NUNAVUT
COASTAL RESOURCE INVENTORY

Resolute Bay

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Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

NCRI

Nunavut Coastal Resource Inventory – Resolute Bay
2018

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EXECUTIVE SUMMARY

This report is derived from the Hamlet of Resolute Bay and represents one component of the Nunavut Coastal Resource Inventory (NCRI). "Coastal inventory", as used here, refers to the collection of information on coastal resources and activities gained from community interviews, research, reports, maps, and other resources. This data presented in a series of maps.

Coastal resource inventories have been conducted in many jurisdictions throughout Canada, notably along our Atlantic and Pacific coasts. These inventories have been used as a means of gathering reliable information on coastal resources to facilitate their strategic assessment, leading to the promotion of economic development, coastal management, and conservation opportunities. In Nunavut, the coastal resource inventory has two additional applications: the preservation of traditional knowledge (Inuit Qaujimajatuqangit, or IQ) and the preparation for forthcoming environmental changes, particularly those driven by climate change.

The Fisheries and Sealing Division of the Department of Environment (DOE) initiated this inventory in 2007 by conducting a pilot project in the community of Igloolik, Nunavut. The NCRI has since been completed in the following communities:

- 2008 Kugluktuk and Chesterfield Inlet
- 2009 Arctic Bay and Kimmirut
- 2010 Sanikiluaq
- 2011 Qikiqtarjuaq and Gjoa Haven
- 2012 Iqaluit, Naujaat and Grise Fiord
- 2013 Pangnirtung
- 2014 Coral Harbour, Clyde River and Taloyoak
- 2015 Cambridge Bay, Kugaaruk and Rankin Inlet
- 2016 Pond Inlet
- 2017 Cape Dorset, Hall Beach and Resolute Bay

This report presents the findings of the coastal resource inventory of Resolute Bay conducted in July 2017.

Inventory deliverables include:

- A final report summarizing all of the activities undertaken as part of this project;
- Provision of the coastal resource inventory in a GIS database;
- Large-format resource inventory maps for the Hamlet of Cape Dorset, Nunavut; and
- Key recommendations on both the use of this study as well as future initiatives.

During the course of this project, Resolute Bay was visited on one occasion in July 2017 to conduct on-site interview sessions. Community consultations were conducted through phone conferencing and emails. A total of nine interviews were conducted. During the interviews we asked participants about the coastal species they currently observe or have previously observed in the area and had them draw the location of their observations on the maps we provided. We used photographs to help participants identify the species they have seen. The interviews varied from 1.5 - 3 hours in length, depending on the participant. The data collected throughout the interviews was compiled into a database and the map were digitized and analyzed.

The maps produced in the interviews are presented here, organized into the following categories: Well-known areas, Fish, Invertebrates, Marine Mammals, Birds, and Marine Plants.

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INTRODUCTION

This document is one in a series of reports produced by the Nunavut Coastal Resource Inventory (NCRI). The overall goal of this initiative is to conduct inventories in all 25 of Nunavut's coastal communities (Figure 1). Each community is unique in terms of its physical environment, oceanographic setting, organisms present, and the interests and approaches of its hunters and trappers.

THE COASTAL RESOURCE INVENTORY

A coastal resource inventory is a collection of information on coastal and aquatic resources and activities gained principally from interviews with elders and hunters in each community. Coastal resources are defined as the animals and plants that live near the coast, on the beaches, on and around islands, above and below the surface of the ocean, above and below sea ice, and on the sea floor, and in lakes and oceans.

All of the community-specific data is digitized and mapped using a Geographic Information System (GIS). This approach can be an effective tool to assist with management, development and, conservation of coastal areas.

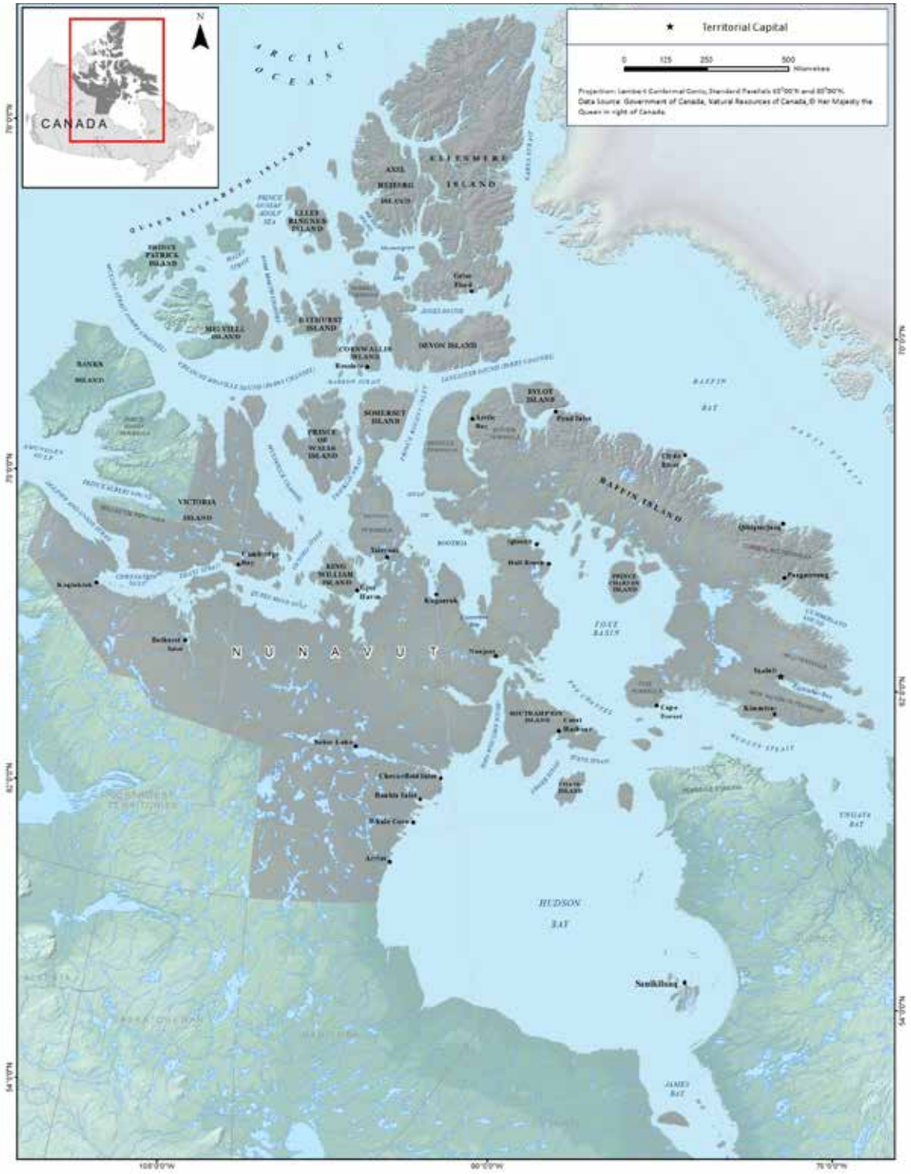
Resource inventories have been conducted along Canada's Atlantic and Pacific coasts. The information has been used to provide the foundation for an integrated coastal management plan, to assist with the protection of important coastal areas; and to facilitate environmental impact assessments, sensitivity mapping, and community planning. Coastal resource inventories have also provided different levels of government with the tools to engage in strategic assessments, informed development, and enlightened stewardship.

The principal source of information for community-based coastal inventories is traditional knowledge or, in Inuktitut, Inuit Qaujimajatuqangit (IQ) gathered through interviews. Over the past 50 years, Inuit have transitioned from a resource-based nomadic life style to a wage-based economy. Coastal and land-based activities remain extremely important, contributing to Inuit quality of life, providing income and food, and as a significant part of Inuit culture.

The NCRI aims to retain some of this valuable knowledge by engaging community elders, hunters and fishers to document the presence, distribution and characteristics of various coastal resources. IQ is unique in that it is qualitative, intuitive, holistic, spiritual, empirical, personal and often based on long time-series of observations (Berkes 2002). It is particularly useful for recording historical data that are unattainable in any other manner. A complementary coupling of IQ and scientific knowledge may provide a means to better understand and manage coastal resources.

Information on coastal resources may provide insights regarding the potential for future fisheries development or other economic opportunities. Given the high unemployment rates in many of Nunavut's coastal communities, it is increasingly important to identify areas of potential economic development. In order to determine both feasibility and long-term sustainability of a new fishery, information on species-specific abundance and distribution of fish stocks (or other coastal resources) must be obtained. Combining communal knowledge of local resources can be a vital step in establishing a commercialized fishery. This information can also lead to the identification of potential coastal parks and related tourism opportunities. This may include sensitive coastal areas, breeding grounds, important species, and unique habitats. Attaining this information comes with much responsibility. The resource should be thoughtfully governed from the outset to avoid unsustainable exploitation.

Figure 1. Map of Nunavut



IQ embodies both tangible and intangible Inuit knowledge. Conserving this knowledge has importance in its own right and for its potential to inform future management plans. Some communities have expressed an interest in exploring development options using a database that has its origins in the living memories, experience, history, and skills of the people who live there. Other communities have opted for a continuation of existing practices: the gathering of extant knowledge into a form that could assist informed decision-making. Regardless, there is growing urgency throughout the Territory to identify, record, and conserve Nunavut's traditional, biological, cultural and ecological knowledge.

There is increasing concern over the potential impact of climate change on the Arctic environment. Over the past 20 years, an increasing number of arctic researchers have commented on the predicted impacts of climate change on the marine environment (Tynan and DeMaster 1997, Michel et al. 2006, Ford et al. 2008a and 2008b, Moore and Huntington 2008). Additionally, the Intergovernmental Panel on Climate Change (IPCC) has reported that the increase in global temperatures is very likely caused by human activity, and that warming is predicted to occur faster in the Polar Regions that anywhere else on the planet (IPCC 2007, 2014). Many changes are predicted to occur in recurrent open water sites, with the potential to affect various coastal resources. Specific impacts can be accepted on water stratification and its role in nutrient renewal, the balance between multi-year and annual ice, the duration and location of open water, and the impacts of tidal mixing and topographic upwelling. These physical changes could influence the marine food web through the prevalence of ice algae, the timing and magnitude of primary and secondary production, and changes in the distribution, abundance and success of traditional species. Inuit can expect significant environmental changes in sea ice, fast ice, coastal erosion, animal behaviour, and population abundances to name a few. For instance, apparent changes in polar bear health and abundance have been linked to climate change driven shifts in sea ice formation and movement. The coastal resource inventory provides a means of collecting information on environmental changes observed by community members.

PERSONNEL AND PROJECT DELIVERABLES

The Coastal Resource Inventory of Resolute Bay was conducted by Department of Environment (DOE) staff. Overall project leadership was provided by Janelle Kennedy, Acting Director, Fisheries and Sealing Division and her staff: Angela Young, Senior Fisheries Science Advisor; Teresa Tufts, Fisheries Scientist; Jennifer Amagoalik; and Manasie Kendall, NCRI Coordinator.

Project deliverables include:

- A final report summarizing project activities;
- The Nunavut Coastal Resource Inventory in a GIS database;
- A series of large-format resource inventory maps;
- Access to all documentation pertaining to project completion; and
- Recommendations on the use of this study and future initiatives.

METHODOLOGY

COMMUNITY VISITS

Resolute Bay was visited in July 2017 for on-site interviews. Correspondence via email and telephone was used before the on-site interviews to put into place all of the elements that were required to properly conduct the interviews. This process was strongly dependent upon Resolute Bay's Hunters and Trappers Organization (HTO) and the Hamlet office. The HTO formally agreed to support this initiative by providing an annotated list of local Inuit hunters and trappers who, in their opinion, were among the most knowledgeable and accomplished members of the community and could best satisfy the requirements of the interview process. The final selection of nine interviewees (Appendix 1) was made by NCRI project personnel. In addition, HTO personnel recommended the names of individuals who could be used as translators and student observers. These individuals were contacted, and tentative interview schedules were established.

THE INTERVIEWS

Six individuals were present during each interview: the interviewee, an interviewer, a translator, a recorder, a science consultant, and a student observer. The interviewer followed a defined protocol that placed emphasis on a series of predetermined questions and photographs of various living resources thought to occur in the area. Maps covering the area of interest and colour coded pencils were provided to interviewees to illustrate locations of interest. Interviewees were encouraged to supplement their responses by drawing on the maps provided to annotate their verbal remarks. Specific categories addressed in the interviews included: interviewee life-history information, location of outpost camps; archaeological sites; travel routes and hunting/fishing areas frequented; the geographic occurrence of mammals, fish, birds, invertebrates, and plants; linkages between coastal resources; present and future environmental changes; and potential economic development (e.g., the possibility of an emergent fishery). Qualitative data were gathered in the form of individual opinions, assumptions, and conclusions.

Annotations on the maps were coded to enable future identification and reference. Follow-up questions were asked of the interviewee, clarifications were elicited, and, if appropriate, discussion ensued about the information presented. The entire process was recorded using audio and video equipment, while selected portions were simultaneously manually recorded. Manual recording was used to maintain a running record of all map annotations and codes. This permitted the analysis of interviews to proceed without first transcribing the audiotapes. The interviews varied from 1.5 - 3 hours, depending on the individual being interviewed.

POST-INTERVIEW METHODOLOGY

All of the data manually recorded throughout the interview was entered into a spreadsheet, using audio and video data for verification when needed. The maps were scanned and the hand drawn data were digitized using Geographic Information System (GIS).

NON-INTERVIEW DATA ACQUISITION

Data on marine resources can be found scattered throughout many different sources including scientific papers, government reports, environmental impact assessments, and maps. However, three surveys with similar geographic breadth and goals have proven to be especially useful. The three-volume "Inuit Land Use and Occupancy Study" was undertaken in the early 1970s and published in 1976 by Indian and Northern Affairs. It grew out of the documentation required by the land claim process and was used to substantiate Inuit claims to residency and land use. The study contained detailed information on traditional land use up to that time, based on interviews with Inuit in each community. It used topographic maps to outline regions associated with hunting, trapping, and fishing activities for every community in Nunavut over three periods: pre-contact, the trading period up to the 1950s, and the present (early 1970s). The third volume is an atlas that displays the results. The original research is available in Ottawa at the National Archives and a copy is also available in the Legislative Library in Iqaluit.

The second is the Nunavut Atlas co-published in 1992 by the Canadian Circumpolar Institute and the Tunngavik Federation of Nunavut (now Nunavut Tunngavik Incorporated or NTI). This atlas is largely data collected for the Inuit Land Use and Occupancy Study. The resource data and maps are great resources but the information is approximately 35 years old. Relevant maps from this volume are presented in this report (Figures 44-46).

The third document is the Nunavut Wildlife Harvest Study produced by the Nunavut Wildlife Management Board in 2004 as mandated by the Nunavut Land Claim Agreement. Harvest data were collected monthly from Inuit hunters from 1996 to 2001. The purpose of the study was to determine the current harvesting levels and patterns of Inuit use of wildlife resources. Once completed this information was to be used to manage wildlife resources in Nunavut.

DATA MANAGEMENT AND ANALYSIS

Data collected through interviews and research were, when appropriate, plotted on working maps. In order to stay within the size of the geographic area under discussion, the scale of the map is kept relatively small. The scale was common to all maps to permit relatively easy comparisons. Information was separated according to resource categories and all information associated with a specific geographic location was entered into a tabular database. The development, care, and maintenance of this tabular database are extremely important, not only as a storage facility for information, but as an active repository accessed by users with diverse interests.

Data management also included protecting the confidentiality of the data. Each interviewee provided their consent to be interviewed, as well as audio and video taped. Any person or organization wishing to access NCRI data must provide written justification to the NCRI Steering Committee and agree to the terms outlined in the Data Release Form.

GIS INTERFACE

Once the inventory maps and database were completed, they were entered into a GIS which creates computer generated maps. It also links information to the geographic locations contained in the database. Attributes associated with each piece of data include information such as the species name, the interviewee source, and the time of year it was observed.

INTERACTIVE ATLAS

The NCRI results are published in community-specific reports that are shared with project partners (community HTOs / HTAs, Hamlets, high schools, and all interviewees) and that are publicly available in hard-copy and PDF formats.

Reports are currently produced in English and Inuktitut. The results from all communities are also displayed online in an interactive atlas, with this information available within a year of interviews in a community. The reports can take up to two years to produce. Links to access the Atlas and other CRI reports are here: ncriatlas.ca and http://www.gov.nu.ca/environment/information/nunavut-coastal-resource-inventory.

Figure 2. The study area extent discussed in the Resolute Bay interviews

RESOURCE INVENTORY

The observations below provide highly personal insights that could warrant additional investigation.

MARINE ENVIRONMENT

The geographic area examined by these interviews spans approximately 600km north to south, 600km east to west, and includes: Wellington Channel, Barrow Strait, Cornwallis Island, Little Cornwallis Island, Devon Island, Somerset Island, and Griffith Island.

HUNTING/FISHING AND OTHER

One participant noted that Char travel to the sea in mid-June and then back to the lakes in August with spawning occurring in September and October.

One participant indicated a change from hunting for the community, to hunting less and only for personal use. The store was also a source of food. This participant grew up not wasting animals and noted that the federal government controlled what could be hunted. In particular, female caribou could not be harvested in the area and hunters were required to travel elsewhere for females so that clothing could be made; male caribou skin was not desirable for clothing. This participant also indicated that both caribou and narwhal have died wearing scientists' collars / satellite tags.

One interviewee indicated that there was a lot of evidence that the Thule people had caught bowhead whales throughout the area.

HEALTH, SIZE, AND PRESENCE

There were several comments regarding polar bear presence in the Resolute Bay area:

- One participant stated that polar bears can be hunted anywhere that ice is present, which is all over the area.
- Three participants indicated that there were more polar bears than there used to be. One person indicated that the bears travel into town a lot during the fall. Another person noted that the bears are managed and that there is a quota of 35 tags for Resolute Bay and 38 for defense kills. Prior to there being a quota, people would hunt them whenever they saw them.
- One participant indicated that polar bear populations fluctuated annually and that their fat had changed. It was noted that helicopters have affected the bear's hearing and that some have died of starvation. This person expressed concern that although people and scientists are trying to protect the bears, they are doing more harm and they should just leave the animals alone.

One interviewee noticed an increase in the harp seal population.

Canada Geese were noted by one interviewee to be travelling further north than in the past and walrus were noted by another participant to be more abundant around Bathurst Island.

CHANGES UNDERWAY

Participants commented on changes in the presence or absence of several species:

- Three interviewees noted an increase in the number of bird species seen in the area. In particular, owls, snow buntings, gulls, sandpipers, and plovers were observed more often. Two other interviewees stated that ravens never used to be in the community but were now plentiful.
- Mosquitoes were identified by one interviewee as a species that was not present in the community in the past but was present now.
- Participants also commented on changes to the climate in their local area:
- Two people identified changes in the climate. Although it was noted to be colder this past summer (2017), overall the climate was noted to be warmer with longer summers when compared to childhood days.

Eight participants commented on changes in ice and snow:

- One interviewee noted that from the 1960s to the 1980s there was snow all year round. This was not the case anymore. Another participant observed that the snow comes a bit later in the year now and that the ice melts later and faster. It was noted that in July one can usually go out farther onto the ice, but not this year (2017). A different person observed that more snow falls in the area when natural disasters occur in the south.

- Three participants found the ice to be different than the past. One person indicated that ice did not form on the west side until January (2017) and that it was still there in July, perhaps due to less current; the ice left faster in 2016. This person also noted that the ice shatters after an earthquake. Another person indicated that the ice is not as thick, and that it doesn't freeze as quickly, as it has done in the past.

- One interviewee commented that the environment had changed a lot. This person felt that the earth had shifted causing southern and northern winds to form different kinds of snow and ice formations. The result was that this person could no longer find their way home based on ice and snow formations.

- One interviewee observed masses of green plankton travelling with the current toward Baffin Bay once the ice was gone.

- One interviewee expressed a desire for studies to be done to find out what exists under the ice. However, it is thought that these studies cannot be done because of the quality of the ice.

- One participant noted that ATCO used to bring tourists in large trailers onto the ice to view the site where Franklin's ship sank. This no longer occurs because the ice is no longer thick enough to support the weight of the trailers.

ECONOMIC DEVELOPMENT

The interviewees discussed the following with regards to social changes and economic development in their area:

- Four participants provided observations regarding shipping in the area. One person indicated that shipping was okay as long as it is conducted quietly and does not disturb the animals. The other three people expressed concern due to the large volume of animals that use the area. The area is a major migration route for some animals and there was worry that the animals would be disturbed by the ship traffic. Another concern was that the noise from the ships would scare the animals; many of which have very good hearing.
- One participant felt that mining would be good for the community while another participant does not want mining near lakes that are important fishing grounds.
- While one participant would like to see a commercial fishery in the area, another participant

would only like a fishery if the community runs it but thought that sports hunting might be a better opportunity.

- Four participants expressed a desire for polar bear sports hunting. One participant compared Resolute Bay to Churchill in that polar bears are abundant and close to town between September and January in both communities.
- Research was noted as being a welcome tool for ocean exploration especially if it employs Resolute Bay individuals.

MARINE RESOURCES IN A PHYSICAL SETTING

The coastal communities of Nunavut are diverse. They extend over 27°of latitude and 60° of longitude. In addition to different geomorphologies, climates, and wildlife they also experience widely different marine environments. These include significant differences in residual circulation, tidal range, tidal currents, tidal mixing, shore-fast leads, ice-edge upwelling, topographic upwelling, and polynyas, all of which influence the abundance, diversity and concentration of marine animals and plants. The oceanographic context in which these organisms occur, especially the causal mechanisms that contribute to population dynamics, is an essential prerequisite to understanding changes that occur over time.

One of the stated goals of this initiative is to develop the capacity to monitor Nunavut's marine resources within the context of impending climate change. Organisms will experience the impacts of global warming directly, through changes in their physiology and indirectly, through variations in their physical or biological environments. Responsible monitoring of marine resources will require more than just a quantitative assessment of certain species; it will require an ecosystem approach that, by definition, includes the physical factors at play in that system.

RECURRENT OPEN WATER AND ARCTIC BIOLOGY

The presence of open water in winter can be a chance occurrence that reflects either temporary or recurring conditions. Temporary open water sites are largely unpredictable and of limited usefulness to animals and humans. Alternatively, recurrent open water sites are a physical indicator of one or several predictable physical processes that result in spatial and temporal reliability.

The formation of recurring open water sites in ice-covered seas, including polynyas, pack ice edges, and shore-fast leads reflect local geography, ice conditions, and water movements such as upwelling and tidal mixing. There is a positive correlation between recurrent open water sites and abundance of marine organisms. Stirling (1980, 1997) identified increases in the abundance of birds, seals, and whales with proximity to ice edges, polynyas, and pack ice. In some cases, animals are drawn to these sites for practical reasons such as the availability of breathing holes, a platform to haul out and rest, predator avoidance, pupping, or moulting (Stirling 1997). Ultimately, recurrent open water sites encourage a non-homogeneous distribution of animals that is linked to greater biological productivity.

Major contributing factors in the abundance of marine organisms observed at recurrent open water are due to food availability, the product of primary production in phytoplankton, ice algae and marine plants. Algal groups are important, but their relative contributions can vary depending on ice conditions and available light. Ice algae can represent 5 to 30% of the total primary production (Alexander 1974; Harrison and Cota 1991; Legendre et al. 1992). Plant material is grazed and enters into the food web, supplying energy to invertebrates such as copepods, amphipods, and shellfish, to fish such as Arctic Cod, to mammals such as seals, Narwhal, Walrus, and Polar Bears and to birds such as Thick-Billed Murres, Northern Fulmars, Black-Legged Kittiwakes, and Black Guillemots. This results in a form of oasis or hotspot in an otherwise ice-covered area. With climate change, the sea ice is thinning faster and earlier in the spring and sunlight sufficient to drive photosynthesis, especially in ice algae, is available sooner. These conditions are extending both the growing and grazing seasons, in some cases by as much as two months.

These open water sites appear to have great importance to the peoples that have occupied the Arctic for several thousand years. Archaeological data obtained from historic Inuit habitation sites, coupled with modern sea-ice extremes, have been used to infer a strong causal relationship between polynyas and historic Inuit settlement patterns (Henshaw 2003). Schledermann (1980) drew attention to the fact that the early settlers of present-day Nunavut did not create settlements in random fashion. Since they depended almost entirely on food resources obtained through hunting, settlements were usually located within reasonable proximity of game, which often meant areas of recurrent open water. Schledermann (1980) also found a close correlation between the distribution of recurring polynyas in the eastern Canadian High Arctic and the abundance of archaeological sites from the Thule culture which specialized in hunting marine mammals.

OCEANOGRAPHIC FACTORS THAT CONTRIBUTE TO OPEN WATER

The Hamlet of Resolute is situated on Cornwallis Island in the Qikiqtaaluk region of Nunavut. It is on the shores of the Barrow Strait over 900 km north of the Arctic Circle at 74° 41' 51"N, 94° 49' 56"N.

TIDAL MIXING

Even at somewhat limited velocities, tidal currents can produce sufficient turbulence to generate the vertical mixing capable of forming and maintaining a polynya. A slow-moving tidal current that encounters a shallow and/or narrow strait increases in velocity, promoting vertical mixing. Warmer, deeper water moves to the surface slowing or preventing the formation of ice. Tidal mixing also delivers nutrients, which promote plant and algal growth when sufficient light is available, especially in summer months. Examples of this phenomenon are the well-known polynyas in Fury and Hecla Strait at the head of Foxe Basin (Hannah et al. 2009).

POLYNYAS

If the Arctic were covered with a thick, seamless layer of sea-ice, many of the organisms that currently exist there and contribute to the region's productivity would find it impossible to survive. Polynyas and leads provide the necessary breaks in the ice that permit sunlight to penetrate and photosynthesis to proceed (in both planktonic and ice-based algae), allow mammals to breathe, and permit over-wintering birds to feed. Wind, water movement, and heat transfer are among the primary factors that contribute to the establishment and maintenance of these open water sites.

Polynyas have long been viewed as extraordinary because of the obvious contradiction of open water occurring in conditions that promote ice. The explanation for this phenomenon is twofold: in

some cases the introduction of heat forestalls ice formation, while in others any newly formed ice is rapidly removed. This process is controlled by wind and/or ocean currents, which remove any ice formed at the site. Other factors include turbulence from the surface waves or currents that can inhibit ice formation, adjacent coastlines, and shore-fast ice or ice bridges that prevent ice from drifting into polynyas.

Recurring polynyas typically occur near shoals and between islands, within the land-fast ice. There are two types of polynyas that recur each year: those that remain open all year long and those that freeze over for one or two of the coldest months of the year. Animals such as seals, walrus and some migratory sea birds use these polynyas as important over-wintering areas.

Recurring polynyas have not been identified close to the Hamlet of Resolute though the Karluk Brooman, Dundas Island and Penny Strait and Queens Channel polynyas are present northwest and north of Cornwallis Island.

LAND-FAST LEADS (FLAW LEADS)

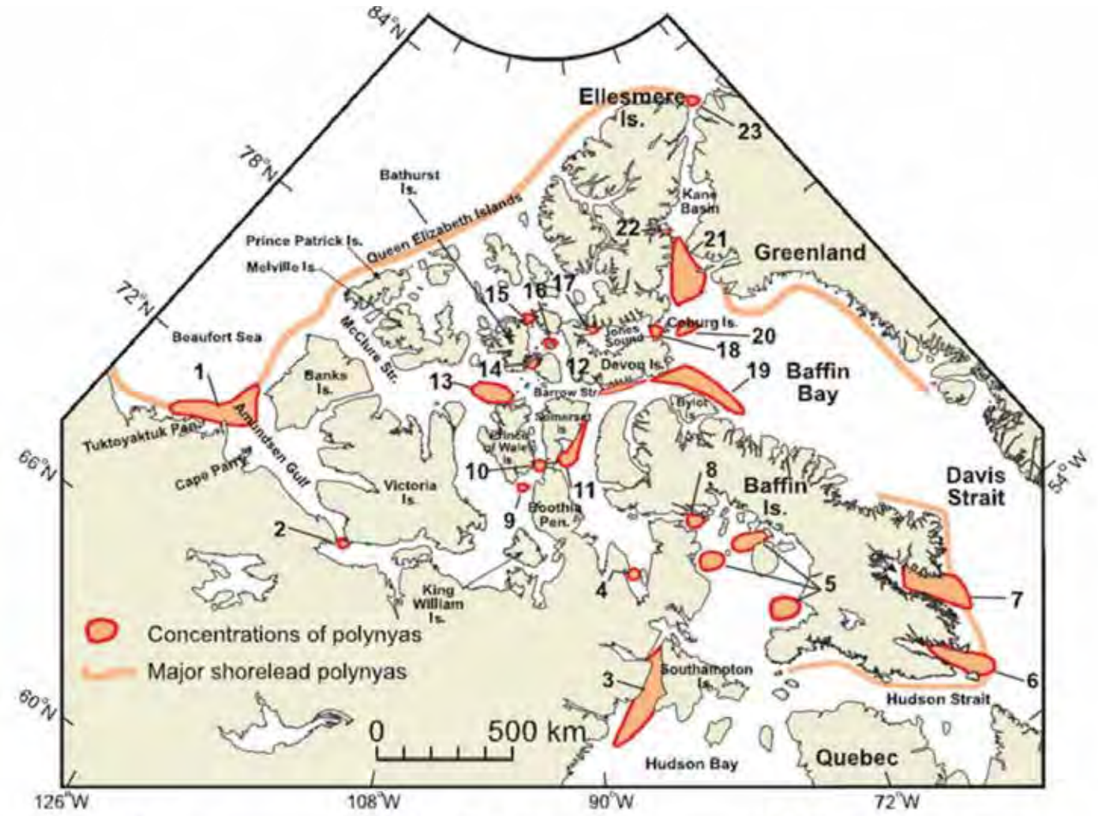
Extensive systems of land-fast leads occur throughout the Arctic. Land-fast ice generally comprises first-year ice, possibly mixed with multi-year remnants, that is fixed to the coast. This ice platform extends outward, eventually merging with offshore pack ice (Stirling and Cleator 1981). The physical presence of this ice cover modifies tidal and wind energy, dramatically changing circulation (George et al. 2004). Eventually, a fracture or crack may develop between the attached ice and the free-floating pack ice due to offshore winds, or through the actions of coastal currents. These leads are normally linear in shape and run parallel to shorelines. They are recurrent and predictable in their location and are among the areas where open water is found most consistently during winter and early spring. Because of these factors, land-fast lead systems are of great biological importance.

The boundary between the ice edge and the beginning of the lead is an ecosystem that is very important and has been identified as biologically rich and diverse by many elders and previous research. For instance:

- The land-fast ice edge is an important Inuit hunting site (Crawford and Jorgenson 1990);
- During late spring and early summer, large numbers of sea birds and marine mammals congregate at the edges of land-fast ice (McLaughlin et al. 2005);
- Ringed seals and polar bears are the only marine animals that regularly occupy extensive land-fast coastal ice (Tynan and DeMaster 1997);
- Bearded seals prefer relatively shallow water (<150 m) with thin shifting ice and leads kept open by strong currents (Tynan and DeMaster 1997);
- Along with polynyas, land-fast lead systems and ice edges play key roles in influencing the abundance and distribution of marine mammals and sea birds (McLaughlin et al. 2005);
- Satellite observations of polar bears in multi-year ice show that they are often associated with leads (Stirling 1997);
- High densities of arctic cod are found immediately below the edge of land-fast sea ice, linked to the availability of high concentrations of copepod prey (Crawford and Jorgenson 1990);
- Near the ice edge the diet of adult ringed seals and narwhal is composed primarily of arctic cod while amphipods and copepods are consumed in smaller numbers (Bradstreet and Cross 1982).

The reasons for greater biological abundance and diversity associated with land-fast leads and ice edges are largely the same as those outlined above for recurrent open water. However, upwelling is an additional mechanism that appears to occur at shore-fast and pack ice edges.

Figure 3. Map of known polynyas in Nunavut



1 Cape Bathurst
2 Lambert Channel
3 Roes Welcome Sound
4 Committee Bay
5 Foxe Basin
6 Frobisher Bay
7 Cumberland Sound
8 Fury and Hecla Strait
9 Franklin Strait
10 Bellot Strait
11 Prince Regent Inlet
12 Lancaster Sound
13 Viscount Melville Sound
14 Karluk Brooman
15 Queens Channel and Penny Strait
16 Dundas Island
17 Hell Gate – Cardigan Strait
18 Lady Ann Strait
19 Bylot Island
20 Coburg Island
21 North Water (NOW)
22 Flagler Bay
23 Lincoln Sea

FIG. 1. A map of known polynyas in the Canadian Arctic, adapted from Barber and Massom (2007) and Stirling (1981). The Karluk Brooman polynyas were identified by Schledermann (1980) and Brown and Nettleship (1981).

UPWELLING: TOPOGRAPHIC AND ICE-EDGE

Upwelling is a mechanism by which colder, deeper water is moved to the surface, where it can create and/or maintain ice-free open water. Topographic upwelling occurs where a current moving through cold subsurface water is deflected or welled upward toward the surface by a bottom structure such as a sill, bank, or ridge (Tee et al. 1993).

Ice-edge upwelling occurs when wind blows parallel to the ice edge and causes surface water to move away from the edge. The surface water is then replaced from below (Tang and Ikeda 1989). The upwelling zone may be several kilometres wide and draw subsurface water from depths of up to 100 metres. This phenomenon has been observed in the Bering Sea (Alexander and Niebauer 1981), the Arctic Ocean (Buckley et al. 1979, Johannessen et al. 1983) and off the coast of Newfoundland (Tang and Ikeda 1989).

Upwelled water usually carries nutrients into the upper layer where, with sufficient light, both phytoplankton and ice algae can grow and provide a strong stimulus to the local food web. This is one explanation for why polynyas and shore-fast leads are so productive.

MARINE RESOURCES IN THE CONTEXT OF CLIMATE CHANGE

Over the past 20 years, many Arctic researchers have commented on the impending probability of climate change, with its predicted impacts on the marine environment as well as the abundance, diversity, and well-being of marine organisms (Tynan and DeMaster 1997, Michel et al. 2006, Moore and Huntington 2008). Changes may occur affecting water stratification and its role in nutrient renewal, the balance between multi-year and annual ice, the relative importance of ice algae, the timing and magnitude of primary and secondary production, changes in traditional species distributions and hunting sites, amongst others. Each of these changes could exert some influence on the food web and the state of the resources as they are presently defined.

GUIDE TO MAPS AND TABLES

The following group of maps summarizes the geographic context, species locations, and information from earlier studies (derived from the Nunavut Atlas). The maps are accompanied by data in tabular form, which provides additional detail, along with descriptive information, when available. Table 1 interprets the map codes provided in the tables accompanying the maps. All historic data is presented at the end of this section.

Table 1. Guide to maps and tables

CATEGORY	MAP CODE
Areas known best	'AKB'
High abundance	'A'
Observed change / different from past	'C'
Concern	'Con'
Camp/Cabin	'Camp'
Historic (before year 2007)	'H'
Hazard area	'Haz'
Harvest area	'Harv'
Human use	'Use'
Ecological observation	'Ecol'
Everywhere	'E'
Feeding area	'F'
Floe edge observation	'Floe'
Ice observation	'Ice'
Migration (arrows indicate direction)	'M'
Spawning / Nesting / Denning / Calving / Pupping areas	'S'
Nursery area	'N'
Polynya	'Poly'
Travel route	'Travel'

Generally, maps comprise groupings of single or several species as reported in multiple interviews. Species and interviews are normally colour-coded and locations are labelled with a number. These labels can be used to look-up relevant information in the table associated with each map.

The species identified by interviewees as being distributed "Everywhere" are not mapped in this report. The designation of "Everywhere" was used when interviewees felt that the organism under discussion has been observed everywhere throughout their travels and places with which they are very familiar. Giving a species an "Everywhere" designation does not confer any information about abundance nor should it be presumed to be ubiquitous; it is only a measure of distribution relative to where the interviewee has been. "Everywhere" data is provided in the table of data following the maps.

Some species were described by a portion of the interviewees as being "Everywhere" while other interviewees provided specific locations for the same species. In these cases, an asterisk has been placed after the species name in the title of the map. For example, arctic char is written as "Arctic Char*" in the map title because it was reported in specific locations, as well as being "Everywhere". The asterisk simply provides a visual cue that the species has two designations.

Please note that the data presented on birds has been further qualified in Appendix 3. Of all the species presented to the interviewees, birds (e.g., sandpipers or gulls) present the greatest challenge in proper identification; a challenge often encountered by even the keenest observers. To assist in interpreting the data, Appendix 3 compares observations recorded through the inventory with literature and sightings by other authors. In the future, inventory work will endeavour to qualify all species reported in a similar way.

Note: The asterisk (*) after some species names in the titles of the maps indicates that the species was also considered to be seen "Everywhere" by some interviewees. Species identified as being "Everywhere Only" are shown by the use of a solid bullet in the map legend.

MAPS AND TABLES

Figure 4. Historic camps and travel routes

Table 2. Historic camps and travel routes

MAP #	INTERVIEW	CODE	CATEGORY	MONTHS	COMMENTS
1	2	H, Camp	Camp		Outpost camp for all year, but now summer only.
2	2	H, Camp	Camp		Outpost camp.
3	2	H, Camp	Camp		Old outpost camp.
4	5	H, Camp	Camp		Used to live here. Fell off a qamutik around here and managed to follow the trail where she was found by her father.
5	8	H	Camp		Old outpost camp. Not used anymore.
6	5	H, Travel	Travel		Route from old camp area to Resolute Bay. Had to leave due to famine.
7	5	H, Travel	Travel		Dog team route from place of birth to camp.

Figure 5. Current camps and travel routes

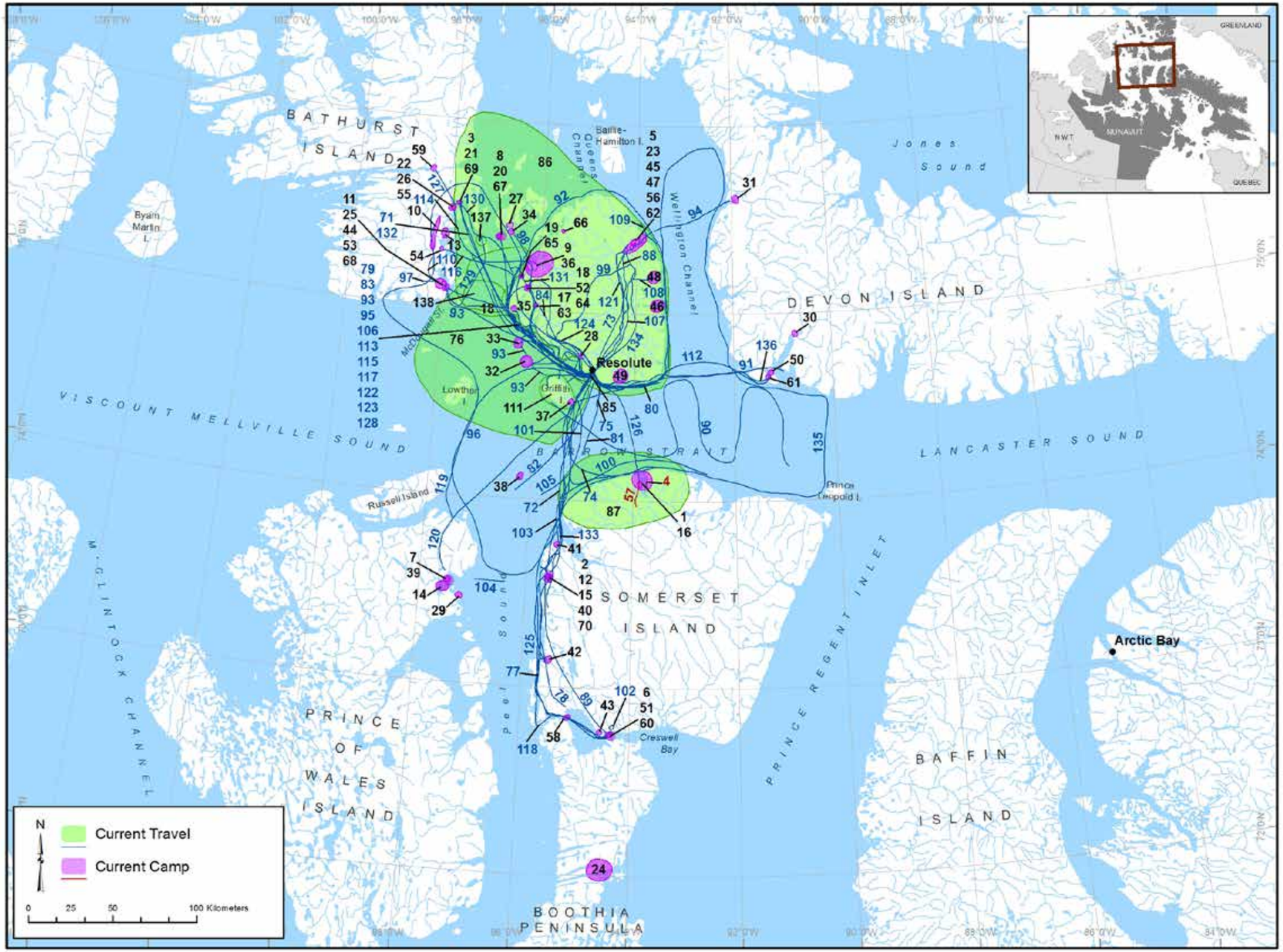


Table 3. Current camps and travel routes

MAP #	INTERVIEW	CODE	CATEGORY	MONTHS	COMMENTS
1	1		Camp		People pay to come here and stay to watch whales, called Arctic Watch.
2	1		Camp		Camp area for fishing.
3	1		Camp		
4	2		Camp		Tourist camp for beluga watching. Doesn't like that they don't go to Resolute and hire people anymore, they just go directly to the spot.
5	2		Camp		Winter camp.
6	3		Camp		Camp where he grew up.
7	3		Camp		Camp where he grew up.
8	3		Camp		Cabin here for all year use. Used when caribou hunting.
9	3		Camp		Cabins.
10	3		Camp		Camping site.
11	3		Camp		Cabins left by a company here. People use these cabins when going out caribou hunting.
12	4		Camp	Jan - Dec	Cabins.
13	4		Camp		Cabins.
14	4		Camp	Jan - Dec	Cabins.
15	4		Camp	Jan - Dec	Cabins.
16	4		Camp	Jan - Dec	Cabins.
17	4		Camp		Cabins.
18	4		Camp		Cabins.
19	4		Camp		Cabins.
20	4		Camp		Cabins.
21	4		Camp		Cabins.
22	4		Camp		Cabins.
23	5		Camp		HTO cabins.
24	5		Camp		Born here.
25	5		Camp		Cabins, 5-6 hour skidoo ride.
26	5		Camp		HTO cabins.
27	6		Camp		Cabin here. A polar bear destroyed it. Stays at this cabin to caribou hunt.
28	6		Camp		His cabin here. Goes to relax.
29	7		Camp		
30	7		Camp		
31	7		Camp		This cabin is use when traveling to Grise Fiord or Musk-ox hunting.
32	7		Camp		
33	7		Camp		
34	7		Camp		Would take a break here while boating.
35	7		Camp		
36	7		Camp		
37	7		Camp		
38	7		Camp		A Polar Bear came up to him while he was camping here on the ice.
39	7		Camp		
40	7		Camp		
41	7		Camp		Would only come here if they were especially tired, otherwise would push for cabin (Figure 5, Label 40).
42	7		Camp		
43	7		Camp		
44	7		Camp		Community cabin.
45	7		Camp		Camp sites.
46	7		Camp		Travel to this cabin if there is too much ice.
47	7		Camp		
48	7		Camp		If traveling for a long period of time, they will camp anywhere on the 12th hour.
49	7		Camp		
50	8		Camp		Old research station here. People stay there sometimes.
51	8		Camp		Outpost camp.
52	8		Camp		HTO cabin.
53	8		Camp		Freeman's Cove cabins (Figure 5, Label 53).
54	8		Camp		Her brother's cabin.
55	8		Camp		
56	8		Camp		
57	9		Camp		
58	9		Camp		Rest here when crossing the lake the next day.

Figure 5. Current camps and travel routes (continued)

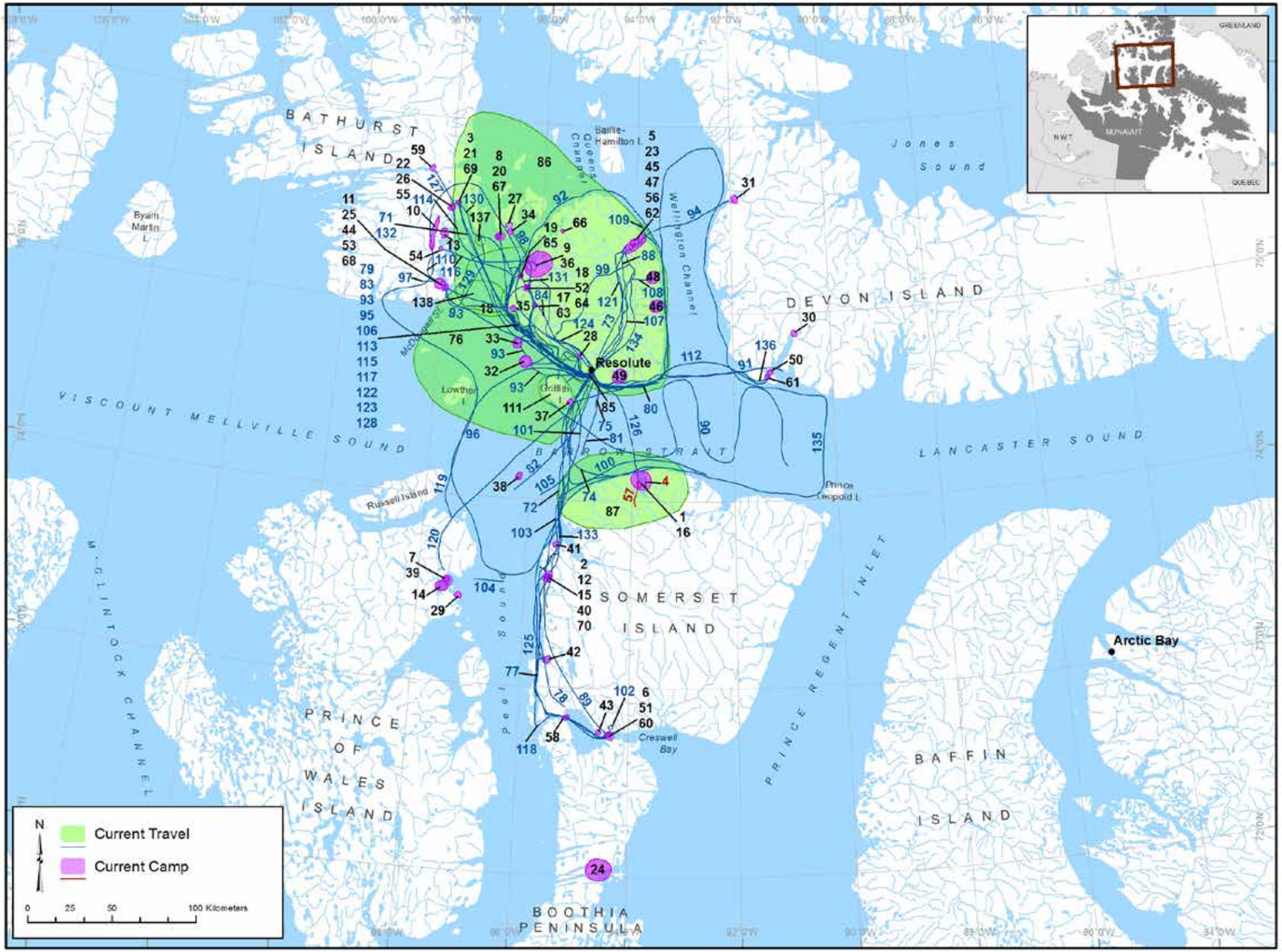


Table 3. Current camps and travel routes (continued)

MAP #	INTERVIEW	CODE	CATEGORY	MONTHS	COMMENTS
59	9		Camp		
60	9		Camp		Outpost camp.
61	9		Camp		
62	9		Camp		
63	9		Camp		Bear issues.
64	9		Camp		
65	9		Camp		
66	9		Camp		
67	9		Camp		
68	9		Camp		
69	9		Camp		
70	9		Camp		
71	1	Travel	Travel		Boating route to camp.
72	2	Travel	Travel		Travel route by skidoo.
73	2	Travel	Travel		Travel route by skidoo and ATV.
74	2	Haz	Travel		Water is too rough to go boating in this area.
75	2	Travel	Travel		Usually a 1 hour drive but this year it took 5 hours due to rough ice.
76	2	Travel	Travel		Boating route.
77	3	Travel	Travel		Skidoo route for hunting and fishing.
78	3	Travel	Travel		Skidoo route.
79	3	Travel	Travel		Travel route to camping area by boat and skidoo.
80	4	Travel	Travel		Skidoo and boating route.
81	4	Travel	Travel		Skidoo and boating route.
82	4	Travel	Travel		Skidoo and boating route.
83	4	Travel	Travel		Skidoo and boating route.
84	4	Travel	Travel		Skidoo and boating route.
85	4	Travel	Travel		Skidoo and boating route.
86	4	Travel	Travel		Boat route.
87	4	Travel	Travel		Boating area.
88	5	Travel	Travel		ATV route to camping area and Elenore River. Muddy route.
89	5	Travel	Travel		Route from old camp to caribou and polar bear hunting area.
90	6	Travel	Travel		Travel route the ship went during the exploratory fishery.
91	7	Travel	Travel		
92	7	Travel	Travel		Route to polar bear hunting area.
93	7	Travel	Travel		Travel route to polar bear hunting area.
94	7	Travel	Travel		
95	7	Travel	Travel		Route to ringed seal hunting area.
96	7	Travel	Travel		Route to ringed seal hunting area.
97	7	Travel	Travel		
98	7	Travel	Travel		Boat route.
99	7	Travel	Travel		Boating up the river.
100	7	Travel	Travel		Route to bear and seal hunting.
101	7	Travel	Travel		Route to bear and seal hunting.
102	7	Travel	Travel		
103	7	Travel	Travel		
104	7	Travel	Travel		Snowmobile route.
105	7	Travel	Travel		Snowmobile route to bear hunting area.
106	7	Travel	Travel		ATV and skidoo.
107	7	Travel	Travel		
108	7	Travel	Travel		
109	7	Travel	Travel		
110	7	Travel	Travel		
111	7	Travel	Travel		Boating route.
112	8	Travel	Travel		Route on the ice.
113	8	Travel	Travel		Travel route to Freeman's Cove cabins (Figure 5, Label 53) on ice.
114	8	Travel	Travel		Route to cabin (Figure 5, Label 55).
115	8	Travel	Travel		Skidoo route.
116	8	Travel	Travel		
117	8	Travel	Travel		Boating route.
118	8	C, Travel	Travel		Route to the Outpost camp (Figure 5, Label 51) when the ice is good. Last few years the ice has not been great so you have to fly there. It is very expensive to charter a plane, so they don't do it too often.
119	8	Travel	Travel		Route to the old Outpost camp (not used anymore; Figure 4, Label 5).

Figure 5. Current camps and travel routes (continued)

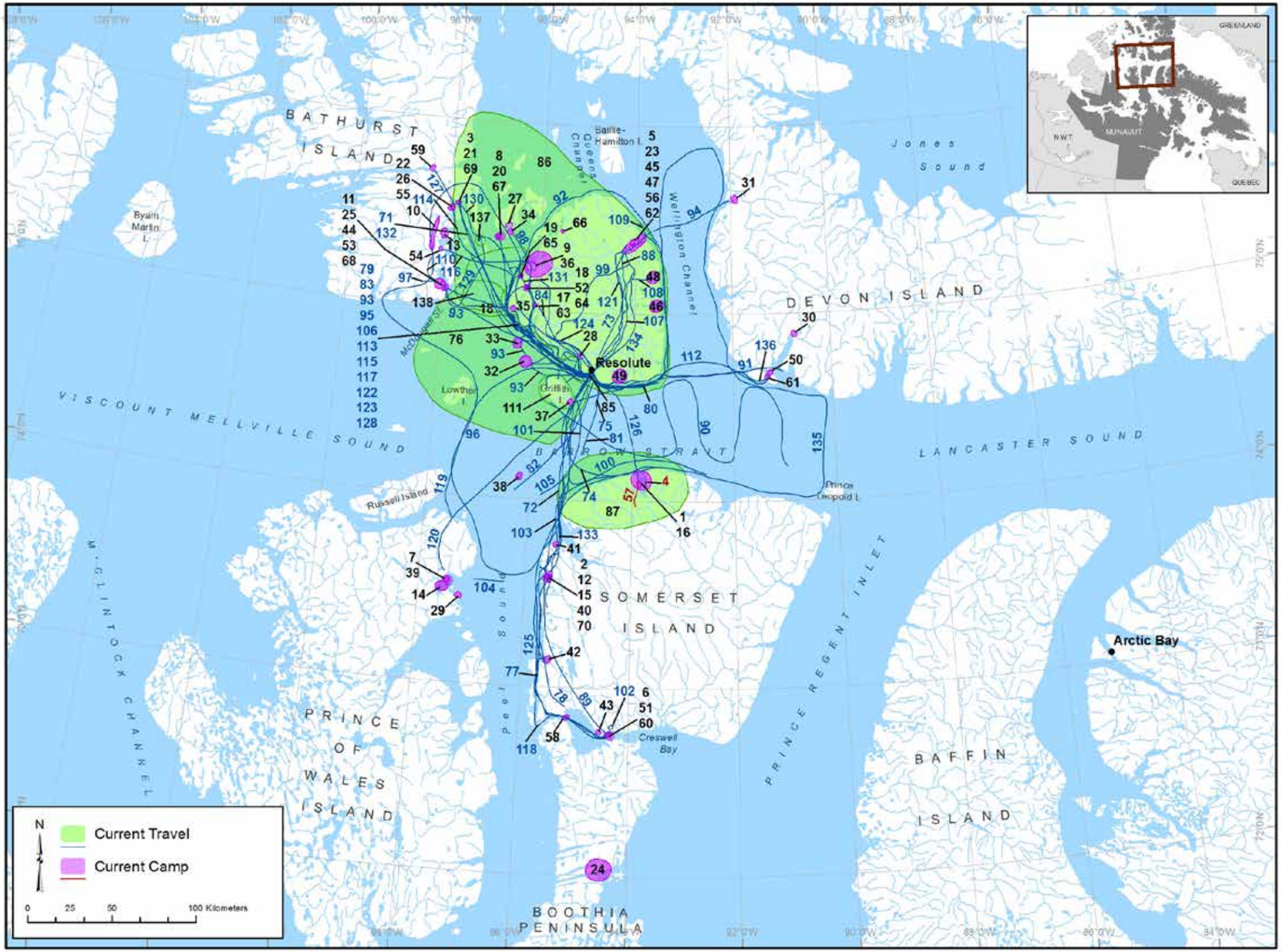


Table 3. Current camps and travel routes (continued)

MAP #	INTERVIEW	CODE	CATEGORY	MONTHS	COMMENTS
120	8	Travel	Travel		Route to the old Outpost camp (not used anymore; Figure 4, Label 5).
121	8	Travel	Travel		Route to cabin (Figure 5, Label 56).
122	8	Travel	Travel		Route to HTO cabin (Figure 5, Label 52).
123	8	Travel	Travel		Alternate route to HTO cabin (Figure 5, Label 52).
124	8	Travel	Travel		Route to HTO cabin (Figure 5, Label 52).
125	9	Travel	Travel		Skidoo route to fishing area. Stop at camp to rest (Figure 5, Label 70).
126	9	Travel	Travel		Route to go Musk-ox hunting.
127	9	Travel	Travel		Route to musk-ox hunting area.
128	9	Travel	Travel		Boating route to hunt seals.
129	9	Travel	Travel		Go this way to hunt in the cracks if there are no seals around the boating route to hunt seals (Figure 5, Label 138).
130	9	Travel	Travel		Boating route.
131	9	Travel	Travel	Jan, Dec	Skidoo route to caribou hunting area.
132	9	Travel	Travel	Mar	Skidoo route to caribou hunting area.
133	9	Travel	Travel		If there is good ice to Somerset Island, will travel by skidoo to go fishing.
134	9	Travel	Travel		Skidoo route.
135	9	Travel	Travel		Skidoo route if the ice is not too rough.
136	9	Travel	Travel		Boating route.
137	9	Travel	Travel		Route to hunt seals.
138	9	Travel	Travel		Boating route to hunt seals.

Figure 6. Historic and current harvest areas, areas known best, landmarks and other observations

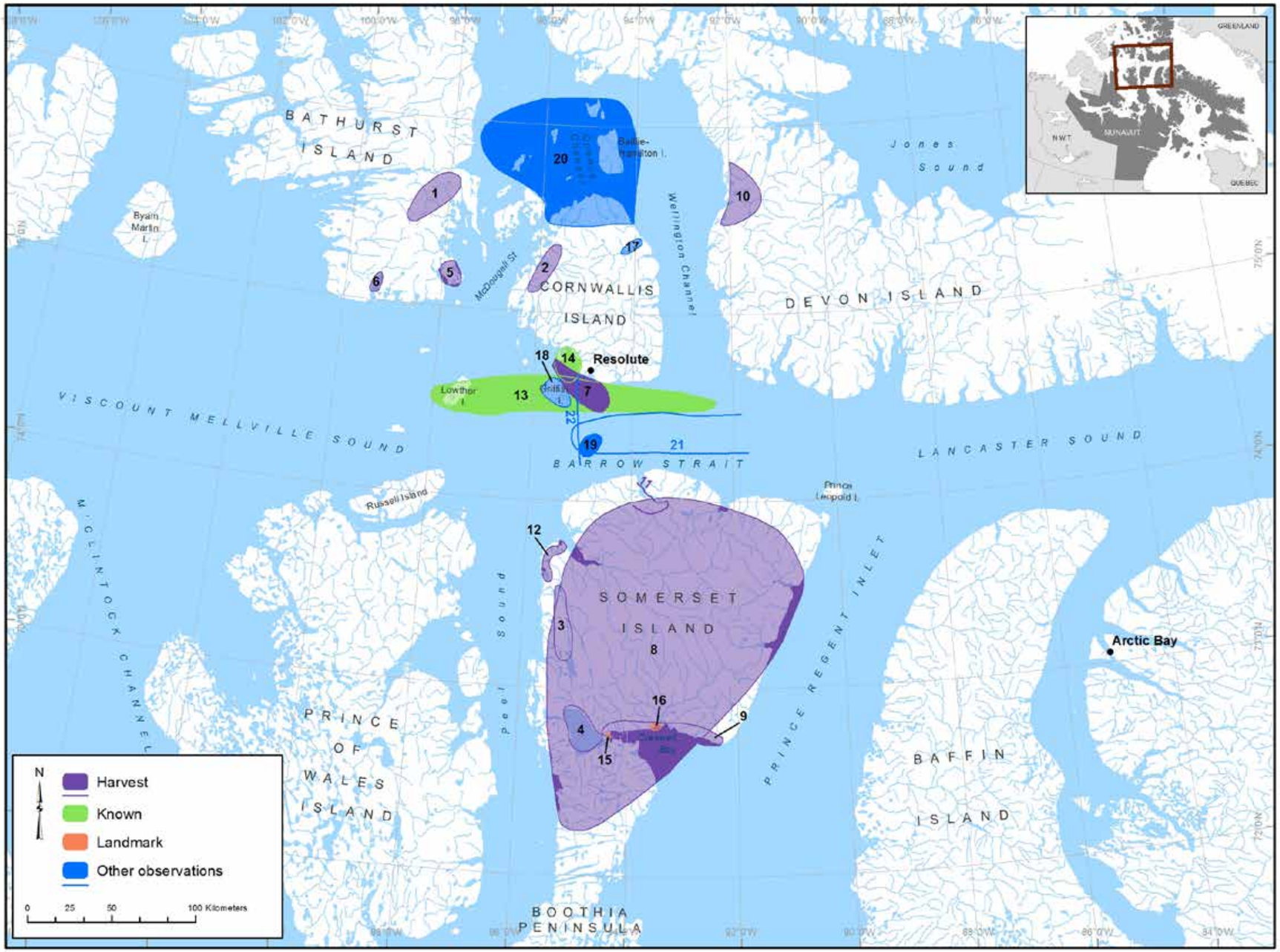


Table 4. Historic and current harvest areas, areas known best, landmarks and other observations

MAP #	INTERVIEW	CODE	CATEGORY	MONTHS	COMMENTS
1	1	Harv	Harvest		Musk-ox hunting in this area.
2	1	Harv	Harvest		Musk-ox hunting in this area.
3	1	Harv	Harvest		Musk-ox hunting in this area.
4	1	Harv	Harvest		Main fishing area, community will share a chartered plane to go fishing.
5	1	H, Harv	Harvest		Caribou hunting when he was younger.
6	1	Harv	Harvest		Caribou hunting area by boat.
7	1	Harv	Harvest		Seal hunting area.
8	2	Harv	Harvest		Caribou and Musk-ox in this area. The community made this area a no hunting zone for caribou, however, there are many musk-ox here.
9	6	Harv	Harvest		Goes here by airplane to fish. Doesn't go by skidoo anymore.
10	7	Harv	Harvest		Musk-ox hunting area.
11	9	Harv	Harvest		Musk-ox hunting area.
12	9	Harv	Harvest		Musk-ox hunting in this area.
13	2	Haz, AKB	Known		Shallow part of the ocean, ships can't go through here.
14	9	AKB	Known		Boating in this area.
15	1	AKB	Landmark		Landing strip.
16	2	AKB	Landmark		Charter a plane to go fishing.
17	2		Other		Future diamond mine, concerned for the chemicals that will affect the fish.
18	2	C	Other		Muskox are now found on Cornwallis Island. They are becoming more abundant because no one is hunting them.
19	2	C	Other		A scientist has a listening device here to hear what is under the water. Can hear passing ships in the device. He is worried about increased shipping; how will they use the ice if ships are coming through more? What happens if an oil spill occurs?
20	4	Haz	Other		Dangerous area due to ice conditions, some areas might be safe and other areas might be thin and hard to predict.
21	5	C	Other		Every time there is a natural disaster (like the Japan Tsunami) the water and ice here is affected. There was thunder and lightning here last year, and we can smell the forest fire smoke from southern areas.
22	6	Harv	Other		You can hear the ships noises this far from shore. Sea mammals can hear ships that are 11 hours away. Once the ship has passed, it takes another 11 hours for the animal to return to its normal state.

Figure 7. Floe edges, polynyas and other observed ice or water feature

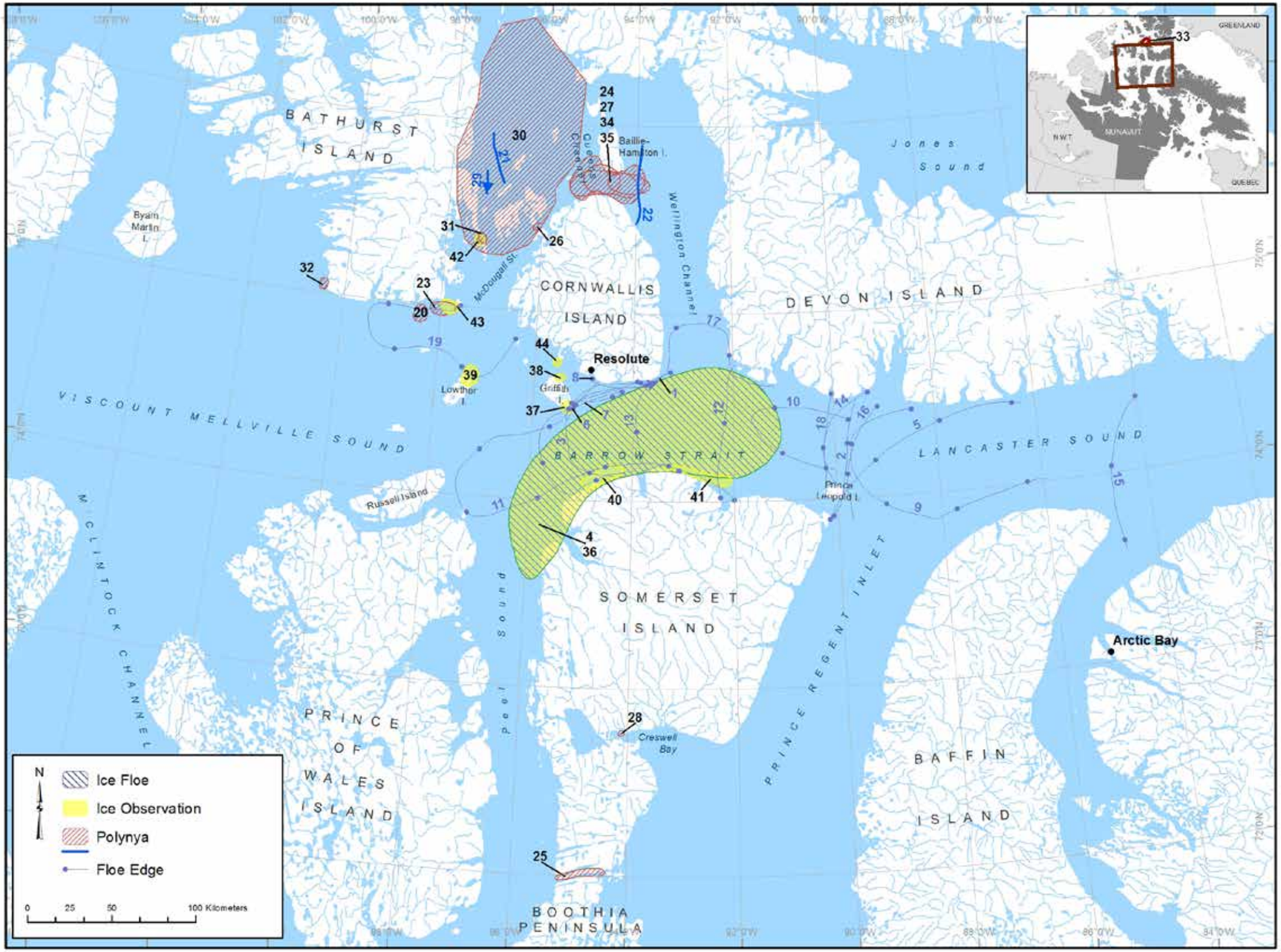


Table 5. Floe edges, polynyas and other observed ice or water feature

MAP #	INTERVIEW	CODE	CATEGORY	MONTHS	COMMENTS
1	1	Floe	Ice Floe		Floe edge this year.
2	1	H, Floe	Ice Floe		Sometimes floe edge is here.
3	2	Floe	Ice Floe		Normal floe edge.
4	2	C, Floe	Ice Floe		Used to be solid ice in area, but now it doesn't freeze as much. Doesn't think climate change is affecting the sea ice, just the currents changing.
5	3	Floe	Ice Floe		Floe edge usually in May, in June it breaks up.
6	3	Floe	Ice Floe		Floe edge in June.
7	4	Floe	Ice Floe		Floe edge sometimes here.
8	4	Floe	Ice Floe		Usual floe edge area.
9	5	Floe	Ice Floe		Winter floe edge.
10	5	Floe	Ice Floe		Spring floe edge.
11	6	Floe	Ice Floe		Floe edge when ice doesn't freeze well. 3 years in a row couldn't go to Somerset Island because of the ice.
12	6	Floe	Ice Floe		Regular floe edge.
13	6	Floe	Ice Floe		Floe edge some years.
14	7	Floe	Ice Floe		The farthest he has noticed the floe edge.
15	8	H, Floe	Ice Floe		Normal flow edge. Someone snowmobiled all the way to Arctic Bay before, back in 2000-2001. Can't do that anymore.
16	8	Floe	Ice Floe		Present floe edge. It is hard to get to Leopold Island because the ice is so rough.
17	9	Floe	Ice Floe	Jan, Feb, Oct, Nov, Dec	Where the floe edge starts forming in the fall.
18	9	Floe	Ice Floe		This years (2017) floe edge.
19	9	Floe	Ice Floe	Jan, Dec	Open area.
20	3	Poly	Ice Polynya		Open most of the year. Has strong currents.
21	4	Haz, Poly	Ice Polynya		
22	4	Haz, Poly	Ice Polynya		
23	4	Haz, Poly	Ice Polynya		Covered by snow.
24	5	Poly	Ice Polynya		
25	6	Poly	Ice Polynya		Shallow area. A ship called 'Labrador' came here and made it deeper so it could pass through. You can't use a small boat here, the current is too strong.
26	6	Poly	Ice Polynya		
27	6	Poly	Ice Polynya		
28	6	Poly	Ice Polynya		Shallow area, but doesn't freeze solid. Strong currents.
29	7	Haz, Poly	Ice Polynya		Strong currents.
30	7	Poly	Ice Polynya		
31	7	Haz, Poly	Ice Polynya		Strong currents.
32	7	Haz, Poly	Ice Polynya		
33	7	Haz, Poly	Ice Polynya		Between Bathurst and Devon Island, not on the map.
34	8	Poly	Ice Polynya		
35	9	Poly	Ice Polynya		
36	2	Ice	Ice Other		This area was off limits due to rough ice and water this year.
37	6	Haz, Ice	Ice Other		Telling hunters not to go to this area because the ice is dangerous. It gets thin from the bottom up.
38	6	Haz, Ice	Ice Other		Telling hunters not to go to this area because the ice is dangerous. It gets thin from the bottom up.
39	6	Haz, Ice	Ice Other		Telling hunters not to go to this area because the ice is dangerous. It gets thin from the bottom up.
40	7	Haz, Ice	Ice Other		Thin ice in this area.
41	9	Haz, Ice	Ice Other		Ice here sometimes never freezes, however, is usually very thin and just covered by snow. A sport hunter fell through the ice here.
42	9	Haz, Ice	Ice Other		Thin ice.
43	9	Haz, Ice	Ice Other		Dangerous ice once and a while.
44	9	Ice	Ice Other	May (Late), Jun (Early)	Every point is dangerous in spring. The ocean current makes the ice thin.

Figure 8. Arctic Char Frequency of Occurrence

Figure 9. Arctic Char Areas of Occurrence

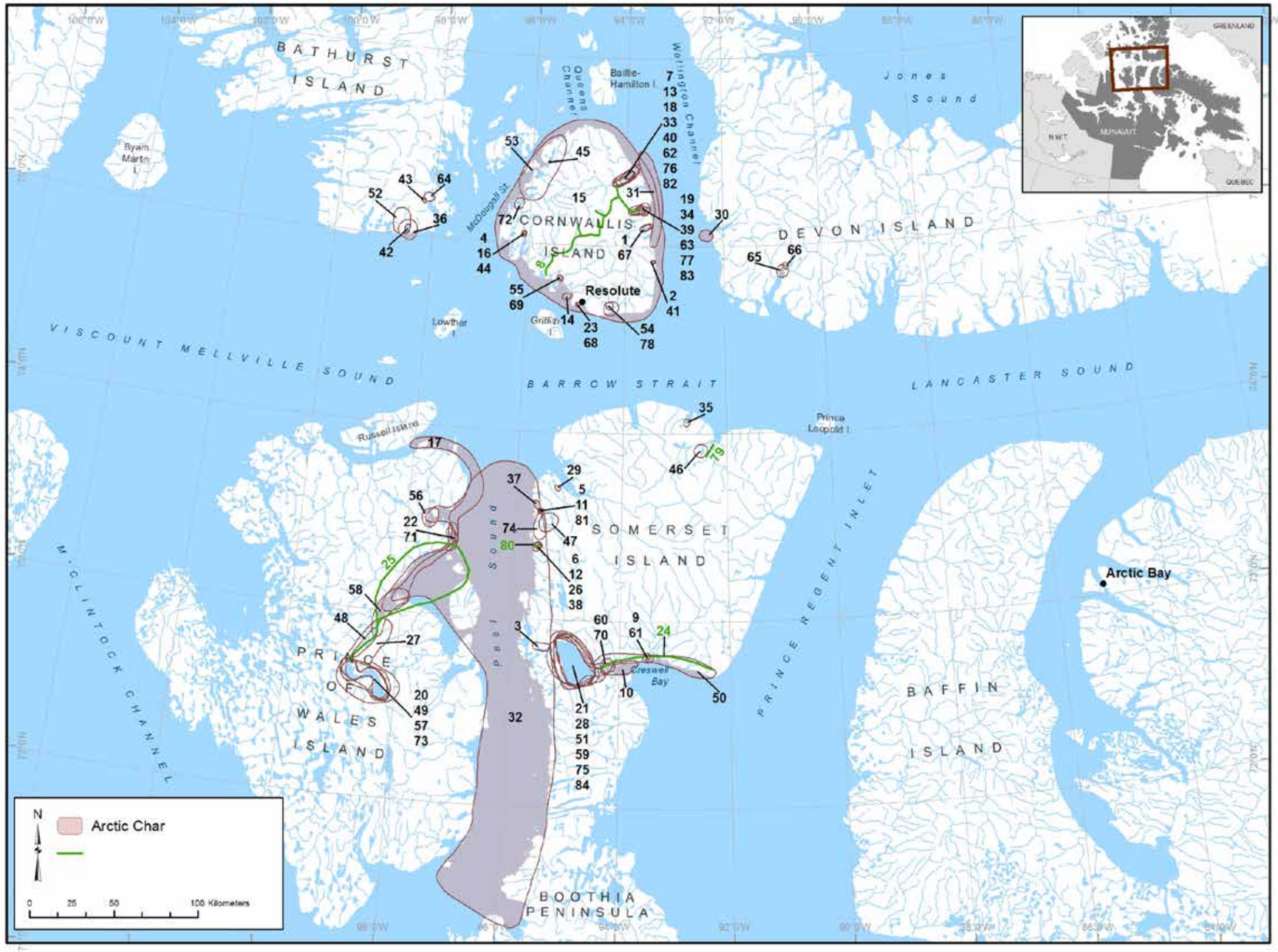


Table 6. Arctic Char Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	1			Sophia Lake.
2	1			
3	1			
4	1			Small char even though they migrate to the ocean. Only 1 ft long.
5	1		May	
6	1		May (Mid, Late)	
7	1			Elenore Lake.
8	2	M		Char migrate through this river.
9	2			
10	2			
11	2			First Lake (Figure 9, Label 11).
12	2			Second Lake (Figure 9, Label 12).
13	2	S		Each lake has its own spawning area that's shallow and warm.
14	2		Aug	Summer in ocean.
15	2			Found all around the island, fairly close to shore.
16	2			
17	2	A, Con	Jul, Aug	Worried about overpopulating char.
18	2			
19	2			
20	3			
21	3			
22	3			
23	3	S		Small ones.
24	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
25	4			
26	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
27	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
28	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
29	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
30	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
31	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
32	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
33	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
34	4		Jul, Aug(Mid)	Goes to the ocean in July, comes back in mid-August.
35	4		Jul, Aug (Mid)	Goes to the ocean in July, comes back in mid-August.
36	4			
37	5			
38	5			
39	5	S	Aug (Early)	Huge eggs in early August.
40	5			
41	5			
42	5			
43	5			
44	5			
45	5			
46	6	S		
47	6	S		
48	6	S		
49	6	S		
50	6			

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
51	6	A		Lots of fish here. They go up river into other lakes. They are big fish and make big holes in his fishing nets.
52	7			
53	7			
54	7	S	Jul (Late), Aug, Sep (Early)	
55	7	S	Jul (Late), Aug, Sep (Early)	
56	7			
57	7			
58	7			
59	7			
60	7			
61	7			
62	7	S	Jul (Late), Aug, Sep (Early)	
63	7	S	Jul (Late), Aug, Sep (Early)	
64	7			
65	7			
66	7			
67	7			
68	8			Sometimes make an appearance in Resolute Lake.
69	8	Con		Skinny, thin fish in this area. Easy to catch; might be starving.
70	8	S	Sep, Oct	
71	8	S	Sep, Oct	Really sandy area.
72	8	S	Sep, Oct	
73	8	S	Sep, Oct	
74	8	S	Sep, Oct	
75	8	S	Sep, Oct	
76	8	S	Sep, Oct	
77	8	S	Sep, Oct	
78	8	S	Sep, Oct	
79	9			Goes here once and a while.
80	9			
81	9			
82	9			
83	9			Have seen parasites in the fish here before.
84	9			Popular area. Healthiest and best tasting fish. Everyone wants to go here.

Figure 10. Landlocked Char Areas of Occurrence

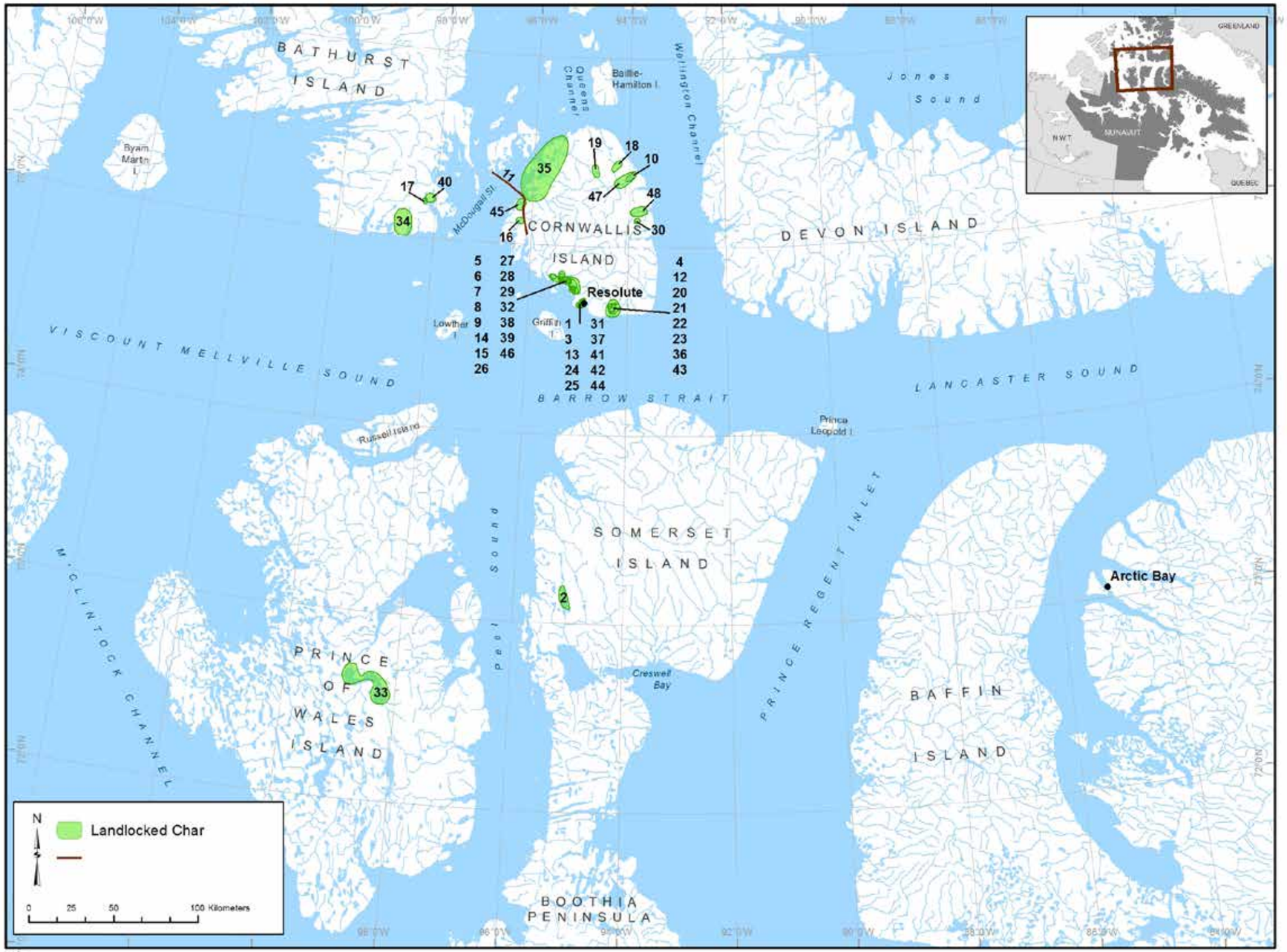


Table 7. Landlocked Char Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	1			
2	2			Huge ones.
3	2			
4	2			Frying pan size.
5	2			
6	2			
7	2			
8	2			
9	3			
10	3			
11	4			
12	4			
13	4			
14	4			
15	4			
16	4			
17	4			
18	5			
19	5			
20	5			Sometimes there are big ones.
21	5			Sometimes there are big ones.
22	5			Sometimes there are big ones.
23	5			Ones that eat inverts have white tissue and taste like mud.
24	5			Ones that eat inverts have white tissue and taste like mud.
25	5			Ones that eat inverts have white tissue and taste like mud.
26	5			Ones that eat inverts have white tissue and taste like mud.
27	5			Ones that eat inverts have white tissue and taste like mud.
28	5			Ones that eat inverts have white tissue and taste like mud.
29	5			Ones that eat inverts have white tissue and taste like mud.
30	5			Ones that eat inverts have white tissue and taste like mud.
31	6			Grows up to 2 feet.
32	6			
33	6	S		
34	7			
35	7			
36	7			
37	7			Resolute Lake.
38	7			3 Mile Lake (Figure 10, Label 38).
39	7			5 Mile Lake (Figure 10, Label 39).
40	7			
41	8			
42	8			
43	8	S	Sep, Oct	
44	8	S	Sep, Oct	
45	8	S	Sep, Oct	
46	8	S	Sep, Oct	
47	8	S	Sep, Oct	
48	8	S	Sep, Oct	

Figure 11. Arctic and Lake Cisco, Atlantic Salmon, Lake Trout and Whitefish Areas of Occurrence

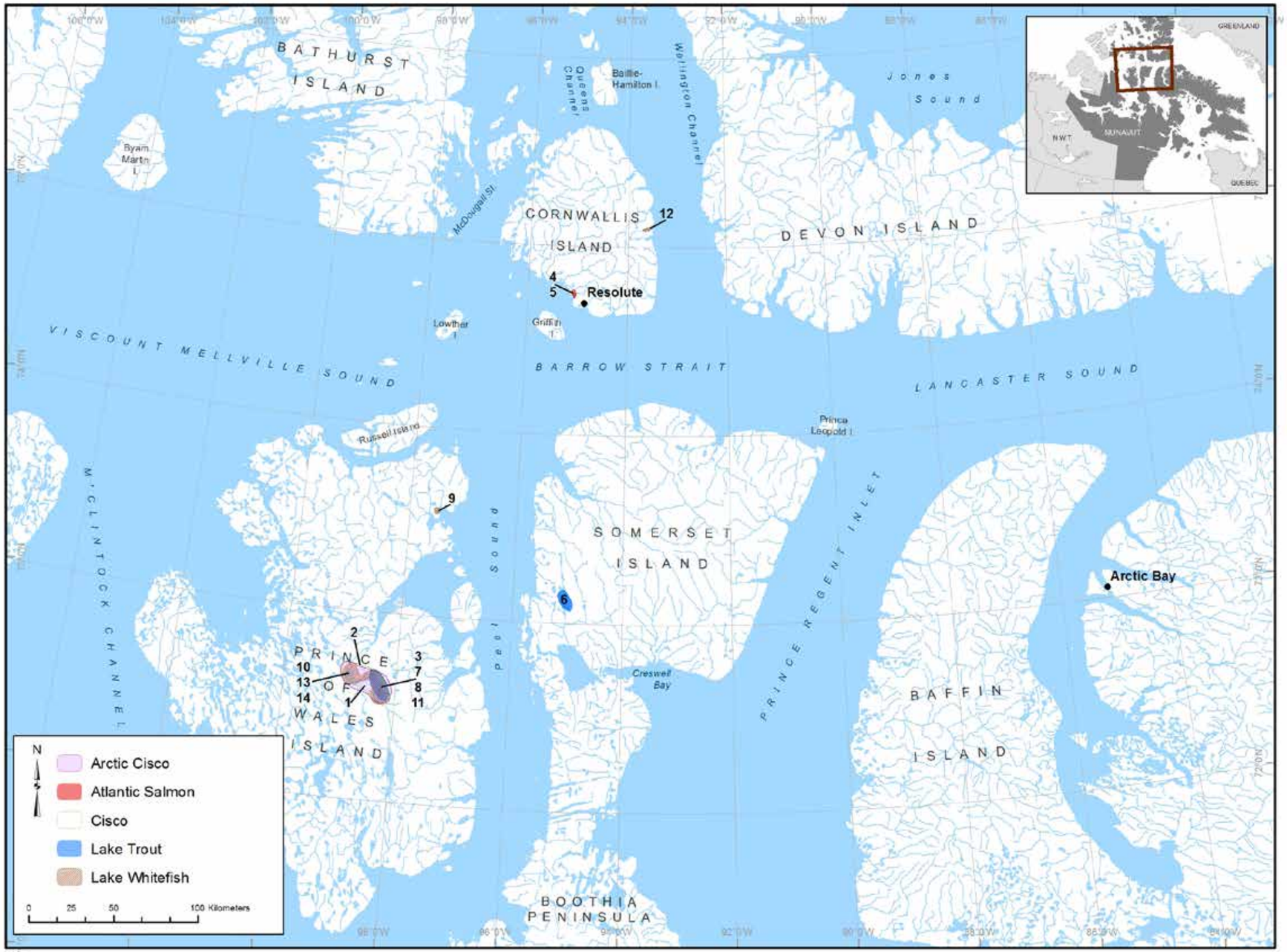


Table 8. Arctic and Lake Cisco, Atlantic Salmon, Lake Trout and Whitefish Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	7		Arctic Cisco		
2	8		Cisco		Arctic Cisco or Broad Whitefish. It had hard scales and a small head. Netted only one when the outpost camp was still open.
3	4		Lake Cisco		Heard about them from his grandfather.
4	5		Atlantic Salmon		Huge, white skin, pink flesh. Didn't really have a good look at it. 3 feet long, 1 foot wide.
5	8		Atlantic Salmon		
6	4		Lake Trout		
7	4		Lake Trout		
8	4		Lake Trout		
9	1		Lake Whitefish		Back Bay.
10	3		Whitefish		Unknown whitefish, only heard of them being here.
11	4		Whitefish		
12	5		Whitefish		Heard of them being at the bottom of the lake.
13	6		Whitefish		
14	6		Whitefish		

Figure 12. Arctic Cod, Cod, and Capelin Areas of Occurrence

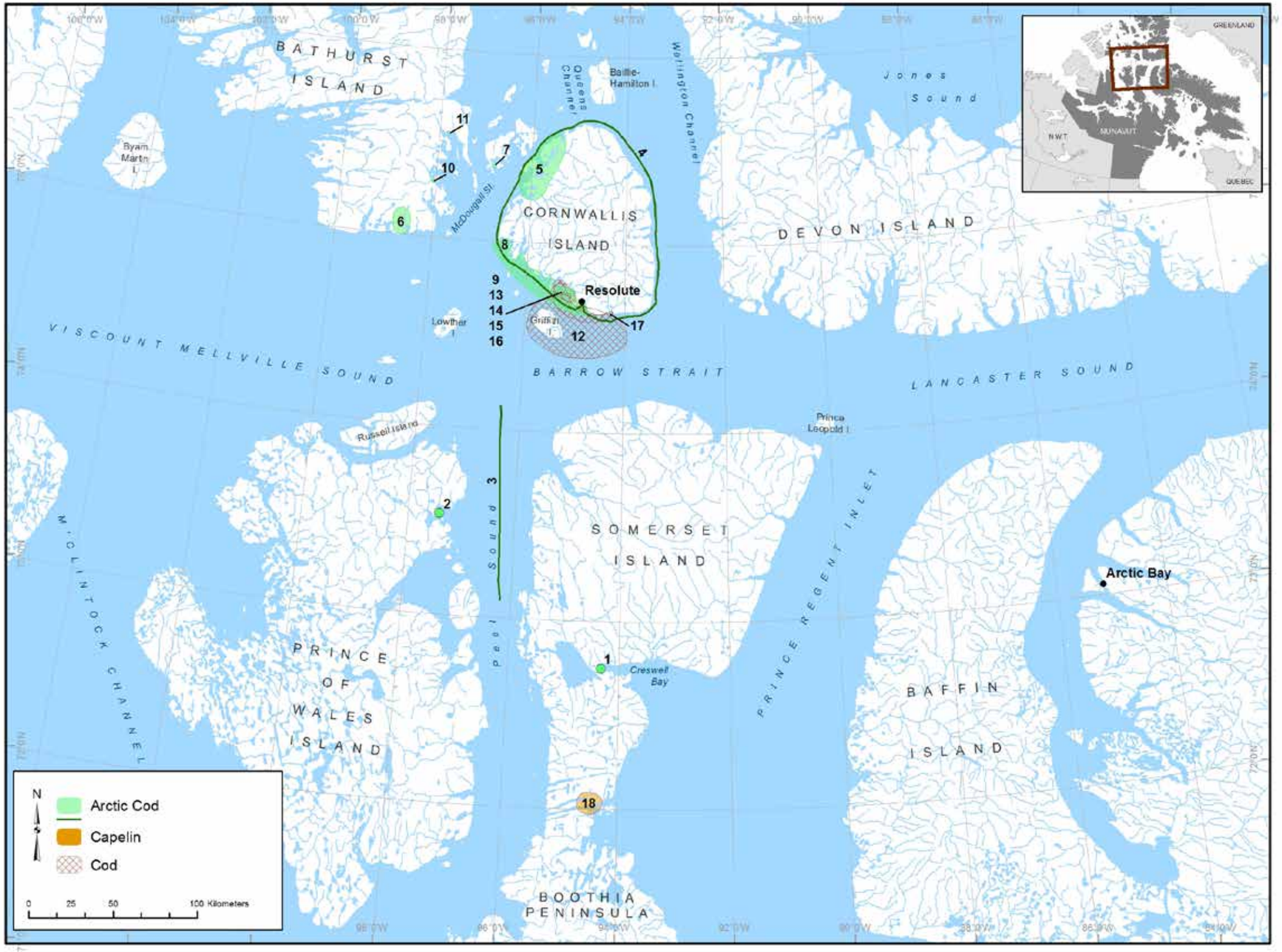


Table 9. Arctic Cod, Cod and Capelin Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	3		Arctic Cod		Used to catch them as a kid.
2	3		Arctic Cod		
3	6		Arctic Cod		They don't fish for cod here, but see them through seal holes.
4	7		Arctic Cod		Whales and seals chase them.
5	7		Arctic Cod		
6	7		Arctic Cod		
7	7	H	Arctic Cod		Land-locked Cod. Unsure if they are still there, but were damned up years ago.
8	8	A	Arctic Cod		In schools.
9	9		Arctic Cod		Catch them in the bay. They get quite large, approximately 2 feet in length.
10	9		Arctic Cod		Catch them in nets.
11	9		Arctic Cod		Right near the cabin.
12	2		Cod		
13	2	A	Cod		Thousands found under ice. Used for bait.
14	3	A	Cod		Lots in the ocean while boating.
15	4		Cod		
16	4		Cod		
17	5	A	Cod		Lots of cod when the whales come in, looks like the surface of water has a layer of oil on it. Sent out cod for sampling.
18	5	A	Capelin	Aug (Early)	

Table 10. Arctic Cod Everywhere Data

INTERVIEW	MONTHS	COMMENTS
1	Jan - Dec	All over in the ocean.
2	Jan - Dec	
4		
7		

Figure 13. Arctic and Shorthorn Sculpin and unknown Sculpin Areas of Occurrence

Table 11. Arctic and Shorthorn Sculpin Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	9		Arctic Staghorn Sculpin		
2	9		Arctic Staghorn Sculpin		
3	9		Arctic Staghorn Sculpin		
4	2		Shorthorn Sculpin		Found in Lorie Lake.
5	3		Shorthorn Sculpin		
6	3		Shorthorn Sculpin		
7	4		Shorthorn Sculpin		Elenore Lake.
8	5		Shorthorn Sculpin		Caught some for samples for Environment Canada.
9	6		Shorthorn Sculpin		
10	6		Shorthorn Sculpin		They are found in these lakes, and are a darker colour.
11	6		Shorthorn Sculpin		
12	7		Shorthorn Sculpin		
13	7		Shorthorn Sculpin		
14	3		Sculpin		Unsure what kind, maybe a Hamecon sculpin.
15	8		Sculpin		Six Horned Sculpin in the lakes.
16	8		Sculpin		Six Horned Sculpin in the lakes.
17	8		Sculpin		Six Horned Sculpin in the lakes.

Table 12. Shorthorn Sculpin Everywhere Data

INTERVIEW	MONTHS	COMMENTS
1		
4		
7		

Figure 14. Arctic Rockling, Eelpout, Greenland Halibut, Greenland Shark, Roughhead Grenadier and unknown fish Areas of Occurrence

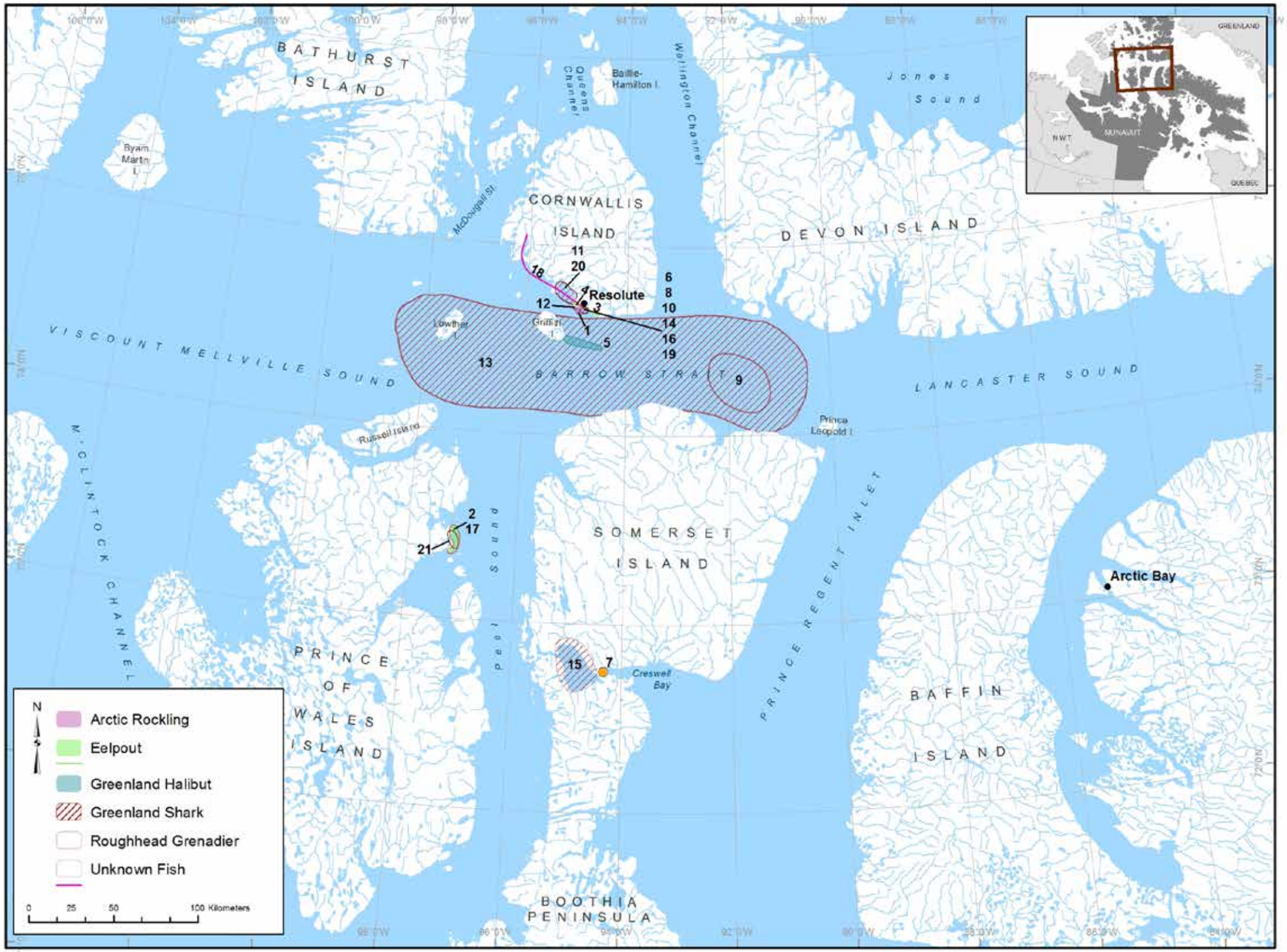


Table 13. Arctic Rockling, Eelpout, Greenland Halibut, Greenland Shark, Roughhead Grenadier and unknown fish Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	6		Arctic Rockling		
2	3		Eelpout		Either Arctic Eelpout or Adolfs Eelpout.
3	5		Eelpout		They come here on shore from big waves.
4	5		Eelpout		Found along shore from big waves.
5	6		Greenland Halibut; Turbot		Laid 5 miles of fishing line down to see what they would catch. Caught nothing.
6	1		Greenland Shark		
7	3	H	Greenland Shark		
8	3		Greenland Shark		They eat beluga whale carcasses in the summer.
9	4		Greenland Shark		
10	4		Greenland Shark		
11	4		Greenland Shark		Helped clean them and helped tag 7.
12	5		Greenland Shark		Researchers here accidentally caught one. It had a rock, sculpins and a rat looking thing in its stomach. They come to the smell of rotten things (like sealskin).
13	7		Greenland Shark		
14	8		Greenland Shark		Hunting Beluga.
15	8		Greenland Shark		
16	9		Greenland Shark	Aug (Late)	
17	3	H	Roughhead Grenadier		Saw one when he was 13 years old and gave it to a marine biologist.
18	4		Unknown Fish		Think it may have been a Northern Wolfish, found it washed up.
19	4		Unknown Fish		Small fish, like Capelin or Herring.
20	4		Unknown Fish		Small fish, like Capelin or Herring.
21	8		Unknown Fish		Unknown Salmon. It was quite large.

Table 14. Greenland Shark Everywhere Data

INTERVIEW	MONTHS	COMMENTS
1		When people catch beluga the sharks come into the area.

Figure 15. Common Cockle and Truncate Softshell Clam Areas of Occurrence

Table 15. Common Cockle and Truncate Softshell Clam Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	1		Common Cockle		
2	2		Common Cockle		They get blown in shore from the strong south winds.
3	3		Common Cockle		Finds shells everywhere along the shore and inland.
4	3		Common Cockle		Finds shells everywhere along the shore and inland.
5	3		Common Cockle		Finds shells everywhere along the shore and inland.
6	3		Common Cockle		Finds shells everywhere along the shore and inland.
7	5		Common Cockle		Collect them in early September.
8	5		Common Cockle		Collect them in early September.
9	6		Common Cockle		Blow onto the beach with big waves. Small in size.
10	7		Common Cockle		Finds just the shells.
11	8		Common Cockle		Wash up on shore. Have to collect them before the seagulls do.
12	8		Common Cockle		Wash up on shore. Have to collect them before the seagulls do.
13	9		Common Cockle		Not too many.
14	1		Truncate Softshell Clam		
15	1		Truncate Softshell Clam		
16	1		Truncate Softshell Clam		
17	1		Truncate Softshell Clam		
18	2		Truncate Softshell Clam		
19	2	A	Truncate Softshell Clam		Did a study to see if they could be commercially harvested and there is enough.
20	3		Truncate Softshell Clam		Finds shells everywhere along the shore and inland.
21	3		Truncate Softshell Clam		Finds shells everywhere along the shore and inland.
22	3		Truncate Softshell Clam		Finds shells everywhere along the shore and inland.
23	3		Truncate Softshell Clam		Finds shells everywhere along the shore and inland.
24	4		Truncate Softshell Clam		Found all around in shallow areas.
25	4		Truncate Softshell Clam		Found all around, in shallow areas.
26	4		Truncate Softshell Clam		Found all around, in shallow areas.
27	4		Truncate Softshell Clam		
28	4		Truncate Softshell Clam		
29	5		Truncate Softshell Clam		Collect them in early September.
30	5		Truncate Softshell Clam	Sep (Early)	Collect them in early September.
31	6		Truncate Softshell Clam		Blow onto the beach with big waves. People from Northern Quebec taught him how to eat them.
32	7	A	Truncate Softshell Clam		Must be all over the islands.
33	7		Truncate Softshell Clam		In shallow areas.
34	7		Truncate Softshell Clam		In shallow areas.
35	8		Truncate Softshell Clam		Wash up on shore. Have to collect them before the seagulls do.
36	8		Truncate Softshell Clam		Wash up on shore. Have to collect them before the seagulls do.
37	9		Truncate Softshell Clam		Wash up on the beach.

Figure 16. Amphipod, mussel and Northern Horsemussel Areas of Occurrence

Table 16. Amphipod, mussel and Northern Horsemussel Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	5	A	Amphipod		Collected 3 different types for samples.
2	3		Mussel		Finds shells everywhere along the shore and inland.
3	3		Mussel		Finds shells everywhere along the shore and inland.
4	3		Mussel		Finds shells everywhere along the shore and inland.
5	3		Mussel		Finds shells everywhere along the shore and inland.
6	3		Northern Horsemussel		Finds shells everywhere along the shore and inland.
7	3		Northern Horsemussel		Finds shells everywhere along the shore and inland.
8	3		Northern Horsemussel		Finds shells everywhere along the shore and inland.
9	3		Northern Horsemussel		Finds shells everywhere along the shore and inland.

Table 17. Amphipod Everywhere Data

INTERVIEW	MONTHS	COMMENTS
1		A little different than the picture.
2		Found under the ice, seals eat them.
3		
4		
7		Seals and char eat them.
8	Summer	
9		

Figure 17. Barnacle, Crayfish, Deep Sea King Crab, Icelandic Scallop, Northern Krill, Northern Shrimp Oyster and Snow Crab Areas of Occurrence

Table 18. Barnacle, Crayfish, Deep Sea King Crab, Icelandic Scallop, Northern Krill, Northern Shrimp and Oyster Areas Snow Crab of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	4		Barnacle		
2	5		Crayfish		Collected a few of them here, claws were short.
3	6		Deep Sea King Crab		In deeper water.
4	3		Icelandic Scallop		Finds shells everywhere along the shore and inland.
5	3		Icelandic Scallop		Finds shells everywhere along the shore and inland.
6	3		Icelandic Scallop		Finds shells everywhere along the shore and inland.
7	3		Icelandic Scallop		Finds shells everywhere along the shore and inland.
8	5		Icelandic Scallop		Collect them in early September.
9	5		Icelandic Scallop	Sep (Early)	Collect them in early September.
10	6		Icelandic Scallop		Blow onto the beach with big waves.
11	4		Northern Krill		
12	1		Northern Shrimp		He was working with ocean surveyors and found shrimp. Not many.
13	2		Northern Shrimp		Smaller because the ocean is colder, they come in with the waves. Some people collect them to eat.
14	4		Northern Shrimp		
15	4		Northern Shrimp		
16	6		Northern Shrimp		In deeper water.
17	3		Oyster		Finds shells everywhere along the shore and inland.
18	3		Oyster		
19	3		Oyster		Finds shells everywhere along the shore and inland.
20	3		Oyster		Finds shells everywhere along the shore and inland.
21	6		Snow Crab		In deeper water.

Figure 18. Basket Star, Brittle Star, Mud Star, Polar Sea Star, Sea Anemone, Sea Cucumber and Sea Urchin Areas of Occurrenc

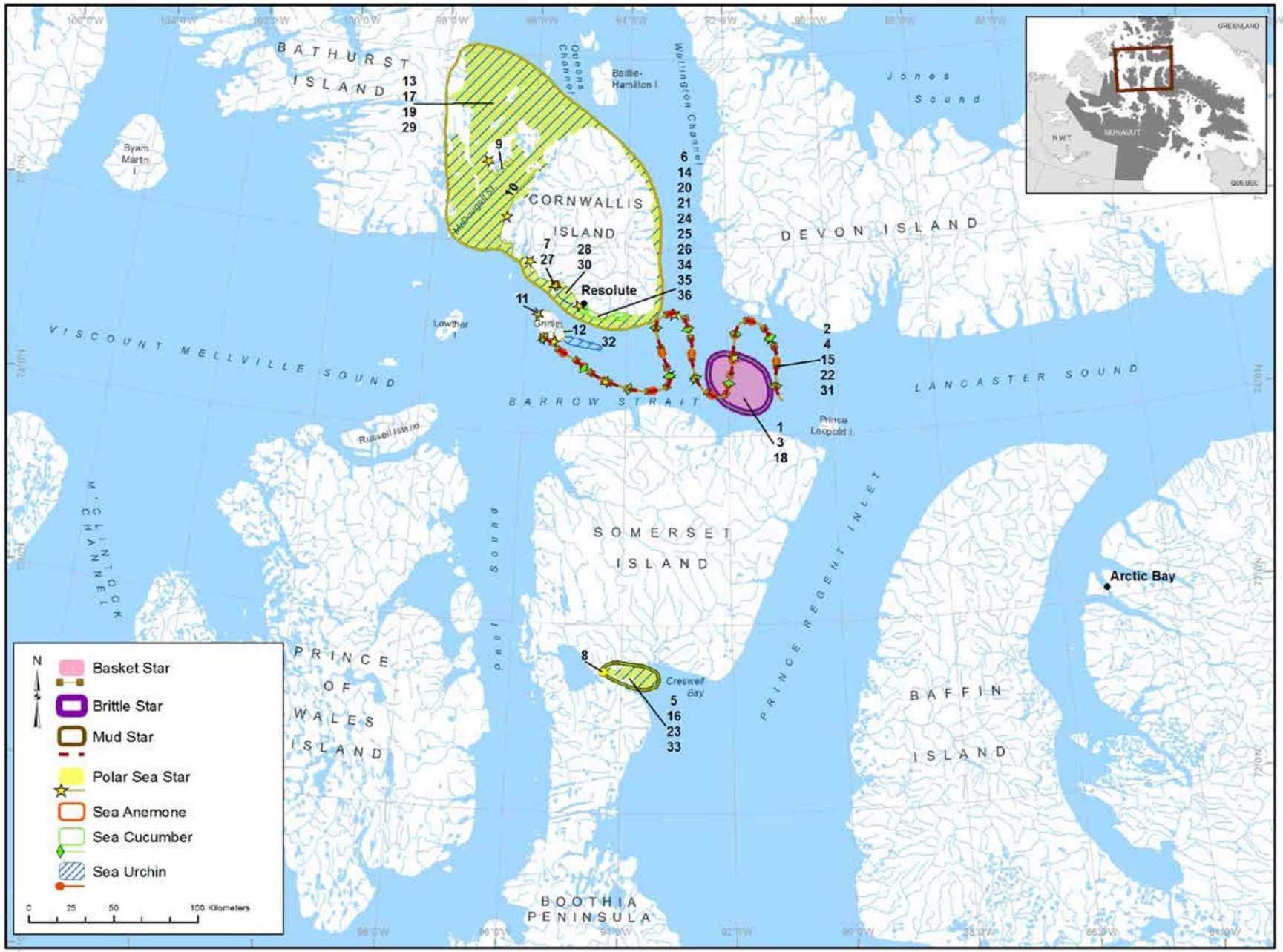


Table 19. Basket Star, Brittle Star, Mud Star, Polar Sea Star, Sea Anemone, Sea Cucumber and Sea Urchin Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	4		Basket Star		
2	6		Basket Star		Got it on the ship, tried to keep it, however, it was too stinky.
3	4		Brittle Star		
4	6		Mud Star		
5	7		Mud Star		
6	1		Polar Sea Star		
7	2		Polar Sea Star		
8	3		Polar Sea Star		
9	3		Polar Sea Star		Finds shells everywhere along the shore and inland.
10	3		Polar Sea Star		Finds shells everywhere along the shore and inland.
11	3		Polar Sea Star		Finds shells everywhere along the shore and inland.
12	3		Polar Sea Star		Finds shells everywhere along the shore and inland.
13	4		Polar Sea Star		
14	5		Polar Sea Star		Only seen when there is bad weather.
15	6		Polar Sea Star		
16	7		Polar Sea Star		
17	4		Sea Anemone		
18	4		Sea Cucumber		
19	4		Sea Cucumber		
20	4		Sea Cucumber		
21	5	A	Sea Cucumber		Soft when alive, turns to cartilage when it dies.
22	6		Sea Cucumber		
23	7		Sea Cucumber		
24	8	C	Sea Cucumber		Wash up on shore. Just noticing them recently.
25	8	C	Sea Cucumber		Wash up on shore. Just noticing them recently.
26	1		Sea Urchin		They wash up on shore when there are big waves.
27	2		Sea Urchin		
28	4	A	Sea Urchin		
29	4		Sea Urchin		
30	5	A	Sea Urchin		
31	6		Sea Urchin		
32	6		Sea Urchin		
33	7	A	Sea Urchin		All over shallow areas.
34	8		Sea Urchin		Wash up on shore.
35	8		Sea Urchin		Wash up on shore.
36	9		Sea Urchin		Wash up on the beach.

Table 20. Polar Sea Star Everywhere Data

INTERVIEW	MONTHS	COMMENTS
4		

Figure 19. Arrow Worm, Arctic Sea Snail, Boreal Armhook Squid, Finger Sponge and Naked and Shelled Sea Butterfly Areas of Occurrence

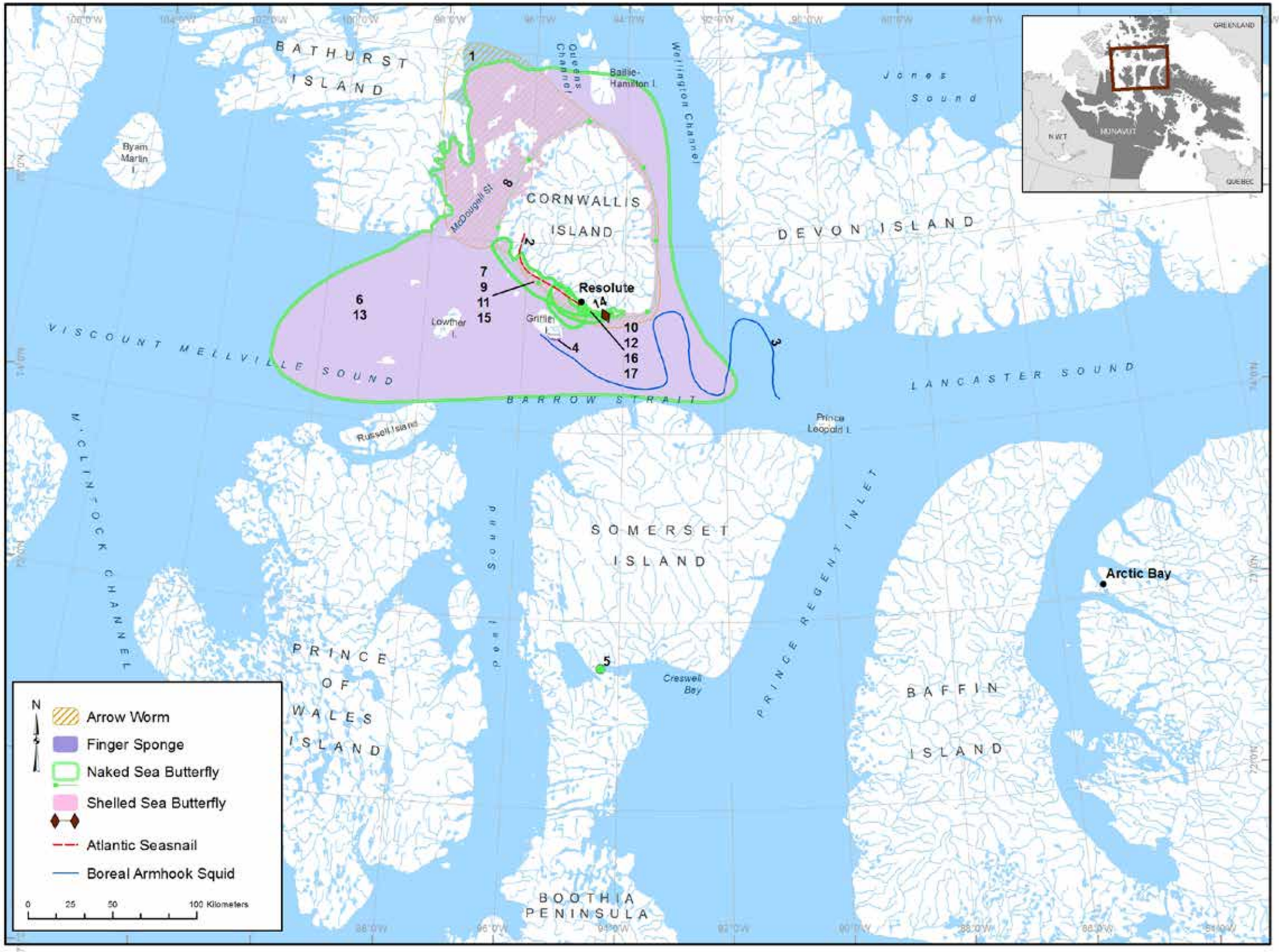


Table 21. Arrow Worm, Arctic Sea Snail, Boreal Armhook Squid, Finger Sponge and Naked and Shelled Sea Butterfly Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	4		Arrow Worm		
2	4		Atlantic Sea Snail		Sees them washed up every year when there are southern winds.
3	6		Boreal Armhook Squid		
4	8		Finger Sponge		Only seen fossils.
5	3	H	Naked Sea Butterfly		
6	4		Naked Sea Butterfly		
7	5	A	Naked Sea Butterfly	Jan - Dec	All along shoreline. Arctic char like them.
8	7		Naked Sea Butterfly		
9	7		Naked Sea Butterfly		
10	8	A	Naked Sea Butterfly		
11	8	A	Naked Sea Butterfly		
12	8	A	Naked Sea Butterfly		
13	4		Shelled Sea Butterfly		
14	5	A	Shelled Sea Butterfly	Jan - Dec	Char like to eat them.
15	8	A	Shelled Sea Butterfly		
16	8	A	Shelled Sea Butterfly		
17	8	A	Shelled Sea Butterfly		

Table 22. Naked and Shelled Sea Butterfly Everywhere Data

INTERVIEW	MONTHS	SPECIES	COMMENTS
4		Naked Sea Butterfly	
4		Shelled Sea Butterfly	

Figure 20. Ctenophore, Lion's Mane Jellyfish, and Moon Jellyfish Areas of Occurrence

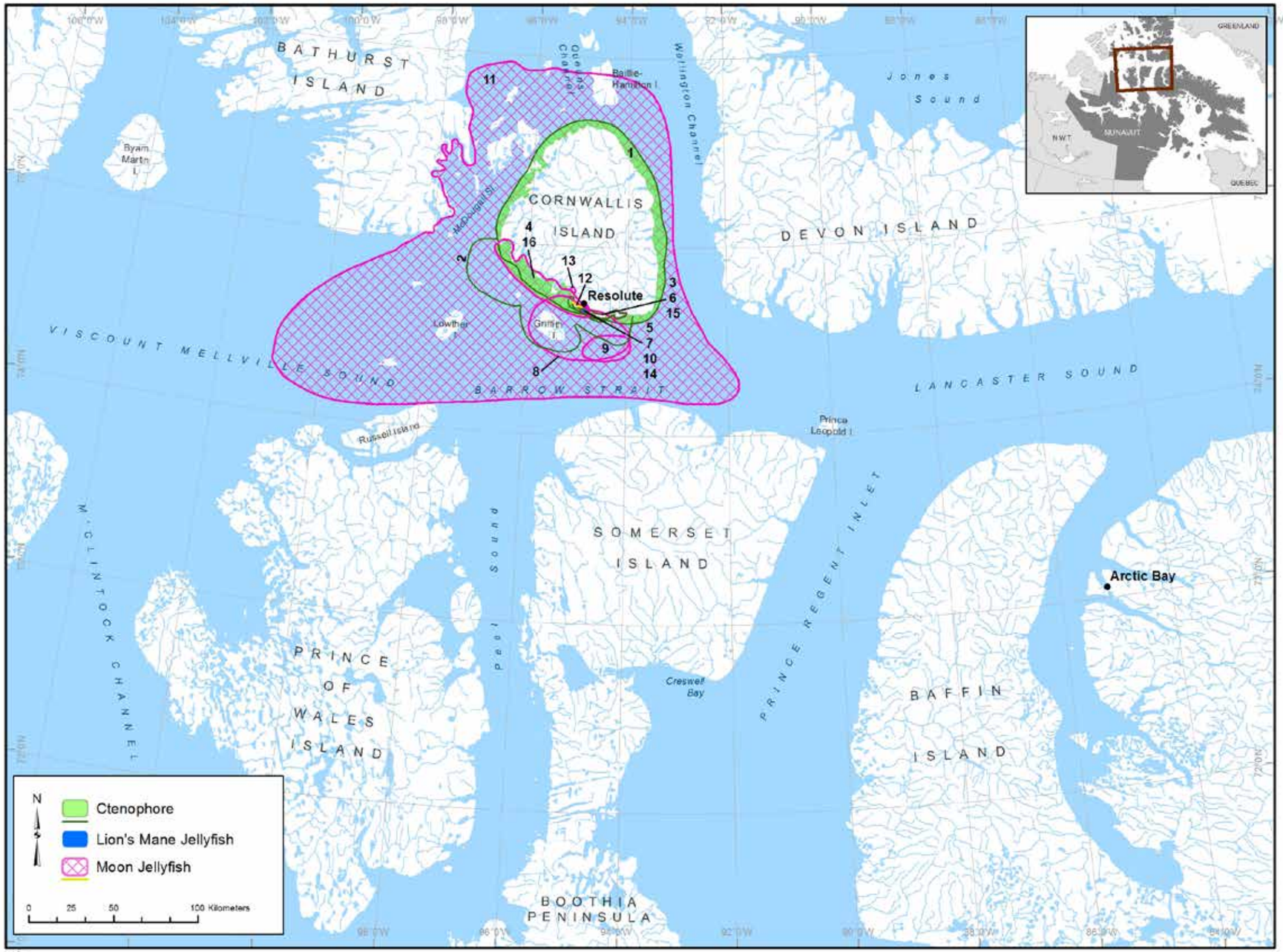


Table 23. Ctenophore, Lion's Mane Jellyfish, and Moon Jellyfish Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	2	A	Ctenophore		
2	4		Ctenophore		
3	5		Ctenophore		All along shore when traveling.
4	8		Ctenophore		
5	8		Ctenophore		
6	8		Ctenophore		
7	5		Lion's Mane Jellyfish		Along shore.
8	2	A	Moon Jellyfish		Found all around here.
9	3		Moon Jellyfish		
10	4		Moon Jellyfish		Some years there are lots.
11	4		Moon Jellyfish		
12	5		Moon Jellyfish		Large and small.
13	6		Moon Jellyfish		Red in colour.
14	8		Moon Jellyfish		
15	8		Moon Jellyfish		
16	8		Moon Jellyfish		

Table 24. Ctenophore and Moon Jellyfish Everywhere Data

INTERVIEW	MONTHS	SPECIES	COMMENTS
1		Ctenophore	
1		Moon Jellyfish	
4		Whelk	
7		Ctenophore	Move with the currents.
7		Moon Jellyfish	Move with the currents.
9		Moon Jellyfish	See them everywhere while boating.

Figure 21. Sea Spider, Tortoiseshell Limpet and Whelk Areas of Occurrence

Table 25. Sea Spider, Tortoiseshell Limpet and Whelk Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	4		Sea Spider		
2	4		Sea Spider		Found it washed up.
3	5		Tortoiseshell Limpet		
4	5		Tortoiseshell Limpet		
5	1		Whelk		They wash ashore when there's big waves.
6	2		Whelk		Washes up from the waves.
7	3		Whelk		Finds shells everywhere along the shore and inland.
8	3		Whelk		Finds shells everywhere along the shore and inland.
9	3		Whelk		Finds shells everywhere along the shore, and even sees them inland.
10	3		Whelk		Finds shells everywhere along the shore and inland.
11	4		Whelk		
12	4		Whelk		
13	4		Whelk		Lots found during exploratory fishing.
14	5		Whelk		
15	5		Whelk		
16	6		Whelk		Collected them when he was working on a ship doing exploratory fishing in 2015. Wanted to make earrings with the shell.
17	7	A	Whelk		
18	7	A	Whelk		
19	8		Whelk		Blow up on shore with big waves. Sometimes sees their shells on the ice.
20	8		Whelk		Blow up on shore with big waves. Sometimes sees their shells on the ice.
21	8		Whelk		Blow up on shore with big waves. Sometimes sees their shells on the ice.
22	9		Whelk		Small ones wash up on the beach.

Figure 22. Polar Bear Frequency of Occurrence

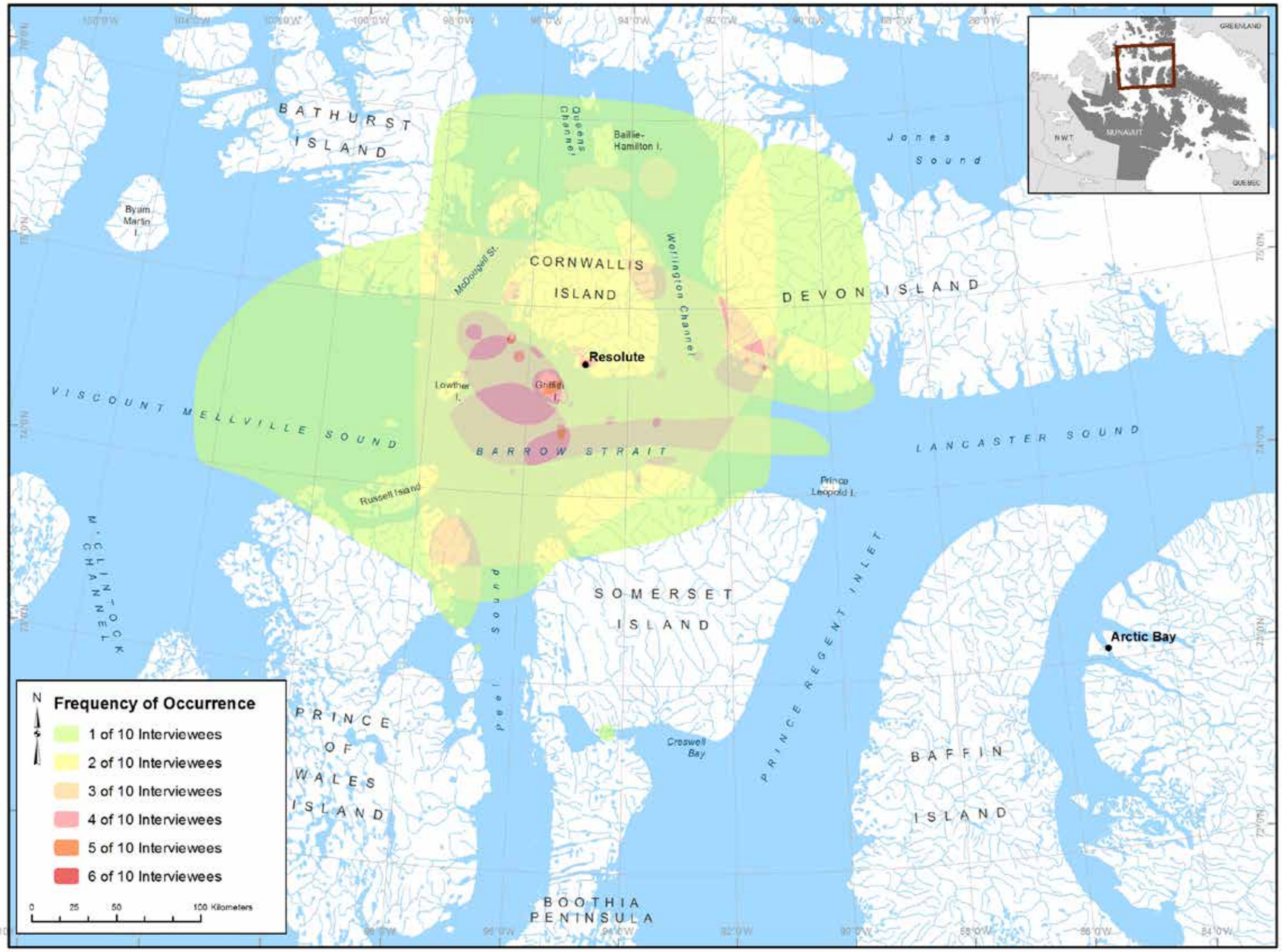


Figure 23. Polar Bear Areas of Occurrence

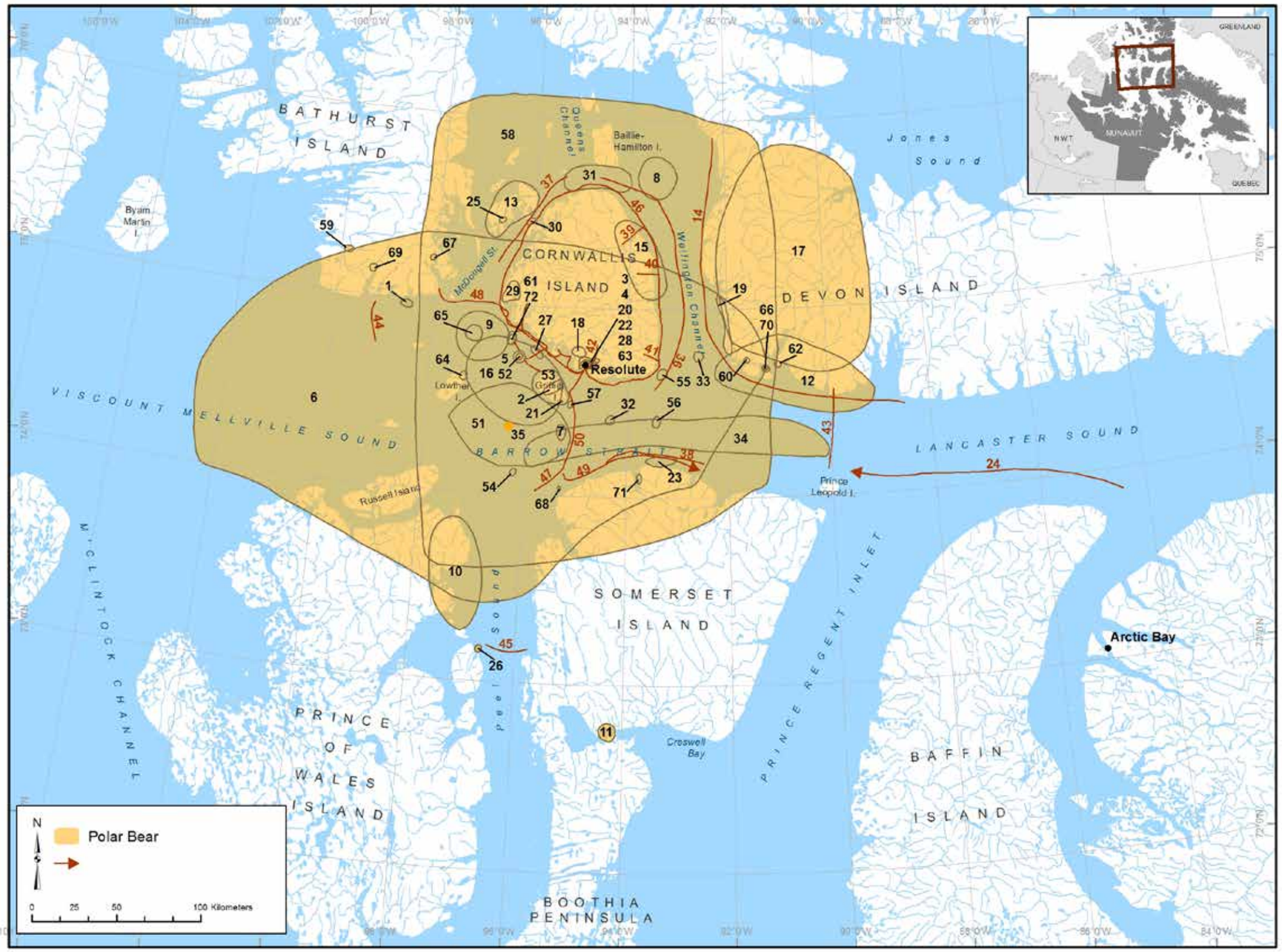


Table 26. Polar Bear Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	1			
2	1	N		Denning area.
3	1	N		Den found right outside of town once.
4	1		Oct, Nov, Dec	They come into town every day.
5	2	N		Denning area.
6	2			Polar Bear hunting area.
7	3			Caught one here.
8	3			Caught one here.
9	3			Caught one here.
10	3		Jan - Dec	
11	3			
12	3		Jan - Dec	
13	3		Jan - Dec	
14	4			Polar Bear hunting area on Devon Island.
15	4	N		Denning area.
16	4			Majority of bears caught here.
17	4	N		Denning area.
18	4	N		Denning area.
19	5	N		Denning in cliffs.
20	5	N		Denning area.
21	5	N		Denning area.
22	5			Found right in town. Used to dealing with them.
23	5	H		Killed a bear here when she was 2 or 3.
24	6	M		Travel from open water.
25	6			
26	6			Caught first Polar Bear cub here at age 4.
27	6			Granddaughter caught a bear here.
28	6			Shot a bear from his doorway, only wearing his shorts. This occurrence is quite frequent. Counted 20 Polar Bears in the community one time.
29	6	N		Dens can be found where there is lots of snow. As the snow gets deeper, the bears continue to move their dens, keeping a constant distance from the surface. They do not hunt them while in their dens.
30	6			
31	6			
32	6	H		Caught a polar bear here using a spear when he was around 13 years old.
33	6			
34	6	A		
35	7			They usually den where there is an accumulation of snow and lots of seals.
36	7			Farthest north he goes Polar Bear hunting.
37	7			
38	7	A		Resolute is Polar Bear capital of the world.
39	7	N		
40	7	N		
41	7	N		
42	7	N		
43	7			Farthest east he goes Polar Bear hunting.
44	7			Farthest west he goes Polar Bear hunting.
45	7			Farthest south he goes Polar Bear hunting.
46	7			
47	7			
48	7			
49	7			
50	7			
51	7			They usually den where there is an accumulation of snow and lots of seals.
52	7			
53	7			
54	7			
55	8			Caught one here.
56	8			Caught one here.
57	8			Caught one here.
58	8			As a wildlife officer, she has been all over looking for Polar Bear.
59	8	N		She went inside the den, it was empty. There was a sleeping area and a washroom area.

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
60	8	N		Den.
61	8	N	Apr	When the Polar Bears first emerge from their dens, their poop is different. She has seen lots of that kind of poop here, indicating they just came out of the den in the area.
62	8			Caught one here.
63	8			Caught one here.
64	8			Caught one here while she was alone.
65	8			Caught one here.
66	8			Largest Polar Bear she has caught was here. Approximately 10 feet long.
67	9	N		
68	9			The last bear he caught was here in 2017. There were 2 males and 1 female.
69	9	N		Dens near the steep cliffs.
70	9	N		
71	9	N		Dens on the hillside.
72	9			Caught a Polar Bear on a boat here.

Table 27. Polar Bear Everywhere Data

INTERVIEW	MONTHS	COMMENTS
1		
4		

Figure 24. Walrus Frequency of Occurrence

Figure 25. Walrus Areas of Occurrence

Table 28. Walrus Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	1			
2	1			
3	2			
4	2			
5	3			No one really hunts walrus here.
6	4	M	Jul	Migrates from the east.
7	4		Jul	
8	4		Jul, Aug	Walrus from the north come south in Summer (July, August) and are here all winter.
9	4	N		Young are raised here.
10	4			Usually here in summer.
11	5	M		They come up in summer and down in fall.
12	5			Saw one calving here, left it alone.
13	5		Jan - Dec	
14	6			Stays all winter.
15	6			In open water at the flow edge. Walrus will eat anything it can find: seal, birds, etc. Especially the ones from Greenland.
16	7	N		Haul-out area.
17	7	N		Haul-out area.
18	7	M		Spring and summer they head south, and return in the fall. They stay close to the ice flows, otherwise go to shallow haul-out areas.
19	7			Walrus remain in the polynya all year round.
20	8			Hung around here a couple years ago.
21	8	M	Jul	Migrate from the east in July from along the coast (Figure 27, Label 27) and go back in the fall.
22	8			Over winter in this area.
23	8			Someone killed a walrus here. It probably lost its hole at the polynya and was starving.
24	8			
25	8			
26	8			On the ice.
27	8			All along the coast.
28	9	M	Jul, Aug, Oct	Migratory route. You can hear them pass by. They come up in July/August and leave to the south/east in October.
29	9			Caught by boat.
30	9			Caught by boat.
31	9			In the bay.
32	9	N		See them around the little islands. Might be a calving ground.

Figure 26. Ringed Seal Frequency of Occurrence

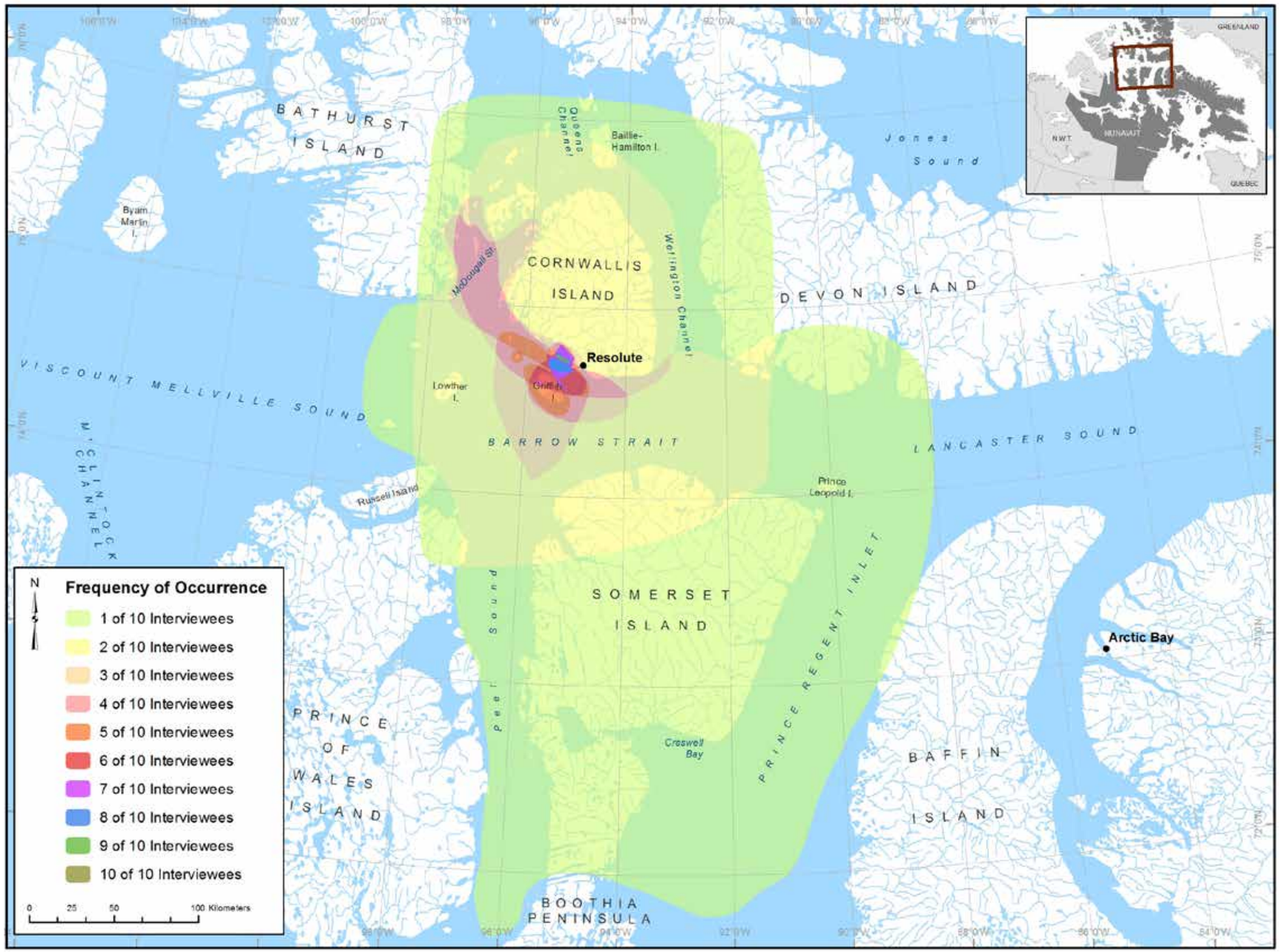


Figure 27. Ringed Seal Areas of Occurrence

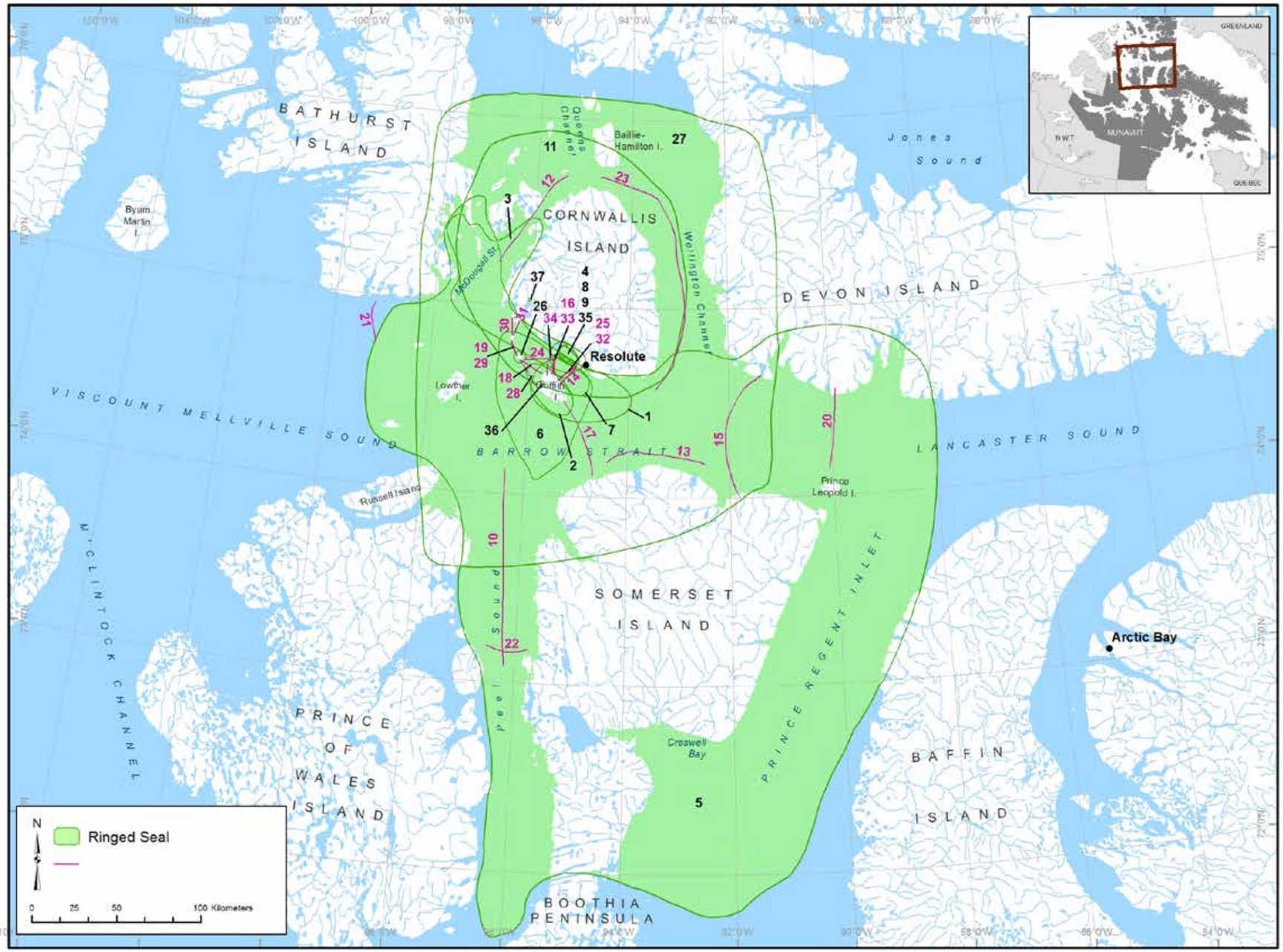


Table 29. Ringed Seal Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	2	A	Jul	Babies everywhere in July.
2	3			
3	3			They have their babies during spring in rough ice areas.
4	3			
5	4		Jan - Dec	Found in open waters.
6	4	N		Most dens are found around here.
7	4		Jan – Jun and Sep - Dec	Hunting area from September to June.
8	5	N		All in Allen Bay.
9	5			They den in Allen Bay. Try to make sure the scientists don't disturb them, give them a chance to grow.
10	6			Seal holes in this area.
11	6			All around this area. Use claws when aggressive.
12	7			
13	7			
14	7			Hunt along cracks or at the flow edge.
15	7			Hunt at the flow edge.
16	7			Hunt in leads.
17	7			Hunt in leads.
18	7			Hunt in leads.
19	7			Hunt in leads.
20	7			
21	7			
22	7			
23	7			
24	7			
25	7			
26	7			
27	8	A		Can find ringed seals all year, but have a hard time finding them in winter. Thinks they might go away, then return.
28	9			Follow the cracks.
29	9			Follow the cracks.
30	9			Follow the cracks.
31	9			Follow the cracks.
32	9			Follow the cracks.
33	9			Follow the cracks.
34	9			Follow the cracks.
35	9	A		
36	9	N		Small seal pups can be found here.
37	9	N		Pups in this area.

Table 30. Ringed Seal Everywhere Data

INTERVIEW	MONTHS	COMMENTS
1		Not many in deeper water, they come closer to shore.
5		

Figure 28. Bearded Seal Areas of Occurrence

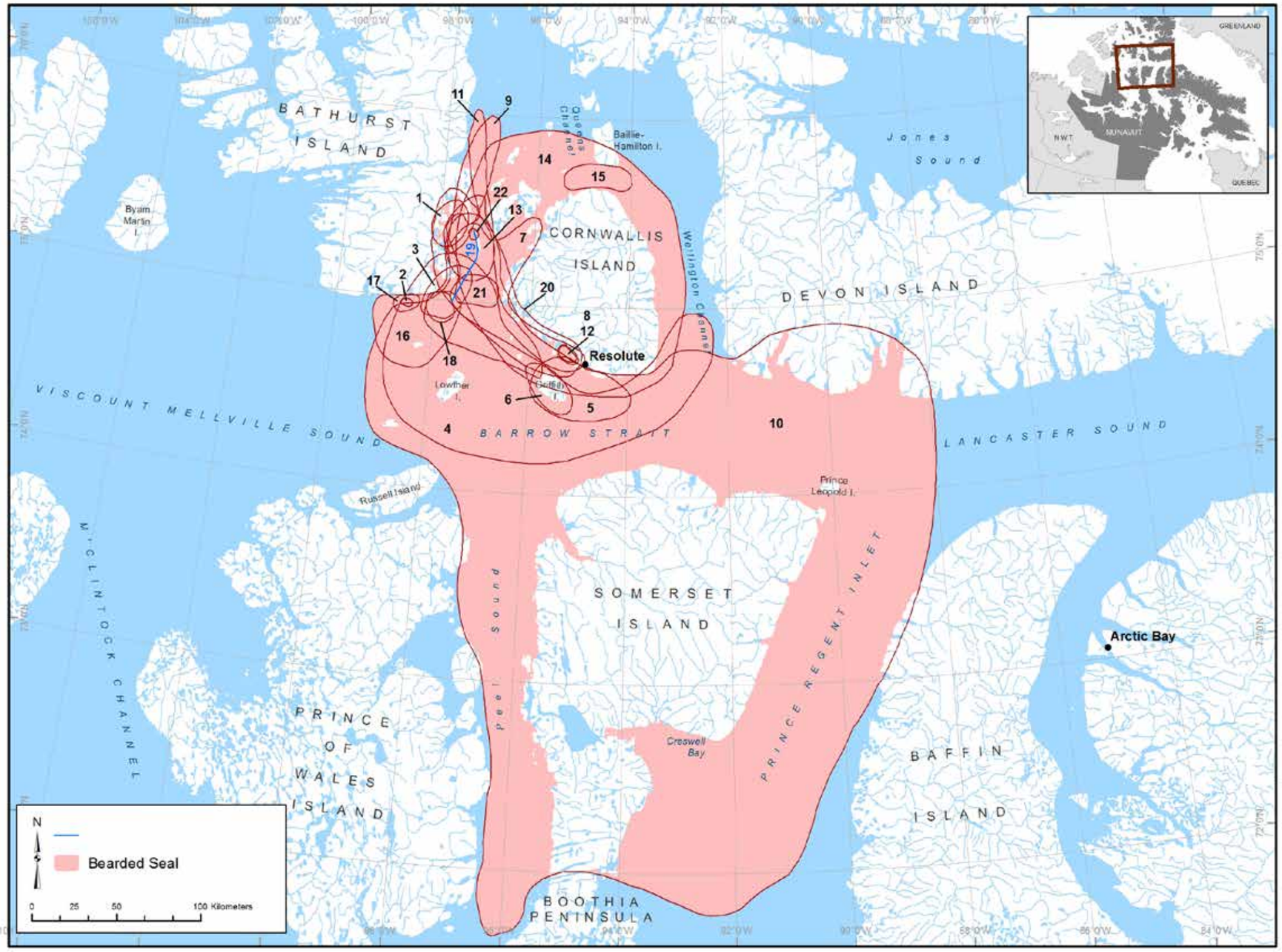


Table 31. Bearded Seal Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	1	A		
2	1	S		They have their babies here.
3	2			Wintering area.
4	2			Hunting spot.
5	2	A	Aug	
6	3			
7	3			They have their babies during spring in rough ice areas.
8	3			
9	4	N		Young are raised here.
10	4		Jan - Dec	
11	4	N		They have their babies in this area.
12	5		Jan - Dec	
13	6			Usually here where the water is shallow.
14	6			All around this area. Use claws when aggressive.
15	6			
16	7			They travel around in the summer.
17	7	A		Concentrated here in the winter. Shallow area where the ice lifts and they swim through.
18	8		May	Mostly near Bathurst area. Can hear them underneath the water; it sounds like a whistling noise.
19	9			
20	9	A		
21	9			Can see the seals in the ice leads or holes.
22	9			

Figure 29. Bearded Seal Frequency of Occurrence

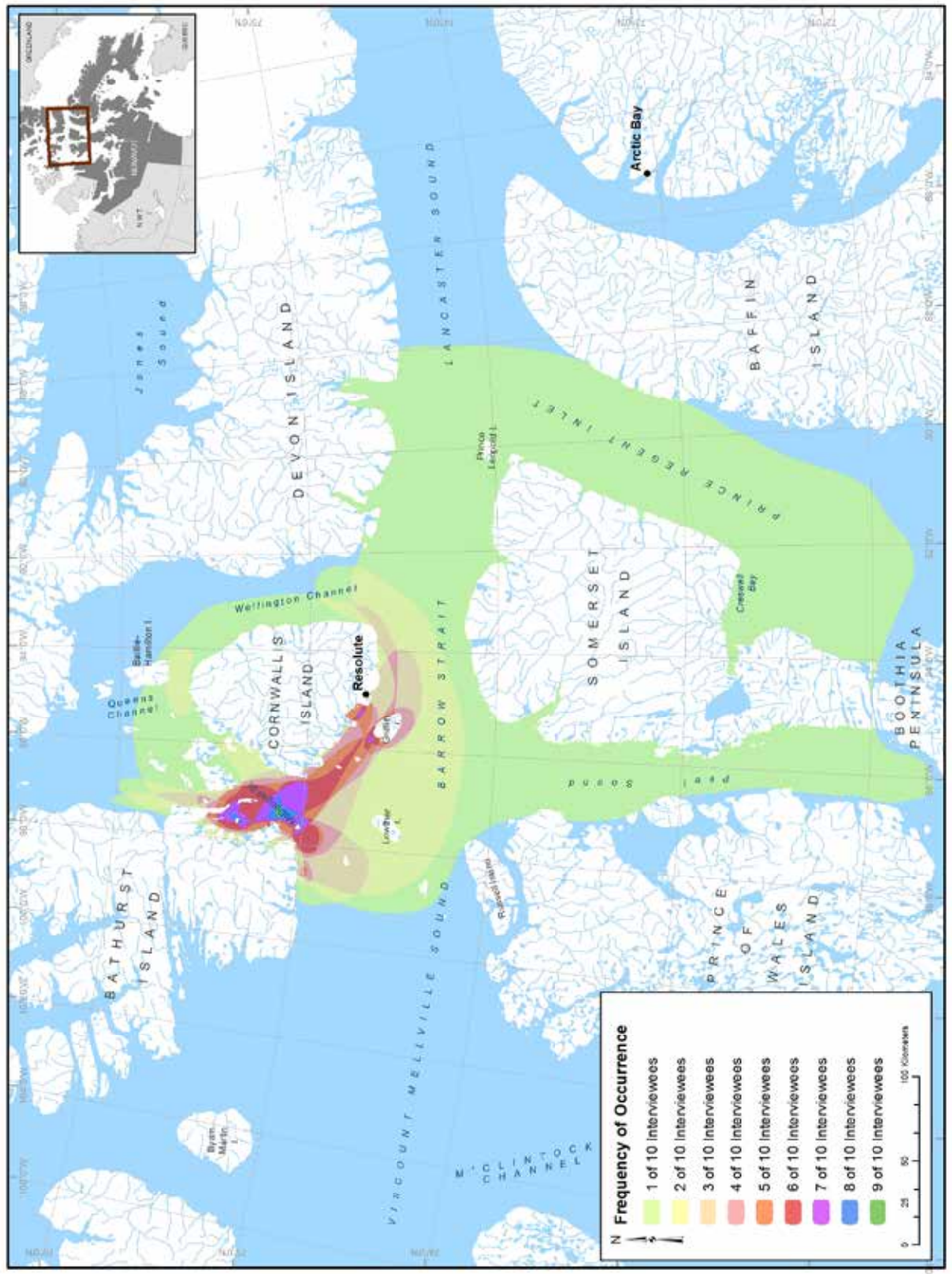


Figure 30. Harp and Hooded Seal Areas of Occurrence

Table 32. Harp and Hooded Seal Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	1		Harp Seal	Aug	They don't stay in winter. Found in groups.
2	2		Harp Seal		
3	3		Harp Seal		
4	3		Harp Seal		
5	3		Harp Seal		
6	5	M	Harp Seal		They go up and down during fall and spring.
7	6		Harp Seal		All around here. Use claws when aggressive.
8	7	C, M	Harp Seal		Come in the summer, leave again in the fall. They come from Newfoundland, and since the cod population has dropped there, they come up to feed on our cod and calve. Harp seal populations have risen.
9	8		Harp Seal		They travel in groups.
10	8	C	Harp Seal		They don't stay over the winter. Never use to see them at all in the past, now they are all over the place. They travel in groups.
11	8		Harp Seal		They travel in groups.
12	9		Harp Seal		This is the farthest north he has seen them. They follow the whales.
13	9		Harp Seal		
14	9		Harp Seal		
15	9		Harp Seal		
16	1	H	Hooded Seal		Saw one here 15 years ago. They don't normally come up here.
17	4		Hooded Seal	Jul, Aug	They are only in this area.
18	7		Hooded Seal		Don't come around too often. A skeleton was found here.

Figure 31. Beluga Areas of Occurrence

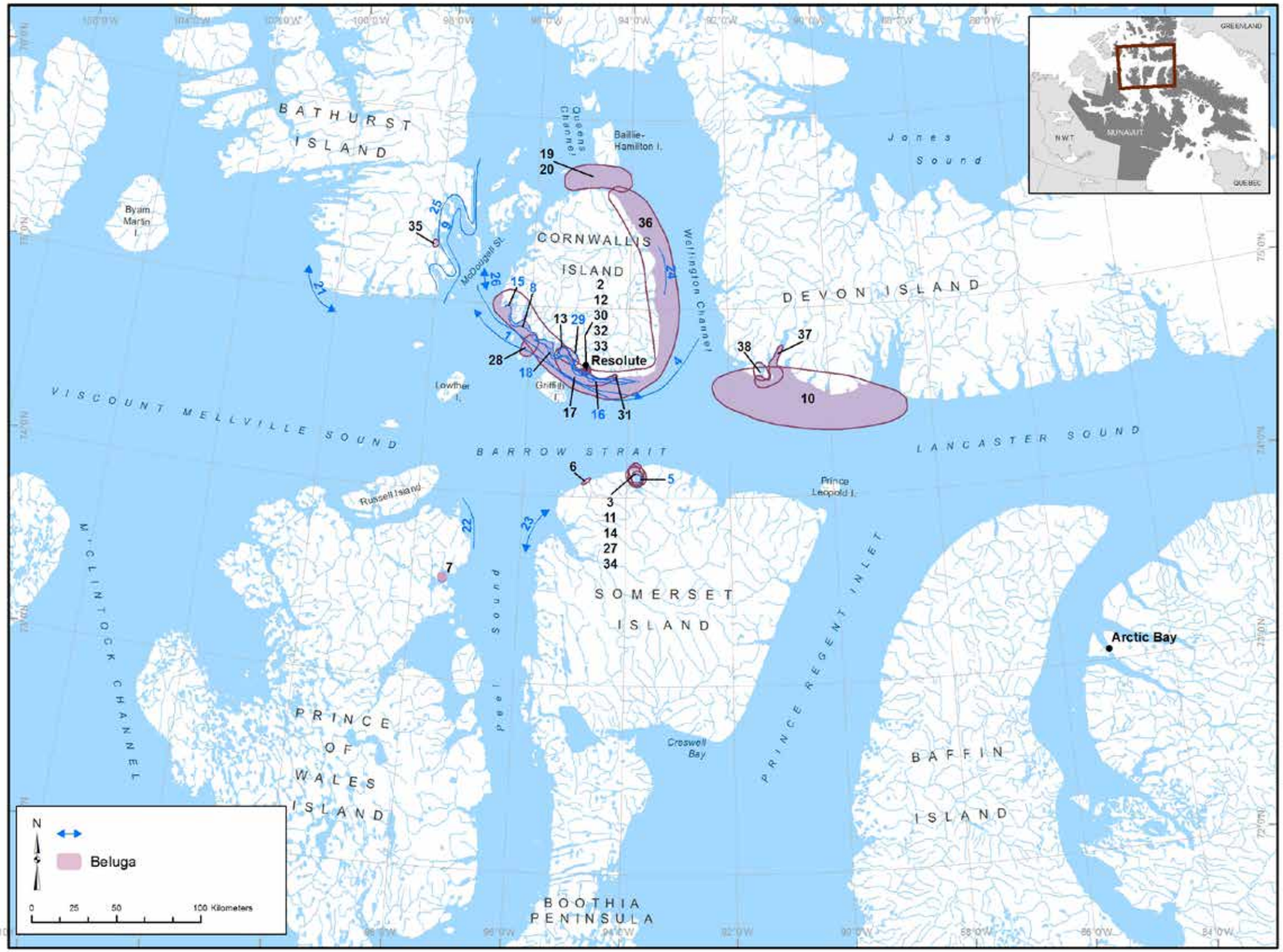


Table 33. Beluga Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	1	M		Beluga migration route going up in the summer. Not many when going up but lots when going back down.
2	1	M		In 2013 the beluga were being followed by a different type of whale, not sure what type; perhaps a Harbour Porpoise or another generic whale or dolphin.
3	1		Jul	Tourist spot. Beluga come here to shed their skin.
4	2		Aug	They go south in August.
5	2			Where they shed their skin.
6	2			Whale watching area.
7	3		Aug, Sep	
8	3	M	Aug, Sep	
9	3		Aug, Sep	
10	3		Aug, Sep	
11	3	A		
12	3			
13	3			
14	4		Jul, Aug	Shed their skin here. Don't hunt here to give them a chance to clean off their skin.
15	5		Aug (Late), Sep (Early)	Found along coast.
16	5	A, M		They travel in thousands. Saw a heard of whales once that was 5 miles wide and 20 miles long.
17	5	M		
18	6		Jul	Come up in the spring (July) and leave again in the fall. Wants large ships to stay away in case they scare the beluga away.
19	6			Stays all winter.
20	6			
21	7			
22	7			
23	7			
24	7			
25	7			
26	7			
27	7			Shed skin here.
28	7			
29	8			
30	8			Beluga migrate along the coast from east to west in the spring and from west to east in the fall (Aug/early Sept). They watched beluga passing by for one week straight in this area. No one was hunting them.
31	8			
32	8			Right in Resolute Bay.
33	8			Followed by Greenland shark.
34	9	A		Popular site.
35	9			
36	9			Here on the east side of the island he saw hundreds of beluga passing by. From 11pm one day until 8pm the next day. You could hear the older whales whistling.
37	9			They hangout in shallow spots.
38	9			

Figure 32. Narwhal Whale Areas of Occurrence

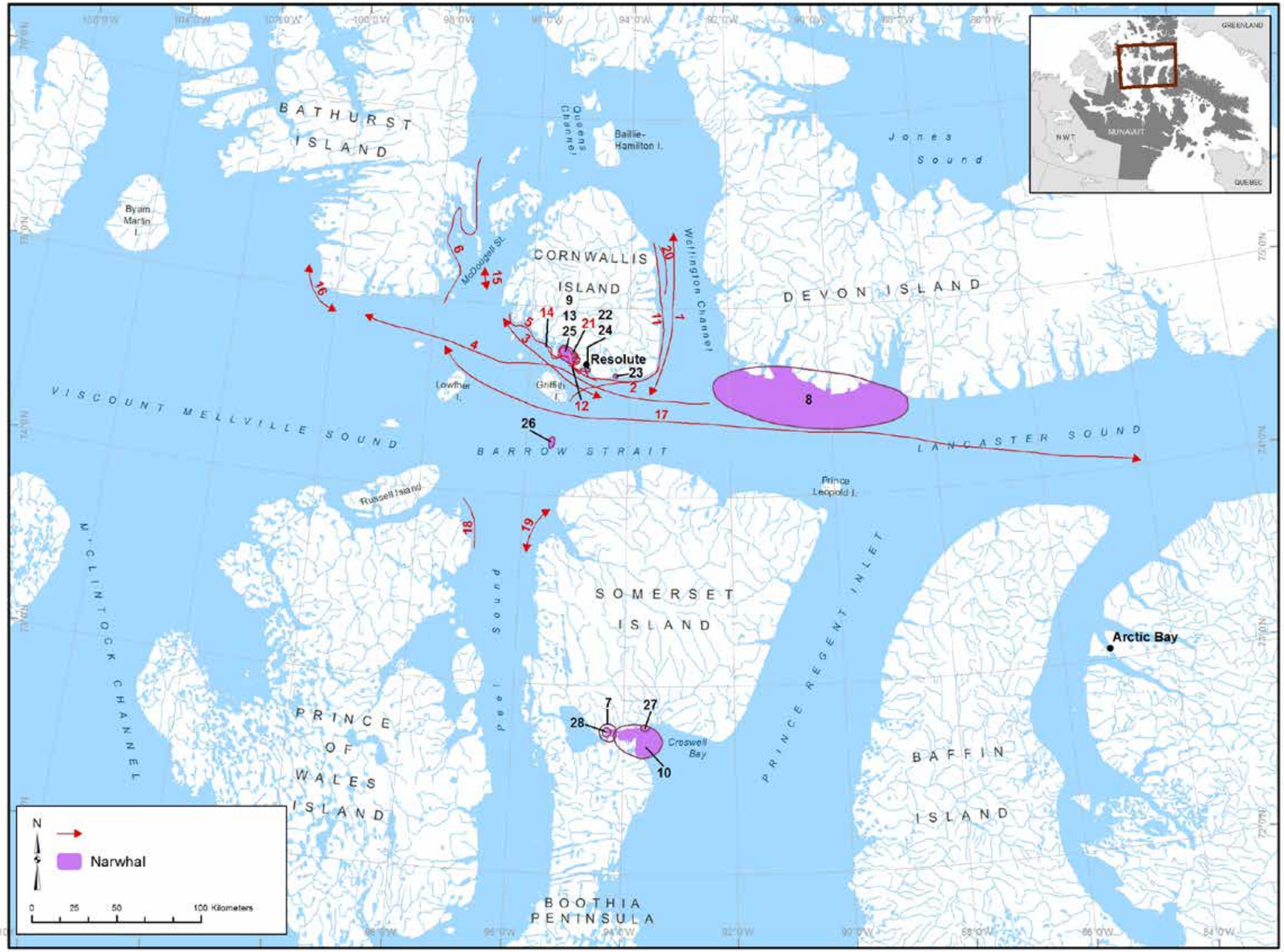


Table 34. Narwhal Whale Areas of Occurrence

MAP #	INTERVIEW	CODE	MONTHS	COMMENTS
1	1	C, M	Jul (Late), Aug (Early)	They come when the ice melts which used to be beginning of August but now it's late July, so they have been coming sooner.
2	1			You can see them at the floe edge.
3	1	F, M		When they're scared they'll come into the bay and feed on cod.
4	2	M	Jul	Migrates through in July.
5	3	M		Usually comes when ice opens.
6	3		Aug, Sep	
7	3		Aug, Sep	
8	3		Aug, Sep	
9	3			
10	4		Jul, Aug	
11	5			
12	5			
13	5			Caught a couple here.
14	6			Narwhal tusks normally have a hollow space in the middle. Once they get really old, the space fills in and the tusk is great for making carvings.
15	7			Narwhal and beluga follow each other, but never really mingle.
16	7			Narwhal and beluga follow each other, but never really mingle.
17	7			
18	7			
19	7			
20	7			
21	8			Seen with beluga, swimming and eating together. Sometimes the beluga will pass by first, then the narwhal pass by later.
22	8			Seen with beluga, swimming and eating together. Sometimes the beluga will pass by first, then the narwhal pass by later.
23	8			Seen with beluga, swimming and eating together. Sometimes the beluga will pass by first, then the narwhal pass by later.
24	8			Seen with beluga, swimming and eating together. Sometimes the beluga will pass by first, then the narwhal pass by later.
25	9			
26	9			Caught at the floe edge with a boat.
27	9	A	Aug	
28	9	A	Aug	

Figure 33. Bowhead and Killer Whale Areas of Occurrence

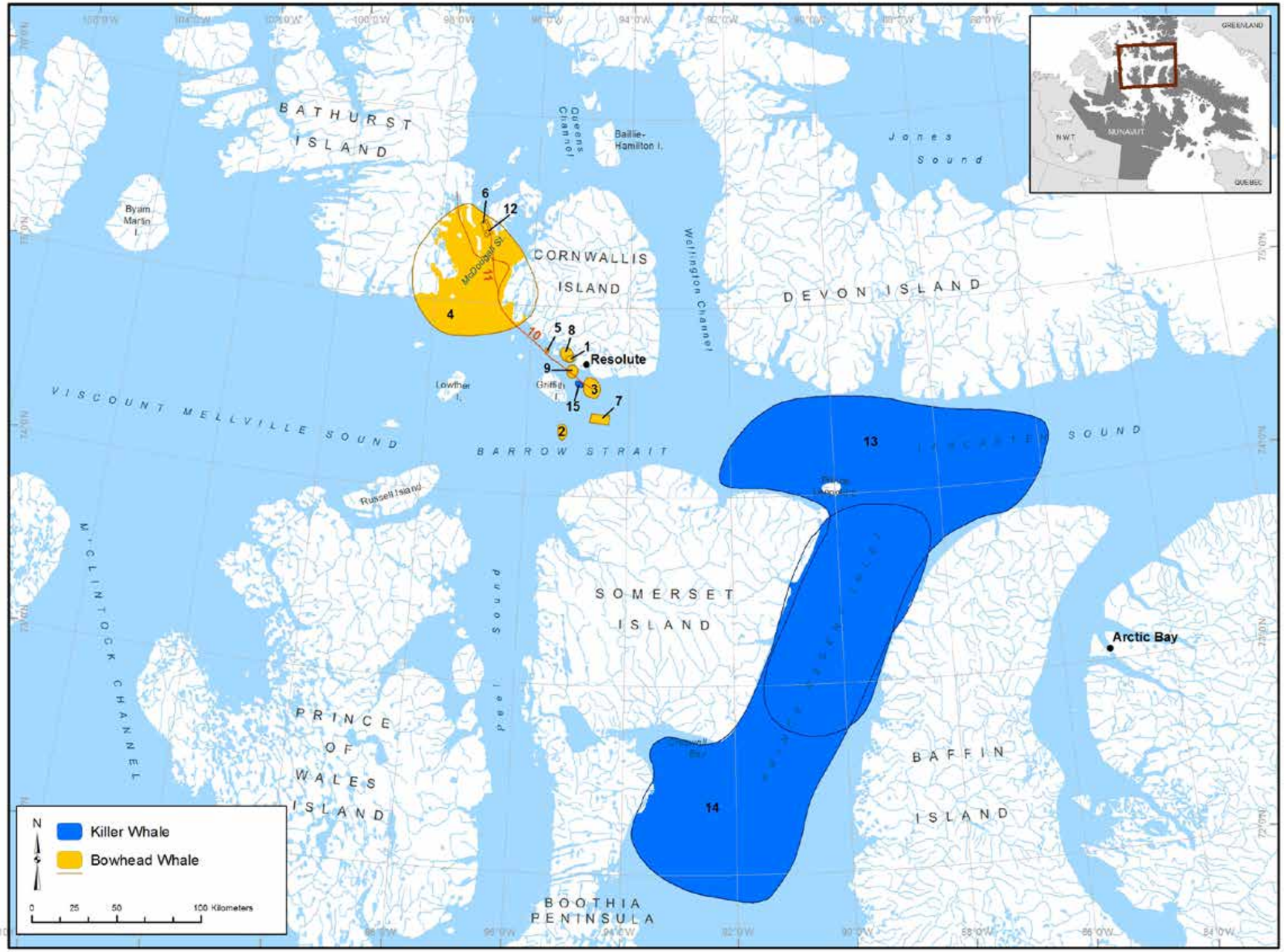


Table 35. Bowhead and Killer Whale Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	2		Bowhead Whale		You can see them sleeping here sometimes
2	3		Bowhead Whale		
3	4		Bowhead Whale	Jul, Aug	
4	4		Bowhead Whale	Jul, Aug	
5	5		Bowhead Whale		A guy found one sleeping here.
6	7		Bowhead Whale		Feeding on krill and plankton.
7	7		Bowhead Whale		Feeding on krill and plankton.
8	8		Bowhead Whale		
9	8		Bowhead Whale		
10	9	M	Bowhead Whale		Travel through here as soon as the ice breaks up.
11	9		Bowhead Whale		
12	9		Bowhead Whale		
13	2		Killer Whale		When they go to this area the Narwhal and Beluga go closer to the shore.
14	4		Killer Whale		
15	7		Killer Whale		Usually stay in deeper water and drive the beluga into the shallows.

Figure 34. Dulse, Eel Grass, Edible and Hollow Stemmed Kelp and Sea Colander Areas of Occurrence

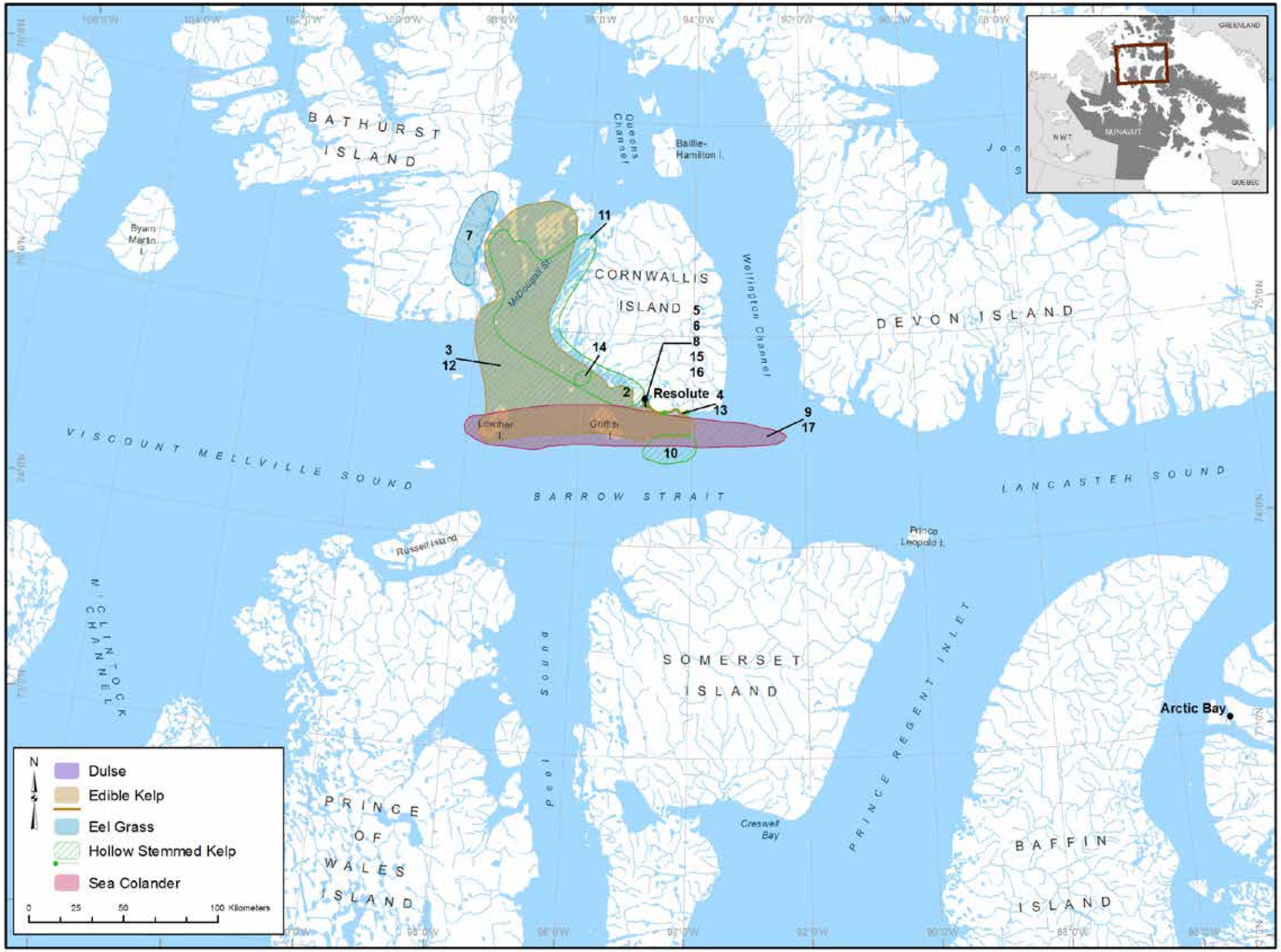


Table 36. Dulse, Eel Grass, Edible and Hollow Stemmed Kelp and Sea Colander Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	2		Dulse		
2	2		Edible Kelp		
3	4		Edible Kelp		
4	5		Edible Kelp		Polar bear eat them.
5	8		Edible Kelp		Wash up on the beach.
6	9		Edible Kelp		Wash up here.
7	3		Eel Grass		Found in ponds and lakes.
8	8	A	Eel Grass		All over the marshy areas.
9	2		Hollow Stemmed Kelp		
10	3		Hollow Stemmed Kelp		Found in deeper waters.
11	3		Hollow Stemmed Kelp		Found in deeper waters.
12	4		Hollow Stemmed Kelp		
13	5		Hollow Stemmed Kelp		
14	7	A	Hollow Stemmed Kelp		Caught a Bearded Seal here before and it's stomach was full of baby squid and octopus.
15	8		Hollow Stemmed Kelp		Wash up on the beach.
16	9		Hollow Stemmed Kelp		Wash up here.
17	2		Sea Colander		

Table 37. Hollow Stemmed Kelp, and Sea Colander Everywhere Data

INTERVIEW	MONTHS	SPECIES	COMMENTS
7		Hollow Stemmed Kelp	Move around in the high current. Sea urchins eat them.

Figure 35. Bladder Wrack, Green Sea Fingers, Semaphore Grass and Robbin's and Variableleaf Pondweed Areas of Occurrence

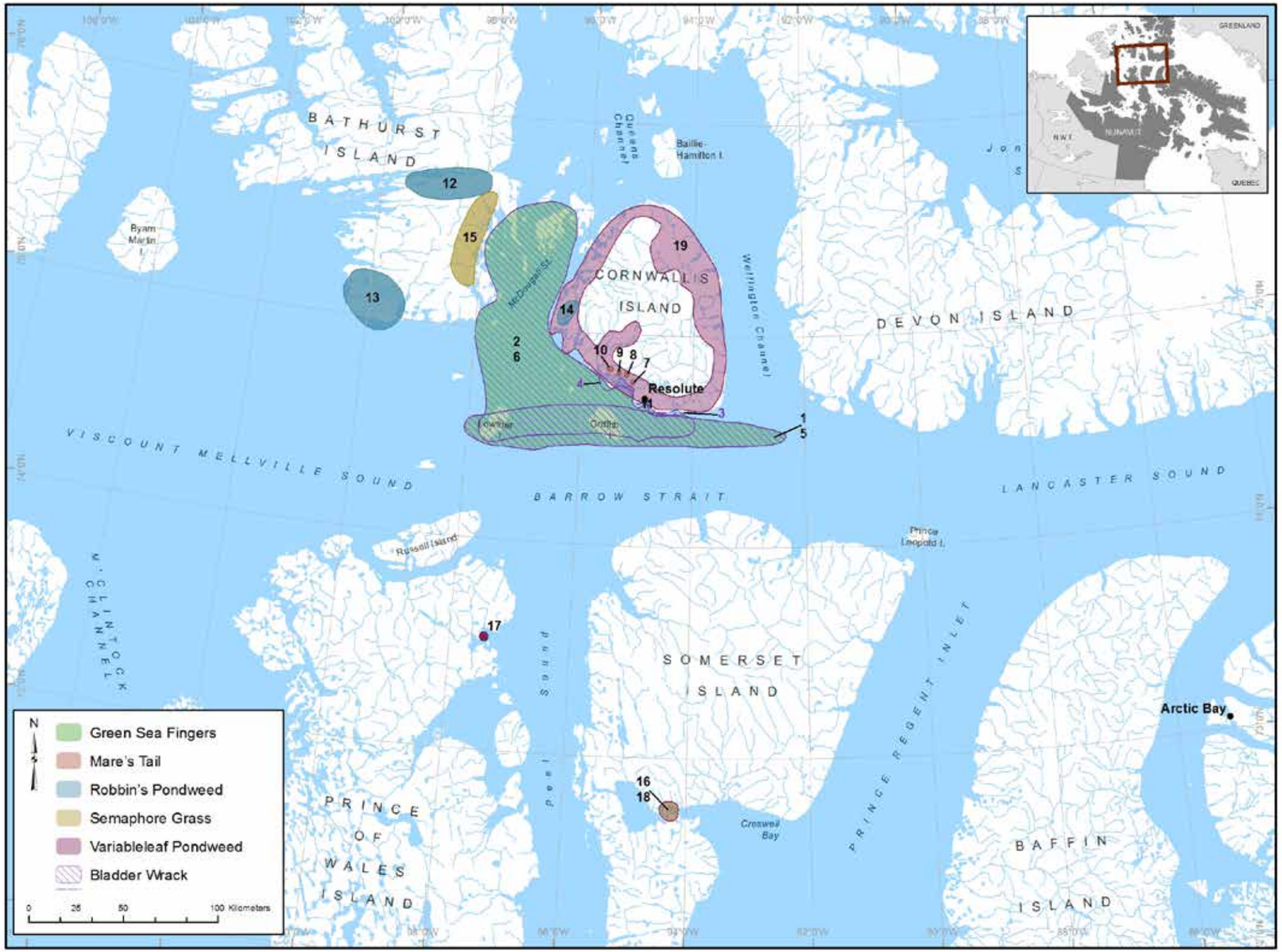


Table 38. Bladder Wrack, Green Sea Fingers, Semaphore Grass and Robbin's and Variableleaf Pondweed Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	2		Bladder Wrack; Rockweed		
2	4		Bladder Wrack; Rockweed		
3	5		Bladder Wrack; Rockweed		
4	7		Bladder Wrack; Rockweed		
5	2		Green Sea Fingers		
6	4		Green Sea Fingers		
7	2		Mare's Tail		
8	2		Mare's Tail		
9	2		Mare's Tail		
10	2		Mare's Tail		
11	4		Robbin's Pondweed		Found mostly in lakes with landlocked char.
12	4		Robbin's Pondweed		Found mostly in lakes with landlocked char.
13	4		Robbin's Pondweed		Found mostly in lakes with landlocked char.
14	4		Robbin's Pondweed		Found mostly in lakes with landlocked char.
15	3		Semaphore Grass		
16	3		Semaphore Grass		
17	3		Variableleaf Pondweed		
18	3		Variableleaf Pondweed		
19	8	A	Variableleaf Pondweed		

Table 39. Goose Grass* Everywhere Data

INTERVIEW	MONTHS	COMMENTS
3		

Figure 36. Brant and Snow Goose Areas of Occurrence

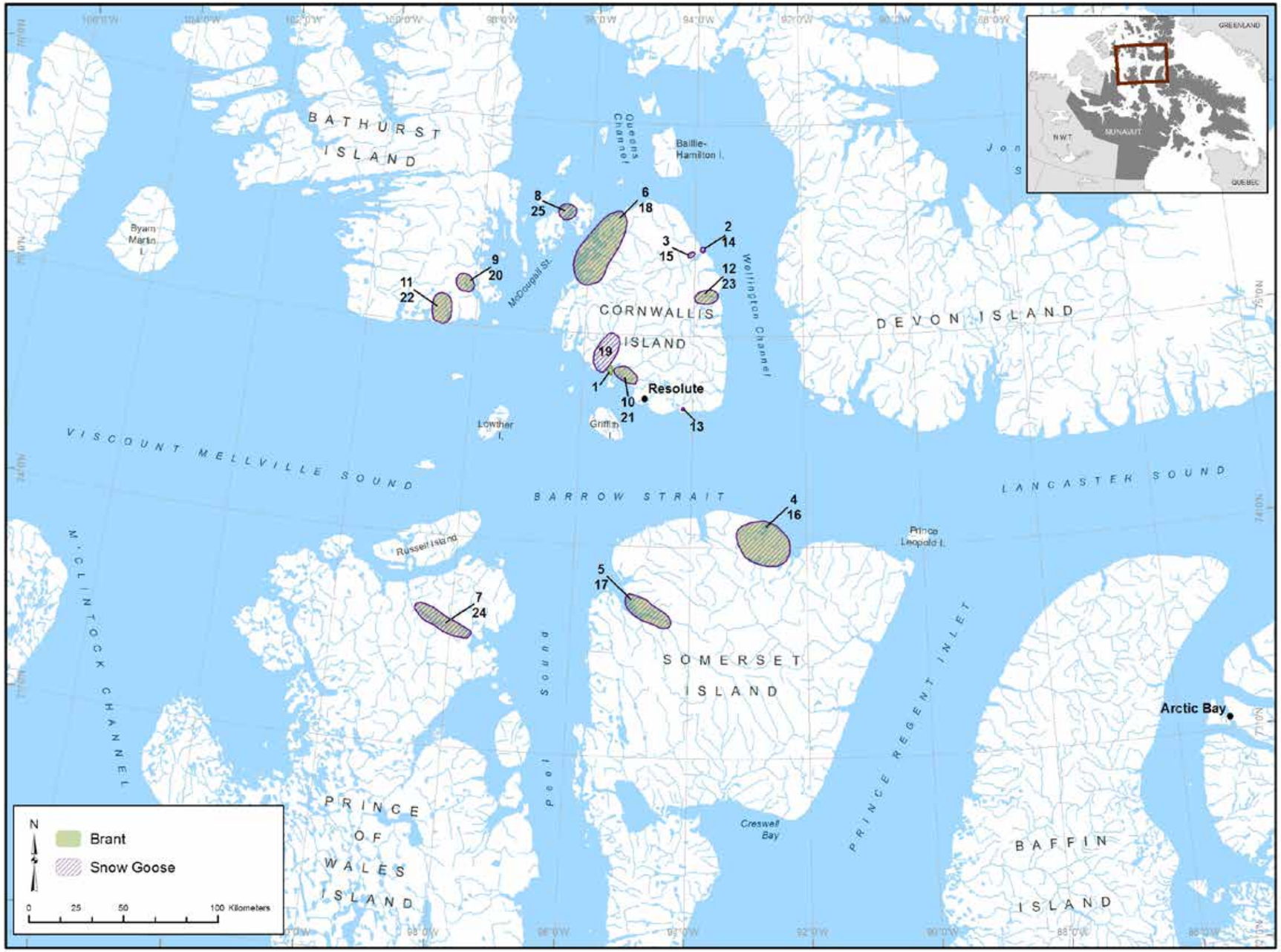


Table 40. Brant and Snow Goose Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	5		Brant		
2	5		Brant		
3	5		Brant		
4	7		Brant		
5	7		Brant		
6	7		Brant		Marshy area.
7	7		Brant		
8	7	N	Brant		
9	7		Brant		Got one here and it had a tag. Was tracked from Ireland to Iceland to Greenland to Bathurst Island. He did not know it had a transmitter on it. Decided to leave it outside and 2 weeks later someone came and retrieved it.
10	7		Brant	May (Late), Jun, Jul, Aug, Sep (Early)	Lowland marshy area.
11	7		Brant	May (Late), Jun, Jul, Aug, Sep (Early)	Lowland marshy area.
12	7	N	Brant		
13	5		Snow Goose		
14	5		Snow Goose		
15	5		Snow Goose		
16	7		Snow Goose		
17	7		Snow Goose		
18	7		Snow Goose		Marshy area.
19	7	N	Snow Goose		
20	7	C	Snow Goose		More are showing up than ever before. Can find them in lowland marshy areas that are hard to get to.
21	7	C	Snow Goose		More are showing up than ever before. Can find them in lowland marshy areas that are hard to get to.
22	7	C	Snow Goose		More are showing up than ever before. Can find them in lowland marshy areas that are hard to get to.
23	7	Con	Snow Goose		More are showing up than ever before. Can find them in lowland marshy areas that are hard to get to.
24	7	C	Snow Goose		
25	7	C	Snow Goose		More are showing up than ever before. Can find them in lowland marshy areas that are hard to get to.

Figure 37. Long-tailed Duck, Black-legged Kittiwake and Glaucous, Ivory, Ross's, Sabine's and unknown Gull Areas of Occurrence

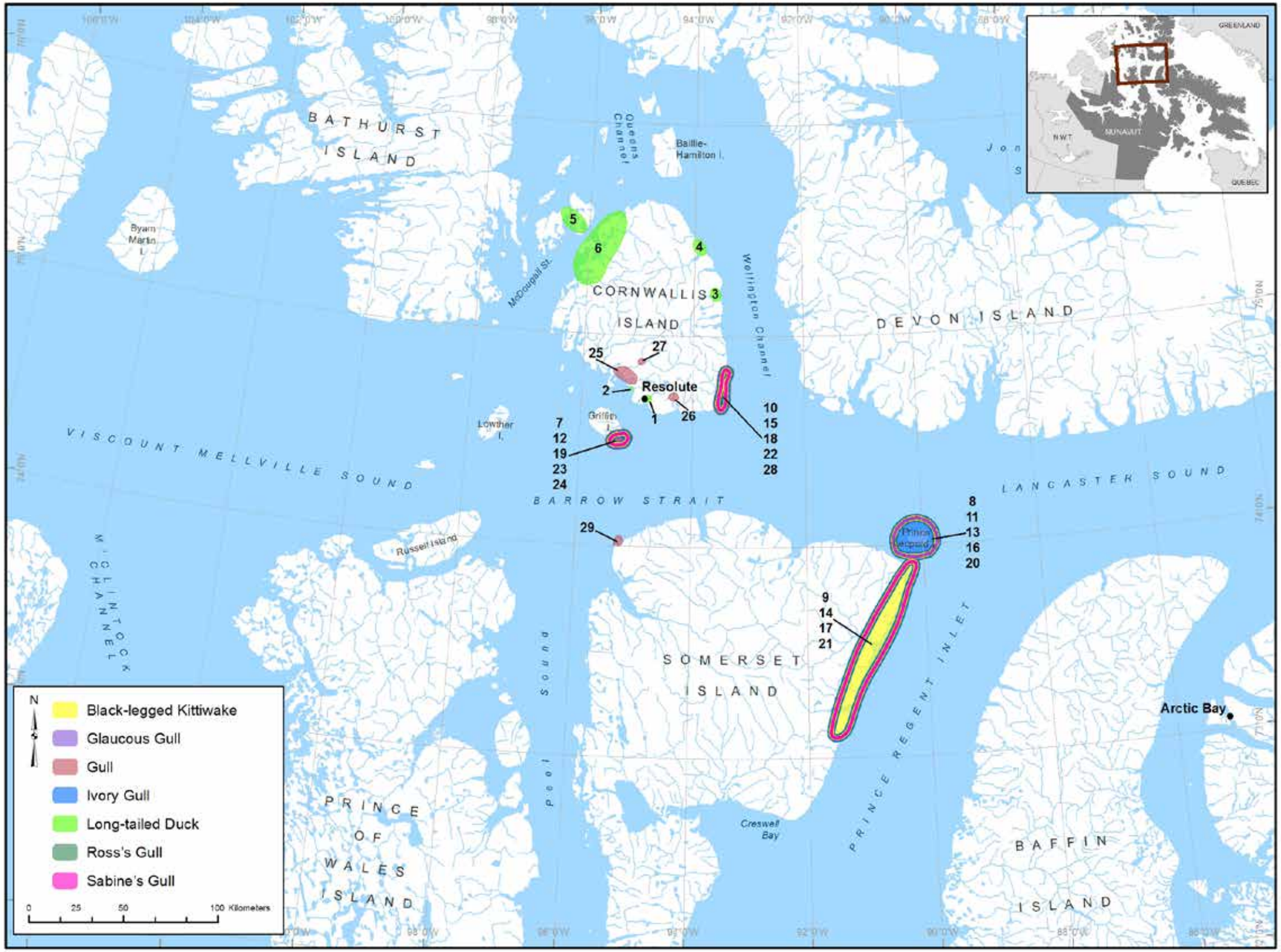


Table 41. Long-tailed Duck, Black-legged Kittiwake and Glaucous, Ivory, Ross's, Sabine's and unknown Gull Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	5		Long-tailed Duck		
2	5		Long-tailed Duck		
3	7	A	Long-tailed Duck		Found along coastal areas. Like to eat plants and amphipods.
4	7	A	Long-tailed Duck		Found along coastal areas. Like to eat plants and amphipods.
5	7	A	Long-tailed Duck		Found along coastal areas. Like to eat plants and amphipods.
6	7		Long-tailed Duck		
7	7		Black-legged Kittiwake		Nest on cliffs.
8	7		Black-legged Kittiwake		Nest on cliffs.
9	7		Black-legged Kittiwake		Nest on cliffs.
10	7		Black-legged Kittiwake		Nest on cliffs.
11	7		Glaucous Gull		
12	7		Ivory Gull		Nest on cliffs.
13	7		Ivory Gull		Nest on cliffs.
14	7		Ivory Gull		Nest on cliffs.
15	7		Ivory Gull		Nest on cliffs.
16	7		Ross's Gull		Nest on cliffs.
17	7		Ross's Gull		Nest on cliffs.
18	7		Ross's Gull		Nest on cliffs.
19	7		Ross's Gull		Nest on cliffs.
20	7		Sabine's Gull		Nest on cliffs.
21	7		Sabine's Gull		Nest on cliffs.
22	7		Sabine's Gull		Nest on cliffs.
23	7		Sabine's Gull		Nest on cliffs.
24	7		Gull		Saw maybe a Mew Gull or Herring Gull or Thayer's Gull. They nest on cliffs.
25	7		Gull		Saw maybe a Mew Gull or Herring Gull or Thayer's Gull. They nest on cliffs.
26	7		Gull		Saw maybe a Mew Gull or Herring Gull or Thayer's Gull. They nest on cliffs.
27	7		Gull		Saw maybe a Mew Gull or Herring Gull or Thayer's Gull. They nest on cliffs.
28	7		Gull		Saw maybe a Mew Gull or Herring Gull or Thayer's Gull. They nest on cliffs.
29	7		Gull		Saw maybe a Mew Gull or Herring Gull or Thayer's Gull. They nest on cliffs.

Figure 38. Arctic Tern, Arctic, Pacific, Red-throated and Yellow-billed Loon and Common and King Eider Areas of Occurrence

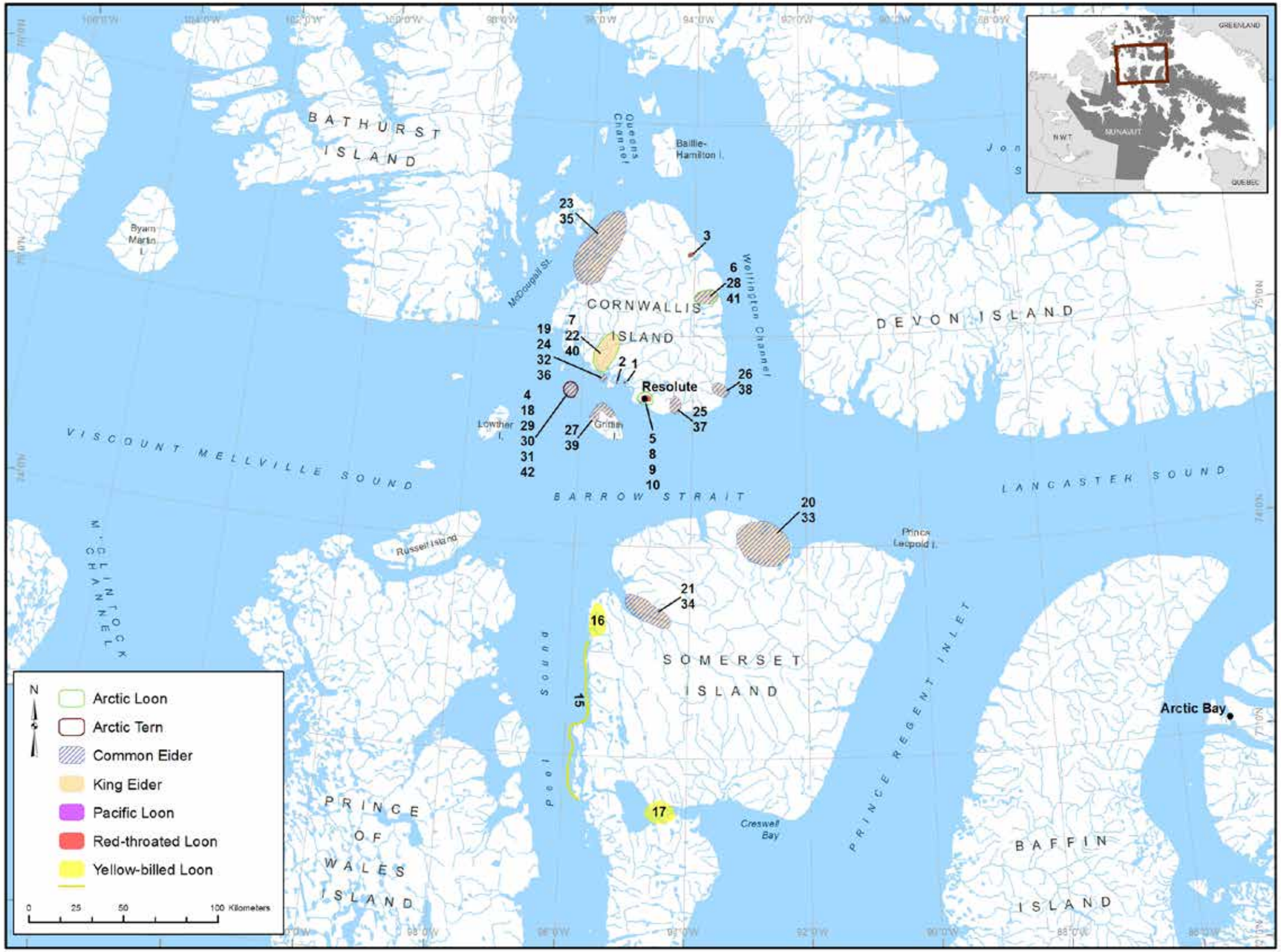


Table 42. Arctic Tern, Arctic, Pacific, Red-throated and Yellow-billed Loon and Common and King Eider Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	5	N	Arctic Tern		Nesting area.
2	5	N	Arctic Tern		Nesting area.
3	5		Arctic Tern		
4	7		Arctic Tern		Migratory bird. They nest near the coast with other birds like the eider ducks because they will protect each other.
5	7	N	Arctic Loon		
6	7		Arctic Loon		Found in coastal ponds.
7	7		Arctic Loon		Found in coastal ponds.
8	5		Pacific Loon		Very black. They lay eggs around ponds
9	5		Red-throated Loon		
10	5		Red-throated Loon		
11	7		Yellow-billed Loon		
12	7		Yellow-billed Loon		
13	7		Yellow-billed Loon		
14	5	A, N	Common Eider		
15	5		Common Eider		
16	7		Common Eider		
17	7		Common Eider		
18	7	N	Common Eider		
19	7		Common Eider		Marshy area.
20	7	N	Common Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
21	7	N	Common Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
22	7	N	Common Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
23	7	N	Common Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
24	7	N	Common Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
25	7	N	Common Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
26	7		Common Eider		
27	5	A, N	King Eider		
28	5		King Eider		
29	7		King Eider		
30	7		King Eider		
31	7		King Eider		Marshy area.
32	7	N	King Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
33	7	N	King Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
34	7	N	King Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
35	7	N	King Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
36	7	N	King Eider		
37	7	N	King Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.
38	7	N	King Eider	Jun (Mid, Late), Jul, Aug, Sep (Early, Mid)	Stay close to the ocean where they can find clams. They also nest close to ponds and rivers.

Table 43. Arctic Tern and Arctic Loon Everywhere Data

INTERVIEW	MONTHS	SPECIES	COMMENTS
7		Arctic Loon	Find them in coastal ponds, wherever there is fish.
7		Arctic Tern	All along the coast.

Figure 39. Gyrfalcon, Peregrine Falcon and Snowy Owl Areas of Occurrence

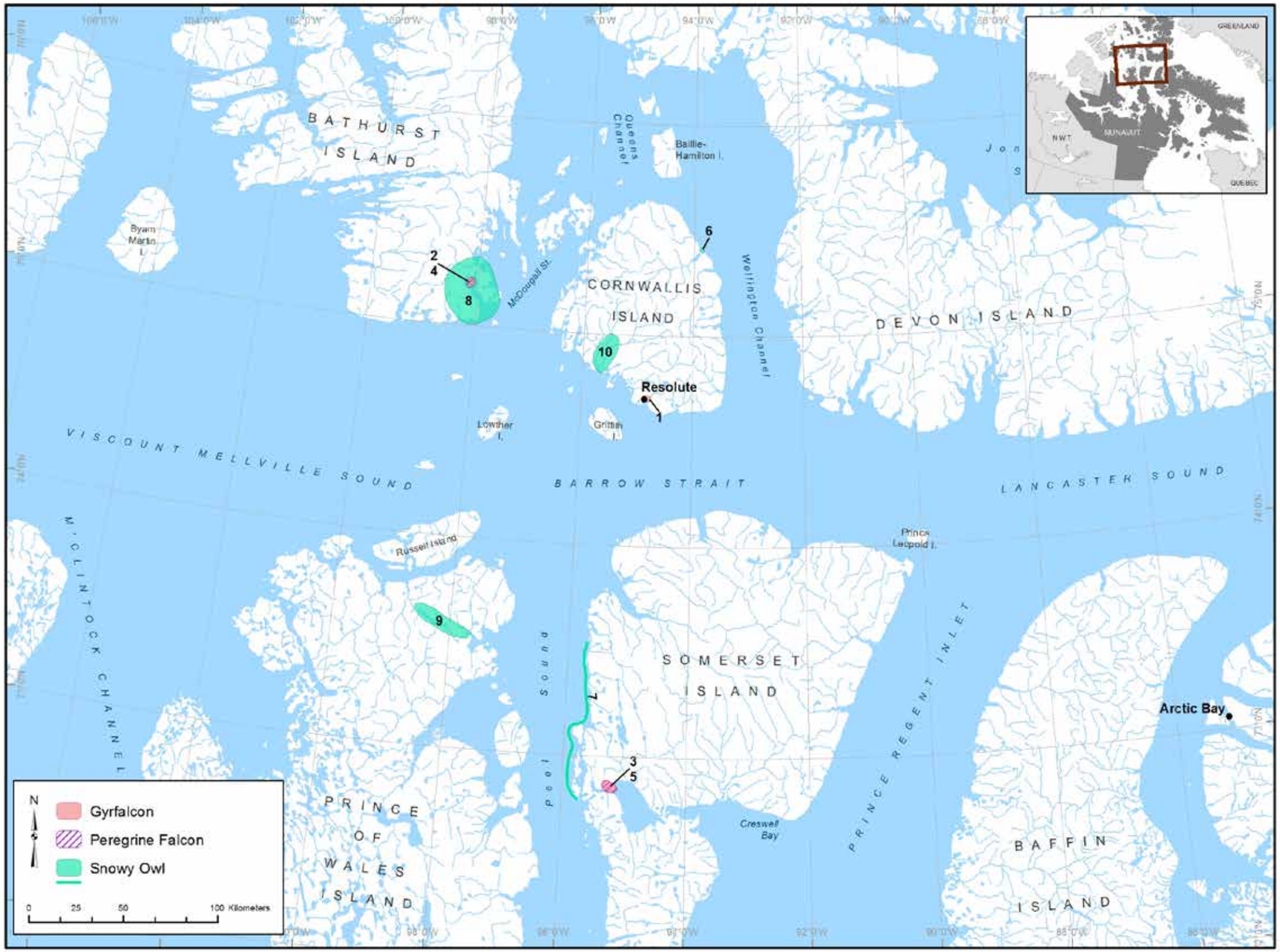


Table 44. Gyrfalcon, Peregrine Falcon and Snowy Owl Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	5		Gyrfalcon		Saw flying around town.
2	7		Gyrfalcon		In high, elevated areas.
3	7		Gyrfalcon		Poachers often come up looking for them.
4	7		Peregrine Falcon		In high, elevated areas.
5	7		Peregrine Falcon		Poachers often come up looking for them.
6	5	N	Snowy Owl		Lays eggs here.
7	7		Snowy Owl		Lots of lemmings for them to eat. Probably migratory.
8	7		Snowy Owl		Lots of lemmings for them to eat. Probably migratory.
9	7		Snowy Owl		Lots of lemmings for them to eat. Probably migratory.
10	7		Snowy Owl		Lots of lemmings for them to eat. Probably migratory.

Figure 40. Black Guillemot, Common and Thick-billed Murre, Common Raven, Long-tailed Jaeger, and Northern Fulmar Areas of Occurrence

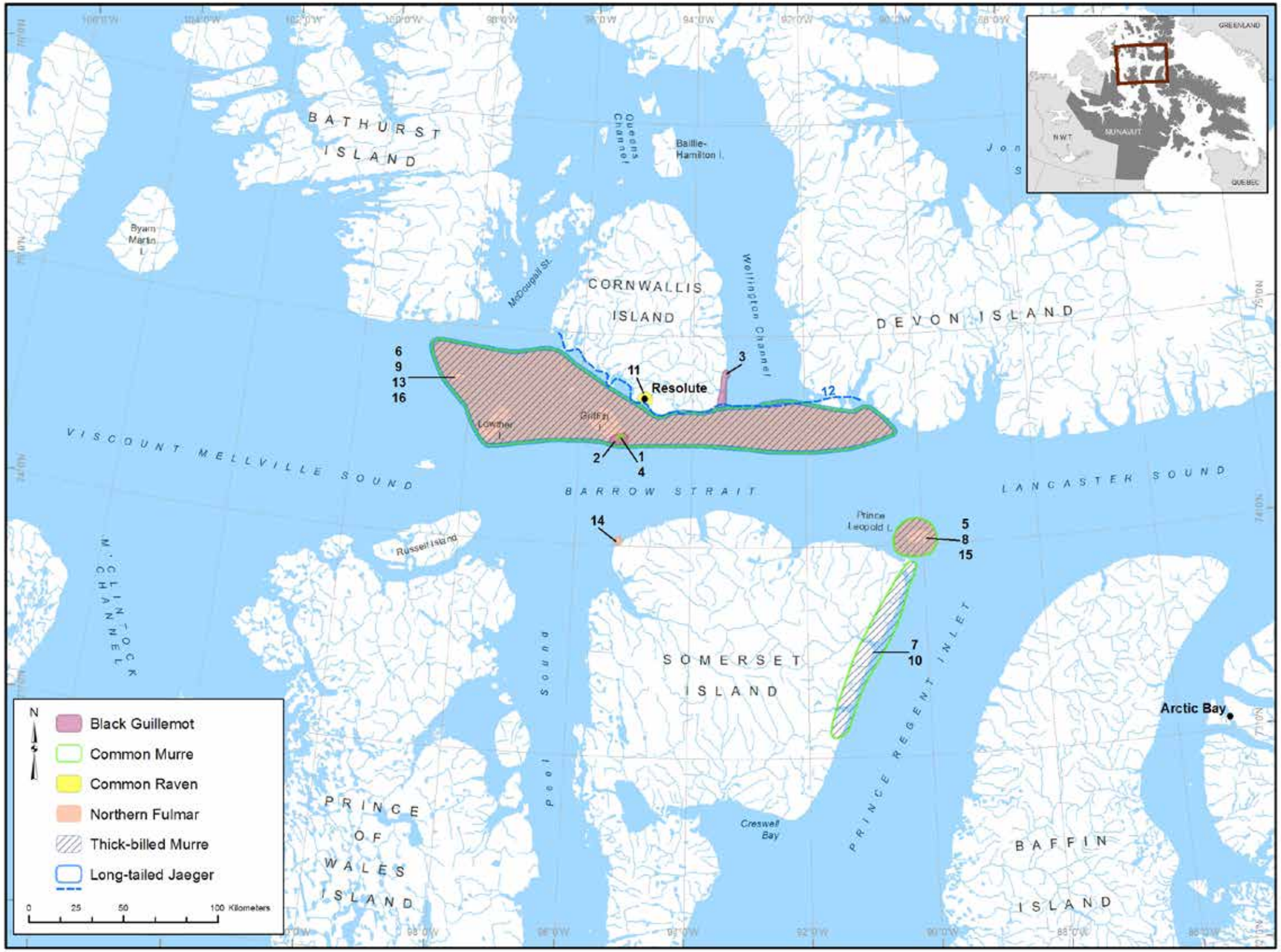


Table 45. Black Guillemot, Common and Thick-billed Murre, Common Raven, Long-tailed Jaeger, and Northern Fulmar Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	5		Black Guillemot		
2	7		Black Guillemot		Quite common. Nest in cracks on cliffs. Usually only stay in the summer, however if there is open water, such as a polynya or a crack in the ice, they stay all winter and turn white.
3	7		Black Guillemot		Quite common. Nest in cracks on cliffs. Usually only stay in the summer, however if there is open water, such as a polynya or a crack in the ice, they stay all winter and turn white.
4	5		Common Murre		
5	7		Common Murre		Arrive with the flow edge. Nest on high cliffs.
6	7		Common Murre		
7	7		Common Murre		Arrive with the flow edge. Nest on high cliffs.
8	7		Thick-billed Murre		Arrive with the flow edge. Nest on high cliffs.
9	7		Thick-billed Murre		Arrive with the flow edge. Nest on high cliffs.
10	7		Thick-billed Murre		Arrive with the flow edge. Nest on high cliffs.
11	7		Common Raven		Only started coming to town in the 1960s, now they are everywhere. They nest on the cliffs around town. They don't get along with other birds, constantly fighting with seagulls.
12	7		Long-tailed Jaeger		Quite common. Nest in lowland marshy areas, however are ocean feeding birds.
13	7		Long-tailed Jaeger		Quite common. Nest in lowland marshy areas, however are ocean feeding birds.
14	7		Northern Fulmar		
15	7		Northern Fulmar		
16	7		Northern Fulmar		They are coastal/ocean birds. Over winter in "Hells Gate". When the ice breaks up they scavenge. They commonly follow beluga; can see them whenever they get a whale.

Figure 41. Harris's Sparrow, Lapland Longspur, Ruddy Turnstone, Sandhill Crane, Sandpiper, Semipalmated Plover and unknown bird Areas of Occurrence

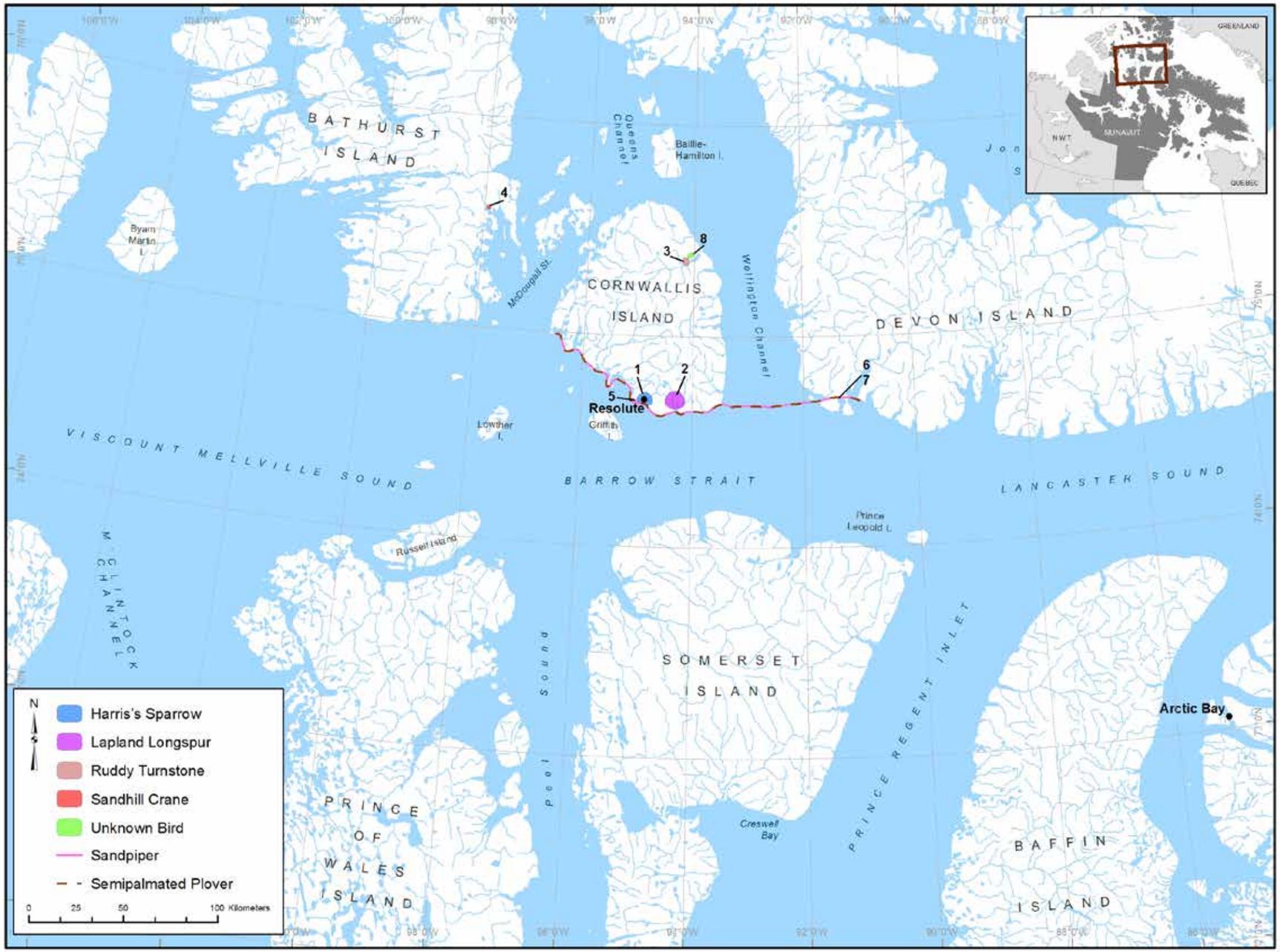


Table 46. Harris's Sparrow, Lapland Longspur, Ruddy Turnstone, Sandhill Crane, Sandpiper, Semipalmated Plover and unknown bird Areas of Occurrence

MAP #	INTERVIEW	CODE	SPECIES	MONTHS	COMMENTS
1	7		Harris's Sparrow		Saw a small brown bird that never use to come around. Looks like a snow bunting but with a red crown.
2	5		Lapland Longspur		
3	5		Ruddy Turnstone		
4	9	C	Sandhill Crane		Starting to see cranes around Resolute Bay.
5	5		Sandpiper		
6	7		Sandpiper		Unsure which kind of sandpiper. Has seen large and small ones.
7	7	C	Semipalmated Plover		Use to be rare to see, but becoming more abundant.
8	5		Unknown Bird		The hawk ate beluga fat and got grease all over it so it couldn't fly; drove to the beach to save it

Table 47. Rock Ptarmigan* and Snow Bunting* Everywhere Data

INTERVIEW	MONTHS	SPECIES	COMMENTS
5		Snow Bunting	
5		Rock Ptarmigan	All over the place. They often follow the musk-ox and take advantage of them digging up the snow to access the ground.
7	May (Late) - Sep	Snow Bunting	The traditional Amauti looks like the design on the back of the snow bunting.

Figure 42. Nunavut Atlas – Resolute Bay Community Map

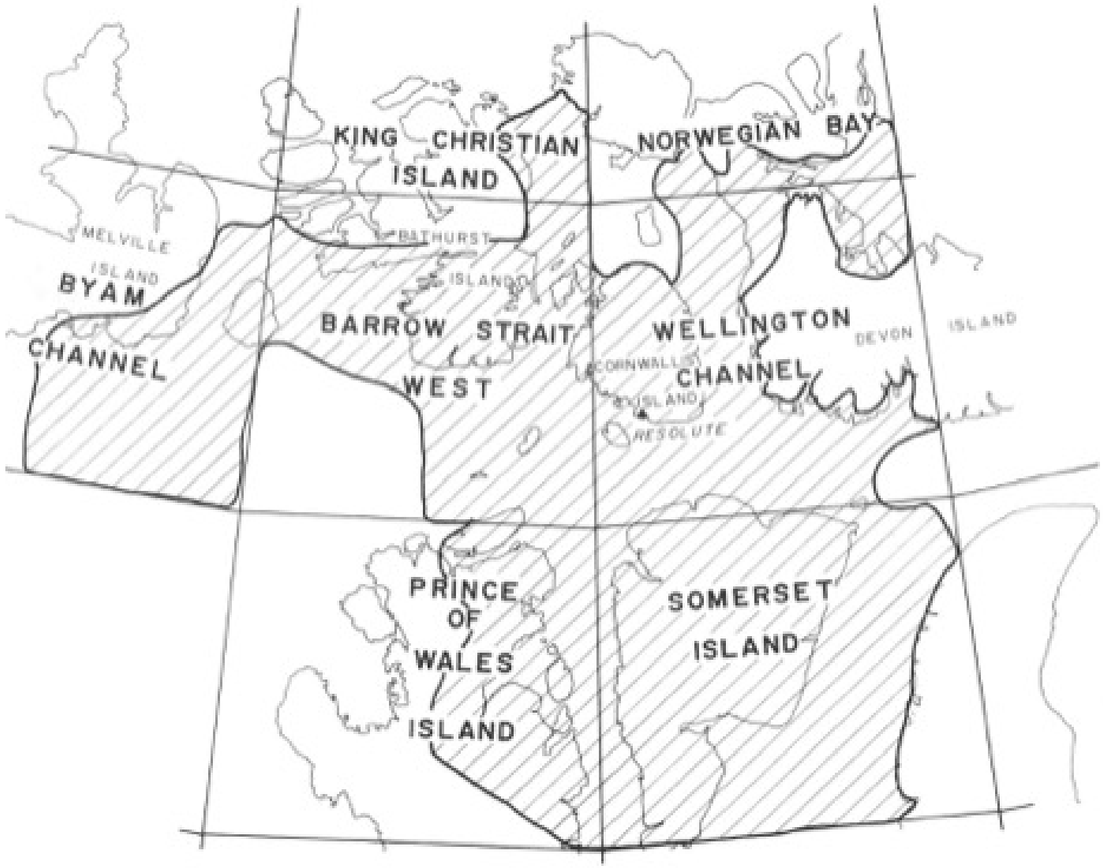


Figure 43. Nunavut Atlas – Resolute Bay Land Use Map

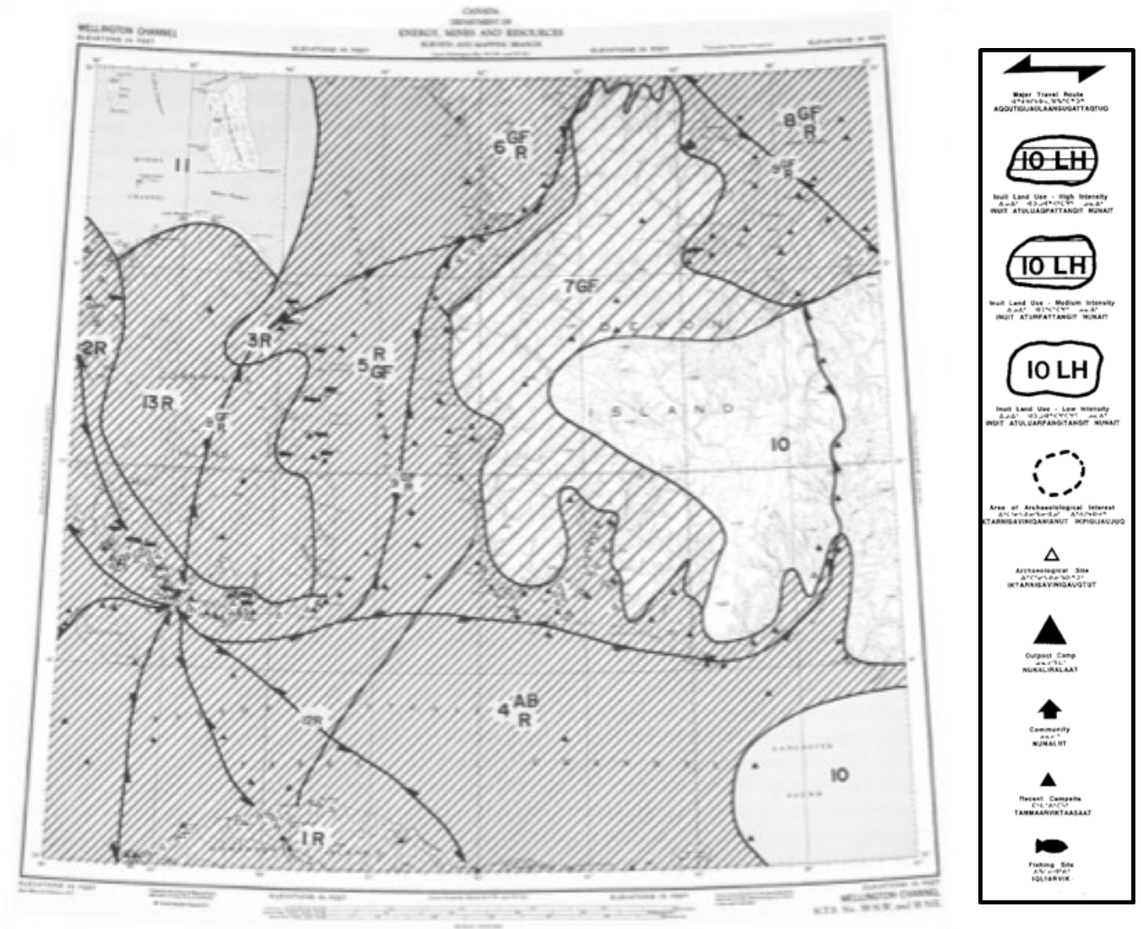
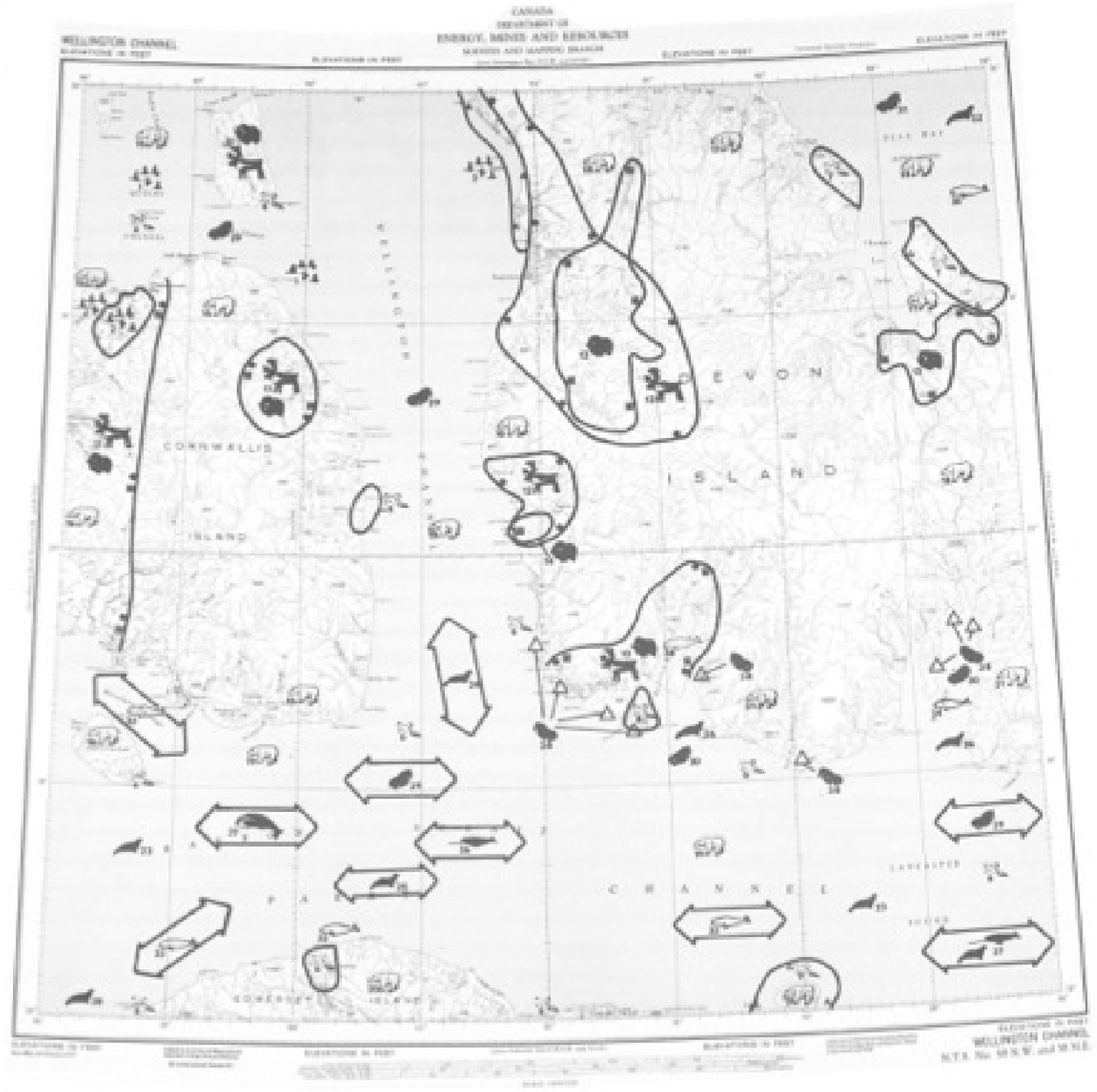


Figure 44. Nunavut Atlas – Resolute Bay Wildlife Map



RESOLUTE BAY

NUNAVUT ATLAS: INUIT LAND USE

IR
Inuit from Resolute hunt caribou on the northern part of Somerset Island. Hunting occurs mainly in winter and spring when the area is accessible across the ice of Barrow Strait.

2R
Resolute hunters used to hunt caribou on western Cornwallis Island. The area is presently being hunted for muskox and is a travel route to Little Cornwallis Island.

3R
Resolute residents fish for Arctic char every year in the lakes and rivers along the south and east coasts of Cornwallis Island. Eleanor Lake is the most commonly fished lake on the island. Caribou are often present but are not hunted in this zone.

4AB & R
Inuit from Resolute and Arctic Bay hunt polar bears in the marine area between Devon Island and Somerset Island. The coastal area along southwestern Devon Island is particularly important for hunting. Seals are also hunted year-round in various parts of this area by Inuit from Resolute and Arctic Bay.

5R & GF
Ringed and bearded seals are hunted in Wellington Channel and Barrow Strait by Inuit from Resolute and Grise Fiord. Ringed seals are hunted throughout Barrow Strait and Wellington Channel in spring, summer and fall. During winter, hunters from Resolute tend to hunt closer to the settlement. As a result, ringed seals are usually taken at their breathing holes in cracks of the sea ice. Particularly in Resolute Passage between Cornwallis and Griffith islands. Bearded seals are hunted primarily in May and June, while basking on the ice. Allen Bay, to the west of Resolute, is a well-known area for bearded seal hunting. Inuit from Grise Fiord hunt seals and polar bears while travelling to and from the Resolute area. Walruses are hunted during the open water season. Narwhals and belugas are hunted by Inuit from Resolute at the floe edge between Griffith and Somerset islands in spring. And off the northwest coast of Somerset Island, while belugas are usually killed each summer near Resolute.

6GF & R
Muskoxen are hunted annually on western Devon Island by Inuit from Grise Fiord. Hunters from Resolute and Grise Fiord also take caribou from this area.

7GF
This area is less frequently utilized by the Grise Fiord hunters for caribou and muskox than is area 6GF & R.

8GF & R
Every year Grise Fiord hunters travel throughout Jones Sound in pursuit of polar bears. The hunters also fish for Arctic char at the lake west of Thomas Lee Inlet. This is the only lake on western Devon Island which is currently being fished. Muskox and caribou are also taken occasionally near the shores of Thomas Lee Inlet, by hunters from Resolute and Grise Fiord.

9GF & R
These routes are used between March and May by Grise Fiord and Resolute hunters travelling between their communities by snowmobile. The route across Cornwallis Island is more commonly used by people from Resolute. The sea-ice route through Wellington Channel is also used by tourists travelling every April and May between Resolute Bay and Grise Fiord.

10
No hunting or trapping activity has been reported in these areas in recent years.

11
Due to the polynya in the vicinity of Baillie-Hamilton Island, this area is not utilized.

12R
This route is used by Resolute hunters travelling by skidoo to the Creswell Bay Outpost Camp.

13R
Residents of Resolute Bay use the interior of Cornwallis Island for travel by skidoo in winter and spring and by all-terrain vehicle in summer and fall.

NUNAVUT ATLAS: WILDLIFE

1 WATERFOWL
The Baillie-Hamilton Island polynya is an important spring staging area for eiders. Pullen Strait is also an important molting area during summer for oldsquaws. There is no boundary associated with this symbol.

2 WATERFOWL
This small, but well vegetated, portion of northwestern Cornwallis Island is an important nesting area for birds. The area is used primarily by king eiders, oldsquaws and several species of shorebirds.

3 WATERFOWL
This area on the west coast of Devon Island is used by greater snow geese for nesting and molting.

4 SEABIRDS
Steep coastal cliffs at Washington Point on Baillie-Hamilton Island provide important breeding habitat for approximately 3,000 pairs of black-legged kittiwakes during the period May through September. Small numbers of glaucous gulls and black guillemots also nest on the cliffs in this area. Concentrations of kittiwakes have also been reported nesting on Houston Stewart Island.

5 SEABIRDS
The steep coastal cliffs in this area are used by about 55 breeding pairs of glaucous gulls and 125 breeding pairs of black-legged kittiwakes during May through September.

6 SEABIRDS
Throughout the marine portion of this map sheet the edges of landfast ice are of great importance for feeding seabirds, particularly fulmars, murres and guillemots. The position of these ice edges varies from year to year, but the stable ice edge that frequently persists for most of July at the south end of Wellington Channel and in the Allen Bay-Griffith Island-Somerset island area, is particularly important for seabirds. During August and September, the nearshore areas along the coast from Resolute eastwards to Cape Dungeness, and from Depot Point northwards to Read Bay, are particularly important as feeding and staging areas for northern fulmars. On the north coast of Somerset Island, Gamier Bay is a major feeding and staging area for fulmars and kittiwakes in summer and fall, and for murres in spring. The Cunningham Inlet area is an important feeding area for fulmars and may also be used in spring by concentrations of eiders. The stable ice edge

that frequently persists from Prince Leopold Island to Maxwell Bay is particularly Important for seabirds. Redstock Bay, Maxwell Bay, Cape Hurd and Graham Harbour are particularly important feeding and staging areas for fulmars and kittiwakes in summer and fall and for murres in spring. Throughout this area are scattered small breeding colonies of gulls. Inland, there are small breeding colonies of greater snow geese.

Griffith and Limestone islands support nesting colonies of gulls and black guillemots. The area around Cunningham Inlet supports a small breeding colony (75 pairs) of Thayer's gulls.

7 SEABIRDS
The steep coastal cliffs in this area are used by an estimated 10,000 pairs of nesting black guillemots, probably the largest colony of these seabirds in the Canadian Arctic. A colony of glaucous gulls is also found in this area.

8 SEABIRDS
Cape Liddon is a critical nesting area for an estimated 10,000 pairs of northern fulmars. Significant numbers of black guillemots and common eiders nest around Caswall Tower.

9 SEABIRDS
Prince Leopold Island is a critical area for seabirds. The steep coastal cliffs surrounding the island are used by an estimated 100,000 northern fulmars, 140,000 thick-billed murres, 58,000 black-legged kittiwakes, 4,000 black guillemots and 400 glaucous gulls for nesting between late April and September.

10 CARIBOU AND MUSKOX
This area may provide range, primarily winter range, for a few Peary caribou. In the past, muskox have been reported in the western part of the area around Red Loon Lake.

11 MUSKOX AND CARIBOU
The western side of Cornwallis Island provides important range for small numbers of muskox and caribou. In recent years, muskox have been observed in the vegetated, low-lying plains and broad valley floors along the west and northwestern coasts. Both caribou and muskox are thought to move back and forth between Cornwallis and Bathurst islands, causing seasonal or yearly fluctuations in the populations on these islands. In recent years, the total populations on Cornwallis Island likely have not exceeded 30 muskox and 30 caribou.

Baillie-Hamilton Island and Little Cornwallis Island may on occasion support a few muskox and caribou. Little Cornwallis Island likely serves as a link in the movement of animals between Cornwallis and Bathurst islands.

12 CARIBOU
These areas provide important range for small numbers of Peary caribou. The total caribou population of Devon Island is small and likely does not exceed 100 animals. Most of these caribou are found on the Grinnell Peninsula, to the north of this map sheet, and along the west coast. It is thought that a movement of caribou occurs between summer ranges on the Grinnell Peninsula and winter ranges along the west coast.

13 MUSKOX
Lowland meadows along the river valleys in these areas provide important year-round range for muskox. The population of muskox in the western area is estimated to be around 50 animals.

14 MUSKOX
In the past, several muskox have been reported in this area.

15 POLAR BEARS
Queens Channel is part of a large year-round concentration area for polar bears.

16 POLAR BEARS
This unit, which includes the coasts of Cornwallis Island, Griffith Island, the west coast of Devon Island and most of Little Cornwallis Island supports polar bear denning in fall and winter. The headlands of bays, river valleys and banks are especially important for denning. There is no boundary associated with this symbol.

17 POLAR BEARS
The north coast of Devon Island is an important maternity fall and winter denning area, as well as a summer retreat area for polar bears. These areas extend inland approximately 20-30 km. There is no boundary associated with this symbol.

18 POLAR BEARS
Concentrations of polar bears are found in Jones Sound during spring and early summer. Their numbers and density are dependent upon ice conditions. The areas between Viks Fiord and Baring Bay and between Thomas Lee Inlet and Maxwell Bay are also concentration areas for polar bears in spring and summer. The valleys in these two latter areas may act as natural corridors for the movement of polar bears back and forth across Devon Island. There is no boundary associated with this symbol.

19 POLAR BEARS
Polar bears concentrate on the fast ice along both sides of Barrow Strait and along the south coast of Devon Island in spring. They breed on the ice and hunt seals and their pups during this period. Bears are also numerous along the ice edge in the mouth of Wellington Channel.

20 POLAR BEARS
The north coast of Somerset Island provides important denning areas in the fall and winter, and a summer area for polar bears. There is no boundary associated with this symbol.

21 POLAR BEARS
The area along the south coast of Devon Island and extending inland for about 20 km is an important fall and winter denning area and a summer range for polar bears. Maxwell and Radstock bays are important summer feeding areas, where numerous bears hunt seals on the ice. Prince Leopold Island provides fall and winter maternity denning habitat for polar bears. The headlands of bays, river valleys and banks are especially important for denning.

22 SEALS
Ringed seals and a lesser number of bearded seals, occur throughout Jones Sound. Some harp seals have also been reported in this area during summer.

23 SEALS
Ringed and bearded seals are found in the Lancaster Sound and Barrow Strait areas year-round. Ringed seals are common and occur in the fast ice. Bearded seals, which are less common, are associated with the moving pack ice.

24 SEALS
Harp seals arrive in Barrow Strait in late July or August. Some migrate north into Wellington Channel. They return to Barrow Strait in late August or September and then move eastwards into Lancaster Sound.

25 SEALS
Harp seals enter Barrow Strait from Lancaster Sound during the summer and return eastward in September. It is possible that there is some movement between Peel Sound and Prince Regent Inlet via Bellot Strait.

26 SEALS
During August and September small concentrations of harp seals occur in Maxwell and Radstock bays. These bays appear to be important feeding grounds.

27 NARWHALS AND SEALS
Narwhals and harp seals migrate west through Lancaster Sound in July, towards Barrow Strait and Peel Sound. The return eastward migration takes place in September and early October before freeze-up.

28 SEALS
In the spring, large numbers of hauled-out ringed seals are found near Limestone Island and south along the northwest coast of Somerset Island towards Aston Bay.

29 WALRUSES
In summer, walruses move east into the northern part of Barrow Strait. Some stay along the south coast of Devon Island, others move farther west. Some walruses return along the route before freeze-up in the fall.

Some walruses are found along the ice edge in Wellington Channel and along the coasts of eastern Cornwallis Island and western Devon Island. Innes Point on southwestern Devon Island, is a summer terrestrial haul-out site for fewer than 100 walruses.

They are also found in Maury Channel during summer.

30 WALRUSES
Concentrations of walruses occur in Radstock and Maxwell bays during summer. These bays appear to be important feeding areas for walrus. Terrestrial haul-out sites are found along the southwestern coast of Devon Island and include sites at Beechey Island, Cape Ricketts, Kearney Cove, Cape Hurd and Maxwell Bay. Usually fewer than 100 animals haul-out at each of these sites.

31 WALRUSES
Walruses are seen in Jones Sound during summer. They appear to migrate into the area from the east in early summer and leave before freeze up in fall.

32 BELUGAS
In summer, beluga whales concentrate in large numbers in the bays on the north coast of Somerset Island. During July and August, an estimated 2,000 belugas gather near the river mouth at the head of Cunningham Inlet. The function of such traditional areas of summer aggregation is not yet well understood.

33 BELUGAS
In July, several thousand beluga whales move into southern Barrow Strait from Lancaster Sound in the east. They travel along the coast of northern Somerset Island and then some move southwest into Peel Sound. Some belugas return east along this route before fall freeze-up. Others pass through the Allen Bay-Resolute Bay area and then continue east along the south coast of Cornwallis and Devon islands. Other belugas move south through Prince Regent Inlet towards traditional summer areas in Creswell Bay. Along the migration route in summer and fall, belugas feed on Arctic cod which are found in the coastal bays.

34 BELUGAS
Beluga whales occur in summer along the south coast of Devon Island. During July, August and September, large numbers of belugas are sometimes seen in Erebus and Terror, Radstock and Maxwell bays. These areas may be important for feeding.

35 BELUGAS
Beluga whales have been reported in the area during the open water season, particularly along the Jones Sound ice edge.

36 NARWHALS
An estimated 1,000 narwhals enter Barrow Strait from Lancaster Sound in the east, during July. They move through the strait and then travel southwest into Peel Sound, an important summering area. They return eastward along a similar route in September. It is possible that there is some movement between Peel Sound and Prince Regent Inlet via Bellot Strait.

37 BOWHEADS
Small numbers of bowhead whales move west through Lancaster Sound in June and July and return along the same route in September and October.

38 WALRUSES
These areas are known walrus haul-outs.

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COMMUNITY OF RESOLUTE BAY
Hamlet of Resolute Bay

Resolute Bay HTO Board Members and Chairpersons

DEPARTMENT OF ENVIRONMENT, GOVERNMENT OF NUNAVUT

INTERVIEWEES – RESOLUTE BAY
Allie Salluviniq, Randy Idlout, Mark Amarualik, Debbie Iqaluk, Simon Idlout, Paul Amagoalik, Tabitha Mullin, Rodger Salluviniq, and one interviewee who requested to remain anonymous.

INUIT HERITAGE TRUST (IHT), IQALUIT

INDEPENDENT COLLABORATOR
Jim Richards, Arctic Bird Specialist, Ontario, Canada. Jim is credited with providing valuable advice as well as many of the bird photos.

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APPENDIX 1
INTERVIEWEE BIOGRAPHIES

INTERVIEW	NAME	BIOGRAPHY
1	Allie Salluviniq	Allie was born in 1949 in Inukjuak, Quebec. He grew up in Resolute and has lived in the community for 64 years. He is still an active hunter but does not hunt walrus anymore because it is too much work.
2	Anonymous	-
3	Randy Idlout	-
4	Mark Amarualik	Mark was born in 1980 in Iqaluit but has been in Resolute all his life. He became active at hunting and fishing when he was four or five and continues to be active today.
5	Debbie Iqaluk	Debbie was born on Summerset Island in 1953 and grew up in Resolute Bay. Debbie became active at hunting and fishing when she was 2 years old and has been active her whole life.
6	Simon Idlout	Simon was born in 1945 and grew up on Cornwallis Island east of the present day community of Resolute. He spent some time in Pond Inlet but moved to Resolute in 1984. He has been an active hunter and fisher since he was 5 years old and is still active today.
7	Paul Amagoalik	Paul was born on a ship on Baffin Bay in 1953. He has lived in Resolute Bay for 64 years. He started hunting and fishing at 10 years of age and it still active now.
8	Tabitha Mullin	Tabitha was born in 1963 in Resolute Bay where she has grown up all her life. She became an active hunter and fisher when she was 7 or 8 years old and is still active.
9	Rodger Salluviniq	Rodger was born in 1975 in Resolute Bay. He grew up in Resolute but spent three years in Pond Inlet. He became active at hunting and fishing at 5 years of age and is still active.

APPENDIX 2
ACRONYMS AND ABBREVIATIONS

CRI – COASTAL RESOURCE INVENTORY

DOE – DEPARTMENT OF ENVIRONMENT

GIS – GEOGRAPHIC INFORMATION SYSTEM

HTO – HUNTER/TRAPPER ORGANIZATION

IHT – INUIT HERITAGE TRUST

INAC – INDIGENOUS AND NORTHERN AFFAIRS CANADA, GOVERNMENT OF CANADA

IQ – INUIT QAUJIMAJATUQANGIT

IPCC – INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

NTI – NUNAVUT TUNNGAVIK INCORPORATED

NWMB – NUNAVUT WILDLIFE MANAGEMENT BOARD

APPENDIX 3
BIRD EVALUATION

SPECIES	GODFREY (1986) SNYDER (1957)	CWS	RICHARDS AND WHITE (2008)	URBAN (1957)	GEALE (1971)	DUVALL AND HANDLEY (1948)	KUHNIGK (1994)	MISC.	NCRI SURVEY ID	COMMENTS ON NCRI SPECIES LIST
Snow Goose	B/	x			x			x	x	As expected. Concerns about the growing numbers should be addressed
Brant	B/B	x			x	x		x	x	As expected.
King Eider	B/B	x		x	x	B		x	x	As expected
Common Eider	B/B	x		B	B	B		x	x	As expected
Long-tailed Duck	B/B	x		x	x	x		x	x	As expected
Rock Ptarmigan	B/B	x		b	x	x			x	As expected
Red-throated Loon	B/B	x		B	B	B	x		x	As expected
Pacific Loon	B/B	x							x	Probable
Yellow-billed Loon	B/B	x							x	Very likely.
Northern Fulmar	B/B	x		x	x	x		x	x	As expected
Gyrfalcon	B/	x							x	Probable, but uncommon
Peregrine Falcon		x							x	Probable, but uncommon. Locals should report poachers to the Wildlife Officers about Gyrfalcon and Peregrine.
Gyrfalcon	B/B			MB						Highly likely.
Sandhill Crane									x	Probable. New for general area.
Semipalmated Plover									x	Possible, but unlikely.
Ruddy Turnstone	B/				x				x	Expected ?
Red Knot	B/B	x			x	x				Expected ?
Sanderling	B/B	x			b	x	x			Expected ?
White-rumped Sandpiper	B/				x		x			Expected ?
Baird's Sandpiper	B/B	x		B	B	x	x			Expected ?
Pectoral Sandpiper	B/	x								Not expected
Purple Sandpiper	B/B	x		b	b	x				Expected ?
Red Phalarope	B/B	x			B	x				Expected ?
Black-legged Kittiwake	/B	x		x	x	x		x	x	As expected
Ivory Gull	/B	x		x	x	x	x	x	x	As expected. Do not nest on cliffs
Sabine's Gull	/B				x	x		x	x	As expected. Do not nest on cliffs
Ross's Gull	B/B							x	x	Expected. Do not nest on cliffs

SPECIES	GODFREY (1986) SNYDER (1957)	CWS	RICHARDS AND WHITE (2008)	URBAN (1957)	GEALE (1971)	DUVALL AND HANDLEY (1948)	KUHNIGK (1994)	MISC.	NCRI SURVEY ID	COMMENTS ON NCRI SPECIES LIST
Iceland Gull	/B	x			b	b	x	x		Expected. Nest on cliffs
Glaucous Gull	B/B	x		x	b	b	x	x	x	As expected
Arctic Tern	B/B	x		B	B	b	x	x	x	As expected
Pomarine Jaeger	B/B	x		x						Expected ?
Parasitic Jaeger	B/B	x		x	b	x		x		Expected ?
Long-tailed Jaeger	B/B	x		x	x	x		x	x	As expected
Dovekie						x		x		Unexpected
Thick-billed Murre	B/B	x		x	x			x	x	As expected
Black Guillemot	B/B	x		x	x			x	x	As expected
Snowy Owl	B/B	x			x				x	As expected
Common Raven	B/B	x			x		x			Expected ?
Horned Lark	B/				x					Unexpected
Varied Thrush							x	x		Unexpected
Lapland Longspur	B/				x				x	As expected
Savannah Sparrow		x						x		Unexpected.
Snow Bunting	B/B	x		B	B	x	B		x	As expected
Harris's Sparrow									x	Not within range; highly unlikely. Given that Horned Lark was not reported, and that they would be scarce there, I suspect it was in fact a Horned Lark.

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Godfrey & Snyder – 'B' in these two columns denote breeding range for each species. It does not mean that the species has actually been recorded as breeding in the specific checklist area itself.

Richards & White (2008) – denotes general status for the geographic area (i.e.; Arctic Islands (north of 60), James Bay Islands, or Mainland), and does not imply that a record exists for each species in the specific checklist area.

Names and arrangement according to: American Ornithologists Union Check-List of North American Birds, 1998, and annual Supplements to end of 2015.

Richards & White codes:

P = Present: all or part of the population present throughout the year

M = Migrant: migrates to/from or through the region on a regular basis

V = Vagrant: uncommon migrant, or outside of normal range

A = Accidental: rare; very few records

E = Extinct

B = Breeding confirmed: active nest or flightless young

b = Breeding suspected: pair in suitable habitat or in courtship

w = Winter records available when /where open water, ice floe-edge, polynyas exist

Codes for species list above:

B = breeding

b = breeding suspected

x = reliably observed

Canada Goose was split by the AOU in 2004 into Canada Goose and Cackling Goose. The literature prior to 2004 does not always differentiate between the two. For current breeding range, I have used a map presented by Mallory et al. 2005, as well as a map presented by Sibley, 2004.

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NOTE: I have listed a few species not noted during interviews that have appeared at Resolute in the past, and marked them as 'Unexpected'.

Note: As well, there were a number of species (mainly small shorebirds) not recorded that should have been in my opinion. I have marked all of those as 'Expected ?'

- They cited Thayer's Gull. As expected, but I have changed it to Iceland Gull, as the AOU lumped Thayer's and Iceland in 2017.

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