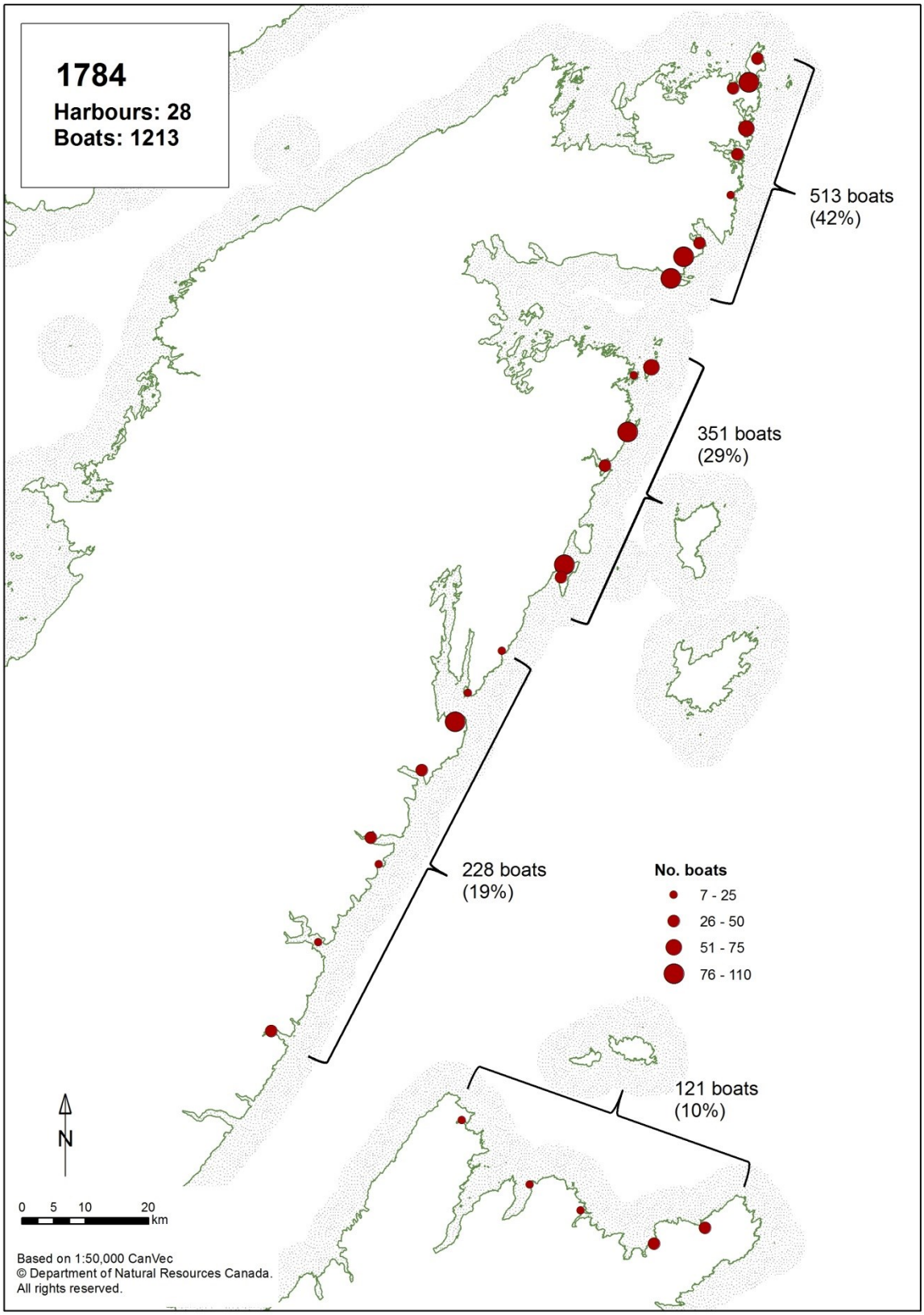



Figure 5. Distribution of all fishing harbours categorised by number of boats in 1784 (Anon. 1784).

particular interest and considerable use to this research. Hydrographic charts, maps and plans of the French Shore appear with increasing regularity during the 18th century. However, for the most part they remain schematic and incomplete, often accompanied by written accounts which actually hold the important and detailed information concerning the location, size and scale of the various harbours and fishing rooms worked (eg. Le Tourneur 1765, 1766, 1773). It is in 1767 that some of the earliest cartographic representations of individual fishing rooms begin to be accurately depicted. In his plans of *Grandes Islotes* and *Croq et des Grands Saints Juliens*, the cartographer Coquelin Latiolais of St. Malo shows the location and extent of rooms with their stages, all in different coloured inks (Coquelin Latiolais 1767a and b). A broader historiographical discussion of the process and development of hydrographic charting of Newfoundland is presented in section 7.1.

It is not until the mid-1780s that the vast majority of individual fishing rooms across the Petit Nord are mapped in any sort of consistent detail. The colonial administrators responsible for the surveys often included officers of the French Navy such as François-Thomas Le Tourneur of Granville in Normandy who during peacetime also engaged directly in the Newfoundland fishery (Martin 2013: 34; Chartrain and Tessier 2013: 36). It is Le Tourneur's detailed plans of 43 fishing stations across the Petit Nord, undertaken sometime between 1784-6, together with the detailed charts and memoires of his mission to White Bay in 1785, that are especially instructive in helping to frame the motives for choosing particular locations for the establishment of fishing rooms and the negotiation of space in particularly congested harbours (Le Tourneur c1784, Plans 15-57; 1785a-m).

#### 5.1.2.1 François-Thomas Le Tourneur

François-Thomas Le Tourneur (1739-1814) appears to have been a frequent visitor to the Petit Nord during his career – initially as a young fisherman and then later in his capacity as

a naval officer (Le Tourneur 1785a; Chartrain and Tessier 2013). Following the Treaty of Paris (1763) he was tasked by Choiseul with mapping the harbours between Fischot and Great Harbour Deep, which he did in 1765 (Le Tourneur 1765, 1766; Le Pelley Fonteny and Desire Dit Gosset 2001; Chartrain and Tessier 2013). This survey may represent the cartographic element of the second of two reports produced for Choiseul documenting the state of the shore fishery shortly after the Seven Years' War, during which the French had been driven from the French Shore by the British (Chartrain and Tessier 2013:36). The surveys of Jacques-Nicloas Bellin might represent the cartographic element of the first report produced a year earlier (Bellin 1764; Chartrain and Tessier 2013: 36). Nevertheless, together, these surveys can be seen as an attempt by the French government to reassert French rights to this coast and its fishery – particularly in the face of increased English incursions.

Following the Treaty of Versailles (1783), Le Tourneur undertook three new survey campaigns between 1784 and 1786 (Chartrain and Tessier 2013: 36). The *43 plans de baies de la côte Est de Terre-Neuve*, *numérotés 15-57*, archived in the Bibliothèque nationale de France, depict the harbours between Ha-Ha Bay and La Scie, and may have been drawn during one of these campaigns (Le Tourneur c1784, Plans 15-57). It is possible to confidently identify two of his voyages in those years – the survey of the harbours of the west coast of the French Shore, between Cape Ray to Ingarnachoix Bay (numbers 1-14 in the c1784 sequence) and the 1785 survey that produced very precise hydrographic charts and descriptions for the harbours of White Bay (Chartrain and Tessier 2013). Given that he was assessing the capacity of White Bay in 1785, then chasing the English from the same

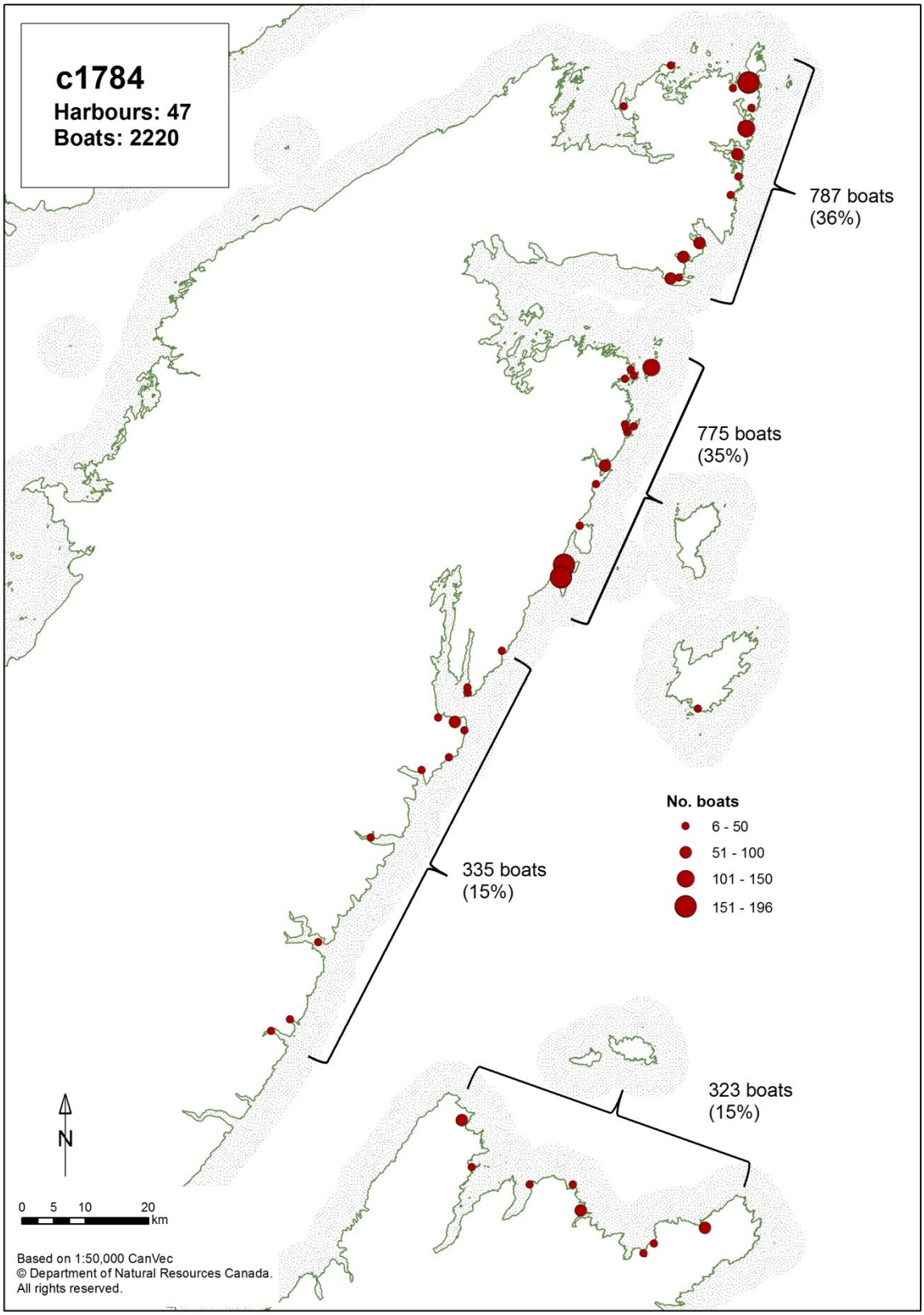



Figure 6. Distribution of fishing harbours categorised by number of boats estimated by Le Tourneur in c1784 (Le Tourneur c1784). N.B. Percentage totals 101% due to rounding.

place the following year, it is reasonable to assume that his 43 plans of the east coast were undertaken during the same campaign as the surveys of the west coast, probably in 1784 (Anon. 1785; Le Tourneur 1785a-m)[4]. The rather crude and schematic style of the 43 plans reflect a preoccupation with making a rapid account of the capacity of each room rather than achieving cartographic accuracy and precision. That his plans of *Orange* (Great Harbour Deep) and *les Petites Vaches* (Union Cove) do not reflect the accuracy and detail of the hydrographic charts he produced for the same harbours in 1785 also suggests they were produced slightly earlier (Le Tourneur c1784, Plans 15-57; 1785c and d). While his c1784 plans are indicative at best, with schematic coastlines and limited inclusion of local topography, they are sufficiently legible to enable rooms to be accurately located along the coast and within harbours.

During the campaign of 1785, Le Tourneur surveyed twelve of the inner coves and harbours of White Bay, areas where French rooms appear to not have been established or if so infrequently (Le Tourneur 1785a-m). Whether the French absence was due to invasive English settlement or a preference for harbours elsewhere is uncertain, although both factors are likely to have played a part. However, Le Tourneur's attention was particularly drawn to harbours with an English presence, where stages and drying areas had already been setup, and he identified three harbours, *havre du Roi* (Western Arm), *havre du Marechal* (Hampden Bay) and *havre Dauphin* (North Channel, Sops Arm), that might be easily claimed (Le Tourneur 1785a, h, i, and j). In these harbours he estimated that 11 fishing rooms, with a possible capacity of up to 120 boats and in the region of 600 men, could be economically viable (Le Tourneur 1785a). Le Tourneur's mission reflected a French concern to reinforce their rights to the French Shore in this area and if his estimate of 120 boats was realised it would represent an expansion of approximately 37 percent of the fleet

[4] The sequence of numbers Le Tourneur records on each plan suggests he journeyed along the French Shore from west to east during this campaign.

recorded in this part of the Petit Nord, and he even thought it could be quadrupled if successful over two or three years (Le Tourneur 1785a) [5]. Le Tourneur's aspirations for White Bay, seemingly driven by martial interests as much as economic ones, appear not to have been realised, at least as recorded in later surveys of the 19th century. Despite their hypothetical nature, Le Tourneur's c1784 plans reveal the scale of French ambitions to significantly increase the intensity of prosecution across the Petit Nord, intentions that went unrealised due to the French Revolution and the protracted wars that followed (La Morandière 2005: 38). In effect, Le Tourneur squeezes 2220 boats into 47 harbours, or in other terms just over 1300 more boats than actually fished that year, in about 20 harbours (Anon. 1784). Although these figures were never reached, what is of interest is the way in which Le Tourneur distributes the capacities. The general distribution continues to follow earlier trends in that the northern half of the Petit Nord, which again accounts for over 70 percent of all boats, but all regions receive more than a twofold increase in their allocation (Figure 6). While the major harbours increase dramatically in terms of the boats they can accommodate, there is also an appreciable increase in the number of smaller and more marginal rooms identified for exploitation. Although French participation in the migratory fishery had already peaked by the end of the 18th century, the impression given by Le Tourneur's assessment at the time is an industry destined for a distinctly upward trajectory (Pope 2006a: 26).

### 5.1.3 19th century

The first two decades of the 19th century are marked by a severely depleted French presence in Newfoundland due to the disruptions of the French Revolutionary and Napoleonic Wars.

[5] Based on Le Tourneur's plans, the harbours along the coast from *Boutitou* (Hilliers Harbour) to *les Grandes Vaches* (Little Harbour Deep) had the capacity to support 335 boats in c1784.

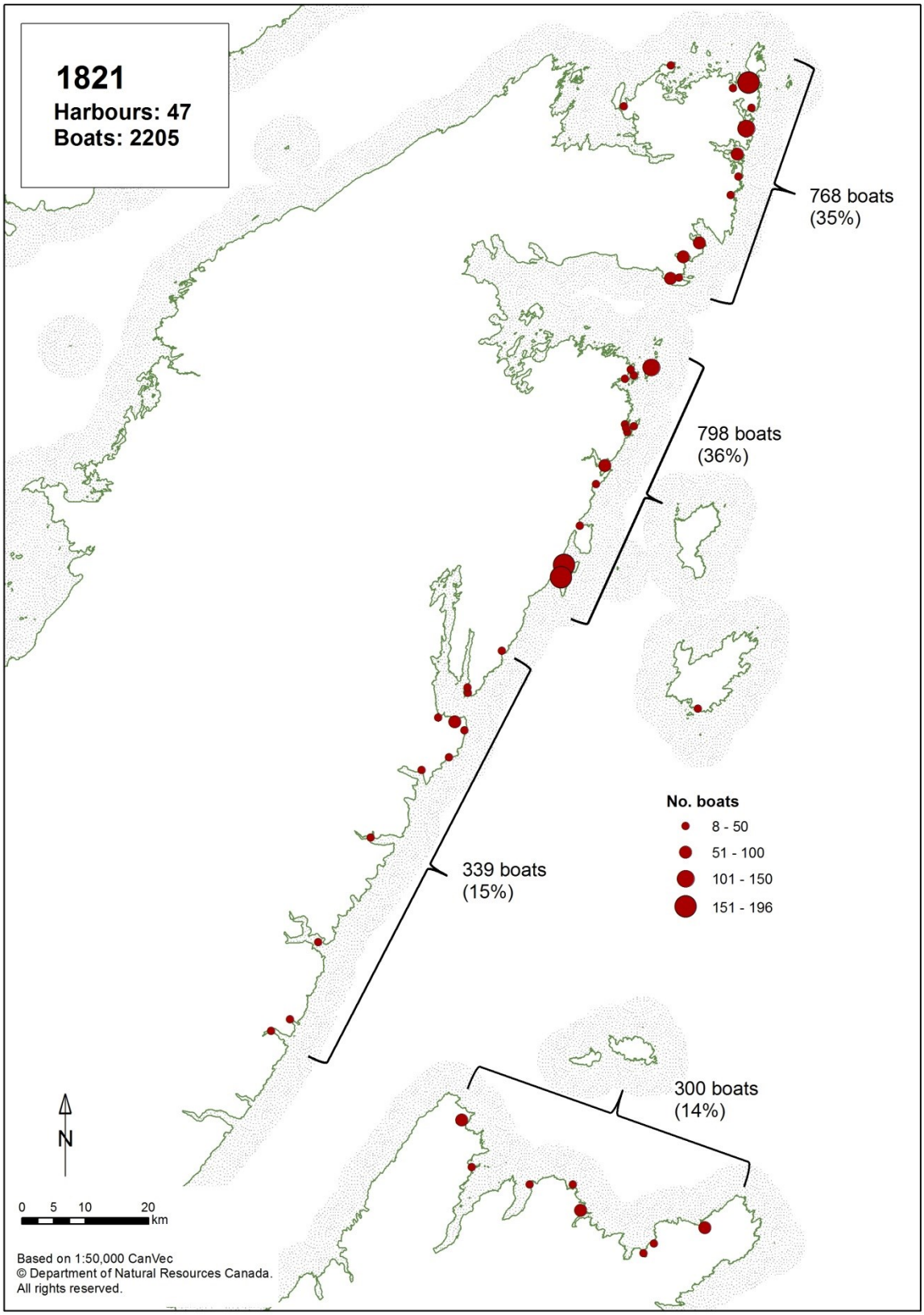



Figure 7. Distribution of fishing harbours categorised by number of boats estimated in 1821 (Anon. 1822).

However, in 1820 the Minister of the Navy established a commission which undertook a systematic survey estimating the capacity of the French Shore in 1821 (Figure 7). This survey, published in *Annales Maritimes et Coloniales*, is the most complete and accurate available for the French Shore and details the state of 47 harbours and their rooms (Anon. 1822). Each room's entry includes information about the number of boats that could be supported, the presence or absence of built structures such as stages or cabins, the extent and type of available cod drying areas, clearly defined boundaries with neighbouring rooms, and the relative proximity to resources such as bait, wood, fresh water and critically cod grounds (Martin 2013: 34). Although essentially a survey of the capacity of fishing rooms rather than actual use, the reference to the availability of *tous les établissemens* (stages, cabins, drying areas etc.) in 107 (62 percent) of 173 rooms indicates their probable use in the previous season (Anon. 1822).

The 1821 survey is partially accompanied by a series of harbour plans drawn by Clair-Désiré Le Tourneur and which bear a remarkable stylistic similarity to those his father, François-Thomas, produced in c1784 (Le Tourneur 1821). The continuity between the plans, in terms of similarities in the distribution of rooms, room size, the arrangement of drying areas and the division between rooms, suggests that the younger Le Tourneur actually had access to the c1784 originals or at least copies of them, and in turn made almost identical versions. That Clair-Désiré was one of the three commissioners who compiled the 1821 written census might also explain the close similarity of recorded figures for the numbers of boats, extent and quantities of drying areas, nature of room divisions and available anchorage areas etc., between this document and both sets of Le Tourneur plans of c1784 and 1821 (Anon. 1822: 216; Chartrain and Tessier 2013: 36).

The survey of 1832 provides a further estimate of the capacity of fishing rooms, in terms of number of boats (Figure 8), at 33 harbours (Anon. 1832). The 1832 document

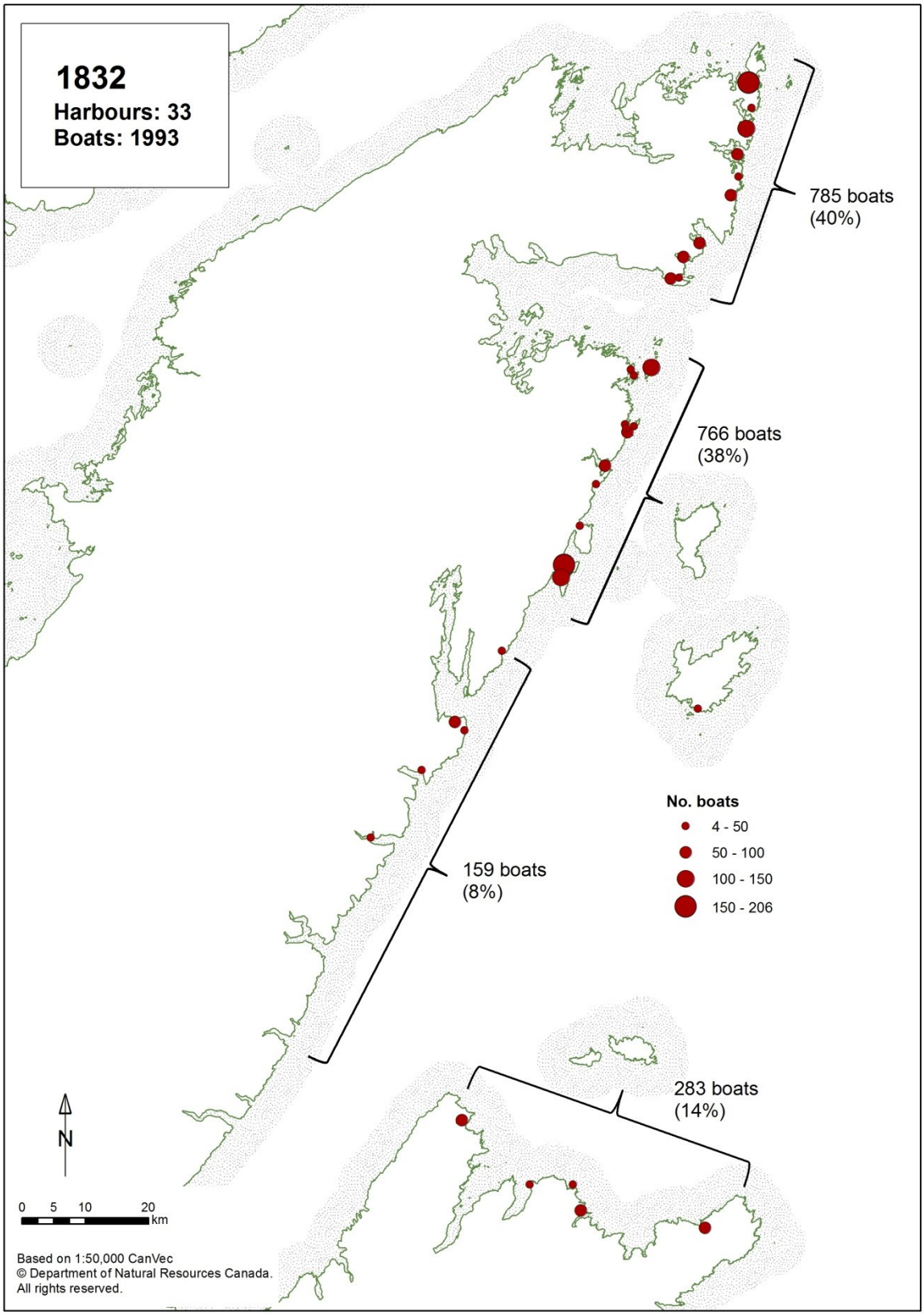



Figure 8. Distribution of fishing harbours categorised by number of boats estimated in 1832 (Anon. 1832).

identifies many of the same fishing rooms as found in the 1680 survey, although the participation levels, as in the surveys of c1784 and 1821, are significantly higher (Pope 2006a: 23). The distribution of the boats perpetuate earlier patterns although the northern harbours of the Northern Peninsula account for an even greater share, with almost 80 percent of all boats estimated at this time. By 1872, the general pattern of the distribution of 39 harbours and boats continues, although the harbours of White Bay and the Baie Verte Peninsula regain some of the share of boats lost (or unrecorded) in 1832, and better match the estimated figures of 1821 (Figure 9). The patterns observed in this survey are important in that they help to contextualise the numerous French naval hydrographic charts available for the Petit Nord produced from the late 1840s until the early 1860s (eg. La Roche-Poncie 1847; Cloué 1854a and b, 1856, 1857a and b, 1858, 1860, 1861, 1862, 1863a and b, 1864a and b; Pierre 1856, 1857, 1859a and b, 1860 a-c, 1861a and b). Although these charts do not contain detailed descriptions and figures for fishing rooms, they identify many of the rooms and their stages and drying areas accurately; and therefore serve as a base against which to regressively plot the location of many rooms through the earlier documents.

## 5.2 Discussion

There is a reasonable degree of continuity in terms of the documentation of harbours across the Petit Nord (Table 5). Of 54 harbours, 35 (65 percent) are represented in at least six or more of the 8 surveys, while 22 (40 percent) of harbours appear in every survey. Only 10 harbours (18 percent) are recorded on three surveys or less. The larger harbours tend to be most consistently documented[6].

In the northern half of the Northern Peninsula these important harbours include Quirpon, Griquet and White Cape Harbour, St. Anthony, Crémaillère, Goose Cove, Fischot,

[6] The thereshold for a large harbour is calculated separately per survey on the basis of the average number of boats plus the standard deviation, giving the upper limit.

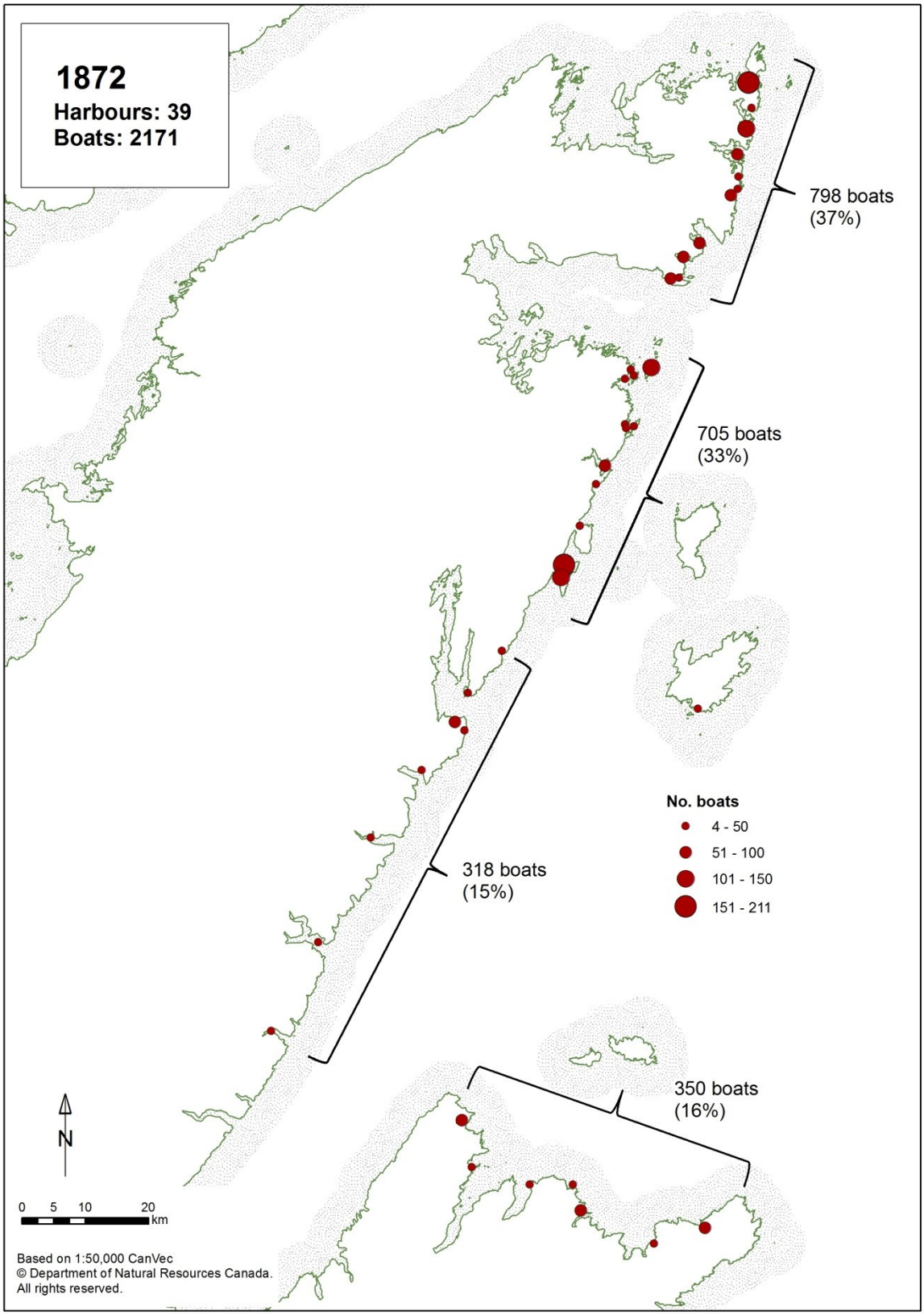



Figure 9. Distribution of fishing harbours categorised by number of boats estimated in 1872 (Anon. 1872).

St. Juliens, Croque, Cape Rouge Harbour and Conche. In the southern half of the Northern Peninsula, Canaries Harbour is consistently the largest harbour while on the Baie Verte Peninsula, Fleur de Lys and La Scie dominated. It is reasonable to suggest that these places represent the backbone of the Petit Nord around which smaller harbours clustered and rooms fluctuated. On average, across all the surveys as a whole, the largest harbours – representing about one sixth of all the harbours – consistently account for over one third of all boats across the Petit Nord (Table 6). At the higher end, in 1784 large harbours carrying 72 or more boats comprised 25 percent of all recorded harbours across the Petit Nord, and accounted for almost 50 percent of the total number of boats fishing and estimated that year (Anon. 1784).

Those harbours that tend to appear less consistently in the historic surveys include the sites of smaller and more peripheral rooms, of twenty boats or less, such as Cook's Harbour, Cape Onion Cove, Ha-Ha Bay, Green Cove and Great Buse Bay in the north, and Cat Cove, Union Cove and Harbour Round in the south, all of which appear on two or less surveys. The inconsistent appearance of some of these smaller harbours on the surveys might suggest two trends: that some had been used early on in the fishery but then fell out of use, were abandoned or infrequently used during later periods; or that by later periods political and economic incentives to utilise as much of the available space on the Petit Nord meant the inclusion of rooms where none had been established before. Two examples may serve to illustrate these trends: *La Crevasse à Robineau* (Robineau Cove?) is recorded in 1680 but by 1765 Le Tourneur notes that it was unused although observed that it appeared to have been used the previous summer; nevertheless, it fails to appear on post-1784 surveys (Anon. 1640; Birard et al. 1680; Anon. 1765a; Anon, 1765b; Le Tourneur 1766; Anon. 1784). Conversely, the fishing room of *le Fond* in North Bay (EjAu-15) appears to have been a late establishment since it appears in surveys from c1784 and later. Archaeological evidence

| | 1640 | 1680 | 1765 | 1784 | c1784 | 1821 | 1832 | 1872 |
|---|---|---|---|---|---|---|---|---|
| Total Harbours | 39 | 42 | 31 | 28 | 47 | 47 | 33 | 39 |
| Total Boats | 889 | 992 | 1291 | 1213 | 2220 | 2205 | 1993 | 2171 |
| Avg. Boats per Harbour | 23 | 24 | 41 | 43 | 47 | 47 | 60 | 56 |
| Standard Deviation | 17 | 19 | 32 | 29 | 44 | 45 | 51 | 49 |
| Min. Boats in Large Hr | 40+ | 43+ | 73+ | 72+ | 91+ | 92+ | 111+ | 105 |
| No. Large Harbours | 6[7] | 6[8] | 4[9] | 7[10] | 8[11] | 7[12] | 3[13] | 4[14] |
| No. Large Harbours (as % of all) | 15% | 14% | 13% | 25% | 17% | 15% | 9% | 10% |
| Boats in Large Harbours | 322 | 366 | 413 | 603 | 1008 | 935 | 540 | 668 |
| Boats in Large Harbours (as % of all) | 36% | 37% | 32% | 50% | 45% | 42% | 27% | 31% |

Table 6. The contribution made by the largest harbours to the total number of boats recorded or estimated across the Petit Nord.

[7] Crémaillère, Croque, Fischot, Grevigneux, Conche, La Scie
[8] Crémaillère, Croque, Fischot, Grevigneux, Conche, Quirpon
[9] Crémaillère, Fischot, Cape Rouge, Quirpon
[10] Crémaillère, Canaries, Goose Cove, Griquet, Cape Rouge, Quirpon, Grand St. Julien
[11] Canaries, Croque, Goose Cove, Fischot, Griquet, Conche, Cape Rouge, Quirpon
[12] Canaries, Croque, Fischot, Griquet, Conche, Cape Rouge, Quirpon
[13] Fischot, Cape Rouge, Quirpon
[14] Fischot, Griquet, Cape Rouge, Quirpon

indicates a French occupation from the 1780s onwards, suggesting that this site wasn't favoured during the early centuries of the fishery although was set up as the intensive prosecution of the fishery increased during the late 18th century and throughout the 19th century (Le Tourneur c1784, Plan 19; Bell et al. 2001: 14). Its position at the bottom of the bay also suggests that intensification of the fishery meant that traditionally unfavoured places were increasingly occupied.

The most obvious conclusion drawn from the spatial patterns derived from the historic documents is that the greatest effort consistently appears to be in the northern half of the Petit Nord. The harbours along the coast between Cape Norman and Conche Harbour consistently accommodate the greatest share of boats – between 60 to 70 percent of the total. This is partially explained by the fact that 60 percent of all harbours and 10 of the 13 largest harbours are located in this region. However, closer analysis of the figures within this region show some chronological differences: while the harbours of the northern coast between Cape Norman and Hare Bay generally account for slightly more boats than the harbours just to the south along the Hare Bay to Conche coast, for the 17th century the latter far outweighs the former. This anomaly suggests a political factor dictating the relative absence of French crews along the northern coasts about the Strait of Belle Isle, and may be partly explained in terms of proximity to the ongoing conflict between French fishermen and the Inuit during the 17th century (Pope 2009a: 140). The coast centred about Croque and Cape Rouge may have been favoured because it was slightly further from the northern area where the Inuit most regularly visited during the 17th and 18th centuries. The more equal distribution of the number of boats along these two coastlines during the later 18th century may reflect the emergence of more peaceful relations, after two centuries of guarded trade and sporadic conflict, between the French and Inuit - enabled in part by an increasing British presence in the region following the terms of the Treaty of Paris in 1763 (Mitchell

2013: 321; Pope 2009a: 141; 2014c). The southern regions of the Petit Nord consistently indicate lower numbers of boats fishing or in the capacity of their harbours. Although the Hilliers Harbour-White Bay coast accounts for twice the number of harbours (16), it supports only slightly more boats on average across all the surveys than the harbours of the Baie Verte Peninsula. Of the former, the historic harbours found in present day Canada Bay (*Canaries, Aiguillettes* and *Grevigneux)* account for the dominant share of boats at every date. The deep fjord-like harbours further south along the coast towards White Bay are regularly absent from surveys or consistently return lower figures of boats. The low returns of White Bay in particular may reflect the fewer opportunities offered and difficult obstacles posed to crews by the physical environment, as well as increasing English competition in the area from the 18th century onwards. The Baie Verte Peninsula similarly offers only eight suitable havens from which to fish, although they have, on average, greater capacities than those of White Bay.

Although it is difficult to make too many interpretations on the basis of just 8 surveys for a period of over 230 years, of which only three censuses (1640, 1765 and 1784) provide any figures for actual boats present at the harbours, there are some general trends in the distribution and intensity of fishing effort. While the censuses of 1640, 1765 and 1784 provide a truer reflection of actual fishing activity – those of 1765 and 1784 are likely to under-represent activity, coming as they did shortly after periods of conflict when the industry was usually trying to re-establish following years of absence (Hersart de la Villemarqué 1995: 15, Table 5). The surveys of c1784, 1821, 1832 and 1872 provide, as might be expected from estimates, higher values for the fishery than were likely to have been the case.

The ability to distinguish the number of boats actually present in the censuses of 1764 and 1784 has the advantage that it allows comparison with the estimates provided for the

other years. It is reassuring that the distribution of harbours and the relative proportions of boats between the different regions of the Petit Nord remains reasonably constant throughout the eight surveys (Table 7). This allows this research to have confidence that the estimated number of boats for 1680, c1784, 1821, 1832 and 1872 reflect genuine patterns of utilisation, if not intensity, of the harbours across the Petit Nord as a whole.

When viewed together, the censuses and surveys appear to reflect a general intensification of the fishing effort from the 17th century through to the 19th century despite intermittent fluctuations in catches and the intervention of wars (Hersart de la Villemarqué 1995: 35; Melnychuk and Guénette 2001). It is perhaps more relevant that for estimated capacities, Le Tourneur's c1784 survey marks the high watermark of intended capacity and effort that is not quite matched in the 19th century. This conforms to the general consensus that the industry had passed its peak by the end of the 18th century (Pope 2006a: 26).

Furthermore, the surveys are important to this research, in light of the detailed information about rooms they provide. Of the boat estimates, the Le Tourneur's survey of c1784 and the 1821 survey provide the most useful information. From the cartographic representations and descriptions of each room, it is possible to discern the principle criteria that affected the choice of site location. These judgements are almost certain to have been made in consultation with the fishermen working the rooms – certainly Le Tourneur's memoires of 1764 were written with the benefit of fishing captains' local knowledge (Le Tourneur 1766). From each entry it is possible to identify the reasoning behind judgements that made certain rooms good or bad places and to tackle some of the aspects that determined a room's suitability. What distances were crews prepared to travel before a room was considered too far from the fishing grounds? Did it have good drying spaces and could they be extended? Was it sheltered or exposed to the elements? And how far was it necessary to go to obtain the resources need to sustain the room for the season?

These various questions and more are addressed below in an analysis of the physical environments of the fishing rooms. The surveys of c1784 and 1821 are used extensively for observations made and archaeological exemplars are provided where available.

| | | Number of boats by year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Ecoregion** | **Harbours** | 1640 | 1680 | 1765 | 1784 | c1784 | 1821 | 1832 | 1872 |
| Strait of Belle Isle Barrens | Cape Norman - Hare Bay | 210 | 228 | 490 | 513 | 787 | 768 | 785 | 798 |
| Northern Coastal Subregion | Hare Bay - Conche Hr | 331 | 406 | 456 | 351 | 775 | 798 | 766 | 705 |
| Eastern Long Range Subregion | Hilliers Hr - White Bay | 184 | 197 | 199 | 228 | 335 | 339 | 159 | 318 |
| North Shore | Baie Verte Peninsula | 164 | 161 | 146 | 121 | 323 | 300 | 283 | 350 |
| | **Total boats** | **889** | **992** | **1291** | **1213** | **2220** | **2205** | **1993** | **2171** |

Table 7. Number of boats recorded in the harbours grouped according to broad ecoregions (see also Figures 2 to 9).

## Chapter 6: The geography and distribution of fishing rooms

What factors determined the patterns of the distribution of fishing harbours observed in the historic censuses and surveys? Whether actual figures or estimates, the nature of certain places along the coast encouraged continued investment in terms of fishing rooms, men and boats over three centuries. While the analysis of the regional distribution of fishing effort can be generalised using fishing harbours, to understand the detail of the role of topography and hydrography the most appropriate geographical unit of analysis is the fishing room. This will allow for regional variations to be assessed while also enabling variations and differences within harbours to also be addressed.

The physical and cultural landscapes of the Petit Nord are inextricably linked. Seasonal migratory fishermen did not have a wide choice of fishing rooms, much of the coast of the Petit Nord is steep and/or rocky and the combination of features that made a workable fishing room are finite (Pope 2009a: 141). Just 54 historic French harbours are documented along over 700km of coast between Cape St. John and Cape Norman. To better understand the physical environmental influences that determined the choice of site location, the topographical and hydrographical context of the rooms is the focus of this chapter. This comprises an assessment of the types of coastal geography sought by fishermen and the landforms and geomorphological features found at fishing rooms. These latter characteristics have a direct relationship to the methods and types of materials used to dry fish, and reflect a concern amongst fishing crews to acquire suitable spaces to produce large quantities of high quality salt cod. The role of hydrography in the choice of room location is also addressed – principally through the analysis of the bathymetry and coastal topography found at the locations of historic stage areas where boats landed cod catches. The distance of each room from the stage to the open sea is roughly estimated in order to

discuss the practical limitations crews faced in their daily journeys to cod grounds and the areas and depths they could expect to effectively fish using hand-lines.

The contestation of shore space was an ongoing concern for fishing crews, especially within the larger and more productive harbours. The division of rooms was carefully negotiated, often using local topography to mark boundaries while ensuring important resources were shared.

## 6.1 Coastal geography and geology

A brief and generalised discussion of the complex geology of the Petit Nord will contextualise the nature of the coastal geography. As discussed in Section 2.3.2, the study area comprises three distinct ecoregions, one of which comprises two sub-regions. These ecoregions are characterised in terms of the underlying geology and soils which broadly influence the nature of vegetation and tree coverage, and which reflect long-term geomorphological processes resulting from periods of deglaciation and sea-level rise (eg. Bell et al. 2005; Putt et al. 2010).

The northern portion of the Northern Peninsula, equating to the Strait of Belle Isle Barrens ecoregion, from Cape Norman to St. Anthony, is characterised by an exposed bedrock geology of Cambrian and Ordovician limestones and marine derived sandstones, shales and melanges of the Hare Bay Allochthon (Bostock et al. 1983). Overlying the bedrock, unconsolidated deposits of surficial drift and glacio-marine clays, sands and gravels are found in a number of the harbours including Noddy Bay, Griquet, St. Lunaire Bay and St. Anthony (Newfoundland and Labrador 2014). The Northern Peninsula has slowly risen since the end of the last glaciation roughly 15,000 years ago and the low-lying coastal geology comprises ancient seabed emerging as a result of isostatic rebound (Bell et al. 2005: 12). These post-glacial changes in sea-level are most evident on the western side of

the Northern Peninsula but can be observed, to a lesser degree, on the steeper coast of the eastern shore as 10-14m high escarpments, dating to around 6-8,000 BP, and found a little inland above the modern shoreline (Bell and Renouf 2003). These escarpments are a common feature at fishing rooms where they were often used to extend drying areas in this region. Relative to the rest of the Northern Peninsula, the northern tip is low-lying with a deeply indented coastline of numerous shallow bays, coves, inlets, channels, inter-tidal islets and small offshore island groups. Of 198 rooms on the Petit Nord, 62 (31 percent) are found in the 14 harbours of this region – an average of 4 to 5 rooms per harbour. Of these 62 fishing rooms 33 (53 percent) are located in areas with significant surficial drift geology, indicating a preference for the low-lying and relatively level ground found in such areas.

Between Crémaillère and St. Julien Island, the Northern Coastal Subregion is similar to the indented coastline to the north, with numerous coves and a number of offshore island groups (such as Fischot, Great and Little Islets Harbours and Great and Little St. Julien Harbours) on either side of the entrance to Hare Bay. However, from Croque Harbour southwards the coastline rises, becomes increasingly sheer and is punctuated less frequently by accessible bays and coves. The Hare Bay Allochthon marine sandstones, with interleaved beds of siltstones and turbidites, continue to dominate except for the distinctive Late Devonian red sandstone outcrop of the Cape Rouge and Conche Peninsulas (Stouge and Godfrey 1982; Bostock et al. 1983; Knight et al. 1986). Surficial glacio-marine deposits are found at the bottom of Irish Bay in Croque Harbour and shallow drift geology occurs throughout Cape Rouge and Conche Harbours (Newfoundland and Labrador 2014). Grey and Bell Islands, located 15 to 20km off shore Cape Rouge, rise steeply from the sea and offer few places to harbour. Of the 198 fishing rooms of the whole of the Petit Nord, 83 (42 percent) are found in 20 harbours in the North Coastal Subregion – averaging 4 rooms per

harbour. Of the 83 fishing rooms, 36 (or 43 percent) are located in areas of surficial drift geology again suggesting an inclination for such relatively flat and even terrain.

Proterozoic gneisses of the Long Range Mountains dominate the Eastern Long Range Subregion ecoregion, along the coast between Canada Bay and White Bay (Bostock et al. 1983; Hild 2012). This is a pelagic coast, steep and punctuated by only a handful of deep and narrow fjords. Of the 198 fishing rooms, 26 (or 13 percent) are found in 12 harbours along this coast – an average of 2 rooms per harbour. Significantly, 85 percent (22) of the fishing room sites in this region are located in areas where surficial drift, glacio-marine or alluvial deposits are recorded – and these represent targeted locations of relative level ground within a predominantly mountainous landscape, which probably also afforded the limited raw materials such as cobbles, needed for drying fish (Newfoundland and Labrador 2014).

The northern coast of the Baie Verte Peninsula (North Shore ecoregion) is characterised by high cliffs interspersed by a small number of bays and coves that have exploited geological faults which strike northeast. Remnants of oceanic crust of the ancient Iapetus Ocean are exposed in a complex and rich geological suite of rocks and minerals, but which generally comprise Ordovician deformed shists and gneisses across the western half of the peninsula giving way, at Baie Verte, to Silurian ophiolites and volcanic sequences in the east (Degrace et al. 1976; Bursnall and Hibbard 1980; Liverman and St. Croix 1989; Hild 2012: 83-5). Of 198 fishing rooms, 27 (or 14 percent) are located in 8 harbours – an average of 3 harbours per room. Of the 27 rooms, 11 (or 41 percent) are sited in areas with surficial drift deposits.

As would be expected, the geology and geography of the coast has a pronounced effect on the distribution and density of fishing rooms. The vast majority (96 percent) of rooms are located within bays, coves, channels and archipelagoes, and are usually sheltered

| | No. Rooms | % of all Rooms |
|---|---|---|
| **Location** | | |
| Bay (mouth) or Cove (mouth) | 61 | 31 |
| Bay (midway) or Cove (midway) | 49 | 25 |
| Bay (bottom) or Cove (bottom) | 43 | 22 |
| Pelagic coast | 7 | 3.5 |
| Archipelago | 12 | 6 |
| Fjord | 8 | 4 |
| Channel | 18 | 9 |
| **Landform*** | | |
| Island or Islet | 53 | 27 |
| Coastal plain | 22 | 11 |
| Escarpment terrace | 52 | 26 |
| Headland, promontory or peninsula | 27 | 14 |
| Raised beach | 54 | 27 |
| Cobble foreshore | 74 | 37 |
| Rocky foreshore | 116 | 59 |
| **Topography**** | | |
| Flat | 98 | 49 |
| Flat; Undulating | 61 | 31 |
| Slope; Steep | 17 | 8.6 |
| Undulating | 19 | 9.6 |
| **Landcover** | | |
| Settlement, Industry | 66 | 33 |
| Barrens | 79 | 40 |
| Meadow; Scrub Forest | 53 | 27 |
| **Elevation** | | |
| 5 or less masl | 118 | 60 |
| 10 or less masl | 61 | 31 |
| 10m or more masl | 19 | 10 |

*Many rooms incorporate multiple landforms thus the values do not sum to 198 or 100%
** n=195. Topography at the 3 rooms of Cook's Harbour is unrecorded.

Table 8. The location, landforms, topography, landcover and elevation of rooms across the Petit Nord. Where percentages total 99% or 101%, this is due to rounding.

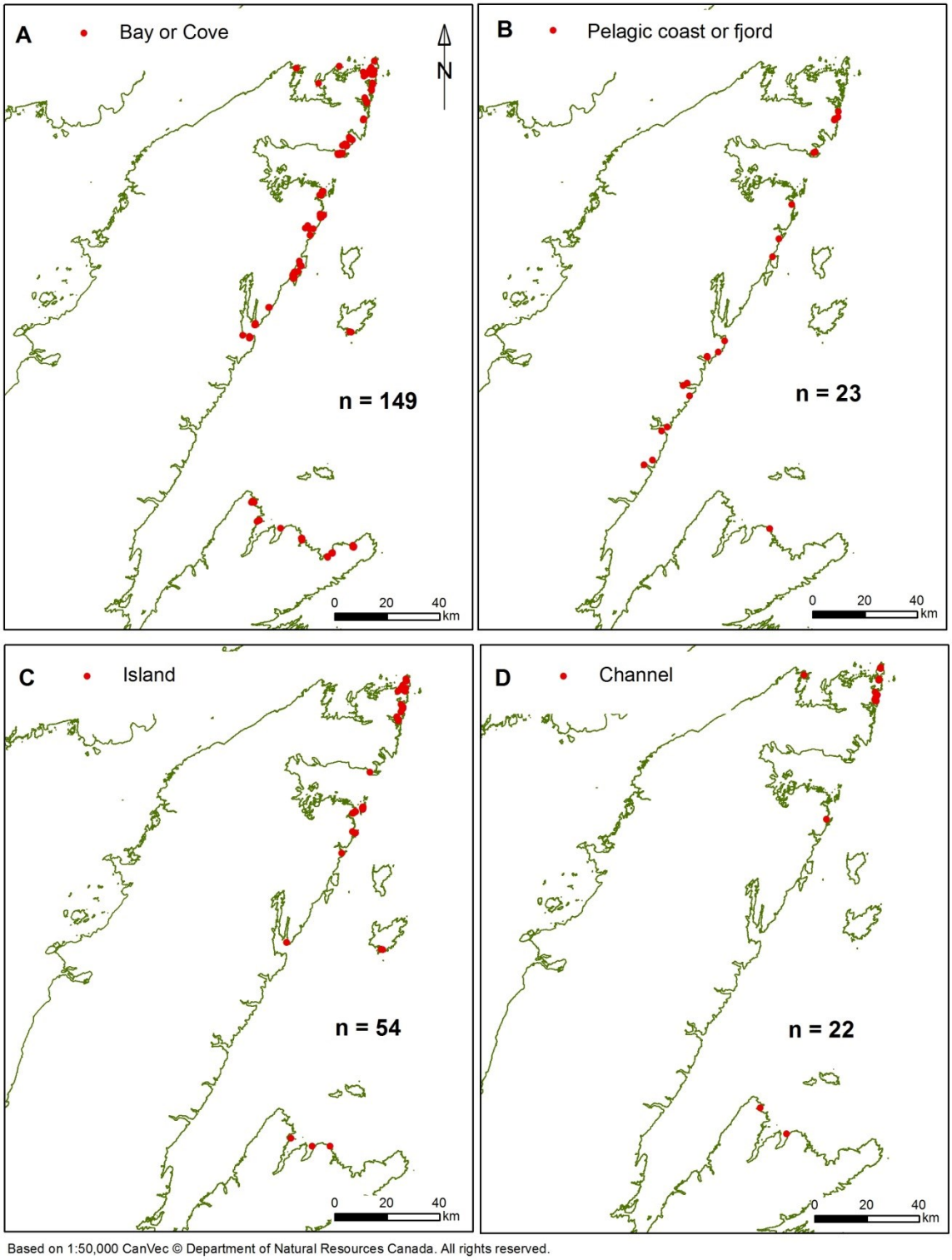
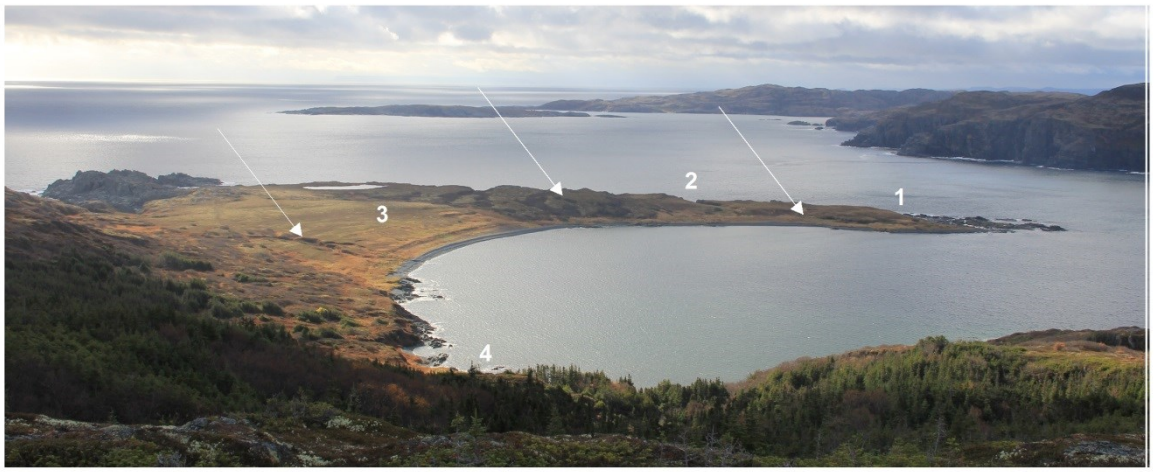



Figure 10. Distributions of the types of coastal locations in which fishing rooms are found. (A) Rooms located in bays and coves. (B) Rooms on exposed pelagic coasts and deeper fjords. (C) Rooms located on or incorporating offshore islands and islets. (D) Rooms found in channels.

from direct exposure to the Atlantic Ocean (Table 8). It is unsurprising, therefore, that the greatest number of harbours are found in the northern half of the Northern Peninsula and that they contain more fishing rooms, on average, than those of the southern regions where the pelagic coasts and limited number of natural harbours restricts the opportunities to establish places (Figure 10).

### 6.2 Topography

Of 198 rooms on the Petit Nord, almost 50 percent (98) are found on predominantly level ground or incorporate substantial areas of level ground; usually in the form of cobble beaches and low raised beach terraces 1-3masl that form narrow strips along the shoreline. This category also includes rooms that make use of relatively flat higher terraces above the shoreline. Of 198 rooms, 102 (52 percent) are found on surficial drift, glacio-marine and alluvial geology along the coast, often where valleys descend to form coves within bays or on the raised beaches of emerging coastlines – another indication of the preference for relatively flat terrain. This preference is occasionally reflected in the historic names given to some fishing rooms. The level ground, now developed, in southeast Goose Cove formed part of the room known in 1821 as *la Plaine* (Anon. 1822: 248). The extensive flat terrain found at the bottom of Irish Bay in Southwest Croque (EgAw-05), comprised part of a room also known as *la Plaine* (Anon. 1822: 254; La Roche-Poncie 1847; Pope 2005: 36; Pope et al. 2007: 10). Similarly, the site of a room, *le Brika ou la Plaine*, at the bottom of Eastern Arm, Hooping Harbour (EdBb-02), is located on a large sandy terrace (Anon. 1832; Pope et al. 2007: 9). Further examples are found in Crémaillère Harbour, Noddy Bay and St. Lunaire Bay (Figure 11, A-C). The proportion of rooms on relatively level ground rises to 80 percent (159) if those that make use of slightly undulating ground, often on higher terrain inland, are also included.




(A). The four rooms arranged in the hook of Crémaillère Harbour (EiAv-03). From left to right the arrows indicate a stream, a hill and a spring that served to mark historic divisions of shore space between the rooms 1-4.

(B). The extensive cobble beach terrace of a single fishing room at Lower Room, Noddy Bay (EjAu-11).

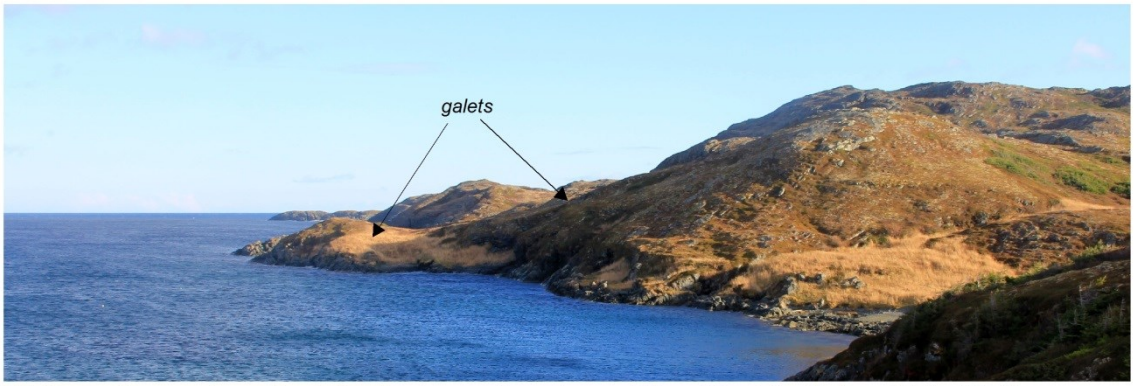
(C). French Beach on Granchain Island (EiAu-03) supported three rooms. The flat topography meant that crews divided the available space by measuring distances along the shoreline and setting up artificial boundaries that ran inland. The low escarpment in the background served as the limit between the northern room on this beach and the room which occupied the northern coast of the island (EiAu-03) (Photo: Peter Pope, Ref: S090716P 086).

Figure 11. Three examples of the extensive flat terrain favoured by French fishing crews for the sites of their rooms, at Crémaillère Harbour, Noddy Bay and Granchain Island.

Less than a fifth of all rooms can be described as being sited on predominantly undulating, uneven, sloping and steep ground. These rooms tend to be smaller operations located in the more marginal situations in harbours, where the favoured places were already occupied by larger rooms, or are found in small isolated coves. They usually have limited beach space at the shoreline, enough perhaps for a stage area, but drying areas tend to extend onto higher ground behind. Examples of such rooms are found at Noble Cove in Little Quirpon Harbour where the room, *la Côte de l'Est babord en entrant* (EjAu-38, Figure 12, A) occupies a very small and narrow coastal strip with a ramp rising to drying areas on the higher barren ground to the east (Cloué 1854; Tapper and Pope 2014: 22). A similar situation is observed at the two rooms found in Three Mountains Harbour, *Sur tribord dans le fond* (EhAv-03, Figure 12, B), and *Sur babord du havre* (EhAv-04), which both occupy very small beaches with constructed *galets* arranged on the slopes above them (Anon. 1822: 247; Pope et al. 2009: 14; Tapper and Pope 2014: 16-17). Further to the south, the two rooms located in Hilliers Harbour (EeBa-07), extend onto higher, uneven rocky and shrubby ground while at Fleur de Lys Harbour, *la Pointe sur tribord* (EaBa-08, Figure 12, C), made use of a narrow rocky foreshore for the stages and sloping undulating ground for drying purposes (Le Tourneur c1784, Plan 39; Cloué 1862, 1863; Erwin and Crompton 2002; Pope et al. 2009: 11; Tapper and Pope 2014: 5).

The average elevations recorded at rooms also indicates a strong preference for lower terrain – the figures do not exactly correlate with those for topography because rooms tended to extend across rising terrain away from the shoreline. Nevertheless, the majority of the terrain used in 60 percent of rooms (118) is located below 5m in elevation, often closer to the lower end of that range. This figure rises to 90 percent of rooms (179) situated on elevations below 10m, leaving just under 10 percent of rooms extending across coastal terrains rising to above 10m (Table 8). Historic accounts note the preferred types of coastal

(A). The small room located in Noble Cove, Little Quirpon Harbour, (EjAu-38) occupies a marginal position within the habour. Crews dried the fish on the barrens above the lower beach and terrace.




(B). The small exposed room located on the steep southern slopes of Three Mountains Harbour (EhAv-04). The arrows indicate sites of constructed galets arranged on the slight terraces above the small beach and historic stage area.

(C). The historic fishing room located near the entrance to Fleur de Lys Harbour (EeBa-08), occupied a rocky foreshore and sloping scrubby ground.The arrow indicates the approximate position of the former stage areas
(Photo: Peter Pope, Ref: P2013.07).

Figure 12. Three examples of the restricted, sloping and steeper terrain least favoured by French fishing crews for the sites of their rooms, at Quirpon, Three Mountains Harbour and Fleur de Lys Harbour.

terrain. In 1785, Le Tourneur in his exploratory survey of White Bay identifies such a place in *la Baye Sud-Ouest* (Wild Cove) in *havre du Roi* (Western Arm), where he records: “Dans cette baye du sud-ouest sur la côte de babord il y a une pointe de terre basse, où on peut etablir un echaffaux et où il y a de la grave pour 18 batteaux” (Le Tourneur 1785a). Although no French rooms appear to have been established at the site Le Tourneur recommended, his account nevertheless demonstrates the types of coastal topography fishermen were seeking. By way of contrast, a number of places unsuitable for establishing fishing rooms are described by Le Tourneur in White Bay. He suggested that although *l'Ance Brulée* (Wild Cove, Baie Verte Peninsula) had the resources to serve as a good place to build fishing stages, the coastline is so high and steep it would be impossible to set up a *grave* (cobbled beach drying area). Nevertheless, he suggested that it would make a good *dégrat* fishing room, by which he meant a place where fishermen could build small stages on which to moor their boats when they fished far from their usual fishing rooms, ie. a small and temporary fishing room (Le Tourneur 1785a). Le Tourneur makes a similar assessment of *havre au Fromage* (Southern Arm), which while a good place to set up fishing stages, has steep coastal slopes, lacking the low and level coastal topography necessary to make a suitable *grave* for drying fish (Le Tourneur 1785a). He likewise rejects *havre de Purwich* (Purbeck Harbour) due to its lack of a *grave*, but here suggested that even if it was set up as a *dégrat*, its distance from those harbours that could actually cure the fish caught, was still too far to travel (Le Tourneur 1785a). He also declines to recommend *havre à Bois* (Jackson's Arm) and *les Grands Chats* (Great Cat Arm) on the basis of their steep coastlines (Le Tourneur 1785a). The restricted nature of these types of places, where shore space was limited, meant that these fishing rooms may have been economically unviable. The situation at *les Petites Vaches* (Union Cove) is instructive; when Le Tourneur meets Capitaine Ville Josse of Saint-Brieuc, Brittany, and his crew of 93 men working the single room, he notes:

> Cette année il ya avoit dans havre le navire *La Themis* de St. Bryeux Capitaine Ville Josse qui avoit 93 hommes d'equipage. Ce havre quoiqu'au premier aspect ne paroisse pas bien sur pour un navire; le Sr. Ville Josse qui y a fait plusieurs pêches m'à assure que jamais il n'ya ni mer ni vent. L'echaffeaux est bati dans un endroit bien tranquille, les bateaux y sont en sureté, et on y trouve touttes les commodittés pour la pêche, excepté que la grave n'est pas bonne, ni facile a travailler. Elle peut servir pour 30 batteaux. Le Capitaine Ville Josse … pris avec les 93 hommes qui environ 600 quinteaux de morues pendant qu'il lui en auroit fallu 5000 quinteaux (Le Tourneur 1785a).

The implication, at least for the year 1785, is that when the crew of *La Themis* landed in this bay, where shore space for drying was limited, the room they worked did not or could not dry the amount of salt-cod 93 men would normally be expected to make. Whether this also reflects the amount of cod actually available to be caught is unclear. In such cases everyone lost financially and this may have contributed to the general sentiment that the rooms of White Bay (or those with terrain of similar characteristics and in areas where fishing was irregular) were less favoured as sustainable operations. Generally, the preference for particularly level terrain combined with an emphasis on proximity to fishing grounds means that many fishing rooms are located in the low-lying areas of coves and islands, and on low points, promontories and peninsulas (Figure 13).

The distribution of rooms simply on the basis of topography and elevation do not demonstrate any particular patterning – nor should they, since fishing crews were invariably searching for similar types of suitable terrain in every part of the Petit Nord. However, the greater instances of the particular types of terrain favoured by fishing crews such as extensive flat coastal plains and low promontories, incorporating geomorphological features such as raised beaches and terraces, ensured that the low-lying, indented and rising coastline of the northern half of the Northern Peninsula offered more opportunities to set up fishing rooms than other parts of the Petit Nord. Here the natural terrain simplified access, the building of the infrastructure along the shore and provided the most suitable means for drying fish. The topographies of the rooms also evolved, and those used by fishermen in

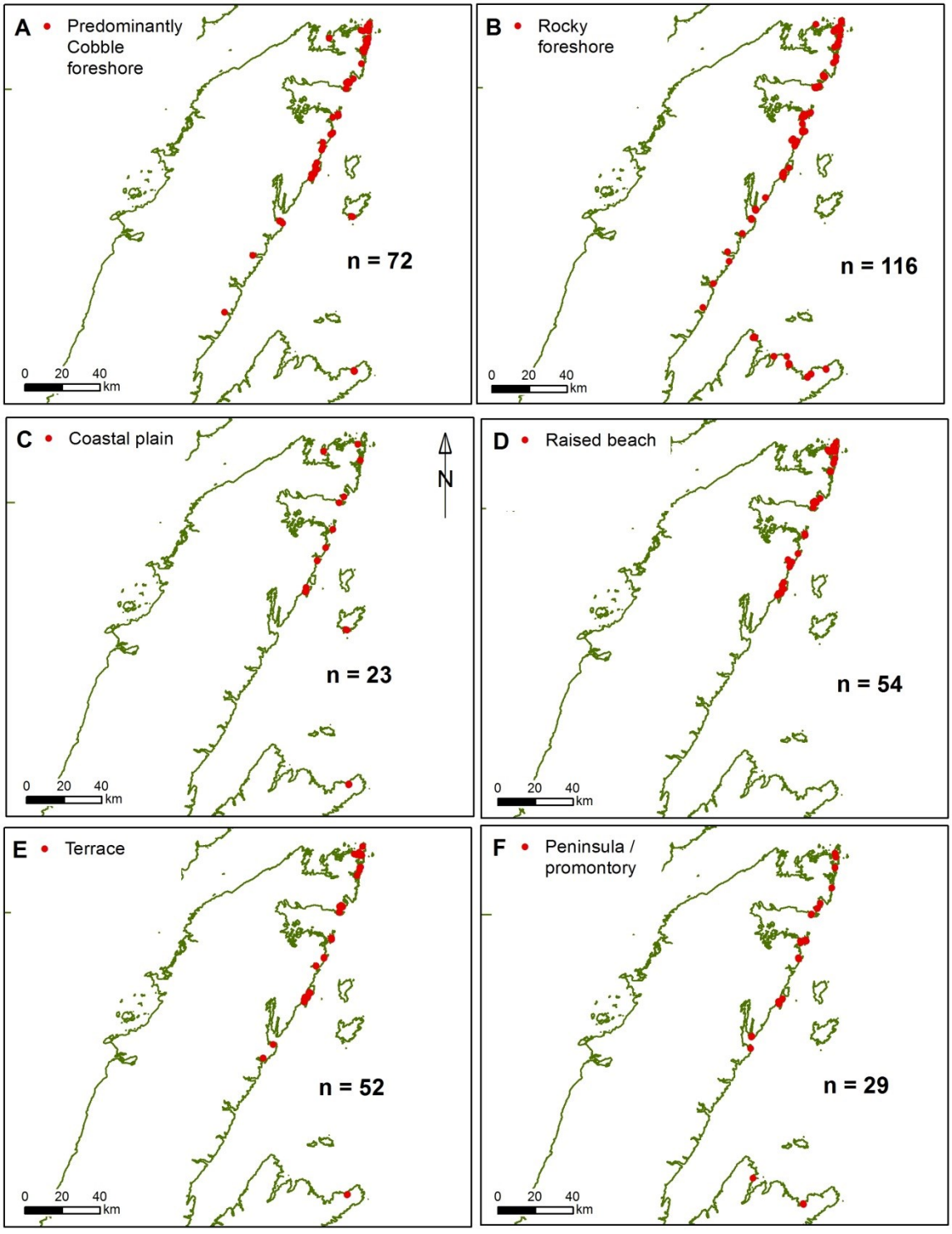



Figure 13. Map of distribution of types of landforms on which fishing rooms are located. (A) Rooms that are predominantly sited on cobble beaches. (B) Predominantly rocky shorelines. (C) Rooms located on extensive level ground. (D) Rooms incorporating raised beaches as low beach terraces immediately above the foreshore. (E) Rooms incorporating escarpment terraces above lower shoreline beach terrace. (F) Rooms located on promontories and points of land.

the later periods of the fishery were markedly different from those places occupied by their predecessors. Continued seasonal use meant they underwent considerable and repeated change as each year crews' fashioned the best conditions possible for their work. As Le Tourneur indicates in his discussion of the potential for establishing fishing rooms in White Bay, it could take years of repeated use and landscaping to make a favourable fishing room: "Sous l'espoir de l'augmentation; en effet il deserte les bois, il aplainie les montagnes, et en 3 a 4 ans on est etonné de voir une belle grave où on n'auroit pas imagine qu'il est eté possible d'y en faire" (Le Tourneur 1785a).

### 6.2.1 Aspect and local environmental conditions

The climate and weather conditions found in particular regions and topographies were also an important factor in determining the quality of fishing rooms. The direction and strength of the wind and exposure to sunshine dictated how quickly and thoroughly fish cured. Curing cod was a slow process and required conditions that were neither too dry nor too wet but allowed the fish to dry evenly without getting too burnt or too damp and thereby spoiling (Pope 2009a: 135). For example, localised weather patterns appear to have affected the desirability of some fishing rooms of the historic resident French fishery at *Plaisance* (Placentia) on the Avalon Peninsula. The 1698 census records how land at *Pointe Verte* (Pointe Verde), while closest to the fishing grounds, was perceived as unappealing because it was often subject to sea fog which interfered with drying fish, while the ground itself had to be cleared of scrub and overgrowth (Thibodeau 1960: 70).

In terms of slope, the fishing rooms of the Petit Nord appear to show a general preference for topographies with predominantly southern and western aspects. Almost 70 percent of rooms incorporate a southern aspect, while 42 percent are solely southern and/or western facing. That almost 60 percent of rooms are open to two or more aspects indicates

the generally exposed nature of the terrain fishing crews exploited. On the Quebec North Shore in the Gulf of St. Lawrence, it has been suggested that rooms were preferably sited in places with an aspect to the north-east because it prevented too much sun burning the fish as well as avoiding the wetter south-westerly winds (Niellon 2010: 6). The influence of the latter may represent a concern with limiting the exposure fish had to warm wet winds coming directly off the Gulf. On the Petit Nord, crews identified places reasonably exposed to the prevailing winds (predominantly drier south westerlies coming off the interior during the summer months) and with consistently higher temperatures associated with longer periods of sunshine, which allowed fish to dry more quickly and evenly than would have been the case in more sheltered or shaded places. Of the 23 rooms identified as very good places to dry fish in 1821, almost three-quarters include a south aspect (Anon. 1822). In contrast, only 20 percent of rooms have aspects to just the north and/or east, although this might also be explained in terms of the shelter fishermen sought in the inner coves of bays, away from direct exposure to the open sea and onshore winds from the east.

Conditions that resulted in fish being burnt and dried too quickly by the sun and wind was a complaint levied at some rooms which used particularly exposed ground. The room known as *Côte de l'Ouest*, on the south shore of St. Anthony Harbour, was considered "trop brûlant", as was *Grande Rochelle* (EiAv-03) in Crémaillère Harbour (Anon. 1822: 246; Pope et al. 2007: 4-5). Similarly, parts of the rooms known as *No. 2* in Goose Cove, and *Grand-Seau* on Nobles Island in Quirpon Harbour, were described as "très brûlant" and "brulans" respectively in detailed plans of c1832 (Anon. c1832, Plans 32 and 59). A common feature of all these rooms is that they incorporated areas of higher barren and rocky ground, on which fish was cured (Cloué 1854; Pierre 1860a, b and c). These examples indicate that micro-climatic conditions could vary significantly within rooms and across

small distances and consequently affected the drying process and the quality of the cod produced.

In 1764, Le Tourneur noted the unsuitability of Fourché Harbour for drying fish, recording in his memoires that although the harbour offered excellent mooring for ships it was, “mauvaise pour la pêche en ce que les montagnes qui le bordent sont si hautes que le soleil ne reluit que peû de terre sur les plaines ou on pourrait etablir des graves” (Le Tourneur 1766). In a later voyage, Le Tourneur provided further examples of such conditions found in some of the other steeply incised bays and inlets of White Bay. Identifying potential sites for French exploitation, he noted an English *grave* at *l'Ance d'Or* (Gold Cove, Hampden Bay) where the high mountains shrouding the harbour, cut off direct sunlight from sunrise to sunset, while he recorded that *les Grands Chats* (Great Cat Arm) received sunlight late in the morning only to lose it by the early evening (Le Tourneur 1785a). These characteristics may have been a further reason for the relative lack of fishing rooms in the southern part of the Petit Nord, particularly in White Bay, where the coastlines of deep bays are often shrouded from sunlight and even sheltered from winds required to adequately cure fish. These places are in contrast to the open terrain found in the northern parts of the peninsula on the numerous headlands and archipelagoes found north of Cape Rouge.

It appears that at some rooms drying fish became increasingly difficult later in the season as summer drew to a close and as weather conditions worsened. The c1832 plan of *Place 14, Pointe Verte* in Quirpon makes the following notation along the western shoreline of the peninsula of the room: “sécherie difficile dans l'arriere saison” (Anon. c1832, Plan 59).

### 6.2.2 Drying fish: materials, patterns and distribution

After the cod was landed, crews swiftly headed, gutted, split and washed it at the stage. It was then salted and stored in the stage for a couple of days, before being rinsed to remove excess salt and arranged, head to tail in rows, and left exposed to desiccate in the wind and sun. The fish was traditionally dried in three main ways: on cobble beach terraces (referred to as *galets* by Bretons and *graves* by Normans; on evergreen spruce and fir boughs (*rances*), and on raised wooden flakes (*vigneaux* or *flagues/flaques*)[15]. Often covering hundreds of square metres, these extensive drying areas were divided by networks of paths that allowed crews access to regularly turn the fish. The fish was usually gathered, piled and covered at night (or during wet weather) to minimise exposure to the damp. The drying process could take a period of days and sometimes weeks, and shoremen spread, piled and respread the fish until it was properly cured.

Before 1803, the first fishing captain to reach a fishing harbour assumed the position of *amiral* and subsequently allocated the available *graves* to each ship arriving at the harbour. This was undoubtedly a source of conflict and negotiation between competing fishing crews, especially in those harbours that were congested and where the rooms were not easily distinguished from one another. According to Eustache Le Pelley Fonteny, who documented the practice in 1802, this also often meant that rooms were allocated to ships that did not or could not fit them – that is, there were too many or too few boats to work their drying areas. It also appeared to have led some captains to appropriate the best drying areas along the shoreline in several rooms, leaving difficult terrain behind to those ships and crews arriving later. Le Pelley Fonteny suggested that to regulate the use of drying areas, each should be allotted according to the number of *bateaux* operated by each crew - thereby fitting crews of different sizes to the best suited spaces available (Le Pelley Fonteny and

[15] Both *flague* and *flaque* occur in the historic literature when used to refer to flakes.

Desire dit Gosset 2001: 124). These constraints had already been so recommended by the Parlement of Brittany in the 17th century (Anon. 1640). Le Pelley Fonteny also suggested that the demarcation between drying areas could be achieved by ensuring they had artificial straight edges, thereby preventing one drying area from being confused with another (Le Pelley Fonteny and Desire dit Gosset 2001: 124).

It is difficult to challenge Le Pelley Fonteny's description of the apportionment of *graves* since the most detailed accounts prior to 1802 are provided by François-Thomas Le Tourneur's 43 plans of c1784 which reflect his judgement of the capacity of each room rather than the actual number of boats present; his plans appear to apportion boats largely on the basis of the drying space available (Le Tourneur c1784, Plans 15-57). A close analysis of the capacity of fishing rooms recorded in the surveys of c1784, 1821 and c1832, clearly show that the size of a room, in terms of the boats it could carry, is directly related to its ability to dry fish. In all types of drying areas recorded – *galets* and *cailloux*, *rances*, *vigneaux* and *flagues* - the greater the area or weight stipulated, the greater the number of boats indicated (Table 9). The implication is that topography was a critical factor in determining the number of boats that could work a room. It also suggests that by the mid-1780s, French administrators were categorising rooms on the basis of their drying areas and estimating the number of boats that could work them – almost 20 years earlier than formally requested by Le Pelley Fonteny in 1802. It is conceivable that Le Tourneur's c1784 survey influenced the proposals that followed.

The particular methods used to dry fish largely depended on the type of topography and space available to crews along the shore to arrange the fish, and the natural raw materials available on which to lay it out to dry. The detailed plans of drying areas found in the historic surveys of Le Tourneur in c1784 and the accounts of French colonial administrators in 1821 demonstrate the considerable importance attached to these features;

**Number of Rooms and Drying Space by Room Size**

| **c1784 survey** (n=169) | | | **Small rooms (<9 boats)** | | | **Med. Rooms (10-15 boats)** | | | **Large rooms (16+ boats)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Drying type** | **Rooms** | **(%)** | **Rooms** | **Toises** | **Qtls** | **Rooms** | **Toises** | **Qtls** | **Rooms** | **Toises** | **Qtls** |
| Tout à faire en grave | 24 | 14 | 9 | - | - | 13 | - | - | 2 | | - |
| Galet | 129 | 76 | 30 | 219 | - | 56 | 530 | - | 43 | 834 | - |
| Rances | 91 | 54 | 19 | - | 179 | 40 | - | 208 | 32 | | 286 |
| Vigneaux | 27 | 16 | 7 | - | 157 | 13 | - | 338 | 7 | | 707 |
| Flagues | 22 | 13 | 6 | - | n/a* | 8 | - | n/a* | 8 | | n/a* |
| Cailloux | 8 | 8 | 1 | - | n/a* | 3 | - | n/a* | 4 | | n/a* |

| **1821 survey** (n=158) | | | **Small rooms (<9 boats)** | | | **Med. Rooms (10-15 boats)** | | | **Large rooms (16+ boats)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Drying type** | **Rooms** | **(%)** | **Rooms** | **Toises** | **Qtls** | **Rooms** | **Toises** | **Qtls** | **Rooms** | **Toises** | **Qtls** |
| Tout à faire en grave | 16 | 10 | 7 | - | - | 8 | - | - | 1 | - | - |
| Galet | 118 | 75 | 24 | 231 | - | 54 | 576 | - | 40 | 878 | - |
| Rances | 89 | 56 | 20 | - | 174 | 35 | - | 235 | 34 | - | 371 |
| Vigneaux | 29 | 18 | 7 | - | 101 | 14 | - | 289 | 8 | - | 176 |
| Flagues | 2 | - | - | - | n/a* | 1 | - | n/a* | 1 | - | n/a* |
| Cailloux | - | - | - | - | - | - | - | - | - | - | - |

| **c1832 survey** (n=97) | | | **Small rooms (<9 boats)** | | **Med. Rooms (10-15 boats)** | | **Large rooms (16+ boats)** | |
|---|---|---|---|---|---|---|---|---|
| **Drying type** | **No. of rooms** | **(% of 172)** | **Rooms** | **m²** | **Rooms** | **m²** | **Rooms** | **m²** |
| Tout à faire en grave | - | - | - | - | - | - | - | - |
| Galet | 93 | 96 | 23 | 1557 | 42 | 2993 | 28 | 4446 |
| Rances | 33 | 34 | 12 | 1319 | 11 | 1332 | 10 | 1133 |
| Vigneaux | 54 | 56 | 11 | 843 | 24 | 906 | 19 | 1657 |
| Flagues | 25 | 26 | 5 | 1037 | 11 | 1901 | 9 | 910 |
| Cailloux | - | - | - | - | - | | - | - |

Before about 1840 a French quintal was equivalent to 48.9kg (Ross 1983: 59, 62).
A *toise* here refers to *toise carrée* which equates to 1.95m² (Ross 1983: 82).
* sample too small (often grouped with other types so no meaningful way to look at trends in quantities).

Table 9. The types of drying areas (averages) indicated at fishing rooms listed in surveys of c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832).

each room includes precise measurements of the ground space available or the weight of fish that could be dried on them. According to these two surveys, rooms usually used a combination of these methods to dry fish, with less than a third of rooms relying on one method alone (Le Tourneur c1784, Plans 15-57; Anon. 1822). This suggests a concern with exploiting as much terrain as was possible. When crews used more than one method, there appear to have been systematic ways to organise drying areas within rooms: a close analysis of Le Tourneur's plans show that drying areas were arranged according to the practicalities of resource acquisition and the labour involved in moving the materials. The majority of rooms surveyed depict *galet* areas arranged along the shoreline beach terraces, close to the foreshore where the stone and cobbles either occurred naturally or could be moved short distances. In contrast, fir and spruce boughs and flakes were usually arranged around the *galets* on higher terraces and sloping ground or over rocky foreshores and other available but uneven ground (Le Tourneur c1784, Plans 15-57). The general patterns of arrangement suggest that *galets* were located close to the source of pebbles, stones and cobbles, while the boughs and wood required for *rances* and flakes meant they would be set up on ground cleared of forest and scrub. *Rances* and flakes could also be built over undulating and uneven ground, making them more versatile structures suited to the marginal areas of the room where it was too difficult or inconvenient to lay out cobbles. Particularly good examples of this general pattern of the arrangement of drying areas in rooms can be found in the historic plans for Fischot, Great and Little St. Julien, Cape Rouge (Figure 14) and La Scie harbours (Le Tourneur c1784, Plans 28, 32, 37 and 57). The general pattern is supported by 19$^{th}$-century historic charts that provide a partial representation of the arrangement of drying structures at some rooms of larger harbours such as St. Anthony, Goose Cove and Fleur de Lys (Pierre 1860a, 1860d; Cloué 1862).

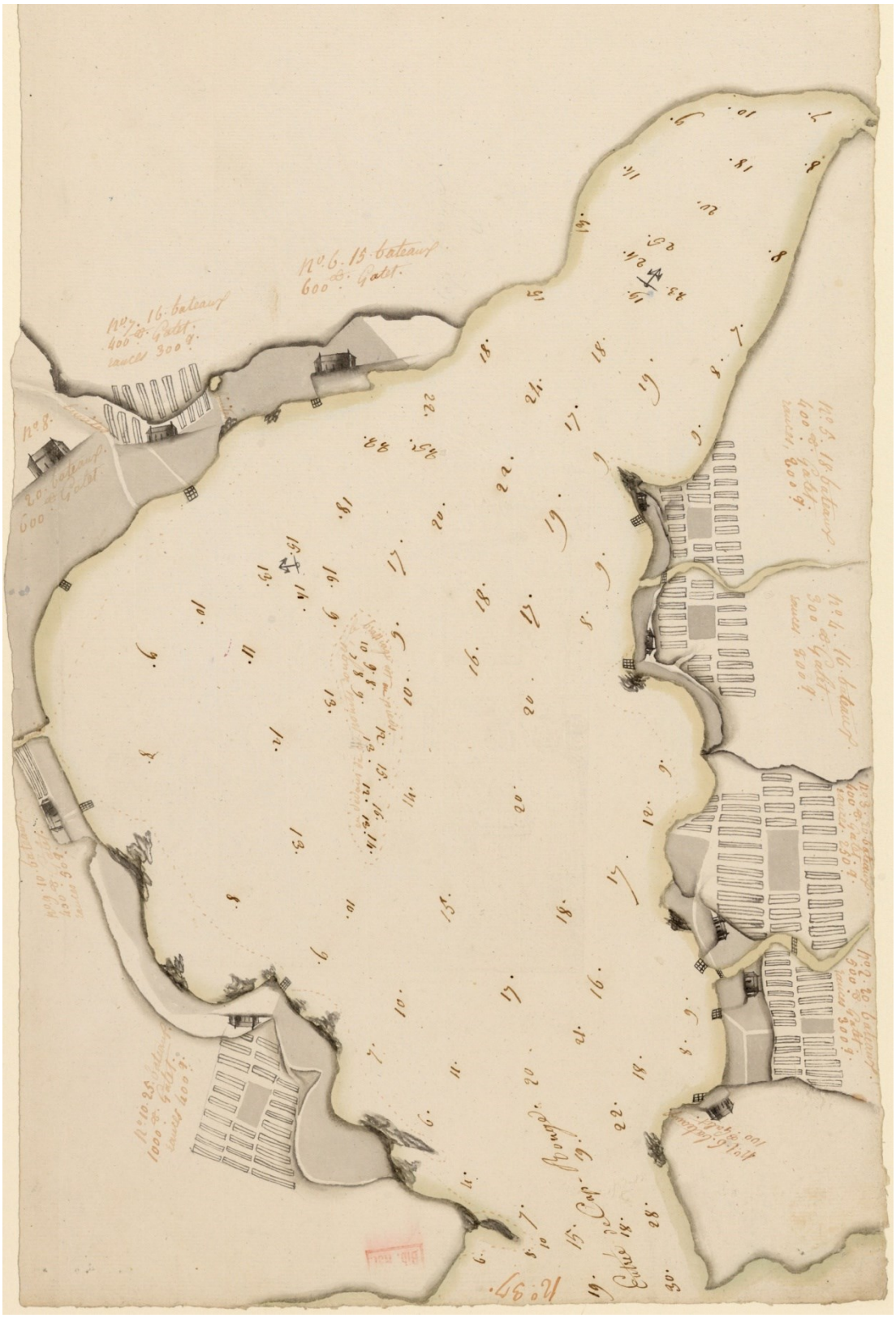


Figure 14. François-Thomas Le Tourneur's plan of the rooms of Cape Rouge Harbour (c1784, plan 37). Note the general pattern of drying areas, with *galets* arranged along the shoreline lower beach terraces and *rances* located on upper terraces.

The availability and nature of drying areas was a principal factor determining the perceived quality and productivity of a fishing room by fishing crews (Pope 2009a: 135). The condition of the drying areas determined how much time and energy was spent preparing the room at the beginning of the season, and naturally a room with either extensive natural, prepared and constructed *galets* was far more attractive to crews than one where considerable work was required to clear vegetation and build these structures, or timber was needed to construct flakes and beds of boughs. However, the type of drying area also influenced the quality of the fish produced: fish dried on the ground on *galets* was thought to be of lower quality than that dried on flakes where better ventilation generally produced a superior grade product (Niellon 2010: 6).

A fifth of all fishing rooms recorded in 1821, were described in terms of the excellent drying conditions they offered – many recorded as *bonne sécherie* or *très-séchante* (Anon. 1822). Unsurprisingly, some harbours were specifically sought for their good drying areas, especially if it allowed fishermen to dry fish quickly and return with their cargo to Europe earlier than their competitors. The rooms of Grandois, Great and Little St. Julien and St. Julien Island were noted as particularly good drying places in 1821, when the commissioners noted, "Ces havres sont recherchés par leurs belles sécheries, favourables aux primeurs" (Anon.1822: 253). Some rooms appear to have been used simply to dry the fish caught at others – similar to the role provided by *dégrat* rooms. *Le Gouffre* (Wild Cove), Canada Bay, seems to have served such a purpose in 1821, particularly for the lower quality cod caught at neighbouring rooms: "Cet établissement peut servir pour faire sécher les morues qui auraient eu des avaries en les transportant de Rincé et des Canaries, à bord de leurs batimens respectifs" (Anon.1822: 260). In this instance, Wild Cove's enclosed topography and distance from the fishing grounds may have contributed to this reduced role.

Certain topographies limited the size of rooms and the extent to which they could be extended. In the survey of c1832, two rooms in Goose Cove, *No. 2* and*, No. 5*, are described as "marécageux", and were considered too marshy to extend because conditions were too wet for drying, and too arduous to make the ground firm or to drain it (Anon. c1832, Plans 32 and 34). A small number of places, 7.5 percent of rooms in 1821, were so physically constrained that they were especially difficult to exploit and expand, and therefore always restricted in the number of boats that could be supported. The historic room known as *l'Îlot du cap Blanc,* located on a small islet in White Cape Harbour (EjAu-22), had a capacity of four boats in c1784 and the same number in 1821 when it was recorded as: "Cette grave ne peut être augmentée en bateaux" (Le Tourneur c1784, Plan 20; Anon 1822: 242; Tapper and Pope 2014: 18-19). Despite its use of part of the mainland for drying in c1832, it was only able to slightly increase its quota of boats to six (Anon. 1832; Anon. c1832, Plan 54).

#### 6.2.2.1 Galet/Grave

Drying cod on the cobbles (*galets*) and pebbles (*cailloux*) of natural beaches (*graves*) was a traditional technique employed in Brittany and already a regular practice in Newfoundland by the early 16$^{th}$ century (Turgeon 2005: 5). It was the favoured method used by crews to dry fish in the Petit Nord and other northern fishing regions such as the Quebec North Shore where wood was generally sparse (Thoulet 2005: 108; Niellon 2010: 6; Josse and Martin 2013: 26). The variety of beaches exploited by crews inevitably meant that stone of various grades was used, from large tabular rocks, to the average sized cobbles found at most rooms, and the smaller pebbles found in a number of southern rooms between Hilliers Harbour and Pacquet (Le Tourneur c1784, Plans 39, 45, 47, 48, 50, 54). A small number of fishing rooms (15 percent) are recorded as "tout à faire en grave" in the historic surveys of c1784 and 1821, implying crews solely made use of cobble, pebble and gravel beach

terraces and did not or could not augment their drying capacity with other methods such as *rances* or *vigneaux* (Le Tourneur c1784, Plans 15-57; Anon. 1822).

Very occasionally, fish may also have been spread directly onto exposed bedrock. The historic room located on the barren and rocky islets of Bois Island near Paquet was recorded as "Sécherie difficile sur les rochers" (Le Tourneur c1784, Plan 53; Anon. 1822: 266). On a plan of c1832 at the fishing room *le Fond* in Cape Rouge Harbour, almost 1500m² of "roches plats" was set aside for drying fish (Anon. c1832, Plan 16). Similarly on a plan of c1832 for *l'Île Madame* in Little Islets Harbour, 195m² of "roches sur lesquelles on étend" was marked for drying purposes (Anon c1832, Plan 29).

At the beginning of each fishing season, crews often prepared natural cobble beach terraces along the shoreline by stripping them of vegetation, clearing them of material washed ashore or left behind by the previous season's occupants and levelling any uneven ground (Pope 2009a: 134; Niellon 2010: 6). While most *galets* are close to the shoreline, where drying space was at a premium, fishermen constructed ramps to access the higher ground of adjacent escarpments and coastal slopes on which they laid artificially constructed *galets*. This required them to gather considerable quantities of stone from the foreshore to set out in raised beds and pavements, sometimes retained at their edges with stone kerbing which also demarcated paths between them (eg. Pope 2006: 40-41; Pope et al. 2007: 7). A number of historic documents make specific reference to the state of the *galets* available to crews for drying fish. This suggests that at some fishing rooms crews spent a considerable amount of time preparing them for sustained seasonal use; most *galets* are likely to have evolved over decades if not centuries. All twelve rooms of the Quirpon Island and North Bay stations were described as "préparé" by Le Tourneur in the mid-1780s (Le Tourneur c1784, Plans 18, 19). Some fishing rooms were specifically targeted for use solely on the basis of their extensive prepared *galets*; both *l'Anse du cap d'Oignon* (Onion Cove)

and *les Grands-Galets* (EjAu-40) on Quirpon Island, supported very large drying areas despite both being in particularly exposed locations, so open to the sea and other elements that few other built structures were erected and crews usually berthed their ships in neighbouring harbours (Le Tourneur c1784, Plans 16, 18; Anon 1822: 237, 238; Pope 2010: 11). It is unlikely that all *galets* were so well prepared; indeed those of the historic rooms of *le Fond* in Four Harbour and *Place No. 6* (EiAu-04) on Granchain Island in St. Lunaire Bay were described in c1832 as "mal prepares" and "en mauvais état" respectively (Anon. c1832, Plans 31 and 48; Pope 2010: 7).

It appears that *graves* and *galets* were often plundered for their stone by crews who used it to provide ballast for their ships after having unloaded their salt and fishing gear on arrival at their rooms. The ballast stabilised the ship for the duration of the season. In preparation for the return journey to Europe, crews then emptied their ballast, usually into deep water, before loading their holds with dry fish. In a proposal made to the *Department de la Marine et des Colonies* in 1802, Eustache Le Pelley Fonteny complains that taking the ballast stone damaged and depleted the *graves* and *galets*. His proposal recommended that *galets* should not be raided for such purposes but, if they were, that the cobbles should be discarded in places which made it easier for fishermen to obtain them in order to replenish the *graves* and *galets* in future years (Le Pelley Fonteny and Desire dit Gosset 2001: 124). The historic surveys of c1784 and 1821 show that *galets* were used for drying at 75 percent of the174 recorded fishing rooms across the Petit Nord, but were particularly concentrated in the rooms found in the northern half of the Northern Peninsula (Figure 15). On average, these northern rooms had a larger proportion of their area designated for *galets* than those rooms found in the southern regions. The average *galet* area was almost three times the area identified in the rooms south of Hilliers Harbour although the rooms of the Baie Verte Peninsula show comparable, albeit slightly lower, values. The survey for c1832 is

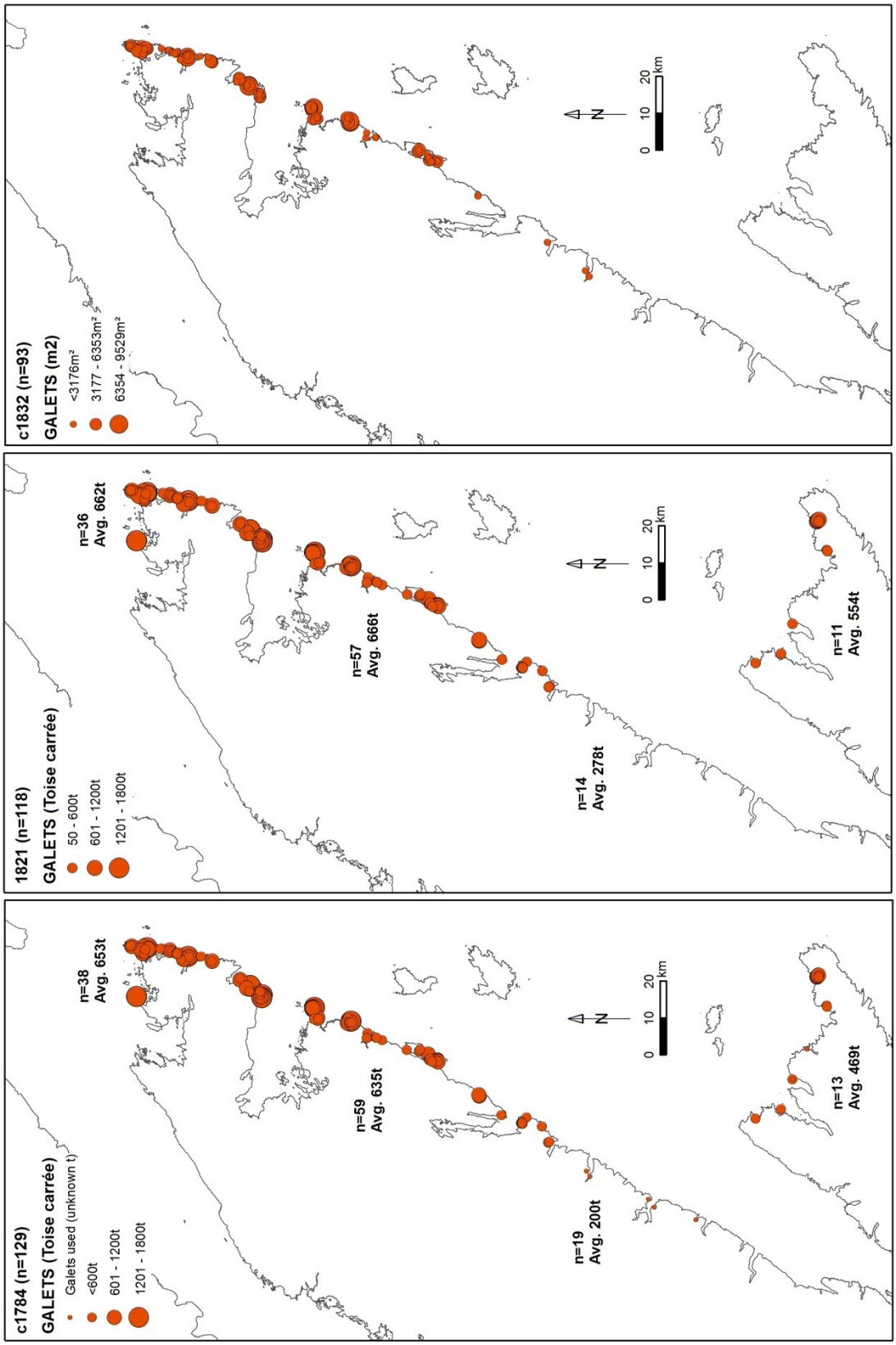



Figure 15. Distribution of rooms categorised by estimated *galet* capacity in c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832). 1 *toise carrée* = 1.95m².

**Number of Rooms by Size**

| **c1784 survey** (n=129) | **<600t** (n=83) | **601-1200t** (n = 36) | **1201-1800t** (n = 10) | **% of all Rooms** |
|---|---|---|---|---|
| **Topography** | | | | **%** |
| Flat | 47 | 20 | 8 | 59 |
| Flat; Undulating | 25 | 10 | 2 | 29 |
| Undulating; Slope | 6 | 2 | - | 6 |
| Undulating; Steep | 4 | 4 | - | 6 |
| **Elevation** | | | | **%** |
| <5m | 46 | 17 | 9 | 56 |
| <10m | 29 | 13 | 1 | 33 |
| <20m | 8 | 6 | - | 11 |
| **Geology** | | | | **%** |
| bedrock | 30 | 21 | 8 | 46 |
| drift, alluvium, glaciomarine | 53 | 15 | 2 | 54 |
| **Landform** | | | | **%** |
| Island or Islet | 20 | 16 | 4 | 31 |
| Coastal plain | 9 | 6 | 4 | 15 |
| Terrace | 26 | 14 | 3 | 33 |
| Headland, promontory or peninsula | 8 | 11 | 4 | 18 |
| Raised beach | 22 | 12 | 7 | 32 |
| Cobble foreshore (predom.) | 31 | 19 | 7 | 44 |
| Rocky foreshore (predom.) | 49 | 17 | 3 | 54 |
| **Aspect** | | | | **%** |
| N | 27 | 16 | 6 | 38 |
| E | 27 | 17 | 4 | 37 |
| S | 54 | 27 | 7 | 68 |
| W | 35 | 20 | 6 | 47 |
| **Distance to open sea** | **m** | **m** | **m** | **Overall avg.** |
| Distance (metres) (avg) | 1313 | 1159 | 1150 | 1207 |

| **1821 survey** (n=117) | **<600t** (n=70) | **601-1200t** (n = 38) | **1201-1800t** (n = 9) | **% of all Rooms** |
|---|---|---|---|---|
| **Topography** | | | | **%** |
| Flat | 36 | 20 | 7 | 54 |
| Flat; Undulating | 27 | 12 | 2 | 35 |
| Undulating; Slope | 4 | 2 | - | 5 |
| Undulating; Steep | 2 | 4 | - | 5 |
| **Elevation** | | | | **%** |
| <5m | 42 | 18 | 8 | 58 |
| <10m | 24 | 14 | 1 | 33 |
| <20m | 4 | 6 | - | 9 |
| **Geology** | | | | **%** |
| bedrock | 23 | 22 | 7 | 44 |
| drift, alluvium, glaciomarine | 47 | 16 | 2 | 56 |
| **Landform** | | | | **%** |
| Island or Islet | 18 | 17 | 4 | 33 |
| Coastal plain | 8 | 7 | 3 | 15 |
| Terrace | 25 | 14 | 3 | 36 |
| Headland, promontory or peninsula | 8 | 11 | 4 | 20 |
| Raised beach | 20 | 14 | 7 | 35 |
| Cobble foreshore (predom.) | 30 | 21 | 6 | 49 |
| Rocky foreshore (predom.) | 38 | 17 | 3 | 50 |
| **Aspect** | | | | **%** |
| N | 25 | 16 | 6 | 40 |
| E | 32 | 18 | 4 | 46 |
| S | 47 | 29 | 6 | 70 |
| W | 28 | 22 | 5 | 47 |
| **Distance to open sea (metres)** | **m** | **m** | **m** | **Overall avg.** |
| Distance (avg) | 1232 | 1144 | 1166 | 1180 |

Table 10. The relationship between size of *galet* and topography, using *galet* figures recorded in the surveys of c1784 and 1821. *Toise carrée* (t) = 1.95m².

incomplete yet begins to show similar patterning[16]. Not only are most rooms using *galets* found in northern harbours, these harbours also include those rooms with the largest *galet* areas (Figure 16, top). As might be expected, *galets* of all sizes are overwhelmingly found in the lower and flatter areas of rooms, usually along the shoreline on low raised beach terraces (Table 10). Certainly, the largest *galets* are only found in rooms with extensive flat or relatively level coastal ground, often with cobble foreshores and raised beaches. Historically, some of the larger fishing rooms were named in recognition of the extensive nature and quality of their cobbled drying areas. The fishing room located in Ron Galet's Cove on Quirpon Island (EjAu-40), known to the French as *les Grands-Galets*, comprises an extensive area of several anthropogenic galets laid out on level ground behind the cobble cove (Birard et al. 1680; Anon. 1822: 238; Anon. 1832; Pope 2010: 11). At Crémaillère, the room known historically as *les Galets* (EiAv-03), offers a broad and extensive natural beach terrace in the sheltered cove of the hooked peninsula that gives the harbour its name (Anon. 1822: 246; Pope et al. 2007: 4-5). Of the 25 largest rooms on the Petit Nord, eight were also the *amirauté* of their fishing station which demonstrates the particular desirability of these places to the fishing crews (Anon. 1822)[17]. The general preference for topographies comprising coastal plains, small flat islands and islets, beach terraces and higher terraces over a largely sedimentary and drift geology with relatively limited tree coverage and extensive barrens, would make the northern half of the Northern Peninsula a naturally convenient region to establish *galets*. In 1821, 90 percent of the rooms identified with *graves* that could be extended for drying purposes are located in harbours north of Conche (Anon. 1822). The profusion of low-lying headlands, peninsulas and promontories found

[16] Values for the different types of drying methods are recorded for 93 rooms across the *Petit Nord* in c1832 (Anon. c1832, Plans 7-66).

[17] By area of *galet* of 1000 *toises carrée* or more. In the *Systeme de longeur de Pied du Roi* (1668-1840), 1 *toise carrée* equated to 1.95m² (Ross 1983: 76). 1000 *toises carrée* would equate to an area of 3800 square metres. The average area of *galet* per room across the Petit Nord in c1784 was 560 toises or 2127 square metres rising to 2280 square metres in 1821. 72,170 *toises carrée* are indicated for *galets* across the whole of the *Petit Nord* in c1784 equating to 27.4ha. In 1821, 71.8ha were designated for *galets*.

along this indented coastline also enabled crews to lay out *galets* on higher exposed ground if shore space was constrained – particularly in smaller and more marginal rooms. Where *galets* were constructed on higher ground, on escarpments or slopes above the shoreline, they nevertheless appear to have been specifically sited on the most level ground locally available in that terrain. Good examples of this practice are observed at the room recorded as *Pointe aux Ancres* (EiAv-03) in Crémaillère Harbour where constructed *galets* were placed on a terrace above the stage area, over the level ground of the tip of the small peninsula (Anon 1822: 246; Pope et al. 2007: 45). At the small room of *Sur babord du havre* in Three Mountains Harbour (EhAv-04), several *galets* are arranged on flat or slightly sloping terraces above the tiny beach (Anon. 1822: 247; Tapper and Pope 2014: 16-17). In Cape Rouge Harbour, *le Goguelin* in Northeast Crouse (EfAx-11), three level cobble ridges located on the escarpment to the north of the beach terrace run inland perpendicular to the shoreline (Anon. 1822: 256; Pope 2005: 20-21, north of Area H; Pope 2006: 38).

There are indications that French fishermen attempted to provide drainage for their *galets*, especially in the more extensive and low-lying rooms susceptible to flooding or close to pooling water. A deep drainage ditch, with the remains of a possible wooden sluice at its seaward end, is recorded at Southwest Croque (EgAw-05) (Pope 2005: 35). At a smaller scale, a series of 1m wide cobble ridges separated by furrows located over 20m of the beach terrace downslope, to the north, of the "*petite fontaine*" water source at the room *Pointe aux Ancres*, in Crémaillère Harbour (EiAw-03), may have served to drain water running across the *galet* (Anon. 1822: 246). However, an alternative, and more likely interpretation may be that the linear features are the remnants of a *galet* made into a garden of raised lazy beds, taking advantage of the spring to provide fresh water, and related to the 19$^{th}$- and 20$^{th}$-century Anglo-Irish livyer settlement known to have been established in the harbour (Pope et al. 2007: 4-5). Although the absence of an organic soil today might suggest gardening

was not carried out at this location in the past, any earth used on the lazy beds may have leached away following abandonment of the settlement when the people moved to nearby St. Anthony. Compellingly, a similar example of livyer lazy beds raised from a former cobble *galet* is found at Thompson's Cove (EjAu-26) on Four Ears Island in Griquet (Pope 2010: 9).

The presence of suitable cobble beaches alone was not necessarily enough to persuade fishermen to establish a room. Le Tourneur (1766) remarks that the "graves y sont superbes" at *Cap de Lard* (Bide Head) and *Baye de Nord-Ouest* (Chimney Bay) in Canada Bay, yet the sites appear to have remained unused by French crews. They were deemed unsuitable because they were too far from the nearest fishing grounds and the presence of many shoaling banks made the waters nearby too hazardous for vessels to safely navigate.

#### 6.2.2.2 Rances

Fir and spruce boughs, known to the French as *rances* and described by Le Tourneur as "lits de branches du sapin pour sécher la morue", were often used to improve the drying of cod on *galets* and on bare ground and terrain, by slightly raising the fish off the ground and allowing better aeration (Le Tourneur 1785a; Pope 2009a: 135). Crews felled considerable stands of timber to build their fishing rooms at the beginning of the season and the continual harvest of firewood provided an abundance of branches, which were an obvious means to extend the area available for drying fish.

According to the c1784 and 1821 surveys, *rances* were widely used across the Petit Nord - utilised at just over a half of all fishing rooms (Table 11). The use of *rances* is evenly distributed across all regions of the fishery. However, the contribution *rances* made to the drying effort of each room differed markedly, increasing substantially in the harbours located in the southern regions of the Petit Nord (Figure 17). The French calculated the use

| | Number of Rooms by Size | | | |
|---|---|---|---|---|
| **c1784 survey** (n=84) | **<400qtl** (n=70) | **401-800qtl** (n = 10) | **801-1200qtl** (n = 4) | **% of all Rooms** |
| **Topography** | | | | **%** |
| Flat | 34 | 5 | 1 | 48 |
| Flat; Undulating | 26 | 3 | 1 | 36 |
| Undulating; Slope | 4 | 1 | 1 | 7 |
| Undulating; Steep | 5 | 1 | 1 | 8 |
| **Elevation** | | | | **%** |
| <5m | 38 | 5 | 2 | 54 |
| <10m | 27 | 4 | 1 | 38 |
| <20m | 5 | 1 | 1 | 8 |
| **Geology** | | | | **%** |
| bedrock | 30 | 5 | 2 | 44 |
| drift, alluvium, glaciomarine | 40 | 5 | 2 | 56 |
| **Landform** | | | | **%** |
| Island or Islet | 17 | 2 | - | 21 |
| Coastal plain | 10 | - | - | 11 |
| Terrace | 28 | 1 | - | 32 |
| Headland, promontory or peninsula | 16 | 3 | - | 21 |
| Raised beach | 21 | - | - | 23 |
| Cobble foreshore (predom.) | 31 | 2 | - | 36 |
| Rocky foreshore (predom.) | 37 | 9 | 5 | 56 |
| **Aspect** | | | | **%** |
| N | 27 | 2 | - | 35 |
| E | 33 | 5 | - | 45 |
| S | 47 | 6 | 4 | 68 |
| W | 30 | 2 | 2 | 40 |
| **Distance to open sea** | **m** | **m** | **m** | **Overall avg.** |
| Distance (m) (avg) | 1142 | 1675 | 1187 | 1334 |

| **1821 survey** (n=88) | **<400qtl** (n=71) | **401-800qtl** (n = 12) | **801-1200qtl** (n = 5) | **% of all Rooms** |
|---|---|---|---|---|
| **Topography** | | | | **%** |
| Flat | 37 | 5 | 1 | 49 |
| Flat; Undulating | 27 | 3 | 1 | 35 |
| Undulating; Slope | 3 | 2 | 1 | 7 |
| Undulating; Steep | 2 | 2 | 2 | 7 |
| **Elevation** | | | | **%** |
| <5m | 41 | 4 | 2 | 53 |
| <10m | 26 | 6 | 2 | 37 |
| <20m | 4 | 2 | 1 | 8 |
| **Geology** | | | | **%** |
| bedrock | 29 | 6 | 3 | 43 |
| drift, alluvium, glaciomarine | 42 | 6 | 2 | 57 |
| **Landform** | | | | **%** |
| Island or Islet | 17 | 2 | - | 22 |
| Coastal plain | 9 | - | - | 10 |
| Terrace | 28 | 1 | - | 33 |
| Headland, promontory or peninsula | 16 | 3 | - | 22 |
| Raised beach | 21 | - | - | 24 |
| Cobble foreshore (predom.) | 32 | 2 | 5 | 44 |
| Rocky foreshore (predom.) | 37 | 9 | - | 52 |
| **Aspect** | | | | **Total** |
| N | 29 | 2 | - | 31 |
| E | 32 | 5 | - | 37 |
| S | 45 | 8 | 5 | 53 |
| W | 25 | 4 | 2 | 31 |
| **Distance to open sea** | **m** | **m** | **m** | **Overall avg.** |
| Distance (m) (avg) | 1271 | 1729 | 1100 | 1366 |

Table 11. The relationship between weight of fish that could be dried on *rances* and topography, using *rances* figures recorded in the surveys of c1784 and 1821.

Figure 16. (t) Drying fish on the extensive *galet* at Southwest Crouse (EfAx-10), Cape Rouge Harbour, 1857-8 (Paul-Émile Miot Collection, LAC, PA-202293). (b) *Vigneaux* and *rances* arranged over the rocky ground at Paquet, Baie Verte Peninsula, 1857-9 (Paul-Émile Miot Collection, LAC, PA-202297).

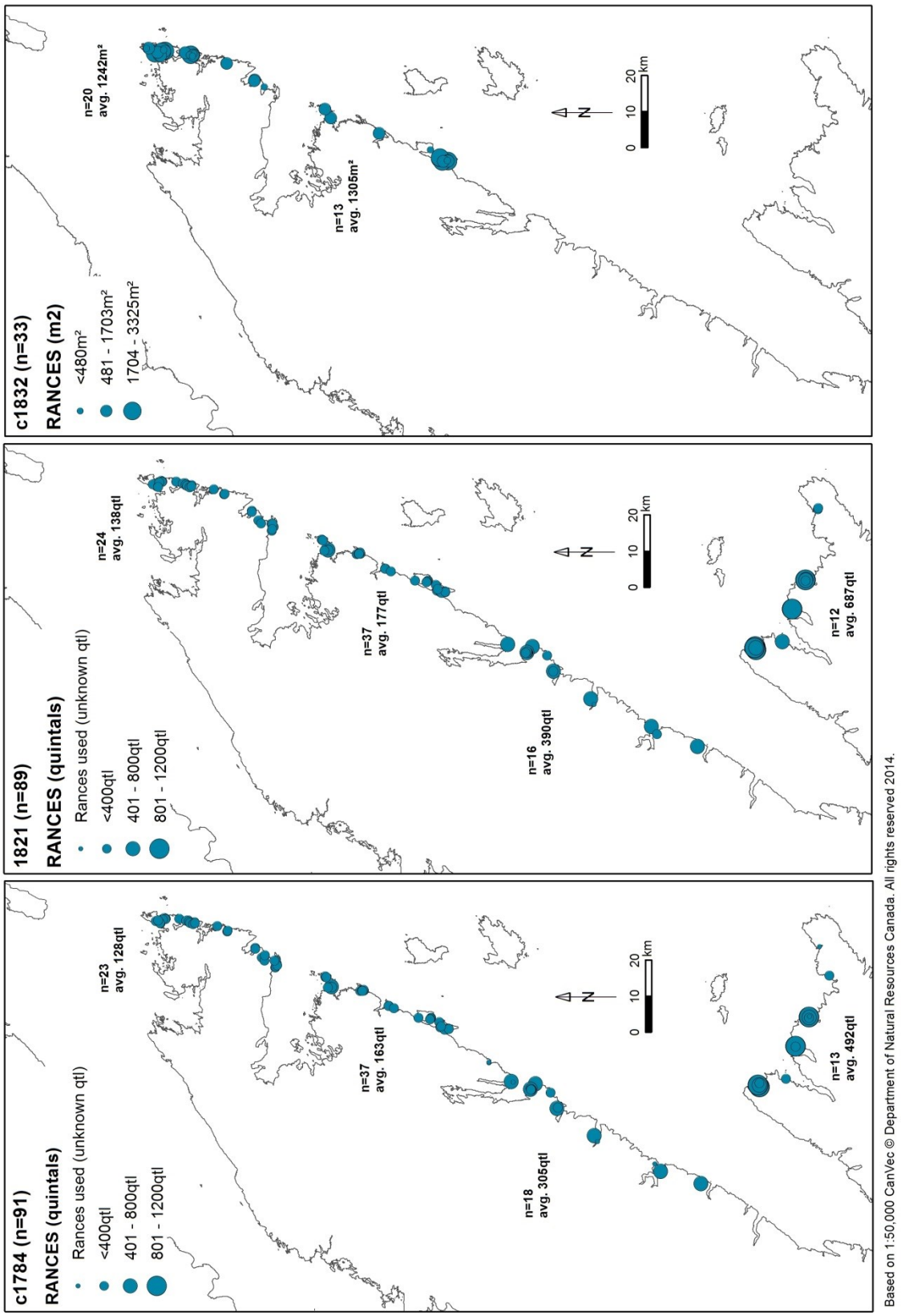



Figure 17. Distribution of rooms categorised by estimated capacity of area of *rances* in c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832).

of *rances* in terms of the dry weight of fish that could be cured on them – expressed in *quintaux* (quintals)[18]. The average measure of all rooms in c1784 was almost 230 quintals rising to approximately 270 quintals by 1821. On average, a room located between Hilliers Harbour and La Scie tended to use *rances* to dry two to three times the amount of fish that harbours in the north did using the same method; the latter invariably relied on *galets* (Le Tourneur 1784, Plans 15-57; Anon. 1822). The rooms on the Baie Verte Peninsula appear to have made particularly extensive use of *rances* with Fleur de Lys and Pacquet harbours making the greatest use (Figure 16, b). The best cartographic representation of *rances* is again provided by Le Tourneur's plans of c1784. Within fishing rooms, they are usually located on ground higher than that occupied by *galets*, often arranged as extensive mats across slopes and escarpments inland or in marginal parts of the rooms where uneven barren and rocky terrain prohibited the setting up of *galets*. At the historic rooms of *Premiere de babord en entrant* and *Contigue dans le fond* (EgAw-09), located on a long and narrow peninsula in Little St. Julien harbour, Le Tourneur depicts the *rances* aligned along the uneven outside edges of escarpments on which constructed *galets* are laid out (Le Tourneur c1784, Plan 19; Pope 2005: 43). The increased use displayed in southern rooms can be explained partly in terms of the fewer coves available for establishing rooms and the generally steeper and more forested terrain of those places. The limitations on shore space meant that any space available was taken by the stage and its associated structures while reducing the quantity of cobble foreshore that could be sustainably harvested. Conversely, the densely wooded ecoregions of the Eastern Long Range Mountains and North Shore offered almost unlimited supplies of wood found in close proximity to the rooms and would have provided a more practical alternative.

[18] 1 quintal equated to about 49kg (Ross 1983: 59, 62).

#### 6.2.2.3 Flakes

The Breton fishermen of the Petit Nord also used flakes (known as *vigneaux* or *flagues*) to increase the drying capacity of their rooms (Pope 2009a: 135). Le Tourneur describes them in similar terms to *rances*, "mais elevés de terre sur les piquets" (Le Tourneur 1785a). Essentially, flakes comprised wooden platforms of horizontal or slanted poles raised two or three feet above the ground on upright timber stakes, sometimes spread with boughs, on which the fish was laid or hung to dry (Bellet 1901: 70). Although thought by some to produce a better cure for fish, flakes appear to have been identified for use at less than a fifth of all fishing rooms across the Petit Nord (Le Tourneur c1784, Plans 15-57; Anon. 1822). In Conche Harbour, one of the larger fishing rooms was historically known as *la Flague* or *la Flaque*, in acknowledgement of the flakes used for drying fish there (Anon. 1822: 257; Richard 1830a; Anon. 1832).

The distribution of rooms identified as suitable for flakes shows a distinct concentration south of Canada Bay where, for c1784 and 1821 at least, flakes were estimated to dry twice the amount of fish than did rooms to the north. The harbours of Fourché, Great Harbour Deep, Fleur de Lys, Pacquet and La Scie appear to have relied extensively on flakes for their drying purposes. In contrast, between Crémaillère and Cook's Harbour flakes appear to have been virtually absent (Figure 18). However, the survey of c1832, although incomplete, perhaps provides a more accurate representation of the use of flakes in the rooms of the northern harbours than the earlier surveys; yet even in these places the areas set aside are still significantly smaller than those found in the rooms further south, where unfortunately the survey is missing most of its data. Nevertheless, extrapolating from the c1784 and 1821 surveys combined with the limited data available for the southern harbours in c1832, it is likely flakes were the primary method used to dry fish

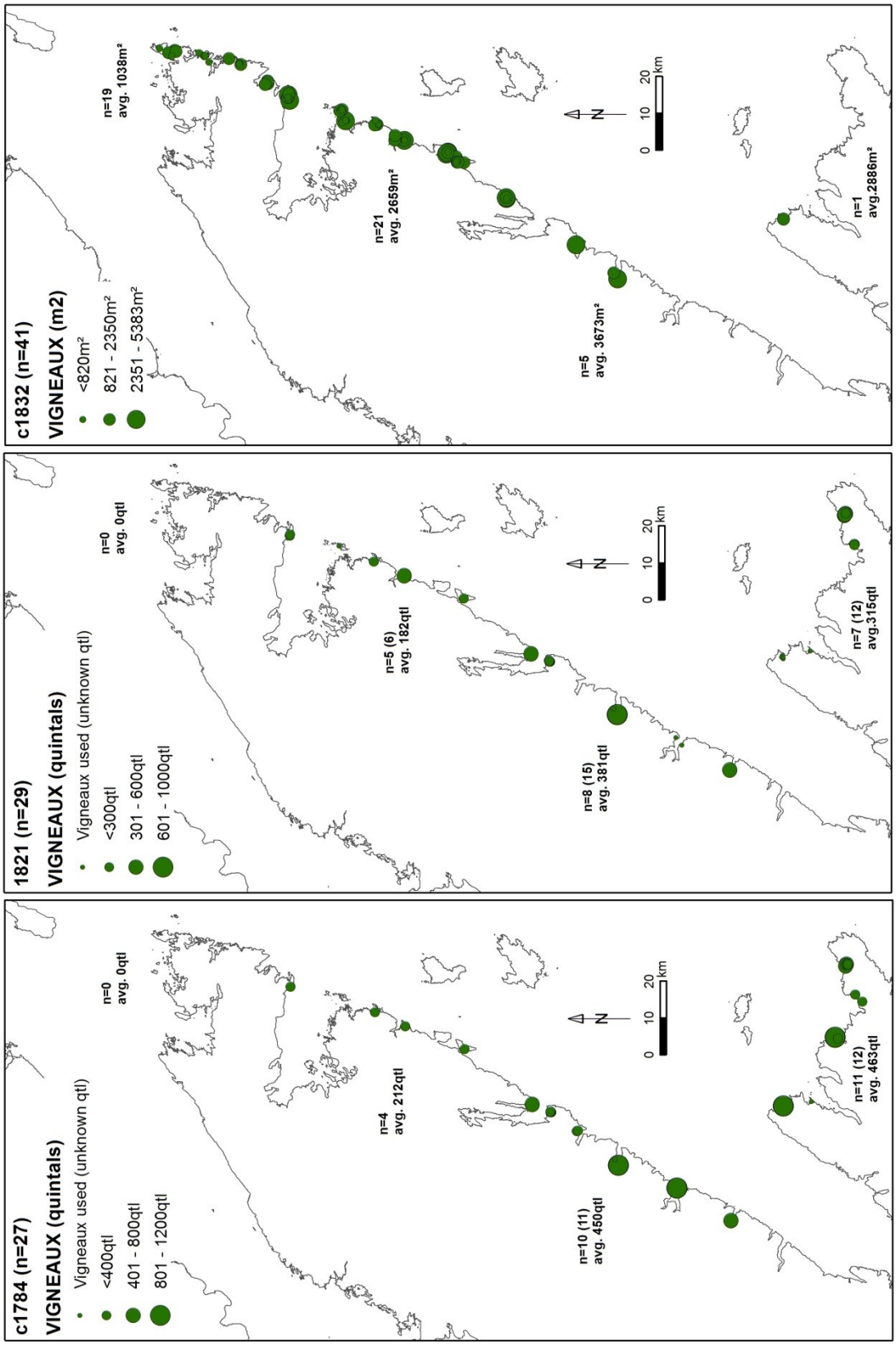



Figure 18. Distribution of rooms categorised by estimated capacity of *vigneaux* and *flagues* in c1784, 1821 and c1832 (Le Tourneur c1784; Anon. 1822; Anon. c1832).

| | Number of Rooms by Size | | | |
|---|---|---|---|---|
| **c1784** survey (n=27) | **<400qtl** (n=19) | **401-800qtl** (n = 4) | **801-1200qtl** (n = 4) | **% of all Rooms** |
| **Topography** | | | | **%** |
| Flat | 9 | 2 | 1 | 44 |
| Flat; Undulating | 4 | 1 | - | 19 |
| Undulating; Slope | 4 | - | 2 | 22 |
| Undulating; Steep | 2 | 1 | 1 | 15 |
| **Elevation** | | | | **%** |
| <5m | 10 | 3 | 1 | 52 |
| <10m | 6 | 1 | 2 | 33 |
| <20m | 3 | - | 1 | 15 |
| **Geology** | | | | **%** |
| bedrock | 5 | - | 3 | 30 |
| drift, alluvium, glaciomarine | 14 | 4 | 1 | 70 |
| **Landform** | | | | **%** |
| Island or Islet | 2 | 1 | - | 11 |
| Coastal plain | 3 | 2 | - | 19 |
| Terrace | - | 1 | - | 4 |
| Headland, promontory or peninsula | 3 | - | - | 11 |
| Raised beach | - | - | - | - |
| Cobble foreshore (predom.) | 7 | 1 | 1 | 33 |
| Rocky foreshore (predom.) | 11 | 3 | 3 | 63 |
| **Aspect** | | | | **%** |
| N | 10 | 1 | 1 | 44 |
| E | 6 | 1 | - | 26 |
| S | 11 | 2 | 3 | 60 |
| W | 10 | 1 | 1 | 44 |
| **Distance to open sea** | **m** | **m** | **m** | **Overal avg.** |
| Distance (m) (avg) | 1881 | 2125 | 2312 | 2106 |

| **1821 survey** (n=29) | **<400qtl** (n=24) | **401-800qtl** (n = 4) | **801-1200qtl** (n = 1) | **% of all Rooms** |
|---|---|---|---|---|
| **Topography** | | | | **%** |
| Flat | 11 | 2 | 1 | 48 |
| Flat; Undulating | 5 | 1 | - | 21 |
| Undulating; Slope | 5 | - | - | 17 |
| Undulating; Steep | 3 | 1 | - | 14 |
| **Elevation** | | | | **%** |
| <5m | 14 | 3 | 1 | 62 |
| <10m | 10 | 1 | - | 38 |
| <20m | - | - | - | - |
| **Geology** | | | | **%** |
| bedrock | 11 | - | - | 38 |
| drift, alluvium, glaciomarine | 13 | 4 | 1 | 62 |
| **Landform** | | | | **%** |
| Island or Islet | 2 | 1 | - | 14 |
| Coastal plain | 2 | 2 | - | 18 |
| Terrace | 2 | - | - | 9 |
| Headland, promontory or peninsula | 2 | - | - | 9 |
| Raised beach | 1 | - | - | 5 |
| Cobble foreshore (predom.) | 5 | 1 | 1 | 32 |
| Rocky foreshore (predom.) | 17 | 3 | - | 91 |
| **Aspect** | | | | **%** |
| N | 11 | 2 | 1 | 64 |
| E | 6 | 1 | - | 32 |
| S | 15 | 4 | - | 86 |
| W | 14 | 3 | - | 77 |
| **Distance to open sea** | **m** | **m** | **m** | **Overall avg.** |
| Distance (m) (avg) | 1271 | 1729 | 1100 | 1366 |

Table 12. The relationship between weight of fish that could be dried on *vigneaux* and topography, using *vigneaux* figures recorded in the surveys of c1784 and 1821.

Figure 19. (t) Detail of drying fish on flakes on a terrace above the shoreline at a fishing room on the Petit Nord, 1858 (Paul-Émile Miot Collection, LAC, PA-202294). (b) Extensive arrangement of flakes located upslope and behind galet area along the shoreline to bottom-right of the image, Petit Nord, 1857-9 (Paul-Émile Miot Collection, LAC, PA-202295).

in these rooms. Like *rances*, flakes appear to have been versatile structures that could be constructed to provide level drying surfaces over undulating and even steep ground (Table 12). A plan of c1832 records the arrangement of drying space available at *Pointe à l'Auguste*, Griquet Harbour, in which drying space could be increased by extending flakes onto the slopes of a nearby hill: "Morne sur lequel on à établi 900 mètres C[arrés] de vigneux." (Anon. c1832, Plan 55). Ocassionally, in rooms where space was particularly constrained, *flagues* appear to have straddled the shoreline and according to Le Tourneur's depictions of such arrangements at Canaries, Cat Cove, Little Harbour Deep, Fleur de Lys, *Baie de Pins* (Ming's Bight) and Brent's Cove, they differed in their placement to *vigneaux* which appear to have been located solely over land (Le Tourneur c1784, Plans 42, 44, 49, 50, 52 and 56). Given the generally shallow nature and acidic conditions of Newfoundland soils, the organic remains of *rances* and flakes are largely invisible archaeologically. However, the considerable depth of soils encountered during the excavations at *Champ Paya* (EfAx-09), and test excavations at other fishing rooms, hint at how the organic material processed and deposited at these sites (including cod fish remains, middens, timber buildings, flakes, boughs and branches etc.) over several centuries have created rich and stratigraphically deep anthropogenic soils at many historic fishing rooms (Pope 2006: 3). Historic surveys provided by participant-observers of the fishery such as Francois-Thomas Le Tourneur and the historic photographs of Paul-Émile Miot offer the best evidence for the widespread use of *rances* and flakes (Figures 14 and 19).

### 6.3 Hydrography

While the topography of the Petit Nord dictated the terrestrial ground fishermen could exploit, the hydrography of the region determined which parts of the coast fishermen could actually reach in their ships and boats.

Beyond the 54 harbours known to have served as fishing stations it is clear that the French knew all stretches of the Petit Nord coast intimately, yet chose to ignore some places because they were inaccessible - usually being too shallow to moor the larger ships. The various obstacles that hindered or prevented crews from exploiting some harbours appear more frequently in historic accounts than those properties which allowed crews to successfully occupy certain havens. Le Tourneur identifies the small cove of *la Buse* (Great Buse Bay), just south of Great Islets Harbour, as a difficult place for ships in his reconnaissance of 1764: "La Buse est une bonne petite ance pour y etablir des echaffaux et mettre des batteaux en sureté, mais il ne peut pas y entrer des navires faulte d'eau, ce qui fait qu'il est sy peû frequenté par les français" (Le Tourneur 1766). Again Le Tourneur's voyages to White Bay provide further useful examples of the physical impediments that prevented French crews from exploiting certain places. On the west coast of the Baie Verte peninsula, Le Tourneur suggested that *havre aux Homards* (Lobster Harbour) would make an excellent fishing room on account of its good fishing – noting how fishermen from Fleur de Lys worked there at the end of the season – but that the shallow bar across its mouth prevented ships from entering what is a very deep basin beyond. Instead, he suggested that although the peninsula at the neck of the harbour could support a *grave* and between 12 and 15 boats it would better serve as a *dégrat* room (Le Tourneur 1785a). Le Tourneur similarly laments the presence of shallow ground in the entrance to *Faux havre* (Middle Arm, White Bay) just to the south, which would have made a good fishing harbour based on its natural resources of timber and bait fish (Le Tourneur 1785a). At a smaller scale still, Le Tourneur doubts that even *chaloupes* could cross the very shallow bar (only 1m deep at low tide) at the mouth of *le Petit Lapin* (Little Coney Arm, White Bay) without loss

– and consequently also relegates the harbour to the status of *dégrat* (Le Tourneur 1785a).

It appears to have been common in such circumstances, particularly for those fishing stations with shallow waters, to anchor their larger ships in neighbouring coves and harbours for the duration of the season (see Section 7.3). *Havre du Four* (Four Harbour) appears to have served as a major anchorage for many of the ships of the rooms of Fischot:

> C'est un très-bon havre pour des navires appartenant à Fichot et aux petites Ilettes, et pour server de relâche aux grandes navires tirant trop d'eau et ne pouvant entrer dans le havres voisins pour lesquels ils ont des bulletins de place. Ces navires sont très en sureté dans le havre du Four (Anon 1822: 251).

### 6.3.1 Location and prosecution of inshore fishing grounds

Besides the advantages of sheltered havens, proximity to the open sea and, by extension, local inshore cod grounds appear to have been a critical factor in determining, first, the location of fishing stations along the coast and second, the placement of fishing rooms within them.

Traditional hand-line cod fishing techniques appear to have remained relatively unchanged from the Middle Ages until the mid-19$^{th}$ century (Mousette 1979: 53). The typical gear comprised a 25-30 fathom lead-weighted line, attached to which were 2 half-fathom leaders with hooks. The hooks were usually baited and the fishermen would lower the line to the demersel zone where cod were found (Mousette 1979: 54, 148 Figure 7). Jigging for cod employed a slightly different method, a shiny lead weight lure incorporating back-to-back hooks was drawn through the water, tempting cod and snagging them in some part of their body, to be reeled in (Mousette 1979: 56, 149 Figure 8). Seine nets only began to appear around 1750, while longline fishing only became widely used in Newfoundland from the mid-19$^{th}$-century onwards and then predominantly in the Banks fishery (Mousette 1979: 107; Turgeon 2005: 38).

If cod hand-lines used in the sedentary fishery usually measured between 25 and 30 fathoms in length, then this limited fishermen to those grounds where cod were present and that they could actually reach - in practical terms it would have limited fishing activity to depths of approximately 50m or less (Ross 1983: 77). This would serve to concentrate increased effort on those regions where the coastal bathymetry and conditions were conducive and conversely limit effort where they were not. The daily rhythm of fishing took the boat crews to the "coves and inlets along the coast" and to the "indentations and crevices that dotted the shoreline" (La Morandière 2005: 10, 11). In the northern half of the Northern Peninsula the offshore bathymetry (of 100m and less) extends further offshore on a gentler gradient than along the steep coast and in the deeply incised fjords of the south, especially in White Bay, where the depths of harbours such as Harbour Deep, Fourché and Great Harbour Deep exceed 120m, descending steeply from the shoreline. In such harbours, there may be a relative scarcity of cod due to lack of suitable environmental conditions, the water being too deep and too cold, and exceeding a technological limit on the depths fishermen could reach with their hand lines (Head 1976: 22). In the northern areas extensive banks and numerous shoals are found inshore and would have provided the crews of the fishing stations with rich cod grounds, whereas in the south fishing effort may have been more concentrated in a narrow zone running parallel to the coastline (Figure 20). This may also partially explain the relative distribution of effort, reflected in historic surveys and censuses, across the Petit Nord, discussed above in section 5.1.

The detailed survey produced by the 1821 commission is particularly useful in helping to identify places historically considered good and bad for fishing. A number of large bays and coves are recorded as particularly good fishing spots. Goose Cove, at the mouth of Hare Bay, is described by the commission as, "De tous les havres que nous avons visités, c'est celui ou l'on avait fait la meilleure pêche" (Anon. 1822: 248). Fischot Harbour had

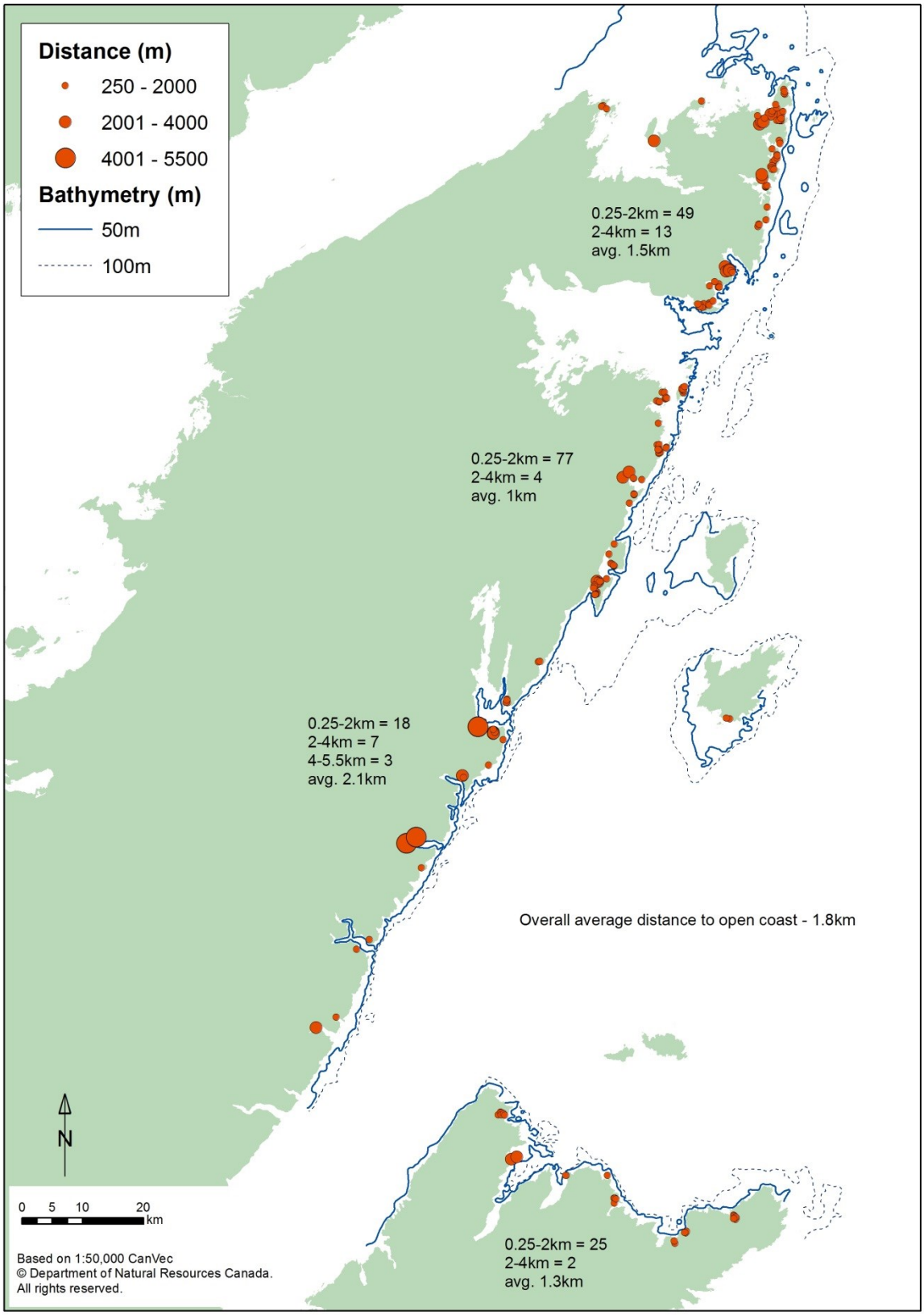



Figure 20. Distances of fishing rooms to the open coast, with simplified bathymetry, by ecological region.

"beaucoup de lieux de pêche", while Cape Rouge was an "excellent havre de pêche tant pour les seines à morue" (Anon. 1822: 250, 256-7). Moving south, Canaries Harbour was described as, "chanceux pour la pêche", as were Hooping Harbour and Fourché (Anon. 1822: 261, 262, 263). On the Baie Verte Peninsula, Fleur de Lys harbour was "très-chanceux en pêche", while Harbour Round and Brent's Cove were, "chanceux en peche à l'arrière-saison" (Anon. 1822: 265, 267). Finally, La Scie was recorded as a "très bon havre de pêche" (Anon. 1822: 268). Not only were the major harbours rated according to their abundance of fish, smaller and more marginal places were also noted. Pilier was described thus, "cette anse est très-bien placée pour la pêche", while Little Canada Harbour, "est parfaitement bien placée pour la pêche" (Anon. 1822: 255, 261). Even the exposed room of Cat Cove, a little north of Hooping Harbour, was lauded as, "très excellente anse pour la pêche, bien convenable pour les seines morue" (Anon. 1822: 262). Further east, the exposed rocky and barren islets of the fishing room of Bois Island was "un bon lieu de pêche; mais un mauvais port" (Anon. 1822: 266). The proximity of rich cod grounds appears to have outweighed even the disadvantages associated with small, exposed and difficult places. François-Thomas Le Tourneur reports that cod were very scarce across the Petit Nord in 1785, but particularly bad fishing was encountered between Canaries and La Scie. He goes on to note that in White Bay the situation was even worse, from *Cap Daim* (Partridge Point, Baie Verte Peninsula) to *havre du Roi* (Western Arm) on one side, and from *baye du Dauphin* (North Channel, Sops Arm) on the opposite coast there was very little cod, while at the bottom of the bay, from Western Arm to *havre du Maréchal* (Hampden Bay) up to North Channel, Sops Arm, there was nothing at all (Le Tourneur 1785a). And while Le Tourneur himself noted these observations could not have been taken to exclude enterprise in White Bay, the overall sense is that the southern part of the Petit Nord generally yielded less than grounds further north.

Le Tourneur also described the fishing grounds prosecuted by French fishermen of Fleur de Lys when cod was less abundant nearer to harbour. They ranged from *Cap Daim* (Partridge Point, Baie Verte Peninsula) along 6 or 8km of the coast to the south into White Bay: "…cette côte est tres abondante en morue, puisque quant la morue manque a la Fleur de Lys les pecheurs de ce havre profitent des jours de beautems pour y aller pecher." (Le Tourneur 1785a). The implication in this example is that fishermen were prepared to travel considerable distances (almost 20km in the example above) along the coast in their search of cod (this provides an interesting context for those harbours known as *dégrat* which appear to have served as outlying rooms for the principal fishing stations at which to temporarily harbour or even dry fish) [19]. Given the limit of the depths to which fishermen could reach cod with their hand lines, or even early seines, it seems that generally and given bathymetry and other environmental conditions affecting cod distribution, fishing grounds prosecuted by each station or room extended along a narrow strip of the coast rather than out from it – especially in the deeper waters of White Bay. The availability of *dégrat* rooms may have been an important consideration for longer fishing trips.

In 1802, Eustache Le Pelley Fonteny (1745-1820), a long-time Granvillais fisherman on the Petit Nord, described the situation in some harbours when the fishing in a particular year turned out to be poor. He explains how in such cases the captains would direct their crews to prosecute neighbouring harbours and fishing grounds which were abundant in cod. However this often created conflict with the fishing crews already established, who were liable to chase the interlopers away. Le Pelley Fonteny suggested amending the laws to allow fishing anywhere by anyone as long as the visiting boats did not impinge on the property of the host crews (Le Pelley Fonteny and Desire dit Gosset 2001: 124). This suggests that, at least until the beginning of the 19th century, there was an explicit

[19] *Lieue de poste* (1668-1840) = 3.898km, therefore 5 lieues = 19.5km (Ross 1983:77).

recognition that certain fishing grounds inshore were the preserve of certain crews and that transgressions across fishing territories were unwelcome.

Seine nets were in sporadic use in the sedentary fishery in Newfoundland by 1750 and by the early 19th century were often used when cod did not seem to be taking bait (Anon 1822; Cadigan 1995; La Morandière 2005: 12). While initially used for acquiring bait fish, seines were increasingly used to catch cod very close to shore by means of a hauling line attached to a winch on the shore and to a boat which circled the fish, herding them toward land (Moussette 1979: 106-7, 167 Figure 26). In 1821, the use of seines was deemed suitable for a number of harbours across the Petit Nord, the rationale being the ease with which cod could be taken, especially in instances where cod would not take the bait offered by fishermen using traditional hand-lines. At Griquet:

> La commission conseille de se servir de seines à morue pour ce havre: l'expérience prouve que, dans la force du capelan, la morue est trop ivre de cet appât pour mordre à l'hameçon, et alors la seine prend beaucoup de morue, qu'on ne pourrait prendre d'aucune autre manière (Anon 1822: 243).

The Commission even suggested that some fishing rooms were at danger of failing unless they adopted the use of seines. Such was their judgement of St. Lunaire Bay:

> C'est un excellente havre pour les seines à morue; un armament de soixante hommes qui se trouve cette année, à cesse de pêcher à la ligne, et il avait plus de morue, à lui seul, que tous les beaux armemens du Kirpon et des Griguets. La commission croit qu'a la baie Saint-Lunaire, un établissement de pêche sans seines serait exposé à perdre sa pêche (Anon 1822: 244).

At La Crémaillère, it was felt that seines would be an efficient method of taking the cod chasing the dense shoals of capelin found in the harbour (Anon 1822: 247). A number of other harbours were similarly identified as being suitable places for the use of seines including St. Anthony Harbour, Goose Cove, Fischot Islands, Cape Rouge, Conche and Coachman's Cove (Anon. 1822: 246-265). While the use of seines might herald the industrialisation of the fishery and the particularly good fishing found at some harbours,

their wider introduction might also signal early 19th-century concerns about economic viability and the effects of depleting cod stocks.

The availability of bait fish was of considerable importance to fishermen who used it to bait their hand-lines. In their survey of 1821, the commissioners recorded the availability of bait species such capelin, squid and herring at 36 of the 54 harbours across the Petit Nord (Anon. 1822). Some harbours such as Quirpon were particularly noted for their bait: "Le capelan se prend avec profusion dans le havre et aux environs. C'est le meilleur havre de la côte de l'est pour le hareng; l'encornet n'y est pas trés abondant" (Anon. 1822: 240). Conversely, other rooms appear to have been considered bad places because of the lack of bait. Again in 1821, the fishing rooms located on Bell Island were recorded as underused, and suitable only as *dégrat* for neighbouring harbours, because of their distance from baiting grounds on the mainland's coast:

> La commission y a établi deux graves. Elle pense que ces établissemens sont très-mauvais pour bâtimens sédentaires, par la grande difficulté de se procurer de l'appât: on ne peut en trouver qu'à la côte de Terre-Neuve, à huit lieues de distance du havre. C'est par cette raison que les bâtimens n'y pêchent plus, et que l'on ne considère ces îles que comme pouvant server de dégras aux havres voisins (Anon 1822: 255).

The importance of baiting areas in harbours is demonstrated in at least one recorded instance in which a fishing room was particularly short-lived because the small cove in which it was sited was a particularly good place to take capelin. Obviously a newly established room in 1821, by c1832 the room historically known as *Première babord* in Goose Cove Harbour was no longer in use: "cette place à été supprimée parceque c'est dans son anse que l'on prend le capelin" (Anon 1822: 248; Anon. c1832, Plan 33). Some coves away from rooms appear to have been specifically targeted for the capelin spawning on their beaches. At least two small coves, one on the north coast of Camel Island in Griquet and another on English Island in Little Islets Harbour, were historically known as *Anse aux Capelaniers* and *Anse des Capelaniers* respectively (Anon. 1822: 241, 251).

From the historical literature, it is apparent that fishing grounds prosecuted by crews were close inshore and stretched along the coastline rather than away from it, and were often very close to the fishing stations if not also within the larger coves and bays. The presence of suitable bait species within the majority of harbours was an obvious draw for many crews although they appear to have been prepared to exploit grounds elsewhere when required.

#### 6.3.1.1 Distance to cod grounds

One way to discuss the distribution of fishing rooms is in terms of their distance from the nearest cod grounds. However, given the lack of detailed historical and modern data about the exact locations of inshore cod populations, a crude proxy, the distance a boat would have to travel from its room to the entrance of its harbour and the open sea, is used in the following analysis.

In the first instance, it is noticeable that the deep shallow embayments of Pistolet Bay, Sacred Bay, Hare Bay, White Bay and Baie Verte contain no historic cod fishing harbours (at least as recorded as part of this research). Instead, fishing stations are invariably clustered about the entrances and mouths of these large bays or occupy smaller coves along the open coast (Figures 21, 22 and 23). This trend is also observed in the distribution of rooms within coves and inlets. Over 70 percent of fishing rooms are located at the mouth or the midpoint of the coves they occupy or are found on offshore island groups or in the channels between islands and the mainland (Table 8). Indicative of this pattern, over a quarter of all rooms documented on the Petit Nord are located on or incorporate parts of offshore islands, ranging from large islands to tiny inter-tidal islets within harbours.

The analysis of the minimum distance of fishing rooms to the open sea shows that over 85 percent of all rooms are found within 2km or less of the open ocean (Table 13).

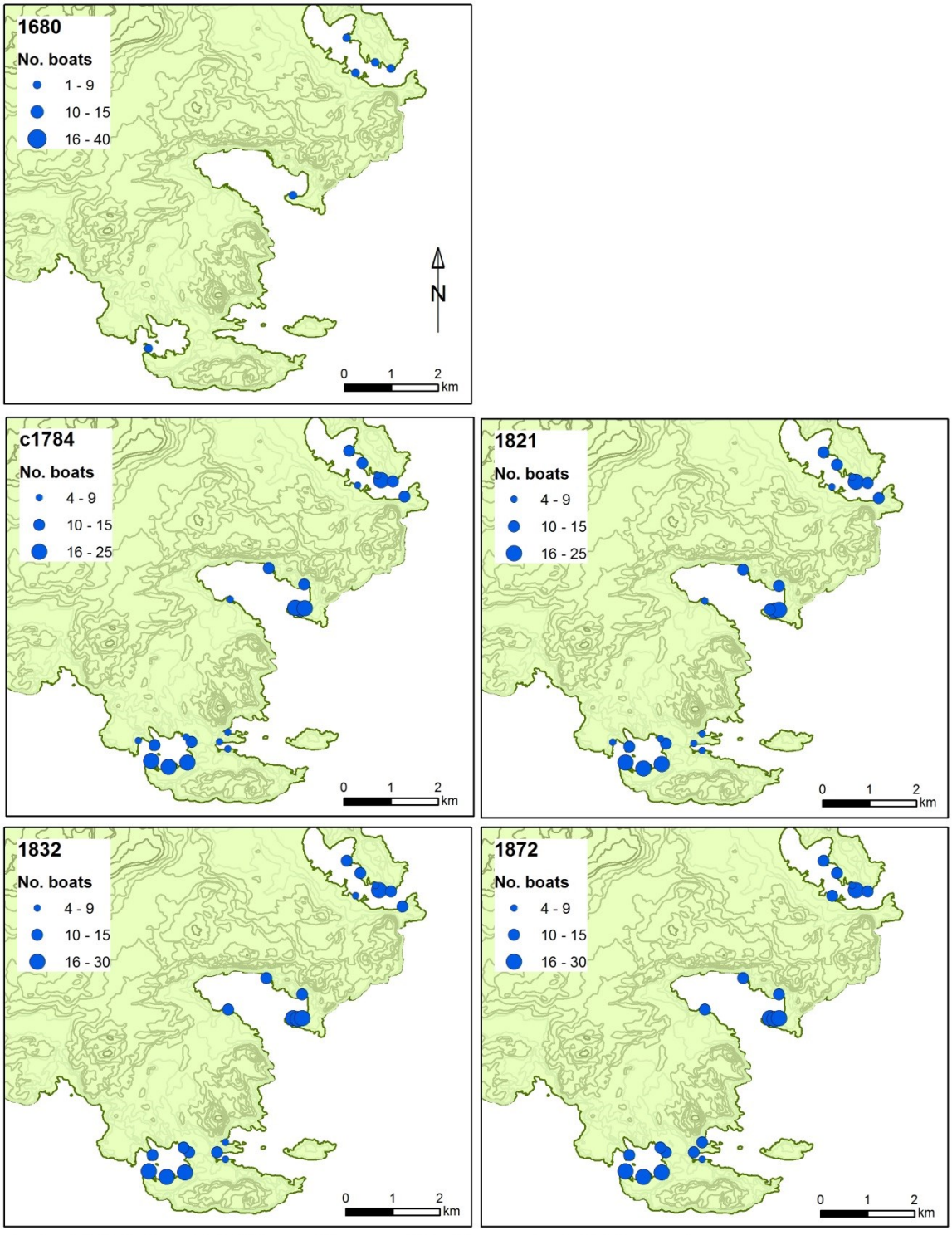



Figure 21. Examples of fishing room locations within the harbours of St. Anthony, Crémaillère and Goose Cove between 1680 and 1872. Note the general tendency for rooms to be located as close as possible to the harbour entrances, and for larger rooms to be similarly distributed.

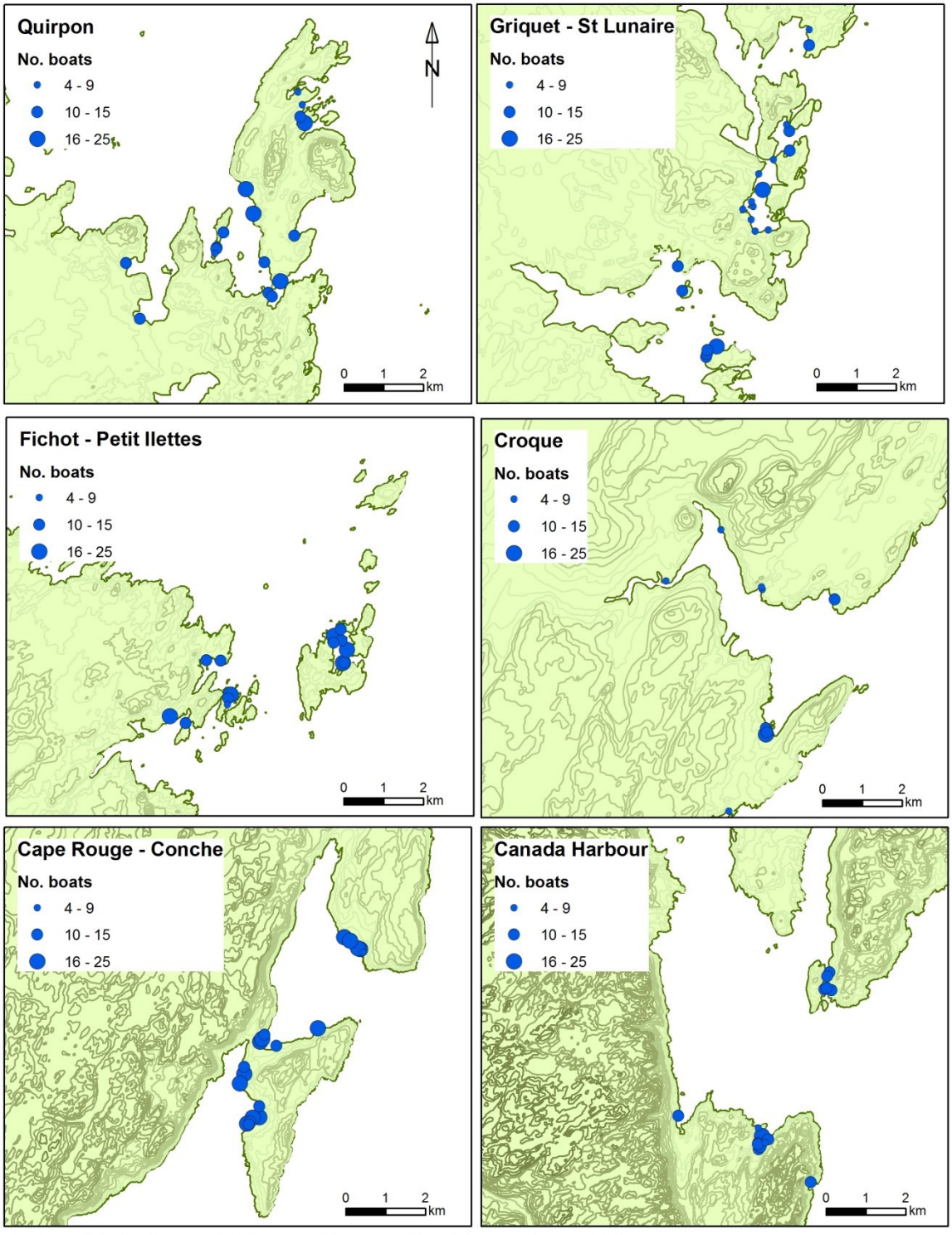




Figure 22. Examples of fishing room locations within the larger harbours of Quirpon, Griquet-St. Lunaire, Fischot-Little Islets, Croque, Cape Rouge, Conche and Canada Harbour in 1821. Note the general tendency for rooms to be located as close as possible to harbour entrances, and for larger rooms to be similarly distributed.

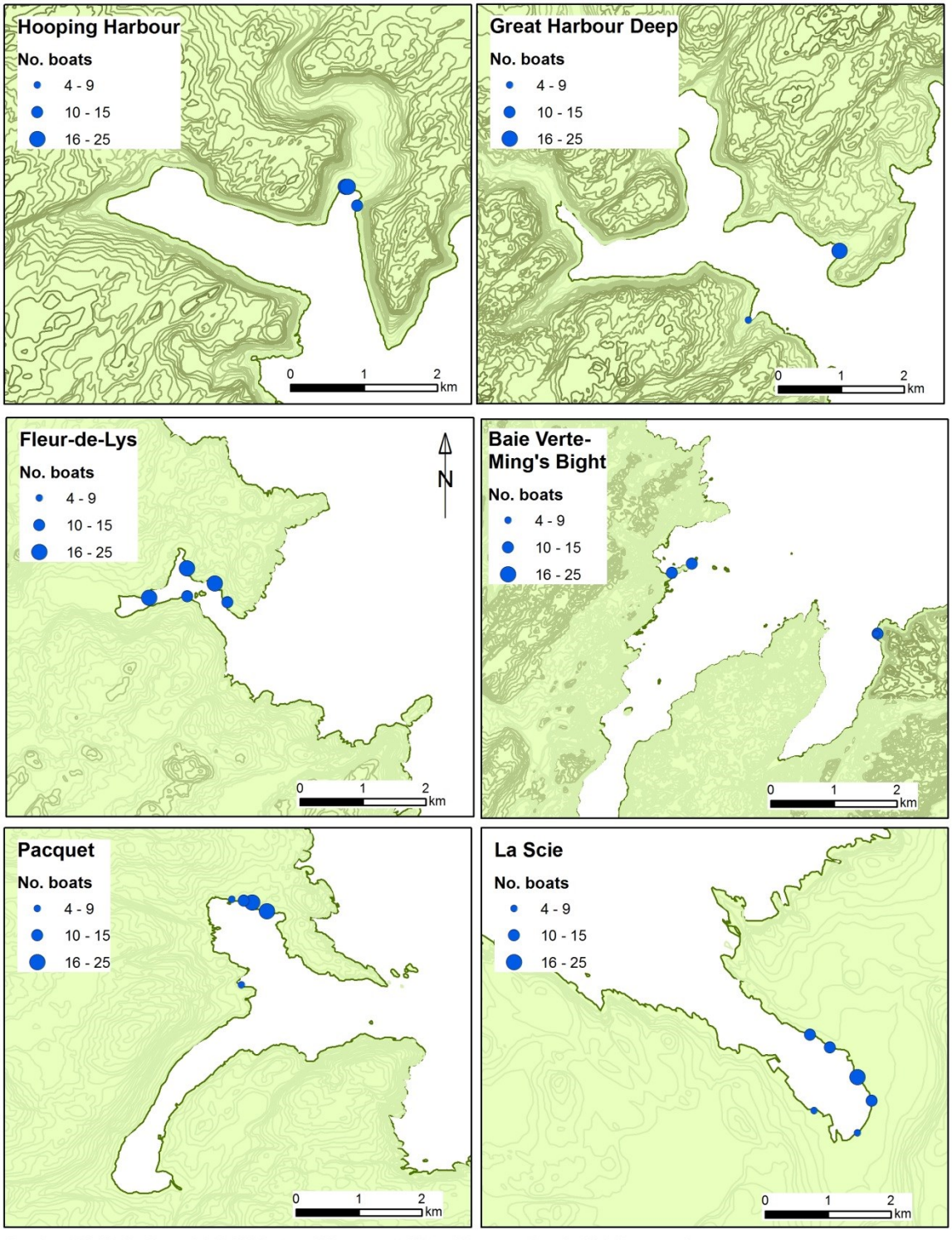



Figure 23. Example of fishing room locations within the larger harbours of Hooping Harbour, Great Harbour Deep, Fleur de Lys, Baie Verte, Ming's Bight, Pacquet and La Scie from Le Tourneur's plan of c1784. Note the general tendency for rooms to be located as close as possible to harbour entrances, and for larger rooms to be similarly distributed - except for La Scie where the steep ground of the outer part of the harbour prevents the easy establishment of rooms.

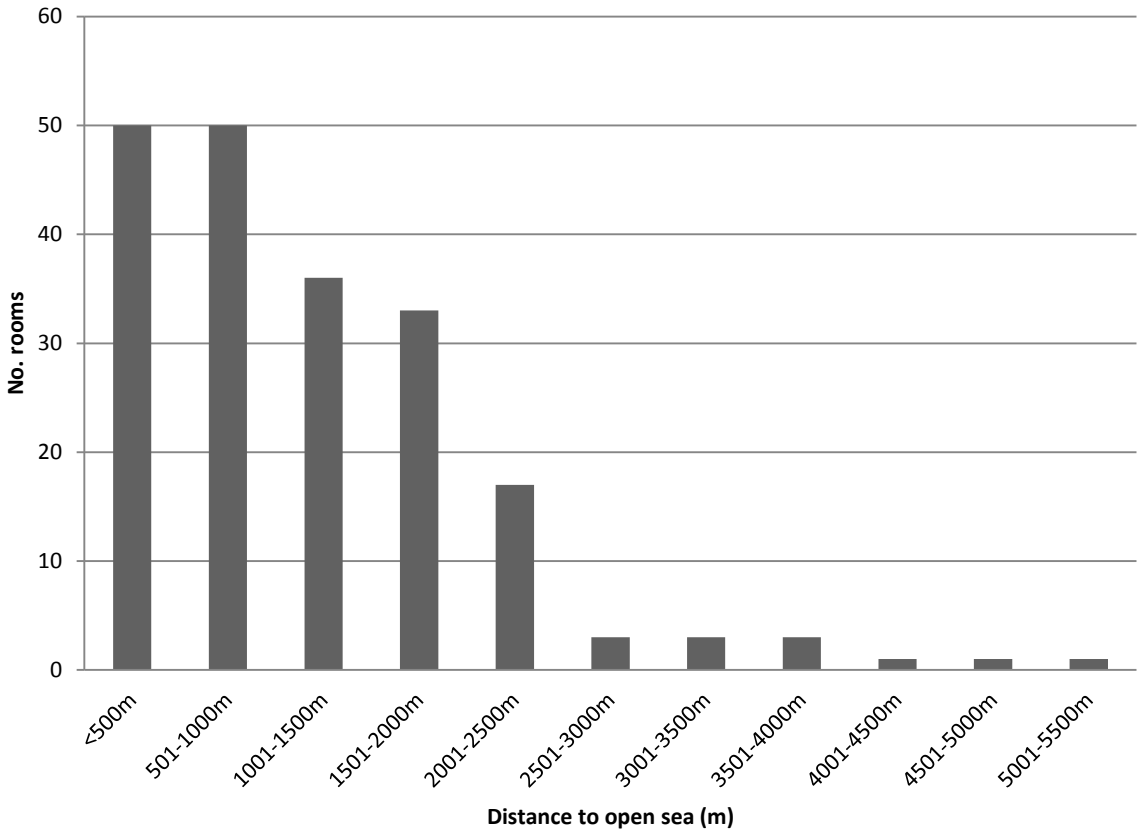



Table 13. Number of fishing rooms by approximate distances to the open sea.

The proximity to fishing grounds is a measurement based on a judgement of the distance a crew of a *chaloupe* would have to row and/or sail from each fishing room to the entrance of the harbour, cove or bay in order to access the nearest fishing ground[20]. As has been discussed, some harbours are large enough to support fishing in their own right. In these instances, the 50m bathymetric contour has been used as the maximum depth to which historically, hand-lining fishermen could be expected to effectively catch or jig for cod.

The importance of proximity to fishing grounds is implied in the descriptions given to certain places in a number of historic accounts. The larger bays were avoided because they were either lacking in cod, Hare Bay "ne paraît pas assez poissonneuse en morue pour qu'on établisse de graves en dedans du havre du Four" (Anon. 1822: 250). In the case of White Bay, "cette immense baie … la commission ne la croit pas poissonneuse en morue" (Anon. 1822: 264). Similarly, in Baie Verte, "paraît peu poissonneuse" (Anon. 1822: 265). Some were just too far from the fishing grounds, "La baie du Pistolet ne paraît pas propre à la pêche de la morue, par son très-grand éloignement des fonds de pêche" (Anon. 1822: 237). The deeper bays behind Griquet Harbour were also deemed too far, at 4km, from the open sea and as such were thought better suited as anchorages for stationing naval vessels patrolling the fishery:

> Les baies du Nord-Ouest et du Sud-Ouest sont trop éloignées de la mer pour y mettre des etablissemens de pêche sédentaires; elles sont tres-spacieuses et tres-bonnes pour relache aux batimens de guerre de toute grandeur (Anon. 1822: 241).

At approximately 3.5km from the open sea, the historic room of *Grand Jérémie* (EiAv-02) in St. Anthony Harbour was considered "un peu distante des fonds de pêche" (Anon. 1822: 245), while its neighbour *la Pointe à la Marguerite*, just 400m further into the harbour, was

[20] Automating this function within GIS is unfeasible due to the complex and indented coastline of the *Petit Nord*. Therefore a manual calculation is made of the distance, in metres, from the the historic position of the fishing room's stage to the entrance of the harbour with the open ocean by the shortest route the crew of a *bateaux* might feasibly be able to sail or row. This was gauged by an arbitrary straight line taken between two headlands or points marking the entrance of the harbour.

thought “très-éloignée des fonds de pêche” (Anon. 1822: 246). Similarly, the distance between the head of a cove or bay and its bottom could make considerable difference in the status of a fishing room. In the very heart of the Petit Nord at Croque Harbour, the two historic rooms of *le Banc aux Mouches* (Croque Le Fond, EgAw-08) and *l’Epine Cadoret* (Croque Waterfront, EgAw-04) are both over 3.5km from the harbour entrance and were considered “très loins des fonds de pêche” (Anon. 1822: 254; Pope 2005: 33-34, 41-42; Tapper and Pope 2014: 10). The despondency reflected in the name of the fishing room known as *le Grand Désespoir* (Southwest Crouse, EfAx-10) at the bottom of Crouse Harbour, might refer to the distance (2.5km) and effort needed to travel to and from the local cod grounds, despite the historically productive fishing of Cape Rouge Harbour and the unusually extensive level ground available for drying *galets* (Anon. 1822: 256; Cloué 1864b; Pope 2005: 15-16; Tapper and Pope 2014: 7). Similarly, Ha-Ha Bay at almost 4km from the open sea was considered a “mauvais établissement de pêche”, although it is unclear whether this is due to its distance from the open coast or poor fishing grounds or both (Anon 1822: 237).

Further south, the limited number of coves within the steep terrain of the large bays and fjords between Hilliers Harbour and White Bay left fishermen with few places suitable for setting up rooms. Consequently, many of the only viable places were located further from the open coast than would normally be tolerated – over a third of all rooms are found more than 2 km from the open sea, and at almost 5.5km the site of the historic room (*No. 1 première place*) in Northern Arm of Fourché Harbour (Squally Point, EdBb-03) is the furthest recorded from the coast of all places across the Petit Nord (Anon. 1822: 263; Pope 2010: 5). A higher proportion of the rooms (53 percent) located between Hilliers Harbour and White Bay are further, on average, from the open coast than found in any of the other ecoregions of the Petit Nord.

The English naturalist Joseph Banks, undertaking a botanical and zoological survey of Newfoundland in 1766, comments on the French fishing station of Canaries Harbour, in present day Canada Bay. He notes that Canaries was preferred as a fishing station over nearby Wild Cove located 3km to the east, which instead served as the major anchorage for the ships of Canaries and Little Canada Harbour for the duration of the season (Le Tourneur c1784, plans 41 and 42; Thoulet 2005: 117). Banks notes in his diary:

> …we went to Canada harbour where were several French Ships but the Harbour more Exposd & the ground as foul as in the Last [.] the Reason of their Chusing this Rather than Wild Cove is its situation nearer the mouth of the Bay which Saves much time to their Batteaux when the fish are on the outside of the bay… (Lysaght 1971: 128).

The inconvenience of Wild Cove as a suitable fishing room, at almost 5km from the entrance of the bay, is similarly noted in 1821 when, it is recorded as "tres éloigné des fonds de peche" (Anon. 1822: 260). Further into White Bay at Union Cove, the commission of 1821 observed, "que ce havre est déjà très en dedans de la baie Blanche; que la morue ne s'y trouve que par bouffée, et qu'en général elle ne le croit pas chanceux pour la pêche", and together with Little Harbour Deep, "ces deux havres sont trop enfoncés dans la baie Blanche pour donner des chances constants de bonne pêche" (Anon 1822: 264).

Even harbours unexploited by the French were partly assessed on the basis of their proximity to fishing grounds. Le Tourneur's survey of White Bay in 1785 provides examples of the factors the French considered when determining where to establish rooms. Despite his general sentiment that it offered less favourable cod grounds, Le Tourneur identifies the potential for 11 new fishing rooms to be established, supporting up to 150 boats, in the North Channel of Sops Arm (40 boats), Hampden Bay (55 boats) and Western Arm (55boats) (Le Tourneur 1785a, 1785h, i and j). Excepting Hampden Bay, all are

comfortably within 2km of the open coast[21]. Le Tourneur also described the low lying *isles aux Pigeons* (Pigeon Island, Steering Rock and Little Pigeon Island), just north of Western Arm, which was reputed to be an excellent fishing ground, and he recommended that many small *dégrat* fishing stages could be established there. He had no doubt that the place could be established as a great fishery for a large number of fishermen over the next one or two years, but his enthusiasm was tempered by the English, who although they seemed to go there only rarely, were encroaching into many of the neighbouring harbours and coves (Le Tourneur 1785a). Although he considered Sops Arm a good bay, it was too deep to anchor vessels and too far from fishing grounds (Le Tourneur 1785a). Likewise, he rejected recommending Great Coney Arm as a fishing station, principally because of its exposed location to winds and seas, and although he conceded that rooms could be established at the bottom of the bay they would, at 5km, be too far from the fishing grounds (Le Tourneur 1785a, 1785f).

Le Tourneur's insistence of the potential of White Bay, despite the difficulty he had persuading investors of it economic value or his suggestion of giving unusually long, 8 to 10 year permits to fishing masters for the rooms, seems rather desperate and his accounts should be understood in terms of the political context of the period. The urgency with which he wonders why else would the English have remained in White Bay in defiance of the laws of earlier treaties, seems to wilfully miss an important difference between those environments that can be successfully exploited all year round by permanent English settlers at a small scale and those types of grounds which would be required to support the seasonally industrial scale the French envisaged. Although Le Tourneur appears to be using the English presence to justify French assertion of their rights to these fishing grounds, he

[21] Le Tourneur did question the availability of cod in the very bottom of White Bay, in Hampden Bay, and although assured by the English fishermen there that cod was abundant he suggests that it was small, difficult to catch and irregular in its migration (Le Tourneur 1785a).

seems to be exaggerating the potential they offered (Le Tourneur 1785a). This is a curious stance for a former fisherman to take but perhaps less so for a career officer of the French Navy.

Although distance was certainly an important consideration in locating rooms, the arbitrary distance standards applied here should not be over-emphasised and cannot be universally used as analogues for the model of proximity of fishing grounds. Some rooms falling within the 2km buffer were actually recorded negatively in the 1821 survey. In Crémaillère Harbour, the room of *Petite Rochelle* (EiAv-08), at under 2km from the harbour entrance was nevertheless deemed, "très-éloignée des fonds de pêche" (Anon 1822: 246; Tapper and Pope 2014: 15-16). Similarly in Four Harbour, "La commission considère le havre du Four comme trop éloigné des fonds de pêche, pour donner une garantie de bonne pêche" while just to the south, Great Islets Harbour, "est trop éloigné des lieux de pêche, pour être favourable à un armement sédentaire" (Anon. 1822: 250, 251). However, the proximity of both these harbours to the Fischot Islands, a harbour considered close to many fishing grounds in 1821, suggests that the productive fishing areas were perhaps located away to the northwest and that the distances perceived as making the difference between good and bad places were based on fine margins (Anon. 1822: 249). As has been noted, some of the larger harbours and coves, such as Cape Rouge, were themselves fishing grounds or so close to grounds that it would have been unnecessary for crews to travel excessive distances to reach them. The fishing rooms located at the bottom of Eastern Arm, Harbour Deep might normally be considered too far within the harbour at almost 2.5km, yet in 1821, "ce havre est chanceux en pêche" (Anon. 1822: 262). To return to the example of Fourché Harbour, despite both its historic rooms being over 4km from the open coast, it was recorded as "chanceux en morue" in 1821 (Anon. 1822: 263).

Nevertheless, historic accounts and the results of the spatial analysis generally suggest that locations more than 2km from the best fishing grounds were least favoured due to the time and effort required of a three-man crew of a *chaloupe* to row and/or sail to reach them. Numerous bays and coves remained unexploited because they extended too far inland, even if their local topography was actually suitable for establishing a room. The differences in exploitation within coves also follows a general pattern, showing a preference for fishing rooms to be situated at the mouths and midway points in the harbours they occupied. This can be seen spatially but also appears to be reinforced in the average size of the rooms, in c1784 and 1821 there are on average 13 boats per room. The average number of boats at the 26 rooms found further than 2km from the coast is lower at 12 boats per room, than those that fall within 2km (13 boats per room). In the examples presented in Figures 21, 22 and 23, it is noticeable that the larger rooms of a station are also more closely located towards the head of the coves and that this trend is repeated over time.

#### 6.3.1.2 Landing stages

The stage was the economic heart of the fishing room – where the cod was landed and processed in preparation for curing. Fishing crews constructed a wooden wharf or pier, comprising a platform and building raised about 2m off the ground, supported on rough timbers and trestles at the water's edge. The stage could be anything up to 30m long and 5m wide, two thirds of which usually extended into the water, with the end serving as the landing wharf where the day's catch was unloaded (Niellon 2010: 8; Josse and Martin 2013: 26). Before the 18$^{th}$ century it was often roofed in fir branches or bark. Later, the ship's sails were used to roof the stage, making it - according to some observers - larger, lighter and airier than its English counterpart (Lysaght 1971: 136). While the fixings, including iron nails, necessary to construct the stage were brought to the Petit Nord by French crews, the

considerable amount of timber required was harvested locally, from the slopes above the rooms or from neighbouring bays if wood was scarce close by. While most fishing rooms appear to have maintained a single stage it was not unusual for larger rooms or particularly productive ones to have two, such as the pairs recorded at the rooms of *l'Amirauté* and *les Sauteurs* in Fleur de Lys Harbour in 1827 (Richard 1829).

Continuity of site placement of stages in observed for the 18th and 19th centuries and probably reflected patterns established in earlier periods. A comparative spatial analysis of the position of stages marked on numerous 18th-and 19th-century charts shows a marked preference for certain locations and positions within a room over time. Of the 168 rooms in which the stage area can be confidently and accurately located, 57 (34 percent) are found in the same place on multiple historic charts (Appendix 1). About 46 (27 percent) of historic stage locations also appear to be the site of modern stages, quays and wharves (Figure 24, F). The continuity of stage locations reflects certain practical considerations concerned with the physical integrity of the stage and its functional efficiency. The position of the stage on the foreshore was critically important to the economic prosperity of the room. It determined the ease with which *chaloupes* could unload their catch of cod each day. As such, stages were usually constructed in sheltered locations, on the most sheltered side of coves, headlands and islands to avoid direct exposure to the open sea; although fenders were commonly used to cushion the boats as they landed and moored against the stage. The stage was usually erected in the part of the room with deepest water, or at least the closest point to sufficient water depth to land a *chaloupe* laden with cod at low tide (La Morandière 2005: 10). This meant that most stages were precisely placed on small points of land, promontories or slips of rocky foreshore that extended into the sea or across the intertidal zone.

The physical nature of the local geology and hydrography dictated the orientation of the stage (ie. perpendicular or parallel) to the waterline and its dimensions, and usually meant extending the timber framework offshore to some extent. A firm base was necessary to support the weight of the stage and the equipment, men and fish passing through it; consequently, rocky foreshores were favoured especially where they extended into deeper water close to shore. The timber poles supporting the stage were inserted into crevices and faults in the bedrock, sometimes crudely hewn, which acted like sockets to secure the weight of the stage and prevent movement of the timbers. In the 19th century, the timbers of the head of the stage were often anchored and stabilised with cribs of ballast stone (Niellon 2010: 8). Occasionally, at some sites, alignments and arrays of timber post sockets are visible as scars and fractures in the foreshore rocks (Figure 24). Particularly good examples (Figure 24, A and B) can be found as two separate arrays on the foreshore rocks at the historic fishing room known as *la Pointe sur tribord* in Fleur de Lys Harbour, and which align with two probable stage structures (Features 2 and 3, EaBa-08) depicted at this room by Cloué in 1859 (Cloué 1862; Tapper and Pope 2014: 5). A similar example (Figure 24, D) is recorded in the area of the historic stage of a room located at White Point (EjAu-47) in Noddy Bay (Cloué 1854a; Tapper and Pope 2014: 29). The fracture scars on the rocky foreshore at the archaeological site of Dos de Cheval (Figure 24, C), known historically as *Champ Paya*, are interpreted as sockets for stage timbers and historic charts suggest this was the location of the room's stage (Le Tourneur c1784, plan 37; Desfossés 1827; Cloué 1864b). These features align with rich deposits of organic material and concentrations of large iron spikes and nails excavated landward (Area C, EfAx-09), and with a possible pile of anomalous rocks, perhaps stage ballast, observed slightly offshore (Pope et al. 2009: 5). Similarly, the array of three large post scar fractures (Figure 24, E) recoded in the bedrock of a rocky promontory in Northeast Crouse (EfAx-11, Area J, Feature 704), may also

(A). One of an alignment of post scars used as crude sockets for stage timbers, Fleur-de-Lys Hr (Feature 2, EaBa-08) (Photo: P. Pope, Ref: P2013.07.08 054).

(B). Circular post compression scars used as crude sockets for stage timbers, Fleur-de-Lys Harbour (Feature 3, EaBa-08) (Photo: P. Pope, Ref: P2013.07.08 064).

(C). Feature 1438 post scars and fractures in the foreshore bedrock at the stage area of Area C, Dos de Cheval (EfAx-09) (Photo: Peter Pope, Ref: P2013.07.17 029).

(D). Part of an array of circular scars in foreshore bedrock at White's Point, Noddy Bay (EjAu-47) (Photo: Peter Pope, Ref: P2013.07.11 124).

(E). Bryn Tapper and Geneviève Duguay mark the positions of possible deep post scar fractures in bedrock of a stage area at Northeast Crouse (Feature 704, Area J, EfAx-11) (Photo: Peter Pope, Ref: P2013.07.19 059).

(F). A modern stage at Northeast Crouse (Area B, EfAx-11) is built in the same location, on a rocky promontory, used by French crews in the past (Cloué 1864).

Figure 24. Examples of stage area locations surveyed and observed at five fishing rooms.

represent the position of a former stage(s) belonging to the room known historically as *le Goguelin* (Anon. 1822: 256; Tapper and Pope 2012: 8).

The importance of the location of the stage is expressed in an annotation marked on a plan of c1832 depicting the setup of a relatively late room, *Place no. 3*, in North Bay (EjAu-15) near Griquet (Bell et al. 2001: 16). The cartographer notes that the stage should be built on a rocky point on the south side of the small cove: "L'echaffaud doit etre construite sur cette pointe en dedans" (Anon. c1832, Plan 56). Similarly, a plan of *les Grands-Galets*, on Quirpon Island, marks a rocky promontory on the southern half of the small cove as, "Lieu où il convient d'etablir l'echaffaud" (Anon. c1832, Plan 63). Occasionally, historic accounts suggest that there was little to be gained by erecting a stage in certain parts of a fishing room, such as in the shallow bottom of a cove as is implied at the large room known as *seconde place de la Martinique* in Conche: "Il se trouve sur la partie de cette grave, en dehors, un petit échafaud et deux cabanes; il n'y a point d'établissement sur la moitie de la grave qui est dans le fond" (Anon 1822: 258). Where the coastal slope was gradual, a satellite pier often extended a considerable distance into the water until a suitable depth was reached. The need for a long stage is recorded at the bottom of La Scie Harbour at the historic room known as *No. 2 (ayant fait autrefois partie du Fond)* in 1821, where "le terrain etant très-plat, l'échafaud est très long" (Anon. 1822: 268).

The physical condition of stages, alongside other built infrastructure, appears to have been a primary concern of French administrators even before the introduction of the three-year lottery system in 1803. In 1786, charts of St. Anthony Harbour show that three of the harbour's seven rooms were uninhabited with their buildings and stages destroyed, while at Crémaillère Harbour two of the six rooms were in a similar state (Combis Daugustine 1792). Almost 80 percent of the rooms listed in 1821 were recorded in terms of the presence or absence of *établissemens*, which undoubtedly included the condition of the

stage (Anon. 1822: 236-269). While over 60 percent of rooms appear to have had "tous ses établissemens" in 1821, some rooms were undoubtedly difficult to maintain year on year; the historic stage area of the small room of *la Pointe aux Renards* (EiAv-06) at the mouth of St. Anthony harbour is particularly exposed and susceptible to strong waves, and as the commissioners of 1821 noted "l'échafaud tombe presque tous les ans" (Anon 1822: 246; Tapper and Pope 2014: 12).

Using historic and modern charts, the water depth at lowest tide or Chart Datum (CD) has been recorded at the estimated head of the stage for 160 fishing rooms (Table 14). The results show that in almost three-quarters of rooms stages were positioned to access water depths greater than 1m at low tide, suggesting that the remainder barely had enough depth at Chart Datum for a *chaloupe* with 0.3m draught[22]. If a stage was to have at least 2m (1 fathom) depth at Mean Water it needed to extend to a depth of at least 1m at low tide. Adjusting for differences in the tidal range taken at a number of harbours between La Scie and Ship Cove, 86 stages (54 percent of all) were built in 1 to 2m of water at Chart Datum - thus giving them a depth range of between 1.5-3.6m at Mean Water to High Water. Given that 1.5m would still be fairly shallow for a cod laden *chaloupe*, the 35 percent of stages recorded at 1.1-2m at Chart Datum is instructive since they would have provided a minimum depth at Mean Water of 1.6-2m and maximum depth of 3.1-3.6m at High Water. Most stages (70 percent) were built to reach 1-3m depth of water at Chart Datum, allowing them the comfort and safety of between 1.9-4.6m at Mean Water to High Water.

The increase in water depth at mean and high tides is likely to have been particularly important at some rooms, especially those located in the intertidal areas and shallow bottoms of bays and coves, or in marginal locations where the choice of room location was

[22] The almost complete 16th century chaloupe excavated from Red Bay measured 0.72cm high from keel to gunwale, and its draught was in the range of 25-30cm (Harris and Loewen 2007: 321). A chaloupe fully laden with cod will certainly have increased the water drawn.

| Chart Datum | Mean Water Depth | High Water Depth | Rooms | % of all Rooms |
|---|---|---|---|---|
| 0 (Intertidal) -1m | 0.5-0.9m to 1.5-1.9m | 1.1-1.6 to 2.1-2.6m | 44 | 28 |
| 1.1m – 2m | 1.6-2m to 2.5- 2.9m | 2.2 – 3.1-3.6m | 56 | 35 |
| 2.1m – 3m | 2.6 – 3.9m | 3.3 – 4.6m | 26 | 16 |
| 3.1 – 4m | 3.6 – 4.9m | 4.3 – 5.6m | 19 | 12 |
| 4m and more | 4.5m + | 5.1m + | 15 | 9 |

Adjustments to all CD values are made using the following values for Mean Water Level (MW) and High Water level (HW) using modern Canadian Hydrographic Service (CHS) charts.

Table 14. Number of rooms with approximate water depths at historic stage locations, with adjustments for tidal range.

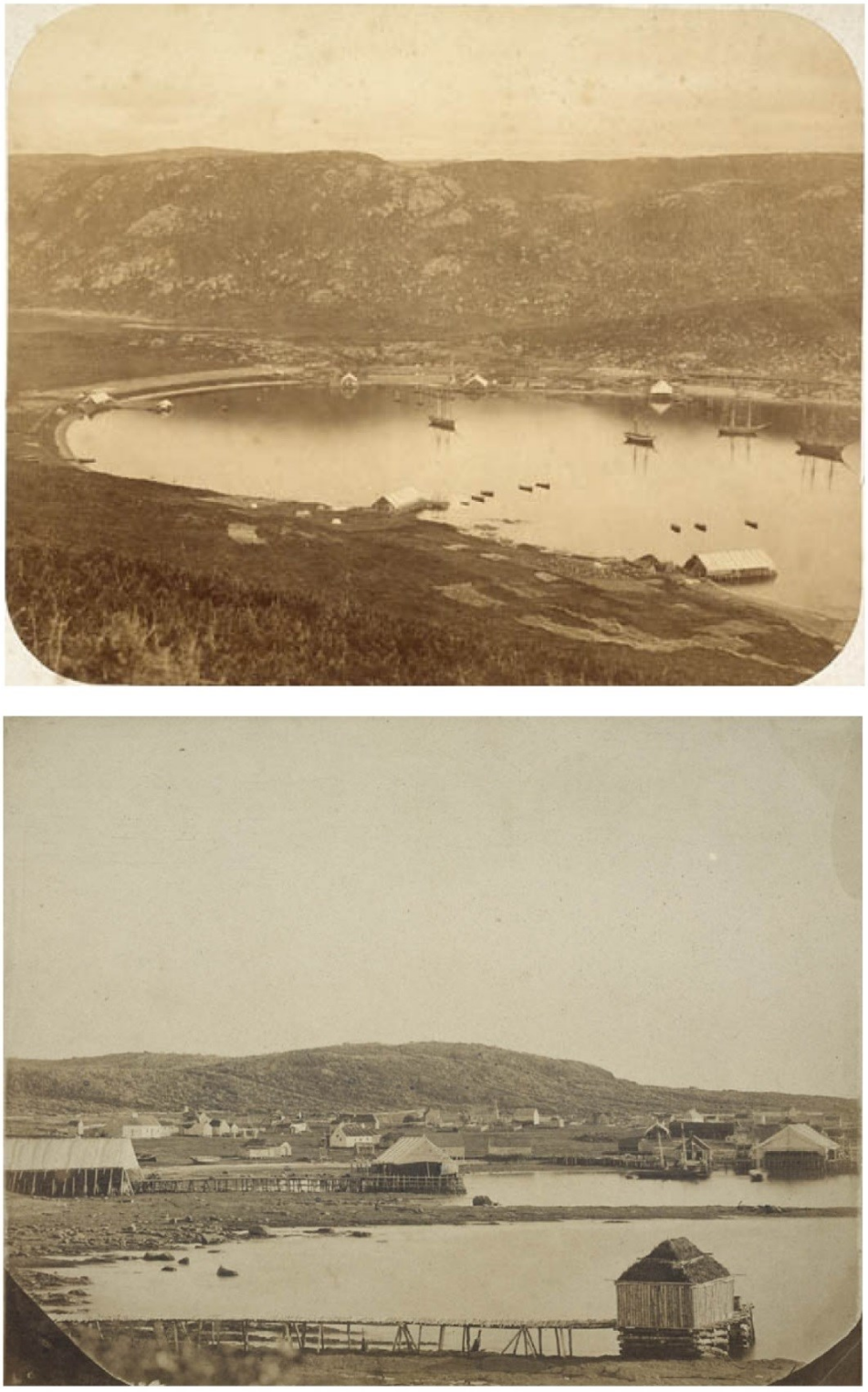


Figure 25. (t) Historic stages at the rooms of Southwest Crouse, 1857-9. Note how the pier of the stage serving the room (EfAx-10) at the bottom of the bay extends into the water to reach sufficient depth for landing chaloupes (Paul-Émile Miot Collection, LAC, PA-188223). (b) Detail of fishing stages at Croque Harbour at low tide, 1857-9 (Paul-Émile Miot Collection, LAC, PA-188225).

severely constrained by other environmental factors. Two examples demonstrate how the importance of tidal range affected the construction of a room's stage. At Southwest Crouse, the extensive natural cobble *galet* made the rooms at the bottom of the cove ideal for drying purposes even though landing the cod catches was less convenient. Stages with long extended piers straddled the intertidal zone at this location (Figure 25, top) in order to reach a minimum depth of 0.5m at Chart Datum (Cloué 1864). This is increased to approximately 2m at high tide (CHS 2003a; CHS 2006). Further south at Little Harbour Deep, the steep topography of the harbour restricts the areas available for setting up a room. The only viable location, close to the sea, is found at Sandy Point adjacent to very shallow water of less than 0.6m depth (Le Tourneur c1784, Plan 49). Therefore, the increase of 0.9m at mean tide or 1.6m at high tide would have been crucial for landing cod at this room in the past; it is conceivable that the routine of fishing effort at this room must have been dictated by the rhythm of the tide (CHS 2002b).

### 6.4 Contested shore space and the division of rooms

Fishing harbours and their rooms were keenly contested by transatlantic crews. The finite number of places suitable for setting up a room ensured that the competition for the best rooms warranted vessels of the French fishing fleet racing across the Atlantic (Le Pelley Fonteny and Desire dit Gosset 2001: 54). Those arriving first had the choice of the harbour and the captain became the harbour's designated *amiral* for the season (Le Pelley Fonteny and Desire dit Gosset 2001: 47; Pope 2014a). Consequently, in the larger harbours of the Petit Nord, closest to the best cod grounds, shore space at favoured rooms was rapidly claimed early in the season. This competition also meant that the least favoured rooms were usually taken up by crews arriving later.

Historic surveys demonstrate the importance French administrators placed on the negotiation and allocation of shore space between fishing rooms. In his plans of c1784, Le Tourneur drew particular attention to topographic features and terrain within harbours that served to separate the work areas of different rooms, emphasising and exaggerating the depiction of streams, hills, breaks in slope, foreshore rocks and other natural obstacles that served as natural boundaries. Similarly, the landmarks used to divide one room from another were assiduously recorded in the detailed survey undertaken in 1821 (Le Tourneur c1784, Plans 15-57; Anon. 1822).

Based on the analysis of these late 18th-century and early to mid-19th-century surveys, plans and charts, 79 different instances of room divisions are found in 26 harbours, separating about 20 percent of fishing rooms recorded across the Petit Nord (Appendix 2). While most rooms relied on a single topographic feature to provide the limit with their neighbour, some fishing rooms used a combination of topographic features or applied cardinal directions to pinpoint the location of a boundary more precisely. Over half (56 percent) of the topographic divisions are recorded on more than one historic source, suggesting that these physical manifestations of administrative boundaries were also persistent cognitive boundaries recognised and observed by fishing crews over time.

Most fishing rooms were separated by "la nature du terrain" or "la nature des lieux", and were self-contained, far enough apart and physically separated by natural topography that obviated the need for man-made divisions – this was the situation recorded at all 9 rooms of Quirpon Island in 1821 (Anon. 1822: 239). In Fleur de Lys Harbour, the hilly terrain ensured its rooms were also naturally detached: "Toutes ces graves n'ont pas besoin de limites: la nature les à séparées par les caps qui empêchent toutes contestations" (Anon. 1822: 265). However, in busy and crowded harbours with more homogenous terrain, other means were required to ensure that the division of space and resources could be negotiated

between the competing needs of crews in adjacent rooms. In these instances, nuanced differences in the physical topography were used to distinguish between rooms, using landmarks that can be observed and surveyed in the present landscape of many rooms. Indeed, in a number of the harbours that are settled and developed today, these physical landmarks provide the only means by which to distinguish the historic territories of former fishing rooms at the landscape scale. The physical persistence of these landmarks made them particularly suited to the seasonal fishery in which the occupation of a particular harbour and its rooms could, at least before the 19th century, change hands year on year.

The divisions used can be broadly grouped into three types of topographical features, ranging from obvious landmarks to much more discrete ones (Table 15). First, coastal features found along the littoral zone including coves, beaches, intertidal rocky foreshores, isolated boulders and sea channels; second, terrestrial features such prominent hills, mounds, escarpments, terraces and peninsulas; and third, watercourses including ponds, springs and streams. Sometimes, where there is an almost complete lack of distinctive topography, surveyors appear to have resorted to calculating measurements and using cardinal directions to impose artificial limits.

### 6.4.1 Coastal features

The foreshore and inter-tidal zone was the pivot around which the fishing activity in a room took place. Rather than the division between land and sea, it was the integral link that bound them. It is natural therefore that fishermen would have used recognisable landmarks in this zone to delimit their working areas; this is reflected in 43 percent of the divisions identified in this study. Small coves within harbours were occasionally used to separate rooms. In Great Brehat Harbour, “une petit anse entre les deux graves, avec le direction ouest et est dans les terres”, separated the two rooms situated in the north of the cove, while at St.

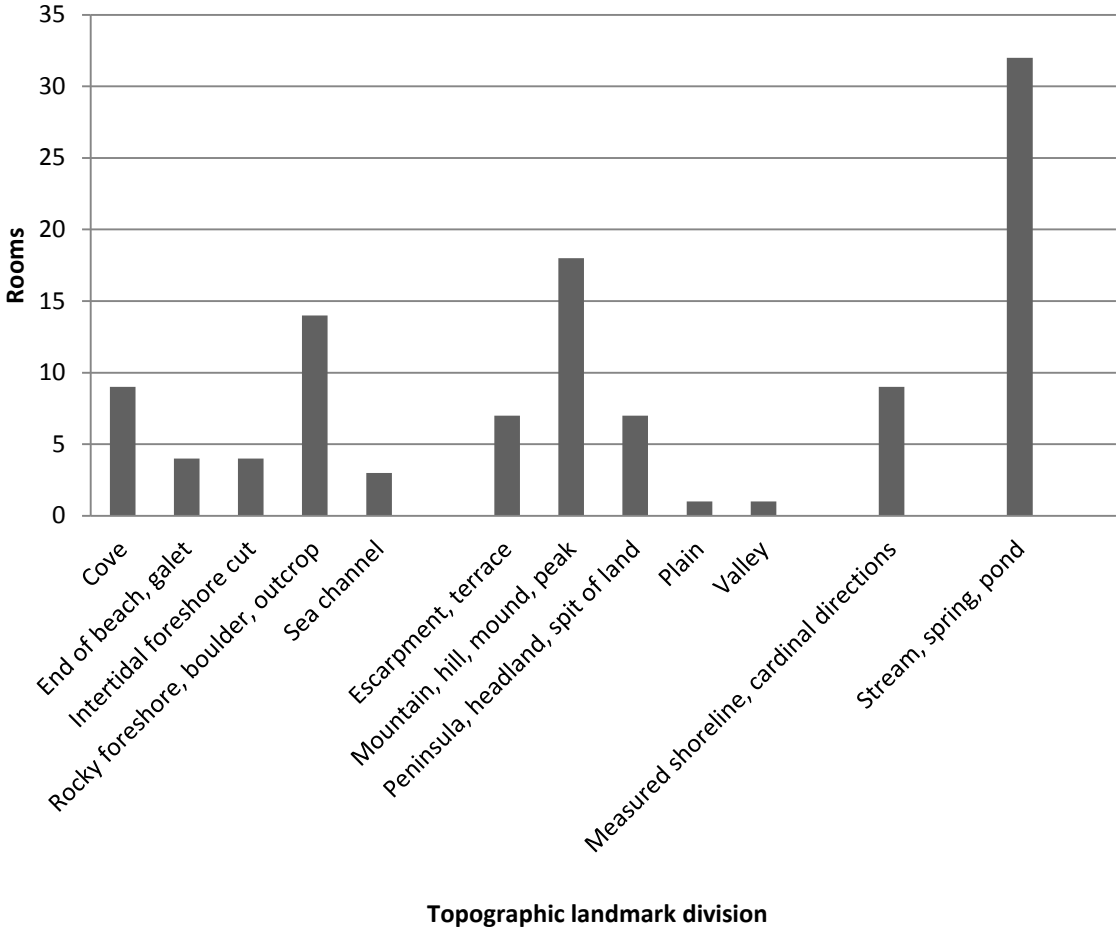



Table 15. Number of rooms distinguished by various types of topographic landmarks. Many rooms used multiple landmarks to mark the limits.

Anthony, “une grande anse entre les deux graves” served as the limit between the two rooms located on the site now infilled and developed by the modern fish plant (Anon 1822: 245). Watering Cove in Fischot Harbour (EhAw-01) separates two historic rooms found on the low-lying ground in the northwest of the harbour. As the historic place-name suggests, *Anse à l'Eau* had the additional advantage of a freshwater stream at the bottom of the cove which was used, within the cove, to set the precise limits of the two rooms (Anon 1822: 249; Pope et al. 2009: 15-16). At the very bottom of Irish Bay in Croque Harbour, the two rooms known historically as *le Petit-Maître* and *la Plaine* (EgAw-05) occupied ground either side of the small cove which they divided into two equal parts using the point of a low ridge extending north-south across the coastal ground as reference (Anon 1822: 254; Pope 2005: 36; Pope et al. 2007: 10).

At a couple of fishing stations, intertidal rocky foreshores between higher ground provided an obvious means by which to separate rooms. Historically, a narrow low-lying peninsula between Little St. Julien and Great St. Julien harbours was the site of two rooms (EgAw-09 and EgAw-02) (Pope 2005: 43). An intertidal rocky foreshore (Figure 26, A), covered at high tide, cuts the promontory into northern and southern halves and was used to demarcate the limit of each room located either side (Anon. 1822: 252). Similarly, on Nobles Island, Quirpon (EjAu-18), two intertidal channels, recorded as “une coupée où la mer passe quand elle est haute”, were used to separate three historic rooms, *Coupe-Soulier* from *Grand-Seau* and *Grand-Seau* from *Petit-Seau* (Anon. 1822. 240; Bell et al. 2001: 19-20).

Spits of rocky foreshore extending into the water also appear to have been used as boundary markers. At Silver Cove in Conche the northern limit of the historic room known as *la Flague* was determined by *“*un rocher plat et alongé, couvert par la mer haute”

(Le Tourneur c1784, Plan 38; Anon. 1822: 257; Figure 26, B; Figure 27, No. 5). Isolated rocky outcrops, boulders and rocks were also used to set limits. An intriguing example is found in Stag Cove in Conche at the room known as *le Grand Sud-Ouest* where historically its limits with *Petit Sud-Ouest*, was "un rocher ayant une tache blanche, au bord de la mer dans l'anse du Sud-Ouest" (Anon. 1822: 257). This may refer to one of two possible locations. The remnants of a white mineral vein, probably of quartz, is exposed on the vertical face of a rocky outcrop located in water about 15m from the shoreline (Figure 26, C; Figure 27, No. 1). The location of the outcrop closely matches the position of a depiction of rocks marking the boundary between two rooms shown by Le Tourneur (Le Tourneur c1784, Plan 38). However, there is some doubt as to whether this feature is actually the landmark described since on a later survey of c1832, a "roche blanche" is marked at the southern end of *le Grand Sud-Ouest* where a large boulder is recorded on the escarpment above the beach terrace marking the division between the two rooms (Anon. c1832, Plan 14). Stag Cove was known to the French as *Anse de la Crique* which suggests that the *l'Anse du Sud-Ouest* mentioned in 1821 was probably the slight cove to the south of Bluff Point (Le Tourneur c1784, Plan 38). This suggests that the large boulder observed in c1832 is the historic landmark. This confusion raises interesting points about which parts of a fishing room were principally contested. If shore space for landing and processing fish was the primary concern, the southern shoreline of Stag Cove, where the stages were historically located, would have been the focus of negotiation. However, if the primary concern of the crews working these rooms was the allocation of drying areas then claiming the ground on the escarpment would prevent those fishermen working the lower beach terrace (which belonged to *le Grand Sud-Ouest*) migrating upslope and inland (onto ground claimed by *Petit Sud-Ouest*). Either way, it appears that the rocky outcrop on the foreshore emphasised

(A). The arrow marks the line of an inter-tidal rocky foreshore which served as the limit between two historic rooms in Little St. Julien Harbour (EgAw-09).

(B). A spit of rocky foreshore marks the historic boundary between two rooms in Silver Cove, Conche.

(C). Remnants of white mineralised vein (of quartz?) observed on intertidal rocks marking the northern limit of the historic room known as 'Le Grand sud-ouest', Stag Cove, Conche.

(D). The small hill in the background marks the limit between two rooms in Crémaillère Harbour (EiAv-03).

(E). The escarpment formed part of the historic boundary between two rooms in St. Juliens Harbour, One room (EgAw-09), belonging to Little St. Julien Harbour occupied the escarpment, while another room (EgAw-02) in Great St. Julien Harbour was sited below.


(F). A steep gully between higher ground marked the boundary between the two historic rooms located at the southern end of St. Julien Island (EgAw-03) (Photo: Peter Pope, Ref: St.Julien.Island.019)

Figure 26. Examples of the types of natural coastal and terrestrial topographic features used to mark the historic limits of fishing rooms.

by Le Tourneur, and the “roche blanche” noted by the surveyor of c1832 at the southern limit of the room, both served to divide shore space.

Occasionally sea channels were used to distinguish between fishing rooms. The entrance to White Cape Harbour was specified as the division between rooms located either side, one on Four Ears Island (EjAu-23, 24 and 27), and the site of a smaller room found on the mainland (Anon. 1822: 242; Bell et al. 2001: 24-30, 34-5). In the northern part of Griquet Harbour, the channel between Four Ears Island and Griquet Island also separated the two large rooms located on each - EjAu-26 and EjAu-29 respectively (Anon. 1822: 243; Bell et al. 2001: 33, 38; Pope 2010: 9). From a perspective that places a dichotomy between land and sea, such emphasis might seem unnecessary. However, in the intrinsically linked coastal and inshore marine cultural landscapes of the fishery they served to delineate boundaries that were otherwise permeable. A number of fishing rooms across the Petit Nord straddled channels of water to incorporate ground on adjacent or opposite shorelines, whether from the mainland onto islands and islets or vice versa - especially if they themselves were constrained and required extended drying areas. The historic room of *l’Îlot au Marchand et Grand-Terre* (EjAu-19), made use of both the small islet of Grandmother Island and extended its drying onto the mainland of Quirpon Island (Le Tourneur c1784, Plan 18; Anon. 1822: 238; Bell et al. 2001: 19-22; Pope 2010: 10). Likewise, the historic room of *l'Îlot et la Grande Terre* (EaBa-02, EaBa-03), straddled the coastline of the mainland onto two small offshore islets in Fleur de Lys Harbour (Le Tourneur c1784, Plan 50; Richard 1829; Cloué 1862; Erwin 2000). To return to Griquet, in such a historically busy harbour the observance of such marine divisions would have been important in the negotiation and appropriation of drying space.

### 6.4.2 Terrestrial features

Prominent landmarks such as hills and headlands, and breaks in slope such as mounds and escarpments were used to divide coastal ground in about 43 percent of the instances analysed. In Crémaillère Harbour (EiAv-03), "une grosse montagne" at the neck of the tip of the hooked peninsula (Figure 11, A) marked the boundary between two rooms (Anon. 1822: 246; Pope et al. 2007: 4-5). Actually only a small hill, it is nevertheless pronounced when viewed from sea level (Figure 26, D). In Goose Cove, the prominent barren hill, or "très-haute montagne" for the French commissioners, located at the bottom of the harbour and from which the modern wharf and pier extend, divided two historic rooms (*No. 3* and *No. 4*) located on the lower ground either side (Anon 1822: 248). Its elevation also made the hill a suitable site for the observation point used by French naval surveyors in the 19th century (Pierre 1857). In Griquet Harbour, "une petite pointe un peu haute", a slight headland bluff above the beach, marked the historic boundary between two rooms (*No. 6* and *No. 7*) located in southwest White Cape Harbour (Le Tourneur c1784, plan 20; Anon. 1821: 242; Pierre 1859). Similarly, two headlands, each recorded as "une grosse pointe" in 1821, provided the natural limits between three rooms occupying the western shore of Canaries Harbour (EeBa-04) (Le Tourneur c1784, plan 42; Anon. 1822: 260; Pope et al. 2009: 9-10).

Natural breaks in slope, such as terraces and rock escarpments, were also obvious ways to partition space. In Little St. Julien Harbour, a 3m high rock escarpment (Figure 26, E) partially divides the room known historically as *No. 2 contigue dans le fond* (EgAw-09), located towards the bottom of the harbour, from *Pointe à l'Aurore* (EgAw-02) to the east, but which was operated from Great St. Julien Harbour (Le Tourneur c1784, Plan 32; Pope 2005: 29, 43). On adjacent St. Julien Island (EgAw-03), "une coupée de montagne", a steep rocky gully between higher ground (Figure 26, F) marked the boundary between the two

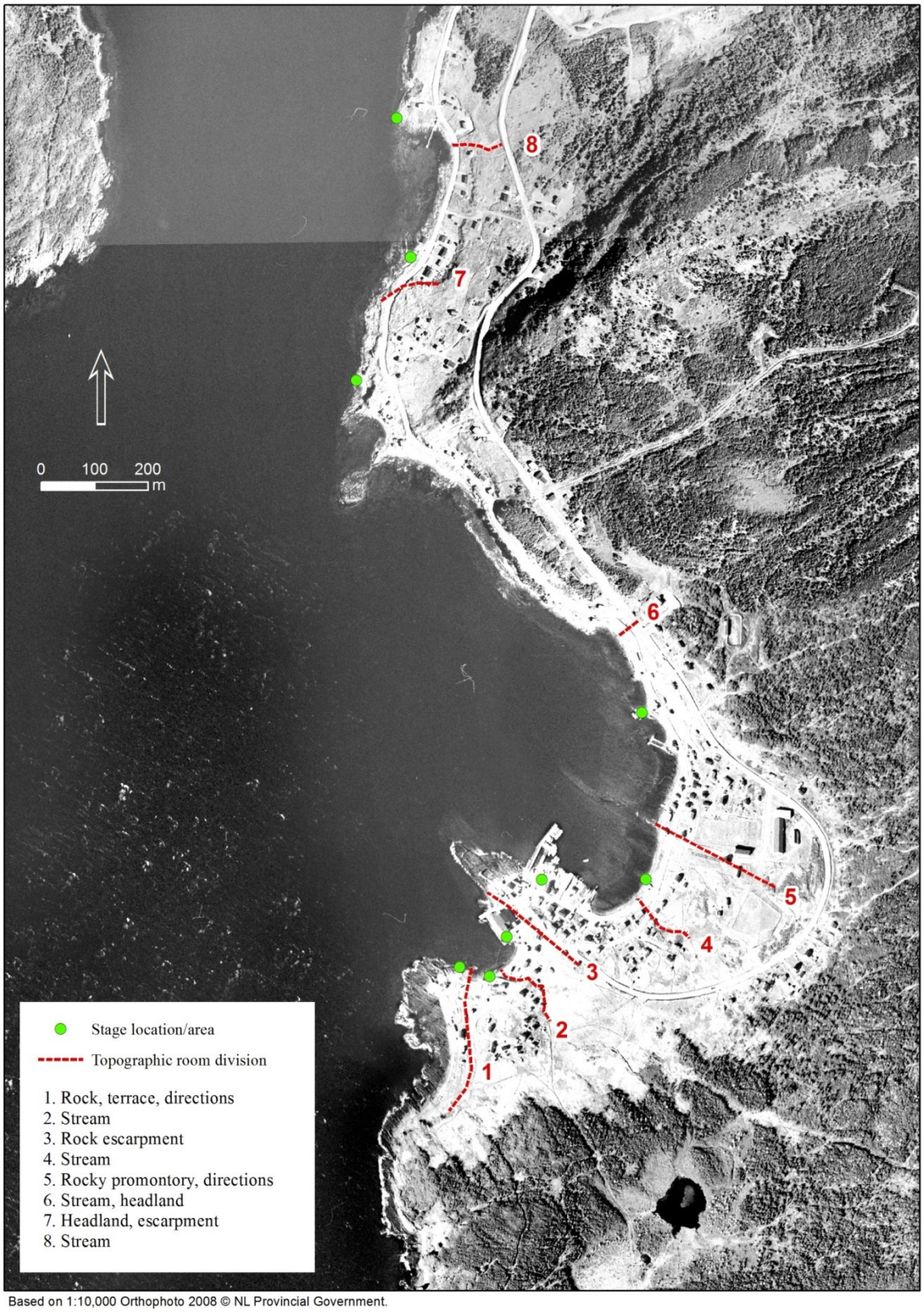



Figure 27. Topographic features used to mark historic divisions between fishing rooms in Conche Harbour, overlaid onto a modern vertical aerial photograph (2008) of the harbour.

historic rooms located at the southern end of the island (Le Tourneur c1784, Plan 32; Anon. 1822: 252; Pope 2005: 32). Elsewhere, a low rocky escarpment located at the northern end of French Beach, Granchain Island (EiAu-03, Figure 11, C), served as the boundary between the northernmost of three rooms located on the beach, with the room (EiAu-04) that occupied the narrow strip of ground along the northern coast of the island (Le Tourneur c1784, plan 21; Anon. 1822: 244; Bell et al. 2001: 12-13; Pope 2010: 7). Very occasionally, crews aligned several topographic features to establish boundaries, as at Hilliers Harbour (EeBa-07) where "trois grosses roches vues les unes par les autres, à la suite de la grosse pointe en allant dans le fond" divided the two rooms of the station (Le Tourneur 1784, Plan 39; Anon. 1822: 258; Renouf et al. 2004; Pope et al. 2009: 11).

### 6.4.3 Watercourses

Undoubtedly, the most common natural feature used to mark the limits of rooms are watercourses, usually in the form of small rivers, streams, springs and ponds (Figure 28). Their prevalent use suggests more collaborative working relationships between crews rather than simply the internecine wrangle over territorial claims. Besides their convenience as permanent physical boundaries, many survive despite modern settlement and development and they were obviously a critically important source of fresh water for the crews during the seasonal occupation. The coincidence of room limits with streams suggests that they were a shared resource. Important rules are likely to have governed their use and prevention from diversion and fouling.

Some rooms were named on the basis of a stream found nearby. In Conche Harbour the historic room of *la Crique* in Stag Cove is separated from its neighbour to the south by a deeply cut winding stream (Figure 28, B; Figure 27, No. 2) (Le Tourneur c1784, Plan 38; Anon. 1822: 257; Anon. 1832). At Kearney's Cove (EgAw-07) in Croque Harbour, "un

(A). A small stream marks the historic boundary between two rooms in Crémaillère Harbour (EiAv-03).

(B). A winding stream marked the historic division between two rooms in Stag Cove, Conche.

(C). A river in the south-east part of La Scie Harbour marked the historic limits between two rooms.

(D). The deeply cut stream historically divided Kearney's Cove in Croque Harbour into two rooms (EgAw-07) (Photo: Peter Pope, Ref: P2013.07.18 118).

(E).The arrow identifies the position of a culturally augmented spring that served as the boundary between two rooms located on the point of the peninsula at Crémaillère Harbour (EiAv-03)

(F). A culverted spring, between two rocky outcrops, separated two rooms in Southwest Crouse.

Figure 28. Examples of watercourses which served as historic boundaries between rooms and provided fishing crews with fresh water during the seasonal occupation.

ruisseau divisant l'anse de la Guenille en deux" (Figure 28, D) (Anon. 1822: 253; Pope 2005: 39-40). In Crémaillère Harbour (EiAv-03), a steeply incised stream served as the northern limit of the generally flat terrain on which extensive *galets* were sited in the hook of the peninsula (Figure 11, A; Figure 28, A) (Anon. 1822: 246; Pope et al. 2007: 4-5). Canaries Harbour, Hooping Harbour and La Scie each supported a room bordered by a small river and were named *le Briha-Chaud*, *le Bria* and *le Briha* (Figure 28, C) respectively, derived from the Breton word *brihat* used in Newfoundland to refer to a tumbling stream (Anon. 1822: 260, 262, 269; Thoulet 2005: 112). A spring, "la fontaine", issuing from the base of the low escarpment on the northern side of the tip of the Crémaillère peninsula (EiAv-03), near Anchor Point, marked the historic limit between the two rooms occupying the end of the promontory (Anon. 1822: 246; Pope et al. 2007: 4-5). The spring is located in a niche of the escarpment and a roughly square depression, measuring approximately 3 x 3m, indicates that a well or sump was opened over the spring in the past (Figure 28, E). In Southwest Crouse, the historic limits of the principal room of the station, known as *l'ancienne Amirauté*, with the room to the south, known as *le Fond*, was "une fontaine divisée en deux par un gros rocher au bord de la mer" (Le Tourneur c1784, Plan 37; Anon.1822: 256). The spring issues from the coastal edge either side of large rocks that extend across the foreshore. The water source has been culverted on the north side by a dilapidated wooden chute, while on the south side it is housed within a wooden culvert (Figure 27, F). The foreshore rocks at the springhead show signs of drilling and possible post scars indicating other structures were erected at there in the past. Occassionally, larger bodies of water like ponds were used to define historic boundaries. In Little Islets Harbour (EhAw-02), "le bout d'un grand etang" persistently divided the room sited near the mouth of the harbour, known as *l'Amirauté,* from its neighbour to the south

(Le Tourneur c1784, Plan 30; Anon. 1822: 251; Cloué 1858; Pope et al. 2009: 18).

### 6.4.4 Measurements and cardinal directions

Sometimes where there is a lack of distinctive topography to distinguish between rooms, surveyors appear to have resorted to calculating distance measurements. On Granchain Island in St Lunaire Bay, the historic divisions between the rooms located on French Beach (EiAu-03), an extensive flat cobble beach terrace (Figure 11, C), were recorded in distances of *toises* along the shoreline *galet* with cardinal directions marking the boundaries running inland (Pope 2010: 7)[23]. Le Tourneur makes a note of the distances between the rooms on his plan of c1784; 30 toises (59m) between rooms *No.3* and *No. 4*, and 40 toises (78m) between rooms No. 4 and No. 5 (Le Tourneur c1784, Plan 21). The survey of 1821 makes similar divisions of space, but marks the distances as slightly greater at 40 toises and 50 toises (98m) respectively (Anon. 1822: 243-4).

In instances where physical boundaries were absent, artificial ones were sometimes installed. According to a historic plan dating to c1832, a wooden picket fence was erected between two of the aforementioned rooms on Granchain Island: "sur cette ligne sont des piquets en bois, chassés en terre, et servant de limite entre les No. 3 et 4" (Anon. c1832, Plan 47). An earlier example of marking boundaries in this way is recorded in 1697 from the historic French resident fishery at *Plaisance* (Placentia) on the Avalon Peninsula, where piles of stones were erected to divide an otherwise flat and an undistinguishable cobble beach into different *graves* (Ménard 2006: 327).

Nevertheless, at some harbours the nature of the coastal terrain defeated any attempts to divide shore space and required third party arbitration to settle disputes between crews. At La Scie Harbour in 1821, the commissioners felt that the extensive room known

[23] 1 *toise* (*Systeme de longueur du pied du roi, 1668-1840)* equates to 1.95m. Usually employed as a measure of length it was also used to denote area (*toise carrée*) (Ross 1983: 77, 82).

historically as *le Briha* could be divided into two smaller operations. Unfortunately for them, the flat terrain and relative lack of distinctive landmarks seems to have made it too difficult to establish the means to mark or measure the division: "La commission se l'a pas mise en deux places, par la difficulté de trouver des limites que l'on pût désigner et reconnoitre" (Anon 1822: 269). At Canaries Harbour, the historic rooms known as *No. 4 et No. 5 ou l'ancienne Amirauté* (EeBa-04), located in the south-east of the harbour, required the harbour's *amiral* to arbitrate any disagreements caused by the absence of definitive boundaries (Pope et al. 2009: 8-9, Areas C and D):

> Cette Grave en forme deux de 15 bateaux, divisée sur les lieux à l'amicable cause de la difficulté du terrain pour établir une limite distincte; en cas de contestation entre les parties, les Capitaines du havre servirons d'arbitres et jugerons sans appel (Le Tourneur c1784, Plan 42).

### 6.4.5 Sharing shore space

Some of the more extensive fishing rooms were considered large enough to be divided into smaller units if pressure on shore space required it. When not taken by a large ship they could be split up, as documented at *la Plaine* (EgAw-05) in Irish Bay, Croque Harbour: "Si elle n'est pas prise par un grand navire, elle peut se diviser en deux graves de douze bateaux, en la partageant par moitié; cette division est facile" (Anon.1822: 254; Pope 2005: 36; Pope et al. 2007: 10). Similarly, at the single room of Union Cove, and at the room known as *l'Amirauté* in Fleur de Lys Harbour, smaller crews could divide these large rooms with carrying capacities of 20 *bateaux* into two rooms of 10 *bateaux* (Anon 1822: 264, 265). Likewise, the large room of *le Grand Désespoir* (EfAx-10) in Cape Rouge Harbour, and two rooms in Conche, known historically as *la Flague* and *seconde place de la Martinique*, were all identified as divisible into two equal parts (Anon 1822: 256, 257, 258; Pope 2005: 15-16). Since many of these rooms were located on largely indistinctive flat terrain, it is conceivable that they required particular arbitration when occupied by two smaller crews.

In other instances, rooms appear to have started as a single entity and then separated into two sites at later dates, usually as a result of increasing competition for space. On the other hand, some reverted to single rooms. In 1767, the two rooms located on the peninsula of Little St. Julien harbour were recorded as a single *amiral*, yet by c1784 were recorded as two separate entities (Coquelin 1767; Le Tourneur c1784, Plan 32). Similarly in North Bay, the historic room known as *No. 1, dans le première grande anse à tribord en entrant* (EjAu-41 and EjAu-14), mapped as a single large room in mid-1780s, had divided in two by 1821 (Le Tourneur c1784, Plan 19; Anon. 1822: 241; Pierre 1859; Bell et al. 2001: 14; Pope 2010: 8). A further example on Dégrat Island, off northeast Quirpon Island, was recorded as "Les deux places réunies en une" in 1821, but appeared to have separated again by 1851 (Anon 1822: 239; Cloué 1856).

In summary, the geography of the Petit Nord profoundly influenced how French fishermen prosecuted the fishery historically, determining the location, size and form of stations and rooms. While proximity to the cod was the most important consideration for the general location of stations, locally crews sought topographies with specific characteristics for the location of their rooms. Crews preferentially selected low-lying coastal ground with open aspects, close to deep water, that allowed large quantities of cod to be easily and efficiently landed, processed and dried. Rooms that offered these various characteristics were keenly contested and led to the arbitration and division of shore space and inshore fishing grounds. Further discussion of these aspects is made in the conclusion of this thesis.

## Chapter 7: Networks of navigation and resource acquisition

The results of the spatial analysis of the historic landmarks and landscapes that extend from the fishing rooms are discussed in this chapter. Fishing rooms were the nodes connecting the activities of fishermen undertaken on land and at sea. Fishermen not only negotiated the inshore waters in the vicinity of their rooms but often travelled greater distances along neighbouring coasts in search of the resources needed to build and sustain the fishing room during the course of the season. The documentary evidence used to discuss these landmarks and landscapes was largely produced in the 18$^{th}$ and 19$^{th}$ centuries, and principally comprises French naval hydrographic charts and the memoires of voyages undertaken by participant-observers of the fishery.

Navigation sites identified in the documentary record usually took the form of terrestrial cultural daymarks and acculturated natural landmarks used by pilots as visual cues to avoid submerged rocks and shoals that dotted the coastlines and harbours most frequently visited. These navigational aids ranged from small cairns, flagstaffs and even fishing stages to prominent and visually distinctive natural rocks, headlands, cliffs and mountains. Although differing greatly in scale, these navigational landmarks served the same purposes. Some, such as cairns and flagstaffs, were deliberately installed while others, such as crosses and stages, erected for entirely different purposes, were adopted due to their convenient locations. Individually, these landmarks reveal little on the ways in which the fishermen and other mariners navigated the inshore waters of the Petit Nord. However, when read as component parts in a series of inter-dependent landmarks, they begin to frame a coherent network of linked sailing routes and anchorages designed to circumvent navigational hazards in order to access the fishing harbours, local cod grounds and important resources. Critically, these landmarks also reveal the cognitive processes

associated with the knowledge and experience required by pilots and fishermen, to safely implement sailing directions.

### 7.1 Navigation, survey and charting

Sailing directions for Newfoundland are known from the 16th century onwards. Breton fishing crews were already familiar with Newfoundland's coastal waters by the time Jacques Cartier made the first of his three voyages to the New World in 1534 (Pope 2009a: 127, 131). Cartier made brief references to parts of Newfoundland's northeastern coast, including the Petit Nord, during his first voyage, yet it was not until 1579 that the French Basque pilot Martin de Hoyarsabal published the first detailed rutter of the north west Atlantic (Barkham 2003). Being amongst the first to seasonally fish Newfoundland, some Breton pilots were employed by some crews from other regions of France, the Basque Country and England (Turgeon 2005: 4; Pope 2009a: 127).

The practical requirements of prosecuting the cod fisheries led to advancements in knowledge, particularly in cartography and marine zoology, and during the course of the 17th and 18th centuries, the improvement in nautical charting reflected a wider rationalisation of the natural world that occurred during the Enlightenment (Duhamel du Monceau 1769; Turgeon 2005: 43; Tessier and Roze 2013: 38-39). It was only after 1761, following John Harrison's invention of the marine chronometer that the problem of accurately establishing longitude was solved, permitting accurate and precise hydrographic charts. Following the Seven Years' War, Captain James Cook was tasked with surveying the coasts of Newfoundland between 1762-7, and he produced the first detailed and accurate hydrographic charts of the island. His surveys, which included detailed coverage of the French harbours located in the Strait of Belle Isle, were prompted by a British concern to reinforce sovereignty over the island with sound geographical knowledge (Whiteley 1975: 5-6).

Naturally, French naval hydrographers and fishing captains also made use of Cook's early surveys. A compendium of the most complete charts then available for Newfoundland was published in 1784 as *Le Pilote de Terre-Neuve*[24] and drew largely on the charts produced by Cook in 1766 and Michael Lane in 1769. However, large sections of the Petit Nord were charted only superficially by Cook and Lane, and French hydrographers had much of the detail to flesh out. While Jacques-Nicolas Bellin had produced a large-scale map of the Petit Nord in 1764, it lacked the accuracy and precision to be used for navigation within individual harbours (Bellin 1764). In 1765, François-Thomas Le Tourneur mapped and described the nature of the coastline and marine conditions between Great Harbour Deep and Fischot, not only at fishing harbours but also the capes, coves and inlets found between them; in this sense, he was tasked with generally improving French hydrography of the region (Le Tourneur 1765, 1766). He dedicates much of a document written in 1773 to correcting the latitude of the harbours and limits, included on Bellin's earlier map, of the French Shore between Cape Bonavista and Quirpon (Le Tourneur 1773). By 1767, Coquelin Matiolais had produced two detailed charts complete with prominent landmarks and harbour soundings for Four Harbour, Great and Little Islets Harbours, and for Grandois, St. Juliens and Croque Harbours (Coquelin Latiolais 1767a and b). Liberge de Granchain had surveyed St. Lunaire Bay in similar detail by 1784 (de Granchain 1784). Le Tourneur produced 43 schematic plans of the principal French fishing harbours of the Petit Nord in c1784, and in his 1785 charts of White Bay, makes reference to Cook's earlier work although substantially improved the detail and accuracy for 11 harbours, renaming 5 in the process (Le Tourneur c1784, Plans 15-57; 1785a-m). St. Anthony and Crémaillère Harbours were surveyed in 1786 (Combis Daugustine 1792). Finally, accurate British charts appear for Paquet Harbour

[24] *Le Pilote de Terre-Neuve, ou recueil de plans des côtes et des ports de cette Île 1784. Pour l'usage des Vaisseaux du Roi, et des Navires de Commerce destinés à la Pêche.* Dépôt des cartes et plans de la marine, France. Memorial University of Newfoundland, Centre for Newfoundland Studies, Record No. CNS-M0020.

in 1801 (followed by a French version in 1816), for Croque in 1808 and La Scie in 1825 (Edgell 1815; Formier 1816; Thomas 1816; Bullock 1825).

Eighteenth-century charts were being used as the basis for those drawn in the 19th century. In his 1827 chart of Fleur de Lys Harbour, the French naval lieutenant Richard notes his admiration for Cook's earlier surveys but nevertheless remarks on the inadequacy of their detail when used to navigate within harbours (Richard 1829). He is, for example, unable to locate a navigational hazard identified by Cook in the approaches to Conche Harbour (Richard 1830a). Richard also produced the first detailed chart for Canaries Harbour in 1827 (Richard 1830b). Between 1847-1864, the French Navy embarked on a concerted programme of hydrographic survey for the major harbours of the Petit Nord, producing charts of such accuracy and precision that many form the basis of modern charts published by the Canadian Hydrographic Service (eg. Le Roche-Poncie 1847; Cloué 1854a and b, 1856, 1857a and b, 1858, 1860, 1861, 1862, 1863a and b, 1864a and b; Pierre 1856, 1857, 1859a and b, 1860 a-d, 1861a and b). This continuity is most clearly demonstrated in the reproduction of exact details, including features such as historic stage locations and place-names, from Cloué's 1858 chart of Cape Rouge on the modern Canadian Hydrographic Chart of Cape Rouge Harbour (Cloué 1864b; CHS 2003a).

The evolution of maps, plans and charts of the Petit Nord show that the French and British navies were familiar with the others' work, and were even in occasional correspondence during peacetime; individual officers actually met to discuss the survey of the coasts and waters of the region for administrative purposes. In his memoires of 1766, François-Thomas Le Tourneur reflects on his correspondence with Captain Thompson of the British Royal Navy frigate *Lark* based in Croque in 1765, in which they discussed the calculation of the exact longitude and latitude of *le Petit-Maître* in Southwest Croque (Le

Tourneur 1766). This suggests that not only was Newfoundland, and the Petit Nord, a nursery for seamen but also one for aspiring naval hydrographers.

In the late 16th century the merchants of St. Malo in Brittany, and others too, petitioned the French crown for military protection against attacks by Inuit peoples on their crews during the seasonal campaigns in northern Newfoundland and southern Labrador (Pope 2014c). The French Navy continued to patrol the fishery during the course of the following centuries. During the mid to late-18th-century, Le Tourneur's remit also required him to chase English interlopers from the French Shore (Anon. 1785; Le Tourneur 1785a). Some harbours appear to have been designated specifically for anchoring and sheltering squadrons of warships.

Naval hydrographers sought the advice and knowledge of fishing vessel pilots and captains while conducting their surveys. It was also not unusual for naval officers to have engaged in the fishery, particularly during times of peace; Le Tourneur himself fished, as a young man, in Fleur de Lys in 1750 and in Cape Rouge Harbour in 1752 and 1753 (Le Tourneur 1785a; Chartrain and Tessier 2013: 36). The results of Le Tourneur's 1764 voyage along the Petit Nord coast were based as much on the opinions of different fishing captains prosecuting the fishery at that time, as on his own judgement (Le Tourneur 1766). Similarly, Richard, in his 1827 chart of Fleur de Lys, describes how his chart maps the hazards of the harbour, excluded from earlier surveys: "Il est également bon de savoir que les pilotes pêcheurs qui viennent quelquefois s'offrir sont forts sujets à caution" (Richard 1829). Peyronnet acknowledges fishermens' local knowledge in a note accompanying his survey of *Grand Bréhat* and specifically the identification of Brehat Shoal:

> …l'ecueil de Bréhat se joint aux Basses des Iles Blanches par une chaîne de rocher non interrompue, comme l'assurent plusieurs pêcheurs; d'ailleurs, si le fait est vrai, il doit être sans danger pour la navigation […] C'est le Capitaine Potevin, prud'homme du hâvre de Bréhat, qui nous en parlé; une de ses Caplaniers en fait la découverte (Peyronnet 18--).

Hydrographic charts emphasise the hazardous nature of coastal waters and approaches to harbours. However, they also mark and identify features, sites and monuments related directly or indirectly to the maritime environment or maritime activity. These include shipping channels, historic anchorages, drying areas, hazards of various types and the daymarks and landmarks that ward them. Offering the view from sea they bridge the land/sea divide. In the Petit Nord, as elsewhere, hydrographers' familiarity with earlier works and that of their contemporaries meant that much of the information recorded on plans, maps and charts was repeated and duplicated in later editions, albeit often with amendments, corrections and refinements. While errors were occasionally perpetuated, the transmission of information from one document to another reflected habitual, if not traditional, ways of navigation throughout the Petit Nord. It is likely that the types of information depicted on French naval hydrographic charts also reflected, at least partially, some of the hazards and routes to which fishermen were also subject and familiar. The active use of temporary fishing infrastructure, such as stages, for navigational purposes strengthens this interpretation. Anecdotal evidence also suggests that some local people continue to use historic French charts to navigate today (Keir Knudsen, pers. comm.).

Nevertheless, it is also obvious that many charts were produced rapidly and as a consequence contained inaccuracies and lacked precision. In his survey of Cape Rouge Harbour, Richard describes the problems with his chart – explaining that he only had a day to produce it and could not return to finish it due to poor weather (Richard 1830a). As a result, he suggested that the survey produced by Desfossés for the harbour in the same year was the better chart to use (Desfossés 1827; Richard 1830a).

## 7.2 Navigation routes and landmarks

The actual routes taken by mariners are in themselves ephemeral, largely cognitive constructs, created through the physical action of sailing, yet are obvious when extrapolated from the documentary record and archaeological survey at the sites of former fishing rooms. While the most obvious archaeological evidence of this activity is signalled by the occasional shipwreck or material culture thrown or lost overboard, it is difficult to locate and retrieve without specialised equipment and techniques employed in underwater archaeology. However, parts of the network of routes can be reconstructed by precisely pinpointing the terrestrial landmarks located or referenced along the coastline by sailing directions and historic charts. These landmarks were used to visually triangulate the location of the hazards to be avoided; by extension the space between the hazards was used, providing the bathymetry allowed, as safe sailing routes. The routes and alignments signalled by the daymarks and landmarks served three principal purposes: to determine the alignment along which to travel, to triangulate the position of hazards to be avoided and to establish the location of areas of sheltered anchorage. They varied in scale and precision too: from naturally distinctive capes and large hills visible from far out at sea and used to generally guide vessels to specific harbours along the coast, to small cultural daymarks visible over shorter distances and used for more precise navigation when vessels were very close to shore or moving within harbours.

Based on the analysis of historic hydrographic charts, 140 cultural daymarks and natural landmarks, of various types and forms, have been identified across the Petit Nord (Table 16; Appendix 3). The distribution and content of the sample reflects the distribution and intensity of 19$^{th}$-century hydrographic survey, and represents an incomplete dataset. Nevertheless, the sample forms the basis of the discussion of some aspects and characteristics of the navigation routes of the Petit Nord.

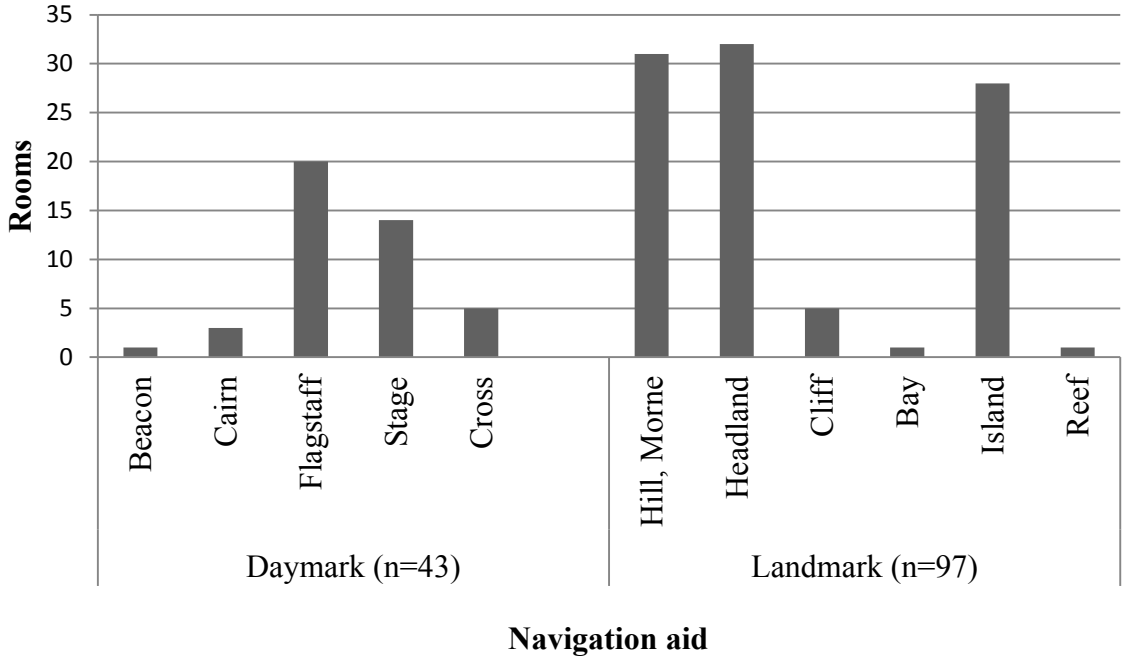



Table 16. Number of cultural daymarks and natural landmarks used by mariners to negotiate inshore sailing routes across the Petit Nord, by type.

### 7.2.1 Vessels of the fishery

Most fishing vessels employed in the fishery reflected the typical commercial types found in the European fisheries of their time; many were unspecialised although strong ribbing was favoured to withstand the transatlantic crossings in heavy seas and a shallow draught to navigate close inshore (Hersart de la Villemarqué 1995: 25-7; Reith 2013: 94).

The types of vessels engaged in the fishery were typically two and three-masted, square-rigged and flat-bottomed shallow draught ships, some types favoured for carrying capacity while others for speed and manoeuverability (La Morandière 2005: 16; Candow 2009a: 392). Generally, vessels increased in tonnage and carrying capacity (number of decks) over time.

During the 16th century most vessels were limited to a carrying capacity of considerably less than 100 tons, although in the second half of the century some vessels were reaching 200 tons, manned by 50-60 men (Hersart de la Villemarqué 1995: 25; La Morandière 2005: 29). During the 17th and 18th centuries fishing vessels appeared in slightly larger versions of their earlier designs and regularly reached between 100 and 300 tons (Hersart de la Villemarqué 1995: 26; Reith 2012: 93). By the 19th century large schooners had become the preferred cod fishing vessel, and provided a combination of speed, manoeuverability and competitive tonnages (Hersart de la Villemarqué 1995: 27; Reith 2013: 94).

The tonnage of a ship had a direct influence on its draught, and this went some way to determining the harbours available to their crews. Obviously the larger vessels were restricted in the places they could anchor and captains had to balance the prospect of obtaining a good fishing station against the convenience of having the ship close by.

The *bateaux* recorded in official censuses and surveys of the Petit Nord were *chaloupes*, small open boats, usually 6 to 8m in length and 1.4-1.6m wide, equipped with a

mainsail and oars, and usually operated by three crew (Barkham 2009: 230; Candow 2009a: 393; Reith 2013: 94). *Chaloupes* could obviously navigate the shallower waters of the coast inaccessible to larger vessels. This is evident on a number of historic charts for the region which note how crews took expedient short cuts through shallow and narrow channels between islands as they travelled to nearby cod grounds. The *Passage de Serpillères* (Frommy Passage), and *Passe de Flago* (Eastern Tickle), both in Fischot Harbour (Figure 33), were normally inaccessible or dangerous to even the smallest fishing ships (Le Tourneur 1766; Le Tourneur c1784, Plan 28; CHS 1998). Further south, the narrow passage between Granchain Island and its neighbour to the south was, "Le Gouliot ou on dit que des Chaloupes ont quelque fois passé" (de Granchain 1784). Likewise, "Le Gouliot, Passe de bateaux" (Le Goulot), enabled crews to quickly and efficiently exit Little Islets Harbour to the south, at least when the tide was high (Coquelin Latiolais 1767a; Anon. c1832, Plan 30).

### 7.2.2 Navigation hazards

The principal concern of sailing directions and charts is the accurate identification and location of natural hazards which represented a danger to ships and the lives of their crews. As such, it is the hazards that are routinely mentioned in pilot rutters, sailing directions or triangulated on hydrographic charts. Often, the only way to precisely locate a hazard was to reference it in relative terms to known points along the coast. Where distinctive and pronounced topography could not be identified and used, mariners installed artificial daymarks instead. The main danger to French ships entering the harbours along the coast were submerged rocks, reefs and shallow shoals, over which the sea becomes increasingly turbulent and waves break. Even areas of shallow water could become turbulent in strong winds. A number of hazards were given evocative names by hydrographers, and presumably fishing crews too. Historically, at least six hazards, mostly submerged rocks, included the

toponym *baleine*, appearing to crews no doubt, similar to whales breaching the surface (La Roche-Poncie 1847; Cloué 1854a, 1860; Pierre 1856, 1859a). *Mulou*, a name evoking some terrible sea creature, was another term used for at least four hazards, while the place-names *Basse Sournoise*, *Ruse* and *Basse de la Souris* suggest mariners' fixation with submerged hazards perceived as being particularly tricky to negotiate and evade (Richard 1830a; La Roche-Poncie 1847; Cloué 1854a, 1857a, 1863b, 1864a; Pierre 1856).

### 7.2.3 Natural landmarks

Natural landmarks were primarily used by the pilots of fishing vessels to navigate the inshore waters of the Petit Nord. They range from large distinctive mountains and capes visible over great distances, which alerted crews to their proximity to particular harbours along the coast or, like cultural daymarks, could be used closer inshore for more exact navigation. There is reason to believe that many of the names of prominent natural landmarks are those given by fishermen – although perhaps later adapted or altered when recorded by hydrographers. Richard, in his survey of Conche in 1827, emphasises the toponymy of *Pointe des Renards* at the southern tip of the Conche Peninsula, known today as Cape Fox: "J'Ecris cap des renards et non Cap renard parce que c'est ainsi que le nomment Tous les Pecheurs de Cap rouge et de La Conche" (Richard 1830a).

At the small scale, particularly prominent landmarks were used by crews to roughly pinpoint favoured harbours on reaching the Petit Nord. The distinctive triple peaks of Fleur de Lys Hill, 4km west of the harbour, were used to sight the harbour entrance from out at sea from the mid-16$^{th}$ century onwards (Figure 29, A):

> Ce Petit havre doit vraisemblablement le nom qu'il porte à la configuration d'une montagne intérieure dont le sommet, vu de l'Est, driesente [sic] trois mamelons qui ressemblent beaucoup à l partie supérieure d'un Fleur des Lis. Cette similitude assez frappante d'ut étre remarqueé, en 1534, par l'intrepide Jacques Cartier… (Richard 1829).

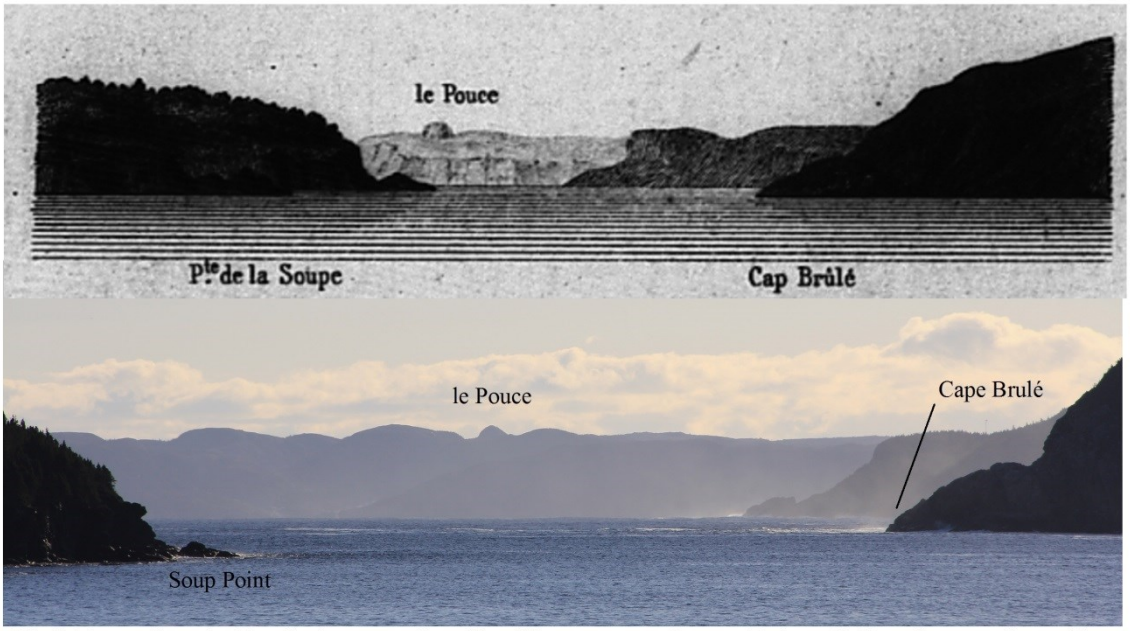
The distinctive round-shaped hills often referred to toponymically as *morne* in Newfoundland, are a category of navigation landmark recorded on a number of 19th-century charts and documents, and nine instances are identified along the coast between Pacquet and Noddy Bay (Formier 1816; Anon. 1822: 259; Richard 1829; La Roche-Poncie 1847; Cloué 1854a and b, 1858, 1860, 1862; Pierre 1856, 1860c and d). One, Gros Morne, was used to locate the entrance to Pacquet Harbour by crews travelling down the coast from the north (Cloué 1860). Other forms of topography were also used. The naval hydrographer Pierre notes a sequence of distinctive landmarks used to guide vessels from Cape Bauld on Quirpon Island, at the very tip of the Northern Peninsula, south along the coast and into the entrances of Griquet Harbour. The sequence included headlands, islands, islets, sheer cliffs with distinctive coloured geology and the verdant summits of high hills:

> Quand on viendra, de l'Est, chercher un des ports représentés sur ce plan, on reconnoîtra aisément le Cap Bauld extrémité septentrionale de Terre-Neuve, les Iles Blanches et le Cap Blanc qui est une haute falaise blanchâtre, dont le sommet, un peu arrondi, est, en été, couvert d'herbe verte. On sera des lors fixé sur sa position et en approchant de terre, le haut sommet arrondi de l'Ile de Chameau et l'Îlot Noir indiqueront l'entrée de la Baie du Nord et des Griguets. La falaise noirâtre, coupée a pic, qui borde le côté exterieur de l'Ile de Quatre Oreilles est aussi un point remarquable sur lequel, de pres, on ne peut se tromper (Pierre 1859b).

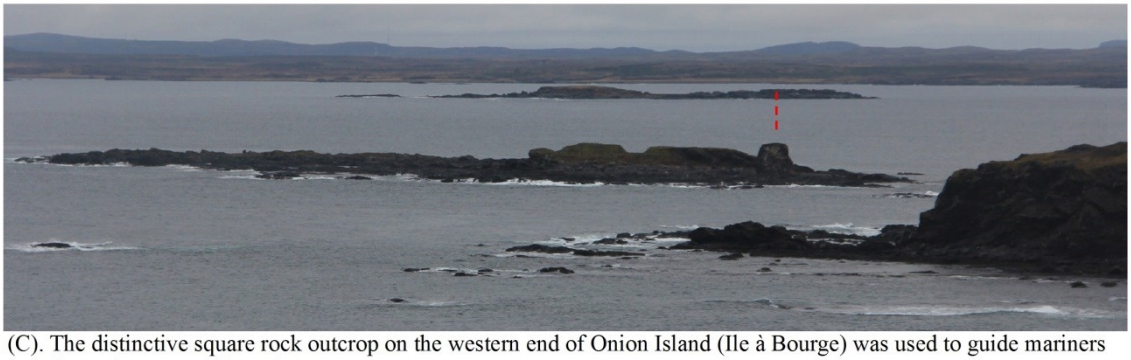
At a larger scale, some natural landmarks were used to derive sailing routes and determine the alignment of submerged hazards. In St. Lunaire Bay, the northern tip of Granchain Island forms a near vertical face that was historically used in alignment with the eastern point of Nymph Island to guide vessels to the south of an area of submerged rocks as they entered the anchorage of Northwest Bay (Figure 30, A):

> Dans la Baie du N.O., on trouve plusieurs mouillages bien abrités, facile à prendre et propres pour de bâtiments de toutes grandeurs. Si l'on veut aller au fond de cette baie, on évitera le plateau de roches qui tient à la côte de tribord et dont l'extrémité, qui découvre, est très accore, en se tenant au Sud de l'alignement de la gauche de l'ile de la Nymphe par la falaise noire de l'ile Granchain (Pierre 1859b).

(A). Fleur de Lys Hill, 4km west of the harbour, was used by fishermen to locate the fishing station from out at sea. (Paul-Émile Miot Collection 1857-9, Libraries and Archives Canada, PA-188221).




(B). (t) Extract from the historic chart coastal profile of the entrance to Pacquet Harbour. 'le Pouce' was used to guide mariners into the harbour avoiding submerged rocks (Cloué 1860). (b) Modern view of the distinctive peak of 'le Pouce'.

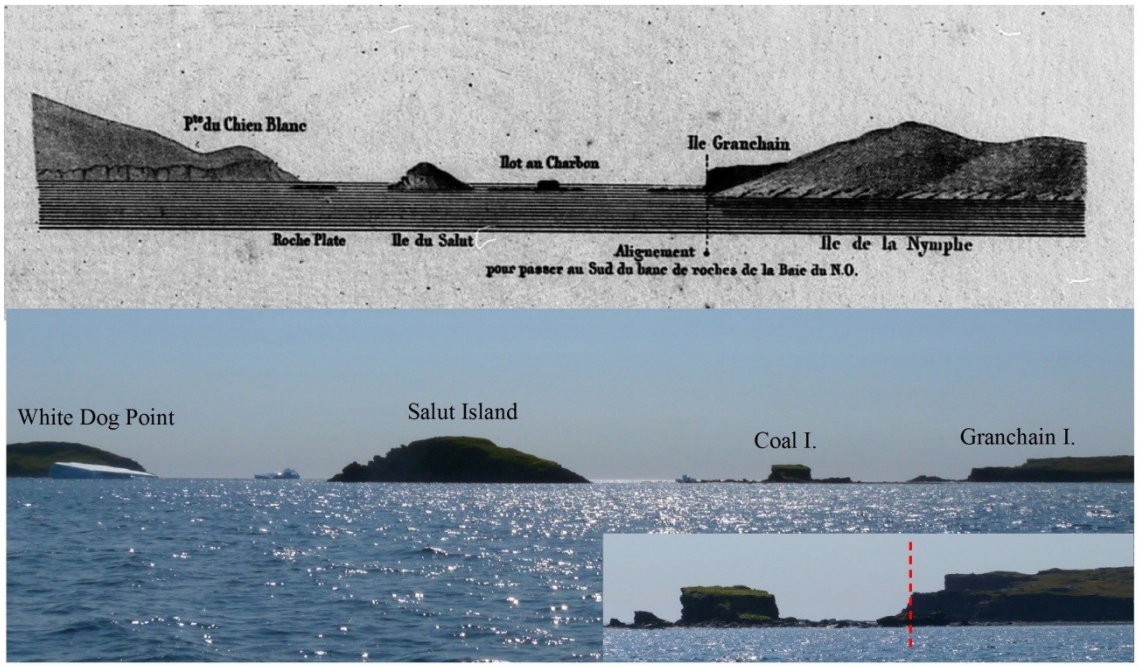


(C). The distinctive square rock outcrop on the western end of Onion Island (Ile à Bourge) was used to guide mariners into the anchorages of Sacred Bay.

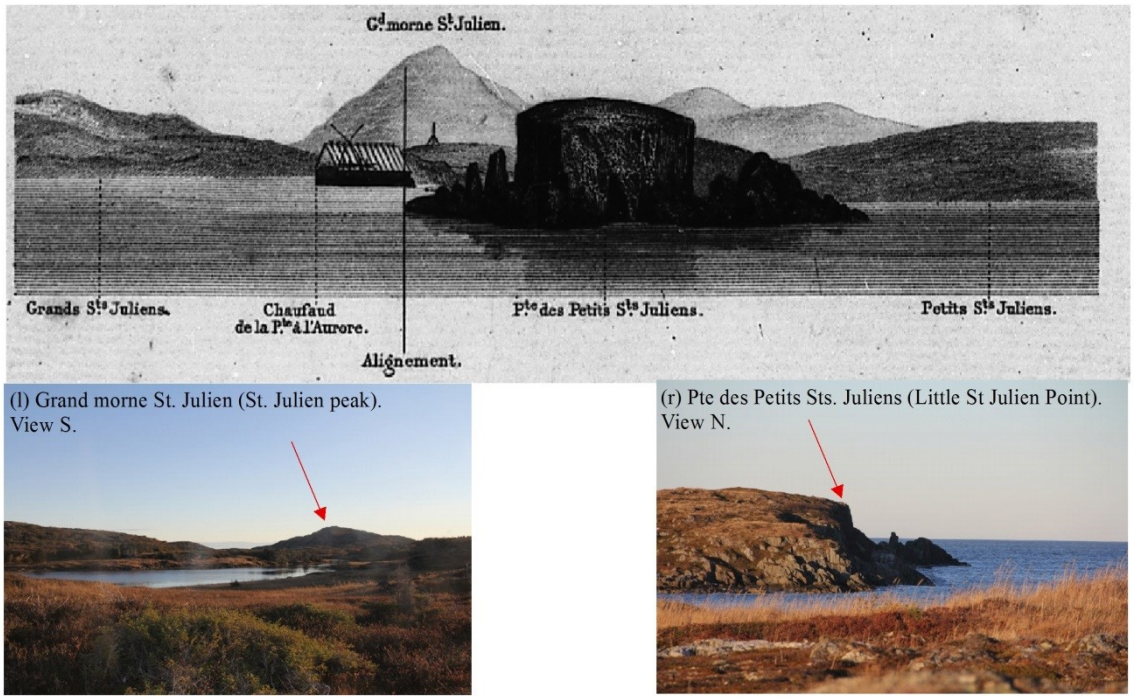
Figure 29. Examples of natural landmarks used to determine the general location of fishing harbour, and the precise alignments of safe anchorages or submerged hazards.

Similarly, mariners were advised to keep the rear of the stage of the room known historically as *Point de l'Aurore* (EgAw-02) visible and not hidden by Little St. Julien Point on leaving Great St. Julien Harbour (Figure 30, B). Keeping this alignment, with St. Julien Peak beyond, ensured vessels avoided drifting onto the submerged shoals of La Baleine Rock and Baleineau Ledge located about 400m north of the harbour entrance (Coquelin Latiolais 1767; Pierre 1856; Pope 2005: 29).

Even natural landmarks located considerable distances away were used to determine precise routes within harbours. The Souris Shoal in Cape Rouge Harbour was avoided by vessels approaching from the east by aligning the northern point of Bell Island, some 30km away, slightly to the left of the tip of Frauderess Point at the mouth of the harbour. While this took vessels north of the shoal, a southern passage past the shoal could be determined by ensuring Rouge Island, about 8km to the east, was aligned directly behind Frauderess Point (Cloué 1864b). Another particularly good example of this phenomenon can be found in Northwest Arm of Pacquet Harbour, on the Baie Verte Peninsula. Strong winds and large seas, particularly from northerly or easterly directions, make Pacquet a treacherous harbour to navigate and matters are exacerbated by the presence of a broad underwater shelf of rock, historically referred to as *la Baleine*, located in the western part of the harbour. To avoid the hazard, mariners were advised to align Soup Point, at the mouth of the harbour, with a distinctive pinnacle known as *le Pouce*, a hilltop found 15km along the coast to the southeast, behind the historic French fishing harbour of Brent's Cove (Cloué 1860). This alignment, closely followed by another that held the tip of Soup Point in alignment with Cape Brule, allowed vessels to sail a cable's length (33 fathoms or about 60m) east and north of the submerged rocks and reach the major anchorage at the bottom of the harbour (Figure 29, B).




(A). (t) Extract from the historic chart coastal profile of the entrance to St. Lunaire Bay (Pierre 1859b). (b) Modern view of the harbour entrance.




(B). (t) Extract from the historic chart coastal profile of the entrance to Great St. Juliens Hbr. View to south (Pierre 1856). (l) Modern view of St. Julien Peak.(r) View north to Little St Julien Point

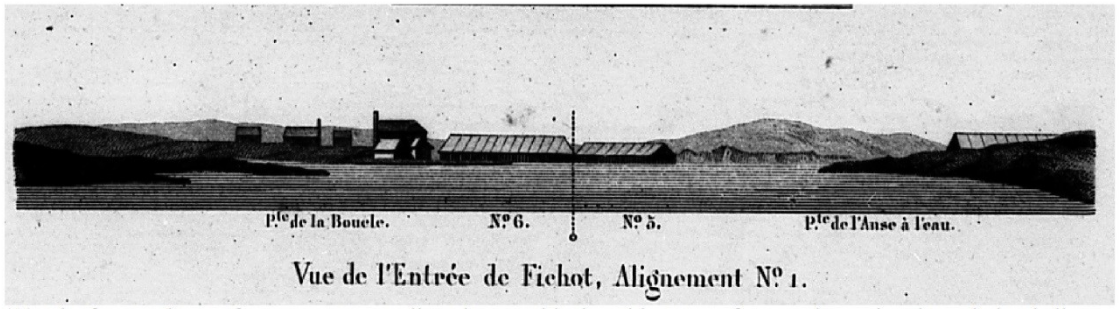
Figure 30. Natural landmarks used to identify sailing routes in St. Lunaire Bay and Great St. Julien's Habour, as recorded on coastal profiles annotated on historic hydrographic charts with comparative modern views.

### 7.2.4 Cultural daymarks

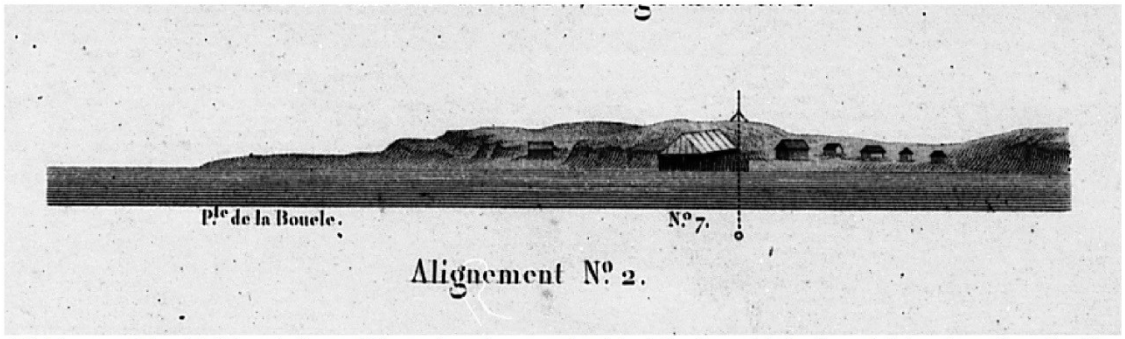
Where local topography could not be used for navigation purposes, or where particularly precise routes were needed close to shore, fishing crews erected various types of monuments on higher ground above the fishing rooms or utilised existing structures, such as stages, cabins and crosses situated along the waterfront. Flagstaffs, stages, crosses and cairns appear to have been the most common form of cultural daymark built to be visible to mariners during daylight hours. Their physical size and locations suggests they were used within harbours for precise navigational purposes – certainly their size would limit their range and visual acuity over greater distances.

Cartographic evidence suggests that flagstaffs were commonly used structures. While not all flagstaffs identified in this study can be categorically associated with navigation, a couple of examples provide compelling documentary evidence for that function. According to the naval hydrographer Georges-Charles Cloué, a flagstaff erected on the western summit of Frommy Island in Fischot Harbour, when aligned with the rear of the stage of the fishing room historically known as *l'Ile Frommy*, provided the line-of-sight of a sailing route for vessels seeking the anchorage at the bottom of the harbour (Figure 31, B); the route ensured vessels followed a shallow channel while avoiding the submerged rocks known as *Mouclière* (Anon. 1822: 249; Cloué 1857a). In 1852-3, the summit of Great Buse was aligned behind a flagstaff erected on the small hill on the west side of the entrance to Little Islets Harbour (Figure 31, C); this provided the sailing route that avoided the Repisse Shoal located about 1km offshore to the north-northeast (Cloué 1858).

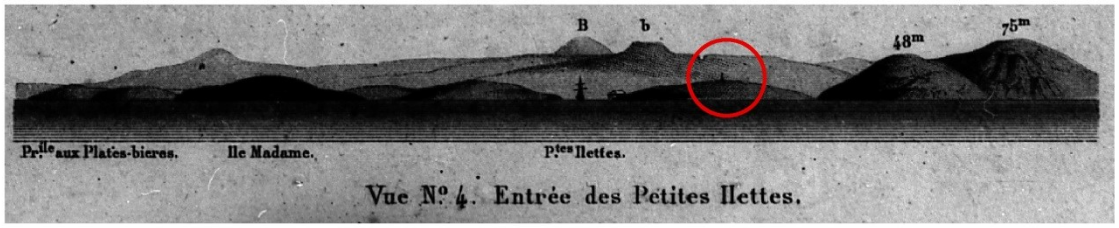
Stages were also used for navigation close to shore. As the point of disembarkation for fishermen, they would have been familiar and easily recognisable points of reference. The use of stages as navigation daymarks appears to be a regular practice in the 19th century, judging by naval charts. This would accord with the lottery of rooms on a three-year



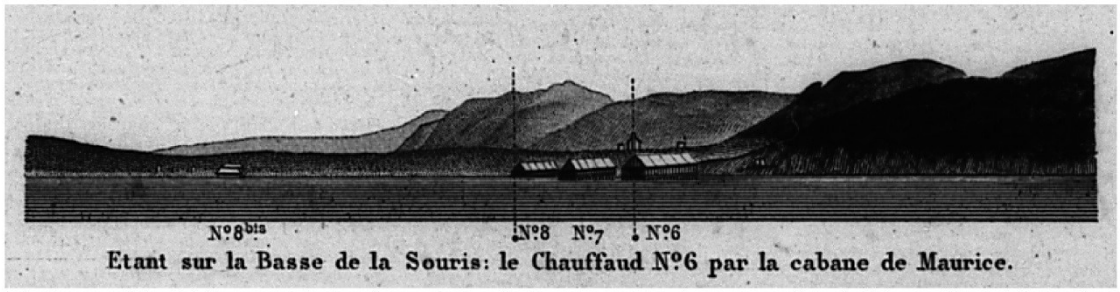

(A). The front and rear of two stages were aligned to provide the mid-passage for vessels passing through the shallow channel of the entrance to Fichot Harbour from the northwest (Cloué 1857).




(B). Frommy Island, Fichot. A flagstaff located on the summit of the island provided a line of sight when aligned with the stage below to guide vessels safely past submerged rocks and into the south anchorage of the harbour (Cloué 1857).




(C). A flagstaff located on a low rise near the entrance to Little Islets Harbour was aligned with Great Buse hill (B) to keep the submerged rocks of Repisse Shoal to portside of vessels as they entered the habour (Cloué 1858).




(D). Stages of the fishing rooms in Southwest Crouse in Cape Rouge Harbour were aligned with a cabin and the peak of a distant hill to ensure vessels safely negotiated the submerged rocks of the Souris Shoal - also known historically as the 'Banc de Champ Paga' (Desfosses 1827; Cloué 1864).

Figure 31. Extracts from coastal profiles annotated on historic hydrographic charts show that stages and flagstaffs served as daymarks for vessels, large and small, sailing closer inshore.

allocation proposed in 1803 and implemented in 1820 - since only when a stage was relatively permanent could it be relied upon as a navigation aid for mariners in future years. Before the early 19th century, it was more likely that most infrastructure at rooms was dismantled at the end of each season. Nevertheless, it is reasonable to assume that based on the 19th-century use of stages for navigational purposes, on coastal profiles included on hydrographic charts of the region allied with the general conservative nature of stage locations within rooms over time, they were probably used as temporary daymarks for ships and *bateaux* alike in earlier periods.

Fischot Harbour provides further examples of the use of stages as navigation markers. The alignment taken from the head of the stage of the room known as *l'Îlot et Serpillière* with the rear of the stage of room *le Nord-Est* to the south served two purposes; first, it provided the first part of the sailing route through the narrow northwest channel which was the main entrance to harbour, and second, it pinpointed the position of the *Ruse* shoal in that channel (Figure 31, A; Figure 33, Fischot Harbour) (Anon. 1822: 249; Cloué 1857a). This shoal was itself avoided by mariners who used a cross, the plinth of which was partially excavated by Mélissa Burns in 2008 (EhAw-01, Area E, Feature 21), erected on the summit of Cape Croix (Figure 32, F) to gauge the point at which a change of direction was necessary (Cloué 1857a; Burns 2008: 144-146; Pope et al. 2009: 17). The safe route to the bottom of the harbour was then provided by the alignment of the flagstaff and stage on Frommy Island mentioned above. Elsewhere, two stages located in Southwest Crouse were used to locate and avoid submerged rocks in Cape Rouge Harbour, known as Souris Shoal. The alignment of the head of the stage of the room known historically as *l'ancienne Amirauté*, with a cabin, possibly a permanent structure belonging to a *gardien* settler of the time and located on the neck of the Conche Peninsula (Figure 31, D), gave the southwest bearing on which the shoal was plotted in 1858 (Cloué 1864b). A second alignment,

(A). Morne Fortan daymark (EjAu-36). A purpose-built cairn served as a navigational mark for French mariners (Photo: Peter Pope, Ref: P2013.07.13 017).

(B). A rock cairn located on the northern end of Burnt Island (EjAw-02) is a possible navigational daymark used by French mariners.

(C). Dr. Peter Pope beside a rock cairn located on the southern end of Burnt Island (EjAw-03). The cairn is a possible navigational daymark used by French mariners.

(D). The excavated plinth of cross once used for inshore navigation at Dos de Cheval (Feature 1131, Area A, EfAx-09) (Photo: Peter Pope, Ref: A070707P 021).

(E). A calvaire erected on the summit of a hill above Pacquet was once used by French mariners to avoid submerged rocks in the harbour (Cloué 1860).

(F). A wooden cross once stood on the summit of Cape Croix, Northeast Island, Fichot (EhAw-01). It provided a line of sight by which to navigate into the harbour from the NW (Photo: Peter Pope, Ref: 80705C 058).

Figure 32. Examples of cultural daymarks and the former sites of cultural daymarks used by fishermen to navigate inshore waters.

taking the head of the stage belonging to the room of *le Grand Désespoir* with an unknown peak to the west above Conche Harbour, then ensured safe passage to the west of the shoal (Cloué 1864b). While these configurations were suitable for vessels entering the rooms of Southwest Crouse, further alignments were required for Souris Shoal by fishermen negotiating the waters off Long Point and the site of the fishing room known as *Champ Paya*. According to Cloué, a *pyramide* structure aligned with a *croix* were used to provide the bearing of the shoal, also known historically as *Banc de Champ Paga*, located about 900 metres offshore (Desfossés 1827; Cloué 1864b). Excavations and survey undertaken by Dr. Peter Pope and his crews at *Champ Paya* since 2004 have located and revealed the nature of these features (Pope 2008: 43). The *pyramide* is located at the site of an oak cross erected by the French Navy in 1934 to replace an earlier calvary commemorating the historic French presence in the harbour (EfAx-09, Area D, Feature 991) (Pope 2007: 25; Burns 2008: 87-97). Several large boulders are found in the immediate vicinity of the calvary and the rocky enclosure that encloses it, and may conceivably have been used to form the *pyramide* structure. However, given that at least two episodes of rebuilding are known to have occurred at the present calvary site, such an interpretation remains uncertain. More conclusively, an earlier *croix* has been identified archaeologically (EfAx-09, Area A, Feature 1131; Figure 32, D) on a knoll overlooking the beach terrace and historic working area of the room (Burns 2008: 101-107). Although certainly symbols of Breton religion and identity, these monuments also functioned as inshore navigation markers; a dual role served by many of the crosses and calvaries erected in prominent positions along the coast of the Petit Nord between the late 17$^{th}$ and mid-19$^{th}$ centuries (Burns 2008: 155-156). In Pacquet Harbour, the position of a historic stage relative to a prominent hill, named "Signal Hill" in 1801 and surmounted with a calvary (Figure 32, E), was used by fishermen to identify the

point at which vessels had safely passed a submerged reef known as *la Baleine* found in the bottom of the harbour (Edgell 1815; Cloué 1860).

Stages were even used as control points during hydrographic surveys. The stage of the room located at the bottom of *les Petites Vaches* (Union Cove), was used by Le Tourneur to orientate his chart of the harbour in 1785 (Le Tourneur 1785d). The use by modern Newfoundland fishermen of local topography and daymarks such as houses and other prominent buildings to locate inshore fishing grounds, parallels in scale the historical use of stages by French fishermen (Wells 2009: 110-11).

Purpose-built rock cairns were raised in a number of locations. The *pyramide* marked by Cloué in 1850 on the hill *Morne Fontan* (EjAu-36), above the historic fishing room of *Îlot au Marchand* (EjAu-19), was used as a daymark (Figure 32, A) to navigate safely into the northern entrance of Quirpon Harbour past a number of submerged hazards that lie offshore (Cloué 1854a and b; Bell et al. 2001: 19-22; Pope 2010: 10; Tapper and Pope 2014: 21). Cloué's chart is accompanied by sailing directions and a coastal profile that provide a guide to safe passage into the rooms of the station:

> Alignment à suivre pour faire la passé Jacques-Cartier. On vient le prendre directement dans la passé, en prenant la petite pyramide du Morne Fontan par l'extremité nord de l'île Jacques Cartier. Pour passer entre l'îlot á Vincent et la Pte á l'Alun, il faut tenir le chaffaud No.5 un peu ouvert á gauche de l'îlot au Marchand (Cloué 1854a).

The sailing directions recommend the route to follow in order to pass through a channel off the northern tip of *Île de Jacques-Cartier* (Nobles Island). The use of a daymark, sited on Morne Fortan to the south of Grandmother Island, when aligned with the northern tip of Nobles Island, and two prominent coastal headlands located to the west (at Lancey Ball Point [known historically as *Pointe des Esquimaux*] and Crow Head [*Pointe au Corbeau*]), allowed the pilot to navigate safely into the station (Cloué 1854b). Further travel through the *rade* to the southern rooms, located about today's Trinity Bight and Noble Cove, required

the mariner to keep the fishing stage of *No.5, les Ilots* (EjAu-31), visible to the left of *Îlot au Marchand* itself (Pope 2010: 10). This would guide vessels between the submerged rocks of *Îlot à Vincent* (Salt Island) and *Roche aux Canias* just off Alun Point (Figure 33) (Cloué 1854a). A modern navigation light is located on the western coastline of Grandmother Island today, echoing earlier traditions.

The Morne Fortan *pyramide* is a cairn constructed from loose angular rocks and stones and covered in a mat of grass and various flowers. Roughly conical or pyramidal in shape, it is clearly a constructed monument, approximately 4m diameter at the base and about 1.5m high (Tapper and Pope 2014: 21). The dimensions exclude the more recent addition of tabular rocks laid in bond on to the top of the mound. This modern addition accentuates its visibility at sea level and appears to demonstrate its continued use as a functional navigation mark in modern times. A concentration of varied grasses and flora around its lower parts, noticeably different amongst the homogenous coverage of crowberry across the barrens, indicate its long use as a bird perch. The hazards the daymark wards may be those mentioned by Jacques Carter during his first voyage to Newfoundland in the summer of 1534: "aller surs le Su vers le Rapont [Quirpon]; et se fault donner garde de trois basses qui sont soubz l'eau on chenal devers l'isle de l'Est." (Michelant and Ramé 1867). The same hazards are described by Cloué in 1850: "il faut après avoir évité les dangers qui sont entre l'ile de Kirpon et les iles de Sacre…prenant la petite pyramide du Morne Fontan par l'extrémité nord de l'ile Jacques Cartier" (Cloué 1854a). They appear again in the modern sailing directions for Quirpon Harbour:

> Foirou Island (51˚39'N., 55˚29'W.), a rock 3.7m high, lies about 2.3 miles W of Cape Bauld; a shoal bank, with a least depth of 2.7m and over which the sea breaks, extends nearly 0.3 mile SE of the rock…Dangers extend 1.5 miles ENE and 1.75 miles E of Cape Artimon…The Islets are a group of low above-water rocks to the N (National Geospatial-Intelligence Agency 2012: 210).

Although there is some uncertainty to exactly which hazards Cartier refers, he may be referring to League Rock, *le grand Mulou* and the *Recifs de Marie* (Barrack Rocks) which lie further to the northwest, or alternatively League Rock, *Recifs de Marie* and The Islets at the mouth of the harbour. The continuity demonstrated in the sailing directions over four centuries reflects the longevity, both of these dangerous obstacles and of maritime cognitive memory.

Two further cairns have been identified on Burnt Island and are interpretated as belonging to the French fishery. A low rock cairn (EjAw-02), is located at the northern end of the island, near Burnt Cape Head, on the highest point of the ridge that forms the spine of the peninsula. It is situated in a position that affords extensive views across Pistolet Bay, Ha-Ha Bay and further east towards Cape Onion and beyond. The monument consists of a loose mound of angular rocks and stones covered with a mat of grasses and moss. Measuring about 4m in diameter at its base and 0.5m high, a kerb or outer face of stones, approximately 1.2m long with at least two courses, forms the base of the cairn on its northern side (Figure 32, B). The cairn has tumbled and loose stone is spread around the mound. Many stones appear to have been recently placed, including the kerb. The construction and dimensions of this structure have parallels with a second cairn observed on the southern end of Burnt Island (EjAw-03). Similarly located on the highest point of the ridge, it offers extensive views to all directions. It is visually prominent when viewed at sea-level from the settlement of Raleigh in Ha-Ha Bay. The site consists of a loose mound of angular rocks and stones with a mat of grasses, flowers and dwarf shrubs covering its lower parts. It is about 4m in diameter at its base and 1.5m high (Figure 32, C). Adjacent to the cairn to the north, another more recent cairn, regular in construction and more obviously conical in shape, has been built at least in part from material robbed from the older cairn. The two historic cairns share morphological and topographical similarities with the daymark

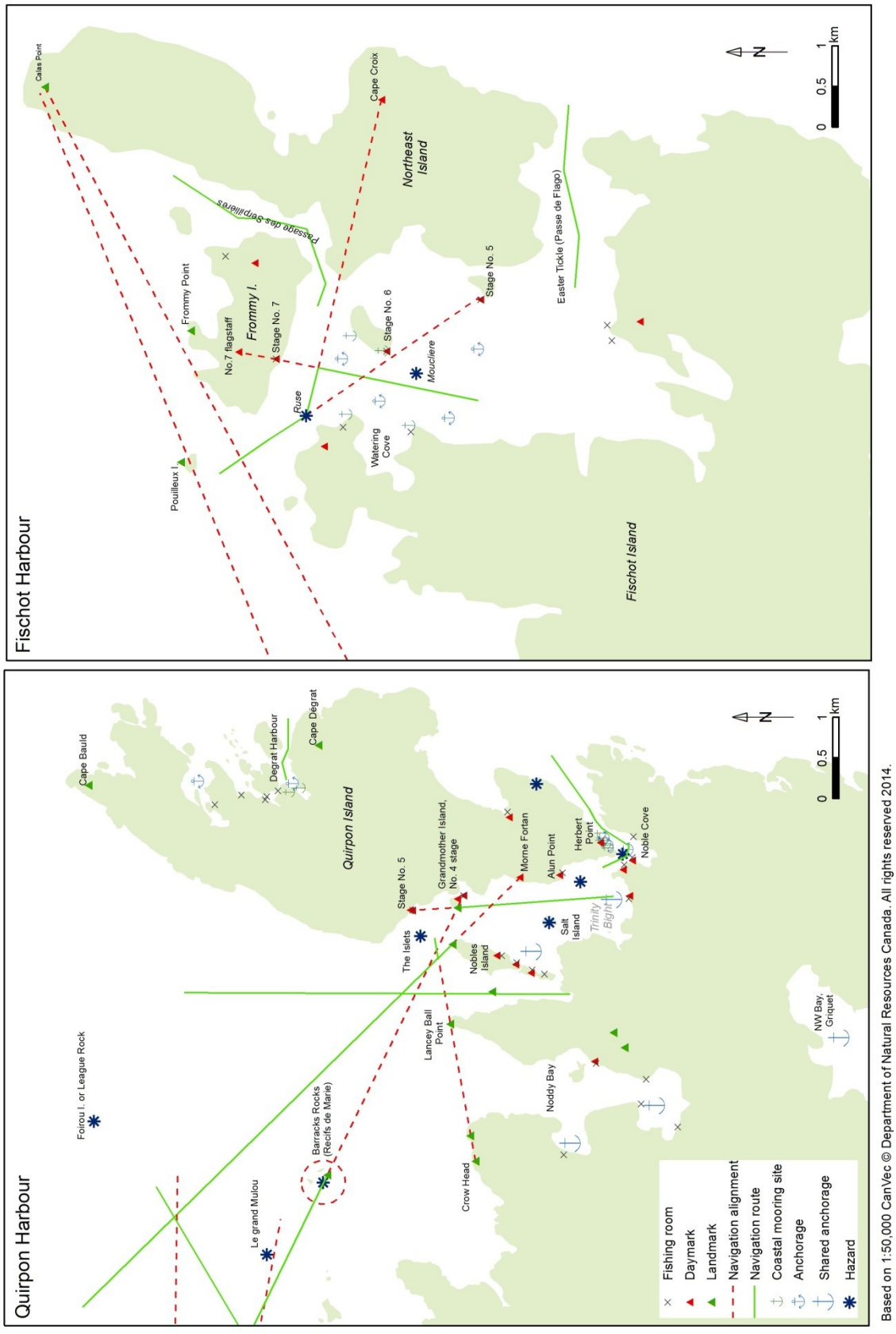



Figure 33. Mapped examples from Quirpon and Fischot Harbours demonstrate how natural landmarks and cultural daymarks were used to determine historic sailing routes and anchorages.

cairn observed on the summit of Morne Fortan, on Quirpon Island (EjAu-36), and are likely to have served a similar function (Tapper and Pope 2014: 30). They may have been used by French crews seeking timber resources from Milan Arm in Pistolet Bay to the south, enabling safe navigation of the Burnt Island peninsula and providing alignments for the Dog Rock and Trompe l'Oeil Point shoals, and possibly even the historic anchorage off Carpon Cove, all of which are located in the southeast part of Pistolet Bay (Great Britain Hydrographic Office 1878).

The elevations of coastal hills and headlands are commonly recorded on 19th-century hydrographic charts. During fieldwork undertaken in October 2013, the author investigated a prominent cairn located on the summit of the hill above Cape Mauve, between Noddy Bay and Quirpon, which is visible over considerable distances in the surrounding landscape. It measures about 1.5m in diameter and 1m high, and is constructed from large angular rocks piled loosely and covered in mature lichens (approximate location 605666E, 5716748N). Its position suggests a use for navigation and/or survey purposes and its elevation (88m) is noted on Cloué's chart of Quirpon drawn in 1850 (Cloué 1854a). It is conceivable that it was erected, along with a number of similar cairns observed in the region, to facilitate surveying of *Baie aux Mauves* (Noddy Bay) and *Kirpon* (Quirpon) harbours by French hydrographers (Christina Robinson, pers. comm.). However, the lack of diagnostic features means this cairn is of unknown date and may actually be a more recent feature. A similar cairn was visited on Cape Onion, and found to have been established (or reused) by the Canadian Hydrographic Service (daymark No. 843?), and covers an iron stake in its centre, stamp-dated to 1949 (approximate location 594733E, 5718430N).

Historically, large hills were used by hydrographers to assist in the survey of some harbours. The *Sommet du Cap Croix* (Cape Croix on Northeast Island) served as the datum

for the survey of Fischot Harbour, while the summit of St. Julien Island provided the control for Grandois, Great and Little St. Julien Harbours; the summit of Camel Island was likewise used for the chart of Griquet Harbour (Pierre 1856, 1859a; Cloué 1857a). The lookouts of *Vigie de la Boussole* (Boussole Hill), above Croque Harbour, and the *Vigie de la Crémaillère* (Crémaillère Hill) afford extensive panoramas over their respective harbours and would have provided excellent vantages from which to undertake wide ranging surveys (La Roche-Poncie 1847; Pierre 1860). The peak of *Vigie du Cap Vent* (Windy Point) at Croque appears to have served as a meridian for some hydrographers, such as Richard for his surveys of Fleur de Lys and Canaries Harbour (Richard 1829, 1830b; La Roche-Poncie 1847). In the former chart he notes: "Mes observations effectuées au Point A ont donné 50°.7'.13″de latitude … [and]… 0°.20'.40″ du Longitude à l'ouest du méridien du Cap Vent (havre du Croc)…" (Richard 1829). At prominent points within harbours, in places with views encompassing large parts of the harbour, naval hydrographers also established *observatoires* from which hydrographic survey was undertaken; nine such sites are known from historic charts and the French scientist Julien Thoulet photographed French naval officers surveying at *Pointe de l'Observatoire* (Observation Point) in Croque Harbour in 1887 (Richard 1829; La Roche-Poncie 1847; Cloué 1854a and b, 1862, 1864b; Pierre 1860a, b, c and d, 1861a; Thoulet 2005: 82-3).

### 7.3 Anchorages

Most sailing routes led to and from anchorages. Some natural landmarks were used specifically to mark safe areas of anchorage within harbours, usually by marking alignments that ensured vessels were sheltered from direct exposure to rougher seas. The prominent square rock formation on the western end of Onion Island (*Île à Bourge*), off Ship Cove, documented by Cloué in 1850-1, was used in alignment with the southwestern point of

Little Harbour, to define the safe anchorage within the West Road of Sacred Bay (Figure 29, C):

> Le mouillage de la Rade de l'Ouest est le meilleur et très facile a prendre: les plus grands navires peuvent y aller, on y laissera tomber l'ancre quand on aura amené la Roche carrée très remarquable de L'ile à Bourge par la Pointe Sud-Ouest du Petit Havre (Cloué 1854b).

The *roche carrée* also served as a navigation mark when aligned on the gap between the twin Moyacs Islands, to ensure safe passage into the calmer waters of the same bay's South Road anchorage (Cloué 1854b). Similar alignments defining the safe area of anchorages are recorded off Grellins Point in Great Islets Harbour, in Le Fond in Croque, Biche Arm in Cape Rouge Harbour and Southwest Arm, Pacquet (La Roche-Poncie 1847; Cloué 1860, 1863b, 1864a). All define the anchorage, usually located in a sheltered cove or arm at the bottom of the harbour, using a headland or island at the harbour's entrance aligned with a prominent point of land somewhere within the harbour. It is over suitable ground beyond the line-of-sight provided by these landmarks that sailing directions advised vessels to drop anchor and moor for the duration of the fishing season. The vast majority of the harbours of the Petit Nord contained suitable anchorages for the ships bringing fishing crews across the Atlantic (Figure 34; Appendix 4). Although some rooms were fortunate to have their own anchorage close by, many ships usually moored in a shared anchorage used by most of the rooms of a harbour. Vessels remained in position, unloaded of equipment and derigged, for the four to five months of the season.

The ideal conditions sought for an anchorage usually meant they were located in low energy environments, away from strong winds and waves, over ground that offered the best holding for anchors. Invariably, this meant places located in the sheltered bottom of bays, coves and inlets, behind headlands and peninsulas that bore the brunt of the force of the open sea. For example, the two anchorages of Quirpon Harbour (Figure 35, A), sheltered

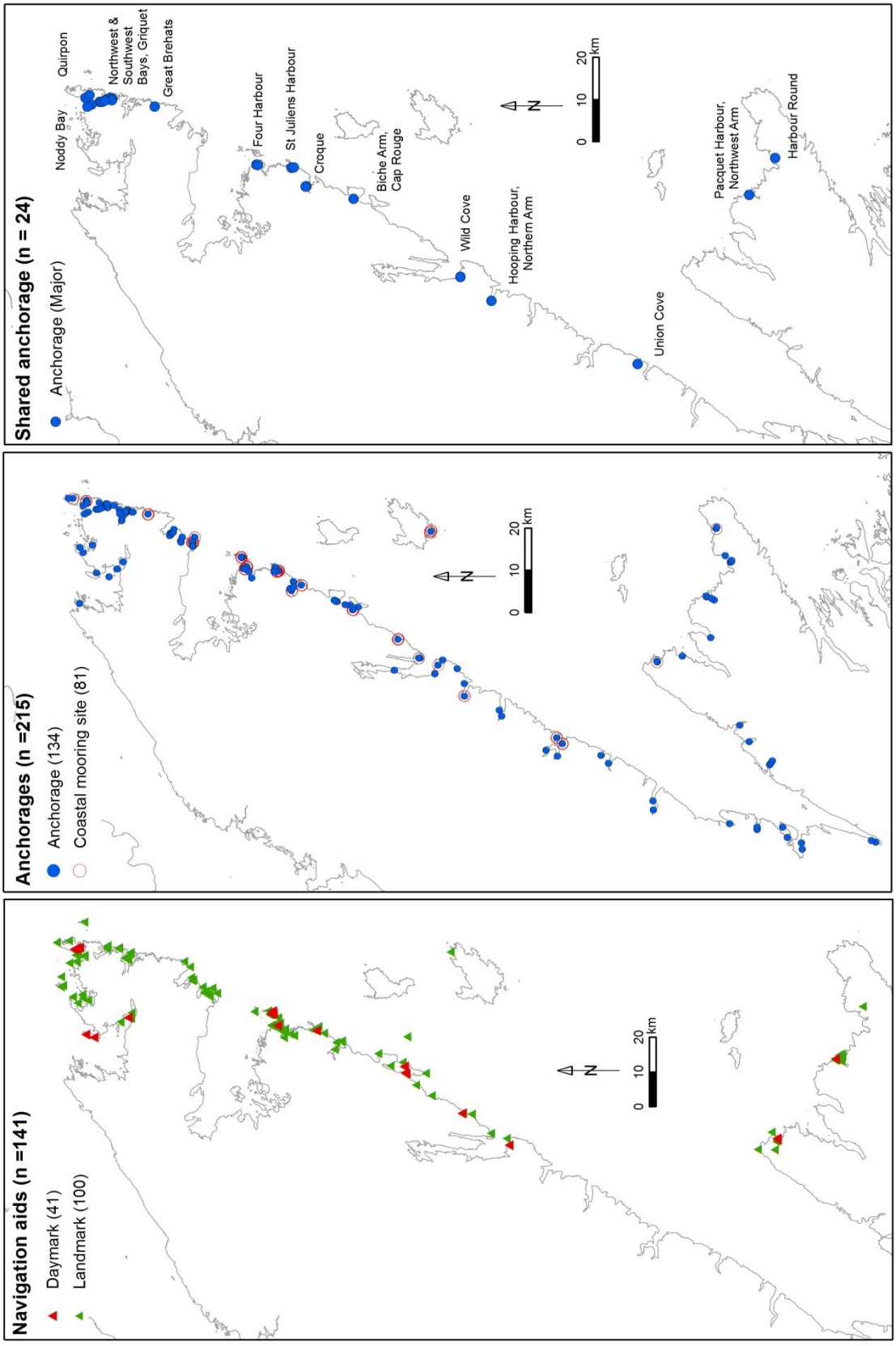



Figure 34. Distribution of landmarks and daymarks, anchorages and shared anchorages across the Petit Nord.

to the north by Nobles Island and to the east by Quirpon Island, served the ships of as many as 16 rooms located within the harbour and on the more exposed eastern coast of Quirpon Island. These two anchorages were located in the deepest parts of the harbour over muddy rather than gravelly ground (Cloué 1854a). In some harbours, anchorages were found some distance from the favoured locations fishermen preferred to locate their rooms, which were often much closer to the open coast. By way of comparison, the average distance from the harbour entrance for the 113 anchorages identified within known fishing stations is approximately 2.3km compared to about 1.4km for the average fishing room.

The water depth at anchorages had to be sufficient to allow ships to clear the bottom, yet not so deep that anchor lines were unable reach the seabed. Adjusting for differences between historic and modern measurements used for soundings, the average depth, at low tide, of the 108 anchorages for which the bathymetry is known is about 18m, ranging from 4.5m at the shallow end (only accessible to the smaller fishing vessels) to 87m at the very deepest (eg. Le Tourneur 1785k; Cloué 1857a, 1858)[25]. At the deeper end, Le Tourneur records that although a suitable bay, large and sheltered, parts of Northern Arm in *Sans Fond* (Hooping Harbour) are too deep, at over 65m, for 18th-century ships' anchors to reach (Le Tourneur 1766). This might imply that even if a bay could support a fishing station or room, the only suitable anchorage might be found at the innermost areas of the harbour in shallower water. The distances between the ship's anchorage and its fishing room may have been a contributory factor in deterring French fishing crews from establishing rooms in such places.

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[25] Between 1668-1840, French hydrographers used the *Systeme de longeur du pied du roi* based on the *Ancien système du pied du roi*, and recorded depths in *brasses et pieds* (fathoms and feet) (eg. Le Tourneur c1784, plans 22, 37 and 55). A *brasse* was equal to 5 *Pied du Roi* or 1.2 *toise.* In metric terms, a *brasse* was equivalent to 1.62m and a *Pied du Roi* to 32.5cm (Ross 1983: 77). Only one chart examined explicitly cites the use of *'pieds français'* (Desfossés 1827). After 1840 and the adoption of the metric system French hydrographers recorded soundings in metres. British hydrographers continued to use the fathom, but which was slightly longer than the French value and equivalent to 6ft or 1.82m.

Crews overwhelmingly sought holding ground composed of fine sediments, into which the arms and flukes of the anchor could penetrate and where the holding power and greater sheer strength provided the resistance necessary to withstand the environmental forces exerted on the vessel; 90 percent of the 85 anchorages where the composition of the ground is known are comprised of sand, mud or combinations of both. Conversely, gravelly and rocky ground was least favoured due to the unpredictable nature of securing a reliable holding. The importance of the ground at anchorages is remarked upon by Le Tourneur in his 1764 survey of *Boutitou* (Hilliers Harbour), where he notes that using anchors in the middle of the harbour was difficult because of the rocky bottom (Le Tourneur 1766). In fact, Le Tourneur devotes much of the content of each entry he makes for the harbours visited that year, to detailed descriptions of the nature of the anchorages; their local hazards and sea conditions, water depths, ground conditions and if additional mooring aids were required. Much of this information is later represented in plan form in the 43 drawings he produced of the fishing stations and their rooms in c1784. In 1808, the British naval officer George Thomas described the anchorage of Le Fond at the bottom of Croque Harbour, noting "The anchorage is excellent the bottom being a good holding ground of black or rather slate coloured mud" (Thomas 1816). At many locations, ships required multiple anchors, often sunk off the bow and stern, and quarters of the vessel to keep it from drifting broadside to the prevailing winds and currents. This practice can be observed in Paul-Émile Miot's historic photograph of Southwest Crouse dating to 1857-9, in which the fishing vessels are anchored to align with the direction of the prevailing southwesterly winds that sweep across the low-lying neck of the Conche Peninsula (Figure 25, top). Cloué's sailing directions accompanying his chart for Pacquet of 1857 describe the necessity of additional tethering in the anchorage of Northwest Arm, as well as emphasising the need for vessels to be moored parallel to the coast in adjacent Paris Bay (*Bras du Sud-Ouest*) - so that they aligned in the

(A). Quirpon Harbour. The red ellipses mark the historic seasonal anchorages used by the ships of the fishing rooms.

(B). Large wrought iron ship's anchor, about 2.2 x1.2m, dredged from Hooping Harbour (EdBb-02) (Photo: Peter Pope, Ref: S040707G 082).

(C). One of four known iron mooring rings used to secure ships in Little St. Julien Harbour (EgAw-09).

(D). Iron mooring ring fixed to a large boulder in Williamsport, Fourché Harbour (Feature 9, EdBb-01) (Photo: Peter Pope, Ref: 090720P 128).

(E). One of three natural rock 'bollards' located along the southern shore of Three Mountains Harbour (EhAv-04). Each shows evidence for having been worked with prominent notches (marked by the red lines on this example) indicating wear from mooring cables.

(F). An alignment of three iron pins embedded into foreshore rocks at Quirpon Island Admiralty (EjAu-49) (Photo: Peter Pope, Ref: P2013.07.13 131).

Figure 35. Examples of historic anchorage areas, an anchor and types of coastal mooring sites found within fishing harbours.

same direction as the southwesterly winds that blow through that harbour:

> La tenue est très mediocre dans tout le Bras du N. O. il y faut de lourdes ancres et de longues touées. Les navires pêcheurs s'y tiennent sur trois amarres: une grosse ancre au N; une à l'ESE; la troisième au S.¼S.O. est enpennelée. Dans le Bras du S.O où Baie de Paris, la tenue ne devient bonne que lorsqu'on a caché la Pointe Pelée derriere la Pointe aux Brousailles; elle est parfait à partir du moment où le Bras s'élargit pour former le bassin où nous indiquons le mouillage. Il faut affourcher parallelement á la côte (Cloué 1860).

Furthermore, almost a fifth of all historic anchorages required vessels to be further secured by mooring cables tied to points along the shoreline in order to hold them fast in particularly exposed locations.

Two-thirds of the historic anchorages identified as part of this research are recorded on two or more cartographic or documentary sources, suggesting that particular areas were well established as designated anchorages over time, at least from the mid-18$^{th}$ century onwards. Nevertheless, the enduring and conservative nature of the historical transmission of hydrographic knowledge, as demonstrated by sailing routes, suggests it is likely that the same anchorages were also habitually used by vessels in earlier centuries of the fishery.

### 7.3.1 Shared anchorages

Some fishing harbours could not provide an anchorage for the ships of their rooms because they were too shallow or too exposed to strong winds and seas. This required crews to seek better havens in neighbouring harbours, where sufficient depths of water and more sheltered conditions were available (Figure 34). At least 15 (27 percent) of the 54 fishing harbours of the Petit Nord provided havens for vessels whose crews worked elsewhere.

The size of the ship carrying crews to the Petit Nord occasionally determined which fishing stations and rooms could be exploited. Larger ships with greater draughts were unable to reach shallower ground off some rooms. In 1765, Le Tourneur deemed Fischot Harbour suitable only for smaller fishing vessels (Le Tourneur 1766). By 1821, Fischot was

again considered a "mauvais port pour les bâtimens: son entrée est très-difficile. Il faut pour ce port des batimens de moins de douze pieds de tirant d'eau" (Anon. 1822: 250)[26]. Consequently, the larger ships of the rooms of Fischot, and Little Islets too, berthed in the deeper anchorage of Four Harbour for the duration of the season (Le Tourneur 1766; Coquelin 1767a; Le Tourneur c1784, Plan 29; Cloué 1858; Anon. 1822: 251). Similarly, the deeper waters of Southwest and Northwest Bays, although too far from the fishing grounds to support rooms, despite suitable local topography, appear to have served as the principal anchorages for the larger ships of many of the rooms of Griquet and White Bay harbours (Pierre 1859a).

Some anchorages were sought because they afforded particularly good shelter. In the major fishing station of Cape Rouge Harbour, Biche Arm was the best anchorage and not only sheltered the ships of the crews who worked the rooms of Northeast Crouse (EfAx-11) and Biche Arm East (EfAx15), but was also used by the ships of the small outlier room of Pilier (EfAw-01), located outside the harbour to the north (Le Tourneur c1784, Plan 36; Cloué 1864a; Pope 2005: 18-21, 25; Pope 2006: 43). Further south, the naturalist Joseph Banks made reference, in 1766, to the major anchorage of Wild Cove (*Le Gouffre*), in Canada Bay, when he noted:

> …we Ran Across Canada bay to a small Harbour calld Wild Cove Where Lay two French Ships it seemd Perfectly Commodious for Large ships & shelterd from sea & winds but the ground very Foul as the Frenchmen had boyd up their anchors with Barrels… (Lysaght 1971:128).

Banks' memoire also notes that although the ground was unsuitable in Canaries Harbour, a sentiment echoed by Richard in 1827, that in Wild Cove must have been only slightly better, despite Le Tourneur recording a *fond de vase* there in the mid-1780s (Le Tourneur c1784, Plan 41; Richard 1830b). Bearing in mind Canaries Harbour's proximity to the cod grounds,

[26] A depth of 12 *pieds* was equivalent to about 3.9m (Ross 1983: 77). No part of Fischot Habour is deeper than 6.3m at CD, most parts are considerably less (Cloué 1857a).

the preference for using Wild Cove demonstrates dual needs, while relatively more sheltered from rough seas and winds, it was also a less important fishing harbour which unlike Canaries could afford to be clogged with numerous large vessels at anchor.

Some of the more peripheral fishing rooms located in small coves on the pelagic coast were directly exposed to the open sea. In 1821, the French commissioners noted that although the tiny cove of Millions (EgAw-10) was an excellent place to fish, it was subject to strong winds from the southwest and therefore ships had to moor two leagues away in Croque Harbour (Anon. 1822: 254; Pope et al. 2007: 10). Moving south along the coast, the small cove known as Little Canada Harbour was another favoured place to fish yet its ships were obliged to seek shelter in Canaries Harbour or, more usually, in Wild Cove 7km away (Le Tourneur 1766; c1784, Plan 43; Anon. 1822: 261). Reputedly one of the best places to fish along the whole Newfoundland coast, the exposed nature and shallow depth of Cat Cove nevertheless meant that the ship was forced to anchor in neighbouring harbours. According to Le Tourneur's memoire of his visit to the station in 1764, Canaries Harbour had traditionally served as the historic mooring place (Le Tourneur 1766). However, by the time of his return to the same fishing station sometime between 1784-6, he noted that the ships had taken to using Northern Arm in Hooping Harbour, 8km away – and even there still required two anchors and mooring lines tied to the shoreline (Le Tourneur c1784, Plan 45; Anon. 1822: 262). The change of harbours may reflect the presence of social ties between crews, relative geographic convenience or simply the availability of space that could be used without interfering with the needs of the host harbours' own fishing crews. For whichever reason, crews were obviously adaptable and such practices were necessarily fluid.

Le Tourneur suggests that some harbours were unsuitable for actually establishing fishing rooms because they were too exposed to the wind and the sea, even if they were

suitable in other ways. He describes *l'Ance au Loup Marin* (Seal Cove, Southern Arm, White Bay) as "trop ouverte aux vents de nord-ouest et que la mer est tres mal" (Le Tourneur 1785a). He similarly rejects recommending *le Grand Lapin* (Great Coney Arm, White Bay) because it is also too exposed, particularly during bad weather (Le Tourneur 1785a).

Some anchorages, especially those conveniently located away from busy areas of fishing activity, provided sanctuary for other mariners. The anchorages found in Southwest Bay in St. Lunaire Bay, in Northwest and Southwest Bays in Griquet, and that found in Noddy Bay were favoured by French naval warships patrolling the fishery (Le Tourneur 1784, Plan 21; Anon 1822: 237, 241). Others, such as Priest's Cove in Cape Rouge Harbour and Northwest Bay in St. Lunaire Bay, were accessible to merchant vessels travelling along the coast, and used as refuges during bad weather, for making repairs or taking on water (Le Tourneur 1766; Le Tourneur c1784, Plan 21; Le Pelley Fonteny et Desire Dit Gosset 2001: 47).

Archaeological evidence for the deep water anchorages is signalled by the occasional chance find of artefacts such as the large wrought iron stocked anchor (Figure 35, B) recently dredged from Hooping Harbour (EdBb-02) (Pope et al. 2007: 9). The rounded shank, squared at the top, measures approximately 2.2m in length and the distance between the bills is about 1.2m; it has an intact ring, an eye for a missing wood or metal stock, arc arms, a rounded crown and large tipped spade flukes. Similar in design and dimensions to a number of fishing anchors recorded from Brittany and archived on the Big Anchor Project website, it likely dates to the early 19$^{th}$-century and provides a glimpse of the submerged archaeological potential of such sites[27]. Similarly, finds of 17$^{th}$-18$^{th}$-century French earthenware and Normandy stoneware ceramics, wine bottle glass, lead net weights and

[27] The Big Anchor Project website lists several comparative anchors: http://www.biganchorproject.com, Anchor ID: 200, 476, 478, 483.

ballast flint, are displayed in the Granchain Exhibit in St. Lunaire, most clearly recovered from underwater contexts. Several cannon along with cannon balls, musket shot have also been recovered by local divers from an unidentified 17th or 18th-century French wreck located near White Dog Point in St. Lunaire Bay (Keir Knudsen, pers. comm.). Likewise, a possible 17th-century jar perforated by a musket shot and recovered by a local fisherman from Crouse Harbour is displayed in the French Shore Historical Society exhibition in Conche.

### 7.3.2 Coastal mooring sites

Far more accessible than the undoubted underwater remains are the archaeological remains of historic mooring sites found along the shorelines between rooms. Mooring sites were used to tie-up ropes and cables securing ships lying at anchor and range from iron rings and stakes set into shoreline bedrock, to natural rock outcrops that served as bollards. At some rooms, they were also used to secure *chaloupes*.

Eighty-three coastal mooring sites, serving 26 anchorages, are recorded from historic sources examined in this study (Appendix 4). Each anchorage required between two and four coastal mooring points – often in addition to multiple anchors. Of coastal mooring sites 27 percent are recorded in more than one historic source, suggesting that ships consistently made use of them over time. As would be expected, coastal mooring sites were overwhelmingly used in anchorages at more exposed locations, particularly where the cove or bay is directly open to the sea to the north, northeast or east. For example, the smaller historic fishing stations of Dégrat on Quirpon Island, Great Brehats, Three Mountains Harbour, Hilliers Harbour and Bell Island are all found on particularly exposed coastlines (Le Tourneur c1784, Plans 18, 23, 26, 35, 39; Pierre 1860b; Cloué 1863a). The harbour entrances of the larger stations of Little Islets Harbour, Fischot, Little and Great St. Julien and La Scie all open directly to the north or east (Le Tourneur c1784, Plans 28, 30, 32, 57;

Pierre 1856). Even anchorages within larger bays, in which swells could still easily occur, such St. Lunaire Bay, Croque Harbour, Conche, Canada Harbour, even Hooping Harbour, Great Harbour Deep and Fleur de Lys, all appear to have required some vessels to be tethered to the shore (Le Tourneur c1784, Plans 21, 33, 38, 40, 45, 47, 50). Most of the mooring sites recorded in Le Tourneur's plans are boldly emphasised, usually depicted as what appear to be rocky outcrops along the shoreline.

Moorings were also required where the ground of the anchorage did not provide the resistance necessary to keep a ship from dragging its anchor. Le Tourneur describes the conditions at Four Harbour in 1764: "Le four, est d'autant plus bon ce que les navires y font mouillére par huit brasses d'eau fond de vase claire, ce qui fait qu'on est obligé de mettre des amarres – à Terre, parceque la tenue n'y est pas bonne." (Le Tourneur 1766). The rough seas that buffeted the Petit Nord were on occasion too strong for the cables that secured ships, particularly if waves struck vessels broadside. Le Tourneur notes how *l'Ance au Jacques* (Jacques Cove, Great Harbour Deep) received its name:

> … il y aussi une petite ance qu'on appelle L'ance au Jacques, parceque le navire Le Jacques s'y est perdu. Je ne peux pas concevoir comment on pouvoitt exposer un havre dans cette qui n'est pas tres profonde, qui est quasi l'ouvert de la baye, ayant son ouverture vers le nord-est, de sorte que quant if fait mauvais tems d'hors la mer vient frapper contre la côte de tribord en entrans dans cette ance, et y occasionne un reimbre qui doit faire casser les cables. Je conviens qu'il est bien commode a un pecheur d'avoir son navire a proximité de son echaffeaux mais encore faut-il avoir son navire en sureté (Le Tourneur 1785a).

This is an instructive note since it highlights the tension between the convenience of having the ship close the fishing room and the necessity of ensuring its safety; which in this instance would be at more sheltered anchorages in either one of the two arms at the bottom of the bay, yet between 4-5km away (Le Tourneur c1784, Plan 47).

The deep narrow inlet of Little St. Julien Harbour (EgAw-09) was an established historic anchorage for the ships of its rooms, as well as for those of the rooms of nearby

Grandois (Coquelin Latiolais 1767; Le Tourneur c1784, Plan 32; Anon. 1822: 252; Pierre 1856; Pope 2005: 43). According to Le Tourneur, "Les navires y sont tres bien ammarés a terre et une ancre devant par les 6 brasses d'eau fond de vase. Ce havre peut contenir 4 navires" (Le Tourneur 1766). Along the rocky foreshore of the harbour are four circular wrought iron mooring rings, fastened by iron pins driven into the bedrock. One ring, located on the eastern shoreline, measures about 25cm in diameter, shows extensive wear and is heavily corroded by salt water (Figure 35, C). A large iron stake is also found along the same shoreline, at the southern end, and is wedged into a fault on a mass of bedrock protruding from the ground; it may have also served as a mooring aid although its size suggests for smaller craft such as *chaloupes* or similar. The rings in particular allowed the maximum number of ships possible to berth in the harbour and to be aligned parallel to the coastline when set with bow anchors with stern lines tied to the shore. This method reduced swing from currents, wind and waves. A similar circular wrought iron mooring ring (EdBb-01, Feature 9; Figure 35, D) is recorded fixed to a massive shoreline boulder at Williamsport in Fourché Harbour (Pope 2010: 5). The mooring rings are likely to have been installed by French fishing crews and although the lack of diagnostic features makes precisely dating them difficult, they are likely to belong to the 18$^{th}$ or 19$^{th}$ century.

Equally difficult to date, yet almost certainly belonging to the room that occupied the southern shore of Quirpon Island at Herbert Point, is an alignment of three heavily corroded large wrought iron pins embedded in the bedrock on a rocky promontory between two beaches (EjAu-49, Area A, Feature 8; Figure 35, F). Each iron pin is about 2cm in diameter, extending about 25cm above the bedrock and arranged about 1.5-2m apart (Tapper and Pope 2014: 23-24). Tethered boats are depicted in c1784 and the room is referred to as the *l'Amirauté* for Quirpon Island in the 1821 survey, which also records the practice of the *chaloupes* being moored near to the room: "Les bâtiments à quatre amarres près de

l'habitation" (Le Tourneur c1784, Plan 18; Anon. 1822: 238). Cloué's hydrographic chart, drawn in 1850, also records the presence of moored boats: "Les petits bâtiments de pêche s'amarrent à quatre le long des roches entre le pointe Sud de l'ile de Kirpon et la Pointe Herbert" (Cloué 1854a). The lack of suitable natural bollards and the spatial coincidence of these features with the positions of mooring points shown on historic charts suggests they served as mooring points for the ropes and cables used to secure the small fishing vessels immediately offshore.

Fishing crews also made use of natural rock outcrops to moor vessels. At Three Mountains Harbour (EhAv-03), historic sources indicate that ships of the two fishing rooms recorded there were anchored at the bottom of the harbour, with lines moored to points on the northern and southern foreshores (Le Tourneur c1784, Plan 26; Anon 1822: 247; Pierre 1860a and b). About 100m west of the site of the fishing room located on the south side of the mouth of the harbour, three prominent natural rock outcrops, each about 1.5m high, are located along 30m of the rocky foreshore (between 596316E 5685160N and 596345E 5685152N). The rock outcrops appear to have been shaped to form crude mooring bollards (Figure 35, E). Each is artificially scarred with deep notches chiselled and gouged to form a neck about which ropes could be wound without slipping loose and free. The notches are worn and abraded and it is noticeable that the ground around the bases of the rock outcrops is also worn and littered with scree (Tapper and Pope 2014: 16-17).

The continual battle fishermen faced with the elements is also evident in the ways they protected and maintained their *bateaux*. According to Le Tourneur, the ships of Pillier anchored in Cape Rouge because Pillier itself is open to strong winds and large seas, particularly from the east, and to such an extent that even the *chaloupes* were usually pulled-up ashore during the fishing season (Le Tourneur 1766). Wooden fenders (*tangons*) also appear to have been routinely used by crews at fishing stages to prevent damage to the

boats when they buffeted against the stage in strong seas. In 1766, Joseph Banks, during his travels in the region noted the significant damage done to a shallop berthed at a stage in Henley Harbour, in southern Labrador observing that "the Shallop had received a great deal of damage by beating in the night against the Stage" (Lysaght 1971: 213). The importance French administrators placed on this aspect of a fishing room is reflected in the 1821 survey which diligently records the need for fenders at each room, noting whether they were strong or large, small or slight or not required at all. Of the 125 rooms for which the presence or absence of fenders is actually recorded, almost three-quarters required them for their boats (Anon. 1822). Over half required strong or very strong fenders and, naturally, these were deployed at the most exposed rooms within a fishing station. That crews had to repair and maintain their boats is evidenced in the discovery of a boat slipway of tabular rocks and logs revealed during excavations at the historic room of *Champ Paya* in Cape Rouge Harbour (Pope 2008: 42-3).

### 7.4 Sustaining the fishery: resource acquisition

Establishing fishing rooms required crews to harvest and collect a number of critical resources. At the beginning of the fishing season, timber was felled in Newfoundland for building the stage, cabins and other apparatus such as flakes; it was also sought for making ship and boat repairs and of course firewood was needed for cooking and warmth. During the season, crews continually fished for bait such as capelin, herring and squid, and the considerable impact of bait practices on seabird colonies has been discussed elsewhere (Pope 2009b). Last but not least, crews required access to fresh water, for drinking and bathing. The ways in which timber and water resources were exploited by fishing crews are the particular focus of discussion in this section.

### 7.4.1 Timber

The Petit Nord straddles the Northern and Middle Boreal forest zones of Newfoundland, ranging from exposed barrens in the very north to thick forest in the south (Damman 1983: 199). Balsam Fir is the dominant forest cover across the Northern Peninsula except at higher elevations on the eastern side of the peninsula where Black Spruce contributes (Meades and Moores 1989: 6-16). Generally, the quality and height of the forests deteriorates towards the coast with increased exposure to winds; climate also affects tree growth and the colder temperatures of the northern half of the Northern Peninsula restricts tree coverage (Damman 1983).

Beyond the metal fixings (nails, spikes, stakes etc.) required for construction of the stage and other buildings, crews brought little construction material to Newfoundland. Most timber was felled from the hinterland of each fishing room, although some captains did occasionally carry the main structural pieces required for stages and cabins in order to save precious fishing time on arrival (Bellet 1901: 70). The carpenters who travelled with the fishing crews differentiated the quality and size of timber based on its intended use; usually distinguishing between three grades: timber suitable for construction, large timbers for ship repairs and smaller tuckamore and brushwood for fuel.

Under the revised terms of the Treaty of Versailles (1783), French crews were entitled to cut all the wood they required from along the coast, without hinderance: “Sa Majesté Britannique donnera des ordres pour que les pêcheurs français ne soient pas gênés dans la coupe de bois nécessaire pour la réparation de leurs échafaudages, cabanes et bâtiments de pêche” (Bellet 1901: 43-44). Nineteenth-century sources, principally the 1821 survey and mid-century hydrographic charts, provide the most consistent evidence for the availability of timber within the 54 harbours of the Petit Nord. These sources record the availability of wood within harbours and what it could be used for, or note if fishing crews were required

to travel elsewhere to obtain it (Appendix 5). The regional analysis of this data, based on the ecoregions of the Petit Nord, identifies pronounced differences in the quantity and quality of wood available to the rooms of each harbour. Generally, it appears that in the first half of the 19th century at least, only just over a third of harbours located north of Conche were self-sufficient in construction quality timber. This was in stark contrast to the fishing stations of the south, where over three quarters had suitable timber within their harbours (Figure 36). The exposed coast between Cape Norman and St. Anthony is an almost treeless tundra, where shallow soils, the wind and cold temperatures limit tree cover to sparse tuckamore with White Spruce and Balsam Fir occurring as krummholz (Meades and Moores 1989: 6-27; Newfoundland and Labrador 2013). Denser stands of larger trees are generally limited to the bottoms of deeper bays. Consequently, many crews of the fishing rooms in this region were forced to seek their wood away from their harbours. In particularly treeless harbours, such as Quirpon, crews had to travel up to 30km or more to Pistolet Bay in search of timber of sufficient quality and size. This was certainly the case by the late 18th century when a formal complaint made in 1784 by the naval officer and hydrographer Liberge de Granchain to the English Governor of Newfoundland, describes the damage done to numerous French rooms between Conche and Quirpon, by English sealers ranging out of White Bay. Requesting reparation, he describes how French crews of Quirpon lost valuable fishing days as a result of having to collect timber to rebuild their rooms following their destruction the previous winter:

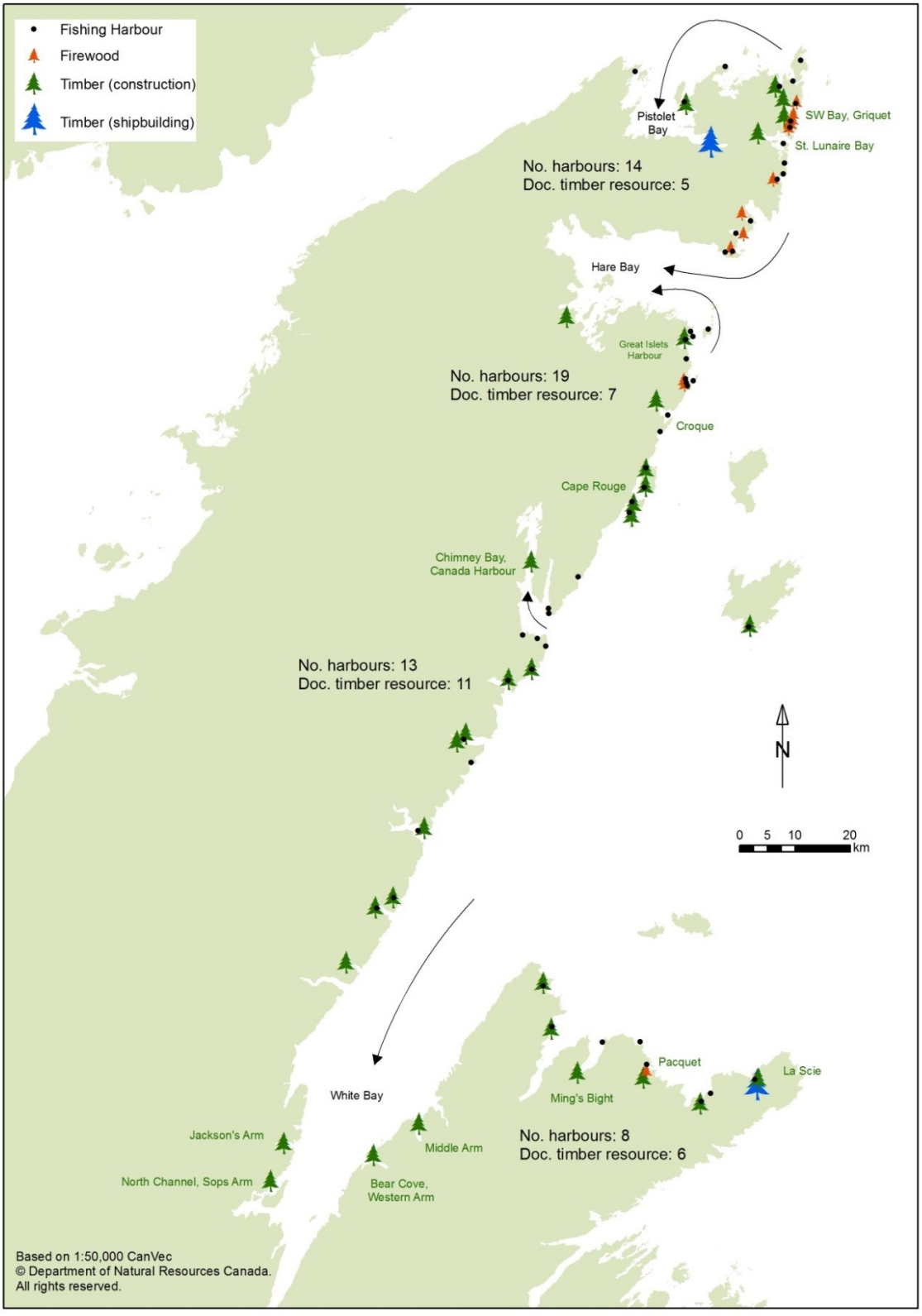


Figure 36. Harbours and bays in which documents indicate timber was found or sought by fishing crews in the first half of the 19th century. The proportion of harbours with documented construction quality timber resources decreases the further north they are located. The arrows indicate major timber areas used by crews.

> Dugués., agent d'une société de Saint-Malo, et les capitaines des navires de cette société, faisant la pêche au Quirpon, trouvèrent, à leur arrivée dans ce havre, les échafauds l'île Jacques-Cartier, celui de la Plate-Forme et celui de l'Ile-Verte coupés au ras de la plate-forme, la cabane de la Pointe-Verte, et deux cabanes de l'ancienne amirauté entièrement démolies, les graves de cette ancienne amirauté et de l'Îlot-au-Marchand hors d'état de servir à cause des foyers qu'on y avait faits et des graisses de loup marin qu'on y avait répandues. Ces dégâts avaient causé à leur société une perte de trois mille quintaux de morue au moins, parce qu'ils avaient été obligés d'employer leurs bateaux, pendant quinze jours, à aller chercher, à la baie du Pistolet, les bois nécessaires pour rétablir ces échafauds, et, pendant ce temps, chaque bateau pouvait pêcher sept ou huit quintaux de morue par jour (de Bouclon 1866: 409).

Crews from Quirpon were still obtaining their construction timber from Pistolet Bay in 1821 and such was the scarcity of wood in Quirpon that they even sought firewood from the same place: “le bois d'établissement et de chauffage se fait dans la baie du Pistolet, ce qui est trés génant, sur tout pour les petits armemens” (Anon 1822: 237, 240). Within Pistolet Bay, it is likely that the forested shores of Milan Arm provided the largest timber available in the bay and which was also easily accessible by ship (Great Britain Hydrographic Office 1878).

Southwest Bay provided ordinary construction timber for the crews of North Bay and Griquet harbours when it was visited by Carpon in 1847:

> … j'allai me promener au fond de la baie du sud-ouest des Griguets, et je fis ce voyage en bateau, avec deux de nos officiers, chargés de faire couper des bois de construction, par une vingtaine d'hommes qu'ils avaient sous les ordres (Carpon 1852: 226).

Historically, these crews also obtained wood from Pistolet Bay, including the largest, longest and straightest timbers required for ship's masts repairs (Anon. 1822: 241, 243). The paucity of good timber in Griquet and White Cape habours is noted by the naval hydrographer Pierre in 1855, who observed that only firewood was available along their shores (Pierre 1859a). Some places, such as Great Brehats, even struggled to provide firewood: ‘Les rivages ne fournissent pas de bois de chauffage. On en trouve en petite

quantité, à quelque distance dans l'interieur. Le bois de construction se tire de la Baie aux Lièvres' (Pierre 1861a). Generally, crews working in the majority of the harbours between Griquet and St. Juliens, a region characterised today by exposed dwarf shrub barrens and areas of unmerchantable forest, found it difficult to obtain good timber locally, their harbours only able to consistently provide wood suitable as fuel (Anon 1822: 245, 246; Meades and Moores 1989: 6-17).

Like Pistolet Bay, Hare Bay (*Baie aux Lièvres*) was another important source of timber for fishing crews – especially those working the harbours found either side of its mouth. Described as "très-boisée" in 1821, crews from the rooms of St. Anthony, Crémaillère, Goose Cove and Three Mountains Harbour to the north, and Great and Little Islets harbours, Grandois, Great and Little St. Julien harbours and probably Fischot too from the south, all cut their timber in Hare Bay (Anon 1822: 247, 248-9, 250, 251, 253). The forested southern shores of Hare Bay are likely to have provided the majority of the timber sought (the northern coast is generally hilly and barren), and the detailed British chart for Ariège Bay, replete with numerous French place-names, suggests that this part of the bay was familiar to crews and likely the focus of their attention (Great Britain Hydrographic Office 1911). The need for wood, especially along those parts of the coast where it was scarce, such as the islands of Fischot, is remembered in local oral history of Anglo-Newfoundlader inhabitants who succeeded the French. According to Paul Bromley, a native of Conche and experienced fisherman and mariner, Four Harbour (known as Harbour Devue locally), was "the place where Fischot people spent the winter, close to good supplies of wood" (Pope et al. 2009: 18).

In harbours located further south, crews appear to have experienced fewer problems obtaining wood. Croque and Conche harbours were deemed largely self-sufficient in 1821 (Anon. 1822: 257, 258). Heavily forested Chimney Bay, in Canada Bay, provided the

timber for all the needs of the rooms of Englee and Canaries harbours and the smaller stations located nearby (Anon. 1822: 261). Deeper in White Bay, extensive Black Spruce forest dominates with more frequent hardwood stands of White Birch and Aspen (Meades and Moores 1988: 6-11). Most stations on the Baie Verte Peninsula, at least in the deeper harbours, were also sufficiently stocked, having good access to Balsam Fir-Black Spruce forests inland (Meades and Moores 1988: 6-13). Ironically, the room located on Bois Island had to obtain some of its timber from Pacquet Harbour nearby (Anon. 1822: 266).

Wood, of all grades, was obviously an important resource when considering the potential of a harbour to support fishing rooms. Le Tourneur notes that one of the advantages of Middle Arm in White Bay as a potential fishing harbour was that, "Il y a du bois d'echaffeaud … pour plusieurs années" (Le Tourneur 1785a). Unfortunately in this instance and despite the presence of capelin bait fish, the shallow water at the entrance of this harbour makes it difficult for all but the smallest fishing vessels to enter. Le Tourneur similarly identified the presence of plenty of wood for building fishing rooms a little further south in Western Arm, North Channel in Sops Arm and Jackson's Arm (Le Tourneur 1785a).

Hare Bay in the north and Jackson's Arm, located deep in White Bay, are of particular interest because both were clearly designated as being the principle sources of timber cut for French fishing stations in an 1878 treaty map between Britain and France (Anon. 1878). Jackson's Arm had already been noted for its plentiful timber when it was visited and surveyed by Le Tourneur almost a century earlier; he even went to the trouble of renaming it, *Plan du havre que M. J. Cook appelle le bras de Jackson et que j'appelle havre à Bois* (Le Tourneur 1785a and g). Like Jackson's Arm, Little Cat Arm appears to have been largely overlooked as a potential fishing harbour, and instead was registered as an important source of wood (Le Tourneur 1785a). Recalling the lack of wood in Cape Rouge Harbour

during his involvement in the fishing campaigns of 1752 and 1753, Le Tourneur seems to hint at the importance of White Bay generally as an area from which to harvest wood for French rooms elsewhere in the Petit Nord (Le Tourneur 1785a).

Over time, the annual harvest of timber severely depleted the forest stands immediately available to many rooms. Wider concerns about the availability and sustainability of wood at fishing rooms emerged in the last quarter of 18th century. During his mission of 1786, a French Naval officer, Terras de Rodeillac, observed the depletion of good wood in many of the harbours he was inspecting, and also noticed the practice of debarking the best trees for roofing buildings. In his memoire, he suggested that fishermen should stop debarking the trees used for stages, presumably to increase the longevity of the timber, and should rather use their ships' sails and moss to roof their buildings. He also suggested that young trees should not be burnt (probably for fuel) but instead allowed to mature in order to replenish the timber available to crews in future years (Terras de Rodeillac 1786; Bellet 1901: 70). The deforestation of harbours by crews over the course of centuries of fishing, has directly contributed to the barren character of many places today; the distinctive clearings cut into the boreal forest are a primary indicator of historic fishing room activity (Pope 2008: 45). The harbours of Grandois and St. Juliens appear to have been denuded of trees since at least the mid-19th century when Pierre observed: "On ne trouve de bois qu'à quelque distance dans l'intèrieur du pays. Les rivages en sont totalement dépourvus. Il y a seulement quelques brousailles sur les collines des Petits Sts. Juliens et des Grandes Oies" (Pierre 1856).

Such was the need for construction quality wood that crews who arrived first in a harbour routinely scavenged it from rooms established in previous seasons – extracting metal fixings from built structures and raiding cabins at the same time. In 1802, Eustache Le Pelley Fonteny challenged this raiding practice in a series of proposals he presented to the

*Département de la Marine et des Colonies*, and which led to some of changes enacted in the *Le Réglement du 15 pluviôse an XI* of 1803 (Le Pelley Fonteny and Desire dit Gosset 2001: 123). The result was that rooms allotted on a three-year term could no longer be raided, on penalty of fines and disqualification from fishing, although timber scattered along the shore appears to have been exempted.

Not only did the search for wood generate conflict between fishing crews, later in the fishery it was also a source of occasional conflict between French fishermen and settled Anglo-Newfoundlanders. The situation must have been serious enough by 1857 that the British and French governments felt it necessary to agree and enforce, in the face of resistance from the nascent Newfoundland legislature, the privileges of French fishermen to cut wood and timber within 616m of the shoreline:

> Des conflits s'étaient élevés entre les régionaux et les Français; pour les prévenir, il avait été stipulé que les Français auraient droit à une réserve, sur le rivage, jusqu'à la distance d'un tiers de mille anglais (616 mètres) à l'intérieur de plus la coupe du bois dont les Français avaient besoin pour l'établissement de leurs places ou sècheries, était soumise à l'autorisation préalable des propriétaires, si elle avait eu lieu sur un terrain privé (Musset 1899:5-6).

Following the French surrender of the Petit Nord in 1904, tree regrowth has slowly encroached on the sites of some former fishing rooms, particularly those in more remote locations. However, the sampling and tree-ring dating of mature Alder and Dogberry trees colonising the upper terrace of the historic fishing room of *Champ Paya* in Cape Rouge Harbour (EfAx-09, Area D), has shown that some historic rooms served as ready-made meadow pastures for the animals of Anglo-Newfoundlander settlers for decades after the French had left (Pope 2010: 3).

### 7.4.2 Fresh water

Most obviously, fishing crews needed fresh water to drink, but it was also used to cook foods, wash clothes and enabled fishermen to bathe occasionally. Water sources varied, but are overwhelmingly small natural streams or rivers fed by the numerous ponds or lakes usually found on higher ground inland from the coast. However, other sources were artificially constructed by fishing crews and include culturally adapted springs, excavated wells and small dammed reservoirs.

Using a combination of field survey, historic and modern maps and modern aerial photographs to identify water courses and bodies, it is obvious that the vast majority of fishing harbours had their own sources (Appendix 6). Only six of 54 fishing stations (11 percent) lacked immediate access to fresh water within their harbours. However, while most harbours had fresh water sources, as many as 90 fishing rooms (45 percent) did not have immediate access to their own water supply; that is, they had to travel by boat away from their rooms to obtain it[28].

As discussed previously, many natural watercourses divided shore space between adjacent rooms precisely because they provided a resource that could be shared between crews (Figure 37, A). Some ponds may have served similar purposes. Historically, the division between the two rooms of *l'Amirauté* and *Mont à Regret* in Little Islets Harbour (EhAw-02) was the southern edge of a small almost rectangular pond located on higher ground to the west (Le Tourneur c1784, Plan 30; Anon. 1822: 251; Pope et al. 2009: 18). Not the obvious shoreline feature usually used for such purposes, it may have been employed because it secured the stream draining southwards for the latter room. Elsewhere, the "Etang d'eau douce" covering much of Granchain Island appears to have been the

[28] This is an estimate based on the water courses identifiable from 1:50,000 topographic mapping, 1:10,000 aerial photographs and historic documents and charts. Fieldwork also allowed me to identify a number of water courses within rooms that are missing from published documents. As such, my estimate is indicative of a general pattern rather than providing absolute numbers. Basically, not all fishing rooms had a water source as part of their infrastructure.

principle source of fresh water for the crews of all the rooms located on the island (Anon. c1832, Plan 47). A similar but dried up pond may have historically served the crews of the large fishing room recorded at Lower Room (Figure 37, F) which occupies an extensive beach terrace in the northeast part of Noddy Bay. Situated towards the western end of the site, a large depressed area of damp ground is fed by a small trickle of a stream (EjAu-11, Area B, Features 13 and 14). It is likely that these are the sites of a pond and stream marked on Cloué's chart of 1850 and which served as a water source for the fishermen of the room (Cloué 1854a; Tapper and Pope 2014: 27).

Many watercourses are located at the bottom of the bays, coves and harbours they enter – often some way from the rooms which were preferentially sited closer to the open coast (Figure 37, B). Some rivers, such as that entering Croque Le Fond, may also have been used by fishermen and sailors to bathe (Thoulet 2005: 84). While most journeys taken to obtain water from these places involved short distances across the harbour, a few trips were considerably longer and even required crews to venture out of their station. For the rooms of the Fischot Islands, Watering Cove, with a stream at its bottom, was used by many of the other rooms in the harbour, especially during drier periods: "Peu d'eau douce; il faut en faire à l'Anse a l'Eau, dans la sécheresse" (Anon 1822: 249). It was common for the crews of rooms without water to seek it from their neighbours. Le Tourneur suggests such an arrangement for *havre du Marechal* (Hampden Bay), in the bottom of White Bay, during his 1785 survey. Noting the lack of fresh water in three of the four sites he identifies as potential places for French rooms, he suggests that those without it could acquire it (were they to be established) from the plentiful streams issuing into Gold Cove (Le Tourneur 1785a; Le Tourneur 1785i). Curiously, he does not mention the larger Hampden River to the south – perhaps because it enters the bay through intertidal flats inaccessible to *chaloupes*.

(A). A stream divides the historic rooms of Croquelin and Goguelin, Northeast Crouse. (EfAx-11, Areas G and H) (Photo: Peter Pope, Ref: P2013.07.19 039).

(B). A large stream at the very bottom of Le Fond, Croque provided fresh water and a place for fishermen to bathe (Photo: Peter Pope, Ref: P2013.07.18 100).

(C). A well excavated into the coastal slope at Observation Point, Crémaillère Harbour (EiAv-07, Area A, Feature 9) (Photo: Peter Pope, Ref: P2013.07.16 055).

(D). Fardy's Cove, Canada Harbour (EeBa-04, Area J, Feature 13). According to a local resident, this is one of two French wells (Photo: Peter Pope, Ref: 80724C.150).

(E). Possible artificial reservoir dammed ino the barrens above Quirpon Island Admiralty (EjAu-49, Area A, Feature 14) (Photo: Peter Pope, Ref: P2013.07.13 152).

(F). Author in the centre of the pond depression, Lower Room, Noddy Bay (EjAu-11, Area B, Feature 13) (Photo: Peter Pope, Ref: P2013.07.11 037).

Figure 37. Examples of fresh water sources used, excavated or adapted by fishing crews.

A number of historic charts indicate that *chaloupes* were used to collect water and that the ease with which they could access the mouths of streams and rivers was important. Within Griquet and White Cape Harbours fresh water was rare and difficult to obtain, forcing the crews to travel to the stronger flowing streams draining into Northwest and Southwest Bays, up to 5km away. Even then, actually collecting the water appears to have been inconvenient because *chaloupes* were unable to enter the mouths of the rivers to reach non-brackish water upstream (Pierre 1859a). Fresh water was also a scarce commodity in St. Lunaire Harbour, where crews had to rely on rains to replenish streams and ponds, yet even then boats were often unable to reach them at low water (Pierre 1859b). Similarly, in St. Anthony, especially at the bottom of the harbour, freshwater was awkward to collect: "L'eau douce est incommode à faire. Les embarcations ne peuvent approcher de l'embouchure des ruisseaux" (Pierre 1860d).

The presence of a fresh water source in a harbour or close to a room did not necessarily mean that crews used it. According to the hydrographer Pierre, the larger harbours of Great and Little St. Julien and St. Julien Island were considered dry places in 1854 - although it becomes apparent that this is not actually the case (Pierre 1856). There is a difference between the presence of a water source and what participant-observers of the fishery considered a viable water source. In many harbours some streams were so small that they were insufficient to cater for the quantities of water required by the crews of their rooms; in this instance larger streams and rivers with sufficient quantities were preferred. Although a small stream cascades into the bottom of Little St. Julien harbour, and another fed by a small pond enters Great St. Julien harbour, both these stations along with St. Julien Island all historically retrieved their fresh water from Grandois Cove, which was the only water course locally that could apparently provide the quantities needed (Pierre 1856). At Fleur de Lys Harbour, although fresh water can be sourced from the mouth of the Fleur de

Lys River, French crews considered it easier to collect from the cascade at Woody Cove near Pigeon Island, over 3km along the coast to the south-east (Richard 1829; Cloué 1862). The shallow nature of the Fleur de Lys river entering the harbour probably dissuaded crews from consistently exploiting it

The lack of a major drainage in some isolated coves and small offshore islands and islets meant that rooms established in these places will have sought fresh water elsewhere. Cape Onion Cove and Green Cove supported isolated rooms in barren and marginal locations, while the crews of the small fishing room on Bois Island, north of Pacquet Harbour, probably obtained their water from nearby coves such as Hardy Harbour, about 1km to the southwest (Anon. 1822: 266). Although the historic water source supplying the four rooms historically located on barren Nobles Island (EjAu-18) in Quirpon Harbour, is unknown from the historic records, the stream entering the bottom of Lancey Ball Bay, 1km to the southwest, is likely to have provided the closest source (Bell et al. 2001: 19-20).

In rooms where natural sources were unavailable, crews tapped natural springs or excavated wells. As previously mentioned, a culturally adapted spring (Figure 28, Image E) was available for crews of the two rooms located on the tip of the Crémaillère peninsula (Anon. 1822: 246). In the same harbour, an excavated well is located in the western part of the historic room known as *le Banc à l'Ours*, adjacent to Observation Point (Anon 1822: 247; Tapper and Pope 2014: 13). The well (EiAv-07, Area A, Feature 9) measures about 3 by 5m and has been excavated into the coastal slope, forming a now boggy and heavily vegetated sump (Figure 37, C). According to local oral history, two wells (EeBa-04, Area J, Features 13 and 22) located in Fardy's (or Fahey's) Cove, adjacent to Canaries Harbour, were dug by the French crews occupying the cove (Pope et al. 2009: 10). One of the wells (Feature 13) is constructed from rectangular stone laid in courses to revet the sides (Figure 37, D).

The steep slopes and escarpments at many rooms provided opportunities to dam water draining off higher ground. At the edge of the rock escarpment leading onto the barrens above Quirpon Island Admiralty is a possible artificial pond (EjAu-49, Area A, Feature 14). Measuring approximately 10m in diameter it is cut into a stream or spring and dammed to provide a regulated flow to the room below (Figure 37, E). This is the only fresh water source observed at this large and important site and likely served as a reservoir for the crews using the room.

## Chapter 8: Conclusion

The regional scale of this research places considerable emphasis on historic sources. The use of maps and memoires produced by administrators and hydrographers, such as François-Thomas Le Tourneur, places significant emphasis on a small fraction of the available data and on particular historical perspectives, which are then used to comment on broader workings of the fishery as a whole. Furthermore, the reliance on historic cartography means that much of the analysis undertaken as part of this research is bound to the ideological representations enmeshed with the production of the maps and plans used, which were certainly an extension of the economic, political and military concerns of the French state (Johnson 2007: 16). This is perhaps indicated by the order in which the harbours of the Petit Nord were surveyed, suggesting that the evolution of hydrographic survey was compelled by political tensions between France and Britain, as much as it was by the needs of the fishery itself.

However, the landscape approach presented here necessarily hinges on the use of multiple sources, no least due to the partial nature of the archaeological record for fishing rooms across the Petit Nord. General trends have been teased from the available data – the archaeological confirmation of historic French activity at over half of the 198 rooms forming the sample of this research suggests that historic sources are reliable indicators of historic French land use. Without the benefit of large scale excavation, dating the majority of French fishing rooms is inexact. While the extensive excavations undertaken at *Champ Paya* (EfAx-09) have provided a detailed and secure chronology for the occupation of that site over a period of 350 years or more, the majority of the known harbours and rooms across the Petit Nord have been dated only loosely on the basis of artefacts retrieved during surface survey of the intertidal zone and the selective test pitting of cultural features

observable as slight earthworks or patches of invasive species of vegetation indicating areas of earlier anthropogenic disturbance. The highly disturbed nature of the foreshore at many sites means that many finds are eroded, and transported away from their original place of deposition – ensuring that material from multi-period occupations is mixed and dispersed. In this sense the archaeological and historic landscapes discussed in this thesis rely considerably on the detailed documentary records available for the 18th and 19th centuries. Consequently, the patterns and trends discussed pertain mostly to the latter part of the French inshore cod fishery.

A main aim of this research has been to investigate how the spatial and chronological distribution of fishing stations and their rooms reflected the evolution of French exploitation of the cod fishery. The total suite of harbours and rooms suitable for fishing appears to have been established early in the history of the fishery. In this sense, the conservative nature of site location, at a few persistent places, means that the rationale for establishing rooms discerned largely from 18$^{th}$ and 19$^{th}$-century sources are probably also applicable to earlier periods.

If the enumerations for the number of boats recorded and estimated at each harbour, across the eight historic surveys analysed, reflected real trends, then there also appears to have been a general intensification of fishing effort over time. Although this generally manifested as a more intense exploitation of existing harbours through the expansion of existing rooms, new rooms were also occasionally established during the 18$^{th}$ and 19$^{th}$ centuries. As the surveys and enumerations became more regular and standardised from the 18$^{th}$ century onwards so do the recorded names and numbers given to individual fishing rooms. Of the 198 rooms analysed in this research, 146 (74 percent) appear to have been recorded by the same name and/or number within their harbour in multiple historic documents dating from the mid-18$^{th}$ century onwards and often even from the 17$^{th}$ century.

When change did occur it was usually a single increment to the place number of the room rather than its given name – suggesting the intensification of effort as more rooms were established or existing rooms were divided into smaller units. For example, to the rooms recorded in Cape Rouge Harbour in 1765, Le Tourneur's survey of c1784 adds an extra room (*Banc à la Truite*), squeezed into the marginal and steep ground along the western side of Truite Point (Anon. 1765a; 1765b; Le Tourneur c1784, Plans 15-57; Anon. 1822: 255-257; Cloué 1864a and b). This suggests that most harbours were largely saturated by the late 18th century in terms of the rooms they could accommodate and that, as a consequence, newer rooms were located in places traditionally considered less favourable. Further research fully matching detailed list of rooms in 1680 with rooms listed in later surveys such as that of 1821, would allow for a fuller discussion of the distribution of fishing rooms more than a century earlier. Similarly, historic community plans for Newfoundland, dating to the early 20th century and often containing observations of the locations of old French fishing rooms, would enable future researchers to examine the very late history of the French presence on the Petit Nord[29].

The surveys of Le Tourneur provide invaluable documentary evidence for the criteria which French fishermen applied, in their assessment of good locations for fishing rooms (eg. 1766, 1785a). The irony is that many of the potential rooms he identified in White Bay appear to have never been used by French crews – at least they fail to appear in later official historic censuses and surveys. Le Tourneur's memoires do make clear what was considered not conducive to the setting up of a French fishing room. Excessive distance to cod, steep terrain, under exposure to wind and sun, limited coastal access and anchorage and no doubt proximity to English settlers perhaps made the harbours of White Bay generally less favoured locations for fishing crews – despite the determined effort of the

[29] PANL, RG-58.1 collection (http://www.therooms.ca/ic_sites/fisheries/mgrg_main.asp?frame=off).

French government to bring this region firmly and securely into the French sphere of influence and control. When the harbours of White Bay were exploited, Le Tourneur implies that they were used by ships coming late to the fishery, the implication being that it was perhaps one of the least preferred regions occupied by crews in the Petit Nord (Le Tourneur 1785a).

The natural physical environment largely determined the way in which the fishery was distributed and organised (Pope 2008: 49). The pattern of exploitation was dictated by the availability and distribution of cod itself, but was also constrained by limitations imposed by natural topography and the practical logistics faced by fishing crews to prosecute an industrial scale fishery. The distribution of harbours across the northern half of the Northern Peninsula between Cape Norman and Conche Harbour is fairly even, mainly broken by the deep shallow embayments of Pistolet Bay, Sacred Bay and Hare Bay, as well as short stretches of steep coastline, all of which are generally unfavoured locations for fishing rooms. Compared to other parts of the Petit Nord however, the availability and accessibility of numerous places to set up fishing rooms offered by the indented relatively low-lying coastline of coves, islands and archipelagos of this region is considerable. The same opportunities are markedly less numerous on the pelagic coastlines of the southern half of the Northern Peninsula, and to a lesser extent the Baie Verte peninsula, where deeply indented harbours in the more mountainous topography restricts the available space to set up. Inshore bathymetry is also likely to have played a role, not only dictating the places crews could access by ship but also effectively determining the catchment area, restricted by depths hand-lining crews could reach, for cod.

The general weighting of fishing harbours, towards the north of the Petit Nord, not only follows topographical necessity, but may also reflect a recognition by fishermen in the past, of where cod stocks were to be predominantly found. Modern fish harvester's

ecological knowledge has been used to track the summer migration of the Gulf of St. Lawrence cod stock northwards along the west coast of the Great Northern Peninsula, through the Strait of Belle Isle and south along the Atlantic coast (Murray et al. 2008). Similarly, the general movement of the Newfoundland cod stock brought it inshore to the north-eastern coast of the island during summer feeding, before it drove northwards along the coast in late summer to return to overwintering grounds offshore (Fahay et al. 1999:1). If these modern behaviours are indicative of historic cod behaviour, the concentration of harbours in the northern half of the Great Northern Peninsula would make obvious sense, since these locations could access plentiful cod late into the season – perhaps offering a competitive and economic advantage over rooms located further south. In this sense, Union Cove and Little Harbour Deep may mark the southern limit, at least on the western coast of White Bay, of historic French fishing activities on that part of the coast – or at least where fish were available or could be easily taken. Further research might investigate fish harvester's ecological knowledge as a way to look at the fishing grounds probably exploited by early French fishermen using hand-line techniques (Head 1976: 21; Wells 2009).

The spatial analysis of the distribution of fishing rooms suggests that proximity to cod grounds was the primary driver affecting site choice even within harbours. Within fishing stations the distribution of fishing rooms shows a marked preference for locations close to the open sea, within 2km or so. Consequently, most fishing rooms cluster about the entrances of the bays and coves in which they are found. This pattern reflects two concerns. First, crews were tied to their local cod grounds and the daily journeys made to and from these inshore grounds placed a premium on the time and effort required by a crew of three to sail and/or row a *chaloupe* to reach them. The industrial scale of the fishery, constrained by the distances travelled to reach Newfoundland, the restricted length of the fishing season and the race to secure profitable returns in Europe ensured fishing, processing and curing

were relentless activities undertaken to maximise production. Crews could ill afford to expend valuable time and energy travelling that could otherwise be spent fishing. Second, crews needed water depths within harbours that would allow them to land cod-laden *chaloupes* at the stage at most (if not all) states of the tide. Obviously, the shallower bottoms of bays were also avoided for this reason. Although stages could be extended into the water, this required crews to expend greater time and resources at the beginning of the season acquiring timber and building the structure. No doubt moving the fish along the pier to reach the processing line within the stage proper was an arduous task during the season. That the majority of historic stage areas appear to have been deliberately and persistently located in places that provided solid foundations, shelter from large seas and access to deepest water available at the room, suggests that the parameters of site location for stage areas observed for the mid-18$^{th}$ century onwards reflect an earlier template for favourable stage locations.

The amount of drying space available at a room largely dictated the number of boats it could accommodate. In these terms, the availability of drying space appears to have been the principal terrestrial requisite affecting site choice by fishing crews. Rooms with extensive drying space that could also be expanded were highly prized. Flat terrain was preferred with open aspects that ensured fish could be consistently and evenly exposed to sun and wind. The location of some of the more extensive flat areas found in the bottom of harbours, (eg. Goose Cove, Fischot, Southwest Croque, Southwest Crouse and La Scie), or even in otherwise exposed locations on outer coasts or bays (eg. Ron Galet's Cove and Lower Room in Noddy Bay) demonstrates that the preference for this terrain outweighed the slightly further distances or difficult conditions crews often had to travel and experience to catch, land or even cure the cod.

Crews were prepared to invest considerable time and energy preparing drying areas, often going to considerable lengths to landscape their fishing rooms in order to increase productivity. This was often achieved by extending drying areas onto higher terraces where reasonably level ground was cleared of tree cover. Although most rooms appear to have employed a combination of drying methods to maximise the areas they could use, *galets* were overwhelmingly the predominant method of drying fish in the Petit Nord, followed by the widespread use of fir boughs as *rances* and less frequent use of flakes. The use of *galets* clearly was clearly the principal method employed in northern rooms along the more low-lying, barren and exposed coastlines of the Northern Peninsula. This practice may reflect a traditional Breton familiarity and preference for using *galets* allied to the sheer abundance of flat or level cobbles beaches on which to work. It may also reflect the relative lack of suitable wood for constructing flakes – where most good quality timber was preserved for constructing the buildings of the room or and the lesser quality used as firewood. Conversely, in the more southerly and mountainous parts of the Petit Nord, in those rooms established in sheltered and wooded harbours, the use of *rances* and flakes appears to have been more prevalent. In these deeply incised bays and inlets, shore space is far more limited, often being rocky, undulating and steep, and cobble beaches do not appear to be quite so frequent or available for harvesting. Nevertheless, fishing crews exploited whatever ground they could, within limits. The rooms located on steeper ground tended to be the more marginal places, mostly smaller operations where the restricted and difficult working conditions were offset by the prospect of good fishing.

The competition for drying areas meant that crews needed to find ways in which to negotiate the allocation and division of shore space. The saturation of harbours by the late 18$^{th}$ century might explain the attention given to dividing shore space by colonial administrators. The identification of a range of physical coastal features such as prominent

rocks, escarpments and streams, used to historically and persistently mark the boundaries of rooms, demonstrates a keen understanding of local topography by fishermen in the past. These features were culturally transformed into places of inclusion (they bounded rooms), exclusion (they separated rooms), and negotiation (they were often places of shared resources such as streams). Further research might establish whether the use of topography in this fashion accompanied the intensification of fishing effort or was already a common practice in earlier centuries. The common use of watercourses to serve as administrative boundaries suggests such divisions may have a long history and that there were important rules and regulations dictating the access to and management of freshwater for crews within harbours. The few examples discussed in this thesis suggest that crews actively managed their freshwater sources. In this vein, the cultural adaption of natural springs, wells and watercourses by fishing crews offers a further avenue of investigation.

The second aim of this research was to investigate the nature of landmarks and landscapes that extend from fishing rooms. The internal landscapes of historic fishing rooms are constrained ones. Physically, they occupied little more than a narrow strip of land and sea along the coast, perhaps extending no more than a few hundred metres inland and a few kilometres offshore. However, the application of the Historic Landscape Analysis approach demonstrates that fishing rooms, as landmarks, were the hubs of a wider and more diffuse maritime cultural landscape, one that integrated physical and cognitive elements associated with landmarks of resource acquisition and navigation. The Historic Landscape Analysis approach also suggests that the types of landmarks identified and the patterns they form occur as repeating units across the Petit Nord. The identification of these repeating trends does not drown the individual biographies of each place but suggests a more general landscape narrative can be made for the fishery as a coherent cultural unit – equating to the "regional scale 4" described by Pope (Pope 2014b: 11-12).

In many ways these external landmarks were not so much separate entities as extensions of the landscape of the fishing room. The process of fishing is partially reflected in the placement and observance of navigation landmarks. The routes habitually used by fishermen to sail their ships to and from harbours, and their boats back and forth to fishing grounds grew out of an intimate knowledge of the local topography and hydrography of the coastline, acquired and expressed by the human act of seafaring. This research has drawn attention to the important role of natural landmarks and cultural daymarks in providing the framework for navigation throughout the Petit Nord. The confirmation of the prominent daymark cairn at Morne Fortan (EjAu-36) on Quirpon Island provides the most tangible evidence yet for the presence of man-made landmarks pertaining to this aspect of the fishery (Tapper and Pope 2014: 21). It also provides a useful typological and morphological exemplar for similar features found elsewhere – such as the two cairns (EjAw-02, EjAw-03) identified on the prominent ridge of Burnt Island (Tapper and Pope 2014: 30). As a cultural monument it offers a useful contrast to the numerous natural landmarks known to have been commonly referenced in historic maritime navigation. The Historic Landscape Analysis has demonstrated the way in which both natural and cultural landmarks combine to create a web of navigation routes (Figure 33). However, the few examples discussed here mean that further archaeological investigation of daymarks, especially the historic sites of flagstaffs and stages, would provide more concrete evidence for their navigational use and chronology.

The nature of anchorages, sheltered locations and good holding ground suggests they were probably reasonably permanent landmarks in the history of the fishery. Crews preferred to be able to moor their ships close to the rooms they worked, or least in the same harbour in which the room was located. However, given that a quarter of all harbours also accommodated the ships of neighbouring rooms, at least in the 18$^{th}$ and 19$^{th}$ centuries, it was

clearly not possible for many crews. It is unclear whether the practice of shared anchorages at this time reflected longstanding historic practices or instead was a by-product of the general increase in the size of vessels compared to their earlier counterparts. If the increase in vessel size was a contributory factor in the use of shared anchorages it must have introduced a further complicating level of negotiation between crews whose ships were berthed in close proximity. Further research might reveal if the use of mooring aids accompanied the general increase in vessel size. While some places were undoubtedly always hazardous for vessels at anchor, the application of mooring lines would serve to keep larger vessels, in increasingly congested anchorages, from drifting and worse. No doubt, the use of mooring aids also reflects the intensification of fishing activity during the later period of the industry, as crews exploited more marginal and exposed rooms.

Through the identification of various types of coastal mooring features, from iron pins and rings to the use of natural rock outcrops, the distribution and persistent nature of historic anchorages identified in this research, suggests that the archaeological potential of the inter-tidal and inshore marine areas where the ships and boats serving the stations, navigated, anchored and sheltered is considerable. These coves, inlets and harbours have been shown elsewhere to contain a wealth of archaeological remains associated with onshore operations, including ballast piles, discarded worked timber, middens and ceramic tile deposits (Logan and Tuck 1990; Fitzhugh et al. 2011). The potential for preserved archaeology may be signalled through the modelling of the interplay between seabed sediment types and marine transport regimes in low-energy environments, qualified against areas of known archaeology such as intertidal fishing stages, wreck sites and anchorages (McNinch et al. 2006; Merritt et al. 2007; Merritt 2008; Keith and Evans 2011; Merritt 2011)[30]. While the underwater archaeological potential of historic harbours such as St. Anthony, settled and

[30] Low energy environments are characterised by small-grain sized seabed sediments, located in sheltered topographies such as bays, coves and inlets.

developed after the French inshore fishery ended, is likely to be compromised by dredging and similar port activities, many historic harbours of the Petit Nord remain relatively undisturbed by modern development (JWEL 2000: 12-13).

Fishing crews had a profound impact on the natural environment of the Petit Nord, not least in terms of the exploitation of cod stocks which may have been suffering significant impacts as early as the 17th century, but also to other resources including seabird populations (Pope 2009b; Betts et al. 2014). This research suggests that fishing crews also had a significant impact on other resources too. Behind the wooden construction of the fishing room lay a complex system of timber acquisition and management. The considerable lengths to which fishing crews went in their search for construction quality timber suggests that tree coverage at some fishing harbours was already denuded by the 19th century. The scarcity of timber forced some crews to exploit forested areas well away from the immediate orbit of the fishing harbours themselves. Further research into the timber exploitation of parts of Pistolet Bay, Hare Bay and Jackson's Arm might demonstrate the impact this practice had on the forested areas historically exploited - perhaps observable as secondary or even tertiary regrowth of timber stands. Such research might demonstrate the wider impact of the fishery in the generation of semi-natural habitats beyond the meadows and gardens found at the sites of many historic rooms.

If a harbour possessed certain topographic characteristics, with the requisite environmental resources, it was heavily exploited and recognised as a good place to fish. An excellent example of this is Cape Rouge Harbour. While providing good and secure anchorage for the ships, it was also self-sufficient in cod, bait, wood and freshwater with the shore space for many large rooms. It appears to have been sufficient in resources that it could even support neighbouring fishing rooms:

> Cap Rouge est un havre magnifique pour les bâtimens et meme pour les escadres nombreuses. Très-bien approvisionné en appâts de tout genre et de

> toute saison; et quand ces divers appâts ne sont pas dans ce havre, on en trouve dans celui de la Conche qui en est toujours amplement fourni. Excellent havre de pêche tant pour les seines à morue que pour les resources de pêche aux îles Groais et Belle-île, quand les côtés voisines manquent de morue. Le bois se fait dans le havre (Anon. 1822: 256-7).

In many ways the conservative nature of the processes and methods employed by the historic French sedentary cod fishery in the Petit Nord, reflects a history of consistent "structures in mentality, technologies and landscape" (Rönnby 2007: 67). The traditional techniques of hand-line cod fishing and the persistent physical location and arrangement of fishing rooms and the structures they contained – such as the position of the stage, the distribution of drying areas – along with the network of navigation landmarks and daymarks, anchorages and sources of water and timber, all suggest a certain degree of environmental determinism but one tempered by cultural traditions and the choices of fishing crews.

## Bibliography

Abbreviations:

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| BnF | Bibliothèque national de France |
| CNS | Memorial University, Centre for Newfoundland Studies |
| France, AC | France, Archives des Colonies |
| LAC | Libraries and Archives Canada |
| PAO | Provincial Archaeology Office, Newfoundland and Labrador |
| PANL | Provincial Archives of Newfoundland and Labrador |


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Plan 7. *Fleur de Lys: Place No. 1 Pointe sur Tribord en entrance; Hâvre de Fourché, Place No. 2 Bras du N.E.*
Plan 8. *Hâvre de Fourché: Place No. 1 Baie du N.O.; Hâvre de Sans Fond: Place No. 1, Place No. 3.*
Plan 11. *Hâvre de Boutitou: Place No. 1, Place No. 2.*
Plan 12. *Hâvre de la Conche: Place No. 8 Seconde Martinique, Place No. 9 Première Martinique.*
Plan 13. *Hâvre de la Conche: Place No. 6, Contigue dans le Fond, Place No. 7, Le Nord Est.*
Plan 14. *Hâvre de la Conche: Place No. 1 Le Grand Sud-Ouest, Place No. 2 Petit Sud-Ouest, Place No. 3 La Crique.*
Plan 15. *Hâvre de la Conche: Place No. 4 Pointe aux Ancres, Place No. 5 La Flague.*
Plan 16. *Hâvre de Cap Rouge: Place No. 7 Le Fond, Place No. 10 Le Champ Paga.*
Plan 17. *Hâvre de Cap Rouge: Place No.3 Le Petit Dégrat 1ere, Place No. 4 Le Goguelin 1ere serie.*
Plan 18. *Hâvre de Cap Rouge: Place No. 6 L'ancienne amirauté, Place No. 8 Bis et Grand Désespoir.*
Plan 19. *Hâvre de Cap Rouge: Place No. 9 bis le nouveau Désespoir, Place No. 9 le Petit Désespoir.*
Plan 20. *Hâvre de Cap Rouge: Place No. 1 Le banc à la Truit, Place No. 2 Le Grand Dégrat.*
Plan 21. *Hâvre du Croc: Place No. 3 Le Petit Maître.*
Plan 22. *Hâvre du Croc: Place No. 1 Les Grouts, Place No. 4 La Plaine.*
Plan 23. *Ile du Saint Julien: Place No. 1 Le S.O. babord dans l'anse, Place No. 2 Tribord dans l'anse.*
Plan 24. *Hâvre du Grand St Julien: Place No.3 L'Amirauté; Hâvre du Petit St Julien: Place No. 2 Contigue dans le Fond.*
Plan 25. *Ile de Oies: Place No. 1 Le S.O.; Hâvre du Grand St Julien:Place No.1 Pointe a l'aurore.*
Plan 26. *Hâvre de Fichot: Place No. 6 Îlot de Serpillère.*
Plan 27. *Hâvre des Iles Fichot: Place No. 4 Petit S.O., Place No. 5 Le N.E.*
Plan 28. *Hâvre de Fichot: Place No. 2 La Pauvrette, Place No. 3 Le Grand Sud-Ouest.*
Plan 29. *Hâvre de Fichot: Place No. 1, L'Anse à L'Eau; Hâvre des Petites Ilettes: Place No. 4, L'Ile Madame.*
Plan 30. *Hâvre des Petites Ilettes: Place No. 2 Le Mont à Regret, Place No. 3 Le Fond.*
Plan 31. *Hâvre du Four: Place No. 1 L'amirauté, Place No. 2 Le Fond.*
Plan 32. *Hâvre des Petites Oies: Place No. 2.*
Plan 33. *Hâvre des Petites Oies: Place No. 6 La Cigale, Place No. 7 Première babord.*
Plan 34. *Hâvre des Petites Oies: Place No. 4 Première du Fond, Place No. 5.*
Plan 35. *Hâvre des Petites Oies: Place No. 1 Le Loup Marin, Place No. 3 La Plaine.*
Plan 36. *Hâvre des Trois Montagnes: Place No. 2, Place No. 3.*

Plan 37. *L'Anse a La Soupe: une seule Place au sud du hâvre de la Crémaillère ; Hâvre des Trois Montagnes: Place No. 1 Sur tribord avant d'entrer dans le hâvre - L'Anse à La Vierge.*
Plan 38. *Hâvre de la Crémaillère: Place No. 1 Pointe aux Ancres, Place No. 2 L'Amirauté.*
Plan 39. *Hâvre de la Crémaillère: Place No. 3 La Grands Galets, Place No.4 La Grande Rochelle.*
Plan 40. *Hâvre de la Crémaillère: Place No. 5 La Petite Rochelle, Place No. 6 Banc à l'Ours.*
Plan 41. *Hâvre de St. Antoine: Place No. 2 L'Amirauté, Place No. 3 Petit Jérémie.*
Plan 42. *Hâvre de St. Antoine: Place No. 4 Grand Jérémie, Place No. 5 Pointe à la Marguerite*
Place 43. *Hâvre de St. Antoine: Place No. 6 La Côte de L'Ouest, Place No. 7 La Pointe aux Renards.*
Plan 44. *Hâvre à Grands Bréhats: Place No. 3 Nouvelle dans le Fond; Hâvre de St. Antoine: Place No. 1 Dos de Cheval.*
Plan 45. *Hâvre à Grands Bréhats: Place No. 1, L'amirauté, Place No. 2 Contigue dans le Fond.*
Plan 46. *Hâvre des Petits Bréhats: Une Seule Place; Anse Verte: Une Seule Place.*
Plan 47. *Baie de St. Lunaire: Place No. 3, Place No. 4.*
Plan 48. *Baie de St. Lunaire: Place No. 5, Place No. 6.*
Plan 49. *Baie de St. Lunaire: Place No. 1, Première de tribord en entrans, Place No. 2 Sur une ile tribord en entrans.*
Plan 50. *Hâvre des Griguets et du Cap Blanc: Place No. 6 qui Etait Le No. 3 du Cap Blanc 3$^{e}$ série, Place de 3$^{e}$ Série Place No. 7 autrefois le No. 2 du Cap Blanc.*
Plan 51. *Hâvre des Griguets et du Cap Blanc: Place No. 1 Pointe aux Ancres 1$^{ère}$ Série, Place No. 5 qui Etait le No. 4 du Cap Blanc, 3$^{e}$ Série.*
Plan 52. *Hâvre des Griguets et du Cap Blanc: Place No. 12 L'ile de l'amirauté, Place No. 11 Quatre Oreilles.*
Plan 53. *Hâvre des Griguets et du Cap Blanc: Place No. 8 autrefois No. 1 du Cap Blanc 2$^{e}$ Série, Place No. 9 Pointe à L'Emeraude 1$^{ère}$ Série.*
Plan 54. *Hâvre des Griguets: Place nouvelle No. 2; Hâvre des Griguets et du Cap Blanc: Place No. 3 Îlot du Cap Blanc.*
Plan 55. *Hâvre des Griguets et du Cap Blanc: Ile Pichard Place No. 4, Pointe à L'Auguste Place No. 10.*
Plan 56. *Baie du Nord: Place No. 2 Première Série, Place No. 3 Troisième Série.*
Plan 57. *Baie du Nord: Place No. 1, 3$^{e}$ Série La Pointe à L'anglais ; Hâvre de Kirpon: Place No. 15, Pointe Noble 2$^{e}$ Série.*
Plan 58. *Kirpont: Place No. 8 La Cote de l'Ouest Place de 2 Série; Kirpon: Place No. 10 L'amirauté de Jacques Cartier Place de 1$^{ère}$ Série.*
Plan 59. *Kirpon: Place No. 14 Pointe Verte Place de 1$^{ère}$ Série, Place No. 12 Le Grand Seaux Place de 2$^{e}$ Série.*
Plan 60. *Kirpon: Place No. 4 L'Îlot aux Marchands et Grand Terre Place de 1$^{ère}$ Série, Place No. 5 Les Ilots Place de 1$^{ère}$ Série.*
Plan 61. *Kirpon: Place No. 2 L'amirauté Place de 1$^{ère}$ Série, Place No. 3 Point à l'Alun Place de 2$^{e}$ Série.*
Plan 62. *Kirpon: Place No. 6 Place de 3$^{e}$ Série L'Anse aux Pigeons, Place No. 7 Place de 3$^{e}$ Série apres l'anse aux Pigeons.*
Plan 63. *Kirpon: Place No. 1 Grands Galets, Place No. 11 Coupe-Soulier sur L'ile de Jacques Cartier.*
Plan 64. *Kirpon: Place No., Ile du Dégrât, Place No., Ile du Dégrât.*
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Baie du nord, No. 19.
Griguets et Cap blanc, No. 20.
Baie St Lunaire, No. 21.
Petits Bréhats, No. 22.
Grands Bréhats, No. 23.
St Antoine, No. 24.
La Crémaillère, No. 25.
Trois montagnes, No. 26.
Petites oyes, No. 27.
Fichot, No. 28.
Havre du four, No. 29.
Petites islettes, No. 30.
Grandes islettes, No. 31.
Grands et Petits St Juliens, No. 32.
Croc, No. 33.
Millions, No. 34.
Isle de belle-Isle de Terre-Neuve, No. 35.
Pillier, No. 36.
Cap rouge, No. 37.
Conche, No. 38.
Boutitou, No. 39.
Aiguillettes et Grevigneux, No. 40.
Gouffre, No. 41.
Canaries, No. 42.
Raincé, No. 43.
Dégrat du cheval, No. 44.
Sans fonds, No. 45.
Fourché, No. 46.
Orange, No. 47.
Petites vaches, No. 48.
Grandes vaches, No. 49.
Fleur-de-Lys, No. 50.
Baie verte, No. 51.
Baie des pins, No. 52.
Isle à bois, No. 53.
Pasquet, No. 54.
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# Appendices

## Appendix 1: List of 198 fishings rooms across the Petit Nord

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| Aiguillette's Harbour | Les Aiguillettes, Le Banc de la Madeleine de l'islot | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 562962 | 5619798 |
| | Le Champ du merle | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 563131 | 5620347 |
| | Les Aiguillettes, Le Morne au lion | Renouf and Bell 2003 | EeBa-03 | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 563185 | 5619771 |
| | Les Aiguillettes, L'Ile verte | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 563033 | 5619849 |
| | Les Aiguillettes, Grevigneaux | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 563049 | 5620222 |
| Baie des Pins | La Baie des Pins, La Grande terre sur babord | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 572871 | 5541963 |
| | La Baie des Pins, L'Îlot des pins | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 572801 | 5541950 |
| Baie Verte | Baie Verte, L'Anse au pot d'Étain | | EaBa-09 | C18-19? | Le Tourneur c1784 | Le Tourneur c1784 | 563862 | 5544625 |
| | Baie Verte, L'Islot du pot d'Étain | | EaBa-19 | C17-18 | Le Tourneur c1784 | Le Tourneur c1784 | 564735 | 5545029 |
| Bell Island | Belle Ile, Dans le fond à babord | Pope 2006: 41, Area D | EeAv-03 | 1650-1950 | Le Tourneur c1784 | - | 599191 | 5617237 |
| | Belle Ile, Sur Tribord en entrant | Pope 2006: 40-41 | EeAv-03 | 1650-1950 | Le Tourneur c1784 | - | 599762 | 5617069 |
| Bois Island | L'Ile Ã Bois | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 579669 | 5541957 |
| Brent's Cove | Le Petit Coup de Hache, Le Fond | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 592544 | 5532483 |
| | Le Petit Coup de Hache, Sur Babord | | | unknown | Le Tourneur c1784 | - | 592659 | 5532738 |
| | Le Petit Coup de Hache, Tribord en entrant | | | unknown | Le Tourneur c1784 | - | 592358 | 5532602 |
| Canaries Harbour | Les Canaries, La Côte de l'est | Pope et al. 2009: 8, Area A | EeBa-04 | C18-19 | Richard 1827 | Richard 1827 | 561166 | 5615008 |
| | Les Canaries, La Pointe blanche | Pope et al. 2009: 9-10 | EeBa-04 | C18-19 | Richard 1827 | Le Tourneur c1784; Richard 1827 | 560964 | 5615115 |
| | Les Canaries, Le Banc à l'ours | Pope et al. 2009: 9, Area F | EeBa-4 | C18-19? | Richard 1827 | Richard 1827 | 560852 | 5614897 |
| | Les Canaries, Le Brikachaw | Pope et al. 2009: 9, Area E | EeBa-04 | C18-19? | Richard 1827 | Richard 1827 | 560841 | 5614855 |
| | Les Canaries, Le Fond de l'amirauté | Pope et al 2009: 9, Area D | EeBa-04 | C18-19? | Richard 1827 | Richard 1827 | 560864 | 5614687 |
| | Les Canaries, Place nouvelle contigue | Pope et al. 2009: 8, Area B | EeBa-04 | C18-19 | Richard 1827 | Richard 1827 | 561076 | 5614892 |
| | Les Canaries, Première de l'amirauté | Pope et al 2009: 8, Area C | EeBa-04 | C18-19 | Richard 1827 | Richard 1827 | 560927 | 5614763 |
| | Les Canaries, Fardy's Cove | Pope et al. 2009: 10, Area J | EeBa-04 | C18-19? | Richard 1827 | Richard 1827 | 560848 | 5615365 |
| Cape Onion | L'anse du cap d'Ognon | Bell, Renouf and Hull 2001: 41-43 | EjAv-10 | unknown | Le Tourneur c1784; Tapper 2013 field | Le Tourneur c1784 | 595150 | 5718732 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| | | | | | notes | | | |
| Cat Cove | Sans Fond, Dégrat du Cheval | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 560081 | 5609462 |
| Conche | La Conche, Contigue dans le fond | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 577917 | 5637999 |
| | La Conche, La Première de la Martinique | | | unknown | Le Tourneur c1784 | Anon. 1832 | 577457 | 5639112 |
| | La Conche, La Seconde de la Martinique | | | unknown | Le Tourneur c1784 | Anon. 1832 | 577484 | 5638851 |
| | La Conche, La Crique | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 577664 | 5637579 |
| | La Conche, La Flaque | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 577924 | 5637687 |
| | La Conche, La Pointe aux ancres | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 577729 | 5637686 |
| | La Conche, Le Grand sud-ouest | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 577576 | 5637522 |
| | La Conche, Le Nord-est | Pope 2005: 23 | EfAx-13; EfAx-07? | 1800-2000 | Le Tourneur c1784 | Le Tourneur c1784 | 577382 | 5638621 |
| | La Conche, Le Petit sud-ouest | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 577632 | 5637505 |
| Cook's Harbour | Anse à la Neige, No. 1 | | | unknown | Pierre 1857 [1855] | - | 578928 | 5717984 |
| | Anse à la Neige, No. 2 | | | unknown | Pierre 1857 [1855] | - | 578693 | 5717888 |
| | Ile a la Goelette, Pointe a Hamel | | | unknown | Pierre 1857 [1855] | - | 579511 | 5717489 |
| Crémaillère | La Crémaillère, La Grande rochelle | Pope et al. 2007: 4-5 | EiAv-03 | 1600-1900 | Le Tourneur c1784 | Pierre 1860 [1857] | 598008 | 5688636 |
| | La Crémaillère, La Petite rochelle | Tapper and Pope 2014: 15 | EiAv-08 | C18-C19? | Le Tourneur c1784 | Daugustine 1792 [1786] | 597303 | 5689015 |
| | La Crémaillère, La Pointe aux ancres | Pope et al. 2007: 4-5 | EiAv-03 | 1600-1900 | Pierre 1860 [1857] | Daugustine 1792 [1786]; Pierre 1860 [1857] | 597867 | 5688165 |
| | La Crémaillère, L'Amirauté | Pope et al. 2007: 4-5 | EiAv-03 | 1600-1900 | Pierre 1860 [1857] | Daugustine 1792 [1786]; Pierre 1860 [1857] | 597973 | 5688143 |
| | La Crémaillère, Le Banc Ã  l'ours (Pointe de l'Observation) | Tapper and Pope 2014: 13 | EiAv-07 | C18-19 | Le Tourneur c1784 | Le Tourneur c1784 | 596488 | 5688347 |
| | La Crémaillère, Les Galets | Pope et al. 2007: 4-5 | EiAv-03 | 1600-1900 | Pierre 1860 [1857] | Daugustine 1792 [1786]; Pierre 1860 [1857] | 598068 | 5688161 |
| Croque | Le Croc, La Genille | Pope 2005: 39-40 | EgAw-07 | C18-19 | Le Tourneur c1784 | Le Tourneur c1784; La Roche-Poncie 1847 [1846] | 583940 | 5656664 |
| | Le Croc, La Plaine | Pope 2005: 36; Pope et al. 2007:10 | EgAw-05 | 1600-1950 | La Roche-Poncie 1847 [1846] | Le Tourneur c1784; La Roche-Poncie 1847 [1846] | 584005 | 5653999 |
| | Le Croc, Le Fond de la baie du nord | Pope 2005: 41-42; Tapper and Pope 2014: 10 | EgAw-08 | 1800-1900 | Le Tourneur c1784 | - | 583181 | 5657754 |
| | Le Croc, Le galet de les pins sans doute compris la pointe de la chapelle | Pope 2005: 33-34 | EgAw-04 | 1600-1900 | Le Tourneur c1784 | - | 582173 | 5656812 |
| | Le Croc, Le Petit maître | Pope 2005: 36-7 | EgAw-05 | 1600-1950 | La Roche-Poncie 1847 | Le Tourneur c1784; La Roche- | 584004 | 5654115 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| | | | | | [1846] | Poncie 1847 [1846] | | |
| | Le Croc, Les Grouts | Pope 2005: 38 | EgAw-06 | 1600-1900 | Le Tourneur c1784 | Le Tourneur c1784 | 585266 | 5656481 |
| | Le Croc, L'Islot | Pope 2005: 36 | EgAw-05 | 1600-1950 | La Roche-Poncie 1847 [1846] | Le Tourneur c1784; La Roche-Poncie 1847 [1846] | 584022 | 5654043 |
| | Le Croc, La Genille (No. 3) | Pope 2005: 39-40 | EgAw-07 | 1600-1960 | Le Tourneur c1784 | Le Tourneur c1784 | 583923 | 5656706 |
| Crouse Harbour | Cap Rouge, bis Le Grand désespoir partie sud | Pope 2005: 15-16 | EfAx-10 | 1550-2000 | Cloué 1864 [1858] | - | 578025 | 5639630 |
| | Cap Rouge, bis Le Nouveau petit désespoir partie est | Pope 2005: 15-16; 2006: 37 | EfAx-10 | 1550-2000 | Cloué 1864 [1858] | Cloué 1864 [1858]; Miot 1857-9 | 578535 | 5639736 |
| | Cap Rouge, bis Le Tertre | Pope 2005: 18-19, Areas E, F | EfAx-11 | 1600-1950 | Cloué 1864 [1858] | Cloué 1864 [1858] | 580498 | 5642466 |
| | Cap Rouge, La Baie Ã  la brinc | Pope 2005: 21, Areas M, N | EfAx-11 | 1600-1950 | Cloué 1864 [1858] | Le Tourneur c1784; Cloué 1864 [1858] | 580786 | 5642244 |
| | Cap Rouge, L'Ancienne amirauté | | | unknown | Cloué 1864 [1858] | - | 578058 | 5639973 |
| | Cap Rouge, Le Champ paya | Pope 2005; 2006; Pope et al. 2007; Pope et al 2009; Pope 2010 | EfAx-09 | 1540-1900 | Cloué 1864 [1858] | Le Tourneur c1784; Cloué 1864 [1858]; Pope 2009: 5 | 579527 | 5640144 |
| | Cap Rouge, Le Craquelin | Pope 2005: 19-20, Areas G, H | EfAx-11 | 1600-1950 | Cloué 1864 [1858] | Cloué 1864 [1858];Tapper & Pope 2013 (fieldnotes) | 580414 | 5642563 |
| | Cap Rouge, Le Fond | | | unknown | Cloué 1864 [1858] | - | 577993 | 5639854 |
| | Cap Rouge, Le Goquelin | Pope 2005: 20-21, Areas J, K, L | EfAx-11 | 1600-1950 | Cloué 1864 [1858] | Cloué 1864 [1858];Tapper & Pope 2013 (fieldnotes) | 580226 | 5642667 |
| | Cap Rouge, Le Grand dégrat | Pope 2005: 17, Areas A, B, C | EfAx-11 | 1600-1950 | Cloué 1864 [1858] | Cloué 1864 [1858] | 580688 | 5642324 |
| | Cap Rouge, Le Grand désespoir partie du nord | | | unknown | Cloué 1864 [1858] | - | 577943 | 5639777 |
| | Cap Rouge, Le Petit dégrat | Pope 2005: 18, Area D | EfAx-11 | 1600-1950 | Cloué 1864 [1858] | Cloué 1864 [1858] | 580633 | 5642349 |
| | Cap Rouge, Le Petit désespoir | Pope 2005: 15-16; 2006: 37 | EfAx-10 | 1550-2000 | Cloué 1864 [1858] | Miot 1857-9 | 578392 | 5639662 |
| | La Biche, Le Grand banc | Pope 2005: 25 | EfAx-15 | 1600-ca 1950 | Pope 2005: 25 | - | 579906 | 5644215 |
| Fischot Island | L'Ile Fichot, L'Anse Ã  l'eau | Pope et al. 2009: 15 | EhAw-01 | C18-19 | Cloué 1857 [1852-3] | Le Tourneur c1784; Cloué 1857 [1852-3] | 591902 | 5671440 |
| | L'Ile Fichot, Le Grand sud-ouest | Pope et al. 2009: 16 | EhAw-01 | C18-19? | Cloué 1857 [1852-3] | Le Tourneur c1784; Cloué 1857 [1852-3] | 592122 | 5670757 |
| | L'Ile Fichot, l'Ã®le Frommy | Pope et al. 2009: 17-18 | EhAw-01 | C18-19? | Cloué 1857 [1852-3] | Le Tourneur c1784; Cloué 1857 [1852-3] | 592075 | 5671610 |
| | L'Ile Fichot, Le Petit sud-ouest | Pope et al. 2009: 16 | EhAw-01 | C18-19? | Cloué 1857 [1852-3] | Le Tourneur c1784; Cloué 1857 [1852-3] | 592161 | 5670769 |
| | L'Ile Fichot, L'Islot du nord-est | Pope et al. 2009: 16-17 | EhAw-01 | C18-19? | Cloué 1857 [1852-3] | Le Tourneur c1784; Cloué 1857 [1852-3] | 592226 | 5671091 |
| | L'Ile Fichot, | Pope et al. | EhAw- | C18-19? | Cloué 1857 | Cloué 1857 | 592095 | 5671329 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| | L'Islot et serpillère | 2009: 16-17 | 01 | | [1852-3] | [1852-3] | | |
| | L'Ile Fichot, Pauvrette | Pope et al. 2009: 15-16 | EhAw-01 | C18-19 | Cloué 1857 [1852-3] | Cloué 1857 [1852-3] | 591890 | 5671268 |
| | L'Ile Fichot, Le Nord-est de l'Ile Frommy | | | unknown | Cloué 1857 [1852-3] | Cloué 1857 [1852-3] | 592336 | 5671738 |
| Fleur de Lys | La Fleur de Lys, La Pointe sur tribord | Erwin and Crompton 2002; Tapper and Pope 2014: 5 | EaBa-08 | C18-19 | Cloué 1862 [1859] | Richard 1829 [1827]; Cloué 1862 [1859] | 562733 | 5551867 |
| | La Fleur de Lys, à Propos | | | unknown | Cloué 1862 [1859] | Richard 1829 [1827]; Cloué 1862 [1859] | 562027 | 5552367 |
| | La Fleur de Lys, L'Amirauté | | | unknown | Cloué 1862 [1859] | Le Tourneur c1784; Richard 1829; Cloué 1862 [1859] | 562555 | 5552097 |
| | La Fleur de Lys, Le Fond au banc à l'ours | | | unknown | Cloué 1862 [1859] | Le Tourneur c1784; Richard 1829; Cloué 1862 [1859] | 561664 | 5551926 |
| | La Fleur de Lys, Les Sauteurs | | | unknown | Cloué 1862 [1859] | Richard 1829 [1827]; Cloué 1862 [1859] | 562179 | 5552327 |
| | La Fleur de Lys, L'Islot à la grande terre | | EaBa-02, EaBa-03 | C18-19 | Cloué 1862 [1859] | Le Tourneur c1784; Richard 1829; Cloué 1862 [1859] | 562183 | 5551952 |
| Four Harbour | Le Havre du Four, Première De Tribord en entrant | | | unknown | Cloué 1858 [1852-3] | Cloué 1858 [1852-3] | 589032 | 5670816 |
| | Le Havre du Four, Le Fond | | | unknown | Cloué 1858 [1852-3] | - | 588667 | 5670829 |
| Fourché Harbour | Fourché, Dans la baie du nord-est | Pope 2010: 5 | EdBb-01 | 1700-1950 | Le Tourneur c1784 | Le Tourneur c1784 | 548137 | 5597568 |
| | Fourché, Dans la baie du nord-ouest | Pope 2010: 5 | EdBb-03 | unknown | Le Tourneur c1784 | Anon. 1832 | 546570 | 5596589 |
| Goose Cove | Les Petites Oies, La Cigale | Pope et al. 2009: 13-14 | EhAv-02 | C18-19 | Pierre 1860 (1857) | Pierre 1860 (1857) | 594877 | 5685247 |
| | Les Petites Oies, La Plaine | | | unknown | Pierre 1860 [1857] | Pierre 1860 [1857] | 595566 | 5684873 |
| | Les Petites Oies, L'Amirauté | | | unknown | Pierre 1860 [1857] | Le Tourneur c1784; Pierre 1860 [1857] | 595173 | 5684779 |
| | Les Petites Oies, Le Loup marin | Pope et al. 2009: 13 | EhAv-01 | C18-19? | Pierre 1860 [1857] | Le Tourneur c1784; Pierre 1860 [1857] | 594795 | 5684903 |
| | Les Petites Oies, Première du fond | | | unknown | Pierre 1860 [1857] | Le Tourneur c1784 | 595659 | 5685307 |
| | Les Petites Oies, Seconde du fond | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 595542 | 5685411 |
| | Les Petites Oies, Pointe Plate | | | unknown | Le Tourneur c1784 | - | 594525 | 5685337 |
| Grandois | Grandes Oies, Le Sud-ouest | | | unknown | Pierre 1856 [1854] | Le Tourneur c1784; Pierre 1856 [1854] | 588071 | 5661994 |
| | Grandes Oies, L'Ile des grandes oies | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 588163 | 5662265 |
| | Grandes Oies, Place nouvelle dans le fond | Pope 2005: 27 | EgAw-01 | C18-19 | Le Tourneur c1784 | - | 587845 | 5662175 |
| Great Brehat | Grands Bréhats, Contigue dans le fond | Pope 2010: 7 | EiAu-05 | C18-19 | Pierre 1861 [1856] | Pierre 1861 [1856] | 604536 | 5698517 |
| | Grands Bréhats, L'Amirauté | | | unknown | Pierre 1861 [1856] | Pierre 1861 [1856] | 604653 | 5698433 |
| | Grands Bréhats, | | | unknown | Pierre 1861 | Pierre 1861 | 604378 | 5698101 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| | Planche nouvelle dans le fond | | | | [1856] | [1856] | | |
| Great Buse Bay | La Grande Buche | | | unknown | Aerial Orthophoto 2008 | - | 588048 | 5665731 |
| Great Islets Harbour | Les Grandes Ilettes, L'Amirauté | | | unknown | Cloué 1863 [1853] | Cloué 1863 [1853] | 587741 | 5669411 |
| | Les Grandes Ilettes, L'Ile des Grandes Ilettes | | | unknown | Cloué 1863 [1853] | Le Tourneur c1784; Cloué 1863 [1853] | 588141 | 5669241 |
| | Les Grandes Ilettes, L'Amirauté | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 588211 | 5669294 |
| Great St. Julien Harbour | Grands St Juliens, L'Amirauté | Pope 2005: 28 | EgAw-02 | C18-19 | Pierre 1856 [1854] | Le Tourneur c1784; Pierre 1856 [1854] | 588420 | 5660961 |
| | Grands St Juliens, Les Chats | Pope 2005: 29-31 | EgAw-02 | C18-19? | Le Tourneur c1784 | Pierre 1856 [1854] | 588088 | 5660762 |
| | Grands St Juliens, Pointe à l'aurore | Pope 2005: 29 | EgAw-02 | C18-19 | Pierre 1856 [1854] | Pierre 1856 [1854] | 588169 | 5660925 |
| Green Bay | L'Anse verte | | | unknown | Pierre 1861 [1856] | Pierre 1861 [1856-8] | 605736 | 5699206 |
| Griquet Harbour | Les Criquets et le Cap Blanc, La Pointe à l'Auguste | Bell, Renouf and Hull 2001: 30-2; Pope 2010: 8 | EjAu-25 | C18-19 | Pierre 1859 [1855] | Pierre 1859 [1855] | 607196 | 5709118 |
| | Les Criquets et le Cap Blanc, La Pointe à l'Émeraude | Bell, Renouf and Hull 2001: 24-30 | EjAu-23, 24 | C18-C19 | Pierre 1859 [1855] | Pierre 1859 [1855] | 606952 | 5708427 |
| | Les Criquets et le Cap Blanc, La Pointe aux ancres | Bell, Renouf and Hull 2001: 36; Pope 2010: 9 | EjAu-28 | C18-19 | Pierre 1859 [1855] | Pierre 1859 [1855] | 607501 | 5709922 |
| | Les Criquets et le Cap Blanc, L'Ile Ã  Pichard | Tapper and Pope 2014: 19-20 | EjAu-46 | C18-19 | Le Tourneur c1784 | Anon. 1832 | 606769 | 5708018 |
| | Les Criquets et le Cap Blanc, L'Ile de l'amirauté | Bell, Renouf and Hull 2001: 38; Pope 2010: 9 | EjAu-29, EjAu-30 | C17-18 | Pierre 1859 [1855] | Pierre 1859 [1855] | 607560 | 5709770 |
| | Les Criquets et le Cap Blanc, Quatre oreilles | Bell, Renouf and Hull 2001: 33; Pope 2010: 9 | EjAu-26 | 1760- | Pierre 1859 [1855] | Pierre 1859 [1855] | 607571 | 5709331 |
| | Les Criquets et le Cap Blanc, Ile du Chameau, No. 2 | Tapper and Pope 2013 (unpublished field notes) | | C19? | Pierre 1859 [1855] | Pierre 1859 [1855] | 606760 | 5710873 |
| | Les Criquets et le Cap Blanc, Havre du Cap Blanc, No. 2 | | | unknown | Le Tourneur c1784 | - | 606862 | 5708794 |
| | Les Criquets et le Cap Blanc, L'Îlot du Cap Blanc, No. 3 | Bell, Renouf and Hull 2001: 22; Tapper and Pope 2014: 18-19 | EjAu-22 | Late C18th - early C19th | Le Tourneur c1784 | Anon. 1832 | 606701 | 5708160 |
| | Les Criquets et le Cap Blanc, Havre du Cap Blanc, No. 5 | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 606497 | 5707981 |
| | Les Criquets et le Cap Blanc, Havre du Cap Blanc, No. 6 | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 606690 | 5707747 |
| | Les Criquets et le Cap Blanc, Havre du Cap Blanc, No. | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 606778 | 5707487 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| | 7 | | | | | | | |
| | Les Criquets et le Cap Blanc, Havre du Cap Blanc, No.8 | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 607083 | 5707509 |
| Ha Ha Bay | Baie du Ha Ha | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 587319 | 5712185 |
| Harbour Deep | Sans Fond, L'Amirauté sur babord | Pope et al. 2007: 9 | EdBb-02 | 1600-1900 | Le Tourneur c1784 | Le Tourneur c1784 | 555760 | 5607758 |
| | Sans Fond, Le Brika ou la plaine | Pope et al. 2007: 9 | EdBb-02 | 1600-1900 | Le Tourneur c1784 | Le Tourneur c1784 | 555796 | 5607762 |
| | Sans Fond, Mont à regret sur tribord | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 555947 | 5607464 |
| Harbour Round | Le Grand Coup de Hache, Contigue dans le fond | | | unknown | Le Tourneur c1784 | - | 590734 | 5530817 |
| | Le Grand Coup de Hache, Première pointe, Première anse | | | unknown | Le Tourneur c1784 | - | 590631 | 5531195 |
| Hilliers Harbour | Boutitou, Babord en entrant | | | unknown | Cloué 1863 [1849] | Le Tourneur c1784; Cloué 1863 [1849] | 568299 | 5626455 |
| | Boutitou, Contigue dans le fond | Renouf et al. 2004; Pope et al. 2009:11 | EeBa-07 | C18-19? | Cloué 1863 [1849] | Le Tourneur c1784; Cloué 1863 [1849] | 568509 | 5626524 |
| La Scie | La Scie, La Partie de la pointe rouge en dehors | | DlAv-04 | Mid C18-MidC19 | Le Tourneur c1784 | Le Tourneur c1784 | 600397 | 5535415 |
| | La Scie, La Partie du fond de la pointe rouge | Reynolds 1998; Erwin 1999 | DlAv-03 | C18-19 | Le Tourneur c1784 | Le Tourneur c1784 | 600536 | 5535325 |
| | La Scie, Le Brika | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 600730 | 5535116 |
| | La Scie, Le Fond | | | unknown | Le Tourneur c1784 | n/a | 600830 | 5534953 |
| | La Scie, Première de tribord en entrant | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 600425 | 5534883 |
| | La Scie, Une Partie du fond contigue | | | unknown | Le Tourneur c1784 | - | 600728 | 5534728 |
| Little Brehat | Petits Bréhats | | | unknown | Pierre 1861 [1856-8] | Pierre 1861 [1856-8] | 605935 | 5701313 |
| Little Canada Harbour | Raincé | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 562528 | 5613637 |
| Little Harbour Deep | Les Grandes vaches | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 531675 | 5566272 |
| Little Islets Harbour | Les Petites Ilettes, L'Amirauté | Pope et al. 2009: 18 | EhAw-02 | 1700-1900 | Cloué 1858 [1852-3] | Le Tourneur c1784; Cloué 1858 [1852-3] | 589277 | 5669957 |
| | Les Petites Ilettes, Le Fond | | | unknown | Cloué 1858 [1852-3] | Le Tourneur c1784; Cloué 1858 [1852-3] | 589197 | 5669705 |
| | Les Petites Ilettes, Mont Ã  regret | Pope et al. 2009: 18 | EhAw-02 | 1700-1900 | Cloué 1858 [1852-3] | Le Tourneur c1784; Cloué 1858 [1852-3] | 589217 | 5669858 |
| | Les Petites Ilettes, L'Ile madame babord en entrant | | | unknown | Cloué 1858 [1852-3] | Anon. 1832; Cloué 1858 [1852-3] | 589410.676 | 5669843.52 |
| Little St. Julien Harbour | Petits St Juliens, Première De Babord en entrant | Pope 2005: 43 | EgAw-09 | C18-19 | Le Tourneur c1784 | Le Tourneur c1784 | 588154 | 5661405 |
| | Petits St Juliens, Contigue dans le fond | Pope 2005: 43 | EgAw-09 | C18-19 | Le Tourneur c1784 | Le Tourneur c1784; Anon. 1832 | 588100 | 5661346 |
| | Petits St Juliens, Seconde Place | | | unknown | Coquelin 1767 | - | 587954 | 5661379 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| Million Cove | Anse aux Millions | Pope et al. 2007: 10 | EgAw-10 | 1700-1900? | La Roche-Poncie 1847 [1846] | La Roche-Poncie 1847 [1846]; Pope et al. 2007:10 | 583277 | 5652596 |
| Noddy Bay | Baie aux Mauves, No. 1 | Bell, Renouf and Hull 2001: 17-18 | EjAu-17 | C17-early C19? | Cloué 1854 [1850] | Cloué 1854 [1850] | 604962 | 5715390 |
| | Baie aux Mauves, No. 2 | Auger 1985; Tapper and Pope 2013: 26 | EjAu-11 | C17-19 | Cloué 1854 [1850] | Cloué 1854 [1850]; Tapper and Pope 2013: 26 | 605460 | 5715944 |
| | Baie aux Mauves, No. 3 | Tapper and Pope 2014: 28 | EjAu-47 | C17-19? | Cloué 1854 [1850] | Cloué 1854 [1850] | 605266 | 5715328 |
| | Baie aux Mauves, Jardin, No. 1 | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 604334 | 5716345 |
| | Baie aux Mauves, le fond, No. 2 | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 604678 | 5714940 |
| North Bay | Baie du Nord, Première De Tribord en entrant - pointe à l'anglais | Pope 2010: 8 | EjAu-41 | unknown | Pierre 1859 [1855] | - | 608018 | 5711740 |
| | Baie du Nord, Autrefois No 1 baie du nord | Bell, Renouf and Hull 2001: 14; Pope 2010: 8 | EjAu-14 | 1780-onwards | Pierre 1859 [1855]; Pope 2010 | Pierre 1859 [1855] | 608015 | 5712096 |
| | Baie du Nord, Le Fond | Bell, Renouf and Hull 2001: 16 | EjAu-15 | 1780-onwards | Le Tourneur c1784? | - | 607879 | 5712268 |
| Orange Bay | Orange, Les Chats sur tribord | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 540474 | 5580765 |
| | Orange, Petit orange sur babord | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 538391 | 5579190 |
| Pacquet Harbour | Pasquet, Seconde de L'ancienne Amirauté | | | unknown | Cloué 1860 [1857] | Cloué 1860 [1857] | 580712 | 5538224 |
| | Pasquet, La Pointe rouge sur babord | | | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 580809 | 5537372 |
| | Pasquet, L'Amirauté | | | unknown | Cloué 1860 [1857] | Cloué 1860 [1857] | 580916 | 5538196 |
| | Pasquet, Première de l'ancienne amirauté | | | unknown | Cloué 1860 [1857] | Cloué 1860 [1857] | 580834 | 5538212 |
| | Pasquet, Première de tribord en entrant | | | unknown | Cloué 1860 [1857] | Cloué 1860 [1857] | 581064 | 5538106 |
| Pilier Bay | Anse du Pilier | Pope 2006: 43 | EfAw-01? | C18-19? | Le Tourneur c1784 | - | 580797 | 5645865 |
| Quirpon Harbour | Kirpon, Coupe soulier (Ile Jacques Cartier) | Bell, Renouf and Hull 2001: 19-20 | EjAu-18 | 1650-1900 | Cloué 1854 [1850] | Le Tourneur c1784; Cloué 1854 [1850] | 606703 | 5716924 |
| | Kirpon, La Côte de l'est babord en entrant | Tapper and Pope 2014: 22; Reynolds 2002 | EjAu-38 | C19 | Cloué 1854 [1850]; Tapper and Pope 2014: 22 | Cloué 1854 [1850] | 608256 | 5715485 |
| | Kirpon, La Côte de l'ouest | Pope 2010: 11 | EjAu-42 | unknown | Cloué 1856 [1851] | Cloué 1856 [1851] | 608710 | 5720023 |
| | Kirpon, La Pointe d'Alun | Pope 2010: 12; Tapper and Pope 2014: 21 | EjAu-44 | C19? | Cloué 1854 [1850]; Tapper and Pope 2014: 21 | Le Tourneur c1784; Cloué 1854 [1850] | 607812 | 5716359 |
| | Kirpon, La Pointe noble | Tapper 2013 (unpublished field notes) | | C17-19? | Le Tourneur c1784; Cloué 1854 [1850] | Le Tourneur c1784; Cloué 1854 [1850] | 608002 | 5715501 |
| | Kirpon, La Pointe verte | Tapper 2013 (unpublished field notes) | | C17-19? | Le Tourneur c1784; Cloué 1854 [1850] | Le Tourneur c1784; Cloué 1854 [1850] | 607910 | 5715597 |
| | Kirpon, L'Amirauté | Tapper and Pope 2014: 23 | EjAu-49 | C17-19 | Cloué 1854 [1850]; Tapper and Pope 2014: 23 | Le Tourneur c1784; Cloué 1854 [1850] | 608212 | 5715878 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| | Kirpon, L'Amirauté de Jacques Cartier | Bell, Renouf and Hull 2001: 19-20 | EjAu-18 | 1650-1900 | Cloué 1854 [1850] | Le Tourneur c1784; Cloué 1854 [1850] | 606787 | 5717109 |
| | Kirpon, L'Anse aux pigeons | FitzHugh 1983 | EjAu-04 | C19-20 | Cloué 1856 [1851] | Cloué 1856 [1851] | 608652 | 5720647 |
| | Kirpon, Les Grands galets | Pope 2010: 11 | EjAu-40 | unknown | Cloué 1854 [1850]; Pope 2010 | Cloué 1854 [1850] | 608559 | 5717036 |
| | Kirpon, Les Islots | Reynolds 2002; Pope 2010: 10 | EjAu-31, EjAu-32, 33, 34 | 1650-1900 | Cloué 1854 [1850]; Pope 2010 | Le Tourneur c1784; Cloué 1854 [1850] | 607348 | 5718203 |
| | Kirpon, L'Ile du dégrat | | | unknown | Cloué 1856 [1851] | Le Tourneur c1784; Cloué 1856 [1851] | 608822 | 5719865 |
| | Kirpon, L'Islot au marchand et grande terre | Pope 2010: 10; Bell, Renouf and Hull 2001: 19-22 | EjAu-19; EjAu-35 | 1650-1900 | Cloué 1854 [1850]; Pope 2010 | Le Tourneur c1784; Cloué 1854 [1850] | 607530 | 5717579 |
| | Kirpon, Place nouvelle apres l'anse aux pigeons | Pope 2010: 11 | EjAu-32 | unknown | Cloué 1856 [1851] | Cloué 1856 [1851] | 608770 | 5720319 |
| | Kirpon, Pointe d'Orléans | | EjAu39? | C17th-19th? | Cloué 1854 [1850] | Cloué 1854 [1850] | 607494 | 5715543 |
| | Kirpon, Grand sceau (Ile Jacques Cartier) | Bell, Renouf and Hull 2001: 19-20 | EjAu-18 | 1650-1900 | Cloué 1854 [1850] | Le Tourneur c1784; Cloué 1854 [1850] | 606612 | 5716731 |
| | Kirpon, Petit sceau (Ile Jacques Cartier) | Bell, Renouf and Hull 2001: 19-20 | EjAu-18 | 1650-1900 | Cloué 1854 [1850] | Le Tourneur c1784; Cloué 1854 [1850] | 606562 | 5716583 |
| | Kirpon, L'Ile du dégrat (North) | | | unknown | Cloué 1856 [1851] | Cloué 1856 [1851] | 608747 | 5720001 |
| Robineau Cove | Les Crevasses Robinaux | | | unknown | AP 2008 | - | 549035 | 5592566 |
| St. Anthony | Baie d'Antoine, Dos du cheval | | EiAv-05? | unknown | Pierre 1860 [1857] | Pierre 1860 [1857] | 599954 | 5690863 |
| | Baie d'Antoine, Grand Jérémie | JWEL 2000 | EiAv-02 | C19-20 | Pierre 1860 [1857] | Pierre 1860 [1857] | 599301 | 5691254 |
| | Baie d'Antoine, La Côte de l'ouest | | | unknown | Pierre 1860 [1857] | Pierre 1860 [1857] | 599196 | 5690773 |
| | Baie d'Antoine, La Pointe à la marguerite | JWEL 2000 | EiAv-02 | C19-20 | Pierre 1860 [1857] | Pierre 1860 [1857] | 599015 | 5691517 |
| | Baie d'Antoine, La Pointe aux renards | Tapper and Pope 2014: 12 | EiAv-06 | C18-19 | Pierre 1860 [1857] | Pierre 1860 [1857]; Tapper and Pope 2014:12 | 600196 | 5690541 |
| | Baie d'Antoine, L'Amirauté | Pope 2010: 7 | EiAv-05 | C18-19 | Pierre 1860 [1857] | Le Tourneur c1784; Daugustine 1792 [1786]; Pierre 1860 [1857] | 599699 | 5690885 |
| | Baie d'Antoine, Petit Jérémie | Pope 2010: 7 | EiAv-05? | C18-19 | Pierre 1860 [1857] | Pierre 1860 [1857] | 599623 | 5690988 |
| St. Julien Island | Iles des St Juliens, Le Sud-ouest babord dans l'anse | Pope 2005: 32 | EgAw-03 | 1500-1900 | Pierre 1856 [1854] | Le Tourneur c1784; Anon. 1832; Pierre 1856 [1854] | 589330 | 5661800 |
| | Iles des St Juliens, Tribord dans l'anse | Pope 2005: 32 | EgAw-03 | 1500-1900 | Anon. 1832 | Anon. 1832 | 589279 | 5661667 |
| St. Lunaire Bay | Baie St Lunaire, L'Amirauté | Bell, Renouf and Hull 2001: 12-13; Pope 2010: 7 | EiAu-04 | C17-19 | Pierre 1859 [1856] | Pierre 1859 [1856] | 605901 | 5704850 |
| | Baie St Lunaire, No 3 Qui était le No 4 babord en entrant | Bell, Renouf and Hull 2001: 12-13; Pope 2010: 7 | EiAu-03 | C18-19 | Pierre 1859 [1856] | Le Tourneur c1784; Pierre 1859 [1856] | 605658 | 5704614 |
| | Baie St Lunaire, | Bell, Renouf | EiAu-03 | C18-19 | Pierre 1859 | Le Tourneur | 605685 | 5704678 |

| Harbour | Room | References | Borden | Date | Room Location Source | Stage Area Location Source | Easting | Northing |
|---|---|---|---|---|---|---|---|---|
| | No 4 Qui était le No 3 | and Hull 2001: 12-13; Pope 2010: 7 | | | [1856] | c1784; Pierre 1859 [1856] | | |
| | Baie St Lunaire, No 5 Qui était le No 2 | Bell, Renouf and Hull 2001: 12-13; Pope 2010: 7 | EiAu-03 | C18-19 | Pierre 1859 [1856] | Le Tourneur c1784 | 605691 | 5704767 |
| | Baie St Lunaire, Sur une Ile tribord en entrant | Tapper and Pope 2014: 18 | EiAu-07 | unknown | Le Tourneur c1784 | Le Tourneur c1784 | 605116 | 5706116 |
| | Baie St Lunaire, Première De Tribord en entrant | | | unknown | Le Tourneur c1784 | - | 605021 | 5706687 |
| Three Mountain Harbour | Trois Montagnes, L'Anse à la vierge | | | unknown | Pierre 1860 [1857] | Pierre 1860 [1857] | 596430 | 5685517 |
| | Trois Montagnes, Sur Babord du havre | Tapper and Pope 2014: 16-17 | EhAv-04 | C18-19 | Pierre 1860 [1857] | Pierre 1860 [1857] | 596430 | 5685159 |
| | Trois Montagnes, Sur Tribord dans le fond | Pope et al. 2009: 14; Tapper and Pope 2014: 16 | EhAv-03 | C18-19? | Pierre 1860 [1857] | Pierre 1860 [1857] | 596256 | 5685309 |
| | L'Anse a La Soupe | | | unknown | Anon. 1832 | - | 597014 | 5685884 |
| Union Cove | Les Petites Vaches | | | unknown | Le Tourneur 1785 | Le Tourneur c1784; Le Tourneur 1785a | 534974 | 5568032 |
| Wild Cove | Le Gouffre | | | unknown | Le Tourneur c1784; AP 2008 | Le Tourneur c1784 | 558292 | 5615761 |

## Appendix 2: List of 79 fishing room historic divisions

| Name | Description | Type | Source(s) | Easting | Northing |
|---|---|---|---|---|---|
| Boutitou (Hilliers Harbour) | Division between room Nos. 1and 2. Approximate | Three aligned rock outcrops | Anon 1822: 258 | 568400 | 5626000 |
| Brent's Cove | Division between room 2 and others. | Stream | Anon 1822: 268 | 592300 | 5532000 |
| Brent's Cove | Brent's Cove | Stream | Anon 1822: 268 | 592700 | 5533000 |
| Canaries Harbour | Division between room Nos. 1 and 2. 'Grosse pointe' | Hill? | Anon 1822: 260 | 560900 | 5615000 |
| Canaries Harbour | Division between No. 2. & 3. 'la grosse pointe.' | Tip of a headland. | Anon 1822: 260 | 560800 | 5615000 |
| Canaries Harbour | Division between rooms Nos. 4 & 5 and No. 6. | Stream | Le Tourneur c1784; Anon 1822: 261 | 560900 | 5615000 |
| Canaries Harbour | Division between room Nos. 6 & 7. | Stream | Le Tourneur c1784; Anon 1822: 261 | 561200 | 5615000 |
| Canaries Harbour | Division between 5 and 6. | Cove. Spit of land | Richard 1827 | 561000 | 5615000 |
| Canaries Harbour | Division betweeen rooms No. 3 and Nos. 4 & 5. Le Bria Chaud. | Stream | Le Tourneur c1784; Richard 1827; Anon 1822: 261 | 560800 | 5615000 |
| Conche | Division between room Nos. 1 and 2. | Rock on shore, directions | Le Tourneur c1784; Anon 1822: 257; Anon 1832 | 577600 | 5637000 |
| Conche | Division between room Nos. 2 and 3. | Stream | Le Tourneur c1784; Anon 1822: 257; Anon 1832 | 577700 | 5637000 |
| Conche | Division between room Nos. 3 and 4. | Rock, contour, galet edge | Le Tourneur c1784; Anon 1822: 257 | 577700 | 5638000 |
| Conche | Division between room Nos. 4 and 5. | Stream | Le Tourneur c1784; Anon 1822: 257; Anon 1832 | 577900 | 5638000 |
| Conche | Division between room nos. 5 and 6. | Rock on shore, directions | Le Tourneur c1784; Anon 1822: 257; Anon 1832 | 578100 | 5638000 |
| Conche | Division between room Nos. 6 and 7. | Stream, peak | Le Tourneur c1784; Anon 1822: 258; Cloue 1858 | 577900 | 5638000 |
| Conche | Division between room Nos. 7 and 8. | Point of land, contour? | Le Tourneur c1784; Anon 1822: 258 | 577500 | 5639000 |
| Conche | Division between room Nos. 8 and 9. Approximate. | Stream | Le Tourneur c1784; Anon 1822: 258; Cloue 1858 | 577600 | 5639000 |
| Cremaillere | Division between room Nos. 3 and 4. | Stream | Le Tourneur c1784; Anon 1822: 246 | 598200 | 5688000 |
| Cremaillere | 'Une grosse montagne pour limite avec No. 3.' | Hill | Anon 1822: 246 | 598000 | 5688000 |
| Cremaillere | Approx. division between No. 1 and 2 rooms. | Rocky point & directions | Anon 1822: 246 | 597900 | 5688000 |
| Englee Harbour | No. 3, le Champ du Merle / No. 4, Grevigneaux | Intertidal foreshore cut | Anon 1822: 259 | 563100 | 5620000 |
| Fischot Harbour | deux grosses roches au plein, pres l'echafaud' | Rocks, directions | Le Tourneur c1784; Anon 1822: 249 | 592200 | 5671000 |
| Fischot Harbour | No. 4. 'Pour limites de droite, la mer. ' | Sea channel | Anon 1822: 249 | 592400 | 5671000 |
| Fischot, Watering Cove | '…un ruisseau au milieu de l'anse qui les separe…' | Stream, Cove | Anon 1822: 249 | 591800 | 5671000 |
| Genille | '…un ruisseau divisant l'anse de la Guenille en deux…' | Stream | Anon 1822: 253 | 584000 | 5657000 |
| Goose Cove | Limit of room Nos. 2 & 3. Defined by E escarpment | Hill, escarpment | Le Tourneur c1784; Anon 1822: 248 | 595500 | 5685000 |
| Goose Cove | Limits of rooms Nos. 1 and 2. | Stream | Le Tourneur c1784; Anon 1822: 248 | 594900 | 5685000 |
| Goose Cove | Limit of rooms No. 3 and 4. | Mountain | Anon 1822: 248; Pierre 1857 | 595600 | 5685000 |
| Goose Cove | Limit of room Nos. 4 & 5. Valley between 2 hills. | Valley; hill near lake | Le Tourneur c1784; Anon 1822: 248 | 595600 | 5685000 |
| Goose Cove | Limit of room Nos. 6 & 7. | Stream, cove | Le Tourneur c1784; Anon 1822; 248 | 594600 | 5685000 |
| Goose Cove | Limits between rooms Nos. 5 and 6. | Stream, mountain | Anon 1822: 248 | 595400 | 5686000 |
| Goose Cove | Stream between No. 3 and 4. | Stream | Le Tourneur c1784; Anon 1822: 248 | 595700 | 5685000 |
| Great Brehat | Division between room Nos. 1 and 2. Small cove. | Cove, stream | Anon 1822: 245; Anon 1832 | 604600 | 5699000 |
| Great St Julien Harbour | ...coupee d'une petit montagne entre les deux graves…' | Hill | Anon 1822: 252 | 588100 | 5661000 |

| Name | Description | Type | Source(s) | Easting | Northing |
|---|---|---|---|---|---|
| Griquet Harbour | Division between room Nos. 5 & 6. | Cove (stream?) | Le Tourneur c1784; Anon 1822: 242 | 606400 | 5708000 |
| Griquet Harbour | Division between room Nos. 6 and 7. | Point of high ground | Le Tourneur c1784; Anon 1822: 242 | 606700 | 5708000 |
| Griquet Harbour | Division between room Nos. 7 and 8. Tip of beach. | End of beach | Le Tourneur c1784; Anon 1822: 242 | 607000 | 5707000 |
| Griquet Harbour | Division between room Nos. 8 and 9. | Sea channel | Anon 1822: 242 | 607400 | 5708000 |
| Griquet Harbour | Limit of room 9. | Peninsula | Anon 1822: 242 | 607200 | 5709000 |
| Griquet Harbour | Division between room Nos. 11 and 12. The sea. | Sea channel | Anon 1822: 243 | 607700 | 5710000 |
| Griquet Harbour | Division Point a l'Auguste and Ouatre Oreilles | Very high point | Anon 1822: 242 | 607300 | 5709000 |
| Hooping Harbour | Division between room No. 2 and 3. | Stream | Le Tourneur c1784; Anon 1822: 262 | 555800 | 5608000 |
| La Scie | Division between room Nos. 2 and 3.Approx. loc | Spring, stream | Anon 1822: 269 | 600900 | 5535000 |
| La Scie | Division between room Nos. 3 and 4. | Stream, rock/boulder | Anon 1822: 269 | 601000 | 5535000 |
| La Scie | Division between room Nos. 4 and 5. | Stream | Anon 1822: 269 | 600800 | 5535000 |
| La Scie | Division between room Nos. 5 and 6. | Rocky point | Anon 1822: 269 | 600600 | 5535000 |
| La Scie | Division between room Nos. 1 and 2. | Stream | Anon 1822: 269 | 600600 | 5535000 |
| Little Islets Harbour | limits of room Nos. 1 & 2. Pond south edge. | Pond, directions | Le Tourneur c1784; Anon 1822: 251 | 589200 | 5670000 |
| Little Islets Harbour | limit of room Nos. 2 & 3. Pond or cove. | Pond; small sea cove | Le Tourneur c1784; Anon 1832 | 589100 | 5670000 |
| Little St Julien Harbour | ...coupe dans le roc couvre dans les grandes marees...' | Intertidal foreshore cut | Anon 1822: 252; Anon 1832 | 588100 | 5661000 |
| Little St Julien Harbour | Division between Little St Julien No. 2 & Great St Julien No. 1. | Escarpment, | Le Tourneur c1784 | 588000 | 5661000 |
| Northwest Crouse | Division between Room No. 1 & 2. | Mountain tip | Anon 1822: 255 | 580800 | 5642000 |
| Northwest Crouse | Division between room No. 2 & 3. | Stream | Anon 1822: 255 | 580800 | 5642000 |
| Northwest Crouse | Division between room No. 3 & 4. | Cove | Anon 1822: 256 | 580600 | 5643000 |
| Northwest Crouse | Division between Craquelin & Goguelin. | Stream | Anon 1822: 256; Cloue 1858 | 580400 | 5643000 |
| Pacquet Harbour | Division between room Nos. 1 & 2. | Hill, stream | Le Tourneur c1784; Anon 1822: 267 | 581000 | 5538000 |
| Pacquet Harbour | '…la plaine du No. 2 longeant la montagne du No. 3.' | Plain, hill | Le Tourneur c1784; Anon 1822: 267 | 580900 | 5538000 |
| Pacquet Harbour | Division between room Nos. 3 & 4. | End of galet, rock | Le Tourneur c1784; Anon 1822: 267 | 580800 | 5538000 |
| Quirpon Harbour, Noble Point | 'Limites E et O.' | Rock, directions | Le Tourneur c1784; Anon 1822: 240 | 607900 | 5716000 |
| Quirpon Island, Pigeon Cove | | Point of land, peak | Anon 1822: 239 | 608900 | 5720000 |
| Quirpon, Nobles Island | Limit between room Nos. 10 & 11. | Mound, directions | Le Tourneur c1784; Anon 1822: 239 | 606800 | 5717000 |
| Quirpon, Nobles Island | Limit between rooms 11 & 12. | Intertidal foreshore cut | Le Tourneur c1784; Anon 1822: 240 | 606600 | 5717000 |
| Quirpon, Nobles Island | Limit between rooms 12 & 13. Natural cut terrain. | Intertidal foreshore cut | Le Tourneur c1784; Anon 1822: 240 | 606500 | 5717000 |
| Quirpon, Nobles Island | Division of rooms 10 and 11. Path between rocks. | Rocks, pathway | Anon 1832: SH281 000058 | 606700 | 5717000 |
| Quirpon, Nobles Island | A 'Langue de terre qui louvre a haute mer …' | Strip of land | Anon 1832: SH281 00 0063 | 606700 | 5717000 |
| Southwest Croque | Division between room Nos. 6 and 7. | End of beach, cove | Anon 1822: 254 | 584000 | 5654000 |
| Southwest Crouse | Division between room No. 6 and 7. | Spring, rocks | Le Tourneur c1784; Anon 1822: 256 | 578000 | 5640000 |
| Southwest Crouse | Division between room No. 7 and 8. | Pathway | Le Tourneur c1784; Anon 1822: 256 | 577800 | 5640000 |
| Southwest Crouse | Division between room Nos. 8 and 9. | Stream | Le Tourneur c1784; Anon 1822: 256 | 578200 | 5640000 |
| Southwest Crouse | Division between room Nos. 9 and 10. | Rocky points | Anon 1822: 256 | 579000 | 5640000 |
| St Julien Island | ...une coupee de montagne.' | Mountain cut | Anon 1822: 252; Anon 1832 | 589400 | 5662000 |

| Name | Description | Type | Source(s) | Easting | Northing |
|---|---|---|---|---|---|
| St. Anthony | Limit of room Nos. 1 & 2. A small peak, escarpment. | Peak, escarpment | Le Tourneur c1784; Anon 1822: 245 | 599800 | 5691000 |
| St. Anthony | Limit of room Nos. 3 & 4. A strong stream. | Stream | Le Tourneur c1784; Anon 1822: 245 | 599500 | 5691000 |
| St. Anthony | Limit of room No.s 2 & 3. Two rocks. | Rocky escarpment | Le Tourneur c1784; Anon 1822: 245 | 599700 | 5691000 |
| St. Anthony | Limit of room Nos. 4 & 5. A large cove. | Cove | Anon 1822: 245 | 599300 | 5691000 |
| St. Lunaire Bay | Division No. 3 and 4. | Measured shore, woodfence | Le Tourneur c1784; Anon 1822: 243; Anon 1832 | 605700 | 5705000 |
| St. Lunaire Bay | Division between room No. 5 and 6. Measured beach. | Measured shoreline | Le Tourneur c1784; Anon 1822: 244 | 605800 | 5705000 |
| St. Lunaire Bay | Division between room Nos. 5 and 6. A large point | Point of land, escarpment | Le Tourneur c1784; Anon 1822: 244 | 605800 | 5705000 |
| Union Cove | | Stream | Anon 1822: 264 | 534900 | 5568000 |

## Appendix 3: List of 140 daymarks and landmarks

| ID | Name | Type | Mark_Type | Source | Easting | Northing |
|---|---|---|---|---|---|---|
| 1 | Bell Island | Landmark | Island | Cloué 1864 | 606725 | 606725 |
| 2 | Boutitou (Hilliers Harbour) | Daymark | Flagstaff | Cloué 1863 | 568348 | 568348 |
| 3 | Boutitou (Hilliers Harbour), Dolo Point | Landmark | Headland | Cloué 1863 | 568584 | 568584 |
| 4 | Boutitou (Hilliers Harbour), No. 1 | Daymark | Stage | Cloué 1863 | 568509 | 568509 |
| 5 | Brown Rock Point | Landmark | Headland | Cloué 1863 | 568394 | 568394 |
| 6 | Burnt Cape North | Daymark | Cairn | Tapper and Pope 2014 | 587168 | 587168 |
| 7 | Burnt Cape South | Daymark | Cairn | Tapper and Pope 2014 | 586523 | 586523 |
| 8 | Canada Head | Landmark | Headland | Cloué 1863 | 562594 | 562594 |
| 9 | Canaries, Canada White Point | Daymark | Cross | Richard 1827; Burns 2008 | 560988 | 560988 |
| 10 | Cap de Oies (Goose Cape) | Landmark | Hill | Pierre 1860 | 596942 | 596942 |
| 11 | Cape Bauld | Landmark | Headland | Pierre 1859 | 608886 | 608886 |
| 12 | Cape Brule (Pointe de Gros Morne in 1832) | Landmark | Headland | Anon c1832; Cloué 1860 | 582584 | 582584 |
| 13 | Cape Crapaud | Landmark | Headland | Richard 1829 | 564115 | 564115 |
| 14 | Cape Croix | Daymark | Cross | Cloué 1857 | 592734 | 592734 |
| 15 | Cape Dégrat | Landmark | Hill | Ganong 1898; Stephens 1890; Biggar 1924 | 609380 | 609380 |
| 16 | Cape Fox | Landmark | Headland | Le Tourneur 1766; Richard 1830 | 578047 | 578047 |
| 17 | Cape Haut-et-Bas | Landmark | Cliff | Pierre 1860 | 597406 | 597406 |
| 18 | Cape Noir | Landmark | Headland | Cloué 1854 | 604252 | 604252 |
| 22 | Cape Rouge Harbour, Admiralty, Stage No. 6 | Daymark | Stage | Cloué 1864 | 578058 | 578058 |
| 19 | Cape Rouge Harbour, Champ Paga | Daymark | Cross | Cloué 1864; Burns 2008 | 579689 | 579689 |
| 20 | Cape Rouge Harbour, Champ Paga | Daymark | Cross | Cloué 1864; Burns 2008 | 579632 | 579632 |
| 21 | Cape Rouge Harbour, Frauderess Point | Landmark | Headland | Le Tourneur 1766; Cloué 1864 | 580655 | 580655 |
| 23 | Cape Rouge Harbour, Grand Desespoir, No. 8, | Daymark | Stage | Cloué 1864 | 577943 | 577943 |
| 24 | Cape Rouge Peninsula, Pyramid Point | Landmark | Hill | Cloué 1864 | 582631 | 582631 |
| 25 | Cape Rouge, Sault du Chien Point | Landmark | Headland | Cloué 1864 | 579785 | 579785 |
| 26 | Cape St. Anthony (Cap St Antoine) | Landmark | Hill | Pierre 1860 | 603159 | 603159 |
| 27 | Conche, White Horse Head | Landmark | Hill | Richard 1830 | 572742 | 572742 |
| 28 | Crémaillère, Savage Point | Landmark | Headland | Pierre 1860 | 598448 | 598448 |
| 29 | Crémaillère, Whale Grotto | Landmark | Cliff | Pierre 1860 | 597350 | 597350 |
| 30 | Croque, Forest Hill | Landmark | Morne | La Roche-Poncie 1847 | 583277 | 583277 |
| 31 | Croque, Genille Point | Landmark | Headland | La Roche-Poncie 1847 | 583652 | 583652 |
| 32 | Croque, Groux Point | Landmark | Headland | Le Tourneur 1766 | 585351 | 585351 |
| 33 | Croque, Observatory Island | Landmark | Island | Coquelin Latiolais 1767 | 585681 | 585681 |
| 34 | Croque, Windy Point | Landmark | Headland | La Roche-Poncie 1847 | 585535 | 585535 |
| 35 | Crow Head (Pointe Francaise) | Landmark | Headland | Pierre 1860 | 604469 | 604469 |
| 36 | Englee, Lion Hill (Le Morne au lion) | Landmark | Morne | Anon 1822: 259 | 563802 | 563802 |
| 37 | Fichot, No. 3 | Daymark | Flagstaff | Cloué 1857 | 592170 | 592170 |
| 38 | Fischot Island, 40m hill | Landmark | Hill | Cloué1858 | 591237 | 591237 |
| 39 | Fischot, Calas Point | Landmark | Headland | Cloué 1858 | 592766 | 592766 |
| 40 | Fischot, Frommy Island | Daymark | Flagstaff | Cloué 1857 | 592093 | 592093 |
| 41 | Fischot, Frommy Island | Daymark | Flagstaff | Cloué 1857 | 592319 | 592319 |
| 42 | Fischot, Frommy Point | Landmark | Headland | Cloué 1858 | 592147 | 592147 |
| 43 | Fischot, Puoilleux Island | Landmark | Island | Cloué 1858 | 591814 | 591814 |
| 44 | Fischot, Stage No. 5 | Daymark | Stage | Cloué 1857 | 592226 | 592226 |
| 45 | Fischot, Stage No. 6 | Daymark | Stage | Cloué 1857 | 592095 | 592095 |
| 46 | Fischot, Stage No. 7 | Daymark | Stage | Cloué 1857 | 592075 | 592075 |
| 47 | Fischot, Watering Cove | Daymark | Flagstaff | Cloué 1857 | 591854 | 591854 |
| 48 | Fishing Point (Pointe aux Renards) | Landmark | Headland | Pierre 1860 | 600683 | 600683 |
| 49 | Fishing Point Cove (Anse de Gros Morne) | Landmark | Cliff | Pierre 1860 | 600090 | 600090 |
| 50 | Fleur de Lys Hill | Landmark | Hill | Richard 1830 | 559935 | 559935 |

| ID | Name | Type | Mark_Type | Source | Easting | Northing |
|---|---|---|---|---|---|---|
| 51 | Fleur de Lys, Îlot et Chafaud du Gardien (Anglais) | Daymark | Stage | Richard 1829 | 562342 | 562342 |
| 52 | Fleur de Lys, Southern Stage at Room No. 2 | Daymark | Stage | Richard 1829 | 562639 | 562639 |
| 53 | Fleur-de-Lys, Morne de l'Ours | Landmark | Morne | Richard 1829; Cloué 1862 | 561819 | 561819 |
| 54 | Fleur-de-Lys, Stage of Room No. 2 | Daymark | Stage | Cloué 1862 | 562559 | 562559 |
| 55 | Four Harbour, Cap de la Croix, 24m Hill | Landmark | Hill | Coquelin Latiolais 1767; Cloué 1858 | 589194 | 589194 |
| 56 | Four Harbour, Cow Point | Landmark | Headland | Cloué 1858 | 589378 | 589378 |
| 57 | Four Harbour, Cow Point | Landmark | Hill | Cloué 1858 | 589311 | 589311 |
| 58 | Four Harbour, point b | Landmark | Headland | Cloué 1858 | 589281 | 589281 |
| 59 | Grand Morne St Julien (St Julien Peak) | Landmark | Morne | Pierre 1856 | 587451 | 587451 |
| 60 | Great Buse | Landmark | Hill | Cloué 1863 | 586913 | 586913 |
| 61 | Great Islets Harbour, Double Island | Landmark | Island | Cloué 1863 | 588511 | 588511 |
| 62 | Great Islets Harbour, River Point | Landmark | Headland | Cloué 1863 | 586487 | 586487 |
| 63 | Great Islets Harbour, south tip of Chabaret Island | Landmark | Island | Cloué 1863 | 587888 | 587888 |
| 64 | Great Islets Harbour, Stage of Room No. 2 | Landmark | Stage | Cloué 1863 | 588157 | 588157 |
| 65 | Great Sacred Island | Landmark | Island | Cloué 1854 | 598419 | 598419 |
| 66 | Great Sacred Island | Landmark | Island | Cloué 1854 | 598802 | 598802 |
| 67 | Great St. Julien Harbour | Daymark | Flagstaff | Pierre 1856 | 588136 | 588136 |
| 68 | Great St. Julien, Point de l'Aurore | Daymark | Stage | Pierre 1856 | 588169 | 588169 |
| 69 | Green Point, Quirpon, No. 14 | Daymark | Flagstaff | Cloué 1854 | 607847 | 607847 |
| 70 | Griquet, Black Islet | Landmark | Island | Pierre 1859 | 608149 | 608149 |
| 71 | Griquet, Camel Island | Landmark | Hill | Pierre 1859 | 607525 | 607525 |
| 72 | Lancey Ball Bay | Landmark | Bay | Cloué 1854 | 606344 | 606344 |
| 73 | Lancey Ball Point | Landmark | Headland | Cloué 1854 | 605946 | 605946 |
| 74 | Le Pouce, Brent's Cove | Landmark | Hill | Cloué 1860 | 593793 | 593793 |
| 75 | Little Buse | Landmark | Hill | Cloué 1863 | 587264 | 587264 |
| 76 | Little Cormorandier Island | Landmark | Island | Cloué 1863 | 592559 | 592559 |
| 77 | Little Islets Harbour | Landmark | Hill | Cloué 1858 | 588556 | 588556 |
| 78 | Little Islets Harbour | Daymark | Flagstaff | Cloué 1858 | 589340 | 589340 |
| 79 | Little Islets Harbour, English Island | Landmark | Island | Cloué 1863 | 589911 | 589911 |
| 80 | Little Islets Harbour, Madame Island | Landmark | Island | Cloué 1863 | 589958 | 589958 |
| 81 | Little Islets Harbour, Madame Island | Landmark | Island | Cloué 1858 | 589910 | 589910 |
| 82 | Little Islets Harbour, Morne 48m | Landmark | Morne | Cloué 1858 | 588945 | 588945 |
| 84 | Little Sacred Island | Landmark | Island | Cloué 1854 | 600853 | 600853 |
| 85 | Little St Julien Point | Landmark | Headland | Pierre 1856 | 588336 | 588336 |
| 86 | Noddy Bay, Hump Hill | Landmark | Morne | Cloué 1854 | 605839 | 605839 |
| 87 | Noddy Bay, Lower Room | Daymark | Flagstaff | Cloué 1854 | 605483 | 605483 |
| 88 | Noddy Bay, Near Round Hill | Landmark | Morne | Cloué 1854 | 605657 | 605657 |
| 89 | Pacquet, Calvaire | Daymark | Cross | Cloué 1860 | 581481 | 581481 |
| 90 | Pacquet, Gros Morne | Landmark | Morne | Formier 1816; Cloué 1860 | 582048 | 582048 |
| 91 | Pacquet, No. 1 | Landmark | Stage | Cloué 1860 | 581064 | 581064 |
| 92 | Pacquet, Pelee Point | Landmark | Headland | Cloué 1860 | 582261 | 582261 |
| 93 | Pacquet, Pointe aux Broussailles | Landmark | Headland | Cloué 1860 | 580908 | 580908 |
| 94 | Pacquet, Soup Point | Landmark | Headland | Cloué 1860 | 581294 | 581294 |
| 95 | Partridge Point | Landmark | Headland | Richard 1829 | 560025 | 560025 |
| 96 | Pistolet Bay, Croix Island | Landmark | Island | British Hydrographic Survey 1878 (After Cloué 1861) | 591036 | 591036 |
| 83 | Pistolet Bay, Little Rond Mount | Landmark | Hill | British Hydrographic Survey 1878 (After Cloué 1861) | 592345 | 592345 |
| 97 | Pistolet Bay, Milan Arm, Beacon | Daymark | Beacon | British Hydrographic Survey 1878 (After Cloué 1861) | 591234 | 591234 |
| 98 | Pistolet Bay, Milan Point peak | Landmark | Hill | British Hydrographic Survey 1878 (After Cloué 1861) | 590218 | 590218 |
| 99 | Pistolet Bay, Rond Island | Landmark | Island | British Hydrographic Survey 1878 (After Cloué 1861) | 591142 | 591142 |
| 100 | Quirpon Island Admiralty, No. 2 | Daymark | Flagstaff | Cloué 1854 | 608182 | 608182 |
| 101 | Quirpon Island, No. 1 | Daymark | Flagstaff | Cloué 1854 | 608494 | 608494 |

| ID | Name | Type | Mark_Type | Source | Easting | Northing |
|---|---|---|---|---|---|---|
| 102 | Quirpon Island, No. 3 | Daymark | Flagstaff | Cloué 1854 | 607781 | 607781 |
| 103 | Quirpon Island, No. 4 | Daymark | Flagstaff | Cloué 1854 | 607489 | 607489 |
| 104 | Quirpon Island, No. 5 | Daymark | Flagstaff | Cloué 1854 | 607348 | 607348 |
| 105 | Quirpon, Barracks Rocks | Landmark | Reef | Cloué 1854 | 604084 | 604084 |
| 106 | Quirpon, Grandmother Island | Landmark | Island | Cloué 1854 | 607376 | 607376 |
| 107 | Quirpon, Grandmother Island, No. 4 | Daymark | Stage | Cloué 1854 | 607531 | 607531 |
| 108 | Quirpon, Les Ilots, No. 5 | Daymark | Stage | Cloué 1854 | 607347 | 607347 |
| 109 | Quirpon, Morne Fortan | Daymark | Cairn | Cloué 1854; Tapper and Pope 2014 | 607751 | 607751 |
| 110 | Quirpon, No. 13 | Daymark | Flagstaff | Cloué 1854 | 607524 | 607524 |
| 111 | Quirpon, Noble Point, No. 15 | Daymark | Flagstaff | Cloué 1854 | 607962 | 607962 |
| 112 | Quirpon, Nobles Island | Landmark | Island | Cloué 1854 | 606928 | 606928 |
| 113 | Quirpon, Nobles Island, No. 10 | Daymark | Flagstaff | Cloué 1854 | 606787 | 606787 |
| 114 | Quirpon, Nobles Island, No. 11 | Daymark | Flagstaff | Cloué 1854 | 606681 | 606681 |
| 115 | Quirpon, Nobles Island, No. 12 | Daymark | Flagstaff | Cloué 1854 | 606577 | 606577 |
| 116 | Quirpon, Noddy Bay Head | Landmark | Headland | Cloué 1854 | 604568 | 604568 |
| 117 | Rouge Island | Landmark | Island | Cloué 1864 | 586611 | 586611 |
| 118 | Sacred Bay, Curlew Point | Landmark | Headland | Cloué 1854 | 596548 | 596548 |
| 119 | Sacred Bay, Green Island | Landmark | Island | Cloué 1854 | 595271 | 595271 |
| 120 | Sacred Bay, Little Harbour | Landmark | Headland | Cloué 1854 | 594677 | 594677 |
| 121 | Sacred Bay, Moyacs Island | Landmark | Island | Cloué 1854 | 595799 | 595799 |
| 122 | Sacred Bay, Onion Island | Landmark | Island, prominent rock | Cloué 1854 | 596109 | 596109 |
| 123 | St. Anthony Hill (Gros Morne de St Antoine) | Landmark | Morne | Pierre 1860 | 599905 | 599905 |
| 124 | St Lunaire Bay, Elizabeth Island | Landmark | Island | Pierre 1859 | 605142 | 605142 |
| 125 | St. Anthony Harbour entrance | Daymark | Flagstaff | Pierre 1860 | 599993 | 599993 |
| 126 | St. Julien, Black Island | Landmark | Island | Le Tourneur 1766 | 589043 | 589043 |
| 127 | St. Lunaire Bay, Adelaide Island | Landmark | Island | Pierre 1859 | 605353 | 605353 |
| 128 | St. Lunaire Bay, Carentonne Island | Landmark | Hill | Pierre 1859 | 605198 | 605198 |
| 129 | St. Lunaire Bay, Carentonne Island | Landmark | Island | Pierre 1859 | 605338 | 605338 |
| 130 | St. Lunaire Bay, Granchain Island, Northern tip | Landmark | Headland | Pierre 1859 | 606283 | 606283 |
| 131 | St. Lunaire Bay, Granchain Point, 'Black cliff' | Landmark | Cliff | Pierre 1859 | 606615 | 606615 |
| 132 | St. Lunaire Bay, Nymphe Island, NW tip | Landmark | Headland | Pierre 1859 | 604731 | 604731 |
| 133 | Three Mountains | Landmark | Hill | Pierre 1860 | 596247 | 596247 |
| 134 | Three Mountains | Landmark | Hill | Pierre 1860 | 596785 | 596785 |
| 135 | Three Mountains | Landmark | Hill | Pierre 1860 | 597055 | 597055 |
| 136 | Three Mountains Harbour, Notre Dame Island | Landmark | Island | Pierre 1860 | 598191 | 598191 |
| 137 | Unknown peak above Conche Harbour | Landmark | Hill | Cloué 1864 | 575229 | 575229 |
| 138 | White Cape | Landmark | Hill | Pierre 1859 | 607422 | 607422 |
| 139 | White Cape | Landmark | Cliff | Pierre 1859 | 607684 | 607684 |
| 140 | White Islands | Landmark | Island | Pierre 1859 | 613728 | 613728 |

## Appendix 4: List of 216 anchorages and mooring sites

| ID | Name | Type | Source | Sediment | Bathymetry | Easting | Northing |
|---|---|---|---|---|---|---|---|
| 1 | Bell Island | Anchorage | Le Tourneur c1784 | | | 599537 | 5617032 |
| 2 | Bell Island | Coastal mooring site | Le Tourneur c1784 | rocks | | 599145 | 5617156 |
| 3 | Bell Island | Coastal mooring site | Le Tourneur c1784 | rocks | | 599694 | 5616883 |
| 4 | Bell Island | Coastal mooring site | Le Tourneur c1784 | rocks | | 599741 | 5617021 |
| 5 | Bell Island | Coastal mooring site | Le Tourneur c1784 | rocks | | 599500 | 5617282 |
| 6 | Bell Island | Coastal mooring site | Le Tourneur c1784 | rocks | | 599185 | 5617352 |
| 7 | Brent's Cove | Anchorage | Le Tourneur c1784 | | 2ftm | 592512 | 5532606 |
| 8 | Canada Harbour, Canaries Harbour | Coastal mooring site | Le Tourneur 1766 | | | 561086 | 5615003 |
| 9 | Canada Harbour, Canaries Harbour | Anchorage | Le Tourneur 1766, c1784; Richard 1827 | Sand, rocks, gravel | 4ftm | 561054 | 5615003 |
| 10 | Canada Harbour, Chimney Bay | Anchorage | Anon 1822: 259 | | | 559642 | 5627448 |
| 11 | Cape Rouge, Biche Arm | Anchorage (Major) | Le Tourneur c1784; Anon 1822: 255; Desfosses 1827; Cloué 1864 | Mud;;Mud | 20ftm;;; | 579602 | 5644567 |
| 12 | Cape Rouge, Biche Arm | Anchorage | Defosses 1827 | Mud, gravel | 78ft franc | 579268 | 5643904 |
| 13 | Cape Rouge, Biche Arm | Anchorage | Defosses 1827 | Mud, gravel | 68ft franc | 579309 | 5644178 |
| 14 | Cape Rouge, Biche Arm | Anchorage | Defosses 1827 | Mud, gravel | 79ft franc | 579648 | 5644745 |
| 15 | Cape Rouge, Priests Cove | Anchorage | Le Tourneur 1766 | Marl | 25-30ftm | 578445 | 5641546 |
| 16 | Cape Rouge, Southwest Crouse | Anchorage | Le Tourneur 1766, c1784; Anon 1822: 255; Desfosses 1827; Cloué 1858; CHS 4507 | Mud, gravel | 15ftm;11fm | 578307 | 5640040 |
| 17 | Cat Cove | Anchorage | Le Tourneur 1766, c1784 | | 4ftm | 560017 | 5609443 |
| 18 | Coachman's Harbour, South Cove | Anchorage | Le Tourneur c1784 | | 6ftm | 563598 | 5544868 |
| 19 | Conche Harbour, Martinique Bay | Anchorage | Le Tourneur 1766, c1784; Cloué 1858 | Sand, pebbles, marl | 20ftm; 20m | 577169 | 5639272 |
| 20 | Conche Harbour, Martinique Bay | Coastal mooring site | Le Tourneur c1784 | rocks | | 576927 | 5639473 |
| 21 | Conche Harbour, Martinique Bay | Coastal mooring site | Le Tourneur c1784 | rocks | | 576897 | 5639424 |
| 22 | Conche Harbour, Martinique Bay | Coastal mooring site | Le Tourneur c1784 | rocks | | 576899 | 5639267 |
| 23 | Conche Harbour, Martinique Bay | Coastal mooring site | Le Tourneur c1784 | rocks | | 576864 | 5639314 |
| 24 | Conche Harbour, Martinique Cove | Anchorage | Le Tourneur c1784; Richard 1830 | Sand | 5m | 576924 | 5639355 |
| 25 | Conche Harbour, Silver Cove | Anchorage | Le Tourneur c1784; Richard 1830; Cloué 1858 | Muddy sand, pebbles | 4ftm; 15m | 577686 | 5637868 |
| 26 | Cook's Harbour | Anchorage | British Hydrographic Service 1878 (After Cloué 1861) | | | 578762 | 5717734 |
| 27 | Cremaillere Harbour | Anchorage | Combis Daugustine 1792; Pierre 1860; Anon 1822: 247 | Sand | 10ftm | 596729 | 5688820 |
| 28 | Cremaillere Harbour | Anchorage | Combis Daugustine 1792; Pierre 1860; Anon 1822: 247 | Sand | 9ftm | 596364 | 5688637 |
| 29 | Cremaillere Harbour, Anchor Point | Anchorage | Combis Daugustine 1792; Anon 1822: 246 | Sand, pebbles | 8ftm | 597815 | 5688263 |
| 30 | Croque | Anchorage | Le Tourneur c1784; Anon 1822: 254 | Mud, gravel | 15ftm;13m | 582422 | 5656988 |
| 31 | Croque | Anchorage (Major) | Coquelin Latiolais 1767; Le Tourneur 1766, c1784; La Roche-Poncie 1847; Anon 1822: 254 | Soft muddy clay | 18ftm;28m | 583021 | 5657295 |
| 32 | Croque | Anchorage (Major) | Le Tourneur 1766; Coquelin Latiolais 1767; La | Soft muddy clay | 28m | 582920 | 5657485 |

| ID | Name | Type | Source | Sediment | Bathymetry | Easting | Northing |
|---|---|---|---|---|---|---|---|
| | | | Roche-Poncie 1847; Anon 1822: 254 | | | | |
| 33 | Croque | Anchorage | Coquelin Latiolais 1767 | | 12-13ftm | 583450 | 5656326 |
| 34 | Croque, Epine Cadoret | Coastal mooring site | Le Tourneur c1784 | | | 582395 | 5657031 |
| 35 | Croque, Epine Cadoret | Coastal mooring site | Le Tourneur c1784 | | | 582332 | 5656973 |
| 36 | Croque, Epine Cadoret | Coastal mooring site | Le Tourneur c1784 | | | 582514 | 5656917 |
| 37 | Croque, Groux | Anchorage | La Roche-Poncie 1847 | Sand | | 585078 | 5656417 |
| 38 | Croque, Southwest Croque | Anchorage | Le Tourneur c1784; Le Tourneur 1821 | | 4m | 584033 | 5654127 |
| 39 | Croque, Southwest Croque | Coastal mooring site | Le Tourneur c1784 | | | 584012 | 5654158 |
| 40 | Croque, Southwest Croque | Coastal mooring site | Le Tourneur c1784 | | | 583992 | 5654091 |
| 41 | Croque, Southwest Croque | Coastal mooring site | Le Tourneur c1784 | | | 584073 | 5654167 |
| 42 | Croque, Southwest Croque | Coastal mooring site | Le Tourneur c1784 | | | 584043 | 5654059 |
| 43 | Englee | Anchorage | Le Tourneur 1766, c1784 | mud | 5-6ftm | 563085 | 5620123 |
| 44 | Fischot Harbour | Anchorage | Cloué 1857 | Mud | | 592103 | 5671099 |
| 45 | Fischot Harbour | Anchorage | Le Tourneur c1784 | | | 591971 | 5671348 |
| 46 | Fischot Harbour | Anchorage | Le Tourneur c1784; Cloué 1857 | Mud | 5-8ftm | 591929 | 5671173 |
| 47 | Fischot Harbour | Anchorage | Cloué 1857; Anon 1822 | Mud | 3.5-5ftm | 592079 | 5671443 |
| 48 | Fischot Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 591955 | 5671465 |
| 49 | Fischot Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 592171 | 5671482 |
| 50 | Fischot Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 592116 | 5671372 |
| 51 | Fischot Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 591926 | 5671304 |
| 52 | Fleur de Lys | Anchorage | Le Tourneur c1784; Cloué 1859 | Muddy sand | | 561981 | 5552107 |
| 53 | Fleur de Lys | Anchorage | Richard 1829 | | | 562168 | 5552143 |
| 54 | Fleur-de-Lys | Coastal mooring site | Le Tourneur c1784 | rocks | | 561941 | 5552144 |
| 55 | Fleur-de-Lys | Coastal mooring site | Le Tourneur c1784 | rocks | | 561930 | 5552118 |
| 56 | Four Harbour | Anchorage (Major) | Le Tourneur 1766; Coquelin 1767a; Le Tourneur 1780; Cloué 1858; Anon1822: 251 | Mud | 9ftm; 11m | 588835 | 5670724 |
| 57 | Four Harbour | Anchorage (Major) | Le Tourneur 1766, c1784; Cloué 1858; Anon1822: 251 | Mud | 8ftm; 6m | 588708 | 5670454 |
| 58 | Four Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 588639 | 5670500 |
| 59 | Four Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 588547 | 5670449 |
| 60 | Four Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 588692 | 5670407 |
| 61 | Four Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 588742 | 5670458 |
| 62 | Fourche, Northeast Cove | Anchorage | Le Tourneur 1766, c1784; Anon 1822: 263 | Clay | 7-9ftm | 548073 | 5597376 |
| 63 | Fourche, Northern Arm | Anchorage | Le Tourneur 1766, c1784; Anon 1822: 263 | | 9-12ftm | 546365 | 5596687 |
| 64 | Goose Cove | Anchorage | Le Tourneur c1784; Pierre 1860 | Sand | 12ftm; 14m | 595350 | 5685306 |
| 65 | Goose Cove | Anchorage | Pierre 1860 | Sand | 11m | 595088 | 5685295 |
| 66 | Grandois | Anchorage | Le Tourneur 1766 | | | 587882 | 5661974 |
| 67 | Great Brehats | Anchorage (Major) | Le Tourneur c1784; Anon 1822: 244-245; Peyronnet 18--; Pierre 1861 | | 9-10ftm | 604463 | 5698171 |
| 68 | Great Brehats | Coastal mooring site | Le Tourneur c1784; Pierre 1861 | | | 604509 | 5698279 |
| 69 | Great Brehats | Coastal mooring site | Le Tourneur c1784; Pierre 1861 | | | 604387 | 5698190 |
| 70 | Great Brehats | Coastal mooring | Le Tourneur c1784 | | | 604492 | 5698037 |

| ID | Name | Type | Source | Sediment | Bathymetry | Easting | Northing |
|---|---|---|---|---|---|---|---|
| | | site | | | | | |
| 71 | Great Brehats | Coastal mooring site | Pierre 1861 | | | 604384 | 5698138 |
| 72 | Great Cat Arm | Anchorage | Le Tourneur 1785 | | 14-20toise | 519476 | 5553146 |
| 73 | Great Cat Arm | Anchorage | Le Tourneur 1785 | | 20-25toise | 522022 | 5553313 |
| 74 | Great Coney Arm | Anchorage | Le Tourneur 1785 | | 34toises | 515490 | 5531267 |
| 75 | Great Harbour Deep, Cats Cove | Anchorage | Le Tourneur c1784, 1785a | rocks | 9-12ftm | 540265 | 5580941 |
| 76 | Great Harbour Deep, Cats Cove | Coastal mooring site | Le Tourneur c1784 | rocks | | 540314 | 5580956 |
| 77 | Great Harbour Deep, Cats Cove | Coastal mooring site | Le Tourneur c1784 | rocks | | 540195 | 5580945 |
| 78 | Great Harbour Deep, Cats Cove | Coastal mooring site | Le Tourneur c1784 | rocks | | 540261 | 5580981 |
| 79 | Great Harbour Deep, Jacques Cove | Anchorage | Le Tourneur 1766, c1784 | | 7-10ftm | 538539 | 5579294 |
| 80 | Great Harbour Deep, Jacques Cove | Coastal mooring site | Le Tourneur 1766, c1784, 1785a | rocks | | 538416 | 5579304 |
| 81 | Great Harbour Deep, Jacques Cove | Coastal mooring site | Le Tourneur 1766, c1784, 1785a | rocks | | 538604 | 5579336 |
| 82 | Great Harbour Deep, Jacques Cove | Coastal mooring site | Le Tourneur 1766, c1784, 1785a | rocks | | 538549 | 5579256 |
| 83 | Great Harbour Deep, Northeast Arm | Anchorage | Le Tourneur c1784 | | | 536601 | 5583909 |
| 84 | Great Harbour Deep, Pigeonniere Arm | Anchorage | Le Tourneur 1766, c1784 | | 25ftm | 534950 | 5580734 |
| 85 | Great Islets Harbour, Admiralty Cove | Anchorage | Coquelin Latiolais 1767; Le Tourneur c1784; Cloué 1863 (1853) | Mud | 15ftm;21m | 587928 | 5669150 |
| 86 | Great Islets Harbour, River Point | Anchorage | Le Tourneur c1784; Cloué 1863 (1853) | Gravel, sand | 12ftm;8m | 586096 | 5668411 |
| 87 | Great St Julien Harbour | Anchorage | Le Tourneur 1766; Coquelin Latiolais 1767; Pierre 1856; Anon 1822: 253 | Mud, gravel | 10-11m | 588243 | 5660826 |
| 88 | Great St Julien Harbour | Anchorage (Major) | Le Tourneur 1766, c1784; Coquelin Latiolais 1767; Pierre 1856; Anon 1822:253 | Mud;Mud | 12ftm;5-6m | 588111 | 5660689 |
| 89 | Great St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 588138 | 5660795 |
| 90 | Great St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 588055 | 5660724 |
| 91 | Great St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 588184 | 5660627 |
| 92 | Great St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 588261 | 5660692 |
| 93 | Great St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 588134 | 5660609 |
| 94 | Grevigneux | Anchorage | Le Tourneur 1766, c1784 | sand | 8-9ftm | 563085 | 5620471 |
| 95 | Grevigneux | Coastal mooring site | Le Tourneur c1784 | rocks | | 563065 | 5620459 |
| 96 | Grevigneux | Coastal mooring site | Le Tourneur c1784 | rocks | | 563071 | 5620484 |
| 97 | Grevigneux | Coastal mooring site | Le Tourneur c1784 | rocks | | 563089 | 5620440 |
| 98 | Griquet Harbour | Anchorage | Le Tourneur c1784; Pierre 1859, Griquets | Mud, gravel | 12ftm; 16m | 607370 | 5710018 |
| 99 | Griquet Harbour | Anchorage | Le Tourneur c1784; Pierre 1859 | Mud | 15-19m | 607378 | 5709796 |
| 100 | Griquet, Northwest Bay | Anchorage (Major) | Pierre 1859 | Mud | 16-17m | 606509 | 5710908 |
| 101 | Griquet, Northwest Bay | Anchorage (Major) | Pierre 1859 | Mud, pebbles, gravel | 17-19m | 605809 | 5712956 |
| 102 | Griquet, Northwest Bay | Anchorage (Major) | Pierre 1859 | Mud, pebbles | 33m | 605800 | 5712349 |
| 103 | Griquet, Northwest Bay | Anchorage (Major) | Pierre 1859 | Mud | 28-33m | 606075 | 5711604 |
| 104 | Griquet, Southwest Bay | Anchorage (Major) | Pierre 1859 | Mud | 18-19m | 606816 | 5709968 |
| 105 | Griquet, Southwest Bay | Anchorage (Major) | Pierre 1859 | | | 606473 | 5709546 |
| 106 | Griquet, Southwest Bay | Anchorage (Major) | Pierre 1859 | Mud | 13m | 606227 | 5709735 |
| 107 | Ha-Ha Bay | Anchorage | Le Tourneur c1784 | | 3.5-6ftm | 587513 | 5712905 |
| 108 | Hampden Bay | Anchorage | Le Tourneur 1785 | | 23 toises | 510218 | 5489405 |
| 109 | Hampden Bay | Anchorage | Le Tourneur 1785 | | 23 toises | 510643 | 5490596 |

| ID | Name | Type | Source | Sediment | Bathymetry | Easting | Northing |
|---|---|---|---|---|---|---|---|
| 110 | Harbour Round | Anchorage | Le Tourneur c1784; Anon 1822: 267 | | 6ftm | 590813 | 5530782 |
| 111 | Harbour Round | Anchorage | Le Tourneur c1784; Anon 1822: 267 | | 8ftm | 591142 | 5530707 |
| 112 | Harbour Round, Goelettes Bay ('Schooner Bay') | Anchorage (Major) | Le Tourneur c1784; Anon 1822: 267-8 | | 14ftm | 590620 | 5531058 |
| 113 | Hilliers Harbour (Boutitou) | Anchorage | Le Tourneur c1784; Cloué 1863 | Muddy sand. | 4-6ftm | 568541 | 5626459 |
| 114 | Hilliers Harbour (Boutitou) | Coastal mooring site | Le Tourneur c1784 | rocks | | 568420 | 5626441 |
| 115 | Hilliers Harbour (Boutitou) | Coastal mooring site | Le Tourneur c1784 | rocks | | 568527 | 5626554 |
| 116 | Hilliers Harbour (Boutitou) | Coastal mooring site | Le Tourneur c1784 | rocks | | 568572 | 5626376 |
| 117 | Hilliers Harbour (Boutitou) | Coastal mooring site | Le Tourneur c1784 | rocks | | 568627 | 5626472 |
| 118 | Hooping Harbour | Anchorage | Le Tourneur 1766, c1784; Anon 1822:262 | mud | 5-6ftm | 555780 | 5607434 |
| 119 | Hooping Harbour, Northern Arm | Anchorage (Major) | Le Tourneur c1784; Anon 1822: 262 | | 10-18ftm | 552150 | 5607440 |
| 120 | Hooping Harbour, Northern Arm | Coastal mooring site | Le Tourneur c1784 | rocks | | 552258 | 5607632 |
| 121 | Hooping Harbour, Northern Arm | Coastal mooring site | Le Tourneur c1784 | rocks | | 552203 | 5607297 |
| 122 | Jackson's Arm | Anchorage | Le Tourneur 1785; Cloué 1861 | | 12toises | 513796 | 5523439 |
| 123 | Jackson's Arm | Anchorage | Le Tourneur 1785; Cloué 1861 | | 16toises | 514515 | 5523395 |
| 124 | La Scie Harbour | Anchorage | Le Tourneur c1784; Anon1822:268 | | | 600278 | 5535155 |
| 125 | La Scie Harbour | Anchorage | Le Tourneur c1784; Anon1822:268 | | | 600565 | 5535063 |
| 126 | La Scie Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 600181 | 5535162 |
| 127 | La Scie Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 600212 | 5535129 |
| 128 | Litle Harbour Deep | Anchorage | Le Tourneur c1784; CHS 4505 | | 9ftm;12ftm | 532888 | 5566078 |
| 129 | Little Canada Harbour | Anchorage | Le Tourneur 1766, c1784 | | 2.5-3ftm | 562543 | 5613593 |
| 130 | Little Islets Harbour | Anchorage | Le Tourneur c1784; Cloué 1858; CHS 4516 | Mud | 1ftm, 3ftm | 589313 | 5669887 |
| 131 | Little Islets Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 589218 | 5669838 |
| 132 | Little Islets Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 589176 | 5669727 |
| 133 | Little Islets Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 589194 | 5669722 |
| 134 | Little Islets Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 589351 | 5669773 |
| 135 | Little Islets Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 589404 | 5669867 |
| 136 | Little Islets Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 589391 | 5669943 |
| 137 | Little Quirpon | Anchorage | Le Tourneur c1784; Anon1822; Cloué 1854 | Sand | 5ftm; 5m | 608167 | 5715811 |
| 138 | Little Quirpon | Anchorage | Le Tourneur c1784; Anon1822; Cloué 1854 | Sand | 5ftm; 7m | 608254 | 5715861 |
| 139 | Little Quirpon | Anchorage | Le Tourneur c1784; Cloué 1854 | Gravel, rocks | 6ftm; 7m | 608114 | 5715565 |
| 140 | Little Quirpon, Herbert Point | Coastal mooring site | Le Tourneur c1784; Anon 1822; 238; Cloué 1854 | rocks | | 608181 | 5715834 |
| 141 | Little Quirpon, Herbert Point | Coastal mooring site | Le Tourneur c1784; Anon 1822; 238; Cloué 1854 | rocks | | 608311 | 5715891 |
| 142 | Little Quirpon, Herbert Point | Coastal mooring site | Le Tourneur c1784; Anon 1822; 238; Cloué 1854 | rocks | | 608225 | 5715879 |
| 143 | Little Quirpon, Herbert Point | Coastal mooring site | Le Tourneur c1784; Anon 1822; 238; Cloué 1854 | rocks | | 608130 | 5715801 |
| 144 | Little St Julien Harbour | Anchorage (Major) | Coqueline Latiolais 1767; Le Tourneur 1766, c1784; Pierre 1856; Anon 1822: 252 | Mud, rocks | 9-12m | 588025 | 5661374 |

| ID | Name | Type | Source | Sediment | Bathymetry | Easting | Northing |
|---|---|---|---|---|---|---|---|
| 145 | Little St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 588034 | 5661286 |
| 146 | Little St Julien Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 588086 | 5661335 |
| 147 | Little St Julien Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 587904 | 5661262 |
| 148 | Little St Julien Harbour | Coastal mooring site | Le Tourneur c1784 | rocks | | 587983 | 5661435 |
| 149 | Little St Julien Harbour | Anchorage | Coqueline Latiolais 1767 | | 6ftm | 587922 | 5661216 |
| 150 | Little St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 587877 | 5661066 |
| 151 | Little St Julien Harbour | Coastal mooring site | Le Tourneur 1766, c1784 | rocks | | 587900 | 5661125 |
| 152 | Middle Arm | Anchorage | Le Tourneur 1785. | | 45toises | 539109 | 5525737 |
| 153 | Ming's BIght | Anchorage | Le Tourneur c1784 | | 17-20ftm | 568944 | 5536758 |
| 154 | Noddy Bay | Anchorage (Major) | Le Tourneur c1784; Anon 1822; Cloué 1854 | Sandy mud | 5ftm; 6m | 604969 | 5715226 |
| 155 | Noddy Bay, Garden Cove | Anchorage (Major) | Cloué 1854 | Sandy gravel | 5m | 604504 | 5716267 |
| 156 | North Bay | Anchorage | Le Tourneur c1784; Pierre 1859 | Mud | 11ftm; 28m | 607691 | 5712110 |
| 157 | Pacquet Harbour, Northwest Arm | Anchorage (Major) | Le Tourneur c1784; Anon 1822: 266-7; Anon 1832 | Sand, rock, gravel; coral (1832) | 12-15m | 580697 | 5537999 |
| 158 | Pacquet Harbour, Northwest Arm | Anchorage | Formier 1816; Anon 1822: 266-7; Cloué 1857 | Muddy sand, gravel | 11f;16-25m | 580937 | 5537963 |
| 159 | Pacquet Harbour, Southwest Arm | Anchorage | Formier 1816; Cloué 1857 | Mud; Mud | 5ftm;9-10m | 579788 | 5535711 |
| 160 | Pacquet Harbour, Southwest Arm | Anchorage | Anon c1832 | Gravel | 8ftm | 580264 | 5536549 |
| 161 | Pistolet Bay, Carpon Cove | Anchorage | British Hydrographic Service 1878 (After Cloué 1861) | | 586384 | 5709260 | 586384 |
| 162 | Pistolet Bay, Milan Arm | Anchorage | British Hydrographic Service 1878 (After Cloué 1861) | | 590692 | 5705232 | 590692 |
| 163 | Pistolet Bay, Milan Point | Anchorage | British Hydrographic Service 1878 (After Cloué 1861) | | 588665 | 5706908 | 588665 |
| 164 | Quirpon Harbour | Anchorage (Major) | Le Tourneur c1784; Cloué 1854 | Mud, Sandy mud | 10ftm;16m | 606869 | 5716749 |
| 165 | Quirpon Harbour, Trinity Bight | Anchorage (Major) | Anon 1822:238; Cloué 1854 | Mud | 14m | 607511 | 5715756 |
| 166 | Quirpon Island, Degrat Harbour | Anchorage | Le Tourneur c1784; Anon1822 | | 5ftm | 608927 | 5719692 |
| 167 | Quirpon Island, Degrat Harbour | Coastal mooring site | Le Tourneur c1784 | | | 608871 | 5719600 |
| 168 | Quirpon Island, Degrat Harbour | Coastal mooring site | Le Tourneur c1784 | | | 608819 | 5719736 |
| 169 | Quirpon Island, L'anse aux pigeons | Anchorage | Anon 1822 | | | 608956 | 5720860 |
| 170 | Sacred Bay, Little Harbour | Anchorage | Anon 1822; Cloué 1854 | | | 594862 | 5717589 |
| 171 | Sacred Bay, South Road | Anchorage | Le Tourneur c1784; Cloué 1854 | | 12ftm | 595593 | 5714030 |
| 172 | Sacred Bay, West Road | Anchorage | Cloué 1854 | | | 593364 | 5716752 |
| 173 | Sops Arm | Anchorage | Le Tourneur 1785 | | 18toises | 508242 | 5510524 |
| 174 | Sops Arm | Anchorage | Le Tourneur 1785 | | 18toises | 510029 | 5510690 |
| 175 | Sops Arm, North Channel, Hauling Cove | Anchorage | Le Tourneur 1785 | | 18toises | 511607 | 5514699 |
| 176 | Sops Arm, North Channel, Sops Cove | Anchorage | Le Tourneur 1785 | | 15toises | 514558 | 5516090 |
| 177 | Southern Arm | Anchorage | Le Tourneur 1785 | | | 543808 | 5528429 |
| 178 | St Lunaire, Northwest Bay | Coastal mooring site | Le Tourneur c1784 | | | 602870 | 5706032 |
| 179 | St Lunaire, Northwest Bay | Coastal mooring site | Le Tourneur c1784 | | | 602783 | 5706056 |
| 180 | St. Anthony Harbour | Anchorage | Anon 1786; Pierre 1860 | Sand | 8ftm | 598953 | 5691752 |
| 181 | St. Anthony Harbour | Anchorage | Pierre 1860 | Sand | | 598512 | 5691638 |
| 182 | St. Anthony Harbour | Anchorage | Pierre 1860 | Sand | | 598306 | 5691911 |
| 183 | St. Anthony Harbour | Anchorage | Anon 1786; Pierre 1860 | Sand | 8-12ftm | 598947 | 5691215 |
| 184 | St. Anthony Harbour | Anchorage | Le Tourneur c1784; Anon | Sand | 8ftm | 599203 | 5690919 |

| ID | Name | Type | Source | Sediment | Bathymetry | Easting | Northing |
|---|---|---|---|---|---|---|---|
| | | | 1786 | | | | |
| 185 | St. Julien Island, South West Cove | Anchorage | Le Tourneur 1766; Anon 1822: 253 | | | 589268 | 5661724 |
| 186 | St. Lunaire Bay | Anchorage | Anon 1822; Pierre 1859 | Mud | 27m | 602515 | 5705641 |
| 187 | St. Lunaire Bay | Anchorage | Le Tourneur c1784; Pierre 1859 | Mud and sand; Muddy sand | 38m | 603303 | 5705557 |
| 188 | St. Lunaire Bay | Anchorage | Anon 1822; Pierre 1859 | Mud | ;27m | 604746 | 5706127 |
| 189 | St. Lunaire Bay | Anchorage | Anon 1822; Pierre 1859 | Sandy mud | ;21m | 604558 | 5706242 |
| 190 | St. Lunaire Bay, Anse Amelie | Anchorage | de Granchain 1784; Anon 1822; Pierre 1859 | Sandy mud;;Sandy mud | ;30m | 605692 | 5706369 |
| 191 | St. Lunaire Bay, Southwest Bay | Anchorage | Le Tourneur c1784; Pierre 1859 | Mud; Mud | 6ftm;14m | 605056 | 5702646 |
| 192 | St. Lunaire Bay, Southwest Bay | Anchorage | Anon 1822; Pierre 1859 | Mud | ;11m | 605019 | 5702385 |
| 193 | St. Lunaire Road | Anchorage | Anon 1822; Pierre 1859 | Mud | ;35m | 604722 | 5704520 |
| 194 | St. Lunaire Road | Anchorage | Anon 1822; Pierre 1859 | Mud | ;36m | 605128 | 5704101 |
| 195 | St. Lunaire Road | Anchorage | Anon 1822; Pierre 1859 | Mud | ;25m | 605541 | 5703822 |
| 196 | St. Lunaire Road | Anchorage | de Granchain 1784; Anon 1822; Pierre 1859 | Mud;;Mud | ;34m | 605298 | 5704398 |
| 197 | St. Lunaire Road | Anchorage | Le Tourneur c1784; Pierre 1859 | Sand and mud; Sandy mud | 12ftm;35m | 605128 | 5704708 |
| 198 | Three Mountain Harbour | Anchorage | Le Tourneur c1784; Pierre 1860 | Sand, pebbles | 6-7ftm; 5m | 596381 | 5685248 |
| 199 | Three Mountains Harbour | Coastal mooring site | Le Tourneur c1784; Anon. 1822; Pierre 1860 | rocks | | 596336 | 5685163 |
| 200 | Three Mountains Harbour | Coastal mooring site | Le Tourneur c1784; Anon. 1822; Pierre 1860 | rocks | | 596215 | 5685183 |
| 201 | Three Mountains Harbour | Coastal mooring site | Le Tourneur c1784; Anon. 1822; Pierre 1860 | rocks | | 596232 | 5685299 |
| 202 | Three Mountains Harbour | Coastal mooring site | Le Tourneur c1784; Anon. 1822; Pierre 1860 | rocks | | 596314 | 5685314 |
| 1 | Three Mountains Harbour, Petit Havre | Anchorage | Le Tourneur c1784; Pierre 1860 | | 4-6ftm;<4m | 597813 | 5684667 |
| 2 | Three Mountains Harbour, Petit Havre | Coastal mooring site | Le Tourneur c1784 | rocks | | 597823 | 5684704 |
| 3 | Three Mountains Harbour, Petit Havre | Coastal mooring site | Le Tourneur c1784 | rocks | | 597777 | 5684663 |
| 4 | Three Mountains Harbour, Petit Havre | Coastal mooring site | Le Tourneur c1784 | rocks | | 597782 | 5684701 |
| 5 | Three Mountains Harbour, Vierge Cove | Anchorage | Le Tourneur c1784 | Pebbles | <3m | 596376 | 5685551 |
| 6 | Three Mountains Harbour, Vierge Cove | Coastal mooring site | Le Tourneur c1784 | rocks | | 596370 | 5685571 |
| 7 | Three Mountains Harbour, Vierge Cove | Coastal mooring site | Le Tourneur c1784 | rocks | | 596346 | 5685564 |
| 8 | Three Mountains Harbour, Vierge Cove | Coastal mooring site | Le Tourneur c1784 | rocks | | 596346 | 5685541 |
| 9 | Union Cove | Anchorage (Major) | Le Tourneur c1784; 1785; Anon 1822: 264 | Mud | 10ftm | 535097 | 5568121 |
| 10 | Western Arm | Anchorage | Le Tourneur 1785 | | | 532437 | 5519777 |
| 11 | Western Arm | Anchorage | Le Tourneur 1785 | | | 532940 | 5519457 |
| 12 | Western Arm | Anchorage | Le Tourneur 1785 | | | 533534 | 5519053 |
| 13 | White Cape Harbour | Anchorage | Le Tourneur c1784; Pierre 1859 | Mud | 10ftm; 13m | 606914 | 5707828 |
| 14 | Wild Cove (Le Gouffre) | Anchorage (Major) | Le Tourneur 1766, c1784; Anon 1822: 260-1. | Mud | 20-25ftm | 558567 | 5615842 |

## Appendix 5: List of 41 historic timber resource areas

| Id | Name | Source | Type | Evidence |
|---|---|---|---|---|
| 1 | Bell Island | Anon 1822: 255 | Wood (construction) | Documentary |
| 2 | Canada Harbour, Chimney Bay | Anon 1822: 259, 261 | Wood (construction) | Documentary |
| 3 | Cap Rouge | Anon 1822: 257 | Wood (construction) | Documentary |
| 4 | Cap Rouge | Anon 1822: 257 | Wood (construction) | Documentary |
| 5 | Cat Cove | Anon 1822: 262 | Wood (construction) | Documentary |
| 6 | Coachman's Harbour | Anon 1822: 266 | Wood (construction) | Documentary |
| 7 | Conche Harbour | Anon 1822: 258 | Wood (construction) | Documentary |
| 8 | Cremaillere Harbour | Pierre 1860 | Wood (firewood) | Cartographic, documentary |
| 9 | Croque | Anon 1822: 254 | Wood (construction) | Documentary |
| 10 | Fleur de Lys Harbour | Anon 1822: 265 | Wood (construction) | Documentary |
| 11 | Fourché, Williamsport | Anon 1822: 263 | Wood (construction) | Documentary |
| 12 | Grandois | Pierre 1856 | Wood (firewood) | Cartographic |
| 13 | Great Brehats | Pierre 1861 | Wood (firewood) | Cartographic |
| 14 | Great Harbour Deep | Anon 1822: 263 | Wood (construction) | Documentary |
| 15 | Great Islets Harbour | Anon 1822: 251 | Wood (construction) | Documentary |
| 16 | Griquet Harbour | Pierre 1859 | Wood (firewood) | Cartographic |
| 17 | Griquet, Northwest Bay | Anon 1822: 241 | Wood (construction) | Documentary |
| 18 | Griquet, Southwest Bay | Anon 1822: 241; Carpon 1852:226; Pierre 1859 | Wood (construction) | Documentary |
| 19 | Ha-Ha Bay | Anon 1822: 237 | Wood (construction) | Documentary |
| 20 | Harbour Round | Anon 1822: 267 | Wood (construction) | Documentary |
| 21 | Hare Bay | Cloué 1860; Pierre 1857; Anon 1822: 248, 251, 253 | Wood (construction) | Cartographic |
| 22 | Hooping Harbour | Anon 1822: 262 | Wood (construction) | Documentary |
| 23 | Jackson's Arm, White Bay | Le Tourneur 1785; Anon 1822: 264 | Wood (construction) | Cartographic, Documentary |
| 24 | La Scie Harbour | Anon 1822: 268 | Wood (shipbuilding) | Documentary |
| 25 | La Scie Harbour | Anon 1822: 268 | Wood (construction) | Documentary |
| 26 | Little Cat Arm, White Bay | Le Tourneur 1785 | Wood (construction) | Documentary |
| 27 | Little Harbour Deep | Anon 1822: 264 | Wood (construction) | Documentary |
| 28 | Little St Julien | Pierre 1856 | Wood (firewood) | Cartographic |
| 29 | Middle Arm, White Bay | Le Tourneur 1785 | Wood (construction) | Documentary |
| 30 | Ming's Bight | Anon 1822: 266 | Wood (construction) | Documentary |
| 31 | Noddy Bay | Anon 1822: 238 | Wood (construction) | Documentary |
| 32 | North Channel, Sops Arm, White Bay | Le Tourneur 1785a | Wood (construction) | Documentary |
| 33 | Pacquet Harbour | Formier 1816; Anon 1822: 266-7 | Wood (construction) | Documentary |
| 34 | Pacquet, Pointe aux Broussailles | Formier 1816; Cloué 1860 | Wood (firewood) | Cartographic |
| 35 | Pillier | Anon 1822: 255 | Wood (construction) | Documentary |
| 36 | Pistolet Bay | Anon 1822: 241 | Wood (shipbuilding) | Documentary |
| 37 | St. Anthony Harbour | Pierre 1857 | Wood (firewood) | Cartographic |
| 38 | St. Lunaire Bay | Anon 1822: 244 | Wood (construction) | Documentary |
| 39 | Three Mountain Summits & Vierge Cove | Pierre 1860 | Wood (firewood) | Cartographic |
| 40 | Union Cove, White Bay | Anon 1822: 264 | Wood (construction) | Documentary |
| 41 | Western Arm, White Bay | Le Tourneur 1785 | Wood (construction) | Documentary |

## Appendix 6: List of 135 water sources within each harbour

| Id | Name | Source | Evidence | Easting | Northing |
|---|---|---|---|---|---|
| 1 | Bell Island | 1:50,000 Toporama | Cartographic | 599727 | 5617289 |
| 2 | Bois Island, Hardy Harbour | 1:50,000 Toporama | Cartographic | 578803 | 5541251 |
| 3 | Brent's Cove | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 592414 | 5532334 |
| 4 | Brent's Cove | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 592660 | 5532531 |
| 5 | Brent's Cove | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 592700 | 5532704 |
| 6 | Canada Harbour, Fardy's Cove | Pope et al 2009: 10 | Fieldwork | 560852 | 5615271 |
| 7 | Canaries Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 561141 | 5614966 |
| 8 | Canaries Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 561077 | 5614873 |
| 9 | Canaries Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 560874 | 5614707 |
| 10 | Canaries Harbour | Le Tourneur 1780; Richard 1827; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 560818 | 5614729 |
| 11 | Cape Rouge Harbour, Biche Arm | Desfosses 1827; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 579138 | 5644277 |
| 12 | Cape Rouge Harbour, Champ Paga | Pope 2010: 3; 1:10,000 Aerial Orthophoto 2008 | Photographic | 579380 | 5639918 |
| 13 | Cape Rouge Harbour, Northeast Crouse | Anon 1822: 255; 1:10,000 Aerial Orthophoto 2008 | Documentary, photographic | 580720 | 5642328 |
| 14 | Cape Rouge Harbour, Southwest Crouse | Anon 1822:256; Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic, photographic | 578029 | 5639907 |
| 15 | Cape Rouge Harbour, Southwest Crouse | Anon 1822:256; 1:10,000 Aerial Orthophoto 2008 | Cartographic, photographic | 578190 | 5639547 |
| 16 | Cape Rouge, Petit Desepoir est | Cloue 1864; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 578813 | 5639746 |
| 17 | Cat Cove | Le Tourneur c1784; 1:50,000 Toporama | Cartographic | 559981 | 5609561 |
| 18 | Coachman's Harbour, North Cove | 1:50,000 Toporama | Cartographic | 563022 | 5545570 |
| 19 | Conche | Le Tourneur c1784; Anon 1822: 257; 1:10,000 Aerial Orthophoto 2008 | Cartographic, photograhic | 577652 | 5637518 |
| 20 | Conche, Martinique Bay | Anon 1822: 258; Le Tourneur c1784 | Cartographic, photographic | 577557 | 5639061 |
| 21 | Conche, Martinique Bay | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic, photographic | 576924 | 5639482 |
| 22 | Conche, Silver Cove | Anon 1822: 257; Le Tourneur c1784 | Cartographic, photographic | 577909 | 5637650 |
| 23 | Conche, Silver Cove | Anon 1822: 258; 1:10,000 Aerial Orthophoto 2008 | Cartographic, photographic | 577873 | 5638143 |
| 24 | Cook's Harbour, Neige Bay | Pierre 1857 | Cartographic | 578298 | 5717773 |
| 25 | Cremaillere Harbour | Cloue 1857; 1:10,000 Aerial Orthophoto 2008 | Cartographic, documentary | 595967 | 5689075 |
| 26 | Cremaillere Harbour, Anchor Point | Anon 1822: 246; 1:10,000 Aerial Orthophoto 2008 | Documentary, photographic | 597880 | 5688090 |
| 27 | Cremaillere Harbour, Les Galets | Le Tourneur c1784; Anon 1822: 246; 1:10,000 Aerial Orthophoto 2008 | Cartographic, Photographic | 598181 | 5688341 |
| 28 | Cremaillere Harbour, No. 2 | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 598030 | 5688143 |
| 29 | Cremaillere Harbour, No. 4 | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Photographic | 598102 | 5688671 |
| 30 | Cremaillere Harbour, No. 5 | Fieldwork; 1:10,000 Aerial Orthophoto 2008 | Photographic | 597416 | 5688946 |
| 31 | Cremaillere Harbour, No. 5 | Fieldwork; 1:10,000 Aerial Orthophoto 2008 | Photographic | 597306 | 5689079 |
| 32 | Cremaillere Harbour, Observation Point | Tapper and Pope 2014 | Field survey | 596435 | 5688355 |
| 33 | Croque, Epine Cadoret | La Roche-Poncie 1847; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 582741 | 5657561 |
| 34 | Croque, Groux Bay | La Roche-Poncie 1847; 1:10,000 Aerial Orthophoto 2008 | Toponymy | 585155 | 5656660 |
| 35 | Croque, Kearney's Cove | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 583947 | 5656693 |
| 36 | Croque, Le Fond | La Roche-Poncie 1847; 1:10,000 Aerial | Cartographic | 583149 | 5657974 |

| Id | Name | Source | Evidence | Easting | Northing |
|---|---|---|---|---|---|
| | | Orthophoto 2008 | | | |
| 37 | Croque, Le Fond | La Roche-Poncie 1847; 1:10,000 Aerial Orthophoto 2008 | Toponymy | 582680 | 5658285 |
| 38 | Croque, Le Fond | 1:10,000 Aerial Orthophoto 2008 | Photographic, fieldwork | 583203 | 5657767 |
| 39 | Croque, SW Croque | 1:10,000 Aerial Orthophoto 2008 | Cartographic, photographic | 584026 | 5653992 |
| 40 | Englee | Le Tourneur c1784 | Cartographic | 563213 | 5619809 |
| 41 | Fischot | Le Tourneur 1780; Pope et al 2009: 15; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 591752 | 5670848 |
| 42 | Fischot | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 591760 | 5670545 |
| 43 | Fischot, Watering Cove | Le Tourneur c1784; Anon 1822: 249; 1:10,000 Aerial Orthophoto 2008 | Documentary | 591726 | 5671282 |
| 44 | Fleur-de-Lys | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 561086 | 5551774 |
| 45 | Four Harbour | Cloue 1858; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 588657 | 5670925 |
| 46 | Four Harbour | Cloue 1858; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 588493 | 5670852 |
| 47 | Fourche | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 548167 | 5597697 |
| 48 | Fourche | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 548022 | 5597817 |
| 49 | Fourche, Squally Point | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 546682 | 5596516 |
| 50 | Goose Cove | Le Tourneur c1784; Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 594934 | 5684691 |
| 51 | Goose Cove | Le Tourneur c1784; Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 595658 | 5684956 |
| 52 | Goose Cove | Le Tourneur c1784 | Cartographic | 594579 | 5685422 |
| 53 | Goose Cove | Le Tourneur c1784; Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 595355 | 5684725 |
| 54 | Goose Cove | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 595488 | 5685532 |
| 55 | Grandois Harbour | Coquelin Latiolais 1767; Pierre 1856; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 587667 | 5661721 |
| 56 | Grandois Harbour, Ile des Oies | Pierre 1856; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 587950 | 5662433 |
| 57 | Great Brehat | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 604465 | 5698510 |
| 58 | Great Brehat | Pierre 1861; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 604323 | 5697989 |
| 59 | Great Brehat | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 604570 | 5698563 |
| 60 | Great Buse Bay | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 587859 | 5665646 |
| 61 | Great Harbour Deep, Cat's Cove | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 540518 | 5580773 |
| 62 | Great Islets Harbour, Admiralty Cove, | Coquelin Latiolais 1767; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 588218 | 5669638 |
| 63 | Great St Julien Habour, No. 1 | Fieldwork; 1:10,000 Aerial Orthophoto 2008 | Photographic | 588072 | 5661118 |
| 64 | Great St Julien Harbour | Coquelin Latiolais 1767; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 587848 | 5660232 |
| 65 | Griquet Harbour | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 606760 | 5708690 |
| 66 | Griquet Harbour | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 606460 | 5707942 |
| 67 | Griquet Harbour | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 606517 | 5707859 |
| 68 | Griquet, Northwest Bay | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 605013 | 5712580 |
| 69 | Griquet, Northwest Bay | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 604952 | 5713251 |
| 70 | Griquet, Northwest Bay | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 606573 | 5713076 |
| 71 | Griquet, Southwest Bay | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 605862 | 5709829 |
| 72 | Griquet, Southwest Bay | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 606218 | 5709910 |
| 73 | Ha-Ha Bay | 1:50,000 Toporama | Cartographic | 587440 | 5712171 |

| Id | Name | Source | Evidence | Easting | Northing |
|---|---|---|---|---|---|
| 74 | Hampden Bay, Gold Cove | Le Tourneur 1785 | Documentary | 510687 | 5490758 |
| 75 | Harbour Deep, Jacques Cove | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 538396 | 5579169 |
| 76 | Harbour Round | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 590964 | 5530545 |
| 77 | Harbour Round | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 591100 | 5531324 |
| 78 | Hilliers Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 568656 | 5626631 |
| 79 | Hilliers Harbour | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 567869 | 5626379 |
| 80 | Hooping Harbour | Le Tourneur c1784 | Cartographic | 556380 | 5607920 |
| 81 | Hooping Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 555773 | 5607766 |
| 82 | Hooping Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 551982 | 5607573 |
| 83 | La Scie | Anon 1822: 269; 1:10,000 Aerial Orthophoto 2008 | Documentary, photographic | 600594 | 5534724 |
| 84 | La Scie | Anon 1822: 269; 1:10,000 Aerial Orthophoto 2008 | Documentary, cartographic | 600695 | 5535203 |
| 85 | Lancey Ball Bay | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 606199 | 5716259 |
| 86 | Little Brehat | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 605872 | 5701386 |
| 87 | Little Brehat | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 605716 | 5700890 |
| 88 | Little Canada Harbour | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 562424 | 5613448 |
| 89 | Little Harbour Deep, Le Fond | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 530868 | 5566019 |
| 90 | Little Harbour Deep, Sandy Point | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 531405 | 5566295 |
| 91 | Little Islets Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 589237 | 5669984 |
| 92 | Little Islets Harbour | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 589206 | 5669874 |
| 93 | Little Islets Harbour | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 589144 | 5669737 |
| 94 | Million Cove | Le Tourneur c1784 | Cartographic | 582701 | 5652187 |
| 95 | Ming's Bight | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 573160 | 5540987 |
| 96 | Noddy Bay | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 604953 | 5714817 |
| 97 | Noddy Bay, Garden Cove | 1:50,000 Toporama | Cartographic | 604306 | 5716028 |
| 98 | Noddy Bay, Lower Room | Fieldwork; 1:10,000 Aerial Orthophoto 2008 | Fieldwork | 605525 | 5715977 |
| 99 | North Bay, griquet | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 607687 | 5712836 |
| 100 | North Bay, Griquet | Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 607319 | 5712218 |
| 101 | Northeast Crouse, Craquelin | Anon 1822: 256; 1:10,000 Aerial Orthophoto 2008 | Documentary, photographic | 580347 | 5642660 |
| 102 | Pacquet Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 580949 | 5538194 |
| 103 | Pacquet Harbour, Northwest Arm | Formier 1816; Anon 1832; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 580477 | 5538018 |
| 104 | Pacquet Harbour, Southwest Arm | Formier 1816; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 580115 | 5535386 |
| 105 | Petit St Juliens Harbour | Fieldwork; 1:10,000 Aerial Orthophoto 2008 | Photographic | 587786 | 5660999 |
| 106 | Pilier | Pope 2006: 43; 1:10,000 Aerial Orthophoto 2008 | Photographic | 582110 | 5645886 |
| 107 | Pilier | 1:10,000 Aerial Orthophoto 2008 | Photographic | 581118 | 5646072 |
| 108 | Quirpon Island, Alun Point | 1:10,000 Aerial Orthophoto 2008 | Cartographic, fieldwork | 607860 | 5716362 |
| 109 | Quirpon Island, Alun Point | 1:10,000 Aerial Orthophoto 2008 | Cartographic, fieldwork | 607939 | 5716197 |
| 110 | Quirpon Island, Degrat Harbour | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 608749 | 5719432 |
| 111 | Quirpon Island, Degrat No. 7 | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 608716 | 5720350 |
| 112 | Quirpon Island, Grandmother Island | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 607689 | 5717673 |

| Id | Name | Source | Evidence | Easting | Northing |
|---|---|---|---|---|---|
| 113 | Quirpon Island, No. 2 | Fieldwork; 1:10,000 Aerial Orthophoto 2008 | Photographic | 608122 | 5715874 |
| 114 | Quirpon Island, Pigeon Cove | Le Tourneur c1784; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 608340 | 5720467 |
| 115 | Quirpon Island, Ron Galets Bay | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 608507 | 5717271 |
| 116 | Quirpon, Noble Cove | Cloue 1854; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 608300 | 5715511 |
| 117 | Robineau Cove | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 548729 | 5592449 |
| 118 | Robineau Cove | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 549147 | 5592551 |
| 119 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 597773 | 5692167 |
| 120 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 597877 | 5691902 |
| 121 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 598058 | 5691526 |
| 122 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 599545 | 5690473 |
| 123 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 599615 | 5691071 |
| 124 | St. Anthony Harbour | Le Tourneur 1780; Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 599472 | 5691235 |
| 125 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 599266 | 5690599 |
| 126 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 598928 | 5690763 |
| 127 | St. Anthony Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 598662 | 5691069 |
| 128 | St Lunaire Bay, Granchain Island | Anon 1832; Pierre 1859; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 605985 | 5704645 |
| 129 | St Luniare Bay | Pierre 1859 | Cartographic | 604499 | 5707144 |
| 130 | Three Mountains Harbour | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 596218 | 5685127 |
| 131 | Union Cove | Le Tourneur c1784; 1785 | Cartographic | 534911 | 5568079 |
| 132 | Vierge Cove | Pierre 1860; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 596586 | 5685861 |
| 133 | Wild Cove | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 558344 | 5615186 |
| 134 | Wild Cove | 1:10,000 Aerial Orthophoto 2008 | Cartographic | 558499 | 5615204 |
| 135 | Woody Cove | Richard 1829; Cloue 1862; 1:10,000 Aerial Orthophoto 2008 | Cartographic | 564471 | 5549891 |