NUNAVUT
COASTAL RESOURCE INVENTORY

Qikiqtarjuak

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Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

NCRI

Nunavut Coastal Resource Inventory
2010

Department of Environment
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EXECUTIVE SUMMARY

This report is derived from the Hamlet of Qikiqtarjuaq and represents one component of the third phase of the Nunavut Coastal Resource Inventory (NCRI). The term "coastal inventory", as used here, refers to the collection of information on coastal resources and activities, gained from community interviews, research, reports, maps, etc. This data is ultimately presented in map format.

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 by conducting a feasibility study, followed by a pilot project in Igloolik, Nunavut. Upon completion of the pilot (Phase I), four additional communities (Kugluktuk, Chesterfield Inlet, Arctic Bay, and Kimmirut) were approached to assess their interest in participating in the inventory (Phase II). The third phase included the communities of Qikiqtarjuaq and Sanikiluaq. This report presents the findings of the coastal resource inventory of Qikiqtarjuaq, which was conducted in March 2010.

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 Qikiqtarjuaq, Nunavut;
- Provision of all documents used and methodologies followed during the process of completing the project; and
- Key recommendations on both the use of this study as well as future initiatives.

During the course of this project Qikiqtarjuaq was visited on two occasions: an initial scoping/consultation meeting, followed by on-site interview sessions from March 8-16, 2010. A total of eight interviews were conducted during the site visit. Five individuals were present during each interview: the interviewee, an interviewer, a translator, a recorder, and a science consultant. The interviewer followed a defined protocol of predetermined questions with photographs of various species known to occur in the area. The interview process varied from 1.5-4 hours depending on the individuals being interviewed. Information collected through interviews and research was plotted on working maps when appropriate. Once the inventory was completed, a database was generated and maps were digitized and analyzed.

An array of maps, drawn from the interviews is provided in this report. Data are organized into the following categories: Archaeological Sites, Marine Mammals, Fish, Birds, Invertebrates, Marine Plants, Areas of High Diversity, and Other. Additional maps illustrate the territory of Nunavut, the extent of the study area, and a reproduction of the study area extracted from the Nunavut Atlas. The map format was chosen to provide a synoptic view of the collected data. A common scale was used for all maps to allow convenient comparisons from one map to another. In addition, the maps are complimented by extensive tabular information.

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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 26 of Nunavut's coastal communities. Although interviews with elders have become commonplace throughout the Territory, community differences are sufficiently important to warrant an individual and focused approach in the manner in which this information is elicited. Each community is unique in terms of its physical environment, oceanographic setting, organisms present, and the interests and approaches of its hunters and trappers. One might even suggest that each community has been treated independently in a series of pilot projects. This approach significantly limits those things that can be taken for granted and simultaneously encourages a continuous process of refinement of interview materials and methodologies.

THE COASTAL RESOURCE INVENTORY

A coastal resource inventory, as used in this report, is an information compendium on coastal 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. Defining the extent of resources discussed varies by community and "near the coast" may include species and activities 50 miles or up to 100 miles inland (mainly lakes and river systems).

The information obtained is then augmented with additional data acquired from scientific articles, unpublished reports, government documents, environmental assessments, maps, etc. All of the community-specific data is then 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 margins, notably on our Atlantic and Pacific coasts where the information gained from this approach was used to provide: the foundation for an integrated coastal management plan; essential insights to assist with the protection of important coastal areas; and information 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 principle source of information for community-based coastal inventories is traditional knowledge (Inuit Qaujimajatuqangit in Inuktitut, or IQ) gathered through interviews. Over the past 50 years, Inuit have gone from a resource-based nomadic life style to a wage-based economy. Nevertheless, coastal and land-based activities are still extremely important, contributing to Inuit quality of life, providing income and food, and as a significant part of Inuit culture. To ensure we retain this traditional knowledge and the above associated benefits, knowledgeable individuals (usually community elders) were engaged using a defined survey that addresses the presence, distribution, and characteristics of various coastal resources. In addition, visual surveys of the coastline and the community provide diverse information on important coastal features, including the type and condition of infrastructure (wharves and fish plants) and the location of a variety of coastal activities or impacts (town dumps or sewage sites).

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. Establishment of a new fishery requires reliable information on species-specific abundance and distribution of fish stocks in order to determine both the feasibility of the initiative as well as its long-term sustainability. Community resource information gathered in one central location can be an important first step toward fishery commercialization. This information could also lead to the identification of potential coastal parks and related tourism opportunities, including sensitive coastal areas, breeding grounds, important species, and unique habitats.

Traditional knowledge (IQ) embodies both historical and contemporary information. 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. From February to November 2007, the Intergovernmental Panel on Climate Change released four reports, in which they reinforced and extended all of their earlier predictions regarding both the potential for change and the impacts expected when those changes occur (IPCC 2007 a, b, c, and d). Conclusions drawn from these documents indicate that the Inuit can expect significant environmental changes in sea ice, fast ice, coastal erosion, animal behaviour, and population abundances, to mention but 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.

ORIGIN OF NUNAVUT COASTAL RESOURCE INVENTORY

The Fisheries and Sealing Division of the Department of Environment, Government of Nunavut initiated the development and implementation of a community-based coastal zone inventory for Nunavut. In their April 2007 report, Nunavut Coastal Resource Inventory: Assessment and Planning, a consulting team from Dalhousie University recommended that the Nunavut Coastal Resource Inventory Project begin with a pilot project in order to define, test, and document methodologies, primarily those dealing with the critical process of documenting IQ. During community consultations in Iglulik in February 2007, community members, including the local Hunters and Trappers Organization, met with the NCRI staff and consultants to discuss the potential of this initiative for the community. The outcome of that meeting, supported by additional later communications, was keen interest in and support for the pilot project. Iglulik was chosen as the pilot community as it possesses resources that were deemed to offer support to the project's success, including a satellite office of the Nunavut Research Institute (NRI). This office is home to the IQ and Oral History project, which has been underway for more than two decades. The staff of this remarkable unit has extensive experience in the collection of IQ, which is stored in a computer-accessible database. Collaboration with NRI, especially the opportunity to learn from their experience, was judged an important initial benefit. In addition, officials of the Hamlet of Iglulik were very positive in regards to the potential benefits to their community, as well as providing important administrative support for the project.

The pilot project was an intense learning process. The primary goals were to create a database comprising an assemblage of IQ that would contain depth and breadth, as well as developing a well-vetted process for interviews, data recording, range of topics, data reduction, digitization, analysis, GIS integration, and presentation. Although the pilot project was judged successful, subsequent phases of this project have demonstrated the need for continuous adjustment and adaptation of the process, in order to

improve its efficiency and better adhere to project goals. Phase II of the NCRI saw inventories completed for the communities of Kugluktuk (October 2008), Chesterfield Inlet (November 2008), Arctic Bay (February 2009), and Kimmirut (March 2009). Two communities, Qikiqtarjuaq (March 2010) and Sanikiluaq (February 2011), were selected for Phase III.

PERSONNEL AND PROJECT DELIVERABLES

The Coastal Resource Inventory of Qikiqtarjuaq was conducted by Department of Environment (DOE) staff with the assistance of the Marine Institute of Memorial University of Newfoundland. Overall project leadership was provided by Wayne Lynch, Director, Fisheries and Sealing Division, and his staff: Corenna Nuyalia, Acting Project Coordinator and Angela Young, Fisheries Sector Specialist. Project consultants were Carey Bonnell and Keith Mercer of the School of Fisheries and Randy Gillespie and Stephen Roberts of the School of Ocean Technology, Marine Institute.

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

Figure 1: Map of Nunavut

METHODOLOGY

This section is composed of two parts: a broad introductory overview of the philosophy, approach, and execution of the interview process, followed by a more detailed examination of the methodology. Refer to the Field Guide (Appendix 4) for an in-depth explanation of all methods employed.

AN OVERVIEW OF THE PROCESS

The process began with the selection of a community that would be prepared to participate in the interview process. Criteria to assist in the selection were devised early in the development of the project, but as one might expect, undergo continuous revision. Once a provisional choice was made, the community was visited with the purpose of determining whether it wished to participate in the inventory, and if so, which individuals would be most appropriate for the interviews. The above questions were directed principally at the local Hunters and Trappers Organization (HTO), who provided an annotated list of potential candidates. Further, queries were made and discussions held with individuals who might serve as interpreters and translators in conjunction with the interview process. Suitable dates and venues were then selected for the interviews.

The interview team was made up of six individuals: the interviewee, an interviewer, a translator, a recorder, a science consultant, and a student observer. The process varied from 1.5 - 4 hours, depending on the amount of detail in the interviewee's responses and the amount of clarification required. Each interview followed the same format (refer to Survey in Appendix 5). The first round of questions requested information about the interviewee's early life history as well as their general knowledge of and familiarity with the local area. This was followed by resource-based questions that referred to specific animals and plants observed in the area. Responses were documented during the interview, with spatial information recorded using maps prepared in advance that were annotated by the interviewee. The entire proceedings, with permission, were recorded using audio and video equipment. Upon completion of the interviews, data was compiled into spreadsheets, and the map information was scanned, digitized, and prepared for data analysis.

DETAILS OF THE PROCESS

COMMUNITY SELECTION

Criteria to guide community selection were established prior to the start of the NCRI process and were based on a series of interviews with a broad range of individuals, all of whom had some prior experience working with traditional knowledge and/or communities. Criteria were subject to continuous refinement as knowledge and insights improved. Community selection did not depend on meeting the requirements of every single criterion, but rather on the general picture conveyed by the responses to these queries. The present criteria are as follows:

- Is the selected community willing to participate in the project?
- Is the community considered to be an important source of data on coastal resources?
- Are any other projects underway in the community that might be complementary to the coastal inventory?
- Does the community possess an existing repository of oral history that could be made available to the project?
- Does the community have a strong but under-utilized or under-managed connection with a particular resource animal, such that inventory data could prove useful?
- Does the community wish to acquire or use any of the coastal inventory data produced by the project?
- Is the community presently involved in a commercial fishery?
- Is the community currently seeking infrastructure for which the coastal inventory study might prove supportive?
- Does the community have a strong and broadly-accepted leadership available to assist the project?
- Does the community have a close association with a park or a protected area?

COMMUNITY VISITS

Communities are visited on three occasions: an initial scoping/consultation meeting, followed by on-site interview sessions (March 8-16, 2010), and finally a follow-up visit to present the finished report and supporting material to the community. The scoping session was designed to put into place all of the elements that were required to properly conduct the interviews. This process depended on the support and participation of the Qikiqtarjuaq Hunters and Trappers Organization (HTO) and the Hamlet office. These groups 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 eight 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. Venues in the community were selected that would accommodate the interview process.

INTERVIEW PREPARATION

Preparations for the interviews focused on the definition and acquisition of all the information and equipment that was necessary to compile the resource inventory. This ranged from digital voice and video recorders to coloured pencils. The latter would be used by both interviewees and project personnel to draw and code information on prepared maps. It also involved defining the subject matter to be addressed in the interviews including: contextual material such as early life history or the location of camp sites, the geographic extent of the maps, the species of interest (animal and plant), and supporting environmental information such as time of occurrence and condition at occurrence (breeding, migrating, feeding, etc.). Once these decisions were made the results were translated into maps of the area normally used by hunters and fishers (Fig. 2), into a list (Appendix 6) and photos (Appendix 7) of the target species, and used to develop relevant questions that would later be posed to interviewees (Appendix 5).

INTERVIEW STRATEGY

The manner in which the interviews would be conducted was repeatedly discussed over a lengthy period and ultimately reflected the advice that NCRI personnel received from many different sources. The goal of the interview process was to allow Inuit hunters to speak in comfortable surroundings on the subject of living coastal resources, based on their life experiences. Recording this information recognizes the finite nature of human life, the wealth of information held by individuals, and the importance of that information from both cultural and management standpoints. Considerable attention was devoted to the realization of these goals. Over the years, Inuit hunters have often been interviewed; however, this time they were pleased to learn that the process would comprehensively embrace a broad range of living marine resources and that the NCRI staff would provide each HTO with a copy of all data collected from the interviews in its community.

THE INTERVIEWS

Five individuals were present during each interview: the interviewee, an interviewer, a translator, a recorder, and a science consultant. The interviewer followed a defined protocol that placed a strong emphasis on a series of predetermined questions and photographs of various living

resources known to occur in the area. Maps covering the area of interest and colour-coded pencils were provided for 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; locations 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).

Every annotation on the maps was 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 audio tapes. The interview process varied from 1.5 - 4 hours, depending on the individual being interviewed.

POST-INTERVIEW METHODOLOGY

During and immediately following each interview, rigorous file management protocols were employed. All recording modes (audio, video, and manual) were carefully synchronized with the information noted on the maps. All of the manually recorded data was entered on a spreadsheet, which was updated as clarifying information became available. The maps used in the interviews were scanned and the hand drawn data was digitized. The end result was the creation of a coherent and workable database, which when used with the maps provides a complementary visualization of that data. From the outset, the maps were planned to form the cornerstone of the interview process and of the resulting community reports.

Figure 2: Image depicting the full extent of study area and interviews.

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 as to residency and land use. The resulting study contains 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 document is the Nunavut Atlas co-published in 1992 by the Canadian Circumpolar Institute and the Tunngavik Federation of Nunavut. This atlas relies largely on data collected for the Inuit Land Use and Occupancy Study and although the presentation of resource data and maps is reasonably accessible, the information is approximately 35 years old. Relevant maps from this volume are presented in this report (Figures 40 and 41).

The third document is the Nunavut Wildlife Harvest Study produced by the Nunavut Wildlife Management Board in August 2004 as mandated by the Nunavut Land Claim Agreement. Harvest data was collected monthly from Inuit hunters for a total of five years from 1996 to 2001. The purpose of the study was to determine current harvesting levels (at that time) 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 plotted, when appropriate, on working maps, while the final representations are presented on all inventory maps. The scale is small, in keeping with the size of the geographic area under discussion. 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 (see Appendix 8). 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 (see Appendix 11).

GIS INTERFACE

Once the inventory maps and database were completed, they were entered into a geographic information system (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 species name, source, population level, etc. Mapped data are linked to additional information in the corresponding database. Photos accompany the data where applicable.

INTERACTIVE ATLAS

The NCRI results are published in community-specific reports that are shared with project partners (community HTOs, 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: ncriatlas.ca and http://www.gov.nu.ca/environment/information/nunavut-coastal-resource-inventory

MARINE RESOURCES IN A PHYSICAL SETTING

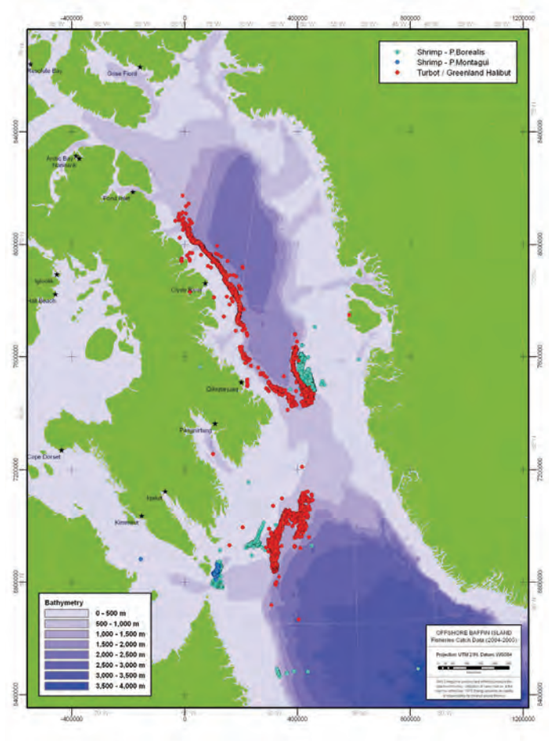
INTRODUCTION

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 ocean 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 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 ephemeral conditions. Sites formed in this manner are largely unpredictable and of limited usefulness to animals and humans. On the other hand, recurrent open water sites are the physical manifestation of one or several predictable physical processes that result in spatial and temporal reliability. The different processes that contribute to this reliability are reviewed below.

Figure 3: Nunavut Fisheries by Species



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. The reasons for this observed correlation are many, varied, and not mutually exclusive. 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.

The availability of food, the product of primary production in phytoplankton, ice algae, and marine plants, is a major contributing factor in the abundance of marine organisms observed at recurrent open water sites. Bradstreet and Cross (1982) believe the aggregation of food items available to invertebrates and vertebrates on the under-ice surface is a factor of significance. Algal groups are important, although 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; Harrisson and Cota, 1991; Legendre et al 1992). Plant material is grazed and enters into the food web, supplying energy to invertebrates (e.g. copepods, amphipods, and shellfish), fish (e.g. Arctic Cod), mammals (e.g. seals, Narwhal, Walrus, and Polar Bears), and birds (e.g. 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 the sea ice thinning faster and earlier in the spring, 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.

In addition, these open water sites appear to have been of great importance to the native peoples that have occupied the Arctic for several thousand years. Zooarchaeological 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

Qikiqtarjuaq in Inuktitut means "big island" and prior to 1998, was known as Broughton Island. It is located approximately 100 kilometers north of the Arctic Circle and is only 4 kilometers off the east coast of Baffin Island in the Davis Strait. The Davis Strait lies between Greenland and Baffin Island, and connects the Atlantic Ocean, through the Labrador Sea to Baffin Bay. The current circulation pattern results in the movement of ice from Baffin Bay into the Atlantic Ocean, keeping a large portion of Davis Strait ice free year long (Figure 3). A major shorelead polynya extends along the coast of Qikiqarjuaq (Hannah et al. 2009).

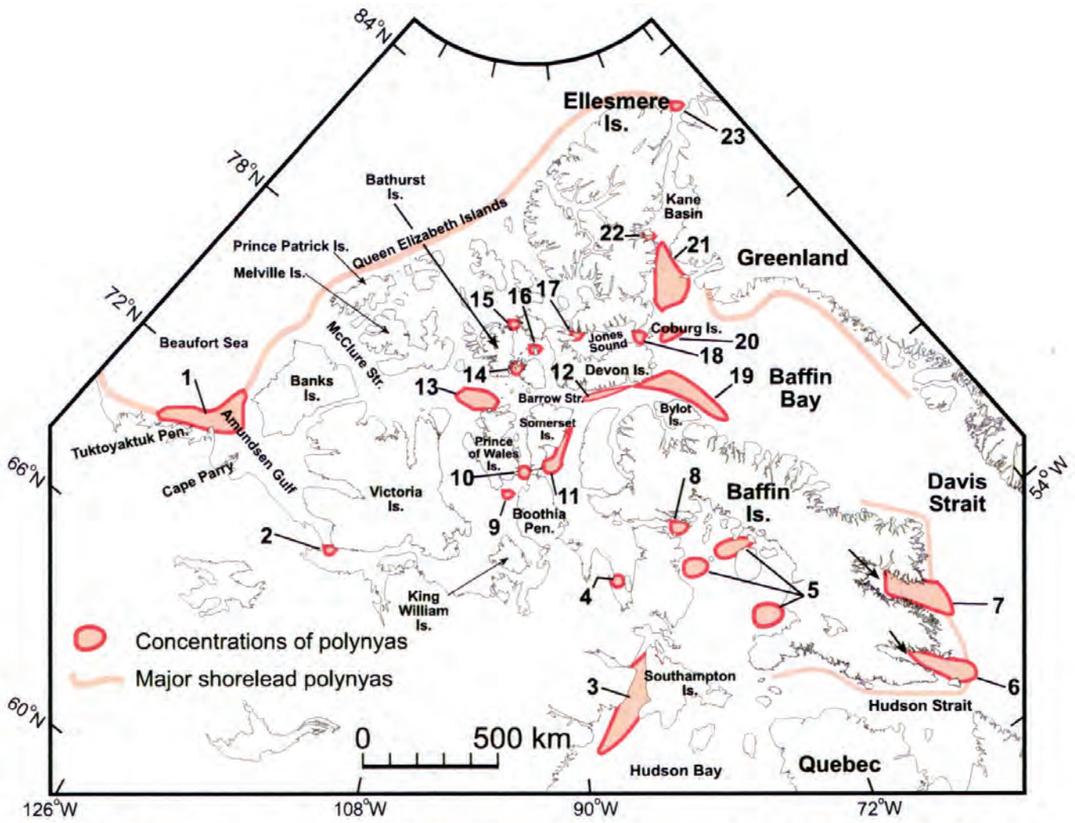
TIDAL MIXING

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-

Figure 4: Nunavut Polynyas



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

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. These mechanisms are not mutually exclusive and sometimes work in concert. The first process involves a continuous transfer of warmer, deeper water to the surface, which slows or eliminates ice formation. The second process is controlled by wind and/or ocean currents, which remove any ice formed at the site. Additionally, the ice formation process gives off some heat, which further slows subsequent ice development. Hannah et al (2009) review these mechanisms and point out several additional factors, such as turbulence from surface waves or currents that can inhibit ice formation, and adjacent coastlines, shore-fast ice or ice bridges that may prevent ice from drifting into polynyas.

LANDFAST LEADS (OR FLAW LEADS)

Extensive systems of land-fast leads occur throughout the Arctic. Stirling (1981) summarizes their many characteristics. 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. George (2004) suggests that the physical presence of this ice cover modifies tidal and wind energy, dramatically changing circulation. At some point, a fracture or crack may develop between the attached ice and the free-floating pack ice due to offshore winds, or to a lesser extent 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, landfast 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 landfast 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 landfast ice (McLaughlin et al. 2005);
- Ringed seals and polar bears are the only marine animals that regularly occupy extensive landfast 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, landfast 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 landfast 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 landfast 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.

UPWELLING: TOPOGRAPHIC AND ICE-EDGE

Upwelling is a mechanism by which warmer, 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 warmer 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, Johannesen et al. 1983) and off the coast of Newfoundland (Tang and Ikeda 1989).

In addition to a greater heat flux to the surface, 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 GLOBAL WARMING

Over the past 20 years, many Arctic researchers have commented on the impending probability of global warming, 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). Many changes may occur potentially impacting the role that recurrent open water sites play in the coastal resources. 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. In other words, change may occur in our physical world that could, in turn, alter the biological system, including the human component.

COMMERCIAL FISHERIES

The main species of fish caught commercially in the waters adjacent to Nunavut are northern shrimp (Pandalus borealis), striped shrimp (Pendalus montagui), and Greenland halibut or turbot (Reinhardtius hippoglossoides). Figure 4 illustrates the location of Qikiqtarjuaq relative to where turbot and shrimp are harvested in Davis Strait. The close proximity of Qikiqtarjuaq to these fishing areas presents potential economic opportunities for the community.

A local resource of truncate soft-shell clams (Mya truncata) has been identified adjacent to the community of Qikiqtarjuaq in the inter-tidal zone. Any future efforts to develop this fishery will need to address issues such as the high operating costs of the north as well as regulatory food safety regimes.

RESOURCE INVENTORY

The community interviews contain two kinds of information: that elicited from direct questions and anecdotal context, which provides additional depth or breadth, colours a response, or offers an interpretation of the species under discussion. The first type has specific geographic coordinates or involves quantitative estimates that lend themselves to eventual representation within a GIS format. The second, in the form of individual opinions, assumptions, and conclusions, offers qualitative information that helps to humanize the responses and mappings. These observations were generally made without any additional information or corroboration and sometimes suggested a correlation to some other environmental change. However, a correlation does not necessarily signify causality. Nevertheless, the observations below provide highly personal and very useful insights that could be worthy of additional investigation.

GENERAL COMMENTS

MARINE ENVIRONMENT/AREAL EXTENT

The geographic area identified by Qikiqtarjuaq interviewees as the normal range of their hunting and fishing activities spans approximately 80,000 km2. This area is centered along the coastline and follows the major shorelead polynya in this region.

ARCHAEOLOGICAL REMAINS

Interviewees indicated the presence of a number of traditional habitations, meeting places, burial sites, etc, along the coastline of Qikiqtarjuaq. These sites contain both intact and remnant structures including sod houses, rock houses, and rock formations. Some of these sites are remnants of the Thule culture, the immediate precursors of the Inuit.

HUNTING/FISHING

- Walrus abundance was reported to have decreased since the 1970s and 1980s. However, it was indicated that walrus can currently be found in greater numbers in an area outside the interview map.
- Belugas were identified as rare in the area.
- It was indicated that there are many bowhead whales in the area, with many observed in 2009. Interviewees also noted that the abundance of bowhead whales can pose a danger when travelling in the area.
- Interviewees have witnessed killer whales feeding on bowhead whales in the area.
- Ringed seals were identified as being abundant, although it was noted that there were many more in the past. It was suggested that this may be due to rough ice in the area.
- Interviewees indicated bearded seals are decreasing in numbers.
- There was some discrepancy in the abundance of harp seals in the area. Some interviewees indicated an increase in numbers, while others noted a decline.
- In general, interviewees indicated seals have been decreasing in abundance since the 1960s. Noise pollution may be scaring some species away, as seals can be seen in higher abundance in low traffic areas. It was also suggested that this decline could be linked to scientific studies done in the late 1960s on female seals.
- Narwhal are now coming closer to Qikiqtarjuaq.
- Interviewees reported that polar bears are increasing in numbers. It was indicated that there are too many polar bears and they are eating young seals.

- The abundance of char was indicated to vary by year. Changes can be observed following a large winter harvest. It was noted that rainfall can influence the number of char in lakes, because less rainfall can inhibit char migration back to spawning areas.

- Clams seem to change in numbers, but always come back.

HEALTH, SIZE AND PRESENCE

- Kelp is growing bigger and longer and tastes better when it's colder.

- In some areas, char meat used to be red, but is now whiter. It was suggested that this is due to char feeding on capelin, which is more plentiful now.

- Crayfish are lighter in sandy bottom areas and are darker in rocky areas.

- The presence of naked shelled sea butterfly near old multi-year ice can help estimate the timing of ice formation.

CHANGES UNDERWAY

- Interviewees noted that winters are now characterized by much less snow, thinner sea ice, earlier ice breakup, and warmer temperatures. These changes are affecting hunting practices. For example, the ice breakup is posing a challenge for hunting on the ice; however, boats can be used earlier. An interviewee suggested that the earlier ice break up may result in more polar bears in town.

- Some interviewees expressed concern regarding shipping activity in the area, with noise from ships disturbing wildlife. Others believed the work associated with shipping activity is important for the community.

ECONOMIC DEVELOPMENT

- Interviewees expressed a need for a new dock in the community. The existing anchoring site is too small now as the population is growing. A breakwater and a community freezer are also needed in the community.

- It was noted that a fish plant, a seal meat/blubber processing plant, and a seal skin tannery would be welcome additions to the community.

- Some interest was expressed for tourism in the community. The potential for job creation was seen as a good option. Bird sanctuaries could attract tourist to view murres and northern fulmar.

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.

Generally, maps comprise groupings of several species or a single species as reported in multiple interviews. Species and interviews are normally color-coded and locations are accompanied by a numeric label. The first number in the label refers to a specific interview while the second is a location identifier. These labels can be used to look-up relevant information in the table associated with each map.

Locations reported by the interviewee as "unsure" have not been included in this report.

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 not represented on the maps, but is provided as a 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.

Table 1: Guide to map codes

MAPPING CODES GUIDE	
Anything unsure or unreliable	Appended with a lower case 'u'
Changes from one spot to another (same group of animals)	Appended with lower case 'c'
Present {since year 2000}	Appended with 'P'
Historic {before year 2000}	Appended with an 'H'
Everywhere (seen all over/no specific place/only where they go)	Appended with a lower case 'e' — Note that an asterisk (*) has been placed after species names in map titles to indicate that the species is also seen 'everywhere'.
High Abundance	Appended with an 'A'
Migration (use arrows to indicate direction)	Appended with an 'M'
Spawning / Nesting / Denning / Calving / Pupping areas	Appended with an 'S'
Nursery Area	Appended with an 'N'
Significant Area of High Diversity	SADP
Significant Unique Area	SAUP
Significant Area for Other Reason	SAOP
Archeological / Historic / Camp Site (old and very old)	ARCH
Other	OTH
Area Known Best (area most familiar with or a travel route)	AKB
Camp / Cabin (typically modern)	CAMP
Example: CHAR_1_AP: First Arctic Char area drawn by interviewee that is also presently (after year 2000) an area of high abundance.	

Figure 5: Archeological Sites - Rock and Sod Houses

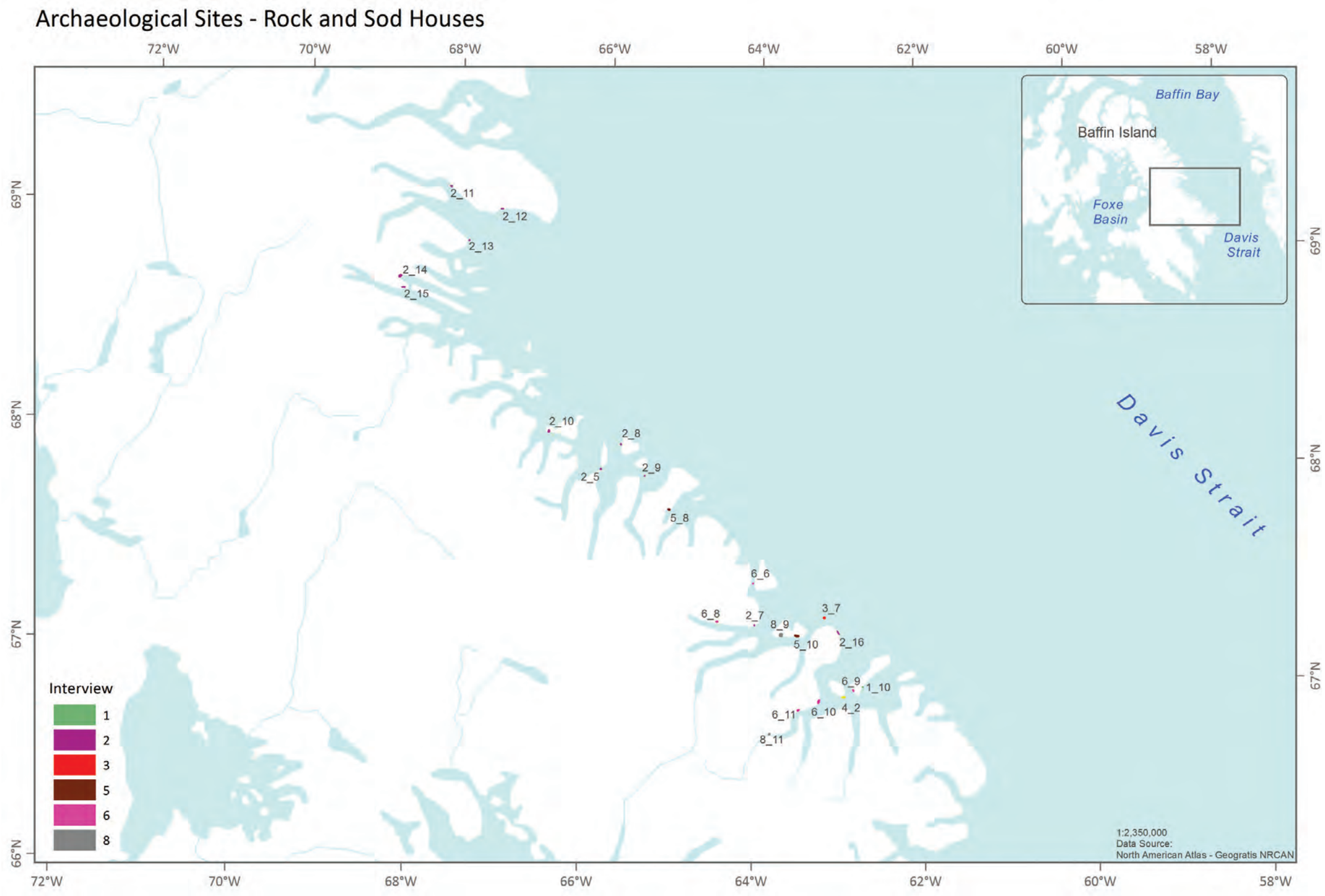


Table 2: Archaeological Sites - Rock and Sod Houses

LABEL NUMBER	INTERVIEW CODE	MAP CODE	TYPE	COMMENTS
1_8	QIK_1_0310	Arch_1	Sod Houses	
1_9	QIK_1_0310	Arch_2	Camp Site	
1_10	QIK_1_0310	Arch_3	Sod Houses	
2_5	QIK_2_0310	Arch_1	Rock Houses	
2_6	QIK_2_0310	Arch_2	Sod Houses	Lots of rock formations
2_7	QIK_2_0310	Arch_3	Sod Houses	Lots of rock formations
2_8	QIK_2_0310	Arch_4	Sod Houses	Lots of rock formations
2_9	QIK_2_0310	Arch_5	Rock formations	
2_10	QIK_2_0310	Arch_6	Rock formations	
2_11	QIK_2_0310	Arch_7	Sod houses	Rock formations
2_12	QIK_2_0310	Arch_8	Sod houses	Rock formations
2_13	QIK_2_0310	Arch_9	Sod houses	Rock formations
2_14	QIK_2_0310	Arch_10	Sod houses	Rock formations
2_15	QIK_2_0310	Arch_11	Sod houses	Rock formations
2_16	QIK_2_0310	Arch_12	Rock formations	For caribou hunting, Lots of Inukshuks still standing
3_7	QIK_3_0310	Arch_1	Thule Site	
3_8	QIK_3_0310	Arch_2	Thule Site	
4_2	QIK_4_0310	Arch_1	Oldest site	
5_8	QIK_5_0310	Arch_1	Sod Houses	
5_9	QIK_5_0310	Arch_2	Sod Houses	
5_10	QIK_5_0310	Arch_3	Sod Houses	
6_6	QIK_6_0310	Arch_1	Sod Houses	
6_7	QIK_6_0310	Arch_2	Thule Site	
6_8	QIK_6_0310	Arch_3	Sod Houses	
6_9	QIK_6_0310	Arch_4	Sod Houses	
6_10	QIK_6_0310	Arch_5	Sod Houses	
6_11	QIK_6_0310	Arch_6	Sod Houses	
8_9	QIK_8_0310	Arch_1	Sod Houses	
8_10	QIK_8_0310	Arch_2	Sod Houses	
8_11	QIK_8_0310	Arch_3	Sod Houses	

Figure 6: Travel Routes and Areas of Greatest Familiarity

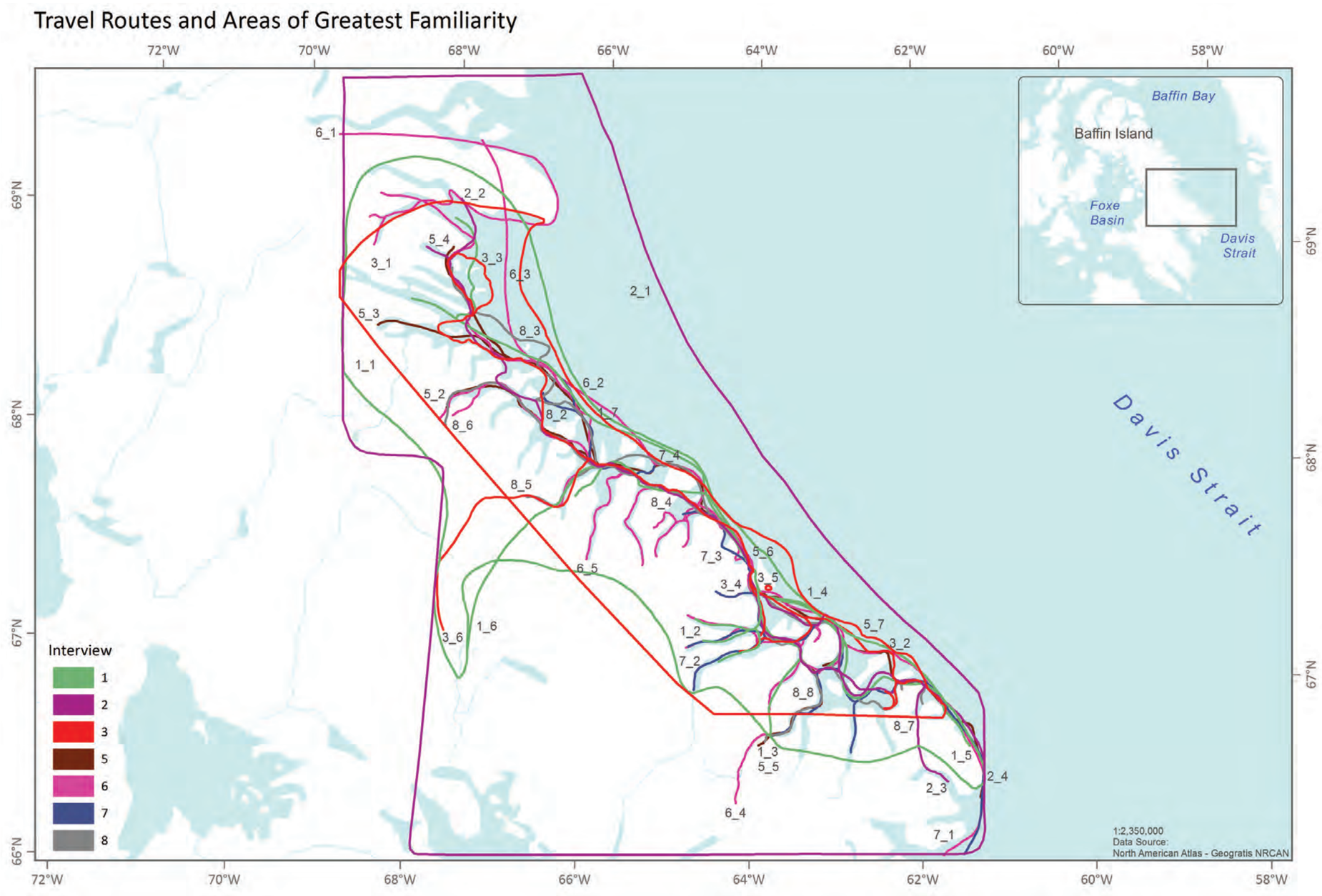


Table 3: Travel Routes and Areas of Greatest Familiarity

LABEL NUMBER	INTERVIEW CODE	MAP CODE	TYPE	COMMENTS
1_1	QIK_1_0310	AKB_1	Area Known Best	Familiar with the Area
1_2	QIK_1_0310	AKB_2	Travel Route	Narwhal Hunting
1_3	QIK_1_0310	AKB_3	Travel Route	Fishing by Ski-doo
1_4	QIK_1_0310	AKB_4	Travel Route	Travel by boat
1_5	QIK_1_0310	AKB_5	Travel Route	Hunt Walrus by boat
1_6	QIK_1_0310	AKB_6	Travel Route	Fishing and Hunting by boat
1_7	QIK_1_0310	AKB_7	Travel Route	Narwhal Hunting by boat
2_1	QIK_2_0310	AKB_1	Area Known Best	Familiar with the Area
2_2	QIK_2_0310	AKB_2	Travel Route	Travel route by ski-doo and boat
2_3	QIK_2_0310	AKB_3	Travel Route	Travel route by ski-doo
2_4	QIK_2_0310	AKB_4	Travel Route	Travel route by boat
3_1	QIK_3_0310	AKB_1	Area Known Best	Familiar with the Area
3_2	QIK_3_0310	AKB_2	Travel Route	Walrus hunting route by boat in October
3_3	QIK_3_0310	AKB_3	Travel Route	Ringed seal pup hunt by ski-doo in June-July
3_4	QIK_3_0310	AKB_4	Travel Route	Seal hunting travel route by ski-doo and boat
3_5	QIK_3_0310	AKB_5	Area Known Best	Familiar with the Area
3_6	QIK_3_0310	AKB_6	Travel Route	Caribou hunting travel route
5_2	QIK_5_0310	AKB_2	Travel Route	Winter/Spring travel route by boat and ski-doo
5_3	QIK_5_0310	AKB_3	Travel Route	Hunting route by boat
5_4	QIK_5_0310	AKB_4	Travel Route	Hunting route for Narwhal and caribou by boat and ski-doo
5_5	QIK_5_0310	AKB_5	Travel Route	Fishing, travel by ski-doo
5_6	QIK_5_0310	AKB_6	Travel Route	Fishing in summer by Boat
5_7	QIK_5_0310	AKB_7	Travel Route	Hunting route for caribou and walrus
6_1	QIK_6_0310	AKB_1	Travel Route	Travel route
6_2	QIK_6_0310	AKB_2	Travel Route	Travel Routes by Boat - Summer
6_3	QIK_6_0310	AKB_3	Travel Route	Winter - Ski-doo Trail to Clyde River
6_4	QIK_6_0310	AKB_4	Travel Route	Fishing Travel Route
6_5	QIK_6_0310	AKB_5	Travel Route	Fishing Travel Route
7_1	QIK_7_0310	AKB_1	Travel Route	Travel route Past Cape Dyer
7_2	QIK_7_0310	AKB_2	Travel Route	Travel route by boat
7_3	QIK_7_0310	AKB_3	Travel Route	Travel route by Ski-doo, Boat
7_4	QIK_7_0310	AKB_4	Travel Route	Narwhal hunting route
8_2	QIK_8_0310	AKB_2	Travel Route	Travel route by boat, summer Char
8_3	QIK_8_0310	AKB_3	Travel Route	Hunting route for Narwhal
8_4	QIK_8_0310	AKB_4	Travel Route	Ski-doo travel route
8_5	QIK_8_0310	AKB_5	Travel Route	Ski-doo winter Char fishing route
8_6	QIK_8_0310	AKB_6	Travel Route	Winter fishing travel route
8_7	QIK_8_0310	AKB_7	Travel Route	Travel by boat Walrus hunting
8_8	QIK_8_0310	AKB_8	Travel Route	Winter fishing travel route

Figure 7: Areas with Significant Diversity

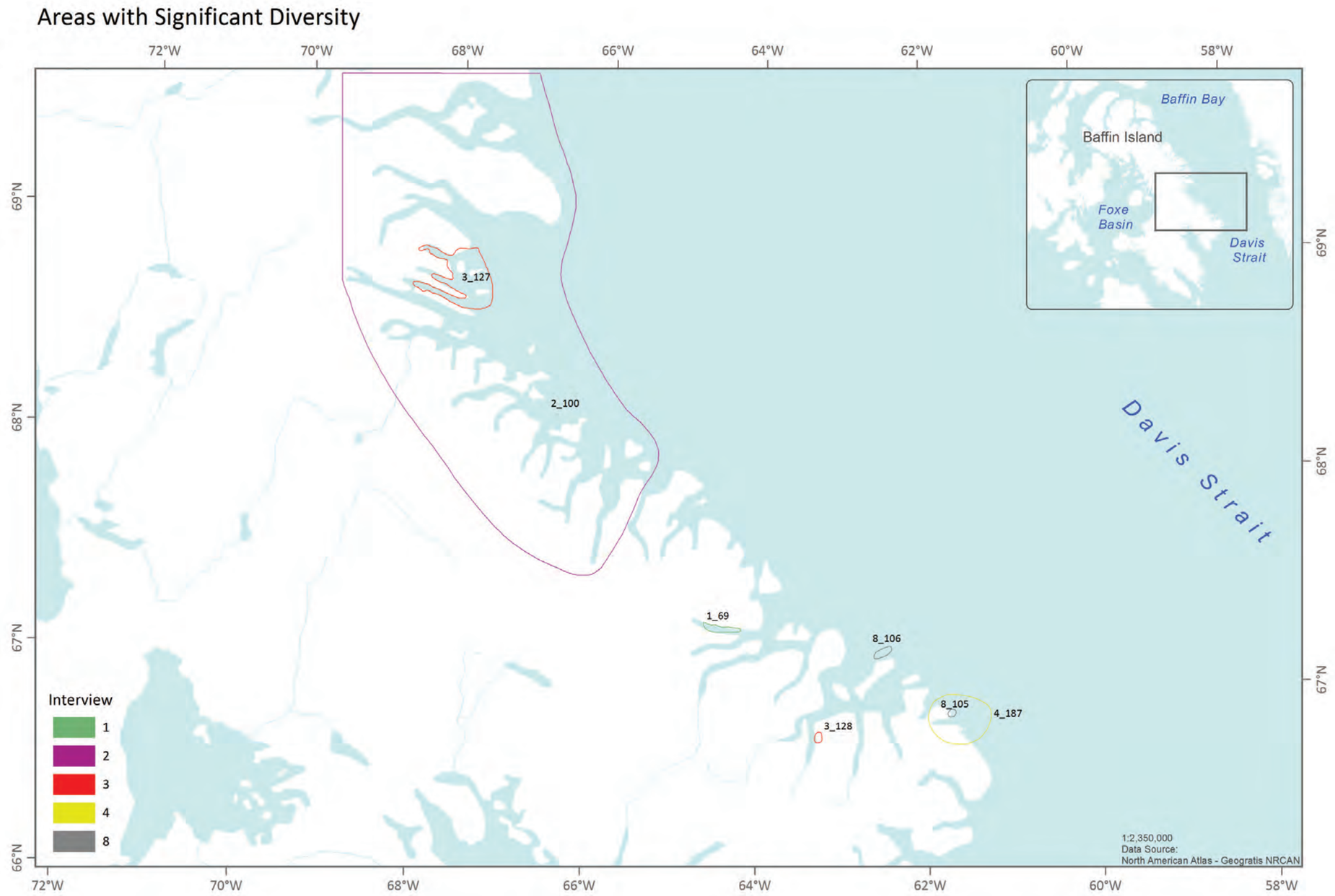


Table 4: Areas with Significant Diversity

LABEL NUMBER	INTERVIEW CODE	MAP CODE	TYPE	COMMENTS
1_69	QIK_1_0310	SADP_1	Special Places	Narwhal, Ringed Seal, Harp Seal, Arctic Char
2_100	QIK_2_0310	SADP_1	Special Places	Knows the area very well
3_127	QIK_3_0310	SADP_1	Special Places	Looks like a different world it's so beautiful, glacier goes right into the water - polynya.
3_128	QIK_3_0310	SADP_2	Special Places	Willow trees, beautiful green land.
4_187	QIK_4_0310	SADP_1	Special Places	Fish, Polar Bear, Seal, Whales, Narwhal, Bowhead, Birds
8_105	QIK_8_0310	SADP_1	Special Places	Lots of different types of birds there
8_106	QIK_8_0310	SADP_2	Special Places	Lots of different types of birds there

Figure 8: Areas Important for Other Reasons

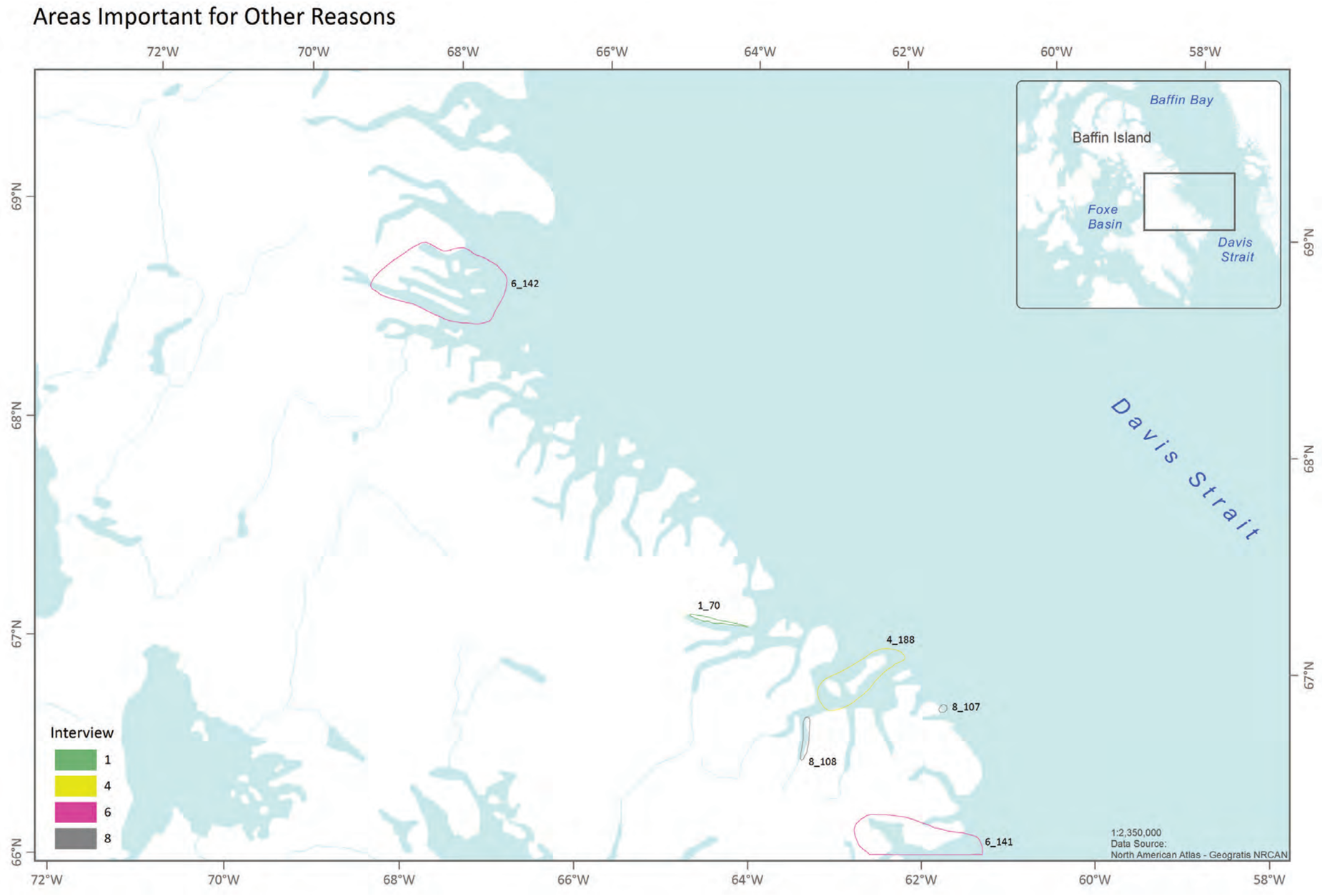


Table 5: Areas Important for Other Reasons

LABEL NUMBER	INTERVIEW CODE	MAP CODE	TYPE	COMMENTS
1_70	QIK_1_0310	SAOP_1	Special Places - Other Reason	Berry Picking grounds, Narwhal present in Sep-Oct
4_188	QIK_4_0310	SAOP_1	Special Places - Other Reason	
6_141	QIK_6_0310	SAOP_1	Special Places - Other Reason	Beautiful
6_142	QIK_6_0310	SAOP_2	Special Places - Other Reason	
8_107	QIK_8_0310	SAOP_1	Special Places - Other Reason	Lots of Plants in the summer, very nice and very green
8_108	QIK_8_0310	SAOP_2	Special Places - Other Reason	

Figure 9: Bearded Seal, Bowhead Whale, Beluga Whale, Harp Seal, Narwhal – Migration Routes

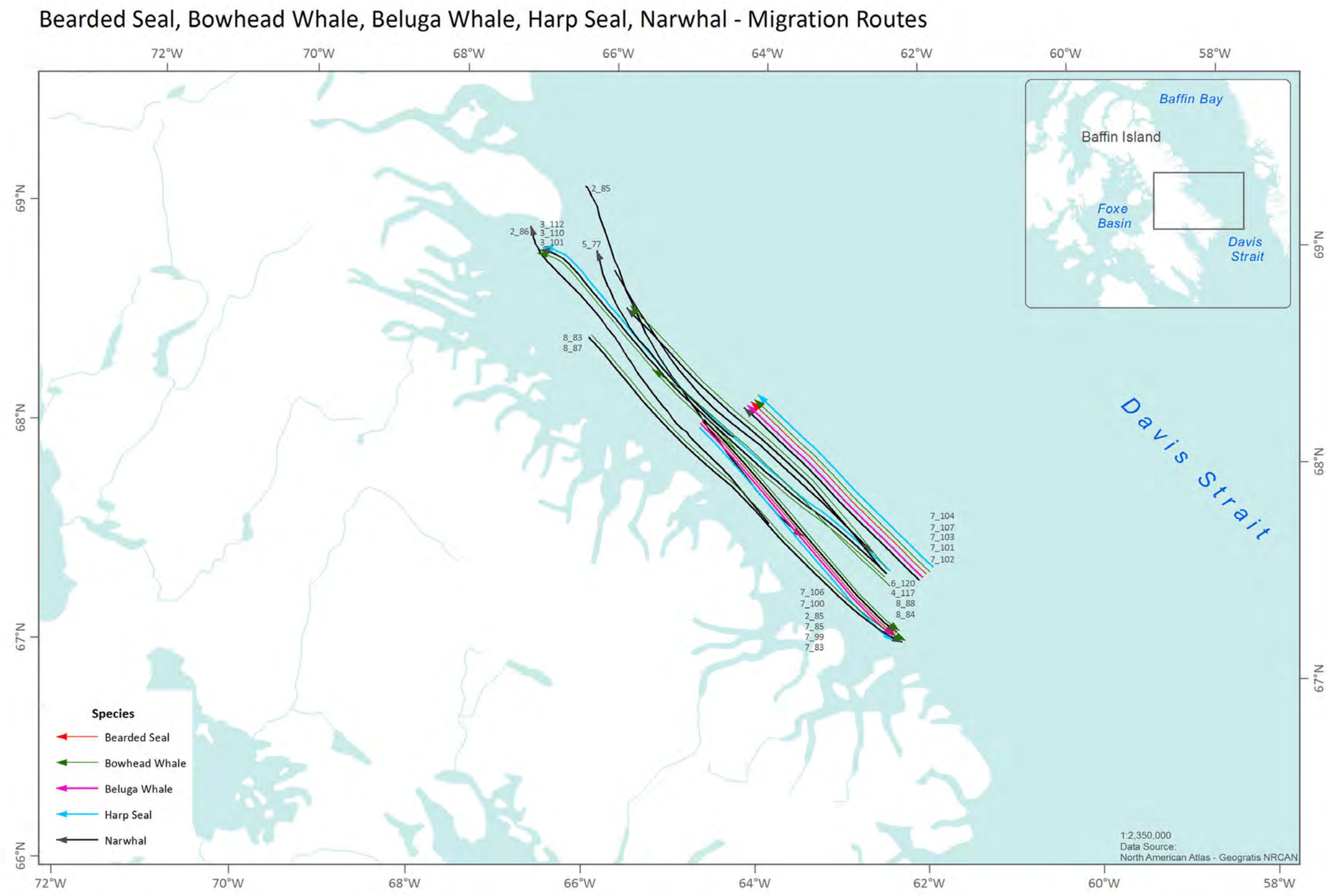


Table 6: Marine mammal migration routes

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTHS	COMMENTS
2_85M	QIK_2_0310	Narwhal	Jun, Jul	Migration route north
2_86M	QIK_2_0310	Narwhal	Aug, Sep	Migration south from high Arctic
3_110M	QIK_3_0310	Narwhal	Jul, Oct	Migrate North in July, South end of Sep-Oct
4_117M	QIK_4_0310	Narwhal	Apr, May, Sep, Oct	
5_77M	QIK_5_0310	Narwhal	Sep, Oct	
7_100M	QIK_7_0310	Narwhal	Mar, Sep, Oct	South Oct, North March
7_102M	QIK_7_0310	Narwhal	Sep, Oct	
8_83M	QIK_8_0310	Narwhal	Apr	Migrate North April
8_84M	QIK_8_0310	Narwhal	Oct	Migrate South October
3_112M	QIK_3_0310	Bowhead Whale	Sep	Migrate South
6_120M	QIK_6_0310	Bowhead Whale	Sep	When migrating south Orca eat most of their young. Breeding ground in the North.
7_106M	QIK_7_0310	Bowhead Whale	Jun	
7_107M	QIK_7_0310	Bowhead Whale	Oct	
8_87M	QIK_8_0310	Bowhead Whale	Jun, Jul	
8_88M	QIK_8_0310	Bowhead Whale	Oct, Nov	
7_99M	QIK_7_0310	Beluga	Jun, Sep	North June, South Oct. At floe edge in Spring hunt
7_101M	QIK_7_0310	Beluga	Sep, Oct	
3_101M	QIK_3_0310	Harp Seal	Jun	Migrate North
7_83M	QIK_7_0310	Harp Seal	May, Jun	Seems to be increasing in numbers. Spring at the floe edge. Migrate South Oct. North May-June
7_104M	QIK_7_0310	Harp Seal	Sep, Oct	
7_85M	QIK_7_0310	Bearded Seal	May, Jun	
7_103M	QIK_7_0310	Bearded Seal	Sep, Oct	

Figure 10: Bearded Seal - Areas of Occupation

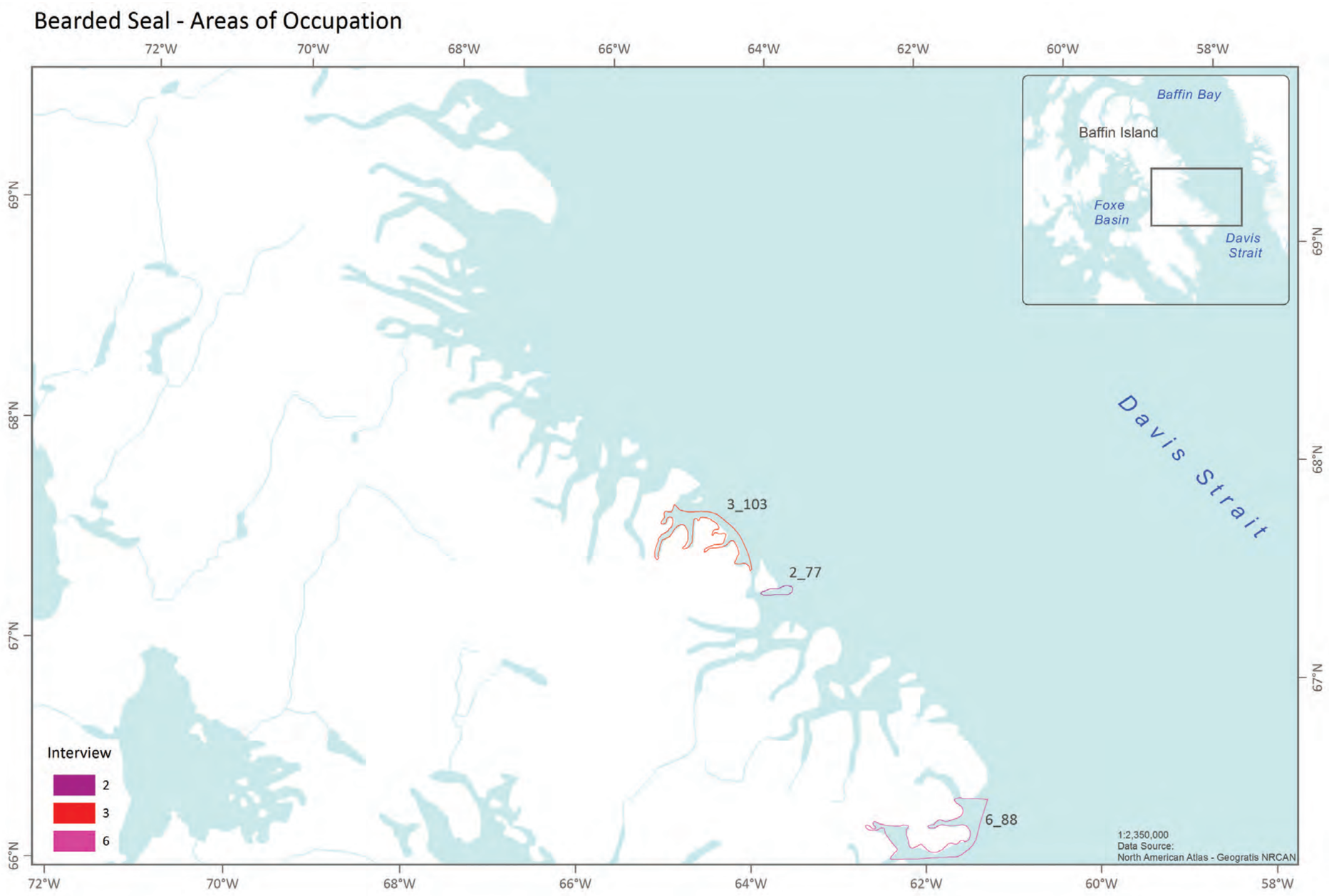


Table 7: Bearded Seal - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTHS	COMMENTS
2_77	QIK_2_0310	Bearded Seal	Aug-Nov	
3_103	QIK_3_0310	Bearded Seal	Sep-Oct	
6_88A	QIK_6_0310	Bearded Seal	Aug-Sep	

Table 8: Bearded Seal everywhere data

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTHS	COMMENTS
1_50E	QIK_1_0310	Bearded Seal	Jul-Aug	Seen frequently on broken ice, summer
4_106E	QIK_4_0310	Bearded Seal	Jan-Dec	In shallower water than harp seals and eat sculpins.
5_69E	QIK_5_0310	Bearded Seal	Jan-Dec	
6_87E	QIK_6_0310	Bearded Seal	Aug-Sep	Hunt in summer
8_74E	QIK_8_0310	Bearded Seal	Jan-Dec	
7_86E	QIK_7_0310	Bearded Seal	May-Sep	See everywhere spring-summer, breed somewhere else.

Figure 11: Beluga Whale - Areas of Occupation

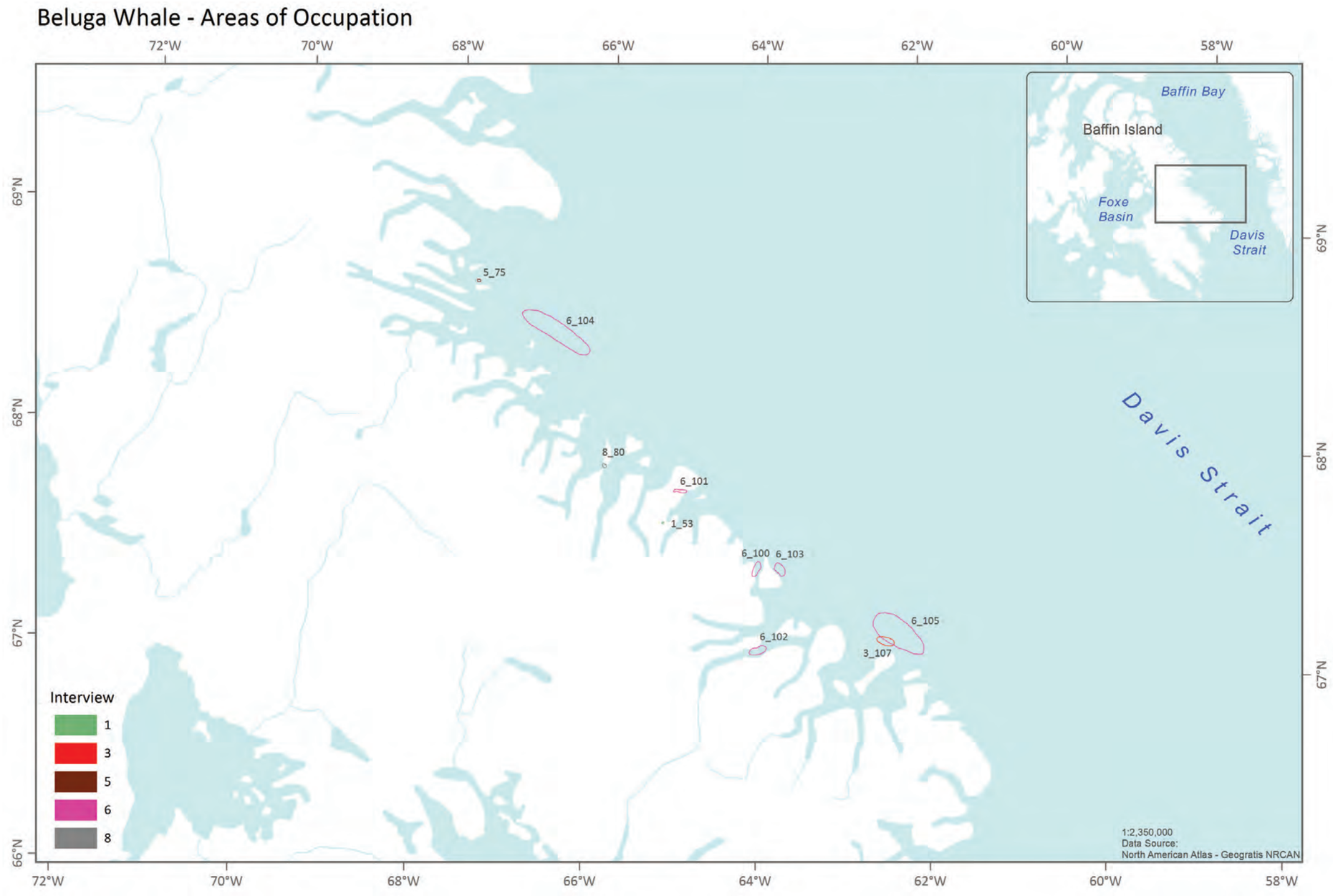


Table 9: Beluga areas of occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH	COMMENTS
1_53	QIK_1_0310	Beluga	Aug	Though Beluga was a Polar Bear because they are not common around here
3_107H	QIK_3_0310	Beluga	Jun	
5_75	QIK_5_0310	Beluga	Aug	Swimming with Narwhal
6_100	QIK_6_0310	Beluga	Jul-Aug	
6_101	QIK_6_0310	Beluga	Jul-Aug	
6_102	QIK_6_0310	Beluga	Jul-Aug	
6_103	QIK_6_0310	Beluga	Jul-Aug	In year 2000
6_104	QIK_6_0310	Beluga	May-Jun	At the floe edge during spring
6_105	QIK_6_0310	Beluga	May-Jun	At the floe edge during spring
8_80	QIK_8_0310	Beluga	Jul-Aug	Very Rare

Figure 12: Bowhead Whale - Areas of Occupation

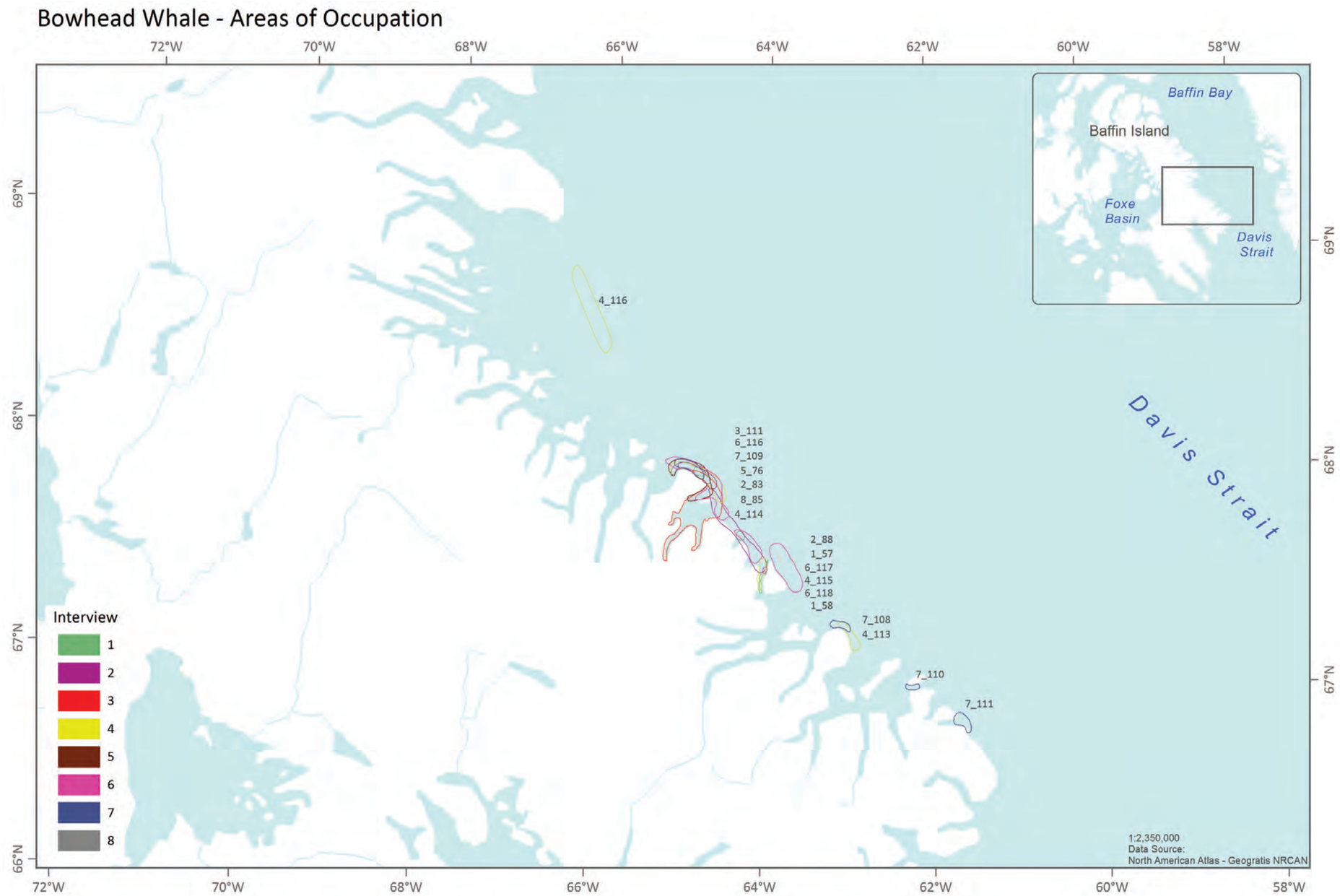


Table 10: Bowhead Whale - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
1_56	QIK_1_0310	Bowhead Whale	Aug	
1_57A	QIK_1_0310	Bowhead Whale	Aug	Whole area filled with them in 2009
1_58	QIK_1_0310	Bowhead Whale	Aug-Sep	
2_83A	QIK_2_0310	Bowhead Whale	Jul-Sep	
2_88	QIK_2_0310	Bowhead Whale	Jul-Sep	See in summer before ice forms
3_111A	QIK_3_0310	Bowhead Whale	Jul-Sep	There are so many it is dangerous to travel in the dark.
4_113A	QIK_4_0310	Bowhead Whale	Jul-Sep	
4_114A	QIK_4_0310	Bowhead Whale	Jul-Aug	Whole area filled with them in 2009
4_115	QIK_4_0310	Bowhead Whale	Jul-Aug	
4_116	QIK_4_0310	Bowhead Whale	May-Jun	
5_78	QIK_5_0310	Bowhead Whale	Jul-Oct	
6_116A	QIK_6_0310	Bowhead Whale	Jul-Aug	
6_117	QIK_6_0310	Bowhead Whale	Jul-Aug	See in summer before ice forms
6_118	QIK_6_0310	Bowhead Whale	Oct	
6_119	QIK_6_0310	Bowhead Whale	Jul-Aug	
7_108	QIK_7_0310	Bowhead Whale	Jul-Aug	
7_109A	QIK_7_0310	Bowhead Whale	Jul-Aug	
7_110A	QIK_7_0310	Bowhead Whale	Jul-Aug	
7_111A	QIK_7_0310	Bowhead Whale	Jul-Aug	
8_85A	QIK_8_0310	Bowhead Whale	Jul-Sept	

Figure 13: Common Minke Whale - Areas of Occupation

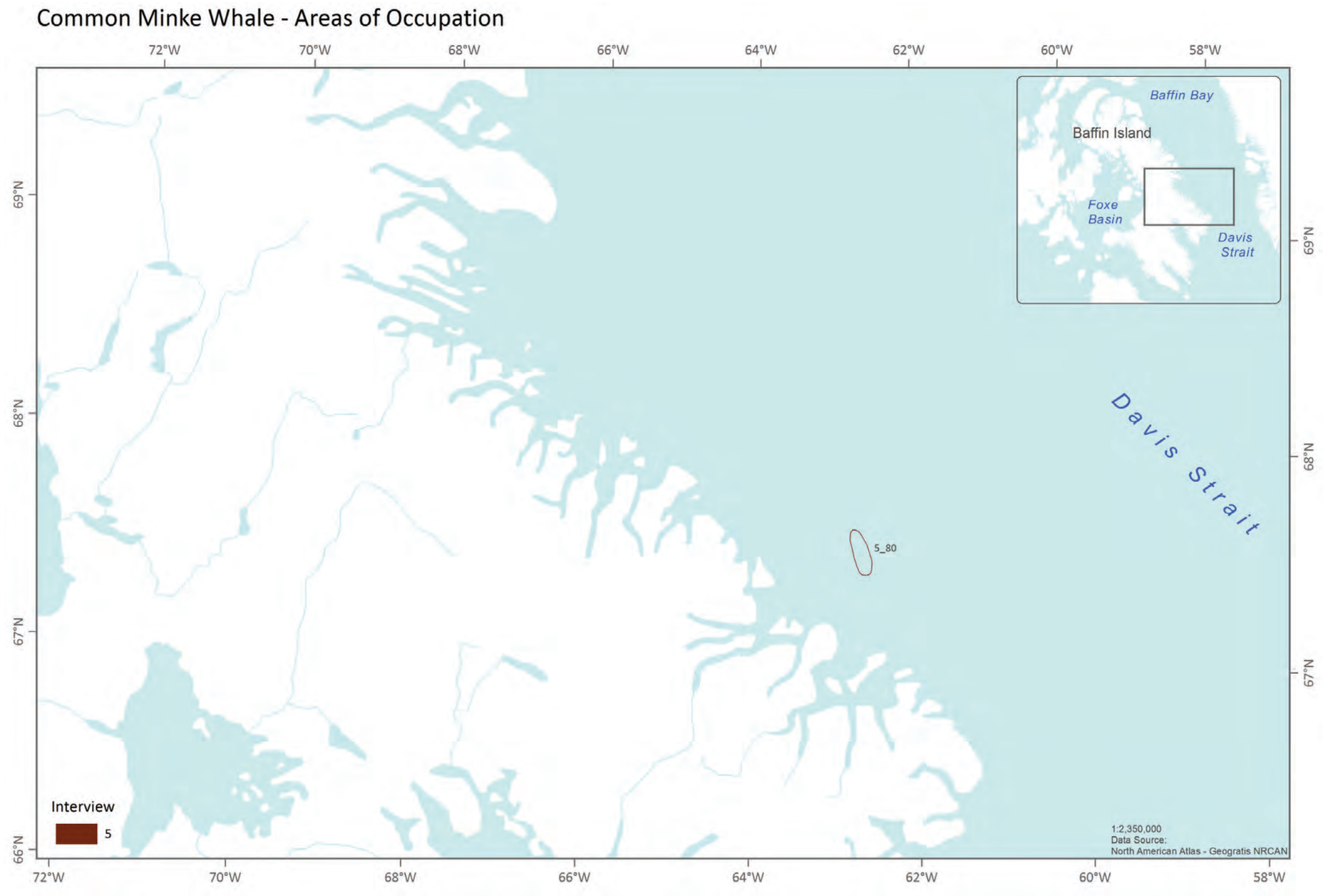


Table 11: Common Minke Whale - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	MAP CODE	SPECIES	MONTH/YEAR	COMMENT
5_80H	QIK_5_0310	MW_1	Common Minke Whale	Oct	Saw in exploratory fishery

Figure 14: Harbour Porpoise - Areas of Occupation

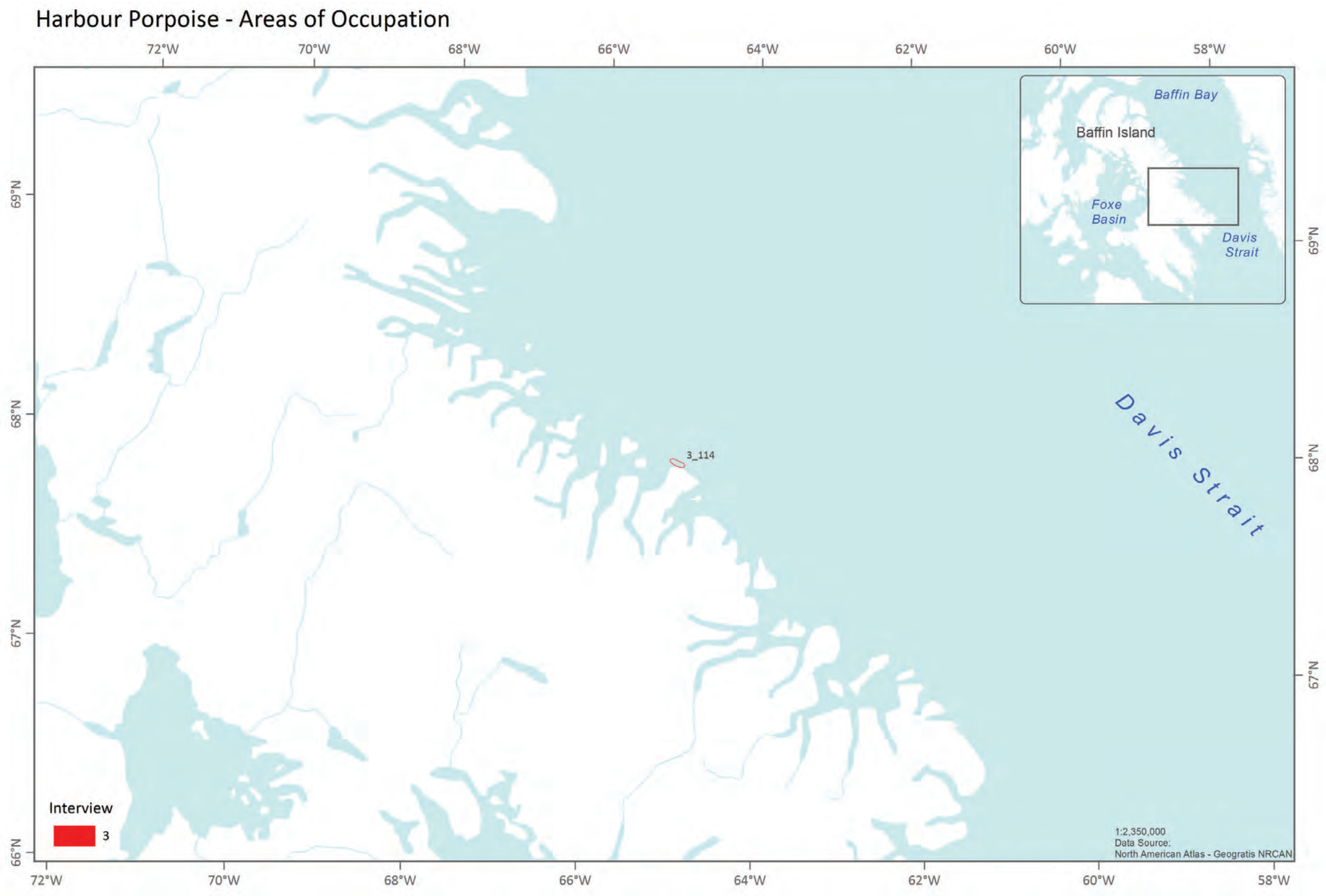


Table 12: Harbour Porpoise - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	MAP CODE	SPECIES	MONTH/YEAR	COMMENT
3_114	QIK_3_0310	HP_1	Harbour Porpoise	Aug	Saw one in August while Narwhal hunting

Figure 15: Harbour Seal - Areas of Occupation

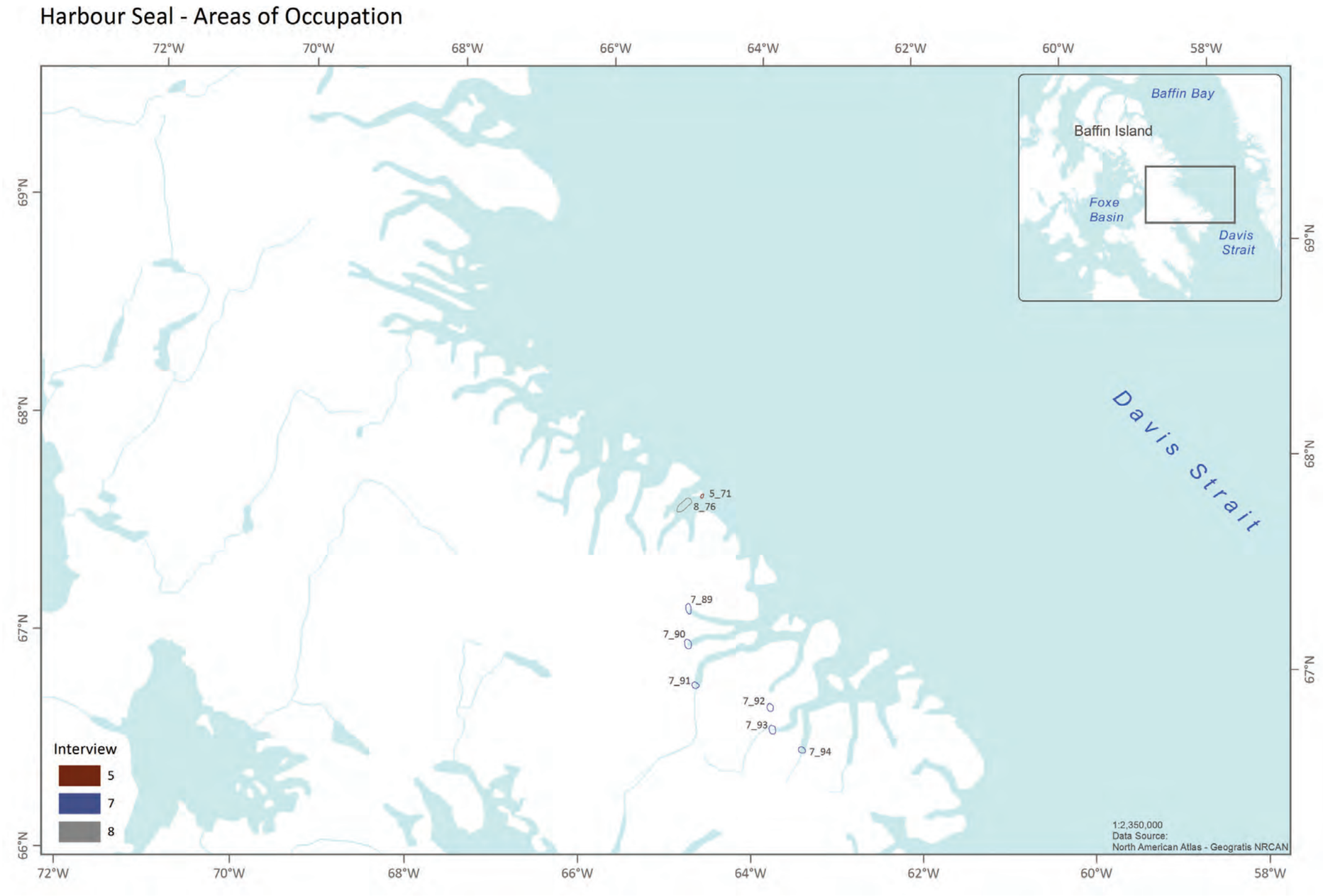


Table 13: Harbour Seal - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
5_71H	QIK_5_0310	Harbour Seal	Mar	Got one in a breathing hole in 1997
7_89	QIK_7_0310	Harbour Seal	Aug	Mouth of fiords near rivers
7_90	QIK_7_0310	Harbour Seal	Aug-Sep	
7_91	QIK_7_0310	Harbour Seal	Aug-Sep	
7_92	QIK_7_0310	Harbour Seal	Aug-Sep	
7_93	QIK_7_0310	Harbour Seal	Aug-Sep	
7_94	QIK_7_0310	Harbour Seal	Aug-Sep	
8_76	QIK_8_0310	Harbour Seal	Jul-Aug	Rarely see them

Figure 16: Harp Seal - Areas of Occupation

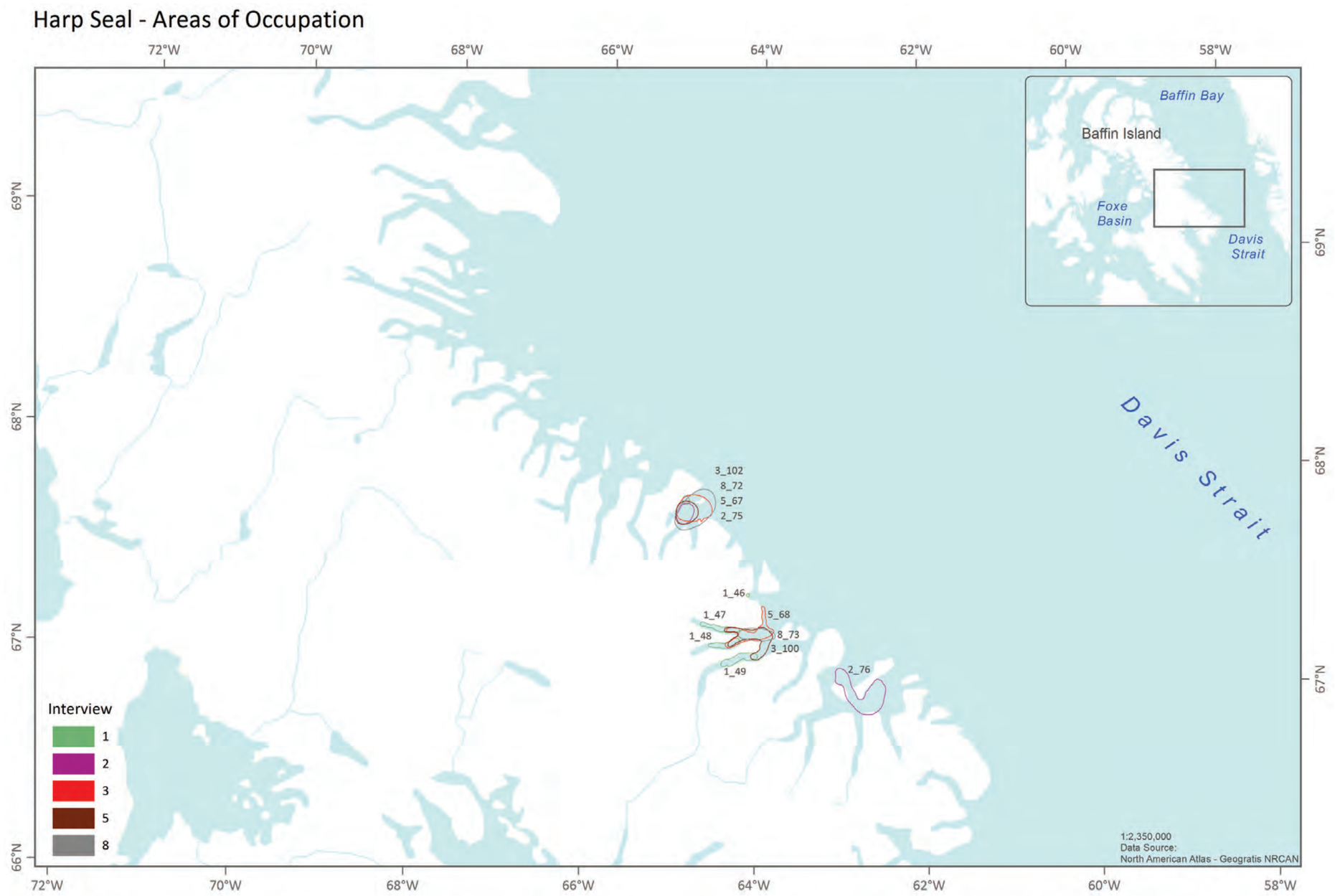


Table 14: Harp Seal - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
1_45A	QIK_1_0310	Harp Seal	Aug	1999 AUG Many
1_46	QIK_1_0310	Harp Seal	Sep	
1_47	QIK_1_0310	Harp Seal	Sep	In these areas to avoid Narwhals
1_48	QIK_1_0310	Harp Seal	Sep	In these areas to avoid Narwhals
1_49	QIK_1_0310	Harp Seal	Sep	In these areas to avoid Narwhals
2_75	QIK_2_0310	Harp Seal	Jul-Oct	Numbers in decline in this area
2_76A	QIK_2_0310	Harp Seal	Jul-Oct	
3_100A	QIK_3_0310	Harp Seal	Aug	
3_102A	QIK_3_0310	Harp Seal	Jul	
5_67HA	QIK_5_0310	Harp Seal	Aug	1999 AUG Many
5_68A	QIK_5_0310	Harp Seal	Jul-Oct	
8_72A	QIK_8_0310	Harp Seal	Aug	
8_73A	QIK_8_0310	Harp Seal	Jul-Oct	

Table 15: Harp Seal everywhere data

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
4_103E	QIK_4_0310	Harp Seal	Jun-Aug	Seen in the spring at the floe edge.
6_86E	QIK_6_0310	Harp Seal	Jun-Nov	At the flowedge in June leave in Oct when ice forms.
7_84E	QIK_7_0310	Harp Seal	Year-round	Summer in the fiords

Figure 17: Hooded Seal - Areas of Occupation

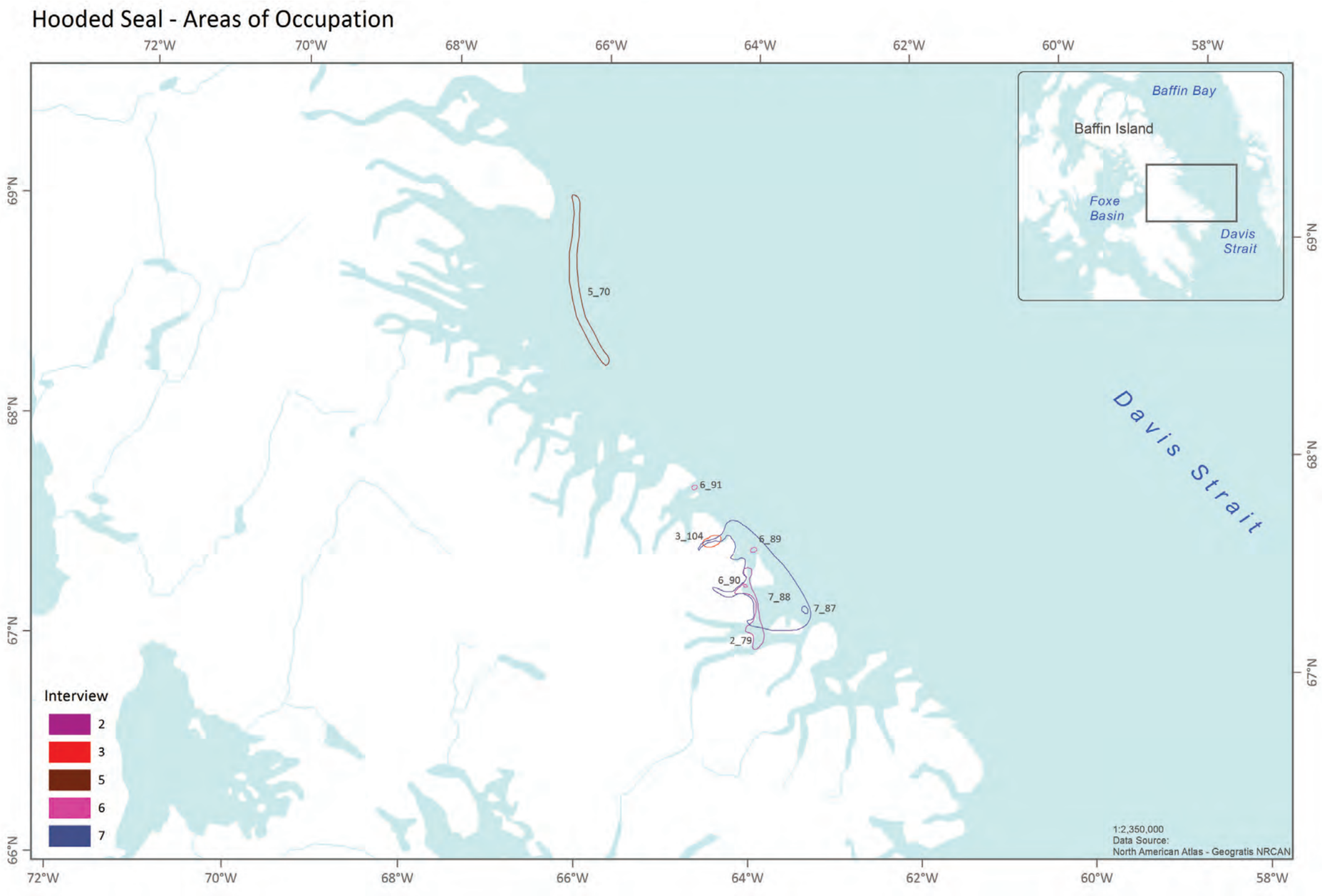


Table 16: Hooded Seal - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
2_79	QIK_2_0310	Hooded Seal	Jul-Oct	
3_104	QIK_3_0310	Hooded Seal	Sep	
5_70	QIK_5_0310	Hooded Seal	Mar-Apr	
6_89	QIK_6_0310	Hooded Seal	Oct	
6_90H	QIK_6_0310	Hooded Seal	Oct	Caught 2 in 2008
6_91H	QIK_6_0310	Hooded Seal	Oct	
7_87	QIK_7_0310	Hooded Seal	Sep	
7_88	QIK_7_0310	Hooded Seal	May-Sep	

Table 17: Hooded Seal - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
8_75E	QIK_8_0310	Hooded Seal	Year-round	

Figure 18: Killer Whale - Areas of Occupation

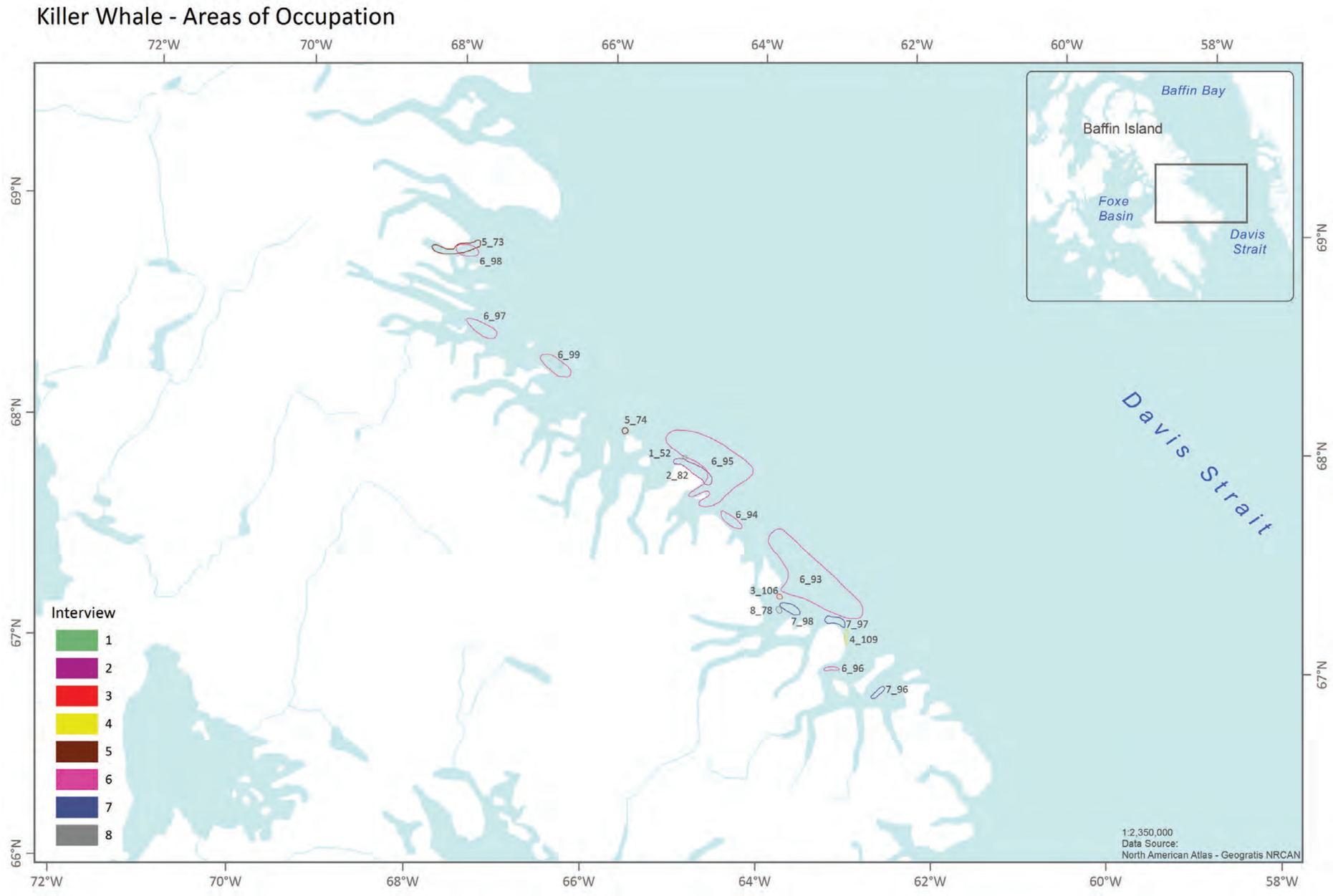


Table 18: Killer Whale - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
1_52	QIK_1_0310	Killer Whale	Aug	Saw 3 in August 2007
2_82	QIK_2_0310	Killer Whale	Jul-Sep	
3_106A	QIK_3_0310	Killer Whale	Oct	
4_109	QIK_4_0310	Killer Whale	Year-round	Feeding on bowhead whales and scaring the narwhal, or playing with them by flipping them back an forth like a ball.
5_73	QIK_5_0310	Killer Whale	Aug	
5_74	QIK_5_0310	Killer Whale	Aug	Witnessed killer whales killing a bowhead in 2005
6_93A	QIK_6_0310	Killer Whale	Jul-Aug	
6_94H	QIK_6_0310	Killer Whale	Jul-Aug	
6_95H	QIK_6_0310	Killer Whale	Jul-Aug	1995 - 5 in the area
6_96H	QIK_6_0310	Killer Whale	Jul-Aug	
6_97H	QIK_6_0310	Killer Whale	Jul-Aug	
6_98H	QIK_6_0310	Killer Whale	Jul-Aug	
6_99H	QIK_6_0310	Killer Whale	Jul-Aug	1996 - 2 in the area
7_96AH	QIK_7_0310	Killer Whale	Aug	Used to live in area
7_97A	QIK_7_0310	Killer Whale	Aug	Seals start to move close to land
7_98A	QIK_7_0310	Killer Whale	Sept	
8_78A	QIK_8_0310	Killer Whale	Sep-Oct	

Table 19: Killer Whale - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
8_79E	QIK_8_0310	Killer Whale	Jul-Aug	

Figure 19: Northern Bottlenose Whale - Areas of Occupation

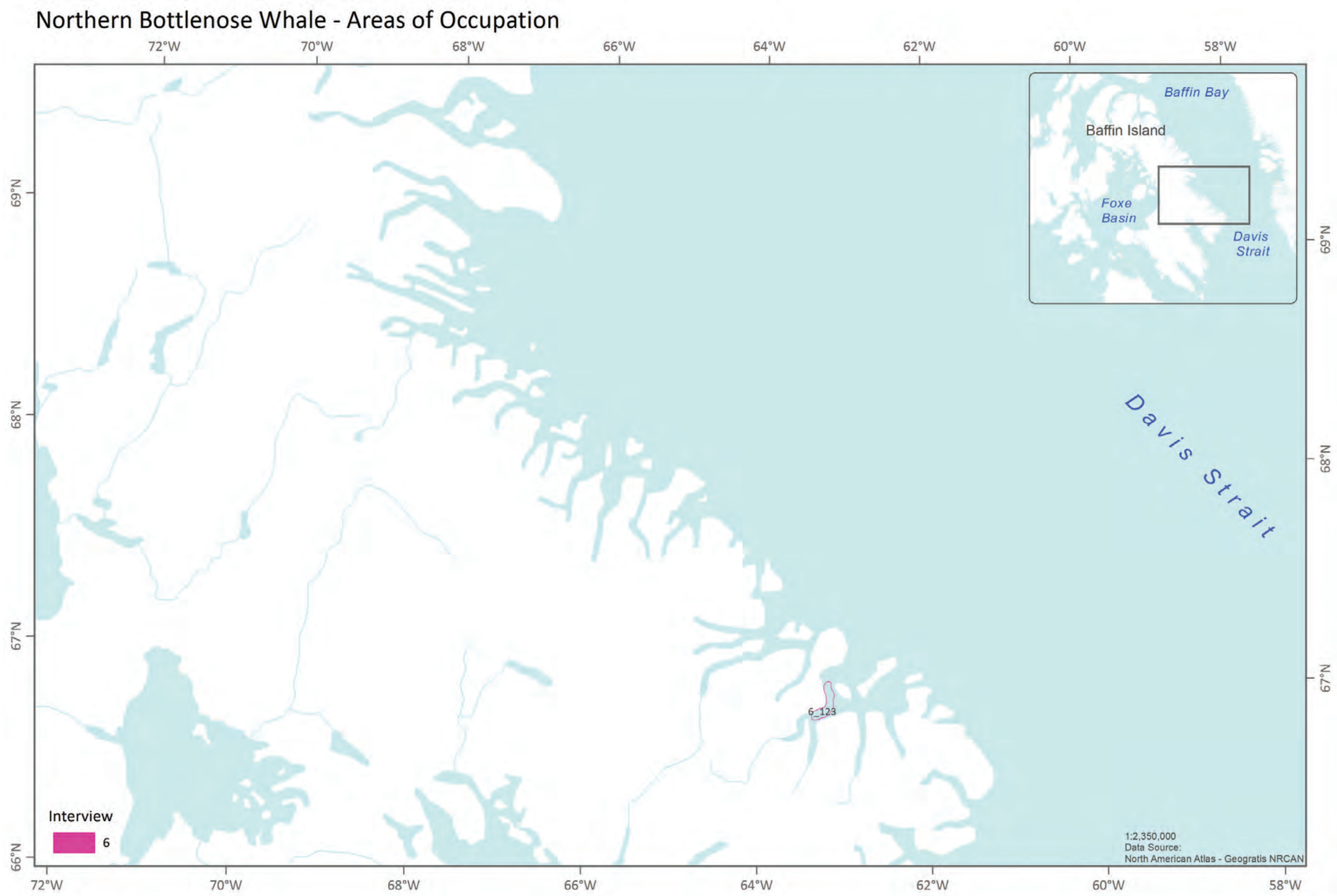


Table 20: Northern Bottlenose Whale - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	MAP CODE	SPECIES	MONTH/YEAR	COMMENT
6_123H	QIK_6_0310	NBW_1	Northern Bottlenose Whale	Aug-Sep	Spotted in the 1980's

Figure 20: North Atlantic Right Whale - Areas of Occupation

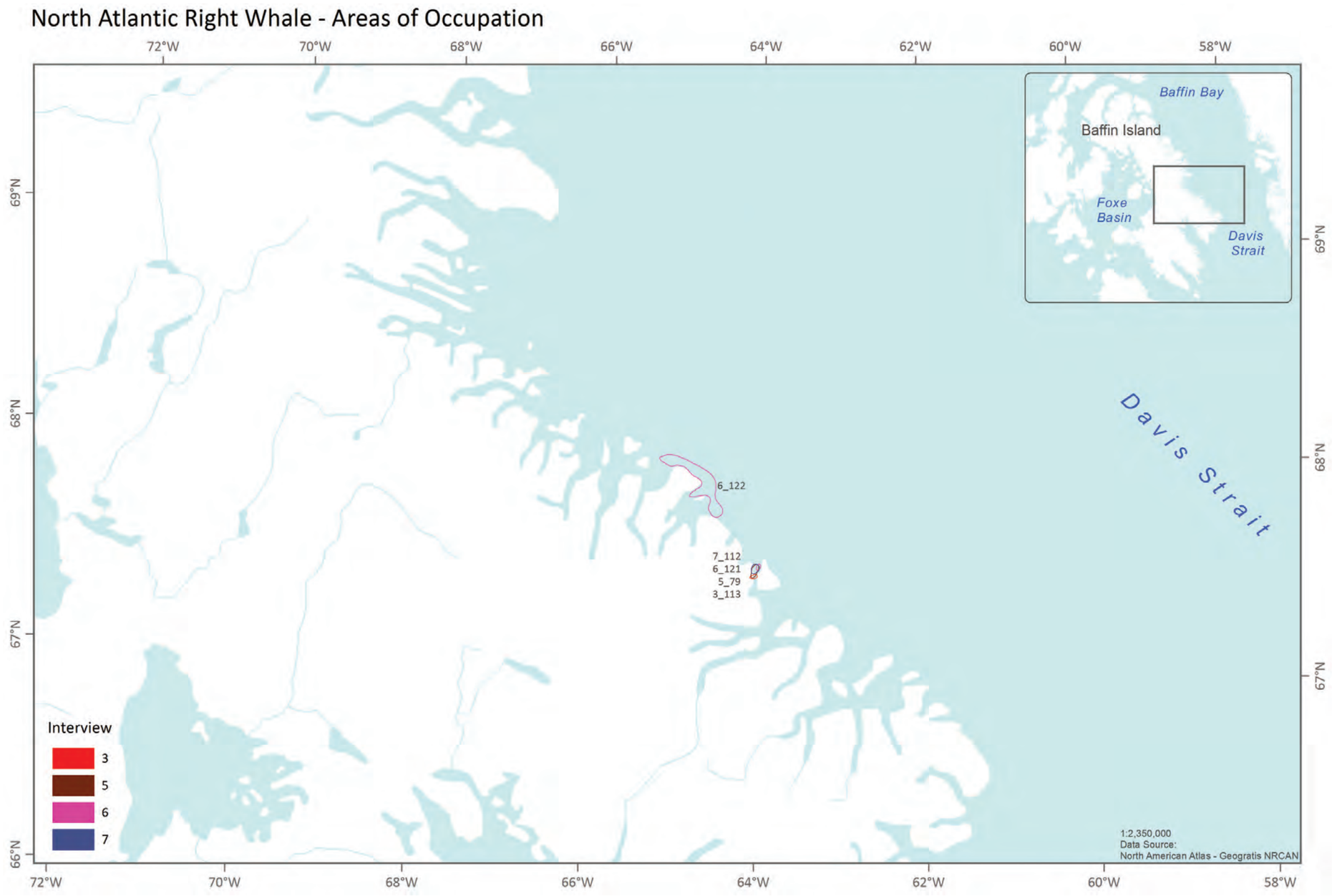


Table 21: North Atlantic Right Whale - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
3_113H	QIK_3_0310	North Atlantic Right Whale	Sep	
5_79H	QIK_5_0310	North Atlantic Right Whale	Jul-Aug	One whale lived in Qik all summer in the 1980's
6_121	QIK_6_0310	North Atlantic Right Whale	Jul-Aug	2 in the area
6_122	QIK_6_0310	North Atlantic Right Whale	Aug-Sep	Swimming with Bowheads
7_112	QIK_7_0310	North Atlantic Right Whale	Jul-Aug	

Table 22: North Atlantic Right Whale - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
8_89E	QIK_8_0310	North Atlantic Right Whale	Jul-Aug	

Figure 21: Narwhal - Areas of Occupation

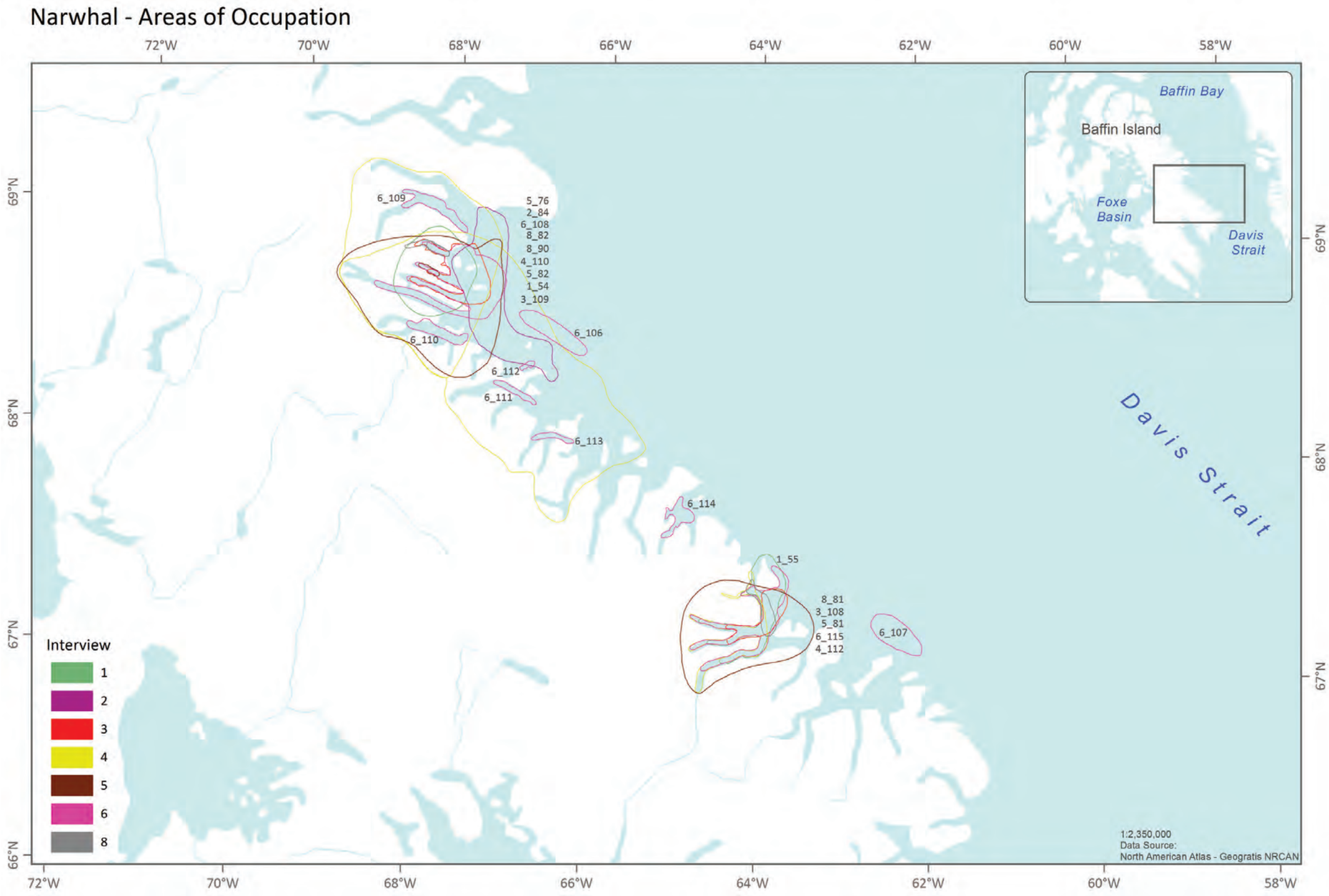


Table 23: Narwhal - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
1_54	QIK_1_0310	Narwhal	Jul-Aug	
1_55A	QIK_1_0310	Narwhal	Sept	
2_84AS	QIK_2_0310	Narwhal	Year-round	
3_108A	QIK_3_0310	Narwhal	Sep-Oct	
3_109A	QIK_3_0310	Narwhal	Aug	
4_110A	QIK_4_0310	Narwhal	May-Jul	
4_111	QIK_4_0310	Narwhal	May-Jul	
4_112A	QIK_4_0310	Narwhal	Jul-Oct	
5_76A	QIK_5_0310	Narwhal	Jul-Aug	Narwhal coming from the high arctic, move into the fiords migrate south later.
5_81A	QIK_5_0310	Narwhal	Sep-Oct	
5_82A	QIK_5_0310	Narwhal	Jul-Aug	
6_106A	QIK_6_0310	Narwhal	May-Jun	
6_107	QIK_6_0310	Narwhal	May-Jun	
6_108A	QIK_6_0310	Narwhal	Jul-Aug	
6_109	QIK_6_0310	Narwhal	Jul-Aug	
6_110	QIK_6_0310	Narwhal	Aug-Sep	
6_111	QIK_6_0310	Narwhal	Aug-Sep	
6_112	QIK_6_0310	Narwhal	Aug-Sep	
6_113	QIK_6_0310	Narwhal	Aug-Sep	
6_114	QIK_6_0310	Narwhal	Aug-Sep	
6_115A	QIK_6_0310	Narwhal	Oct	
8_81A	QIK_8_0310	Narwhal	Sep-Oct	
8_82A	QIK_8_0310	Narwhal	Jul-Aug	
8_90AS	QIK_8_0310	Narwhal	Aug	

Figure 22: Polar Bear - Areas of Occupation

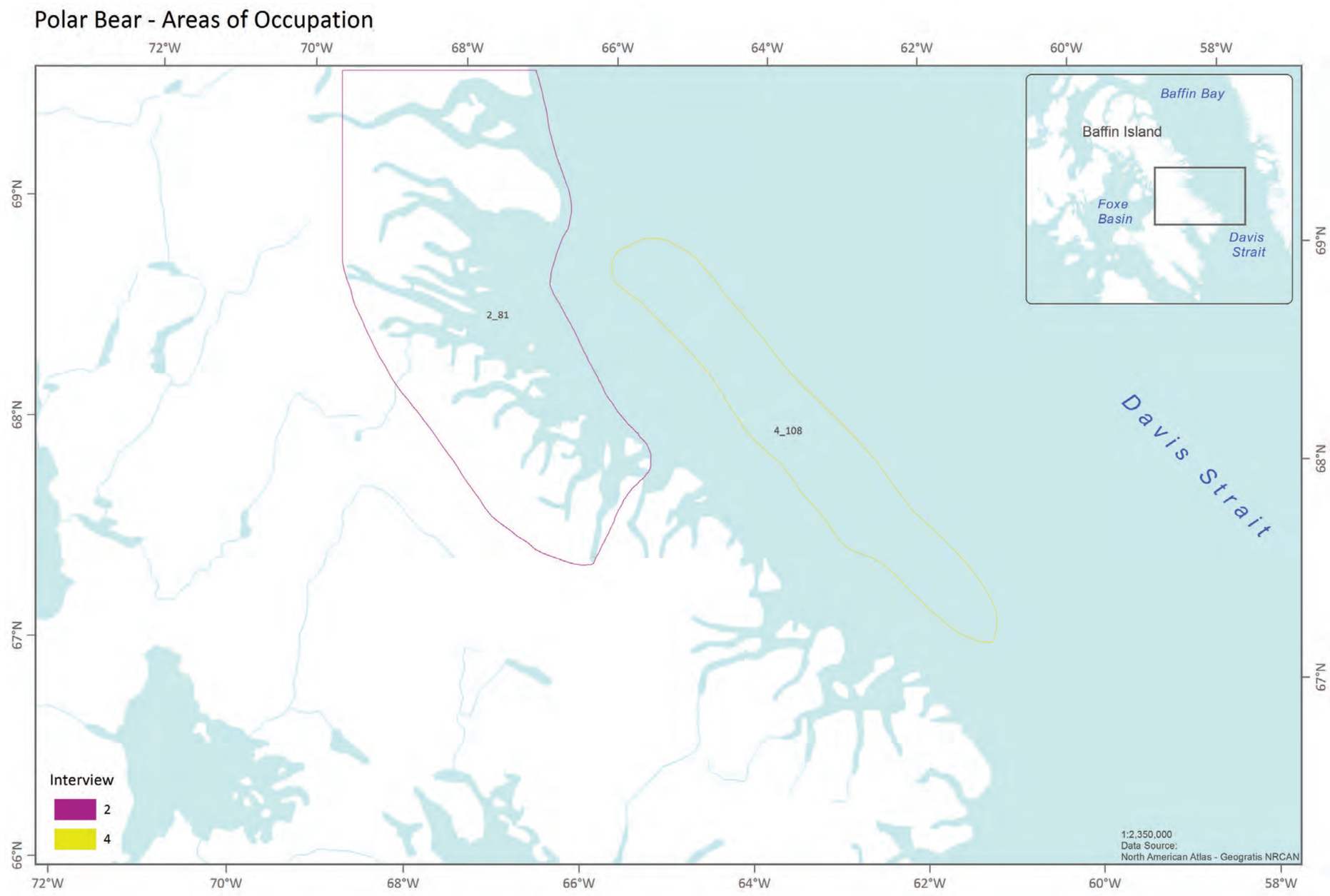


Table 24: Polar Bear - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
2_81A	QIK_2_0310	Polar Bear	Mar	Migrate from denning sites in the mountains
4_108A	QIK_4_0310	Polar Bear	Jul-Sep	On large icebergs along the coast, not too close to land. On smaller icebergs close to shore. You can see blood on bergs from where they have eaten.

Table 25: Polar Bear - Polar Bear everywhere data

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
1_51E	QIK_1_0310	Polar Bear	Year-round	
2_80E	QIK_2_0310	Polar Bear	Year-round	
3_105E	QIK_3_0310	Polar Bear	Year-round	Denning in fiords
4_107E	QIK_4_0310	Polar Bear	Year-round	
5_72E	QIK_5_0310	Polar Bear	Year-round	
6_92E	QIK_6_0310	Polar Bear	Year-round	All year. Jul-Aug fiords are filled with them. Mar-Apr female with young travel South.
7_95E	QIK_7_0310	Polar Bear	Year-round	Anywhere, Anytime. Unitl 1970's never saw them here
8_77E	QIK_8_0310	Polar Bear	Year-round	

Figure 23: Ringed Seal - Areas of Occupation

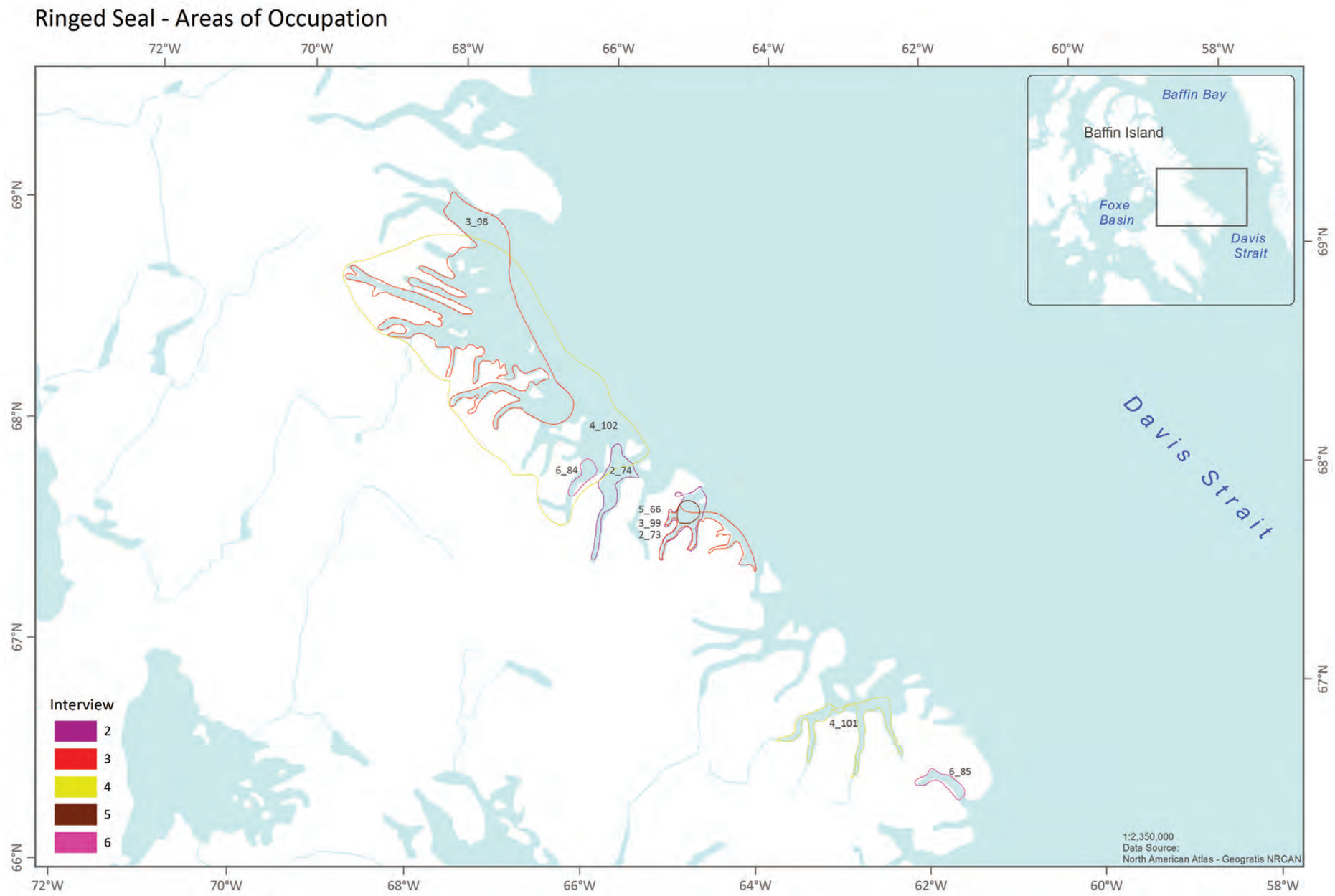


Table 26: Ringed Seal - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
2_73A	QIK_2_0310	Ringed Seal	Year-round	
2_74A	QIK_2_0310	Ringed Seal	May-Jul	During ice break up
3_98AS	QIK_3_0310	Ringed Seal	Mar-May	Breeding Mar-May
3_99	QIK_3_0310	Ringed Seal	Jan-Mar	Winter hunting area
4_101A	QIK_4_0310	Ringed Seal	Jul	They are so abundant that you do not need rifle.
4_102A	QIK_4_0310	Ringed Seal	Year-round	
5_66A	QIK_5_0310	Ringed Seal	Jun-Jul	There used to be many more
6_84A	QIK_6_0310	Ringed Seal	Aug-Sep	
6_85A	QIK_6_0310	Ringed Seal	Aug-Sep	During ice break up

Table 27: Ringed Seal - Ringed Seal everywhere data

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
1_44E	QIK_1_0310	Ringed Seal	Year-round	
2_72E	QIK_2_0310	Ringed Seal	Year-round	
3_97E	QIK_3_0310	Ringed Seal	Year-round	
4_100E	QIK_4_0310	Ringed Seal	Year-round	
5_65E	QIK_5_0310	Ringed Seal	Jun-Jul	
6_83E	QIK_6_0310	Ringed Seal	Aug-Sep	
7_82E	QIK_7_0310	Ringed Seal	Year-round	Numbers vary, killed for money, jaws etc.
8_71E	QIK_8_0310	Ringed Seal	Year-round	

Figure 24: Walrus - Areas of Occupation

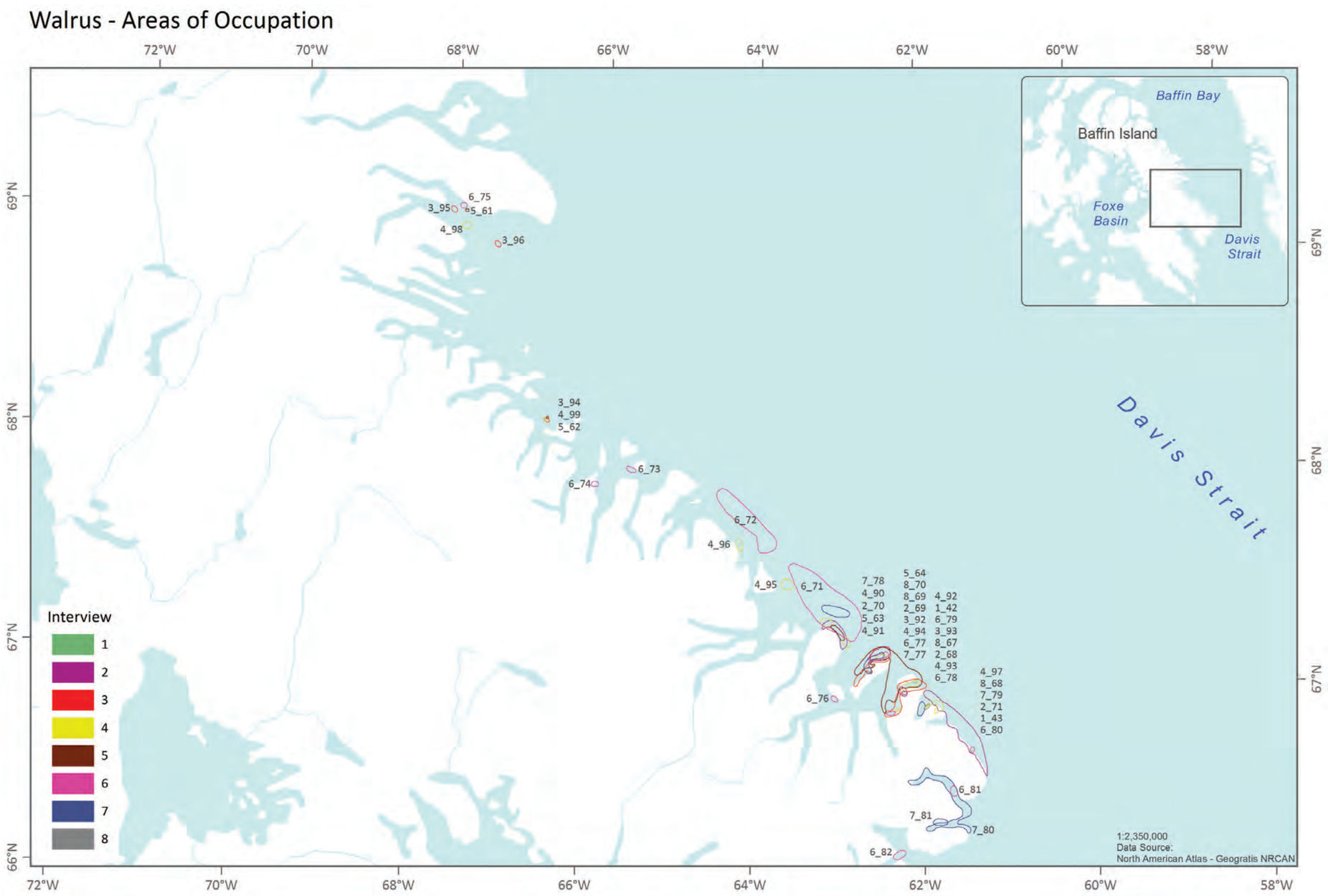


Table 28: Walrus - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENT
1_42	QIK_1_0310	Walrus	Aug	
1_43	QIK_1_0310	Walrus	Aug	
2_68A	QIK_2_0310	Walrus	Jul-Sep	
2_69	QIK_2_0310	Walrus	Jul-Sep	
2_70	QIK_2_0310	Walrus	Jul-Sep	
2_71A	QIK_2_0310	Walrus	Jul-Sep	
3_92A	QIK_3_0310	Walrus	Oct	
3_93A	QIK_3_0310	Walrus	Oct	
3_94A	QIK_3_0310	Walrus	Oct	
3_95A	QIK_3_0310	Walrus	Oct	
3_96A	QIK_3_0310	Walrus	Oct	
4_90	QIK_4_0310	Walrus	Jul-Aug	
4_91	QIK_4_0310	Walrus	Jul-Aug	
4_92A	QIK_4_0310	Walrus	Sep-Oct	
4_93A	QIK_4_0310	Walrus	Sep-Oct	
4_94A	QIK_4_0310	Walrus	Oct	
4_95	QIK_4_0310	Walrus	Jul	
4_96	QIK_4_0310	Walrus	Jul-Aug	
4_97A	QIK_4_0310	Walrus	Jul	
4_98A	QIK_4_0310	Walrus	Sep-Oct	
4_99	QIK_4_0310	Walrus	Sep-Oct	
5_61	QIK_5_0310	Walrus	Aug	Lots of Walrus outside Map area, southeast of Qikitarjuaq
5_62H	QIK_5_0310	Walrus	Sep-Oct	
5_63A	QIK_5_0310	Walrus	Jul	
5_64A	QIK_5_0310	Walrus	Oct	
6_71	QIK_6_0310	Walrus	Aug-Sep	
6_72	QIK_6_0310	Walrus	Aug-Sep	
6_73	QIK_6_0310	Walrus	Aug-Sep	Used to be abundant in the 70's and 80's
6_74	QIK_6_0310	Walrus	Aug-Sep	
6_75	QIK_6_0310	Walrus	Aug-Sep	Used to be abundant in the 70's and 80's
6_76	QIK_6_0310	Walrus	Aug-Sep	
6_77A	QIK_6_0310	Walrus	Aug-Sep	
6_78	QIK_6_0310	Walrus	Aug-Sep	
6_79A	QIK_6_0310	Walrus	Aug-Sep	
6_80	QIK_6_0310	Walrus	Aug-Sep	
6_81A	QIK_6_0310	Walrus	Aug-Sep	
6_82A	QIK_6_0310	Walrus	Aug-Sep	
7_77A	QIK_7_0310	Walrus	Jul-Sep	More abundant in the fall
7_78A	QIK_7_0310	Walrus	Jul-Sep	A lot more off the map
7_79A	QIK_7_0310	Walrus	Sep-Oct	
7_80A	QIK_7_0310	Walrus	Sep-Oct	
7_81SA	QIK_7_0310	Walrus	Sep-Oct	Breeding. Used to be around Qik, people scared them away
8_67A	QIK_8_0310	Walrus	Sep-Oct	
8_68A	QIK_8_0310	Walrus	Sep-Oct	abundant in fall
8_69A	QIK_8_0310	Walrus	Sep-Oct	
8_70A	QIK_8_0310	Walrus	Sep-Oct	

Figure 25: Walrus, Narwhal, Ringed Seal - Breeding Areas

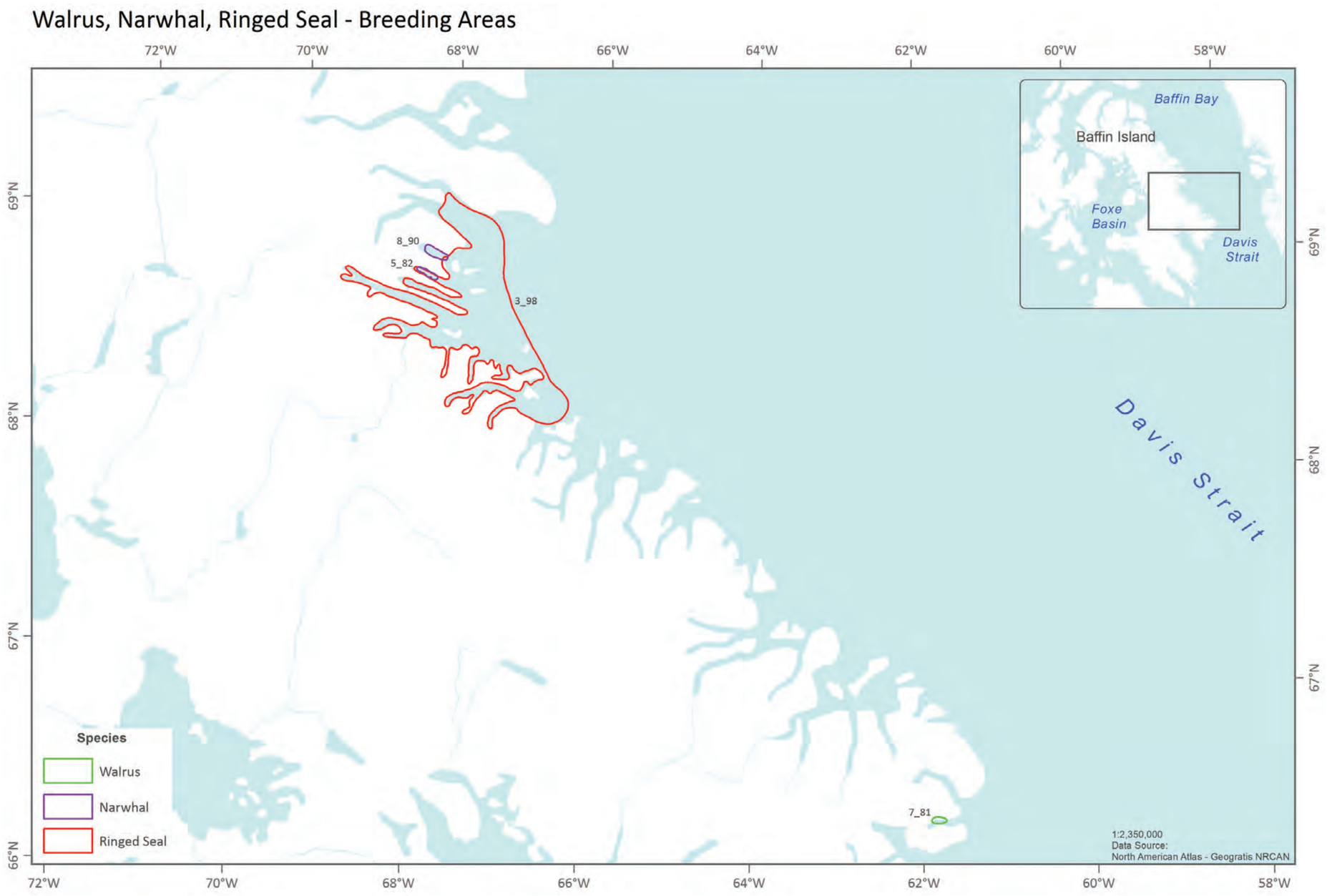


Table 29: Walrus, Narwhal, Ringed Seal - Breeding Areas

LABEL NUMBER	INTERVIEW CODE	MAP CODE	SPECIES	MONTH/YEAR	COMMENT
3_98	QIK_3_0310	RS_2_SPA	Ringed Seal	Mar-May	Breeding Mar-May
5_82	QIK_5_0310	NW_4_SP	Narwhal	Jul-Aug	
7_81	QIK_7_0310	Wal_5_SPA	Walrus	Sep-Aug	Breeding. Used to be around Qik, people scare them away
8_90	QIK_8_0310	NW_5_SPA	Narwhal	Aug	

Figure 26: Atlantic Cod, Arctic Char - Spawning Areas

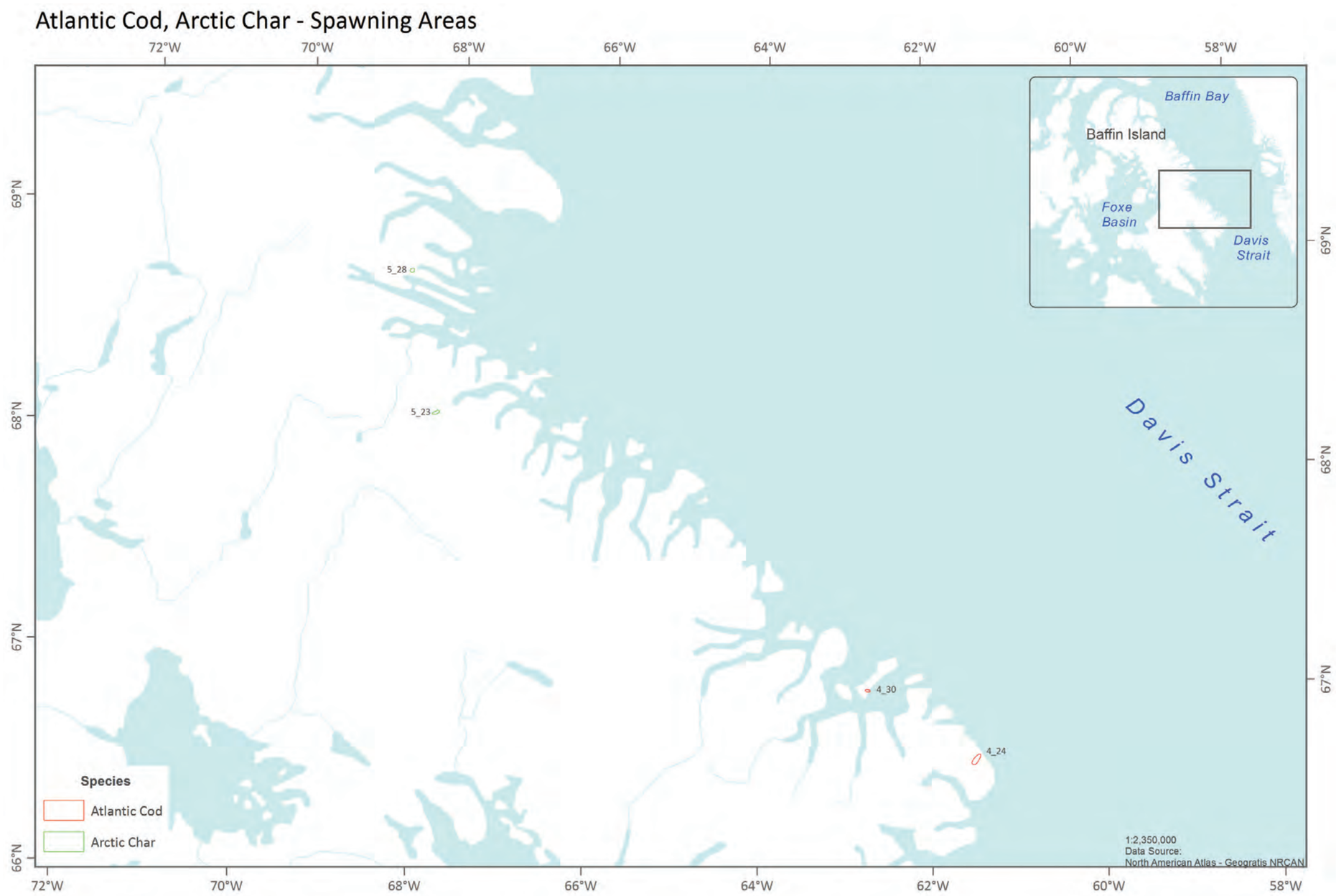


Table 30: Atlantic Cod, Arctic Char - Spawning Areas

LABEL NUMBER	INTERVIEW CODE	MAP CODE	SPECIES	MONTH/YEAR	COMMENTS
4_24	QIK_4_0310	Acod_1_SP	Atlantic Cod	Year-round	
4_30	QIK_4_0310	Acod_3_SP	Atlantic Cod	Year-round	
5_23	QIK_5_0310	Char_13_SP	Arctic Char	Dec	Commercial Lakes
5_28	QIK_5_0310	Char_18_SP	Arctic Char	Jul-Aug	Builds a fishing weir

Figure 27: Arctic Char - Areas of Occupation

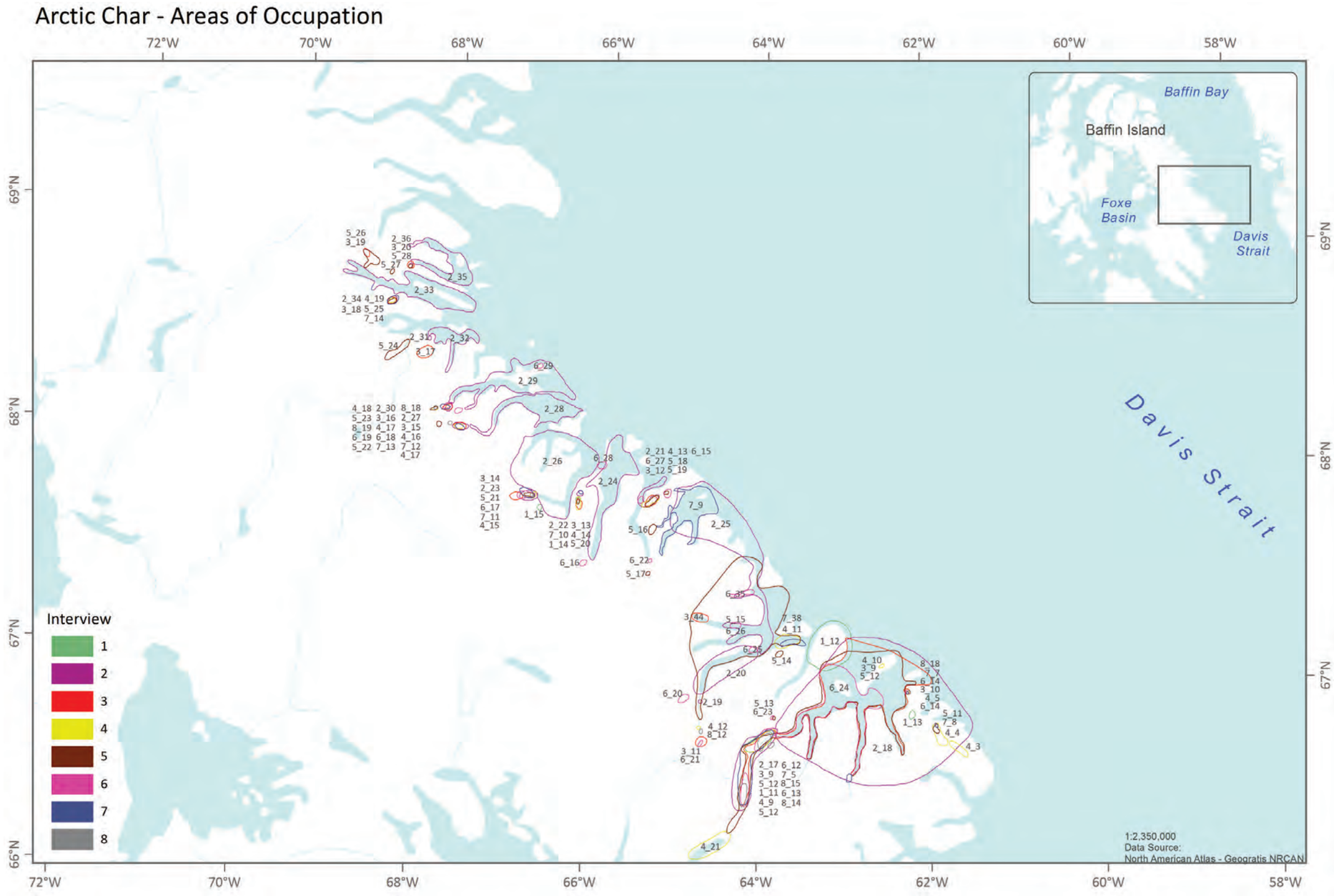


Table 31: Arctic Char - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENTS
1_11AS	QIK_1_0310	Arctic Char	Mar-May	
1_12A	QIK_1_0310	Arctic Char	Jul	
1_13	QIK_1_0310	Arctic Char	May	
1_14	QIK_1_0310	Arctic Char	Apr-May	
1_15	QIK_1_0310	Arctic Char	Mar-May	
2_17A	QIK_2_0310	Arctic Char	Year-round	
2_18	QIK_2_0310	Arctic Char	Jul	Along the coast, downriver July, upriver August
2_19	QIK_2_0310	Arctic Char	Jul	Smaller, Whiter, taste good
2_20	QIK_2_0310	Arctic Char	Jul	Smaller, Whiter, taste good. Along coast same time every year
2_21	QIK_2_0310	Arctic Char	Year-round	Can tell where they are from from how they look
2_22	QIK_2_0310	Arctic Char	Jan-May	
2_23	QIK_2_0310	Arctic Char	Year-round	Best Tasting
2_24	QIK_2_0310	Arctic Char	Jul-Sep	Along coast in summer, come from lake in Char_6
2_25	QIK_2_0310	Arctic Char	Jul-Sep	Recently there, very big, giant species, never seen before. Also seen in Clyde River
2_26	QIK_2_0310	Arctic Char	Jul-Sep	Come from Char_7
2_27A	QIK_2_0310	Arctic Char	Year-round	
2_28	QIK_2_0310	Arctic Char	Jul-Sep	Best tasting
2_29	QIK_2_0310	Arctic Char	Jul-Sep	Best tasting
2_30	QIK_2_0310	Arctic Char	Oct-Jun	
2_31	QIK_2_0310	Arctic Char	Sep-Jul	
2_32	QIK_2_0310	Arctic Char	Jul-Sep	
2_33	QIK_2_0310	Arctic Char	Jul-Sep	
2_34	QIK_2_0310	Arctic Char	Oct-Jun	
2_35	QIK_2_0310	Arctic Char	Jul-Sep	
2_36	QIK_2_0310	Arctic Char	May-Jun	
3_9A	QIK_3_0310	Arctic Char	Year-round	Most abundant. You can fish anywhere. Go downriver in July.
3_10A	QIK_3_0310	Arctic Char	Jul	
3_11	QIK_3_0310	Arctic Char	May	
3_12	QIK_3_0310	Arctic Char	Year-round	
3_13	QIK_3_0310	Arctic Char	Year-round	
3_14A	QIK_3_0310	Arctic Char	Year-round	
3_15	QIK_3_0310	Arctic Char	Year-round	Best Tasting
3_16	QIK_3_0310	Arctic Char	Year-round	
3_17A	QIK_3_0310	Arctic Char	Year-round	Iqalualuit
3_18	QIK_3_0310	Arctic Char	Year-round	
3_19	QIK_3_0310	Arctic Char	Year-round	
3_20	QIK_3_0310	Arctic Char	Year-round	
3_44	QIK_3_0310	Arctic Char	Year-round	Large char
4_3	QIK_4_0310	Arctic Char	Aug-Sep	All Char spawn in lakes.
4_4H	QIK_4_0310	Arctic Char	Jul	Along the coast, downriver July, upriver August
4_5H	QIK_4_0310	Arctic Char	Aug-Sep	All char spawn in lakes
4_9A	QIK_4_0310	Arctic Char	Year-round	All Char spawn in lakes.
4_10	QIK_4_0310	Arctic Char	Year-round	Knows there is fish there but doesn't fish there himself.
4_11	QIK_4_0310	Arctic Char	Aug-Sep	all char spawn in lakes
4_12	QIK_4_0310	Arctic Char	Oct-Nov	all char spawn in lakes
4_13	QIK_4_0310	Arctic Char	May-Jun	all char spawn in lakes
4_14	QIK_4_0310	Arctic Char	May-Jun	all char spawn in lakes
4_15	QIK_4_0310	Arctic Char	Jan-Sep	all char spawn in lakes
4_16	QIK_4_0310	Arctic Char	Jan-Sep	all char spawn in lakes
4_17	QIK_4_0310	Arctic Char	Jan-Sep	all char spawn in lakes
4_18	QIK_4_0310	Arctic Char	Jan-Sep	all char spawn in lakes
4_19	QIK_4_0310	Arctic Char	Jan-Sep	all char spawn in lakes

Table continued on next page

Table 31: Arctic Char - Areas of Occupation (continued)

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENTS
4_21	QIK_4_0310	Arctic Char	Year-round	has many species including DV_1, very diverse
5_11	QIK_5_0310	Arctic Char	Year-round	Very old, traditional fishing location
5_12A	QIK_5_0310	Arctic Char	Nov-Mar, Jul-Aug	fish move into the fiords in the summer
5_13	QIK_5_0310	Arctic Char	Apr-Jun	
5_14	QIK_5_0310	Arctic Char	Apr-May	
5_15	QIK_5_0310	Arctic Char	Year-round	
5_16	QIK_5_0310	Arctic Char	Jul-Aug	
5_17H	QIK_5_0310	Arctic Char	Apr	
5_18	QIK_5_0310	Arctic Char	May	
5_19	QIK_5_0310	Arctic Char	Jul-Sep	
5_20	QIK_5_0310	Arctic Char	Year-round	
5_21	QIK_5_0310	Arctic Char	December	
5_22A	QIK_5_0310	Arctic Char	Nov-Mar	Commercial Lakes
5_23S	QIK_5_0310	Arctic Char	Dec	Commercial Lakes
5_24A	QIK_5_0310	Arctic Char	Jan-Mar	
5_25A	QIK_5_0310	Arctic Char	All Year	Best tasting Char
5_26	QIK_5_0310	Arctic Char	Jul-Aug	
5_27	QIK_5_0310	Arctic Char	Jul-Aug	fish do not taste as good as Char 15 and 16
5_28S	QIK_5_0310	Arctic Char	Jul-Aug	Builds a fishing weir
6_12A	QIK_6_0310	Arctic Char	Dec-Mar	
6_13A	QIK_6_0310	Arctic Char	Dec-Mar	
6_14	QIK_6_0310	Arctic Char	Dec-Mar	
6_15	QIK_6_0310	Arctic Char	Dec-Mar	
6_16	QIK_6_0310	Arctic Char	Dec-Mar	
6_17	QIK_6_0310	Arctic Char	Dec-Mar	
6_18	QIK_6_0310	Arctic Char	Dec-Mar	
6_19	QIK_6_0310	Arctic Char	Dec-Mar	
6_20	QIK_6_0310	Arctic Char	Dec-Mar	
6_21	QIK_6_0310	Arctic Char	Dec-Mar	
6_22	QIK_6_0310	Arctic Char	Dec-Mar	
6_23	QIK_6_0310	Arctic Char	Dec-Mar	
6_24	QIK_6_0310	Arctic Char	Jul-Aug	
6_25	QIK_6_0310	Arctic Char	Jul-Aug	
6_26	QIK_6_0310	Arctic Char	Jul-Aug	
6_27	QIK_6_0310	Arctic Char	Jul-Aug	
6_28	QIK_6_0310	Arctic Char	Jul-Aug	
6_29	QIK_6_0310	Arctic Char	Sep	
6_35	QIK_6_0310	Arctic Char	May-Sep	
7_5A	QIK_7_0310	Arctic Char	Sep-May	
7_6A	QIK_7_0310	Arctic Char	Sep-May	smaller in size
7_7A	QIK_7_0310	Arctic Char	Sep-May	
7_8A	QIK_7_0310	Arctic Char	Sep-May	
7_9A	QIK_7_0310	Arctic Char	Jun-Aug	in fiords during summer
7_10A	QIK_7_0310	Arctic Char	Sep-May	lake to small to see on map
7_11A	QIK_7_0310	Arctic Char	Sep-May	
7_12A	QIK_7_0310	Arctic Char	Sep-May	
7_13A	QIK_7_0310	Arctic Char	Sep-May	
7_14A	QIK_7_0310	Arctic Char	Sep-May	
7_38	QIK_7_0310	Arctic Char	All Year	
8_12	QIK_8_0310	Arctic Char	Dec-Mar	
8_13	QIK_8_0310	Arctic Char	Dec-Mar	
8_14	QIK_8_0310	Arctic Char	Dec-Mar	
8_15A	QIK_8_0310	Arctic Char	Dec-Mar	
8_16	QIK_8_0310	Arctic Char	Dec-Mar	
8_17	QIK_8_0310	Arctic Char	Dec-Mar	
8_18	QIK_8_0310	Arctic Char	Dec-Mar	
8_19	QIK_8_0310	Arctic Char	Dec-Mar	

Figure 28: Arctic Cod, Arctic Flounder, Arctic Skate, Atlantic Cod, Atlantic Herring, Atlantic Spiny Lumpsucker, Atlantic Wolffish, Capelin - Areas of Occupation

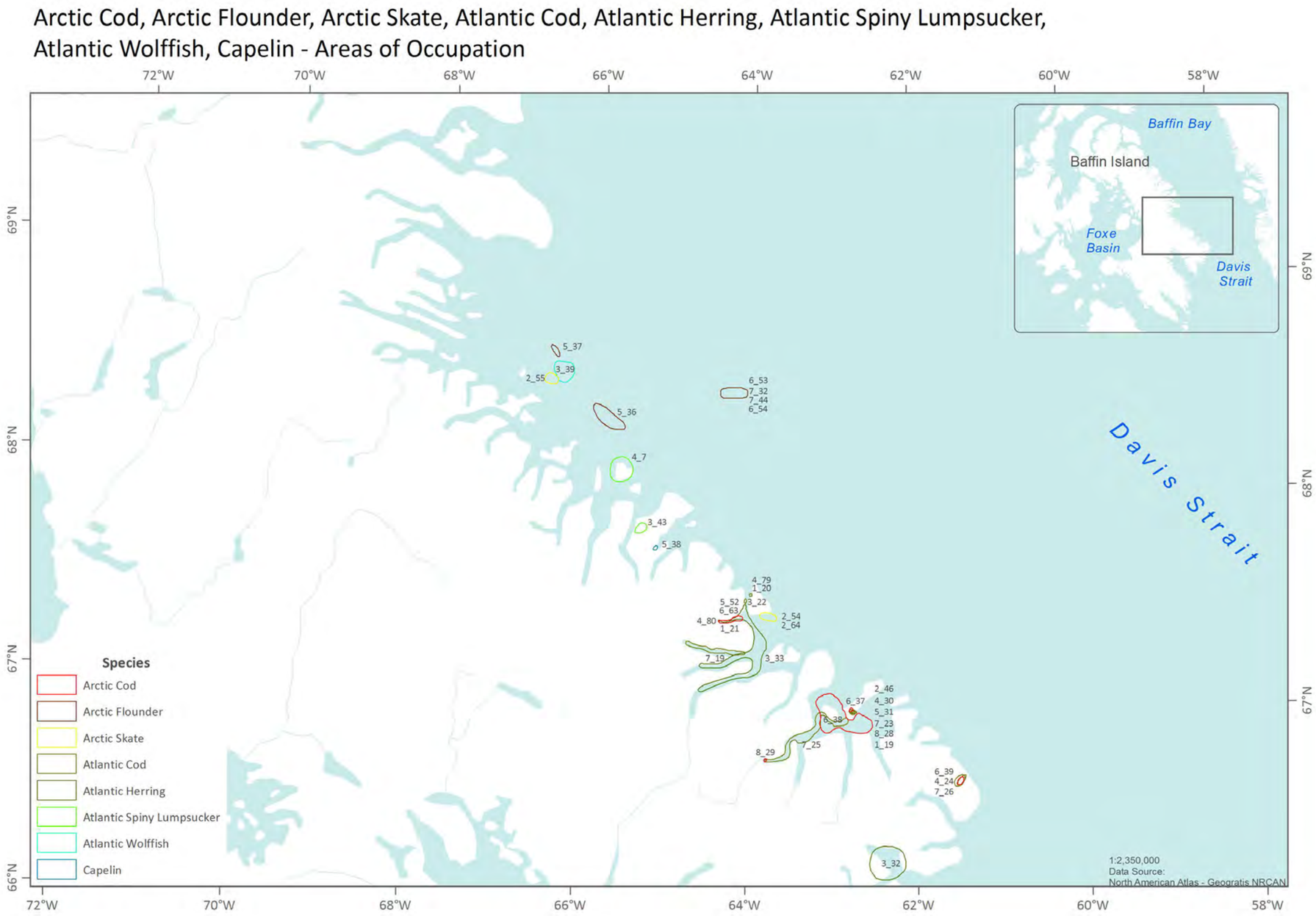


Table 32: Arctic Cod, Arctic Flounder, Arctic skate, Atlantic Cod, Atlantic Herring, Atlantic Spiny Lumpsucker, Atlantic Wolf fish, Capelin areas of occupation

MAP CODE	INTERVIEW CODE	SPECIES	MONTH	COMMENTS
1_19H	QIK_1_0310	Atlantic Cod	Mar	
1_20	QIK_1_0310	Atlantic Cod	Year-round	
1_21	QIK_1_0310	Atlantic Cod	Dec	
2_46A	QIK_2_0310	Atlantic Cod	Year-round	Migrate to ocean in summer
2_54	QIK_2_0310	Arctic Skate	Jan-Apr	
2_55	QIK_2_0310	Arctic Skate	Jan-Apr	
3_22	QIK_3_0310	Atlantic Cod	Jul	
3_32	QIK_3_0310	Atlantic Herring	Aug-Sep	When there is open water. You can see black patches when flying overhead.
3_33	QIK_3_0310	Atlantic Herring	Aug-Sep	When there is open water
3_39H	QIK_3_0310	Atlantic Wolf fish	Mar	Test Fishery 1997 - Kevin McCarmic
3_43H	QIK_3_0310	Atlantic Spiny Lumpsucker	Jun	Found in stomach of Arctic Char 1998
4_7A	QIK_4_0310	Atlantic Spiny Lumpsucker	Year-round	How they named the Island "Manitung Island".
4_24S	QIK_4_0310	Atlantic Cod	Year-round	
4_30S	QIK_4_0310	Atlantic Cod	Year-round	
5_31A	QIK_5_0310	Atlantic Cod	Jan-Jun	
5_36H	QIK_5_0310	Arctic Flounder	Dec-Mar	Exploratory winter fishery
5_37H	QIK_5_0310	Arctic Flounder	Dec-Mar	Exploratory winter fishery
5_38A	QIK_5_0310	Capelin	Jul-Aug	
6_42A	QIK_6_0310	Atlantic Herring	Jun-Jul	Not sure if Atlantic Herring or Pacific herring
6_53H	QIK_6_0310	Arctic Skate	Mar	
6_54H	QIK_6_0310	Arctic Skate	Mar	
7_23A	QIK_7_0310	Atlantic Cod	Jul-Sep	
7_25A	QIK_7_0310	Atlantic Cod	Jul-Sep	
7_26A	QIK_7_0310	Atlantic Cod	Jul-Sep	
7_32H	QIK_7_0310	Arctic Flounder	Mar	Exploratory Fishery
7_44H	QIK_7_0310	Arctic Skate	Mar	Exploratory Fishery
8_28A	QIK_8_0310	Atlantic Cod	Year-round	

Figure 29: Dolly Varden, Greenland Cod, Greenland Halibut, Greenlandic Shark, Lake Trout, Lake Whitefish, Land-locked Char, Leatherfin Lumpsucker, Lumpfish - Areas of Occupation

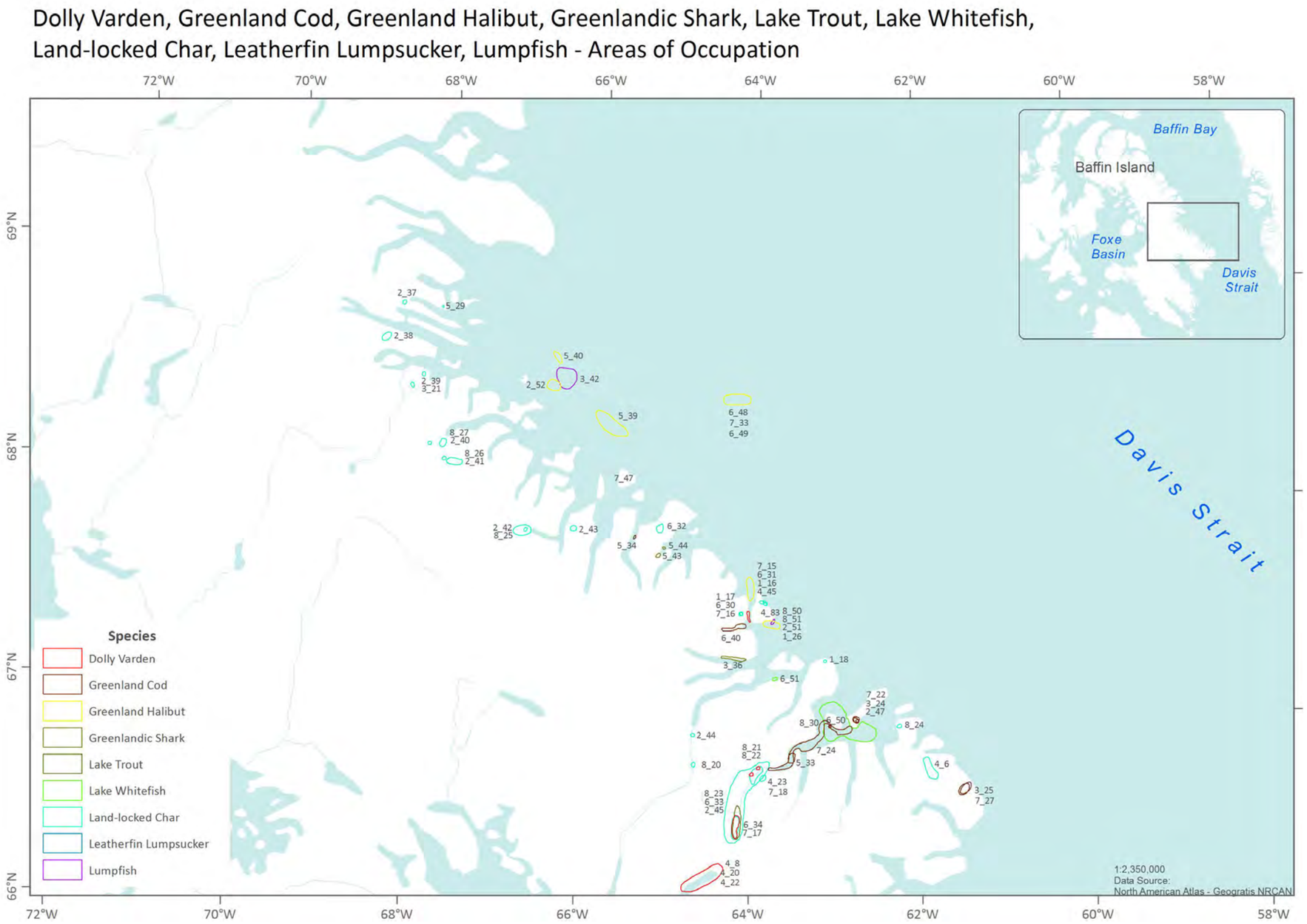


Table 33: Dolly Varden, Greenland Cod, Greenland Halibut, Greenlandic Shark, Lake Trout, Lake Whitefish, Land-locked Char, Leatherfin Lumpsucker, Lumpfish - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENTS
1_16	QIK_1_0310	Land-Locked Char	Dec	
1_17	QIK_1_0310	Land-Locked Char	Dec	Char usually small, but in 2009 someone caught a very large one
1_18	QIK_1_0310	Land-Locked Char	May	
1_26	QIK_1_0310	Leatherfin Lumpsucker	Jan	Saw in a seal hole
2_37	QIK_2_0310	Land-Locked Char	Jul-Sep	
2_38	QIK_2_0310	Land-Locked Char	Dec	Char usually small, but in 2009 someone caught a very large one
2_39	QIK_2_0310	Land-Locked Char	Year-round	
2_40	QIK_2_0310	Land-Locked Char	Year-round	In same lakes as char
2_41	QIK_2_0310	Land-Locked Char	Year-round	In same lakes as char
2_42	QIK_2_0310	Land-Locked Char	Year-round	In same lakes as char
2_43	QIK_2_0310	Land-Locked Char	Year-round	In same lakes as char
2_44	QIK_2_0310	Land-Locked Char	Year-round	In same lakes as char
2_45	QIK_2_0310	Land-Locked Char	Year-round	In same lakes as char
2_47A	QIK_2_0310	Greenland Cod	Year-round	
2_51	QIK_2_0310	Greenland Halibut	Nov-Apr	
2_52	QIK_2_0310	Greenland Halibut	Jan-April	Exploratory fishery
3_21A	QIK_3_0310	Land-Locked Char	Year-round	
3_24A	QIK_3_0310	Greenland Cod	Year-round	
3_25A	QIK_3_0310	Greenland Cod	Year-round	Uukait
3_36	QIK_3_0310	Greenlandic Shark	Oct	Came around while butchering Narwhal
3_42	QIK_3_0310	Lumpfish	Mar	Test Fishery 1997 - Kevin McCarmic
4_6	QIK_4_0310	Land-Locked Char	Aug-Sep	
4_8	QIK_4_0310	Lake Trout	Year-round	
4_20	QIK_4_0310	Land-Locked Char	Year-round	Has many species including DV_1, very diverse.
4_22	QIK_4_0310	Dolly Varden	Year-round	
4_23	QIK_4_0310	Dolly Varden	Year-round	
4_45A	QIK_4_0310	Greenland Halibut	Year-round	Lots of small turbot
5_29A	QIK_5_0310	Land-Locked Char	Year-round	They are good fish because there is no river
5_33A	QIK_5_0310	Greenland Cod	Apr-Jun	
5_34	QIK_5_0310	Greenland Cod	Apr-Jun	
5_39	QIK_5_0310	Greenland Halibut	Dec-Mar	Exploratory winter fishery
5_40	QIK_5_0310	Greenland Halibut	Dec-Mar	Exploratory fishery
5_43	QIK_5_0310	Greenlandic Shark	Jul-Aug	Saw three last summer
5_44	QIK_5_0310	Greenlandic Shark	Jul-Aug	Saw 3 last summer
6_30A	QIK_6_0310	Land-Locked Char	May-Aug	
6_31	QIK_6_0310	Land-Locked Char	May-Aug	
6_32	QIK_6_0310	Land-Locked Char	May-Aug	
6_33	QIK_6_0310	Land-Locked Char	Year-round	
6_34	QIK_6_0310	Lake Trout	Year-round	
6_40	QIK_6_0310	Greenland Cod	Jul-Aug	Large Cod
6_48	QIK_6_0310	Greenland Halibut	Mar	Exploratory fishery
6_49	QIK_6_0310	Greenland Halibut	Mar	Exploratory fishery
6_50	QIK_6_0310	Lake Whitefish	Aug-Sep	Caught 2 in fishing nets
6_51	QIK_6_0310	Lake Whitefish	Aug-Sep	Caught once in fishing nets
7_15A	QIK_7_0310	Land-Locked Char	Year-round	If the lake is big and deep you know there is LLC
7_16A	QIK_7_0310	Land-Locked Char	Year-round	If the lake is big and deep you know there is LLC
7_17AU	QIK_7_0310	Dolly Varden	Year-round	In larger lakes in summer
7_18AU	QIK_7_0310	Dolly Varden	Year-round	
7_22A	QIK_7_0310	Greenland Cod	Jul-Sep	
7_24A	QIK_7_0310	Greenland Cod	Jul-Sep	
7_27A	QIK_7_0310	Greenland Cod	Jul-Sep	
7_33	QIK_7_0310	Greenland Halibut	Mar	Exploratory fishery
7_47	QIK_7_0310	Leatherfin Lumpsucker	Mar	In seal holes “Maritung Island”
8_20	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_21	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_22	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_23A	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_24	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_25	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_26	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_27	QIK_8_0310	Land-Locked Char	Dec-Mar	
8_30A	QIK_8_0310	Greenland Cod	Jul-Aug	
8_31A	QIK_8_0310	Greenland Cod	Jul-Aug	
8_50	QIK_8_0310	Lumpfish	Dec-Mar	Stuck to nets
8_51	QIK_8_0310	Leatherfin Lumpsucker	Dec-Mar	Stuck to nets

Figure 30: Mailed Sculpin, Ninespine Stickleback, Northern Wolfish, Slimy Sculpin, Starry Flounder, Thorney Skate, Threespine Stickleback, Threespot Eelpout, Toothed Cod, Trout Perch, Winter Flounder - Areas of Occupation

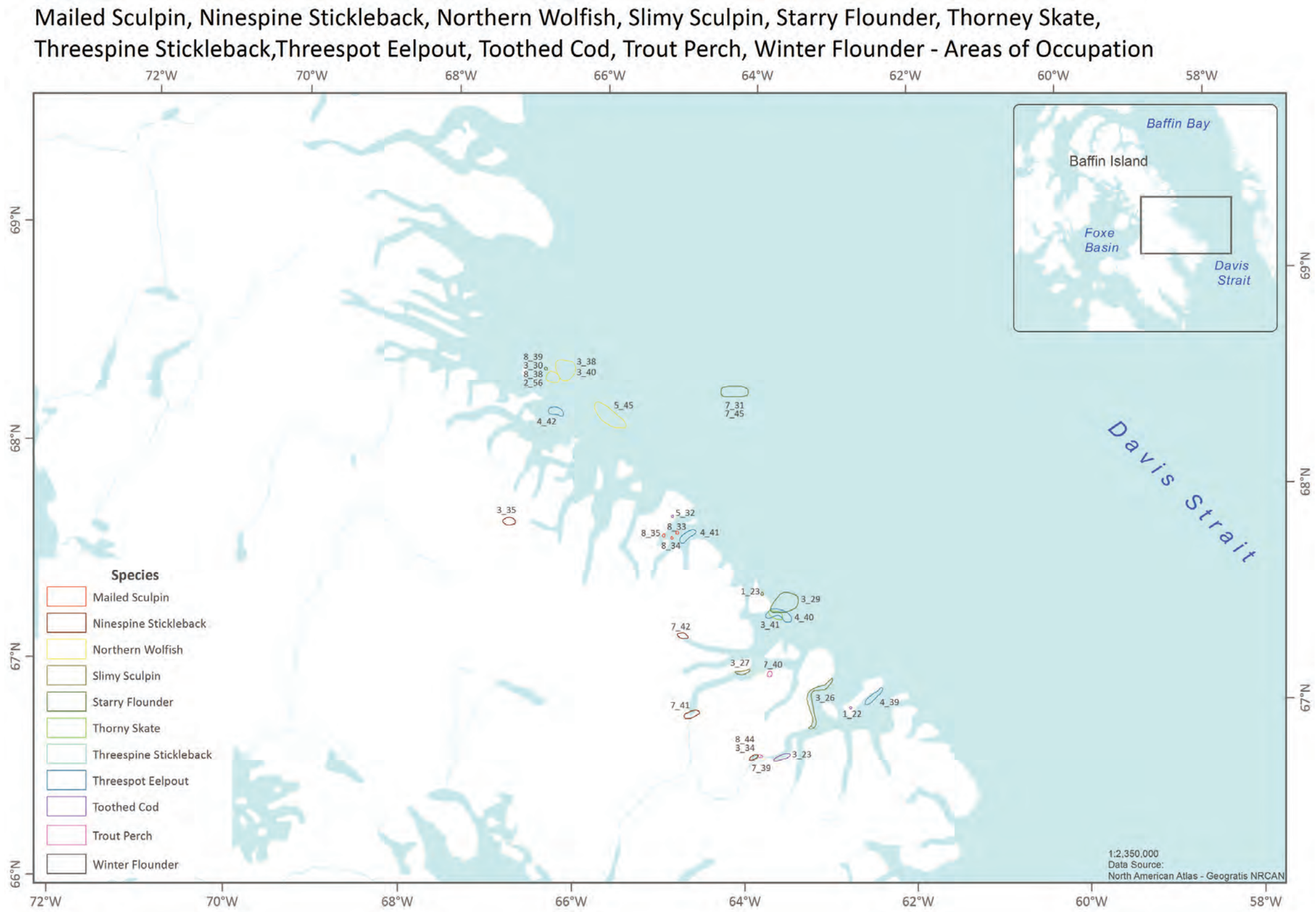


Table 34: Mailed Sculpin, Ninespine Stickleback, Northern Wolfish, Slimy Sculpin, Starry Flounder, Thorney Skate, Threespine Stickleback, Threespot Eelpout, Toothed Cod, Trout Perch, Winter Flounder - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENTS
1_22	QIK_1_0310	Toothed Cod	Mar	
1_23	QIK_1_0310	Slimy Sculpin	Year-round	
2_56	QIK_2_0310	Northern Wolfish	Jan-Apr	
3_23A	QIK_3_0310	Toothed Cod	Aug-Sep	
3_26	QIK_3_0310	Slimy Sculpin	Sep	
3_27	QIK_3_0310	Slimy Sculpin	Sep	
3_29H	QIK_3_0310	Starry Flounder	Mar	Test Fishery 1997 - Kevin McCarmic
3_30H	QIK_3_0310	Starry Flounder	Mar	Test Fishery 1997 - Kevin McCarmic
3_34	QIK_3_0310	Ninespine Stickleback	May	
3_35	QIK_3_0310	Ninespine Stickleback	May	
3_38H	QIK_3_0310	Northern Wolfish	Mar	Test fishery 1997 - Kevin McCarmic
3_40H	QIK_3_0310	Thorny Skate	Mar	Test Fishery 1997 - Kevin McCarmic
3_41H	QIK_3_0310	Thorny Skate	Mar	Test Fishery 1997 - Kevin McCarmic
4_39	QIK_4_0310	Threespot Eelpout	Year-round	
4_40	QIK_4_0310	Threespot Eelpout	Year-round	
4_41	QIK_4_0310	Threespot Eelpout	Year-round	
4_42	QIK_4_0310	Threespot Eelpout	Year-round	
5_32	QIK_5_0310	Toothed Cod	Aug	Caught in net by his cabin
5_45H	QIK_5_0310	Northern Wolfish	Aug	
7_31H	QIK_7_0310	Starry Flounder	Mar	exploratory fishery
7_39A	QIK_7_0310	Trout Perch	Jul-Sep	A. Char feed on them
7_40A	QIK_7_0310	Trout Perch	Jul-Sep	
7_41A	QIK_7_0310	Ninespine Stickleback	Aug-Sep	
7_42A	QIK_7_0310	Ninespine Stickleback	Aug-Sep	
7_45	QIK_7_0310	Thorny Skate	Mar	Test Fishery 1997 - Kevin McCarmic
8_33A	QIK_8_0310	Mailed Sculpin	Jan-Feb	
8_34A	QIK_8_0310	Mailed Sculpin	Jan-Feb	
8_35A	QIK_8_0310	Mailed Sculpin	Jan-Feb	
8_38H	QIK_8_0310	Starry Flounder	Mar	Test Fishery 1997 - Kevin McCarmic
8_39H	QIK_8_0310	Winter Flounder	Mar	
8_44A	QIK_8_0310	Threespine Stickleback	Year-round	

Figure 31: Arctic Loon, Arctic Tern, Cackling Goose, Canada Goose, Common Eider, Common Loon, Dovekie, Long-tailed Duck, Long-tailed Jaeger, Northern Fulmar - Areas of Occupation

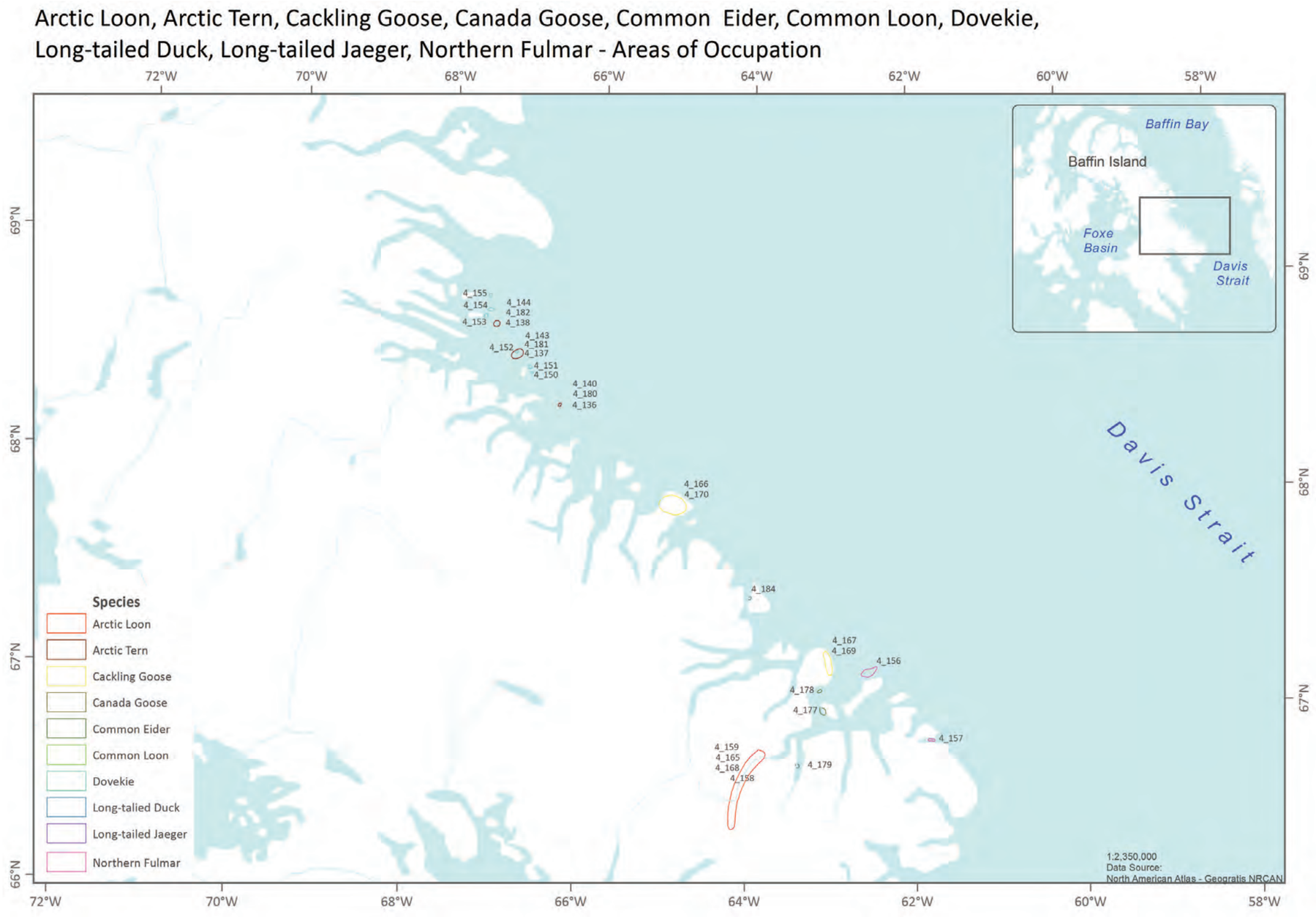


Table 35: Arctic Loon, Arctic Tern, Cackling Goose, Canada Goose, Common Eider, Common Loon, Dovekie, Long-tailed Duck, Long-tailed Jaeger, Northern Fulmar - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	MAP CODE	SPECIES	MONTH/YEAR	COMMENTS
4_136SA	QIK_4_0310	AT_1_SPA	Arctic Tern	May-Aug	
4_137SA	QIK_4_0310	AT_2_SPA	Arctic Tern	May-Aug	
4_138SA	QIK_4_0310	AT_3_SPA	Arctic Tern	May-Aug	
4_140SA	QIK_4_0310	LtJ_1_SPA	Long Tailed Jaeger	May-Aug	
4_143SA	QIK_4_0310	LtJ_2_SPA	Long Tailed Jaeger	May-Aug	
4_144SA	QIK_4_0310	LtJ_3_SPA	Long Tailed Jaeger	May-Aug	
4_150SA	QIK_4_0310	Dove_1_SPA	Dovekie	May-Aug	
4_151SA	QIK_4_0310	Dove_2_SPA	Dovekie	May-Aug	
4_152SA	QIK_4_0310	Dove_3_SPA	Dovekie	May-Aug	
4_153SA	QIK_4_0310	Dove_4_SPA	Dovekie	May-Aug	
4_154SA	QIK_4_0310	Dove_5_SPA	Dovekie	May-Aug	
4_155SA	QIK_4_0310	Dove_6_SPA	Dovekie	May-Aug	
4_156SA	QIK_4_0310	NF_1_SPA	Northern Fulmar	May-Aug	
4_157SA	QIK_4_0310	NF_2_SPA	Northern Fulmar	May-Aug	
4_158	QIK_4_0310	AL_1	Arctic Loon	Jul-Aug	
4_159	QIK_4_0310	CL_1	Common Loon	Jul-Aug	
4_165SA	QIK_4_0310	CG_1_SPA	Canada Goose	May-Oct	
4_166SA	QIK_4_0310	CG_2_SPA	Canada Goose	May-Oct	
4_167SA	QIK_4_0310	CG_3_SPA	Canada Goose	May-Oct	
4_168S	QIK_4_0310	Cacg_1_SP	Cackling Goose	May-Oct	
4_169S	QIK_4_0310	Cacg_2_SP	Cackling Goose	May-Oct	
4_170S	QIK_4_0310	Cacg_3_SP	Cackling Goose	May-Oct	
4_177SA	QIK_4_0310	CE_1_SPA	Common Eider	May-Aug	
4_178SA	QIK_4_0310	CE_2_SPA	Common Eider	May-Aug	
4_179SA	QIK_4_0310	CE_3_SPA	Common Eider	May-Aug	
4_180SA	QIK_4_0310	CE_4_SPA	Common Eider	May-Aug	
4_181SA	QIK_4_0310	CE_5_SPA	Common Eider	May-Aug	
4_182SA	QIK_4_0310	CE_6_SPA	Common Eider	May-Aug	
4_184S	QIK_4_0310	OS_1_SP	Long-Tailed Duck	April-Aug	

Figure 32: Black-legged Kittiwake, Gull, Pomarine Jaegar, Razorbill, Red Throated Loon, Ross' Goose, Sandhill Crane, Snow Goose, Snowy Owl, Thick Billed Murre, Tundra Swan, Yellow Billed Loon - Areas of Occupation

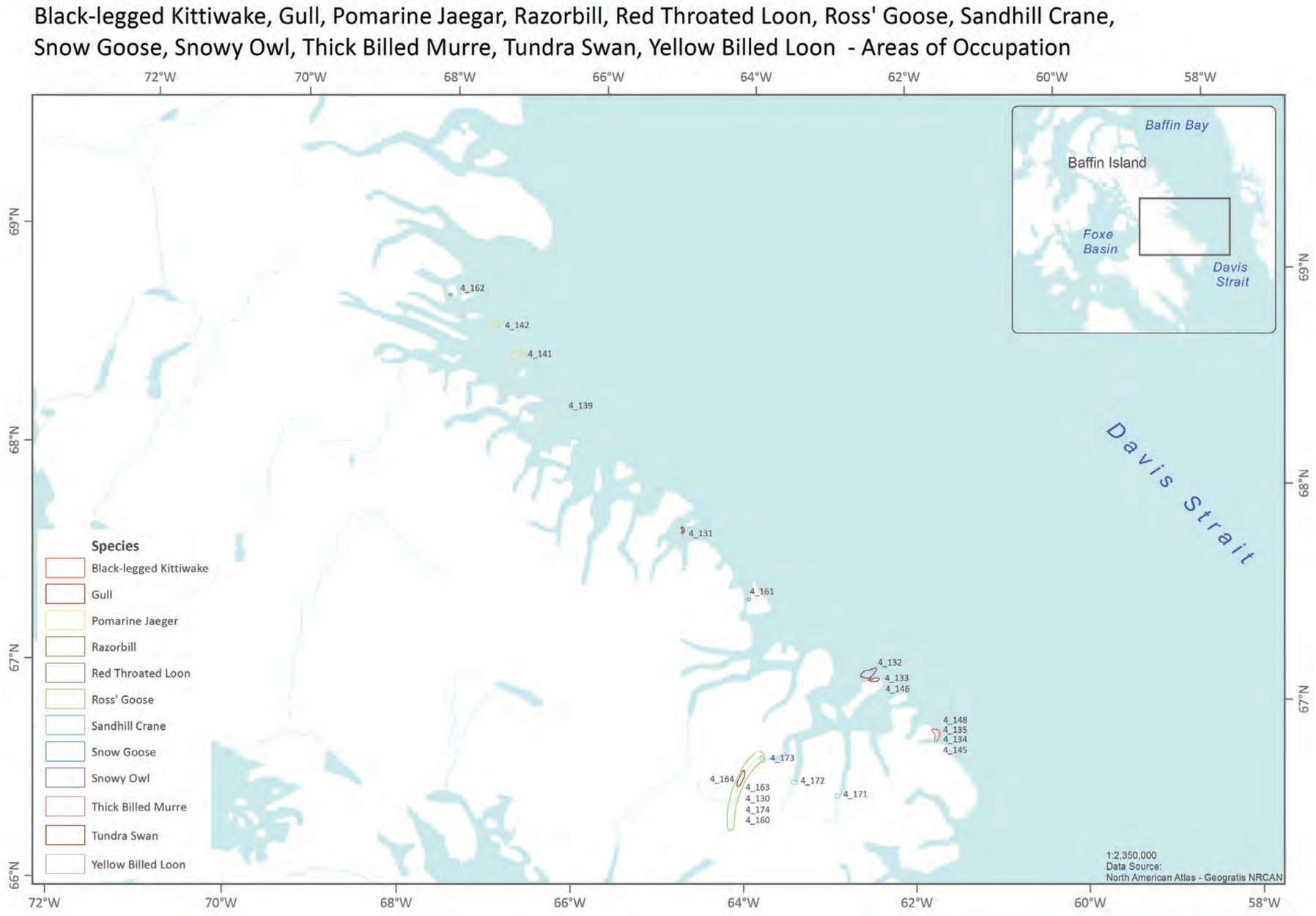


Table 36: Black-legged Kittiwake, Gull, Pomarine Jaegar, Razorbill, Red Throated Loon, Ross' Goose, Sandhill Crane, Snow Goose, Snowy Owl, Thick Billed Murre, Tundra Swan,Yellow Billed Loon - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENTS
4_130A	QIK_4_0310	Snowy Owl	Year-round	there are a lot of lemmings at his fishing spot, he has noticed lots of snowy owls.
4_131SA	QIK_4_0310	Gull	May-Aug	shorebirds (Plovers and Sandpipers) the larger ones tend to be closer to the shoreline (sandy beaches) where the smaller species in swampy lakes and ponds.
4_132SA	QIK_4_0310	Gull	May-Aug	
4_133SA	QIK_4_0310	Gull	May-Aug	
4_134SA	QIK_4_0310	Gull	May-Aug	
4_135SA	QIK_4_0310	Black-Legged Kittiwake	May-Aug	
4_139SA	QIK_4_0310	Pomarine Jaeger	May-Aug	
4_141SA	QIK_4_0310	Pomarine Jaeger	May-Aug	
4_142SA	QIK_4_0310	Pomarine Jaeger	May-Aug	
4_145SA	QIK_4_0310	Thick Billed Murre	May-Aug	
4_146SA	QIK_4_0310	Thick Billed Murre	May-Aug	
4_148	QIK_4_0310	Razorbill	Jul-Aug	
4_160	QIK_4_0310	Yellow-billed Loon	Jul-Aug	
4_161	QIK_4_0310	Red Throated Loon	Jul-Aug	
4_162	QIK_4_0310	Red Throated Loon	Jul-Aug	
4_163SA	QIK_4_0310	Snow Goose	May-Oct	
4_164	QIK_8_0310	Ross' Goose	May-Oct	
4_171	QIK_4_0310	Sandhill Crane	Aug-Sept	
4_172	QIK_4_0310	Sandhill Crane	Aug-Sept	
4_173	QIK_4_0310	Sandhill Crane	Aug-Sept	
4_174	QIK_4_0310	Tundra Swan	May-Jun	

Figure 33: Clam, Cockle, Icelandic Scallop, Blue Mussel, Northern House Mussel areas of occupation

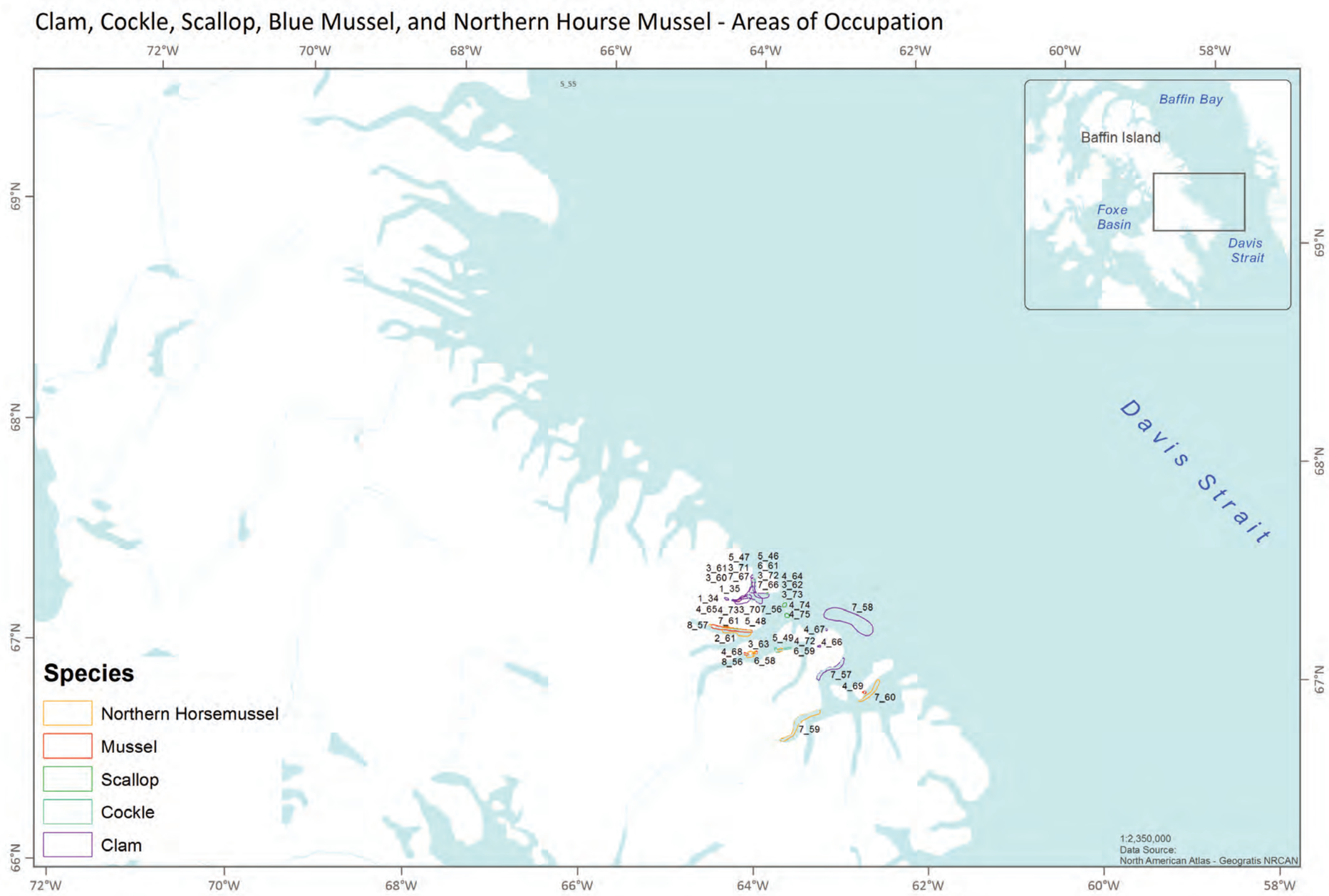


Table 37: Clam, Cockle, Icelandic Scallop, Blue Mussel, Northern House Mussel areas of occupation

MAP CODE	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENTS
1_34	QIK_1_0310	Clam	Mar	When harvested by divers or during low tide
1_35A	QIK_1_0310	Northern Horse Mussel	Jul	
2_61A	QIK_2_0310	Northern Horse Mussel	Year-round	
3_60A	QIK_3_0310	Clam	Year-round	Saw while diving
3_61A	QIK_3_0310	Clam	Year-round	Saw while diving
3_62A	QIK_3_0310	Clam	Year-round	Saw while diving
3_63	QIK_3_0310	Northern Horse Mussel	Year-round	Around small Island.
3_70A	QIK_3_0310	Cockle	Year-round	Saw while diving
3_71A	QIK_3_0310	Cockle	Year-round	Saw while diving
3_72A	QIK_3_0310	Cockle	Year-round	Saw while diving
3_73	QIK_3_0310	Icelandic Scallop	Year-round	Saw only one.
4_64	QIK_4_0310	Clam	Jul-Sep	Exploratory Fishery
4_65H	QIK_4_0310	Clam	Jan-Mar	Exploratory Fishery
4_66H	QIK_4_0310	Clam	Jan-Mar	Exploratory Fishery
4_67H	QIK_4_0310	Clam	Jan-Mar	Exploratory Fishery
4_68A	QIK_4_0310	Blue Mussel	Jul-Aug	
4_69A	QIK_4_0310	Blue Mussel	Jul-Aug	
4_72HA	QIK_4_0310	Cockle	Aug-Sep	Found in Exploratory fishery for Iceland Scallop
4_73HA	QIK_4_0310	Cockle	Aug-Sep	Found in Exploratory fishery for Iceland Scallop
4_74	QIK_4_0310	Icelandic Scallop	Aug	
4_75	QIK_4_0310	Icelandic Scallop	Aug	
5_46	QIK_5_0310	Clam	Oct	
5_47	QIK_5_0310	Clam	Oct	
5_48A	QIK_5_0310	Blue Mussel	Sep	
5_49A	QIK_5_0310	Blue Mussel	Sep	
6_58A	QIK_6_0310	Northern Horse Mussel	Aug	
6_59A	QIK_6_0310	Northern Horse Mussel	Aug	
6_61H	QIK_6_0310	Cockle	Jul	Hooking on them while searching for drowned person
7_56A	QIK_7_0310	Clam	Year-round	Harvest area, divers
7_57A	QIK_7_0310	Clam	Year-round	Meaty Now
7_58A	QIK_7_0310	Clam	May-Aug	Walrus feed here
7_60A	QIK_7_0310	Northern Horse Mussel	May-Aug	
7_61	QIK_7_0310	Northern Horse Mussel	May-Aug	Coastline, larger ones
7_66	QIK_7_0310	Icelandic Scallop	Year-round	
7_67	QIK_7_0310	Cockle	Year-round	
8_56A	QIK_8_0310	Northern Horse Mussel	Jul-Aug	
8_57A	QIK_8_0310	Northern Horse Mussel	Jul-Aug	

Figure 34: Amphipod, Crayfish, Barnacle, Northern Shrimp, Toad Crab, Hermit crab and Striped shrimp areas of occupation

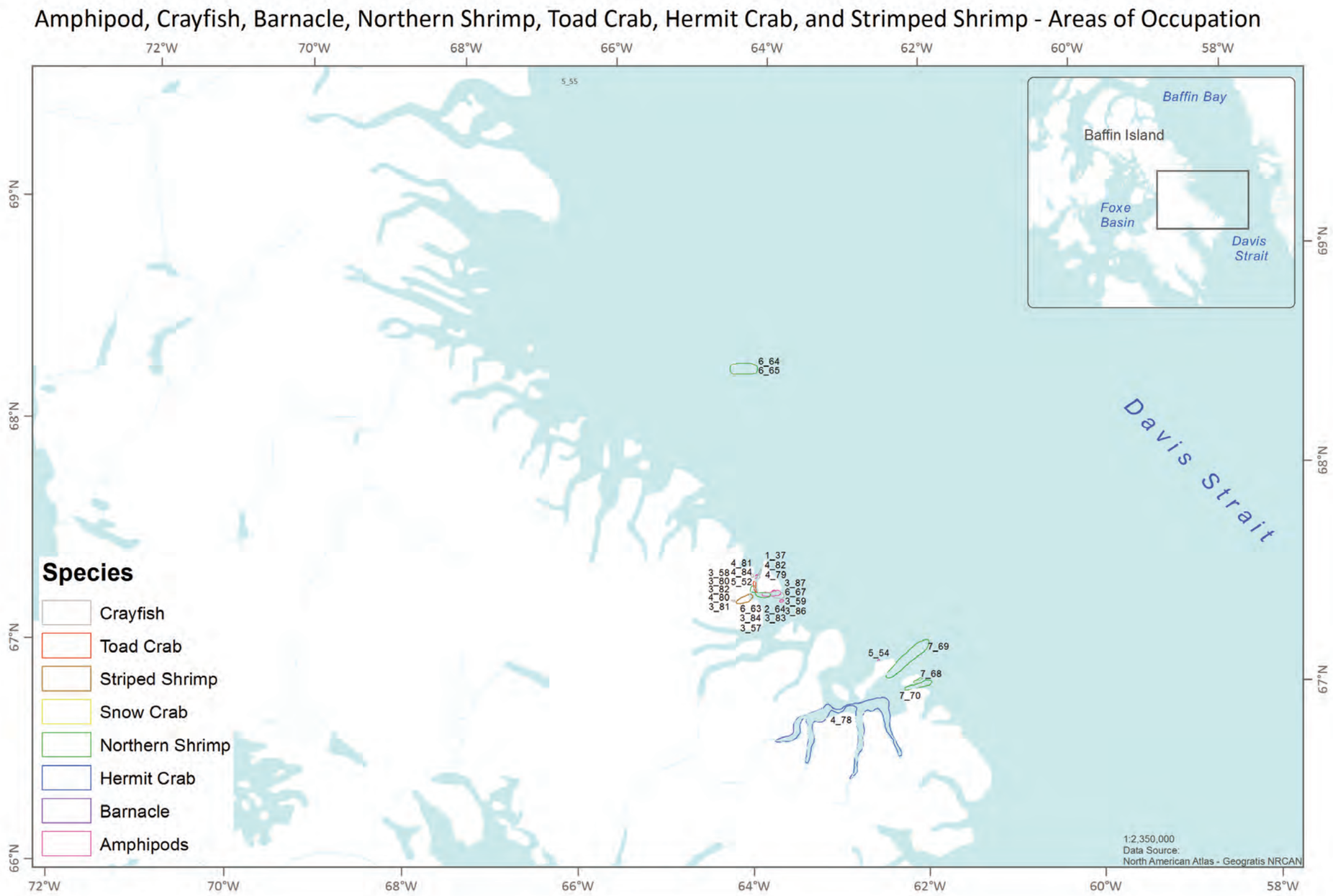


Table 38: Amphipod, Crayfish, Barnacle, Northern Shrimp, Toad Crab, Hermit crab and Striped shrimp areas of occupation

MAP CODE	INTERVIEW CODE	SPECIES	MONTH	COMMENTS
1_37A	QIK_1_0310	Amphipod	Year-round	
2_64H	QIK_2_0310	Crayfish	Apr	1998
3_57A	QIK_3_0310	Barnacle	Year-round	Saw while diving
3_58A	QIK_3_0310	Barnacle	Year-round	Saw while diving
3_59A	QIK_3_0310	Barnacle	Year-round	Saw while diving
3_80	QIK_3_0310	Crayfish	Year-round	Saw while collecting seaweed
3_81	QIK_3_0310	Northern Shrimp	Year-round	
3_82	QIK_3_0310	Northern Shrimp	Year-round	
3_83	QIK_3_0310	Northern Shrimp	Year-round	
3_84	QIK_3_0310	Striped Shrimp	Year-round	
3_86A	QIK_3_0310	Amphipod	Dec-Apr	Eat seal caught in nets.
3_87A	QIK_3_0310	Amphipod	Dec-Apr	Eat seal caught in nets.
4_78	QIK_4_0310	Hermit Crab	Aug-Sep	Seen in fiords with tides.
4_79	QIK_4_0310	Crayfish	Aug-Sep	Lighter in the Sandy Areas
4_80	QIK_4_0310	Crayfish	Aug-Sep	Darker in rocky areas.
4_81H	QIK_4_0310	Northern Shrimp	Mar-Jul	
4_82H	QIK_4_0310	Toad Crab	Mar-Jul	
5_52H	QIK_5_0310	Crayfish	Oct	1982
5_54A	QIK_5_0310	Amphipod	Oct	
6_63H	QIK_6_0310	Crayfish	Aug	
6_64H	QIK_6_0310	Northern Shrimp	Mar	Exploratory fishery areas
6_65H	QIK_6_0310	Northern Shrimp	Mar	
6_67A	QIK_6_0310	Amphipod	Year-round	
7_68H	QIK_7_0310	Northern Shrimp	Aug	Exploratory Fishery
7_69H	QIK_7_0310	Northern Shrimp	Aug	Exploratory Fishery
7_70A	QIK_7_0310	Northern Shrimp	Sep-Oct	

Figure 35: Sea Urchin, Sea Cucumber, Arctic Moonsnail, Polar Sea Star, Mud Star, Basket Star, Tortoise Limpet, Whelk, Jellyfish, and Naked Sea Butterfly - areas of occupation

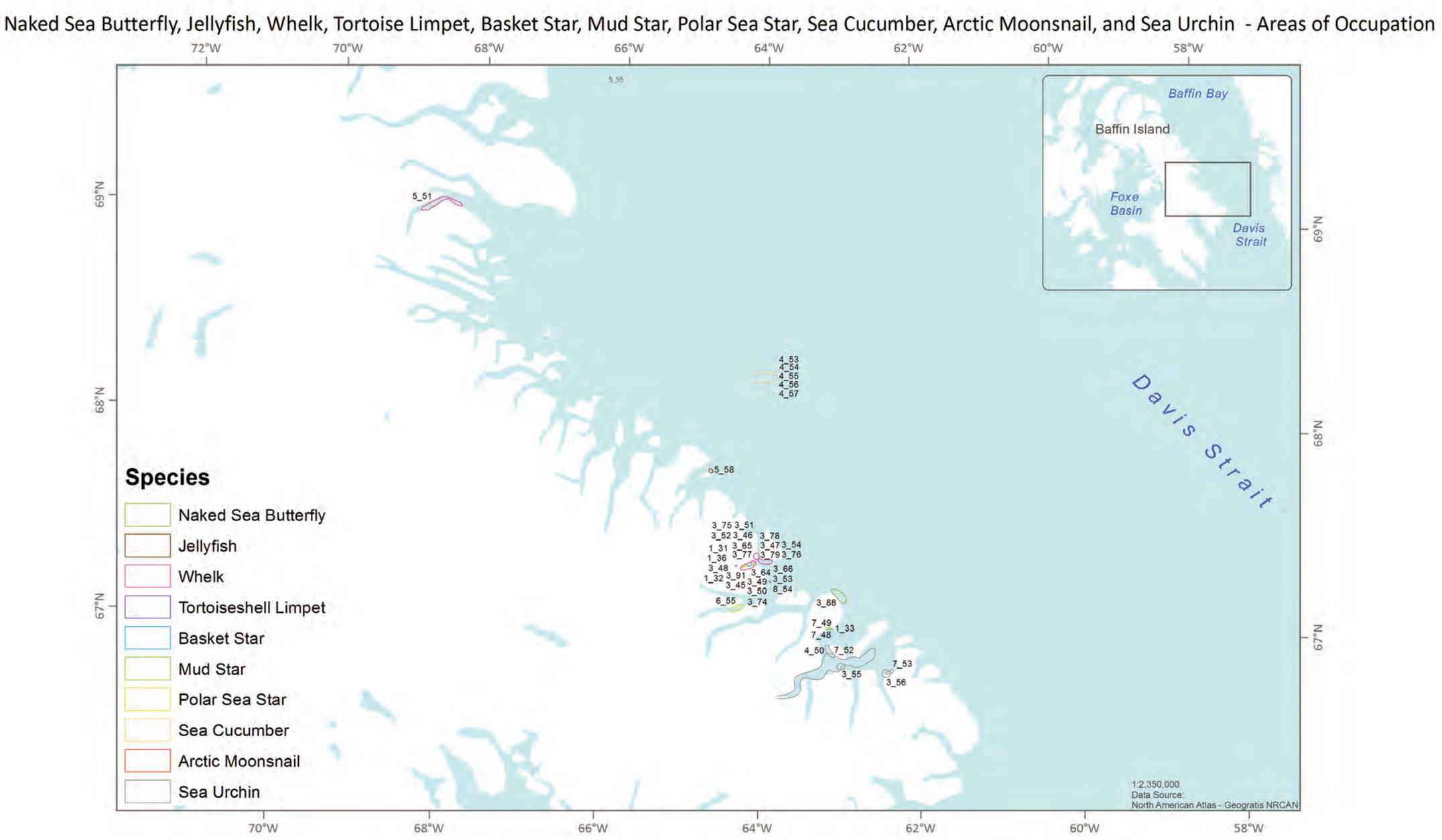


Table 39: Sea Urchin, Sea Cucumber, Arctic Moonsnail, Polar Sea Star, Mud Star, Basket Star, Tortoise Limpet, Whelk, Jellyfish, and Naked Sea Butterfly - areas of occupation

MAP CODE	INTERVIEW CODE	SPECIES	MONTH	COMMENTS
1_31	QIK_1_0310	Polar Sea Star	Mar	When harvested by divers
1_32A	QIK_1_0310	Sea Urchin	Jul	
1_33	QIK_1_0310	Sea Urchin	Jul	
1_36	QIK_1_0310	Arctic Moonsnail	Mar	When harvested by divers
3_45A	QIK_3_0310	Polar Sea Star	Year-round	Saw while diving
3_46A	QIK_3_0310	Polar Sea Star	Year-round	Saw while diving
3_47A	QIK_3_0310	Polar Sea Star	Year-round	Saw while diving
3_48A	QIK_3_0310	Sea Cucumber	Year-round	Saw while diving
3_49A	QIK_3_0310	Mud Star	Year-round	Saw while diving
3_50A	QIK_3_0310	Sea Urchin	Year-round	Saw while diving
3_51A	QIK_3_0310	Mud Star	Year-round	Saw while diving
3_52A	QIK_3_0310	Sea Urchin	Year-round	Saw while diving
3_53A	QIK_3_0310	Mud Star	Year-round	Saw while diving
3_54A	QIK_3_0310	Sea Urchin	Year-round	Saw while diving
3_55A	QIK_3_0310	Sea Urchin	Year-round	Saw while diving
3_56A	QIK_3_0310	Sea Urchin	Year-round	Saw while diving
3_64A	QIK_3_0310	Tortoise Limpet	Year-round	Saw while diving
3_65A	QIK_3_0310	Tortoise Limpet	Year-round	Saw while diving
3_66A	QIK_3_0310	Tortoise Limpet	Year-round	Saw while diving
3_74	QIK_3_0310	Arctic Moonsnail	Year-round	Saw while diving
3_75	QIK_3_0310	Arctic Moonsnail	Year-round	Saw while diving
3_76	QIK_3_0310	Arctic Moonsnail	Year-round	Saw while diving
3_77	QIK_3_0310	Whelk	Year-round	Saw while diving
3_78	QIK_3_0310	Whelk	Year-round	
3_79	QIK_3_0310	Whelk	Year-round	
3_88	QIK_3_0310	Naked Sea Butterfly	Jul-Aug	See during the spring/summer
3_91A	QIK_3_0310	Basket Star	Year-round	
4_50A	QIK_4_0310	Sea Urchin	Jun-Oct	
4_53H	QIK_4_0310	Sea Cucumber	Mar-May	1993-1994 By ski-doo
4_54H	QIK_4_0310	Sea Cucumber	Mar-May	1993-1994 By ski-doo
4_55H	QIK_4_0310	Sea Cucumber	Mar-May	1993-1994 By ski-doo
4_56H	QIK_4_0310	Sea Cucumber	Mar-May	1993-1994 By ski-doo
4_57H	QIK_4_0310	Sea Cucumber	Mar-May	1993-1994 By ski-doo
5_51H	QIK_5_0310	Whelk	Apr	
5_58H	QIK_5_0310	Jellyfish	Feb	1996 giant jelly fish in seal net.
6_55	QIK_6_0310	Polar Sea Star	Aug	
7_48	QIK_7_0310	Polar Sea Star	Jul-Sep	
7_49	QIK_7_0310	Mud Star	Jul-Sep	
7_52A	QIK_7_0310	Sea Urchin	Jul-Sep	
7_53A	QIK_7_0310	Sea Urchin	Jul-Sep	Eat dead fish on Rocky Bottom
8_54A	QIK_8_0310	Sea Urchin	Jul-Aug	

Figure 36: Bladder Wrack, Edible Kelp, Floating Buttercup, Goose Grass, Hollow Stemmed Kelp, Mare's Tail, Sea Colander - Areas of Occupation

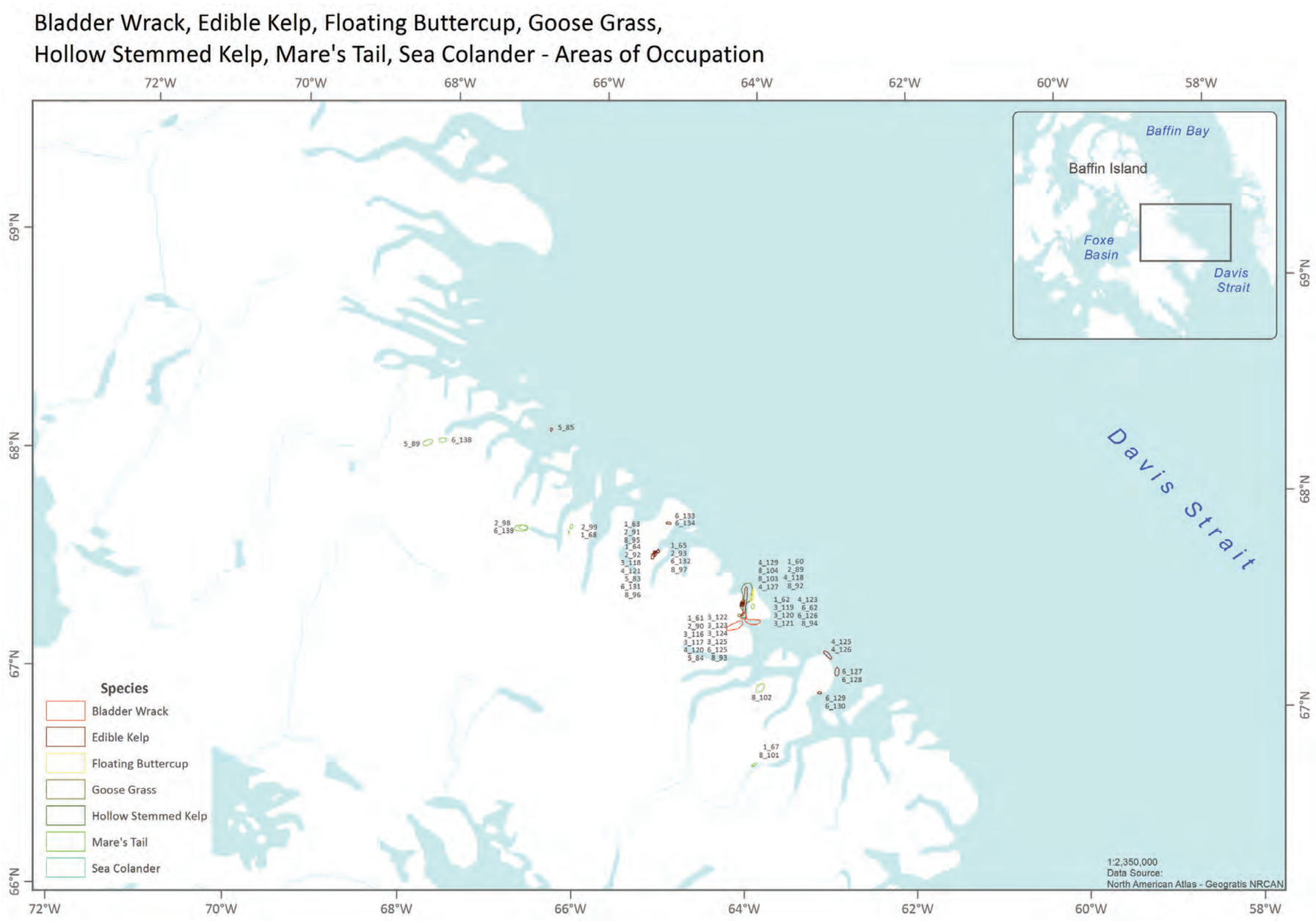
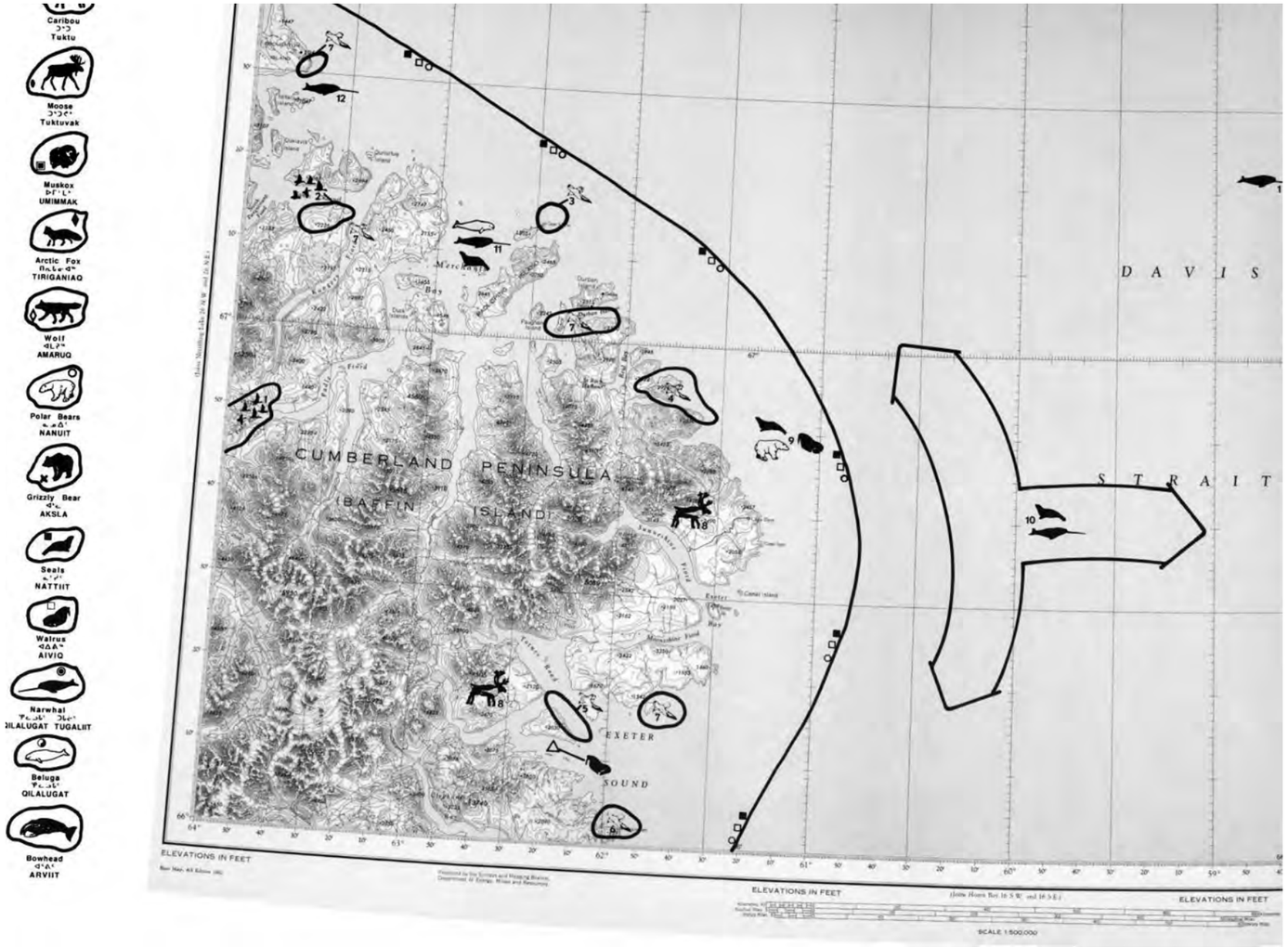


Table 40: Bladder Wrack, Edible Kelp, Floating Buttercup, Goose Grass, Hollow Stemmed Kelp, Mare's Tail, Sea Colander - Areas of Occupation

LABEL NUMBER	INTERVIEW CODE	SPECIES	MONTH/YEAR	COMMENTS
1_60A	QIK_1_0310	Hollow Stemmed Kelp	Year-round	Hasn't changed
1_61	QIK_1_0310	Edible Kelp	Year-round	
1_62	QIK_1_0310	Sea Colander	Year-round	
1_63A	QIK_1_0310	Hollow Stemmed Kelp	Year-round	So many, can't tell the difference
1_64A	QIK_1_0310	Edible Kelp	Year-round	
1_65A	QIK_1_0310	Sea Colander	Year-round	
1_67	QIK_1_0310	Mare's Tail	May	In Lakes
1_68	QIK_1_0310	Mare's Tail	May	In Lakes
2_89A	QIK_2_0310	Hollow Stemmed Kelp	Jul-Oct	Hasn't changed
2_90A	QIK_2_0310	Edible Kelp	Jul-Oct	
2_91A	QIK_2_0310	Hollow Stemmed Kelp	Year-round	
2_92A	QIK_2_0310	Edible Kelp	Year-round	Only place where edible kelp is harvested
2_93A	QIK_2_0310	Sea Colander	Year-round	
2_98	QIK_2_0310	Mare's Tail	Dec-Mar	Caught in fish nets
2_99	QIK_2_0310	Mare's Tail	Dec-Mar	Caught in fish nets
3_116A	QIK_3_0310	Edible Kelp	Jul-Oct	
3_117A	QIK_3_0310	Edible Kelp	Year-round	
3_118A	QIK_3_0310	Edible Kelp	Year-round	Kuannilik- High current and a polyna
3_119A	QIK_3_0310	Sea Colander	Year-round	
3_120A	QIK_3_0310	Sea Colander	Year-round	
3_121A	QIK_3_0310	Sea Colander	Year-round	
3_122A	QIK_3_0310	Bladder Wrack	Year-round	
3_123A	QIK_3_0310	Bladder Wrack	Year-round	
3_124A	QIK_3_0310	Bladder Wrack	Year-round	
3_125A	QIK_3_0310	Goose Grass	Year-round	
4_118A	QIK_4_0310	Hollow Stemmed Kelp	Jul-Aug	
4_120	QIK_4_0310	Edible Kelp	Dec-Mar	
4_121A	QIK_4_0310	Edible Kelp	Dec-Mar	
4_123	QIK_4_0310	Sea Colander	Jul-Aug	
4_125	QIK_4_0310	Hollow Stemmed Kelp	Jul-Aug	
4_126	QIK_4_0310	Edible Kelp	Dec-Mar	
4_127	QIK_4_0310	Mare's Tail	Year-round	In Lakes
4_129	QIK_4_0310	Floating Buttercup	Jul-Aug	
5_83A	QIK_5_0310	Edible Kelp	Year-round	There is so much that this area is named after it
5_84A	QIK_5_0310	Edible Kelp	Year-round	
5_85	QIK_5_0310	Edible Kelp	Year-round	
5_89A	QIK_5_0310	Mare's Tail	Nov	
6_62	QIK_6_0310	Sea Colander	Jul	
6_125A	QIK_6_0310	Edible Kelp	Year-round	
6_126A	QIK_6_0310	Sea Colander	Year-round	
6_129A	QIK_6_0310	Edible Kelp	Year-round	
6_128A	QIK_6_0310	Sea Colander	Year-round	
6_127A	QIK_6_0310	Edible Kelp	Year-round	
6_130A	QIK_6_0310	Sea Colander	Year-round	
6_131A	QIK_6_0310	Edible Kelp	Dec-Mar	
6_132A	QIK_6_0310	Sea Colander	Year-round	
6_133A	QIK_6_0310	Edible Kelp	Year-round	
6_134A	QIK_6_0310	Sea Colander	Year-round	
6_138A	QIK_6_0310	Mare's Tail	Jan-Mar	
6_139A	QIK_6_0310	Mare's Tail	Jan-Mar	
8_92A	QIK_8_0310	Hollow Stemmed Kelp	Jul-Aug	
8_93A	QIK_8_0310	Edible Kelp	Jul-Aug	
8_94A	QIK_8_0310	Sea Colander	Jul-Aug	
8_95A	QIK_8_0310	Hollow Stemmed Kelp	Jul-Aug	
8_96A	QIK_8_0310	Edible Kelp	Jul-Aug	
8_97A	QIK_8_0310	Sea Colander	Jul-Aug	
8_101A	QIK_8_0310	Mare's Tail	Jul-Aug	
8_102A	QIK_8_0310	Mare's Tail	Jul-Aug	
8_103A	QIK_8_0310	Floating Buttercup	Jul-Aug	Never used to see them, starting to see them more and more
8_104A	QIK_8_0310	Floating Buttercup	Jul-Aug	Sand Bar area

Figure 37: Nunavut Atlas, Cape Dyer



NUNAVUT ATLAS LEGEND

1. WATERFOWL
Snow and Canada geese and loons nest at the head of Padle Fiord. Common eiders also nest in the Padle Fiord area.

2. WATERFOWL
Some Canada geese nest in this area.

3. SEABIRDS
A large fulmar colony (100,000 pairs) nest at Cape Searle. Small numbers if black guillemots nest here too.

4. SEABIRDS
In this area, about 200,000 pairs of thick-billed murres nest in tow colonies and about 10,000 pairs of fulmars nest in the three colonies. A few black guillemots and some glacous gulls also nest in the vicinity.

5. SEABIRDS
About 3,000 pairs of fulmars nest at this site. Think-billed murres may also nest here, but more have been reported in recent years.

6. SEABIRDS
A large colony (in the tens of thousands) of thick-billed murres has been reported at this location.

7. SEABIRDS
Glacous gull colonies are located at these sites

8. CARIBOU
Caribou were formerly hunted in the Exeter Sound and Bay area, but very few occur here nowadays if any at all.

9. SEALS, POLAR BEARS & WALRUSES
This entire marine nearshore area is an excellent year round habitat for ringed and bearded seals, and their predator, the polar bear. Merchants Bay is an especially productive habitat for ringed seals. There is thought to be a movement of young ringed seals into Cumberland Sound from this area. Female polar bears move inland to den in winter. Walruses enter inshore areas from Broughton Island to Cape Dyer during the summer.

10. SEALS AND NARWHALS
This unit describes the pattern of harp seal migration from the Gulf of St. Lawrence and Newfoundland to the coast of Greenland and the Arctic Archipelago. Hundreds of thousands of harp seals move into the Davis Strait in May and June. The seals are deflected by ice to the open water areas of southwestern Greenland, and the bulk of the seal population arrives here in mid-June. As the ice retreats later in the summer, the seals move northward and westward, and penetrate into the Lancaster and Jones Sounds. The movement back to the south begins in September and by early November; the seals have passed back though this area.

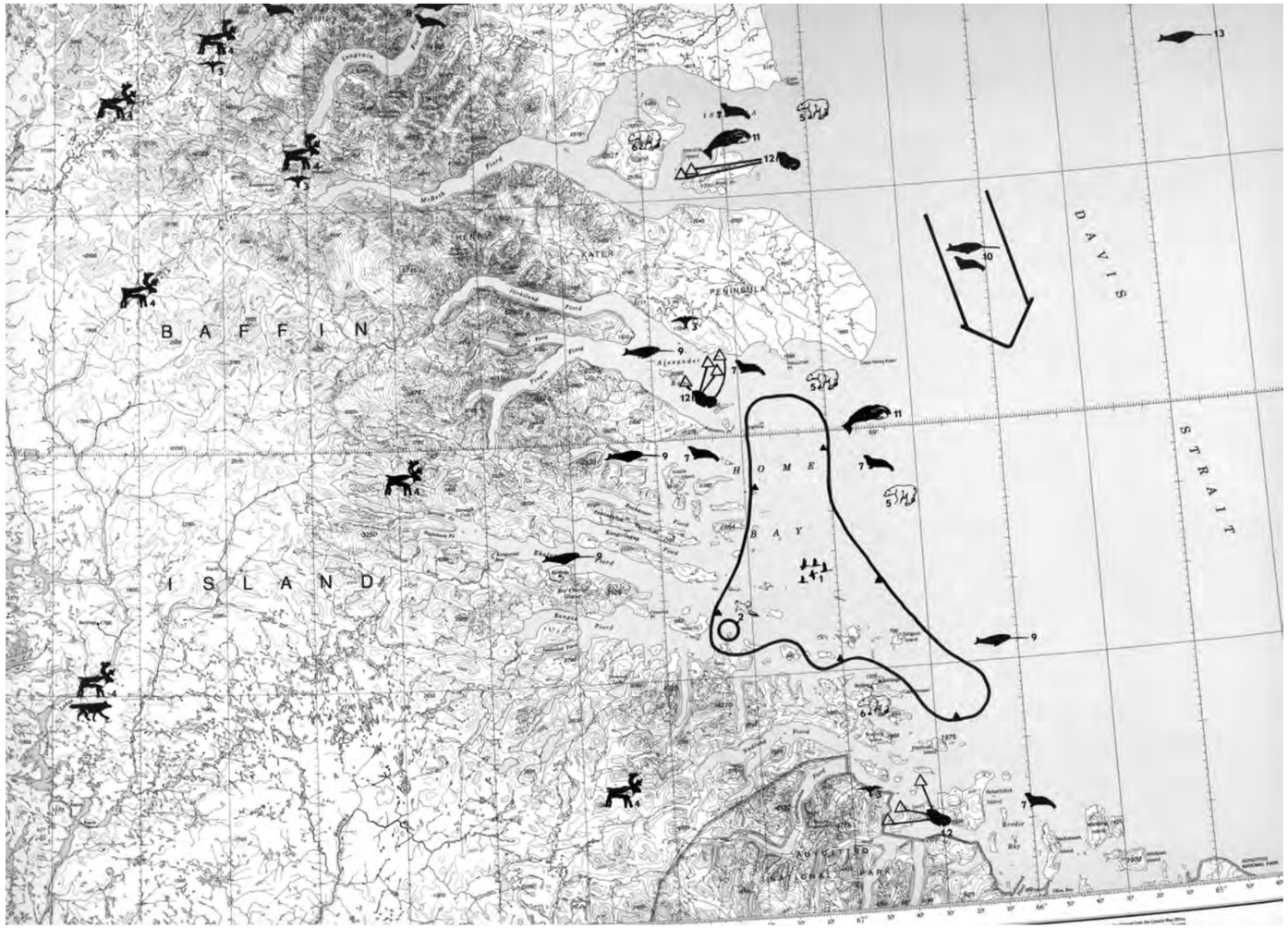
Narwhals also migrate south along the east Baffin Island coast during the fall, enroute to wintering areas in Baffin Bay, Davis Strait and the southeastern Baffin Island areas.

11. BELUGAS, NARWHALS AND SEALS
Narwhals, belugas, and harp seals sometimes occur in Merchants Bay and Padle Fiord during the summer.

12. NARWHALS
Narwhals often come around Broughton Island during the summer. In spring, narwhals often occur at the floe edge east of the island.

13. NARWHALS
Narwhals overwinter in small groups scattered throughout the heavy offshore pack ice of northern Davis Strait and southern Baffin Bay.

Figure 38: Nunavut Atlas, Home Bay



NUNAVUT ATLAS LEGEND

1. WATERFOWL
Eider ducks and common terns nest on most of these islands in outer Home Bay.

2. SEABIRDS
About 150 pairs of kittiwakes nest on this small island to the east of Kekertal Island.

3. RAPTORS
Peregrine falcons or gyrfalcons nest on the cliffs in these areas.

4. CARIBOU AND WOLVES
The lush vegetation growing on the flat marshy areas at the heads of fiords in the region provide good summer range for caribou. The caribou move to the highland areas in the winter where vegetation is sparse, but windswept of snow. In addition to the heads of most fiords on this map sheet, caribou occur in the valleys of the Clyde and McBeth rivers and are especially numerous in the Dewar Lakes area, where wolves in good numbers can also be found. They are generally found year-round in these areas.

5. POLAR BEARS
Polar bears are abundant in the nearshore marine areas of this map during winter and spring, when they hunt for ringed seals on the fast ice, at the floe edge, and in the offshore pack ice.

6. POLAR BEARS
Polar bears den during winter on Aulitivik Island and in the area southeast of Cape Hooper.

7. SEALS
Ringed seals are abundant in the bays, fiords and inlets on this map sheet. Home Bay is a well known, highly productive area for seals. Outer Alexander and Isabella bays are frequented by harp and bearded seals in summer and early fall.

8. NARWHALS AND SEALS
The Clyde Inlet-Inugsuin Fiord area is frequented by several hundred narwhals as well as by bearded and harp seals during late summer and fall. It is home to ringed seals year-round.

9. NARWHALS
Narwhals occur in these areas during late summer and fall. They occur in the area northeast of Cape Hooper during the late winter and spring off the floe edge.

10. NARWHALS AND SEALS
Narwhals and harp seals migrate south, down the east coast of Baffin Island, during the fall. They are apparently coming from summering areas in the high arctic. They visit some of the bays and fiords along the way.

11. BOWHEADS
Bowheads congregate in Isabella Bay (concentrations of perhaps a hundred animals occur here) for feeding and possibly mating during the late summer. Bowheads also occur in Home Bay at the same time.

12. WALRUSES
Walruses enter the Alexander and Isabella bays in summer with the breakup of the fast ice. They haul-out in late summer and early fall at some traditional haul-out sites (ulliit).

13. NARWHALS
Narwhals winter in small groups scattered throughout the heavy offshore pack ice of northern Davis Strait and southern Baffin Bay.

FINAL THOUGHTS

INTERVIEW PROCESS

The interview process was judged to be especially effective, even though both format and execution were quite relaxed. The process was well defined and the use of photos and maps ensured that the same material was considered from one interview to the next. This provided a solid, reproducible structure that encouraged rigor, permitted immediate interviewee inter-comparisons, and allows for future community assessments. Interviews took from 1.5 - 4 hours, depending on the depth of the individual's knowledge, the amount of marine-specific information they possessed, and the extent to which responses prompted supplementary questions. Since the process was focused on coastal resources, it generally excluded mammals considered primarily terrestrial, such as caribou, muskoxen, or arctic fox, while embracing polar bears and a broad array of birds that range widely over both coastal and terrestrial areas.

Despite general satisfaction with the process, some prior reservations warrant comment. First, the interview process was initially conducted in the present tense, with the implicit assumption that all responses were addressing contemporary, immediate or very recent experience with the species under discussion. However, unless explicitly excluded, the information offered may represent temporal integration of experiences over some indeterminate period. Hunters who have traveled and hunted these areas for decades could provide responses drawn from observations made indiscriminately in the short, medium, or long term. For these reasons, interviewees were routinely informed that contemporary data was those observations made since 2000, and data offered from observations before that date should be accompanied with an indication of the observation date. These latter observations were analyzed, identified, and archived independently of contemporary data.

A second issue addresses the designation "Everywhere". Sometimes an interviewee, in response to a question about an animal's distribution, indicated that they were observed to be present "Everywhere". This is a very subjective descriptor that, without additional qualifiers, is not very useful. Essentially, it refers to the geographic extent of the respondent's knowledge, and unless that knowledge is further defined, its utility is limited. Consequently, all interviewees were asked at some point to delineate the extent of their travels. That information was recorded and subsequently displayed (see Figure 7) where it can be located and used to identify what is meant by "Everywhere" for a specific interviewee.

MAPS AND DATA

Given the broad geographic reach of the interviewees' responses, the map format was chosen to provide a synoptic view of the collected data. Every effort was made to keep a common scale for all maps in this document, in order to permit comparisons between maps. For some species, the scale showed the breadth of the distribution and the inter-connectedness of seemingly disparate locations; while for others, especially where distributions were modest or localized, the advantages were less obvious.

The scale used in maps obtained from the Nunavut Atlas (1992) is larger because the geographic area of interest is smaller. In addition, one must keep in mind that the data collected for the Nunavut Atlas was actually collected in the early 1970's and represents conditions that were extant 35 years ago. Some comparisons are possible but they must be made with caution.

Harvest data available from the Nunavut Wildlife Management Board (NWMB) Study (NWMB 2004) is not represented in this report. The difference between these two studies is that the Nunavut Coastal Resource Inventory (NCRI) was attempting to ascertain the qualitative geographic distribution of species while the NWMB's primary concern was harvest statistics. Additional inventories should, where possible, document harvest data in the study area.

The present dataset was never conceived as a stand-alone product. It represents a snapshot in time of observations made by individuals within a community who have considerable experience hunting, fishing, and trapping in the region surrounding that community. These data are considered within the context provided by other studies but have limitations, just as those did that preceded it. For a full picture it is necessary to view these findings as one of many complementary datasets.

GOVERNANCE

Collection of resource information through the process of IQ interviews can have many different values for a community, including cultural, social, historical, and economic. All of these, with the exception of the economic value, are more or less self-evident. However, translating a living marine resource into an economic benefit, while simultaneously addressing the issue of sustainability, requires some consideration of resource governance.

Acquiring knowledge about available resources can be empowering and the acquisition of those resources could lead to prosperity and well-being. The NCRI attempts to identify the location and abundance of mammals, fish, birds, invertebrates, and plants for a number of reasons, including the potential for economic development. However, the exploitation of a resource requires important decision-making, a reasonable definition of expectations and limits, empowerment of individuals, and accountability. In other words, a sustainable approach to resource utilization requires a vision or goals, coupled with an implementation plan. The resource should be thoughtfully governed from the outset.

COMBINING INUIT QAUJIMAJATUQANGIT AND SCIENTIFIC KNOWLEDGE

Inuit Qaujimajatuqangit (IQ) is unique in that it is qualitative, intuitive, holistic, spiritual, empirical, personal, and often based on a long time-series of observations (Berkes 2002). Some of these characteristics are often cited as limitations, due to the reliance on long-term memory or that it is subjective. Conversely, IQ 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. This combination of knowledge may produce important synergies resulting in a very powerful tool.

The scientific approach embraces all available evidence and postulates a theory that attempts to predict future changes. The accuracy of the prediction is a measure of the completeness of scientific knowledge. Understanding the reasons for change is important because that information is central to any attempt to mitigate or influence long term effects, such as climate change. Addressing the root cause is a more certain approach than attempting to influence the symptoms. A critical factor in the scientific method is the availability and reliability of data available for analysis. The Arctic, because of its size, complexity, and manpower limitations, does not often have an adequate supply of scientific observations. However, one underutilized data source is traditional knowledge where species, locations, processes, and events have been monitored for generations. By bringing traditional knowledge and science together into a complementary working relationship there will be significant benefits for all stakeholders.

CLIMATE CHANGE

Over the past 20 years, an increasing number of arctic researchers have commented on the possibility of climate change and global warming and the predicted impacts on the marine environment (Tynan and DeMaster 1997,

Michel et al. 2006, Ford et al. 2008a and 2008b, Moore and Huntington 2008). Many changes may occur in recurrent open water sites, with the potential to affect various coastal resources. Specific impacts can be expected 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 then 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. In other words, we expect changes to occur in our physical world that could alter the biological system, including the human component.

The Nunavut Coastal Resource Inventory initiative was undertaken to provide information that could inform decision-making in the areas of resource management, economic development, conservation, environmental assessment, and the mitigation of anticipated climate change effects. In order to be effective, each intervention will require baseline resource information plus knowledge about the factors that are driving change. Assessment of environmental change will be considered for both direct human activity (resource extraction) and significant systemic changes (climate change). Climate change will exert its influence through warmer average temperatures, altered wind patterns, changes in precipitation, increasing freshwater input, and modified ocean circulation. Alteration of these factors will directly affect the physical marine environment and, ultimately, coastal marine resources as well. In order to mitigate, ameliorate, or influence these anticipated changes a considerable amount of information about the factors that drive both the physical and biological environments, as well as their interconnectedness is required. There are two immediate sources for that information: traditional ecological knowledge and scientific knowledge.

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Hamlet of Qikiqtarjuaq
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COLLECTED REFERENCES

Species photo references are available upon request. They have been excluded from this list due to length and issues with keeping links updated. All document references are listed in this section.

Ainley, G.A., C.T. Tynan and I. Stirling. 2003. Sea Ice: A Critical Habitat for Polar Marine Mammals and Birds. In: Sea Ice: an Introduction to its Physics, Chemistry and Geology, Thomas, D.N. and G.S. Dieckmann (eds.), Blackwell Publishers, 240-266.

Alexander, V. 1974. Primary productivity regimes of the nearshore Beaufort Sea, with reference to the potential role of ice biota. In: J.C. Reed and J.E. Sater (Editors), The Coast and Shelf of the Beaufort Sea. Arctic Institute of North America, Arlington, Va. Pp. 604-635.

Alexander, V. and H.J. Niebauer. 1981. Oceanography of the eastern Bering Sea ice edge zone in spring. Limnology and Oceanography 26: 1111-1125.

American Ornithologists Union. 1998. The A.O.U. Checklist of North American Birds (Seventh Edition). Washington, D.C. and supplements thereto through the 49th supplement, 2008.

Ashkui Project. Combining Traditional Ecological Knowledge and Western Science: URL: http://www.ec.gc. ca/EnviroZine/english/issues/26/print_version_e.cfm

Berkes, F. 1993. Traditional Ecological Knowledge in Perspective. Pp 1-10, In: Inglis, J.T. (ed.) Traditional Ecological Knowledge: Concepts and Cases. International Program on Traditional Ecological Knowledge, Canadian Museum of Nature, Ottawa and International Development Research Centre, Ottawa. 150 pp.

Berkes, F, R., Huebert, H. Fast, M. Manseau and A. Diduck. 2005. Breaking Ice: Renewable Resource and Ocean Management in the Canadian North. University of Calgary Press, 396 pp.

Bradstreet, M.S.W. and W.E. Cross. 1982. Trophic Relationships at High Arctic Edges. Arctic 35: 1-12.

Bray, R. 1943. Notes on the Birds of Southampton Island, Baffin Island and Meleville Peninsula. Auk 60:504-536

Brook, R., M. M'Lot and S. McLachlan. 2006. Pitfalls to avoid when linking traditional and scientific knowledge. pp 13-20 In : (Riewe, R. and J. Oakes, eds.) Climate Change: linking traditional and scientific knowledge. Aboriginal Issues Press.

Buckley, J.R., T. Gammelsrod, J.A. Johannessen, O.M. Johannessen 1979 and L.P. Roed. 1979. Science 203: 165-167.

Canadian Wildlife Service, 2007. Northwest Territories/ Nunavut Bird Checklist Survey program data. Available online at http://www.pnr-rpn.gc.ca/checklist

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Wildlife Species Search. Available online: http://www.cosewic.gc.ca/eng/sct1/ searchform_e.cfm Acessed online: 28/06/2011. Last updated:01/06/2011

Crawford, R. and J.Jorgenson. 1990. Density Distribution of Fish in the Presence of Whales at the Admiralty Inlet Landfast Ice Edge. Arctic 43: 215-222.

Csanady, G.T. 1982. Circulation in the coastal ocean. D. Reidel, Dordrecht, The Netherlands, 279 pp.

Department of Fisheries and Oceans. Aquatic Species at Risk. Accessed online at: http://www.dfo-mpo.gc.ca/species-especes/search-location-recherche-endroit-eng.htm. Last updated; 02/06/2011.

DFO 2009. Web Tide Model http://www.mar.dfo-mpo.gc.ca/science/ocean/ coastal_hydrodynamics/WebTide/webtide.html

Dyke, A.S., J. Hooper and J.M. Savelle. 1996. A History of sea ice in the Canadian Arctic Archipelago based on post-glacial remains of the bowhead whale (Balaena mysticetus). Arctic 49: 235-255.

Dyke, A.S. and J.M. Savalle. 2001. Holocene History of the Bering Sea Bowhead Whale (Balaena mysticetus) in its Beaufort Sea Summer Grounds off Southwestern Victoria Island, Western Canadian Arctic. Quaaterney Research 55: 371-379.

Ellis, D. V. 1956. Observations on the migration, distribution and breeding of birds in the Canadian Arctic during 1954 and 1955. Dansk Ornithologisk Forenings Tidesskrift 50:207-230

Ford, J.D., B. Smit, J. Wandel, M. Allurut, K. Shappa, H. Ittusarjuat, and K. Qrunnut. 2008a. Climate change in the Arctic: current and future vulnerability in two Inuit communities in Canada. Geographical Journal 174: 45 – 62.

Ford, J.D., T. Pearce, J. Gilligan, B. Smit and J. Oakes. 2008b. Climate change and hazards associated with ice use in northern Canada. Arctic, Antarctic and Alpine Research 40: 647- 659.

George, J.C.C., H.P. Huntington, K. Brewster, H. Eicken, D.W. Norton and R. Glenn. 2004. Observations on Shorefast Ice Dynamics in Arctic Alaska and the Responses of the Inupiat Hunting Community. Arctic 57(4): 363-374.

Gilligan, J., J. Clifford-Pena, J. Edye-Rowntree, K. Johansson, R. Gislason, T. Green and G. Arnold with J. Heath and R. Brook. 2006. The value of integrating traditional, local and scientific knowledge. pp 3-12 In: Riewe, R. and J. Oakes, (eds.) Climate Change: linking traditional and scientific knowledge. Aboriginal Issues Press.

Godfrey, W. Earle. 1986. The Birds of Canada (Revised Edition). National Museum of Natural Sciences, Ottawa, Canada.

Hannah, C.G., F. Dupont and M. Dunphy. 2009. Polynyas and Tidal Currents in the Canadian Arctic Archipelago. Arctic 62 (1): 83-95.

Harrisson, W.G. and G.F. Cota 1991. Primary production in polar waters: relation to nutrient availability, In: E. Sakshaug, C.C.E. Hopkins and N.A. Oritsland (Editors), Proc. Pro Mare Symp. On Polar Marine Ecology (Trondheim, 12-16 May 1990. Polar Res. 10(1): 87-104.

Hay, K. 2000. Final Report of the Inuit Bowhead Knowledge Study. 2000. Nunavut Wildlife Management Board.

Henshaw, A. 2003. Polynyas and Ice Edge Habitats in Cultural Context: Archaeological Perspectives from Southeast Baffin Island. Arctic 56 (1): 1-13.

Hohn, E. Otto. 1968. The Birds of Chesterfield Inlet, District of Keewatin, NWT, Canada. Canadian Field Naturalist 82(4):224-262.

Huntington, H.P. 2000. Using traditional Ecological knowledge in science: methods and applications. Ecological Applications 10(5): 1270-1274.

Ingram, R.G., J. Bacle, D.G. Barber, Y. Gratton, and H. Melling. 2002. An overview of physical processes in the North Water. Deep Sea Research II, 49: 4893-4906.

Ingram, R.G., E. Carmack, F. Mclaughlin and S. Nicol. 2005. Polar Ocean Coastal Boundaries Pan-Regional Overview. In: Robinson, A.R., Brink, K.H. (Eds.) The Sea, Vol. 14: The Global Coastal Ocean, Regional Studies and Syntheses, Wiley, New York, pp 61-81.

Ingram, R.G. and S. Prinsenberg. 1998. Coastal Oceanography of Hudson Bay and Surrounding Eastern Canadian Arctic Waters. In: Robinson, A.R., Brink, K.H. (eds.) The Sea, Vol. 11: The Global Coastal Ocean, Regional Studies and Syntheses, Wiley, New York, pp 835 -862.

International Union for Conservation of Nature (IUCN). The IUCN red list of endangered species. Available Online at: http://www.iucnredlist.org/apps/redlist/search Acessed online; 28/06/2011

Inuit Land Use and Occupancy Project (1976), Volumes 1-3; Indian and Northern Affairs ISBN 0-660-00-401-1

Inuit Qaujimajatuqangit of Climate Change in Nunavut. 2005. (Four Volumes: North Baffin Region; South Baffin Region; Kivalliq Region; and, Kitikmeot Region)

IPCC 2007a. Summary for Policy Makers. In: Climate Change 2007: The Physical Science Basis. (February 2007) Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC Secretariat, c/o WMO 7bis, Avenue de la Paix. C.P. No 2300, 1211 Geneva 2, Switzerland, 18 pp. (www.ipcc.ch/)

IPCC 2007b. Summary for Policy Makers. In: Climate Change 2007: Climate Change Impacts, Adaption and Vulnerability. (April 2007). Working group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC Secretariat, c/o WMO 7bis Avenue de la Paix, C.P. No 2300, 1211 Geneva 2, Switzerland, 23 pp. (www.ipcc.ch/)

IPCC 2007c. Summary for Policy Makers. In: Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment. (August 2007) Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York. (www.ipcc.ch/)

IPCC 2007d. Summary for Policy Makers. In Climate Change 2007: Synthesis Report. Approved in detail at IPCC Plenary XXVII (Valencia, Spain 12 – 17 November 2007). (www.ipcc.ch/)

Johannessen, O.M., J.A. Johannessen, M. Morison, B.A. Farrelly and E.A.S. Svendsen. 1983. The Mesoscale oceanographic conditions in the marginal ice zone north of Svalbard in early fall 1979. J. Geophysical Research 88: 2755-2769.

Legendre, L., S.F. Ackley, G.S. Dieckmann, B. Gulliksen, R. Horner, T. Hoshia, I.A. Melnikov, W.S. Reeburgh, M. Spindler, and C.W. Sullivan. 1992. Ecology of sea ice biota. 2. Global significance. Polar Biol. 12: 429-444.

McGhee, R. 1993. Ancient Peoples of the Arctic. UBC Press, in association with the Canadian Museum of Civilization, Vancouver.

McLaughlin, F.A., E.C. Carmack, R.G. Ingram and W.J. Williams, 2005. Oceanography of the Northwest Passage In The Sea, Vol. 14: The Global Coastal Ocean, Regional Studies and Syntheses, A.R. Robinson and K.H. Brink, eds. John Wiley and Sons, Inc., New York, pp 1213-1244.

Melling, H. 2000. Exchanges of freshwater through the shallow straits of the North American Arctic. In: The Freshwater Budget of the Arctic Ocean, E.L. Lewis et al (eds.), Kluwer Academic Publishers, Dordrecht., 479-502.

Michel, C., R.G. Ingram and L.R. Harris. 2006. Variability in oceanographic and ecological processes in the Canadian Arctic Archipelago. Progress in Oceanography 71: 379- 401.

Moller, H., F. Birkes, P. O'Brian Lyver and M. Kislalioglu. 2004. Combining science and traditional ecological knowledge: monitoring populations for co-management. Ecology and Society 9(3): [online]. http://www. ecologyandsociety.org/vol9/iss3/art2

Moore, S. and H.P. Huntington. 2008. Arctic marine mammals and climate change: impacts and resilience. Ecological Applications 18(2), Supplement: S157-S165.

Nunavut Wildlife Management Board. 2004. The Nunavut Wildlife Harvest Study - Final Report. 822 p.

O'Brien, J. P., M.D. Bishop, K.S. Regular, F.A. Bowdring, T.C. Anderson. 1998. Community-Based Coastal Resource Inventories in Newfoundland and Labrador – Procedures Manual. Fisheries and Oceans, St. John's, Newfoundland

Priest, H. 2004. The Nunavut Wildlife Harvest Study. 2004. Nunavut Wildlife Management Board.

Prinsenberg, S.J. 1986a. The circulation pattern and current structure of Hudson Bay. Pp. 187-204, In: Martin, I.P. (ed.) Canadian Inland Seas. Elsevier Oceanography Series.

Prinsenberg, S.J. 1986b. On the physical oceanography of Foxe Basin. Pp. 217-236, In: Martin, I.P. (ed.) Canadian Inland Seas. Elsevier Oceanography Series.

Prinsenberg, S. 1988. Ice ridge contributions to the freshwater contents of Hudson Bay and Foxe Basin. Arctic, 41:6-11.

Prinsenberg, S.J. and N.G. Freeman. 1986. Tidal heights and currents in Hudson Bay and James Bay. Pp. 205-216, In: Martin, I.P. (ed.) Canadian Inland Seas. Elsevier Oceanography Series.

Pyle, Peter and David F. DeSante. 2006. English and Scientific Alpha Codes for North American Birds through the 47th AOU Supplement. The Institute for Bird Populations, Pt. Reyes, CA.

Renaud, Wayne E., Stephen R. Johnson and P. Dianne Hollingdale. 1979. Breeding Birds of Arctic Bay, Baffin Island, N.W.T., with notes in the Biogeographic Significance of the Avifauna. Arctic. 32(2):122-134

Richard, Pierre. 2001. Marine Mammals of Nunavut. Qikitqtani School Operations, Box 1330, Iqaluit, Nunavut, X0A 0H0.

Richards, Jim, and Tony White. 2008. Birds of Nunavut: A Checklist (private publication, sponsored by Environment Canada).

Riewe, R. 1992. Nunavut Atlas. 1992. Canadian Circumpolar Institute (co-published by Tungavik Federation of Nunavut. ISBN 0838-133X

Saville, D.B.O. 1951. Bird Observations at Chesterfield Inlet, Keewatin, in 1950. Canadian Field Naturalist 65(4):145-157.

Schledermann, P. 1980. Polynyas and prehistoric settlement patterns. Arctic 33 (2): 292-302

Schledermann, P. 1990. Crossroads to Greenland, Arctic Institute of North America, Calgary, 364 pp.

Shortt, T. M., and H. S. Peters. 1942. Some recent bird records from Canada's Eastern Arctic. Canadian Journal of Research 20:338-348

Sibley, David Allen. 2004. Identification of Canada and Cackling Goose, Updated, October 7, 2004 http://www.sibleyguides.com/canada_cackling.htm

Smith, M. and B. Rigby. 1981. Distribution of polynyas in the Canadian Arctic. Pp. 6-28, In: Polynyas in the Canadian Arctic. Stirling, I. and H. Cleator (eds.) Occasional Paper, Number 45, Canadian Wildlife Service.

Soper, J. D. 1928 A faunal investigation of southern Baffin Island. National Museum of Canada Bulletin 53: 76-116

Stewart, D.B. and W.L. Lockhart. 2004. Summary of the Hudson Bay Marine Ecosystem Overview. Prepared by Arctic Biological Consultants, Winnipeg, for Canada Department of Fisheries and Oceans, Winnipeg, Mb. Draft vi + 66 pp.

Stirling, I. 1980. The Biological Importance of Polynyas in the Canadian Arctic. Arctic 33: 303-315.

Stirling, I. 1997. The importance of polynyas, ice edges, and leads to marine mammals and birds. J. of Marine Systems 10: 9-21.

Stirling, I., H. Cleator. And T.G. Smith. 1981. Marine Mammals. pp. 45-58, In: Polynyas in the Canadian Arctic (Stirling, I. and H. Cleator (eds.). Occasional Paper, Number 45, Canadian Wildlife Service.

Sutton, George Miksch. 1931. Notes on Birds Observed Along the West Coast of Hudson Bay. Condor 33:154-159.

Tang, C.L. and M.Ikeda.1989. Ice-Edge Upwelling off the Newfoundland Coast during LIMEX. Atmosphere-Ocean 27: 658-681.

Tee, K.T., P.C. Smith and D. Levaivre. 1993. Topographic Upwelling off the Coast of Nova Scotia. J. Physical Oceanography 23(8): 1703-1726.

Tynan, C.T. and D.P. DeMaster. 1997. Observations and Predictions of Arctic Climate Change: Potential Effects on Marine Mammals. Arctic 50: 308-322.

Welch, H.E., M.A. Bergmann, T.D. Siferd, K.A. Martin, M.F. Curtis, R.E. Crawford, R.J. Conover, and H. Hop. 1992. Energy flow through the marine ecosystem of the Lancaster Sound region, Arctic Canada. Arctic, 45: 343-357.

Buckley, J.R., T. Gammelsrod, J.A. Johannessen, O.M. Johannessen 1979 and L.P. Roed. 1979. Upwelling: Oceanic Structure at the Edge of the Arctic Ice Pack in Winter. Science 203: 165-167.

APPENDIX 1
QIKIQTARJUAQ INTERVIEWEE BIOGRAPHIES

NAME	BACKGROUND
1. Rhoda Kokseak	Rhoda has lived in Qikiqtarjuaq for 24 years. She grew up in Pangnirtung and has been fishing and hunting since the age of 10.
2. Jacopie Newkingnak	Grew up in the Clyde River area and has lived in Qikiqtarjuaq since the 1950s. Jacopie has been hunting and fishing since childhood until Winter 2010, when for health reasons he was unable to hunt for the first time.
3. Davidee Kooneelusie	Was born and raised in Pangnirtung and moved to Qikiqtarjuaq in 1966. He will hunt and fish year round while he is not working. Has also worked on several exploratory fisheries in the 1980s and 90s.
4. Joshua Alukie	Grew up on Padloping Island until relocating to Qikiqtarjuaq in 1968. He has extensive knowledge of entire regions' coastal history and wildlife. He has years of experience on offshore trawlers and in exploratory fisheries. He is considered to be one of the most knowledgeable people regarding coastal bird species.
5. Allen Kooneelusie	Grew up in Pangnirtung and moved to Qikiqtarjuaq in 1967. He hunts Seal, Narwhal and Walrus presently and Polar Bear until 1999, when he had a dog team.
6. Toomasie Newkingnak	Was born in Qivituuq and has lived in Qikiqtarjuaq for the past 50 years. He is still actively hunting Seal, Narwhal, Polar Bear, Caribou, Arctic Char, Ptarmigan, Hare and Fox.
7. Levi Nutaralak	Levi was born and raised in Pangnirtung, and moved to Qikiqtarjuaq in the 1960s. He has been hunting and fishing since he was a small child.
8. Pauloosie Keyootak	Grew up near Pangnirtung and has lived in Qikiqtarjuaq since 1965. He hunts year round and has an in-depth of knowledge about the entire coastal region.

APPENDIX 2
ACRONYMS AND ABBREVIATIONS

CBCRI – Community-Based Coastal Resource Inventory

CLEY – Department of Culture, Language, Elders and Youth

CWS – Canadian Wildlife Service

DFO – Department of Fisheries and Oceans

DOE – Department of Environment

DSD – Department of Sustainable Development

ED & T – Department of Economic Development and Transportation

GC – Government of Canada

GN – Government of Nunavut

HTO – Hunter/Trapper Organization

INAC – Indian and Northern Affairs, Government of Canada

IQ – Inuit Qaujimajatuqangit

IPCC – Intergovernmental Panel on Climate Change

NRCan – Natural Resources Canada

NRI – Nunavut Research Institute

NTI – Nunavut Tunngavik Incorporated

NWMB – Nunavut Wildlife Management Board

TK – Traditional Knowledge

TEK – Traditional Ecological Knowledge

REFERENCES

GeoConnections (*www.geoconnections.org/*)

Inuit Land Use and Occupancy Project (1976), Volumes 1-3; Indian and Northern Affairs ISBN 0-660-00-401-1

IPCC 2007a. Summary for Policy Makers. In: Climate Change 2007: The Physical Science Basis. (February 2007) Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC Secretariat, c/o WMO 7bis, Avenue de la Paix. C.P. No 2300, 1211 Geneva 2, Switzerland, 18 pp. (*www.ipcc.ch/*)

IPCC 2007b. Summary for Policy Makers. In: Climate Change 2007: Climate Change Impacts, Adaption and Vulnerability. (April 2007). Working group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. IPCC Secretariat, c/o WMO 7bis Avenue de la Paix, C.P. No 2300, 1211 Geneva 2, Switzerland, 23 pp. (*www.ipcc.ch/*)

IPCC 2007c. Summary for Policy Makers. In: Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment. (August 2007) Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York. (*www.ipcc.ch/*)

IPCC 2007d. Summary for Policy Makers. In Climate Change 2007: Synthesis Report. Approved in detail at IPCC Plenary XXVII (Valencia, Spain 12 – 17 November 2007). (*www.ipcc.ch/*)

Nunavut Coastal Resource Inventory Iglulik Pilot Project 2008.

Priest, H. 2004. The Nunavut Wildlife Harvest Study. 2004. Nunavut Wildlife Management Board.

Riewe, R. 1992. Nunavut Atlas. 1992. Canadian Circumpolar Institute (co-published by Tungavik Federation of Nunavut. ISBN 0838-133X

APPENDIX 3
QIKIQTARJUAQ - BIRD SIGHTINGS COMMENTARY

The following table compares the community interview findings with several literary sources and the knowledge of a professional birder. The list consists of birds that the interviewees stated seeing. All sightings have been graded on their normal breeding range status according to Godfrey (1986), status of their occupancy by Richards and White (2008), and verified against the NWT/NU Checklist Survey databank and other literature. The final column gives the opinion of Jim Richards, a professional birder, on the interview findings.

BIRDS REPORTED IN INTERVIEWS	IS THE BIRD WITHIN NORMAL BREEDING RANGE?	WHAT STATUS DOES THE BIRD HAVE WITHIN THE AREA?	IS THERE RECORD OF SIGHTINGS OF THIS BIRD FROM OTHER LITERATURE?	IS THE BIRD LISTED WITH THE NWT/NU BIRD CHECKLIST SURVEY?	COMMENTS FROM JIM RICHARDS ON THE LIKELIHOOD OF BIRD SIGHTING FREQUENCY AND INTERVIEW
Pomarine Jaeger	Yes	Migrant, Breed	Yes		as expected. Surprized not seen by more locals
Snowy Owl	Yes	Permanent, Breed			as expected
Glaucous Gull	Yes	Migrant, Breed		Yes	as expected
Herring Gull	Yes	Migrant, Breed			as expected
Thayer's Gull	No	Migrant, Breed		Yes	as expected
Mew Gull	No	Migrant, Breed	Yes		as expected
Ivory Gull	No	Accidental			possible
Ross' Gull	No	Vagrant			quite likely
Sabine's Gull	No	Migrant, Possibly breed			possible
Iceland Gull	No	Accidental			unlikely
Snow Goose	No	Migrant, Breed			as expected
Ross's Goose	No	Migrant, Breed			likely
Canada Goose	Yes	Migrant, Breed			as expected
Cackling Goose	Yes	Migrant, Breed		Yes	as expected
Tundra Swan	Yes	Migrant, Breed		Yes	as expected
Arctic Tern	Yes	Migrant, Breed			as expected
Thick-Billed Murre	No	Vagrant			likely
Northern Fulmar	No	Accidental			possible
Common Eider	Yes	Migrant, Breed, Wintertime			as expected
Long Tailed Duck	Yes	Migrant, Breed		Yes	as expected
Arctic Loon	No	No record			seeing Pacific Loons
Common Loon	No	Migrant, Breed	Yes	Yes	as expected
Yellow-billed Loon	Yes	Migrant, Breed			as expected

BIRDS REPORTED IN INTERVIEWS	IS THE BIRD WITHIN NORMAL BREEDING RANGE?	WHAT STATUS DOES THE BIRD HAVE WITHIN THE AREA?	IS THERE RECORD OF SIGHTINGS OF THIS BIRD FROM OTHER LITERATURE?	IS THE BIRD LISTED WITH THE NWT/NU BIRD CHECKLIST SURVEY?	COMMENTS FROM JIM RICHARDS ON THE LIKELIHOOD OF BIRD SIGHTING FREQUENCY AND INTERVIEW
Dovekie	Yes	Migrant, Breed	Yes	Yes	As Expected
Black-Legged Kittiwake	Yes	Migrant, Breed	Yes	Yes	As Expected
Sandhill Crane	Yes	Migrant, Breed	Yes	Yes	As Expected
Razorbill	Yes	Migrant, Breed	Yes	Yes	As Expected

APPENDIX 4
SPECIES PHOTOS

BIRDS


Buff-breasted Sandpiper


Stilt Sandpiper


Pectoral Sandpiper


White-rumped Sandpiper


Baird's Sandpipier


Least Sandpiper


Semipalmated Sandpiper


American Golden Plover


Black-bellied Plover


Dunlin


Red-necked Phalarope


Red Phalarope


Common Snipe


Red Knot


Sanderling


Ruddy Turnstone


Hudsonian Godwit


Arctic Tern


Thick-billed Murre


Black Guillemot


Glaucous Gull


Herring Gull


Ivory Gull


Iceland Gull


Northern Fulmar


Tundra Swan


King Eider


Common Eider

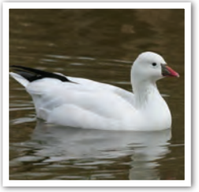

Obsqaav


Arctic Loon


Common Loon


Red-throated Loon


Snow Goose


Ross's Goose


Canada Goose


Rock Ptarmigan


Willow Ptarmigan


Rough Legged Hawk


Peregrine Falcon

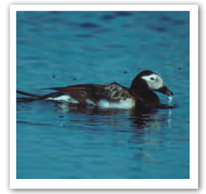
Gryfalcon

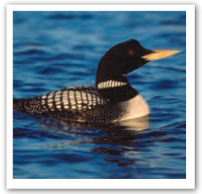

Snowy Owl


Snow Bunting


Common Raven


Cackling Goose


Long-Tailed Duck


Yellow-Billed Loon


Sandhill Crane


Black-Legged Kittiwake


Sabine's Gull


Bonaparte's Gull


Black-Headed Gull


Ross's Gull


Mew Gull


Thayer's Gull


Ring-Billed Gull


California Gull


Lesser Black-Backed Gull


Great Black-Backed Gull


Pomarine Jaeger


Long-Tailed Jaeger


Dovekie


Razorbill

FISH


Lake Whitefish


Round Whitefish


Broad Whitefish


Mountain Whitefish


Arctic Char


Red Lake Trout


Lake Trout


White Sucker


Longnose Sucker


Lake Cisco


Least Cisco


Arctic Cisco


Arctic Grayling


Northern Pike


Walleye


Bull Trout


Inconnu


Stickleback


Dolly-Varden


Arctic Cod


Arctic Staghorn Sculpin


Arctic Ocean Pout


Capelin


Slender Eelblenny


Greenland Halibut


Sandlance


Glacier Lantern Fish

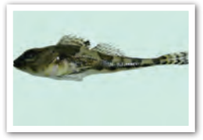

Greenlandic Shark


Atlantic Cod


Greenland Cod


Toothed Cod


Slimy Sculpin


Mailed Sculpin


Starry Flounder


Winter Flounder


Arctic Flounder


Trout Perch


Atlantic Herring


Ninespine Stickleback

Threespine Stickleback

Threespot Eelpout

Northern Wolfish

Atlantic Wolfish

Atlantic Spiny Lumpsucker

Arctic Skate

Thorny Skate

Landlocked Char

Greenland Turbot

INVERTEBRATES


Truncate Softshell Clams


Whelk


Scallop


Mussel


Snow Crab


Hermit Crab


Lobster


Crayfish


Northern Shrimp


Amphipod


Northern Krill


Mysid Shrimp


Naked Sea Butterfly


Mud Star


Polar Sea Star


Sea Cucumber*


Sea Anemone


Sea Urchin


Barnacle


Oyster


Deep Sea King Crab

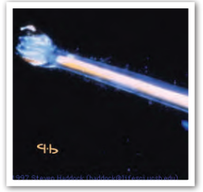

Basket Star


Tortoiseshell Limpet


Skate


Finger Sponge


Boreal Armhook Squid


Arrow Worm


Clam Worm


Plankton Worm


Northern Horsemussel


Cockle


Arctic Moonsnail


Flexed Gyro


Striped Shrimp


Toad Crab


Jellyfish


Clam

MARINE MAMMALS


Walrus


Ringed Seal


Harp Seal


Bearded Seal


Killer Whale


Beluga


Narwhal


Hooded Seal


Bowhead Whale


Polar Bear


Harbour Seal


Common Minke Whale


Northern Bottlenose Whale


Harbour Porpoise


North Atlantic Right Whale

MARINE PLANTS


Hollow Stemmed Kelp


Edible Kelp


Sea Colander


Spiny Sour Weed


Green Sea Fingers


Dulse


Bladder Wrack


Floating Buttercup


Goose Grass


Mare's Tail

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Department of Environment
Avatiliqiyikkut
Ministère de l’Environnement