# NUNAVUT
# COASTAL RESOURCE INVENTORY

## Naujaat


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Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

NCRI

Nunavut Coastal Resource Inventory – Naujaat
2011

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# EXECUTIVE SUMMARY

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

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

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

- 2008 Kugluktuk and Chesterfield Inlet
- 2009 Arctic Bay and Kimmirut
- 2010 Sanikiluaq
- 2011 Qikitarjuaq and Gjoa Haven
- 2012 Iqaluit, Naujaat, and Grise Fiord

This report presents the findings of the coastal resource inventory of Naujaat, which was conducted in March 2012.

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 Naujaat, 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, Naujaat was visited on two occasions; an initial scoping/consultation meeting in February 2012, followed by on-site interview sessions from March 23-31, 2012. A total of seven interviews were conducted during the site visit. During the interviews we asked participants about the coastal species they currently observe or have previously observed in the area and had them draw the location of their observations on the maps that we provided. We used photographs to help participants identify the species they have seen. The interviews lasted between 1.5 - 4 hours, depending on the participant. The data collected throughout the interviews was compiled into a database and the maps were digitized and analyzed.

The maps produced in the interviews are presented here, organized into the following categories: Marine Mammals, Fish, Birds, Invertebrates, Marine Plants, Areas of High Diversity, and Other.

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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. Each community is unique in terms of its physical environment, oceanographic setting, organisms present, and the interests and approaches of its hunters and trappers.

## THE COASTAL RESOURCE INVENTORY

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

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

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

The principle source of information for community-based coastal inventories is traditional knowledge or, in Inuktitut, Inuit Qaujimajatuqangit (IQ), gathered through interviews. Over the past 50 years, Inuit have transitioned from a resource-based nomadic life style to a wage-based economy. Coastal and land-based activities remain extremely important, contributing to Inuit quality of life, providing income and food, and as a significant part of the Inuit culture. The NCRI aims to retain some of this valuable knowledge by engaging community elders, hunters and fishers to document the presence, distribution, and characteristics of various coastal resources. IQ is unique in that it is qualitative, intuitive, holistic, spiritual, empirical, personal, and often based on a long time-series of observations (Berkes 2002). It is particularly useful for recording historical data that are unattainable in any other manner. A complementary coupling of IQ and scientific knowledge may provide a means to better understand and manage coastal resources.

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

**Figure 1:** Map of Nunavut

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

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

## FUNDING, PERSONNEL AND PROJECT DELIVERABLES

The second phase of the Nunavut Coastal Resource Inventory received primary financial support from Indian and Northern Affairs, Government of Canada, the Departments of Environment (DoE) and Economic Development and Transportation (EDT), Government of Nunavut, and secondary funding from Fisheries and Oceans, Canada. The Nunavut Research Institute also generously gave in-kind GIS support services to the project team. The four communities selected for Phase II were Kugluktuk (Kitikmeot), October 2008; Chesterfield Inlet (Kivalliq), November 2008; Arctic Bay (Qikiqtaaluk), February 2009; and, Kimmirut (Qikiqtaaluk), March 2009.

Funding for the third and fourth phase came from the DOE, Government of Nunavut. The third phase, two communities have been; Qikiqtarjuaq, March 2010 and Sanikiluaq, January 2011 to August 2011. The fourth phase, three communities have been completed; Gjoa Haven, November 2011, Iqaluit, January 2012, and Naujaat, March 2012.

Funding for the Hamlet of Naujaat came from the DOE, Government of Nunavut. The Coastal Inventory of Naujaat was conducted by DOE staff with the assistance of the Marine Institute of Memorial University of Newfoundland. This report focuses on the Hamlet of Naujaat, which was worked on from March 23, 2012 to March 31, 2012.

Overall project leadership was provided by Wayne Lynch, Director, Fisheries and Sealing Division, and his staff: Ron Brown, Manager, Policy and Programs; and Corenna Nuyalia, Acting Project Coordinator. Consulting on the project and participating in all interviews was Georgina Bishop from the School of Ocean Technology, Marine Institute of Memorial University of Newfoundland.

Project deliverables include:

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

# METHODOLOGY

## COMMUNITY 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. 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?

## INITIAL COMMUNITY VISIT

During the course of this project, Naujaat, formerly Repulse Bay, was visited on two occasions; an initial scoping/consultation meeting, February 2012, followed by on-site interview sessions from March 23-31, 2012. The scoping session was designed to put into place all of the elements that were required to properly conduct the interviews. This process was strongly dependent upon the Naujaat Hunter-Trapper Organization (HTO). The HTO formally agreed to support this initiative and provided 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 seven interviewees (Appendix 2) was made by NCRI project personnel. In addition, HTO personnel recommended the names of individuals who could be used as translators and student observers. These individuals were contacted, and tentative interview schedules were established.

## THE INTERVIEWS

Six individuals were present during each interview: the interviewee, an interviewer, a translator, a recorder, a science consultant, and a student observer. The interviewer followed a defined protocol that placed emphasis on a series of predetermined questions and photographs of various living resources thought to occur in the area. Maps covering the area of interest and colour coded pencils were provided 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). Qualitative data was gathered in the form of individual opinions, assumptions, and conclusions.

Annotations on the maps were coded to enable future identification and reference. Follow-up questions were asked of the interviewee, clarifications were elicited, and, if appropriate, discussion ensued about the information presented. The entire process was recorded using audio and video equipment, while selected portions were simultaneously manually recorded. Manual recording was used to maintain a running record of all map annotations and codes. This permitted the analysis of interviews to proceed without first transcribing the audiotapes. The interviews varied from 1.5 - 4 hours, depending on the individual being interviewed.

## POST-INTERVIEW METHODOLOGY

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

## NON-INTERVIEW DATA ACQUISITION

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

The second is the *Nunavut Atlas* co-published in 1992 by the Canadian Circumpolar Institute and the Tunngavik Federation of Nunavut. This atlas is largely data collected for the Inuit Land Use and Occupancy Study. The resource data and maps are great resources but the information is approximately 35 years old. Relevant maps from this volume are presented in this report (Figures 36-37).

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

## DATA MANAGEMENT AND ANALYSIS

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

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

## GIS INTERFACE

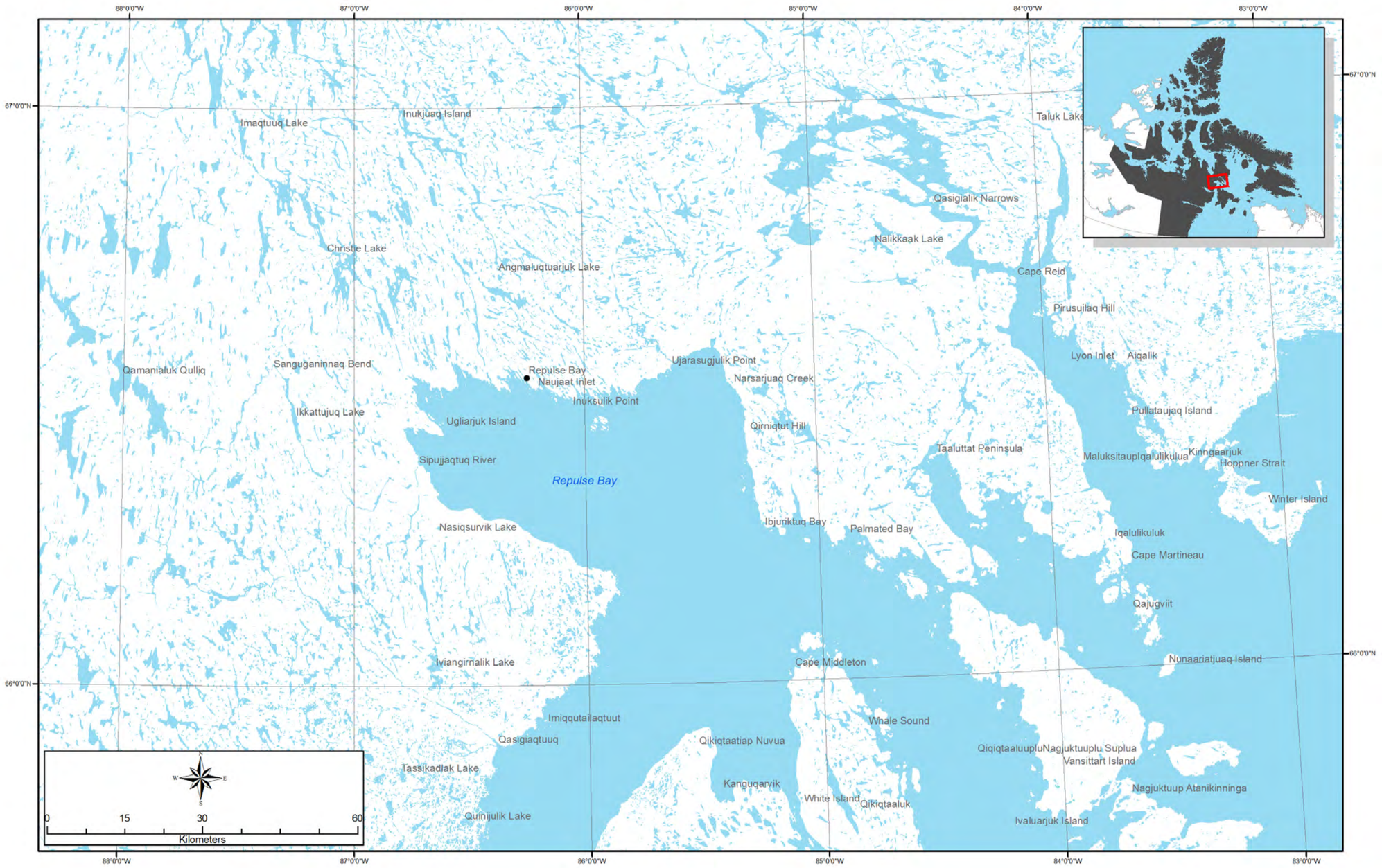
Once the inventory maps and database were completed, they were entered into a GIS which creates computer-generated maps. It also links information to the geographic locations contained in the database. Attributes associated with each piece of data include information such as the species name, the interviewee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

## INTERACTIVE ATLAS

The NCRI results are published in community-specific reports that are shared with project partners (community HTOs, 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

**Figure 2:** The study area extent discussed in the Naujaat interviews



# RESOURCE INVENTORY

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

## HUNTING/FISHING

The individuals interviewed in Repulse Bay (having spent Naujaat hunters/fishers depend on a broad array of animals to supply their "country food" needs. Ensuring access to and availability of country food continues to be an issue of importance and concern for the community. All participants noted that species abundance always varies from year to year.

## HEALTH, SIZE AND PRESENCE

Throughout the course of the Naujaat interviews references were repeatedly made regarding the health, size, or presence/absence of different species

- Forty four percent of interviewees said the numbers of some fish species varies from year to year;
- Forty two percent of participants stated that char abundance was increasing; and fourteen percent said there was a decrease in cod catches;
- Participants have seen an increase in polar bear and narwhal;

## CHANGES UNDERWAY

Participants commented on changes in their local area regarding- species, climate change, pollution and marine transportation:.

- The abundance of polar bears is reported to be increasing and some have noted it is more dangerous to hunt and camp in tents due to the increased population. Participants would like to see an increase in the quota in polar bears
- No noticeable changes in the appearance of the fish were noted;
- Some participants noticed seals are more diseased and more apt to sink due to being thinner
- Interviewee's are concerned about the increase in marine transportation with regards to disturbing wildlife, migration routes, marine pollution and possible oil spills
- Some participant's noticed changes in the ice; ice taking longer to freeze and melting earlier in the spring. However it was noted that the lakes don't seem to be affected

## ECONOMIC DEVELOPMENT

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

- All participants noted that a commercial fishery would be beneficial to the community, if supported by proper fisheries management techniques
- The HTO has a community freezer however it is non operational
- A food processing plant would be beneficial to the area to create job opportunities
- Some participants noted that funding and infrastructure is needed; such as improvements to the community wharf, which is currently too small and is only accessible by a gravel slip way. They would also like to see more housing development in the community
- Naujaat is well known for its carvers, however there isn't much soap stone, this could be a possible business opportunity for the community
- Tourism could be a viable industry including eco-tourism but more outfitters are needed in Naujaat

# MARINE RESOURCES IN A PHYSICAL SETTING

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

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

## RECURRENT OPEN WATER AND ARCTIC BIOLOGY

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

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

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

These open water sites also appear to have great importance to the peoples that have occupied the Arctic for several thousand years. Archaeological data obtained from historic Inuit habitation sites, coupled with modern sea-ice extremes, have been used to infer a strong causal

relationship between polynyas and historic Inuit settlement patterns (Henshaw 2003). Schledermann (1980) drew attention to the fact that the early settlers of present-day Nunavut did not create settlements in random fashion. Since they depended almost entirely on food resources obtained through hunting, settlements were usually located within reasonable proximity of game, which often meant areas of recurrent open water. Schledermann (1980) also found a close correlation between the distribution of recurring polynyas in the eastern Canadian High Arctic and the abundance of archaeological sites from the Thule culture which specialized in hunting marine mammals.

## OCEANOGRAPHIC FACTORS THAT CONTRIBUTE TO OPEN WATER

The Hamlet of Naujaat is located at the northwestern limit of Hudson Bay near Foxe Basin. It is located right on the Arctic Circle (approx 66 º N, 86 º W), an area in the Central Arctic part of Canada. This area of the Central Arctic is located on the Northwest Passage and is difficult to navigate by ship because of year round ice (Central Arctic Ltd., 2006). Large volumes of freshwater enters the Beaufort Sea from numerous rivers, thereby creating an estuarine environment where less dense freshwater overlays the denser salt water.

### 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. Tidal mixing also delivers nutrients, which promote plant and algal growth when sufficient light is available, especially in summer months. Examples of this phenomenon are the well-known polynyas in Fury and Hecla Strait at the head of Foxe Basin (Hannah et al 2009).

### POLYNYAS

If the Arctic were covered with a thick, seamless layer of sea-ice, many of the organisms that currently exist there and contribute to the region's productivity would find it impossible to survive. Polynyas and leads provide the necessary breaks in the ice that permit sunlight to penetrate and photosynthesis to proceed (in both planktonic and ice-based algae), allow mammals to breath, 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. The process is controlled by wind and/or ocean currents, which remove any ice formed at the site. Other factors include turbulence from surface waves or currents that can inhibit ice formation, adjacent coastlines, and shore-fast ice or ice bridges that prevent ice from drifting into polynyas (Hannah et al 2009).

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

Although strong tidal currents, sometimes associated with the formation of polynyas, have been observed on the west side of King William Island, there are no known polynyas in this area. This may be due to the lack of a deep basin in the area to act as a reservoir for warm water (Hannah et al 2009).

### LAND-FAST LEADS (FLAW LEADS)

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

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

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

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

### UPWELLING: TOPOGRAPHIC AND ICE-EDGE

Upwelling is a mechanism by which colder, deeper water is moved to the surface, where it can create and/or maintain ice-free open water. Topographic upwelling occurs where a current moving through 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).

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

### MARINE RESOURCES IN THE CONTEXT OF CLIMATE CHANGE

Over the past 20 years, many Arctic researchers have commented on the impending probability of 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). Changes may occur affecting water stratification and its role in nutrient renewal, the balance between multi-year and annual ice, the relative importance of ice algae, the timing and magnitude of primary and secondary production, changes in traditional species distributions and hunting sites, amongst others. Each of these changes could exert some influence on the food web and the state of the resources as they are presently defined.

# GUIDE TO MAPS AND TABLES

The following group of maps summarizes the geographic context, species locations, and information from earlier studies (derived from the *Nunavut Atlas*). The maps are accompanied by data in tables, which provides additional detail, along with descriptive information, when available. Table 1 describes the map codes used in the tables.

**Table 1.** Guide to maps and tables

| CATEGORY | MAP CODE |
|---|---|
| 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 upper case 'E' |
| | Appended with a upper case 'E' |
| 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 |
| Other | OTH |
| Area Known Best (area most familiar with or a travel route) | AKB |
| Camp / Cabin (typically modern) | CAMP |
| Camp / Cabin (typically modern) | CAMP |

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 labeled with a number. 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.

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

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

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

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

**Figure 3.** Campsites

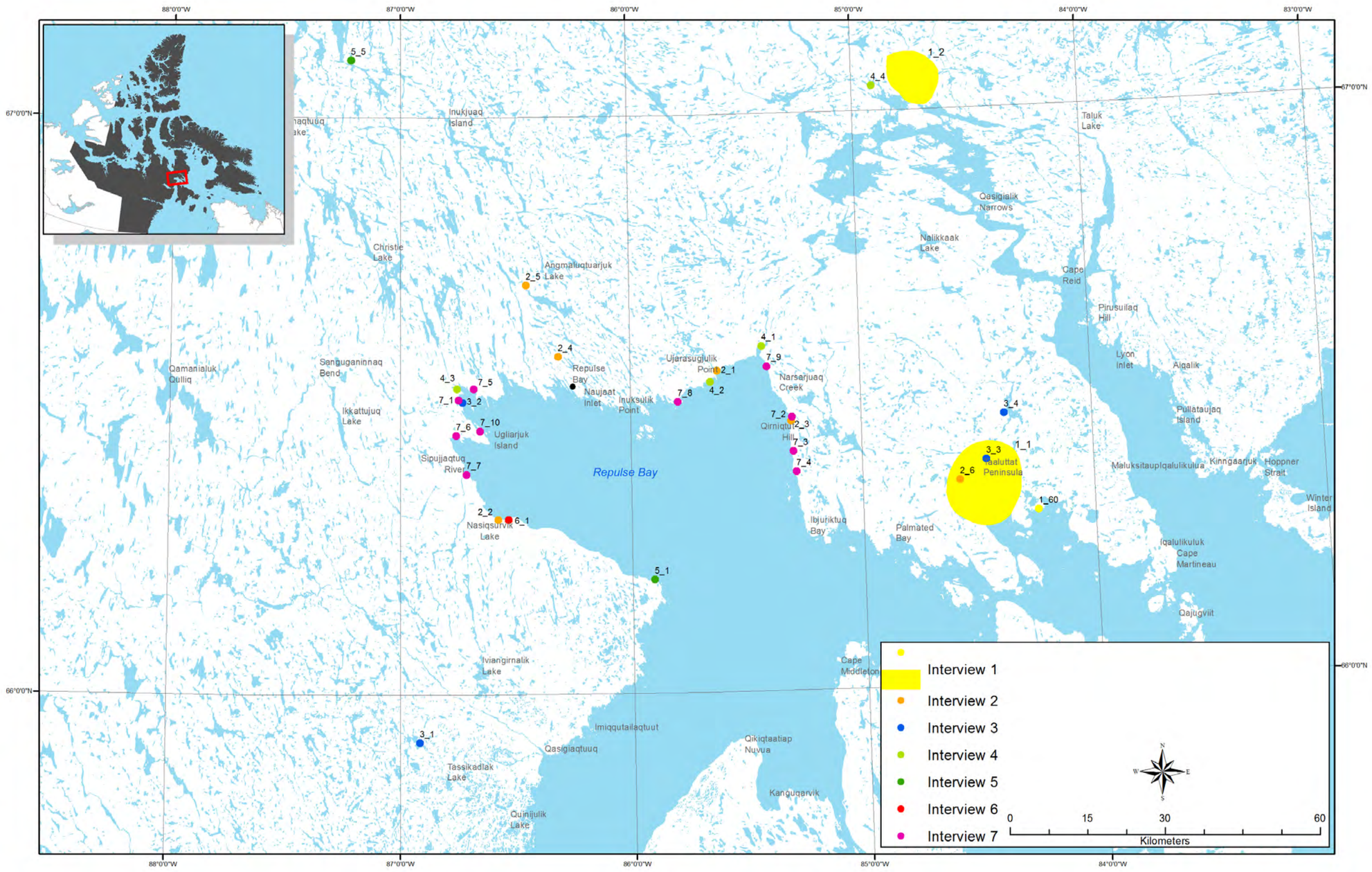


**Table 2.** Camp sites

| MAP CODE | INTERVIEW CODE | COMMENTS |
|---|---|---|
| 1_1 | REP_01_0312 | Fishing camp |
| 1_2 | REP_01_0312 | Fishing camp |
| 1_60 | REP_01_0312 | Interviewee was born in this area |
| 2_1 | REP_02_0312 | Summer caribou hunting camp |
| 2_2 | REP_02_0312 | Spring seal hunting camp |
| 2_3 | REP_02_0312 | Spring and summer seal hunting camp |
| 2_4 | REP_02_0312 | Cabin. Beautiful all year |
| 2_5 | REP_02_0312 | Summer camp by Honda |
| 2_6 | REP_02_0312 | Cabin - not used often. They don't use tents anymore because of polar bears. They try to make cabins strong to keep them away |
| 3_1 | REP_03_0312 | |
| 3_2 | REP_03_0312 | |
| 3_3 | REP_03_0312 | |
| 3_4 | REP_03_0312 | |
| 4_1 | REP_04_0312 | Cabin |
| 4_2 | REP_04_0312 | Cabin |
| 4_3 | REP_04_0312 | Cabin |
| 4_4 | REP_04_0312 | Cabin |
| 5_1 | REP_05_0312 | Camping site |
| 5_5 | REP_05_0312 | Cabin |
| 6_1 | REP_06_0312 | Cabin |
| 7_1 | REP_07_0312 | Cabin |
| 7_2 | REP_07_0312 | |
| 7_3 | REP_07_0312 | |
| 7_4 | REP_07_0312 | |
| 7_5 | REP_07_0312 | |
| 7_6 | REP_07_0312 | |
| 7_7 | REP_07_0312 | |
| 7_8 | REP_07_0312 | |
| 7_9 | REP_07_0312 | |
| 7_10 | REP_07_0312 | |

**Figure 4.** Areas of significance

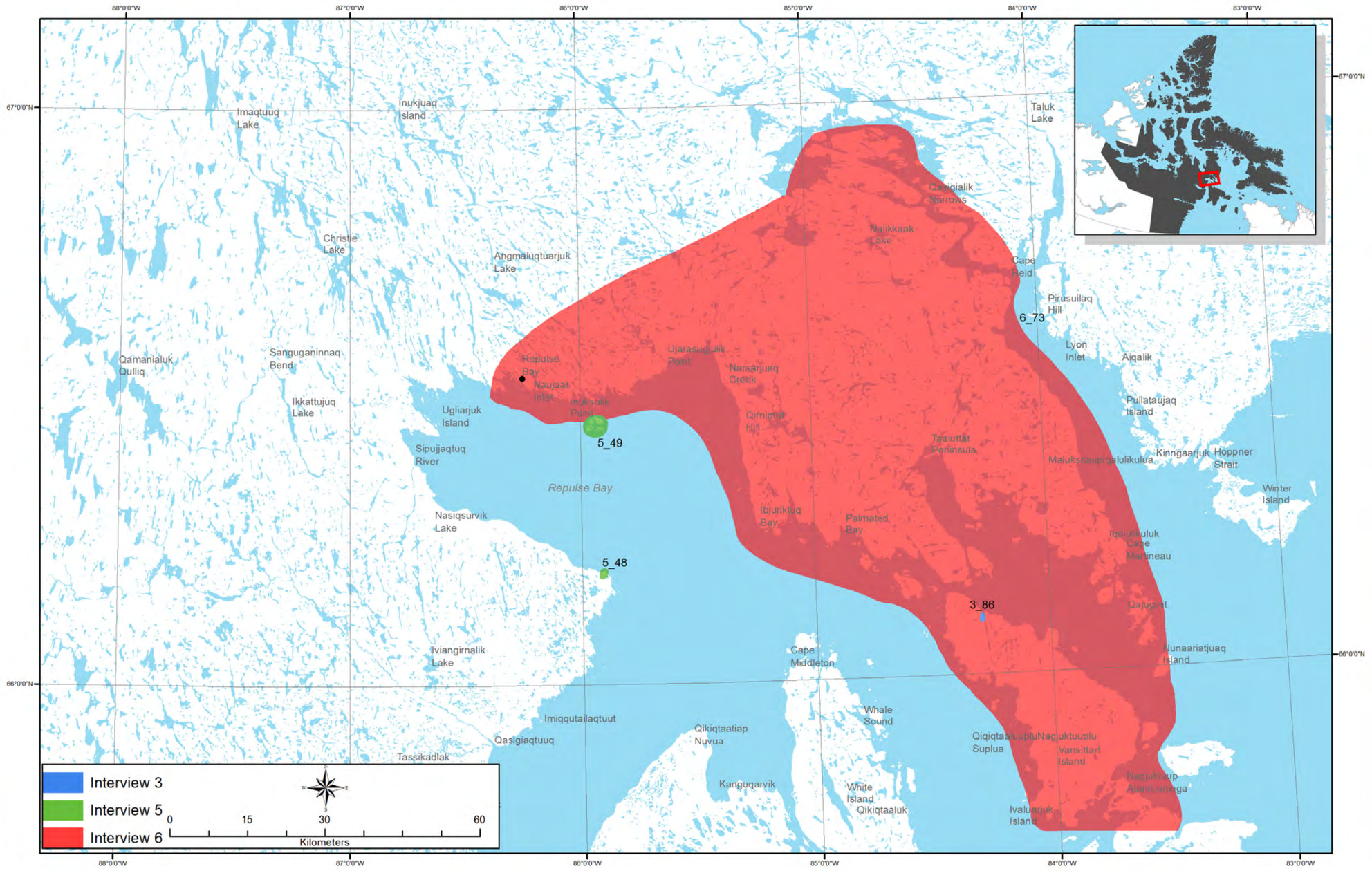


**Table 3.** Areas of significance

| MAP CODE | INTERVIEW CODE | COMMENTS |
|---|---|---|
| 3_86 | REP_03_0312 | Small glaciers in this area, it is very beautiful |
| 5_48 | REP_05_0312 | Doesn't want to see mining in the area |
| 5_49 | REP_05_0312 | Doesn't want to see mining in the area |
| 6_73 | REP_06_0312 | Beautiful area and doesn't want development in the area |

**Figure 5.** Probability of occurrence for Arctic Char

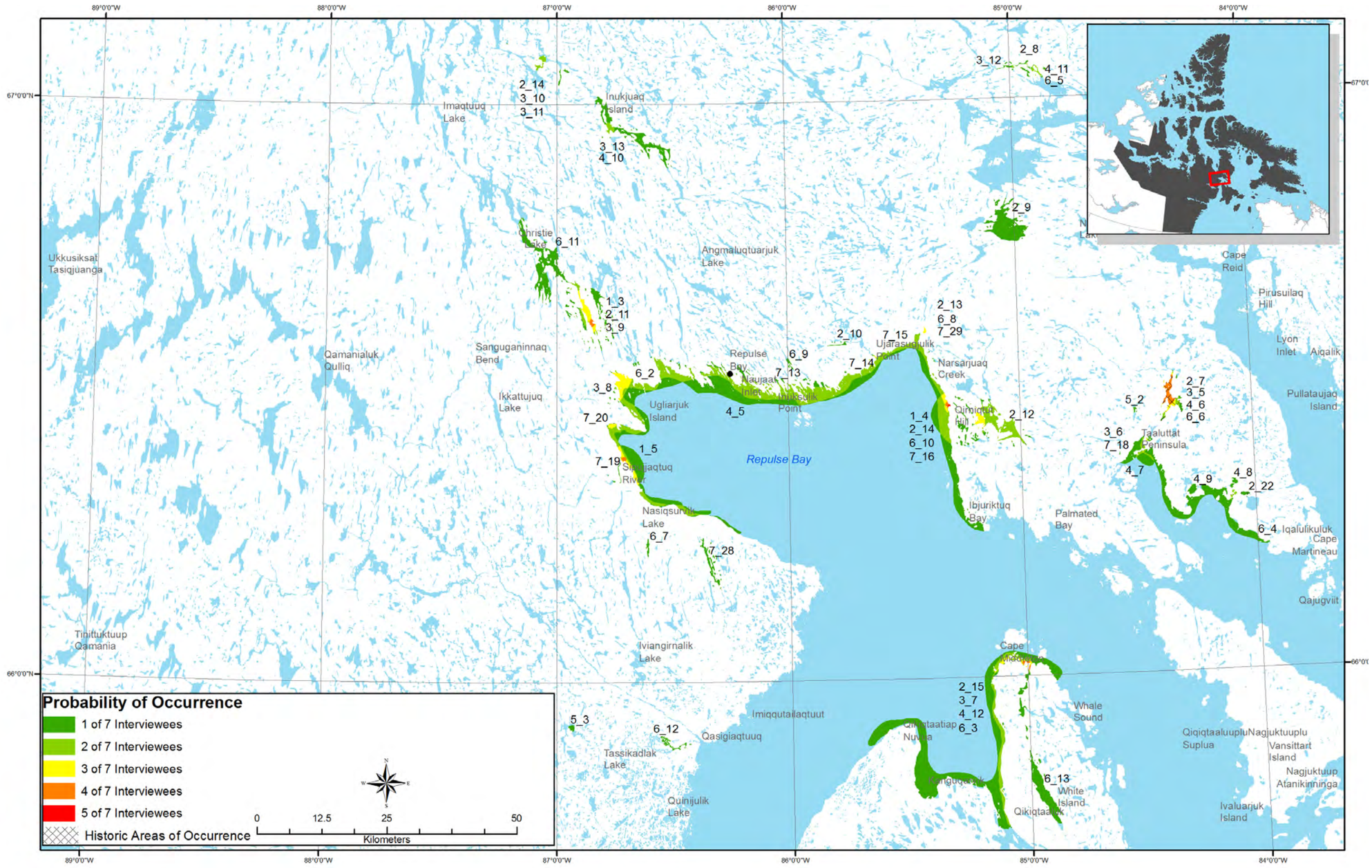


**Table 4.** Probability of occurrence for Arctic Char

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_3 | REP_01_0312 | Jul, Aug | |
| 1_4 | REP_01_0312 | Jul, Aug | |
| 1_5 | REP_01_0312 | Jul, Aug | |
| 2_7 | REP_02_0312 | Sep, Oct | |
| 2_8 | REP_02_0312 | May, Jun | |
| 2_9 | REP_02_0312 | Jul, Aug | |
| 2_10 | REP_02_0312 | May, Jun | |
| 2_11 | REP_02_0312 | May, Jun | |
| 2_12 | REP_02_0312 | May to Aug | |
| 2_13 | REP_02_0312 | Jun to Aug | |
| 2_14 | REP_02_0312 | Jul, Aug | |
| 2_15 | REP_02_0312 | Jul, Aug | |
| 2_22H | REP_02_0312 | | |
| 3_5 | REP_03_0312 | Dec to Apr | |
| 3_6 | REP_03_0312 | Jul, Aug | |
| 3_7 | REP_03_0312 | Jul, Aug | |
| 3_8 | REP_03_0312 | Jul, Aug | |
| 3_9 | REP_03_0312 | Sep to Nov | |
| 3_10 | REP_03_0312 | Sep to Apr | |
| 3_11 | REP_03_0312 | Dec to Apr | |
| 3_12 | REP_03_0312 | Dec to Apr | |
| 3_13 | REP_03_0312 | Sep to Apr | |
| 4_5 | REP_04_0312 | Jul, Aug | Alone the shore in the summer time, in late August fish start to go back up river |
| 4_6 | REP_04_0312 | Jul to Nov | |
| 4_7 | REP_04_0312 | Jul, Aug | |
| 4_8 | REP_04_0312 | | |
| 4_9 | REP_04_0312 | | |
| 4_10 | REP_04_0312 | Dec to Mar | |
| 4_11 | REP_04_0312 | Dec to Mar | |
| 4_12 | REP_04_0312 | Jul, Aug | |
| 5_2 | REP_05_0312 | Oct, Nov | |
| 5_3 | REP_05_0312 | Oct, Nov | |
| 5_4 | REP_05_0312 | Oct, Nov | |
| 6_2 | REP_06_0312 | Jul, Aug | |
| 6_3 | REP_06_0312 | Jul, Aug | |
| 6_4 | REP_06_0312 | Jul, Aug | |
| 6_5 | REP_06_0312 | Sep to Nov | |
| 6_6 | REP_06_0312 | Sep to Nov | |
| 6_7 | REP_06_0312 | | |
| 6_8 | REP_06_0312 | Jun to Aug | |
| 6_9 | REP_06_0312 | | |
| 6_10 | REP_06_0312 | | |
| 6_11 | REP_06_0312 | Jun to Aug | |
| 6_12 | REP_06_0312 | Sep to Nov | |
| 6_13 | REP_06_0312 | | |
| 7_11 | REP_07_0312 | Jul, Aug | Char go back up river the end of August |
| 7_12 | REP_07_0312 | Jul, Aug | Char go back up river the end of August |
| 7_13 | REP_07_0312 | Jul, Aug | Char go back up river the end of August |
| 7_14 | REP_07_0312 | Jul, Aug | Char go back up river the end of August |
| 7_15 | REP_07_0312 | Jul, Aug | Char go back up river the end of August |
| 7_16 | REP_07_0312 | Jul, Aug | Char go back up river the end of August |
| 7_17 | REP_07_0312 | Oct to Apr | |
| 7_18 | REP_07_0312 | | |
| 7_19 | REP_07_0312 | Jul, Aug | All along the shore in the Summer |
| 7_20 | REP_07_0312 | Jul, Aug | All along the shore in the Summer |

**Figure 6.** Probability of occurrence for Lake Trout

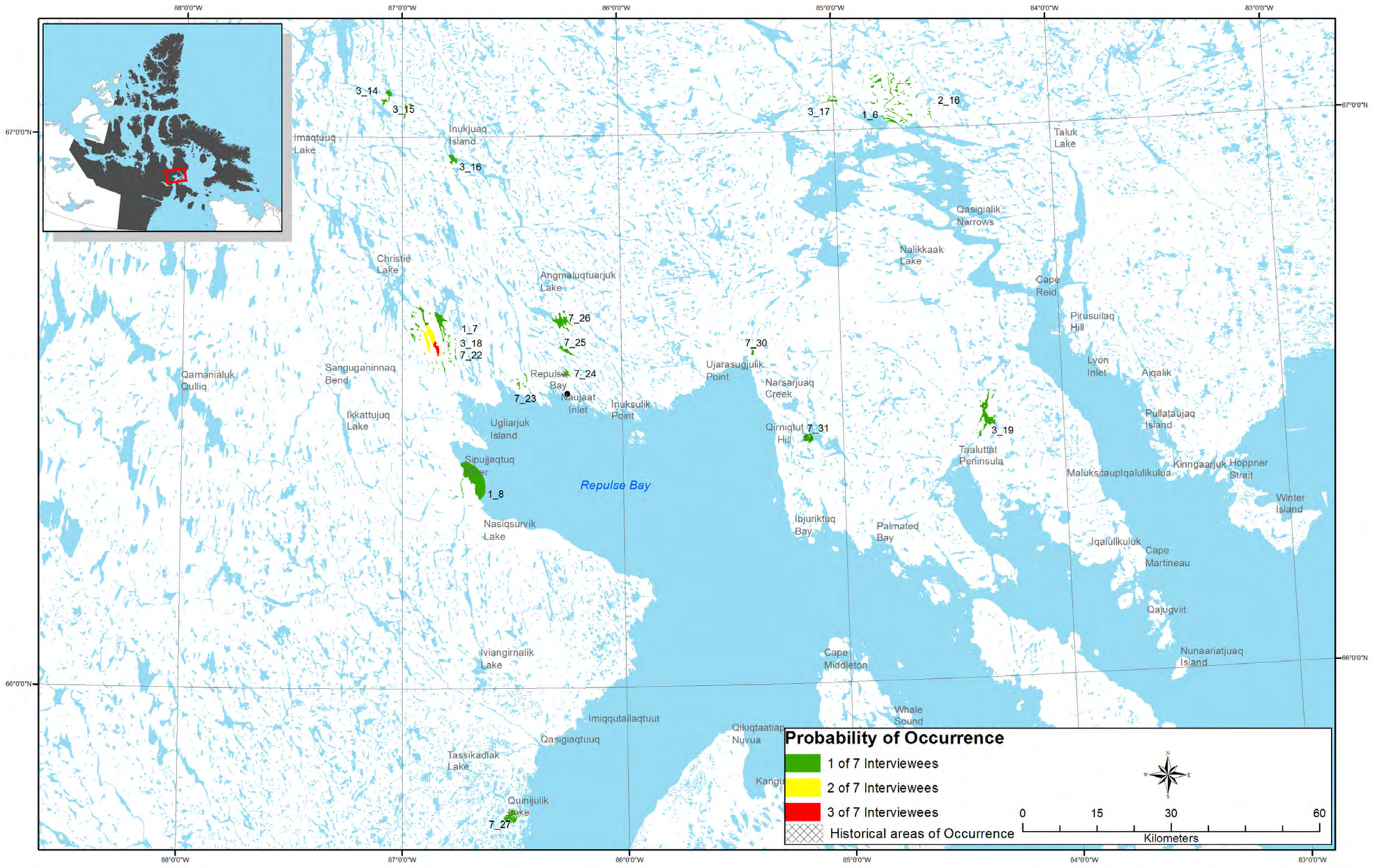


**Table 5.** Probability of occurrence for Lake Trout

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_6 | REP_01_0312 | Year-round | |
| 1_7 | REP_01_0312 | Year-round | |
| 1_8 | REP_01_0312 | Year-round | |
| 2_16 | REP_02_0312 | May, Jun | |
| 3_14 | REP_03_0312 | Dec to Apr | |
| 3_15 | REP_03_0312 | Dec to Apr | |
| 3_16 | REP_03_0312 | Dec to Apr | |
| 3_17 | REP_03_0312 | Dec to Apr | |
| 3_18 | REP_03_0312 | Dec to Apr | |
| 3_19 | REP_03_0312 | Dec to Apr | |
| 7_22 | REP_07_0312 | Year-round | |
| 7_23 | REP_07_0312 | Year-round | |
| 7_24 | REP_07_0312 | Year-round | |
| 7_25 | REP_07_0312 | Year-round | |
| 7_26 | REP_07_0312 | Year-round | |
| 7_27 | REP_07_0312 | Year-round | |
| 7_30 | REP_07_0312 | Year-round | |
| 7_31H | REP_07_0312 | Year-round | |
| *4_13E* | *REP_04_0312* | *Year-round* | Trout are found in every lake |
| *5_6E* | *REP_05_0312* | | Lake trout is found in all  lakes |
| *6_14E* | *REP_06_0312* | *Year-round* | |
| *7_21E* | *REP_07_0312* | *Year-round* | |

**Figure 7.** Areas of occurrence for Atlantic Cod

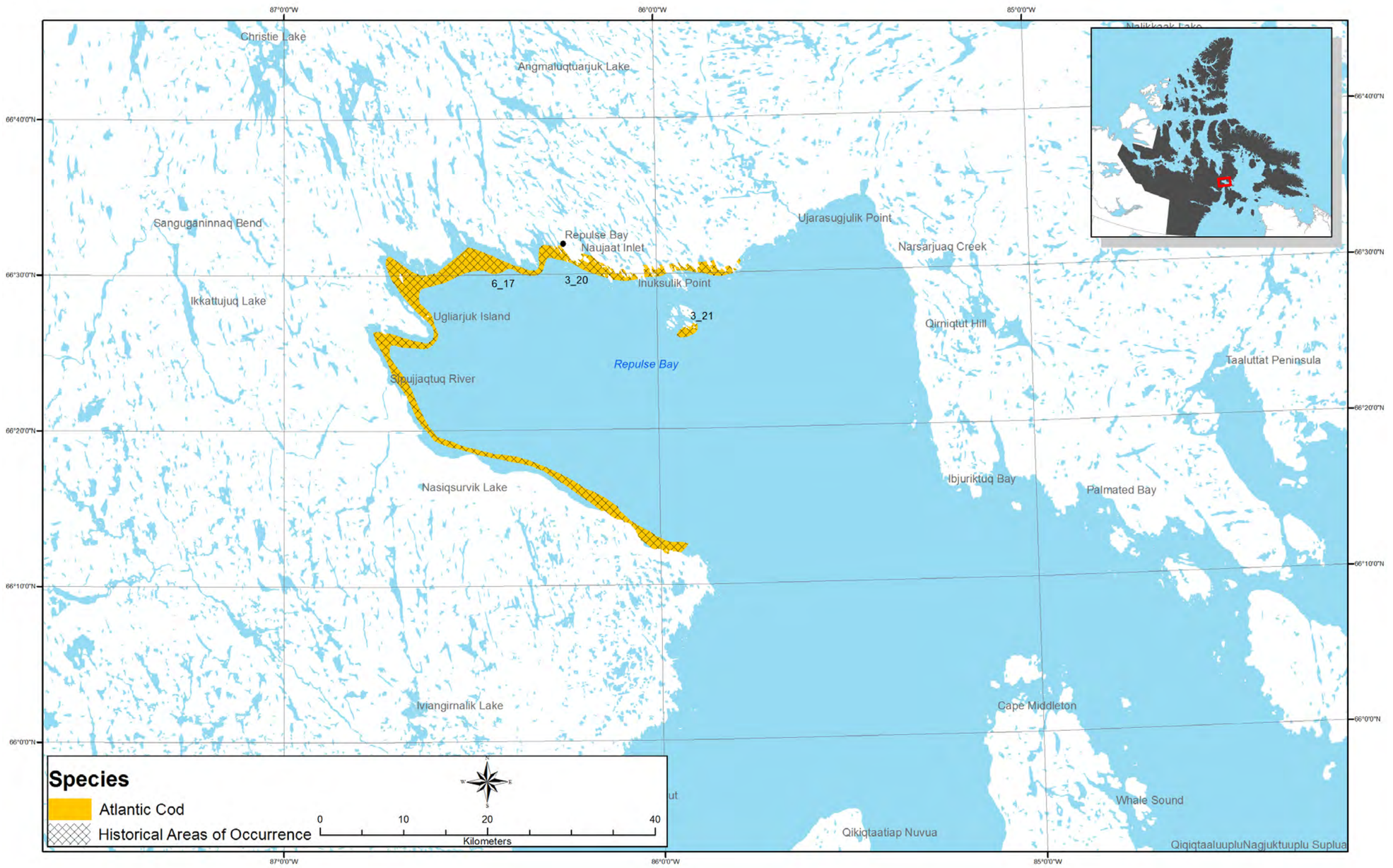


**Table 6**. Areas of occurrence for Atlantic Cod

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 3_20 | REP_03_0312 | May to Aug | |
| 3_21H | REP_03_0312 | | |
| 6_17H | REP_06_0312 | | May have Atlantic cod confused with Arctic Cod |

**Table 7.** Arctic Cod, and Atlantic Cod everywhere data

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS |
|---|---|---|---|
| 1_9E | REP_01_0312 | Arctic Cod | Jul to Sep |
| 7_32E | REP_07_0312 | Arctic Cod | |
| 1_10E | REP_01_0312 | Atlantic Cod | Jul to Sep |
| 2_17E | REP_02_0312 | Atlantic Cod | |
| 5_7E | REP_05_0312 | Atlantic Cod | |

**Figure 8.** Areas of occurrence for Bull Trout, Ninespine Stickleback, and Threespine Stickleback

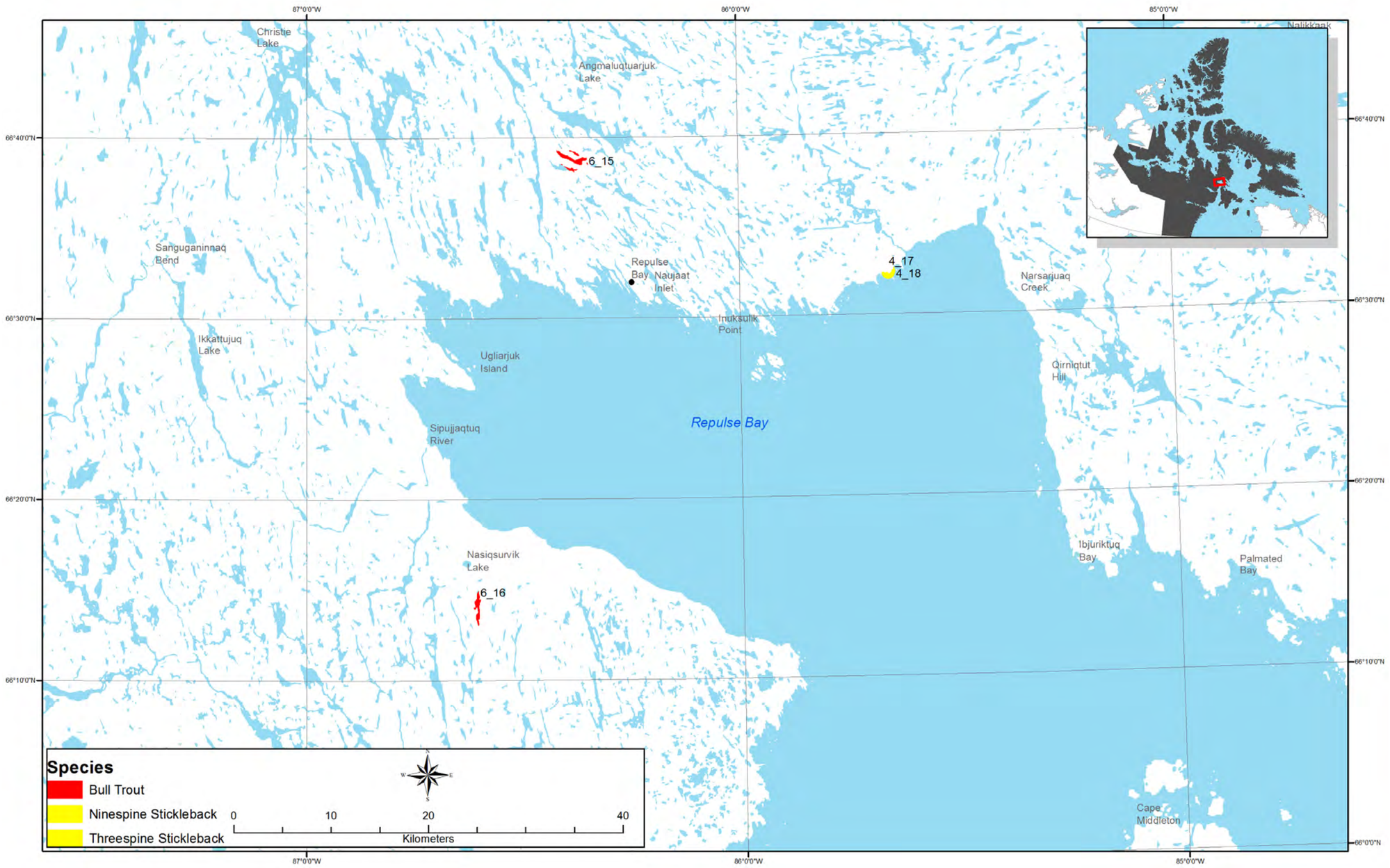


**Table 8.** Areas of occurrence for Bull Trout, Ninespine Stickleback, and Threespine Stickleback

| MAP CODE | INTERVIEW CODE | SPECIES | COMMENTS |
|---|---|---|---|
| 6_15 | REP_06_0312 | Bull Trout | Red meat |
| 6_16 | REP_06_0312 | Bull Trout | |
| 4_17 | REP_04_0312 | Ninespine Stickleback | |
| 4_18 | REP_04_0312 | Threespine Stickleback | |
| 3_24E | REP_03_0312 | Ninespine Stickleback | Everywhere |
| 6_20E | REP_06_0312 | Ninespine Stickleback | Everywhere |
| 7_35E | REP_07_0312 | Ninespine Stickleback | Everywhere |
| 7_36E | REP_07_0312 | Threespine Stickleback | Everywhere |
| 3_25E | REP_03_0312 | Threespine Stickleback | Everywhere |
| 6_21E | REP_06_0312 | Threespine Stickleback | Everywhere |

**Figure 9.** Areas of occurrence for Capelin, and Rainbow Smelt

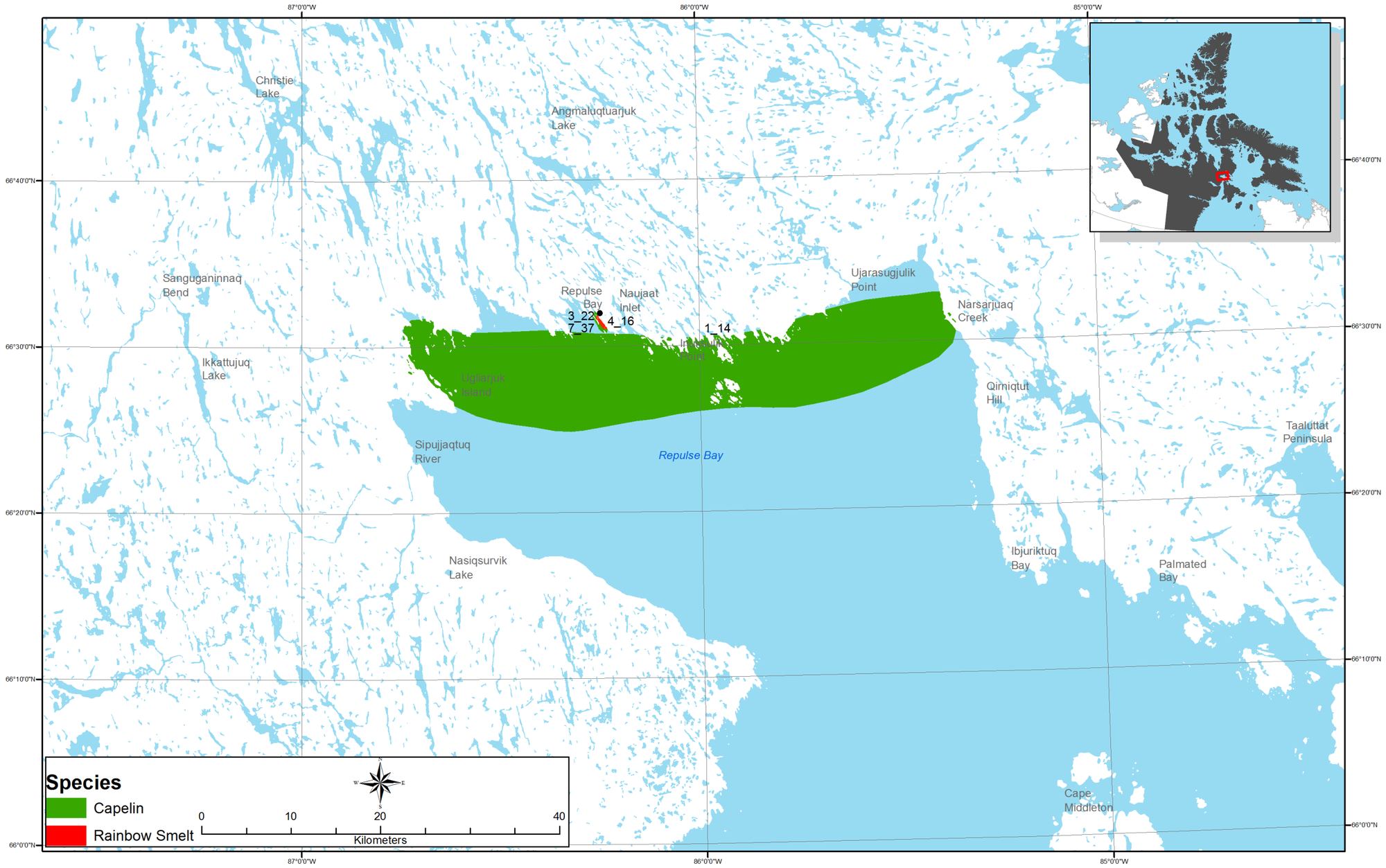


**Table 9.** Areas of occurrence for Capelin, and Rainbow Smelt

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 1_14 | REP_01_0312 | Capelin | Jul to Sep | |
| 3_22 | REP_03_0312 | Capelin | | |
| 3_23 | REP_03_0312 | Capelin | | |
| 4_16 | REP_04_0312 | Capelin | | |
| 7_37 | REP_07_0312 | Rainbow Smelt | | |
| 2_20E | REP_02_0312 | Capelin | | Everywhere |
| 7_33E | REP_07_0312 | Capelin | | Everywhere |
| 7_34E | REP_07_0312 | Atlantic Herring | | Everywhere |

**Figure 10.** Areas of occurrence for Arctic Staghorn Sculpin, Shorthorn Sculpin, Twohorn Sculpin

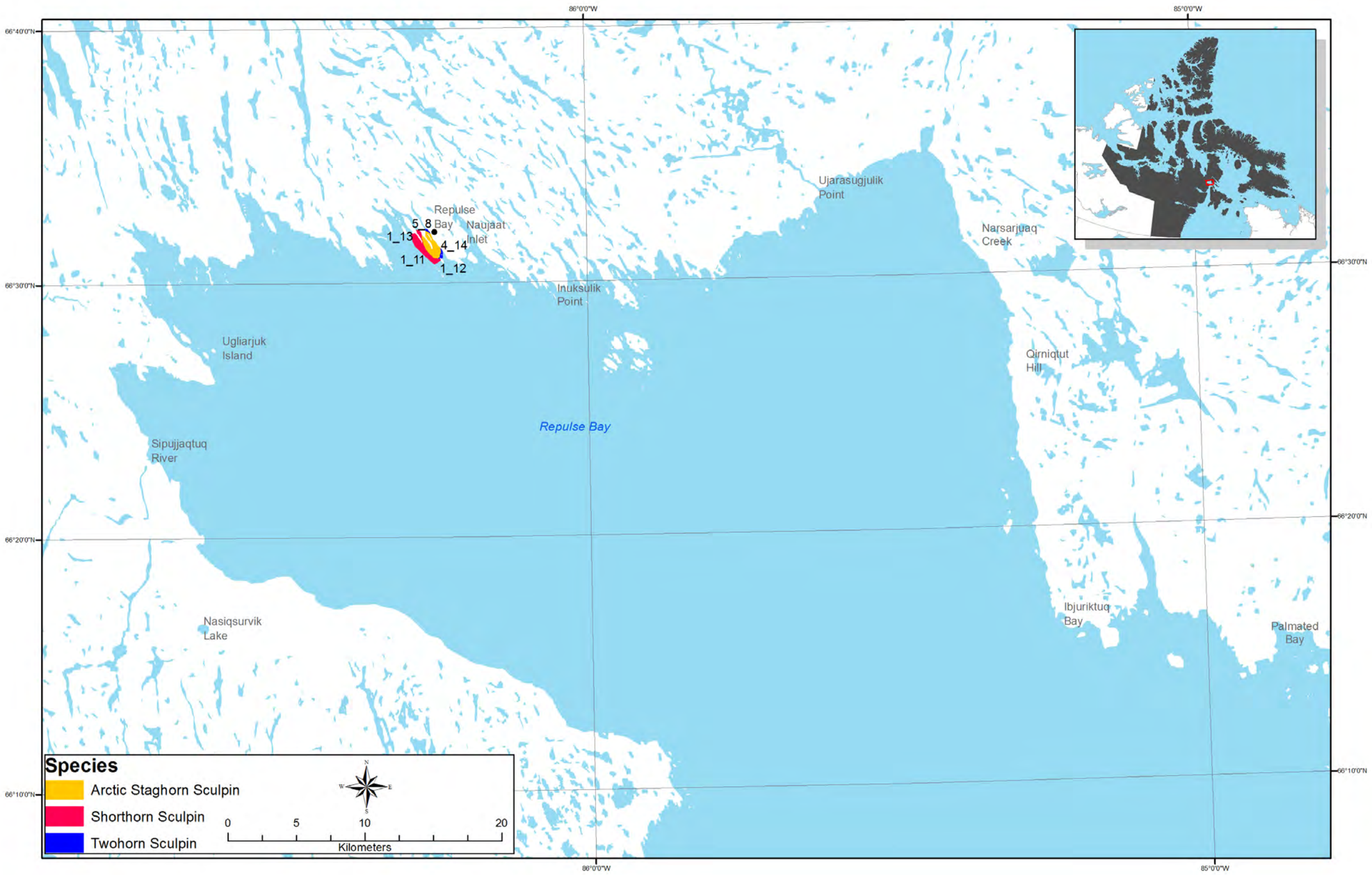


**Table 10.** Areas of occurrence for Arctic Staghorn Sculpin, Shorthorn Sculpin, and Twohorn Sculpin

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 1_11 | REP_01_0312 | Arctic Staghorn Sculpin | Jul to Sep | |
| 5_8 | REP_05_0312 | Arctic Staghorn Sculpin | Jul, Aug | |
| 1_13 | REP_01_0312 | Shorthorn Sculpin | Jul to Sep | |
| 1_12 | REP_01_0312 | Twohorn Sculpin | Jul to Sep | |
| 4_14 | REP_04_0312 | Twohorn Sculpin | | |
| 2_18E | REP_02_0312 | Twohorn Sculpin | | Everywhere. Found along the coast |
| 6_18E | REP_06_0312 | Twohorn Sculpin | | Everywhere |
| 2_19E | REP_02_0312 | Shorthorn Sculpin | | Everywhere |
| 4_15E | REP_04_0312 | Shorthorn Sculpin | | Everywhere |
| 5_9E | REP_05_0312 | Shorthorn Sculpin | Jul, Aug | Everywhere |
| 6_19E | REP_06_0312 | Shorthorn Sculpin | | Everywhere |

**Figure 11.** Areas of occurrence for Leatherfin Lumpsucker, and Lumpsucker

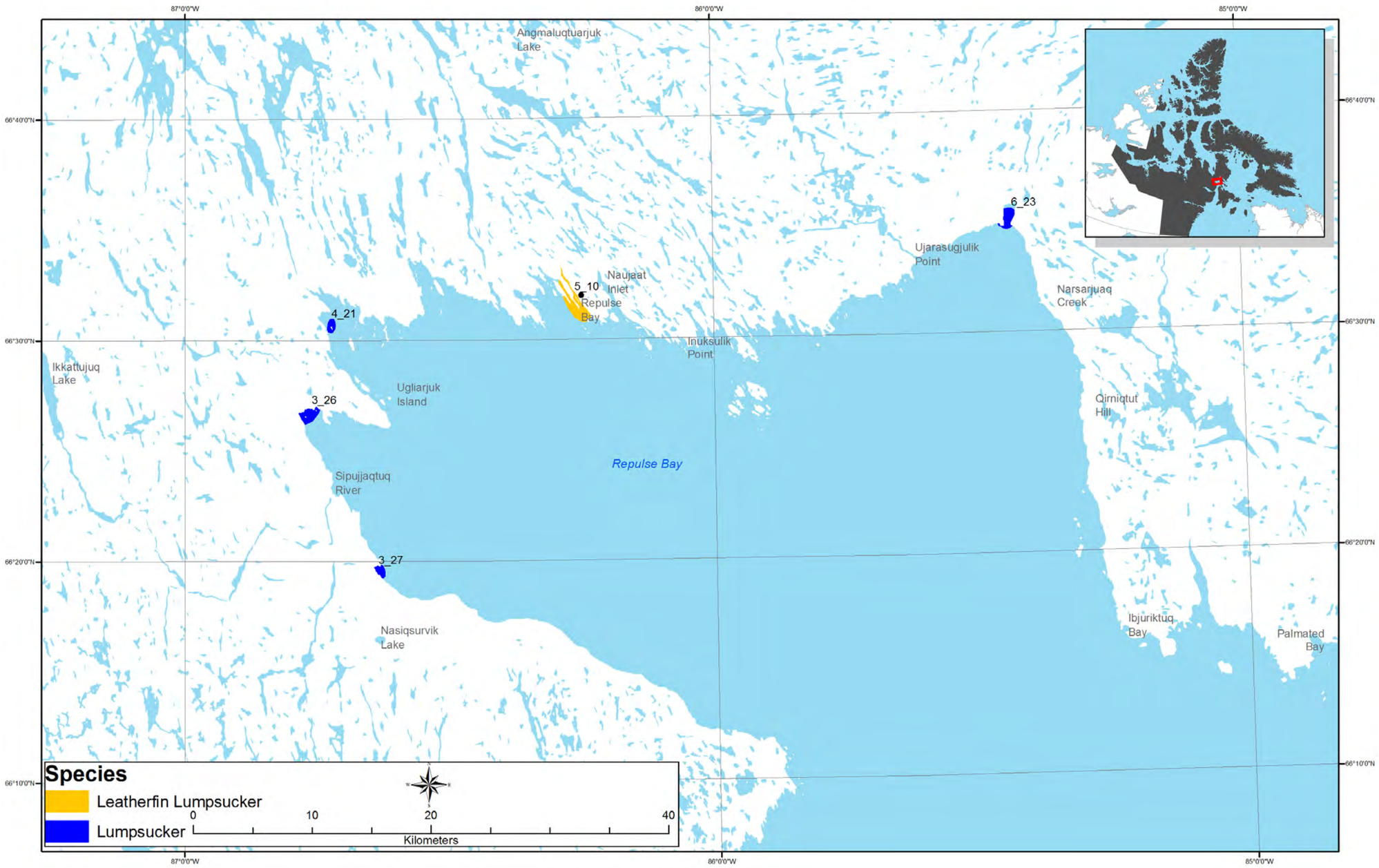


**Table 11.** Areas of occurrence for Leatherfin Lumpsucker, and Lumpsucker

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 3_26 | REP_03_0312 | Lumpsucker | Jul, Aug | |
| 3_27 | REP_03_0312 | Lumpsucker | Jul, Aug | |
| 4_21 | REP_04_0312 | Lumpsucker | | |
| 6_23 | REP_06_0312 | Lumpsucker | | |
| 5_10 | REP_05_0312 | Leatherfin Lumpsucker | Jul, Aug | |
| 2_21E | REP_02_0312 | Lumpsucker | | Everywhere |
| 1_17E | REP_01_0312 | Lumpsucker | Jul to Sep | Everywhere |
| 7_38E | REP_07_0312 | Leatherfin Lumpsucker | Jul, Aug | Everywhere. Gets caught in nets, too scared to touch them |

**Figure 12.** Areas of occurrence for McAllister's Eelpout, Northern Hagfish, Polar Eelpout, Threespot Eelpout

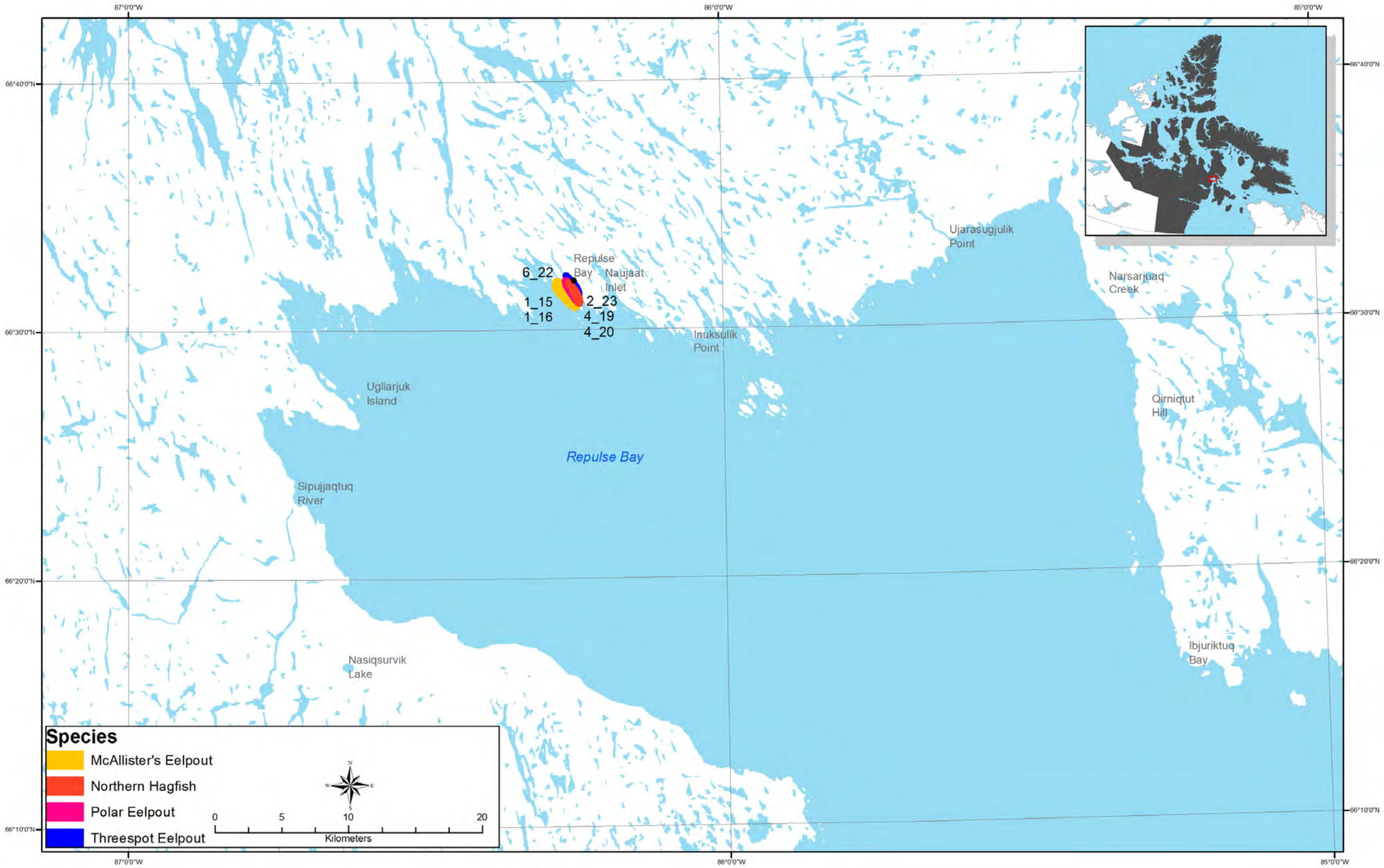


**Table 17.** Areas of occurrence for McAllister's Eelpout, Northern Hagfish, Polar Eelpout, Threespot Eelpout

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 1_16 | REP_01_0312 | McAllister's Eelpout | Jul to Sep | |
| 4_19 | REP_04_0312 | Polar Eelpout | Jul, Aug | |
| 1_15 | REP_01_0312 | Threespot Eelpout | Jul to Sep | |
| 4_20 | REP_04_0312 | Threespot Eelpout | Jul, Aug | |
| 6_22 | REP_06_0312 | Threespot Eelpout | | |
| 2_23 | REP_02_0312 | Northern Hagfish | | |

**Figure 13.** Areas of occurrence for Clam, Polar Sea Star, Naked Sea Butterfly, and Shelled Sea Butterfly

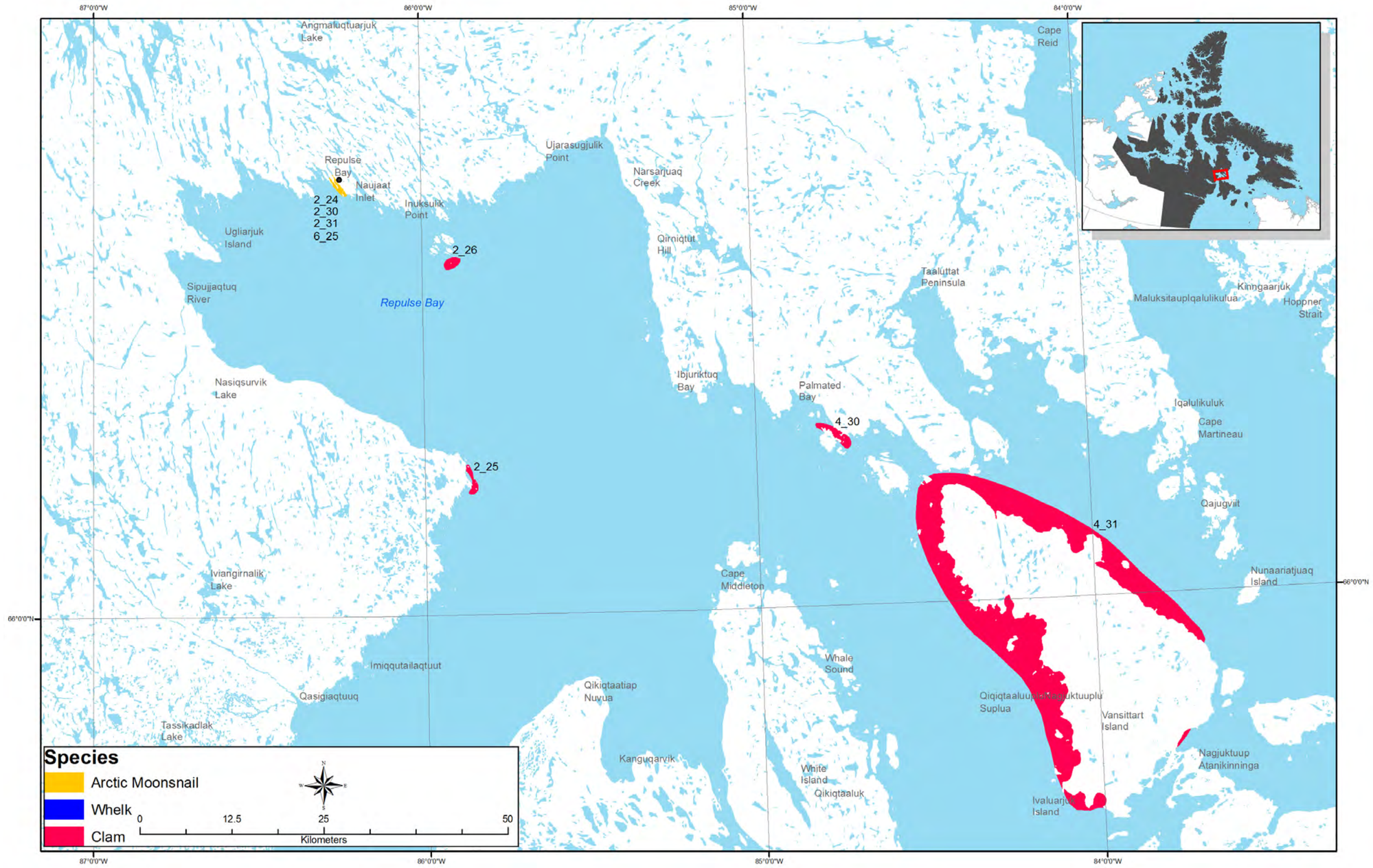


**Table 13.** Areas of occurrence for Clam, Polar Sea Star, Naked Sea Butterfly, and Shelled Sea Butterfly

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 2_24 | REP_02_0312 | Clam | Dec to Mar | |
| 2_25 | REP_02_0312 | Clam | Dec to Mar | |
| 2_26 | REP_02_0312 | Clam | Dec to Mar | |
| 4_30 | REP_04_0312 | Clam | | |
| 4_31 | REP_04_0312 | Clam | | |
| 6_24 | REP_06_0312 | Clam | | Doesn't harvest them |
| 6_25 | REP_06_0312 | Clam | | |
| 5_14 | REP_05_0312 | Polar Sea Star | Jul, Aug | |
| 6_28 | REP_06_0312 | Polar Sea Star | | |
| 3_30 | REP_03_0312 | Naked Sea Butterfly | Jul, Aug | |
| 3_31 | REP_03_0312 | Shelled Sea Butterfly | Jul, Aug | |

**Table 14.** Clam, Icelandic Scallop, Naked Sea Butterfly, Shelled Sea Butterfly, Polar Sea Star, Mud Star, and Sea Urchin everywhere data

| MAP CODE | INTERVIEW CODE | SPECIES |
|---|---|---|
| 1_18E | REP_01_0312 | Clam |
| 1_19E | REP_01_0312 | Iceland Scallop |
| 2_29E | REP_02_0312 | Iceland Scallop |
| 2_27E | REP_02_0312 | Mussel |
| 2_28E | REP_02_0312 | Cockle |
| 5_11E | REP_05_0312 | Northern Horsemussel |
| 1_26E | REP_01_0312 | Naked Sea Butterfly |
| 2_38E | REP_02_0312 | Naked Sea Butterfly |
| 5_15E | REP_05_0312 | Naked Sea Butterfly |
| 6_30E | REP_06_0312 | Naked Sea Butterfly |
| 1_27E | REP_01_0312 | Shelled Sea Butterfly |
| 2_39E | REP_02_0312 | Shelled Sea Butterfly |
| 6_31E | REP_06_0312 | Shelled Sea Butterfly |
| 1_23E | REP_01_0312 | Polar Sea Star |
| 2_35E | REP_02_0312 | Polar Sea Star |
| 1_24E | REP_01_0312 | Mud Star |
| 2_36E | REP_02_0312 | Mud Star |
| 1_25E | REP_01_0312 | Sea Urchin |
| 2_37E | REP_02_0312 | Sea Urchin |

**Figure 14.** Areas of occurrence for Amphipod, Ctenophore, Sea Anemone, Arctic Moonsnail, and Whelk

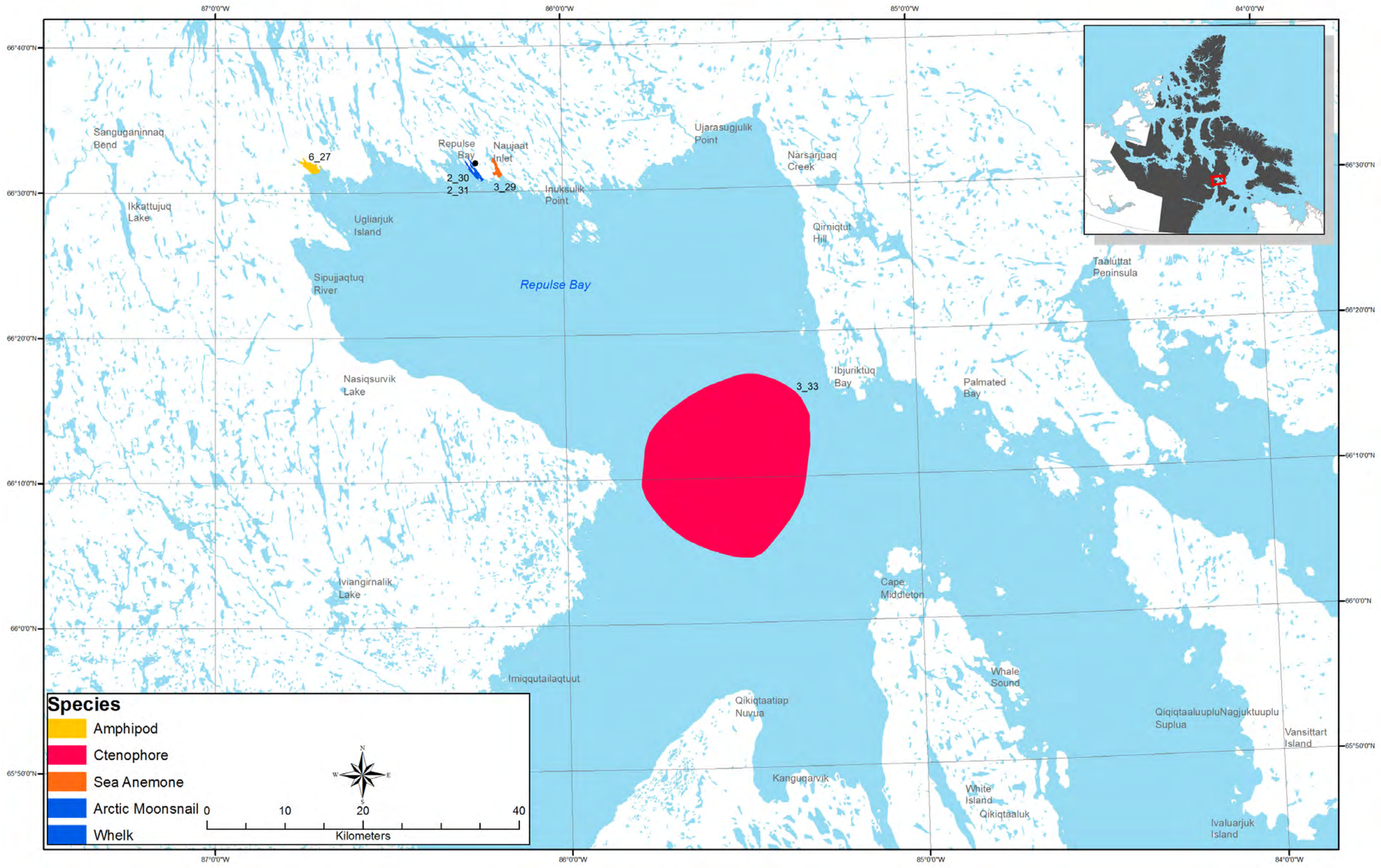


**Table 15.** Areas of occurrence for Amphipod, Ctenophore, Sea Anemone, Arctic Moonsnail, and Whelk

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 6_27 | REP_06_0312 | Amphipod | | A lot in this area |
| 3_33 | REP_03_0312 | Ctenophore | Jul, Aug | |
| 3_29 | REP_03_0312 | Sea Anemone | Jul, Aug | |
| 2_31 | REP_02_0312 | Arctic Moonsnail | | |
| 2_30 | REP_02_0312 | Whelk | | |

**Table 16.** Arctic Moonsnail, Amphipod, Ctenophore, Jellyfish, Hermit Crab, Northern Shrimp, Flexed Gyro, Boreal Armhook Squid everywhere data

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 1_20E | REP_01_0312 | Arctic Moonsnail | | |
| 5_12E | REP_05_0312 | Arctic Moonsnail | | |
| 1_21E | REP_01_0312 | Amphipod | | Amphipods used to be abundant in the area but doesn't see much anymore. |
| 2_33E | REP_02_0312 | Amphipod | | |
| 3_28E | REP_03_0312 | Amphipod | Jul to Sep | |
| 5_13E | REP_05_0312 | Amphipod | | |
| 6_26E | REP_06_0312 | Amphipod | | All along the shore, bigger in open water |
| 1_29E | REP_01_0312 | Ctenophore | | |
| 2_41E | REP_02_0312 | Ctenophore | | |
| 4_50E | REP_04_0312 | Ctenophore | | |
| 5_17E | REP_05_0312 | Ctenophore | | |
| 6_33E | REP_06_0312 | Ctenophore | | |
| 1_28E | REP_01_0312 | Jellyfish | | |
| 2_40E | REP_02_0312 | Jellyfish | | |
| 3_32E | REP_03_0312 | Jellyfish | Jul, Aug | |
| 4_49E | REP_04_0312 | Jellyfish | | |
| 5_16E | REP_05_0312 | Jellyfish | | |
| 6_32E | REP_06_0312 | Jellyfish | | |
| 1_22E | REP_01_0312 | Hermit Crab | | |
| 2_32E | REP_02_0312 | Flexed Gyro | | |
| 2_34E | REP_02_0312 | Northern Shrimp | | |
| 2_42E | REP_02_0312 | Boreal Armhook Squid | | |

**Figure 15.** Probability of occurrence for Ringed Seal

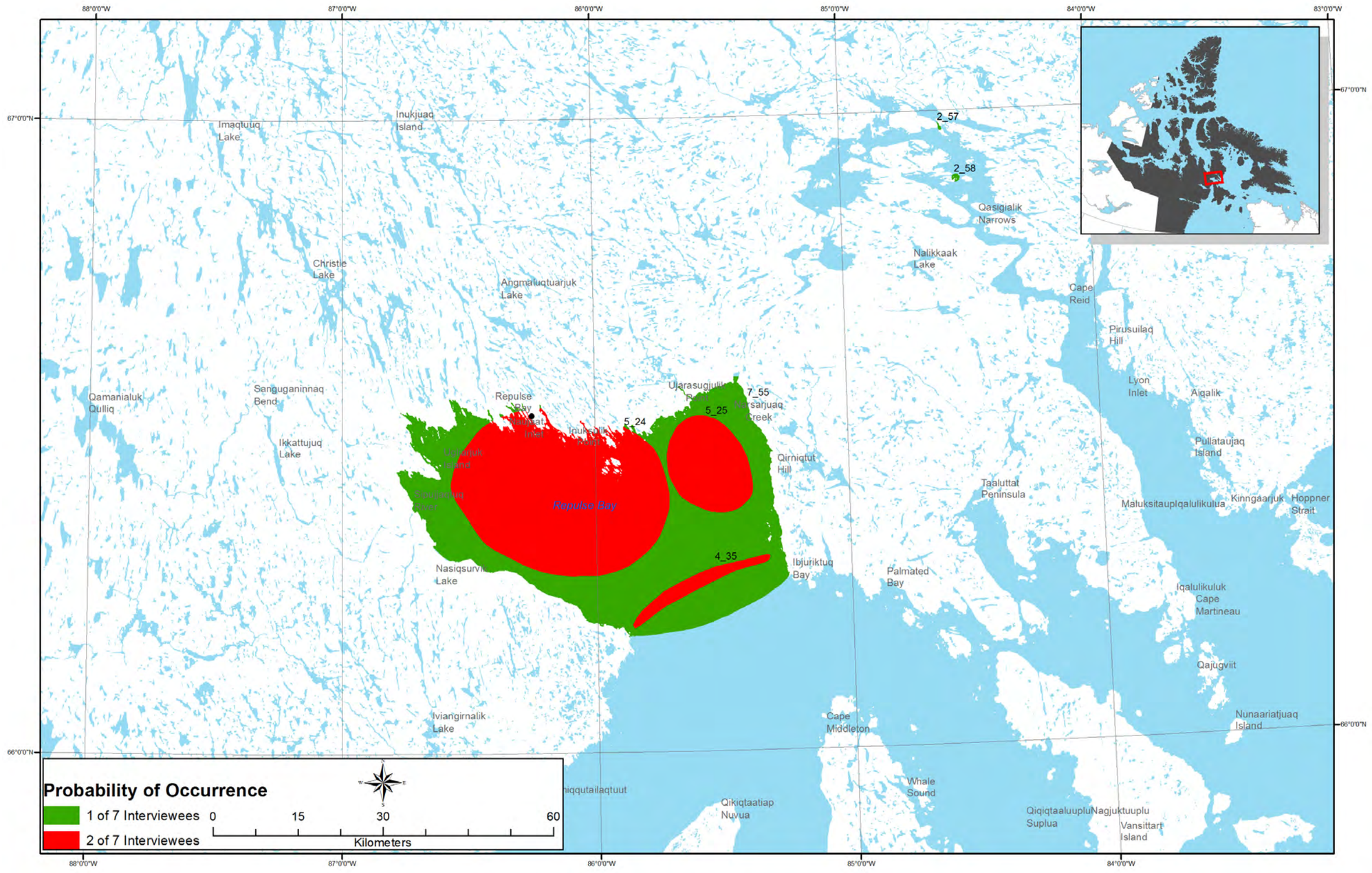


**Table 17.** Probability of occurrence for Ringed Seal

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 2_57 | REP_02_0312 | Dec to Mar | Hunts in polynyas |
| 2_58 | REP_02_0312 | Dec to Mar | Hunts in polynyas |
| 4_35 | REP_04_0312 | | A lot at the flow edge |
| 5_24 | REP_05_0312 | Mar to Dec | |
| 5_25 | REP_05_0312 | Mar to Dec | |
| 7_55 | REP_07_0312 | Year-round | |
| 1_36E | REP_01_0312 | Year-round | Everywhere |
| 2_56E | REP_02_0312 | Year-round | Everywhere |
| 3_60E | REP_03_0312 | Year-round | Everywhere |
| 4_34E | REP_04_0312 | Year-round | Everywhere |
| 6_48E | REP_06_0312 | Year-round | They are all over. So many the ice is completely covered. "As many seals as grains of sand on the ice" |

**Figure 16.** Probability of occurrence for Harp Seal

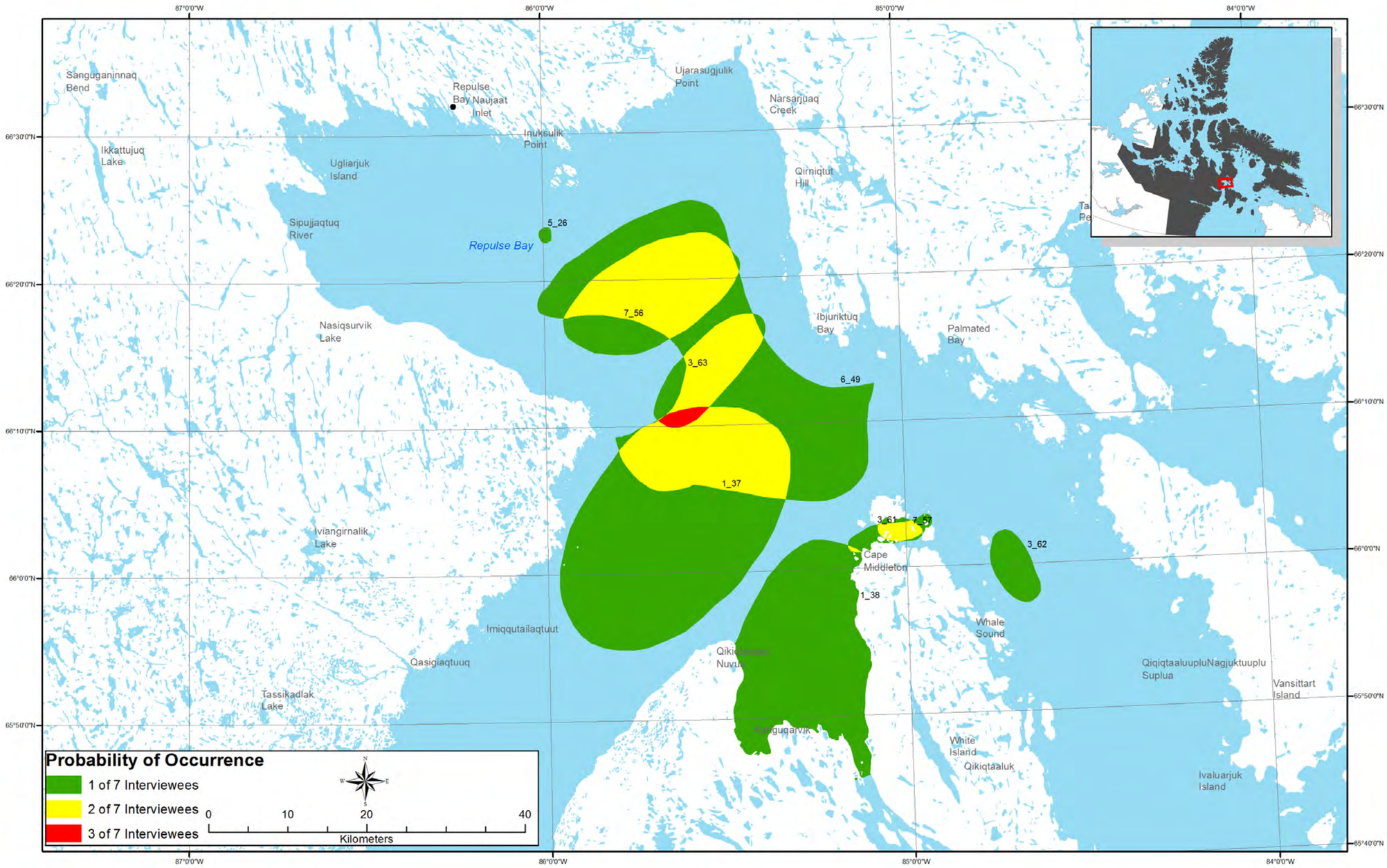


**Table 18.** Probability of occurrence for Harp Seal

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_37 | REP_01_0312 | Jul, Aug | |
| 1_38 | REP_01_0312 | Jul, Aug | |
| 3_61 | REP_03_0312 | Jul, Aug | |
| 3_62 | REP_03_0312 | Jul, Aug | |
| 3_63 | REP_03_0312 | Jul, Aug | |
| 5_26 | REP_05_0312 | Jul, Aug | |
| 6_49 | REP_06_0312 | Aug, Sep | |
| 7_56 | REP_07_0312 | Jul, Aug | |
| 7_57 | REP_07_0312 | Jul, Aug | |
| 2_59E | REP_02_0312 | | Everywhere |
| 4_36E | REP_04_0312 | Jul to Sep | Everywhere |

**Figure 17.** Probability of occurrence for Harbour Seal

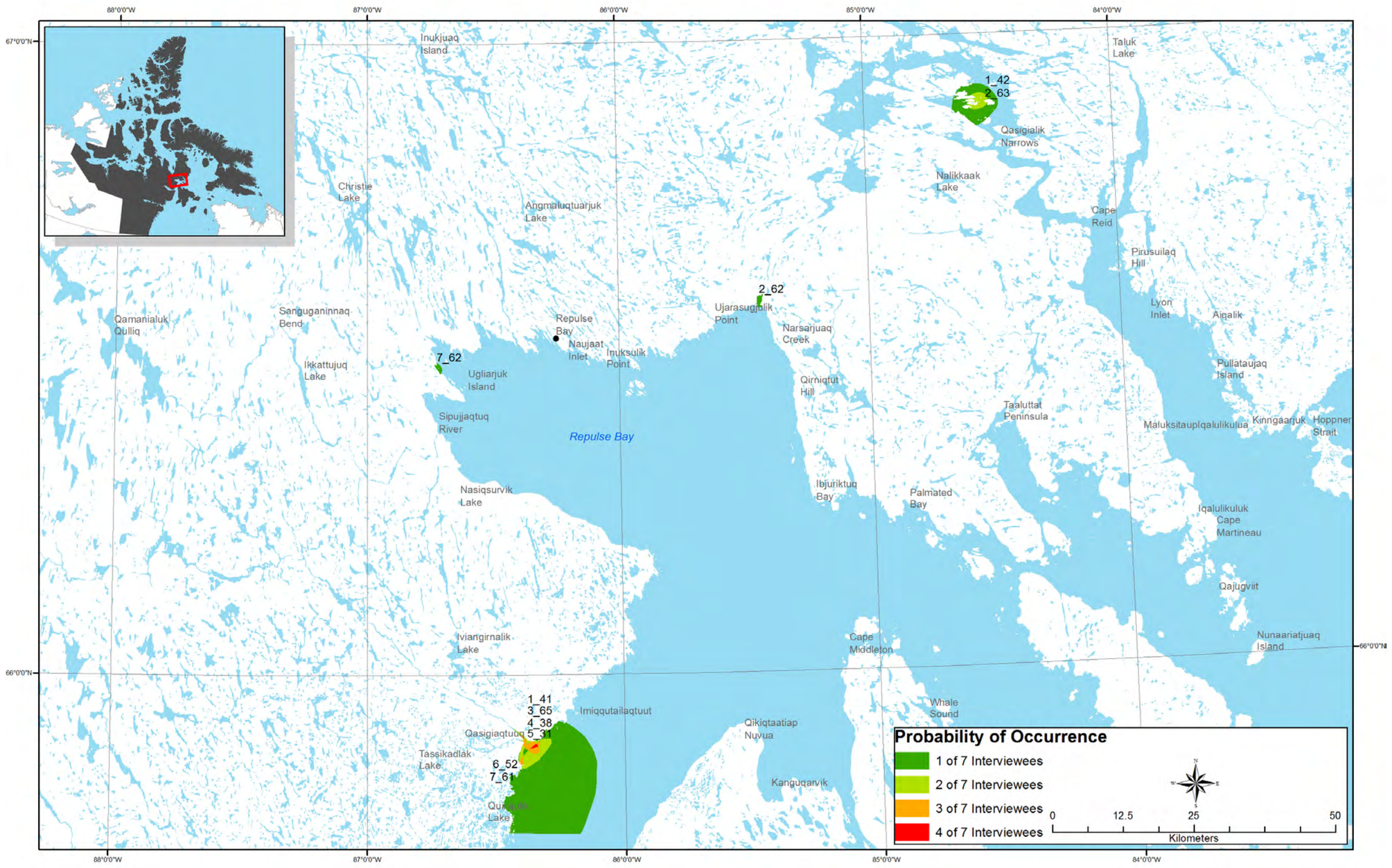


**Table 19.** Probability of occurrence for Harbour Seal

| MAP CODE | INTERVIEW CODE | MONTHS |
|---|---|---|
| 1_41 | REP_01_0312 | Jul, Aug |
| 1_42 | REP_01_0312 | Jul, Aug |
| 2_62 | REP_02_0312 | Jul, Aug |
| 2_63 | REP_02_0312 | Jul, Aug |
| 3_65 | REP_03_0312 | |
| 4_38 | REP_04_0312 | Jul, Aug |
| 5_31 | REP_05_0312 | Jul, Aug |
| 6_52 | REP_06_0312 | Jul, Aug |
| 7_61 | REP_07_0312 | |
| 7_62 | REP_07_0312 | |

**Figure 18.** Areas of occurrence for Bearded Seal

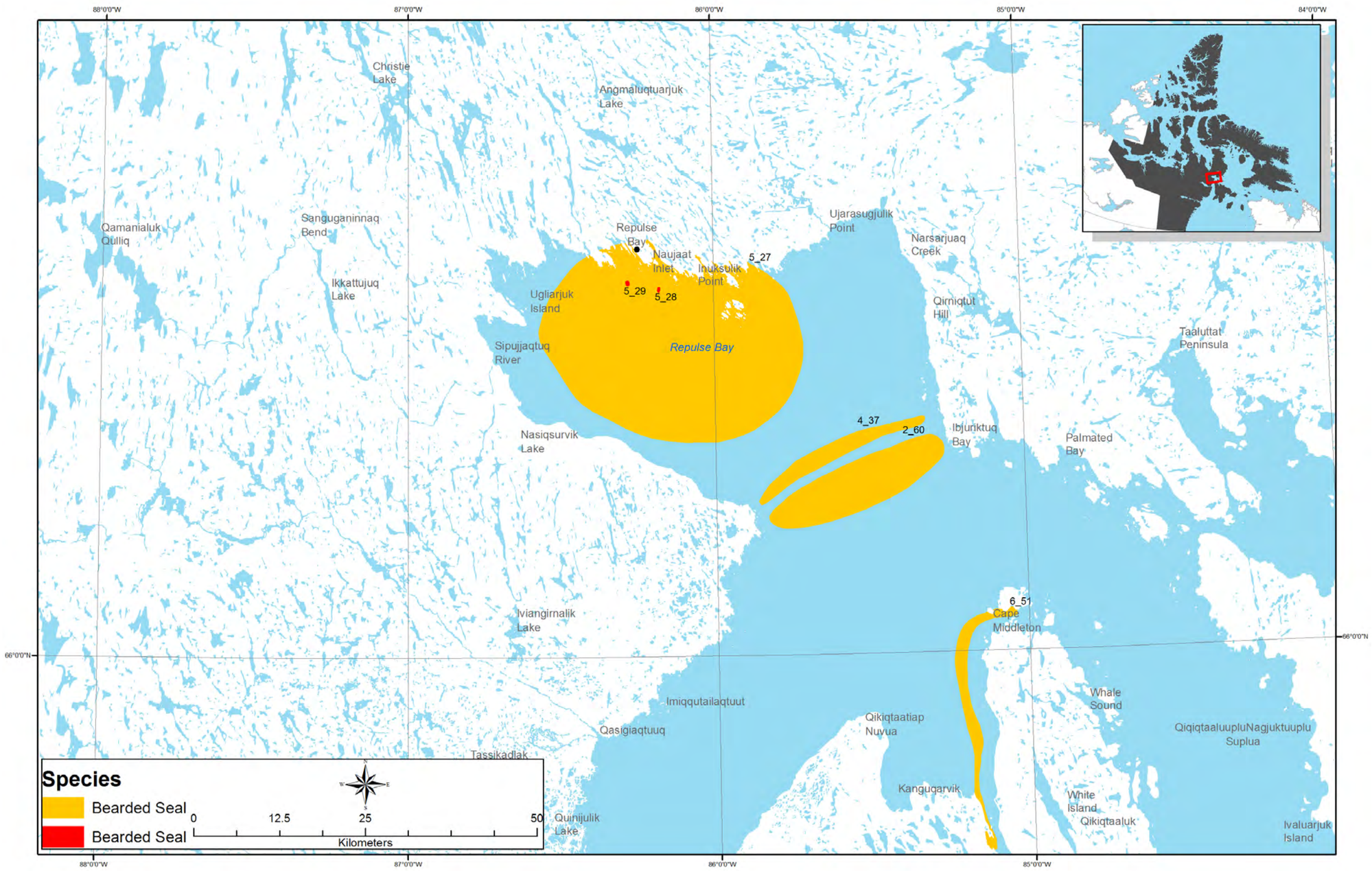


**Table 20.** Areas of occurrence for Bearded Seal

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 2_60 | REP_02_0312 | | Hunts at the flow edge |
| 4_37 | REP_04_0312 | | At the flow edge |
| 5_27 | REP_05_0312 | Oct, Nov | |
| 5_28 | REP_05_0312 | Oct, Nov | |
| 5_29 | REP_05_0312 | Oct, Nov | |
| 6_51 | REP_06_0312 | Jul, Aug | An abundance of bearded seals in the area (not as many as ringed seals) |
| *1_39E* | *REP_01_0312* | *Jul, Aug* | *Everywhere* |
| *2_61E* | *REP_02_0312* | *Jul, Aug* | *Everywhere* |
| *3_64E* | *REP_03_0312* | *Year-round* | *Everywhere. Not many* |
| *6_50E* | *REP_06_0312* | | *Everywhere* |

**Figure 19.** Areas of occurrence for Hooded Seal

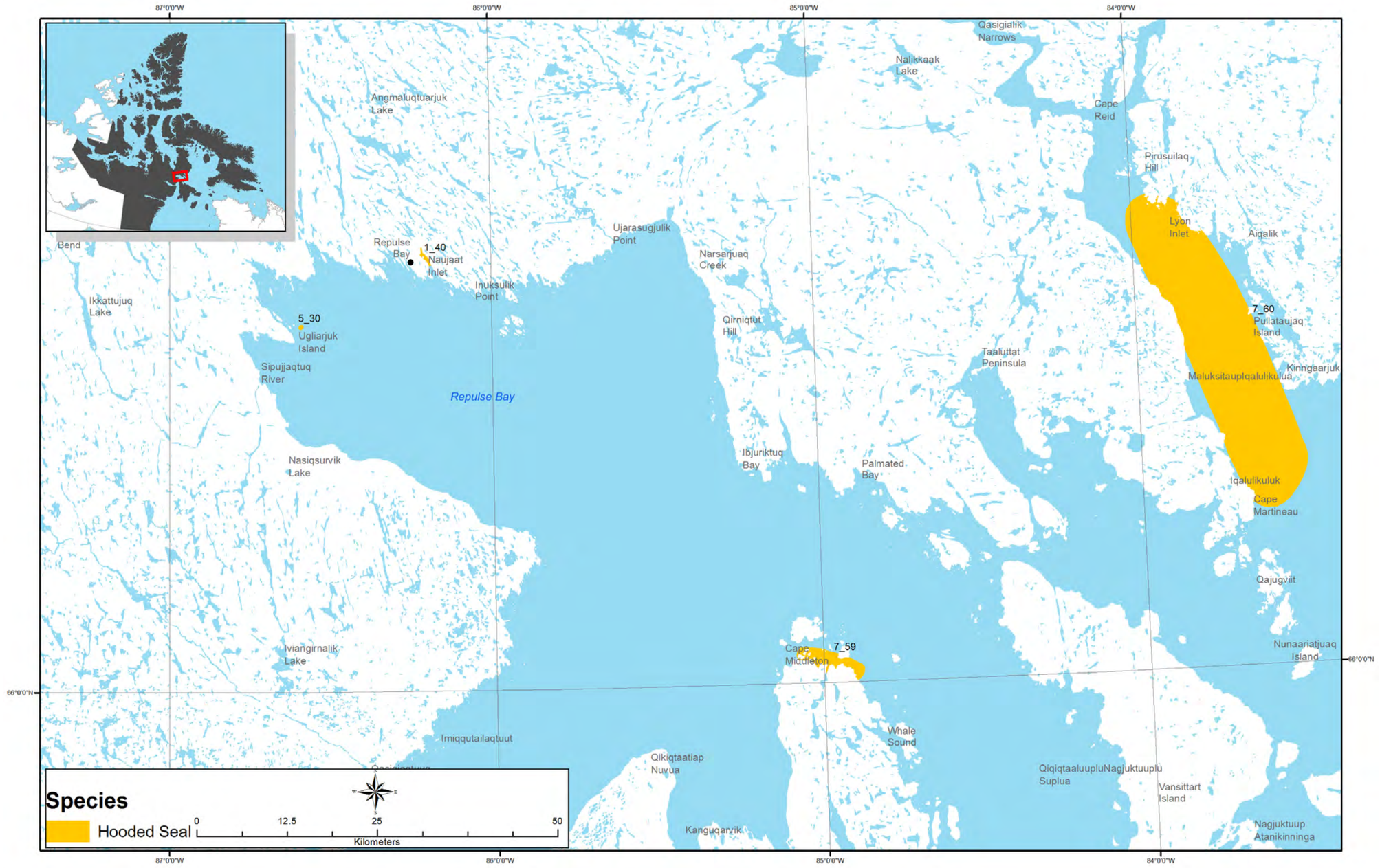


**Table 21.** Areas of occurrence for Hooded Seal

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_40 | REP_01_0312 | September | Saw one here |
| 5_30 | REP_05_0312 | August | |
| 7_59 | REP_07_0312 | | More in this area |
| 7_60 | REP_07_0312 | | Hooded seals are bigger in this area |
| *7_58E* | *REP_07_0312* | | *Everywhere* |

**Figure 20.** Probability of occurrence for Walrus

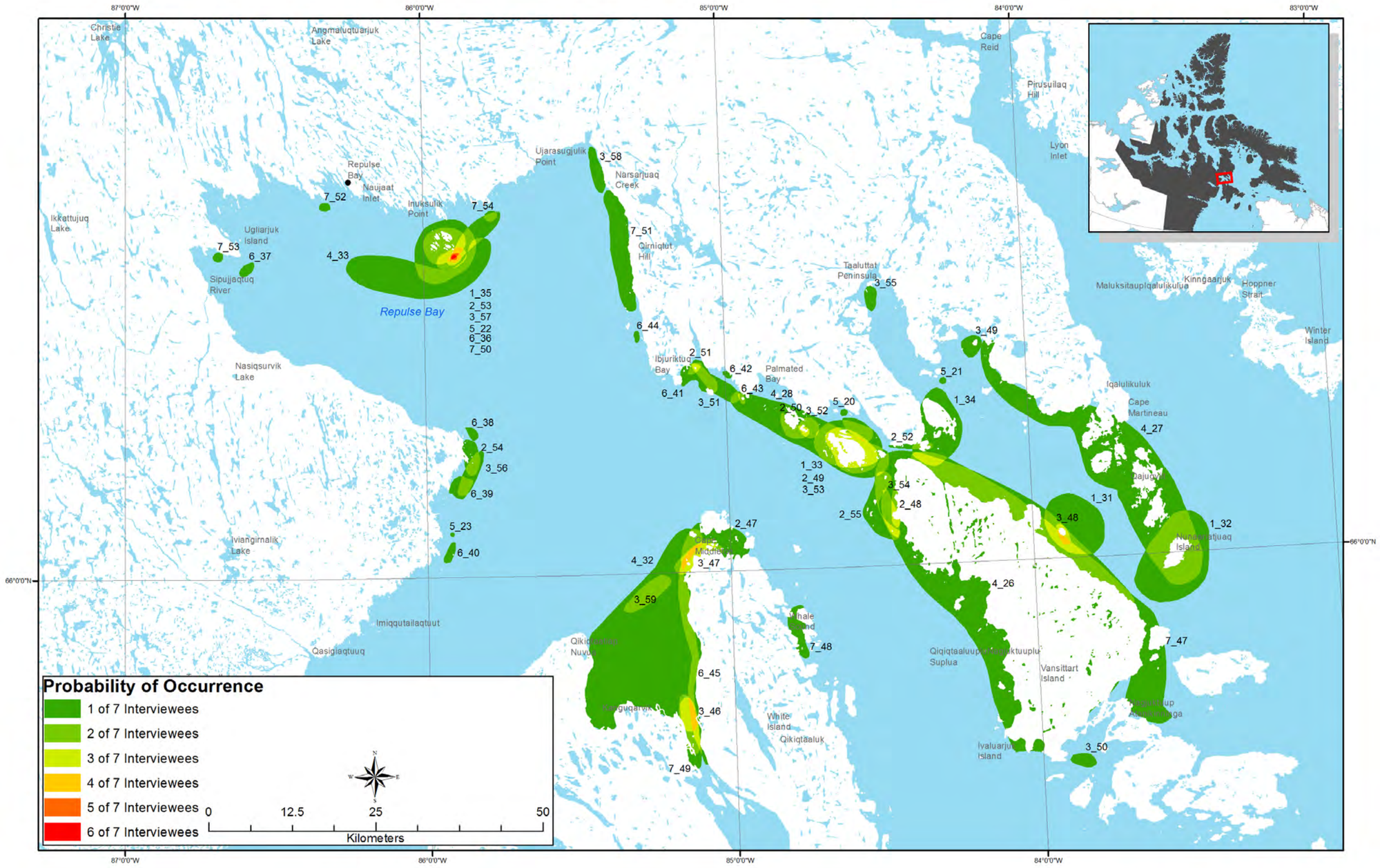


**Table 22.** Probability of occurrence for Walrus

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_31 | REP_01_0312 | Jul, Aug | Walrus are seen on small islands |
| 1_32 | REP_01_0312 | Jul, Aug | |
| 1_33 | REP_01_0312 | Jul, Aug | |
| 1_34 | REP_01_0312 | Jul, Aug | |
| 1_35 | REP_01_0312 | Jul, Aug | |
| 2_47 | REP_02_0312 | Jul, Aug | |
| 2_48 | REP_02_0312 | Jul, Aug | |
| 2_49 | REP_02_0312 | Jul to Sep | |
| 2_50 | REP_02_0312 | | |
| 2_51 | REP_02_0312 | Oct, Nov | |
| 2_52 | REP_02_0312 | | |
| 2_53 | REP_02_0312 | Oct to Dec | |
| 2_54 | REP_02_0312 | Dec to Mar | |
| 2_55 | REP_02_0312 | | |
| 3_46 | REP_03_0312 | Jul, Aug | |
| 3_47 | REP_03_0312 | Jul, Aug | |
| 3_48 | REP_03_0312 | Jul, Aug | |
| 3_49 | REP_03_0312 | Jul, Aug | |
| 3_50 | REP_03_0312 | Jul, Aug | |
| 3_51 | REP_03_0312 | Oct to Dec | |
| 3_52 | REP_03_0312 | Oct to Dec | |
| 3_53 | REP_03_0312 | Oct, Nov | |
| 3_54 | REP_03_0312 | Oct, Nov | |
| 3_55 | REP_03_0312 | Oct, Nov | |
| 3_56 | REP_03_0312 | Dec to Mar | |
| 3_57 | REP_03_0312 | Oct, Nov | |
| 3_58 | REP_03_0312 | | |
| 3_59 | REP_03_0312 | Apr to Jun | |
| 4_26 | REP_04_0312 | Oct to Dec | A lot of walrus in the fall |
| 4_27 | REP_04_0312 | Oct to Dec | |
| 4_28 | REP_04_0312 | Oct to Dec | |
| 4_32 | REP_04_0312 | Oct to Dec | |
| 4_33 | REP_04_0312 | | |
| 5_20 | REP_05_0312 | Oct, Nov | |
| 5_21 | REP_05_0312 | Oct, Nov | |
| 5_22 | REP_05_0312 | Apr to Aug | |
| 5_23 | REP_05_0312 | June | |
| 6_36 | REP_06_0312 | Jul, Aug | Would find dead walrus on islands because they were crushed by so many other walrus |
| 6_37 | REP_06_0312 | Oct, Nov | |
| 6_38 | REP_06_0312 | Oct, Nov | |
| 6_39 | REP_06_0312 | Oct, Nov | |
| 6_40 | REP_06_0312 | Oct, Nov | |
| 6_41 | REP_06_0312 | Oct, Nov | |
| 6_42 | REP_06_0312 | Oct, Nov | |
| 6_43 | REP_06_0312 | Oct, Nov | |
| 6_44 | REP_06_0312 | Oct, Nov | |
| 6_45 | REP_06_0312 | Aug, Sep | |
| 7_47 | REP_07_0312 | Jul, Aug | |
| 7_48 | REP_07_0312 | Jul, Aug | |
| 7_49 | REP_07_0312 | Jul, Aug | |
| 7_50 | REP_07_0312 | Jul to Oct | |
| 7_51 | REP_07_0312 | Jul, Aug | |
| 7_52 | REP_07_0312 | Jul, Aug | |
| 7_53 | REP_07_0312 | Jul, Aug | |
| 7_54 | REP_07_0312 | Jul, Aug | |
| 6_47E | REP_06_0312 | Aug, Sep | Everywhere |

**Figure 21.** Migration routes for Walrus

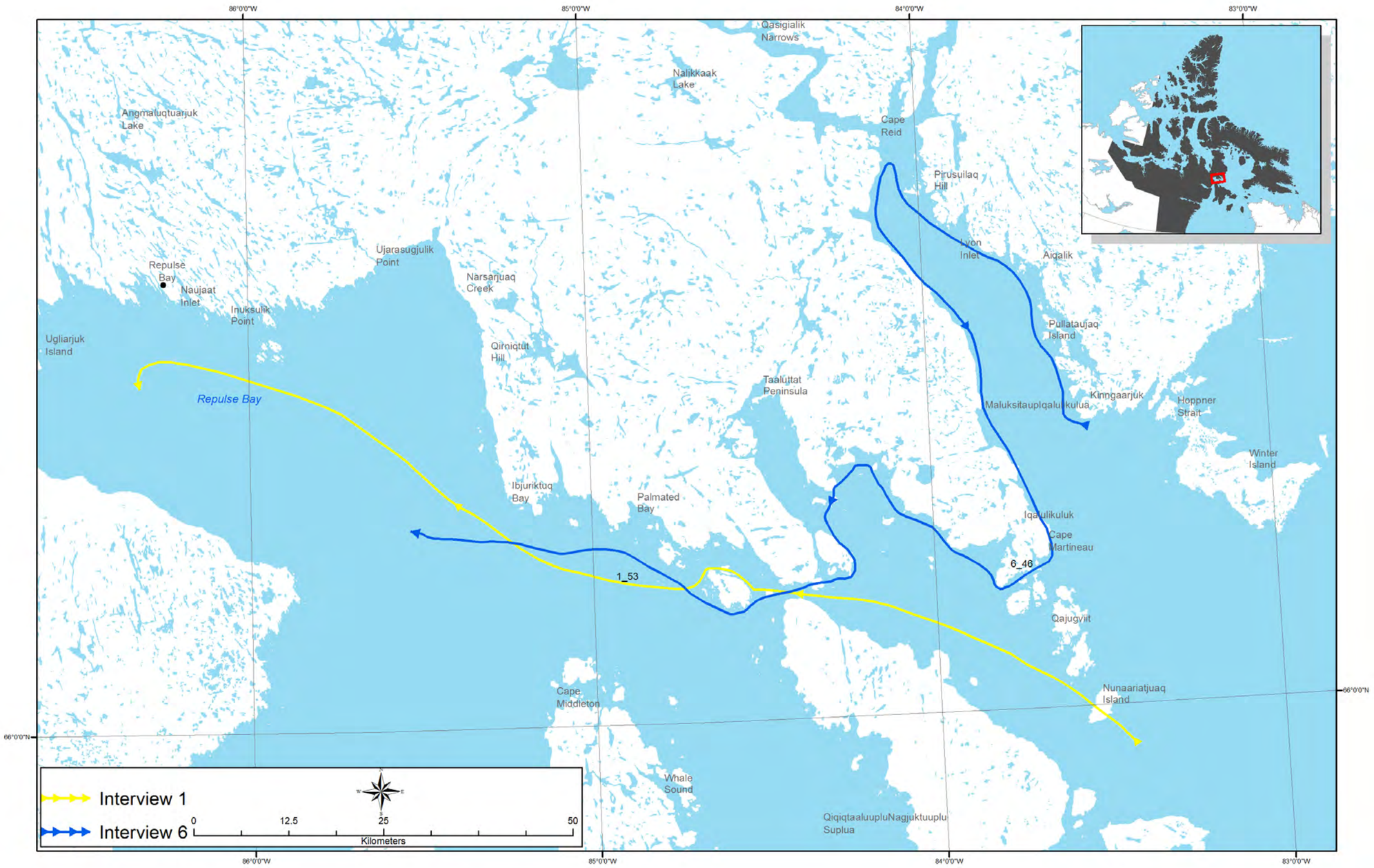


**Table 23.** Migration routes for Walrus

| MAP CODE | INTERVIEW CODE | MONTHS |
|---|---|---|
| 1_53M | REP_01_0312 | Jun, Jul |
| 6_46M | REP_06_0312 | |

**Figure 22.** Probability of occurrence for Polar Bear

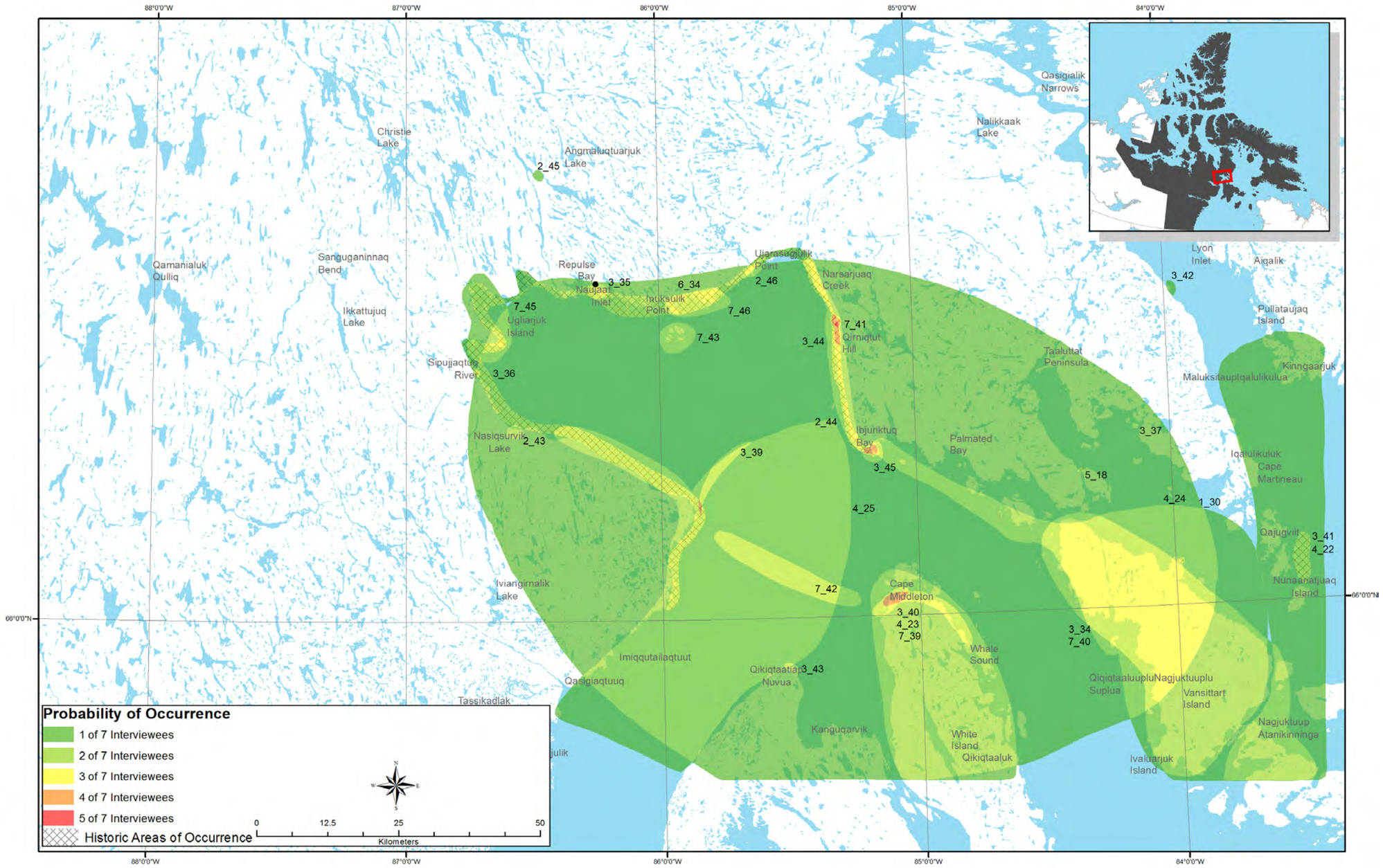


**Table 24.** Probability of occurrence for Polar Bear

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_30 | REP_01_0312 | Aug to Mar | Harvests polar bears until they run out of quota, the season varies |
| 2_43 | REP_02_0312 | May to Aug | |
| 2_44 | REP_02_0312 | May to Aug | |
| 2_45 | REP_02_0312 | Oct, Nov | |
| 2_46 | REP_02_0312 | | |
| 3_34H | REP_03_0312 | November | |
| 3_35 | REP_03_0312 | Oct to Dec | |
| 3_36 | REP_03_0312 | October | |
| 3_37 | REP_03_0312 | | |
| 3_39 | REP_03_0312 | May, Jun | |
| 3_40 | REP_03_0312 | Jul, Aug | |
| 3_41H | REP_03_0312 | Dec to Apr | |
| 3_42 | REP_03_0312 | Jul, Aug | |
| 3_43 | REP_03_0312 | Jul, Aug | |
| 3_44 | REP_03_0312 | Jul, Aug | |
| 3_45 | REP_03_0312 | Jul, Aug | |
| 4_22 | REP_04_0312 | May, Jun | |
| 4_23 | REP_04_0312 | Jul, Aug | |
| 4_24 | REP_04_0312 | Jul, Aug | |
| 4_25 | REP_04_0312 | May, Jun | |
| 5_18H | REP_05_0312 | November | |
| 6_34H | REP_06_0312 | May, Jun | |
| 7_39 | REP_07_0312 | Jul, Aug | |
| 7_40 | REP_07_0312 | Jul, Aug | |
| 7_41H | REP_07_0312 | Jul, Aug | Used to be so many |
| 7_42 | REP_07_0312 | Jul, Aug | |
| 7_43 | REP_07_0312 | Jul, Aug | |
| 7_45 | REP_07_0312 | Jul, Aug | |
| 7_46 | REP_07_0312 | Jul, Aug | |
| 3_38E | REP_03_0312 | | Everywhere. On the coast, not many inland. Polar bears are seen at the flow edge in June |
| 5_19E | REP_05_0312 | | Everywhere |
| 6_35E | REP_06_0312 | Year-round | Everywhere |
| 7_44E | REP_07_0312 | Jul, Aug | Everywhere |

**Figure 23.** Probability of occurrence for Beluga

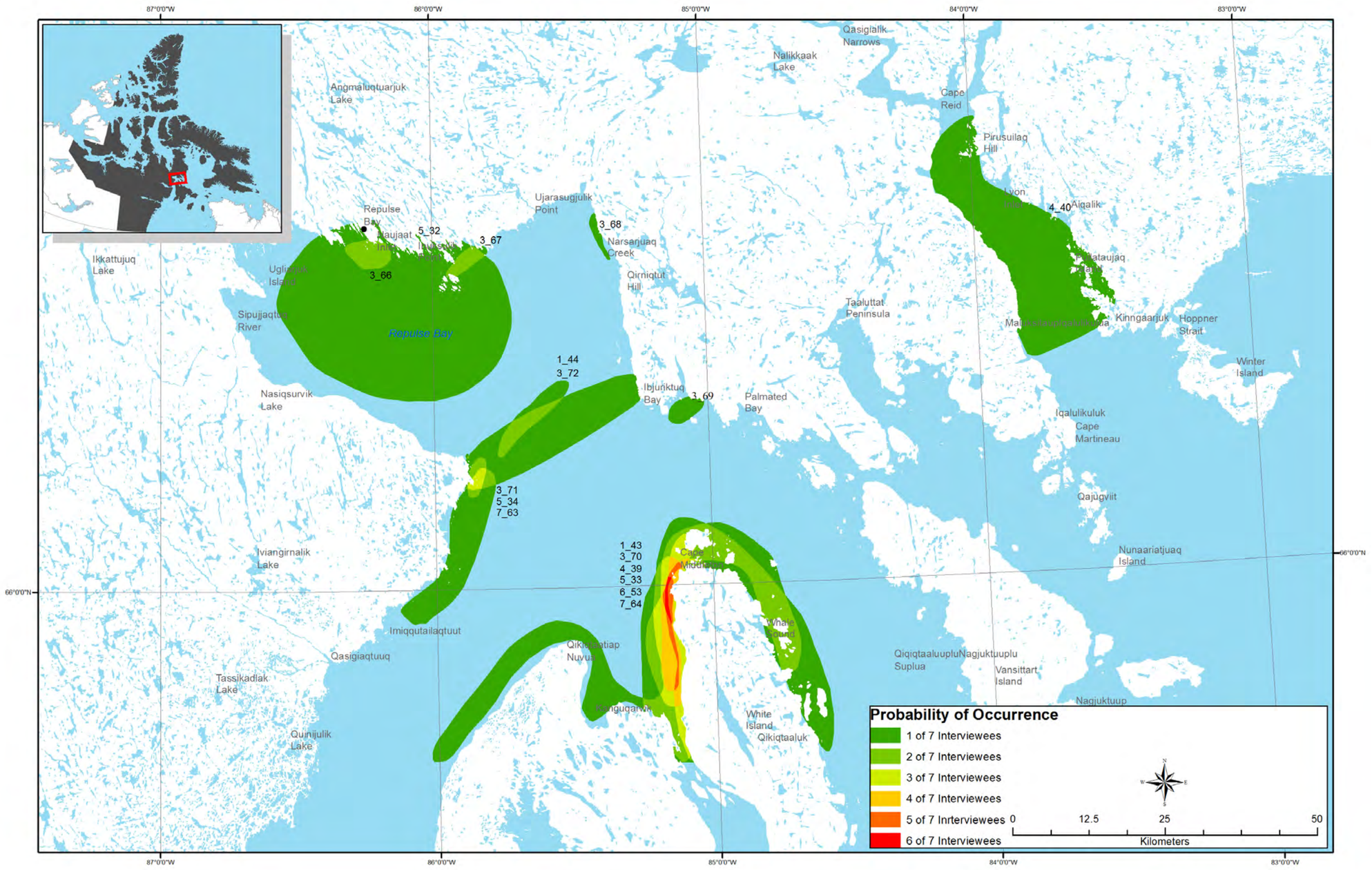


**Table 25.** Probability of occurrence for Beluga

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_43 | REP_01_0312 | Jul, Aug | |
| 1_44 | REP_01_0312 | June | At the flow edge. Beluga used to come into town at break up, but not anymore |
| 3_66 | REP_03_0312 | Aug, Sep | |
| 3_67 | REP_03_0312 | Aug, Sep | |
| 3_68 | REP_03_0312 | | |
| 3_69 | REP_03_0312 | Aug, Sep | |
| 3_70 | REP_03_0312 | Jul, Aug | |
| 3_71 | REP_03_0312 | Sep, Oct | |
| 3_72 | REP_03_0312 | Apr to Jun | |
| 4_39 | REP_04_0312 | Jul, Aug | |
| 4_40 | REP_04_0312 | Jul, Aug | |
| 5_32 | REP_05_0312 | Sep, Oct | |
| 5_33 | REP_05_0312 | Jun to Aug | |
| 5_34 | REP_05_0312 | Oct, Nov | |
| 6_53 | REP_06_0312 | Jul, Aug | We don't hunt them as often as narwhal. Usually in shallow water |
| 7_63 | REP_07_0312 | Jul, Aug | |
| 7_64 | REP_07_0312 | Jul, Aug | |
| 2_64E | REP_02_0312 | Year-round | Everywhere |
| 6_55E | REP_06_0312 | | Everywhere |

**Figure 24.** Migration routes for Beluga Whale

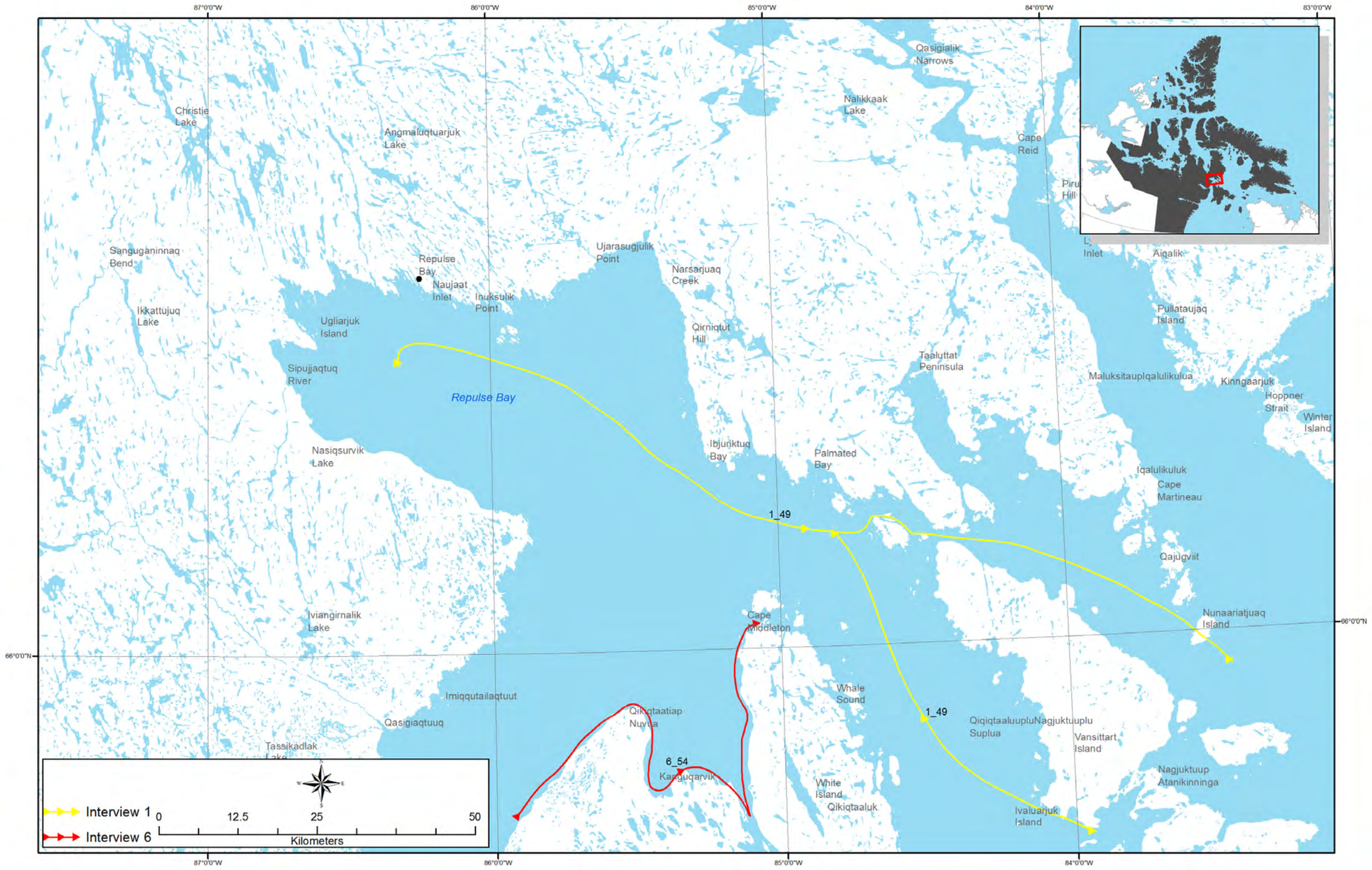


**Table 26.** Migration routes for Beluga Whale

| MAP CODE | INTERVIEW CODE | MONTHS |
|---|---|---|
| 1_49M | REP_01_0312 | Jun, Jul |
| 6_54M | REP_06_0312 | Aug, Sep |

**Figure 25.** Probability of occurrence for Narwhal

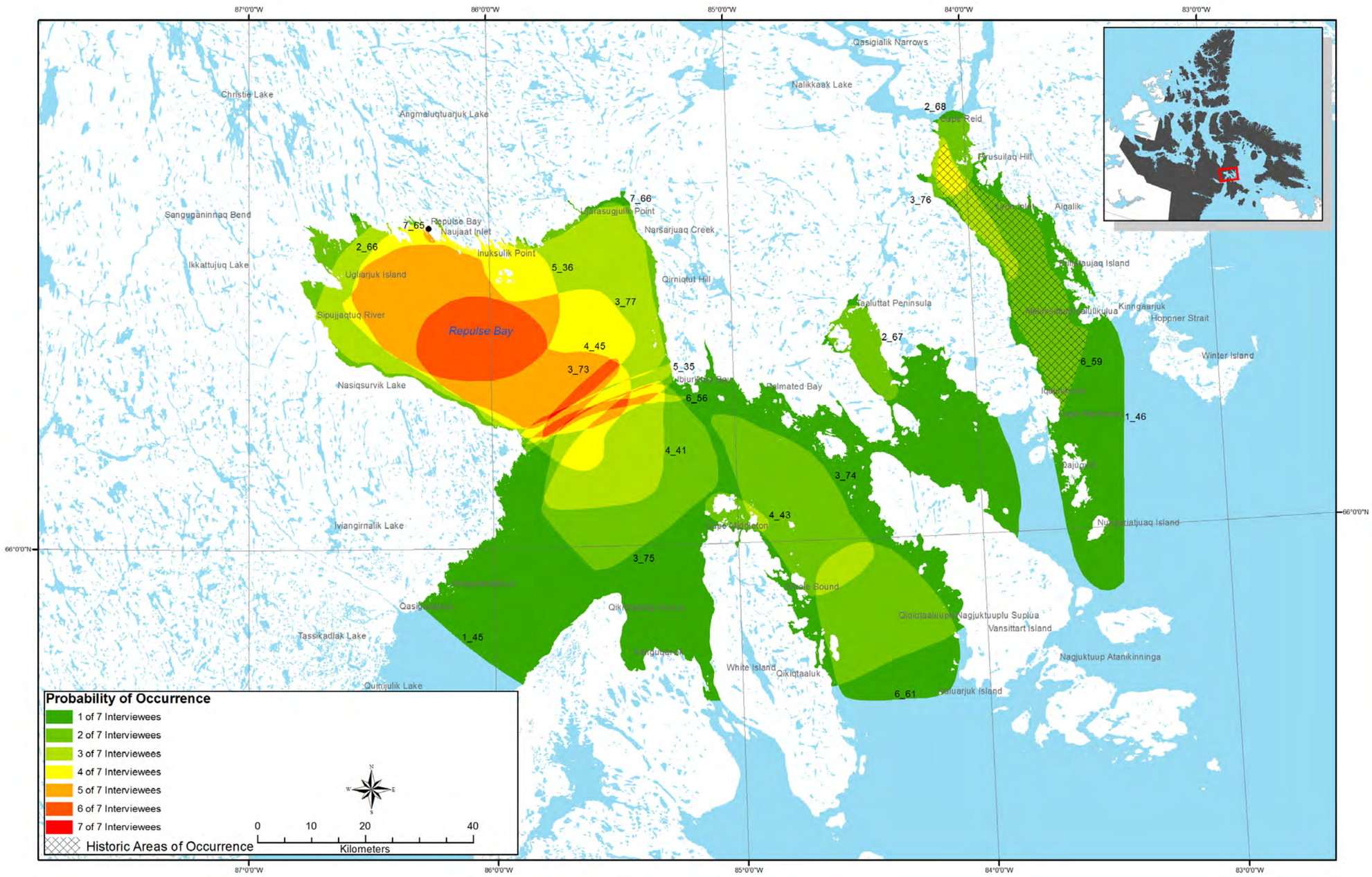


**Table 27.** Probability of occurrence for Narwhal

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_45 | REP_01_0312 | Jun to Aug | |
| 1_46 | REP_01_0312 | Jun to Aug | |
| 2_66 | REP_02_0312 | | A lot of narwhal in the area |
| 2_67 | REP_02_0312 | | |
| 2_68 | REP_02_0312 | | |
| 3_73 | REP_03_0312 | June | |
| 3_74 | REP_03_0312 | June | |
| 3_75 | REP_03_0312 | June | |
| 3_76 | REP_03_0312 | Jul, Aug | |
| 3_77 | REP_03_0312 | Aug, Sep | |
| 4_41 | REP_04_0312 | Apr to Jun | Always at the flow edge in the spring |
| 4_43 | REP_04_0312 | Jul, Aug | |
| 4_45 | REP_04_0312 | Jul, Aug | Narwhal are in this area when there are no killer whales |
| 5_35 | REP_05_0312 | June | Hunt narwhal at the flow edge |
| 5_36 | REP_05_0312 | Jul, Aug | |
| 6_56 | REP_06_0312 | May | Hunts at the flow edge; Narwhal come in to the bay to escape from Killer whales - there are so many the bay is black from them |
| 6_59H | REP_06_0312 | Jul, Aug | |
| 6_61 | REP_06_0312 | August | The narwhal in this area have bigger tusks than other areas |
| 7_65 | REP_07_0312 | Jul, Aug | |
| 7_66 | REP_07_0312 | Jul, Aug | |
| 2_65E | REP_02_0312 | Year-round | Everywhere |
| 4_44E | REP_04_0312 | Jul, Aug | Everywhere along the coast to get away from the killer whales. Used to be in pods now spread out. |
| 6_60E | REP_06_0312 | August | Everywhere |
| 7_67E | REP_07_0312 | Jul, Aug | Everywhere |

**Figure 26.** Migration routes for Narwhal

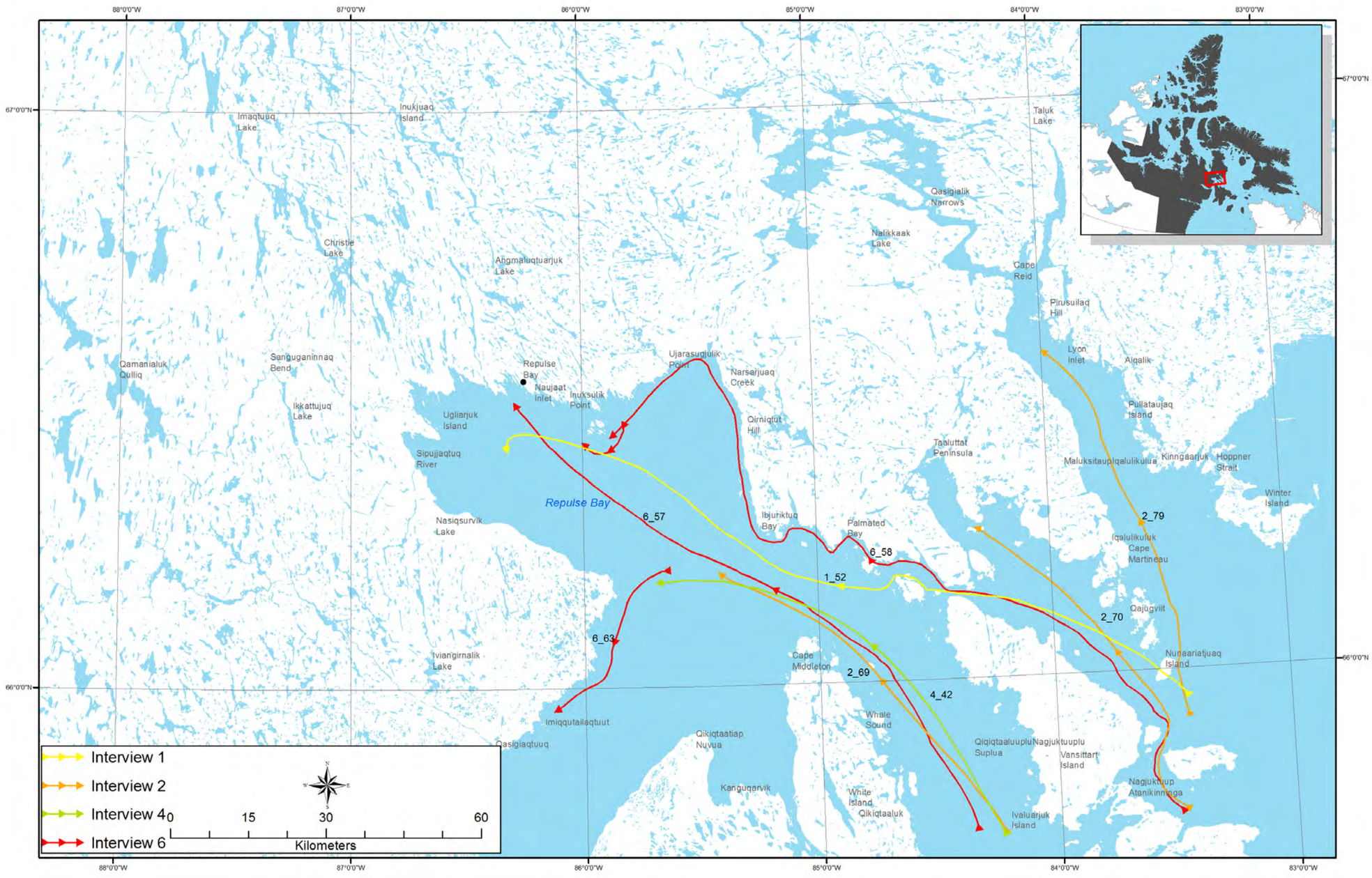


**Table 28.** Migration routes for Narwhal

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 1_52M | REP_01_0312 | Jun, Jul | |
| 2_69M | REP_02_0312 | Jun to Sep | |
| 2_70M | REP_02_0312 | Jun to Sep | |
| 2_79M | REP_02_0312 | Jun to Sep | |
| 4_42M | REP_04_0312 | | |
| 6_57M | REP_06_0312 | August | |
| 6_58M | REP_06_0312 | August | |
| 6_63M | REP_06_0312 | | Migration to Wager Bay |

**Figure 27.** Probability of occurrence for Orca

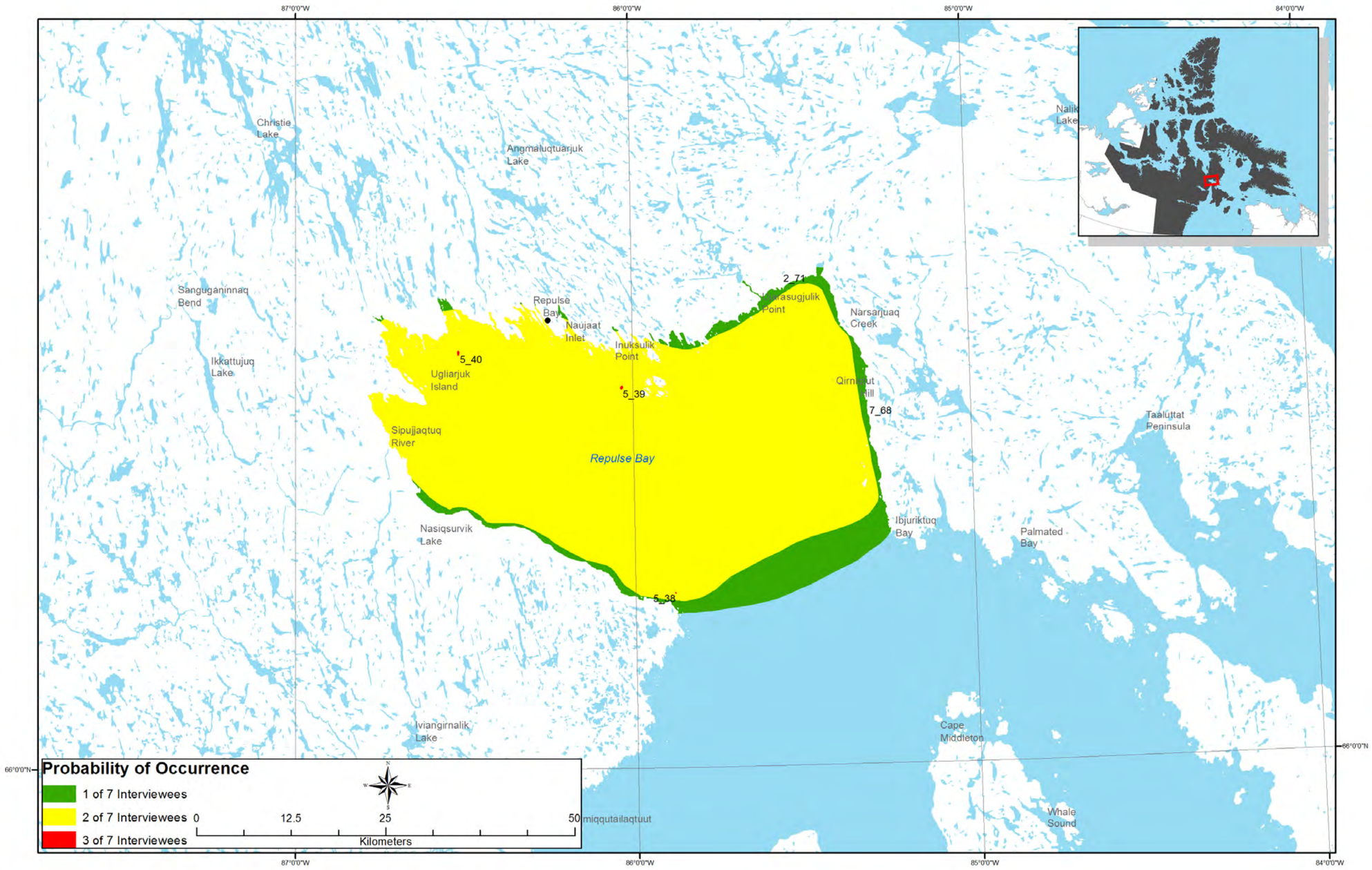


**Table 29.** Probability of occurrence for Orca (Killer Whale)

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 2_71 | REP_02_0312 | Jun to Sep | |
| 5_38 | REP_05_0312 | Jul, Aug | |
| 5_39 | REP_05_0312 | Jul, Aug | |
| 5_40 | REP_05_0312 | Jul, Aug | |
| 7_68 | REP_07_0312 | Jul, Aug | |
| 1_47E | REP_01_0312 | Jun to Aug | Everywhere |
| 4_46E | REP_04_0312 | Jul, Aug | Everywhere |
| 6_64E | REP_06_0312 | Jul, Aug | Everywhere. The killer whale population has been growing in the area |

**Figure 28.** Migration routes for Orca

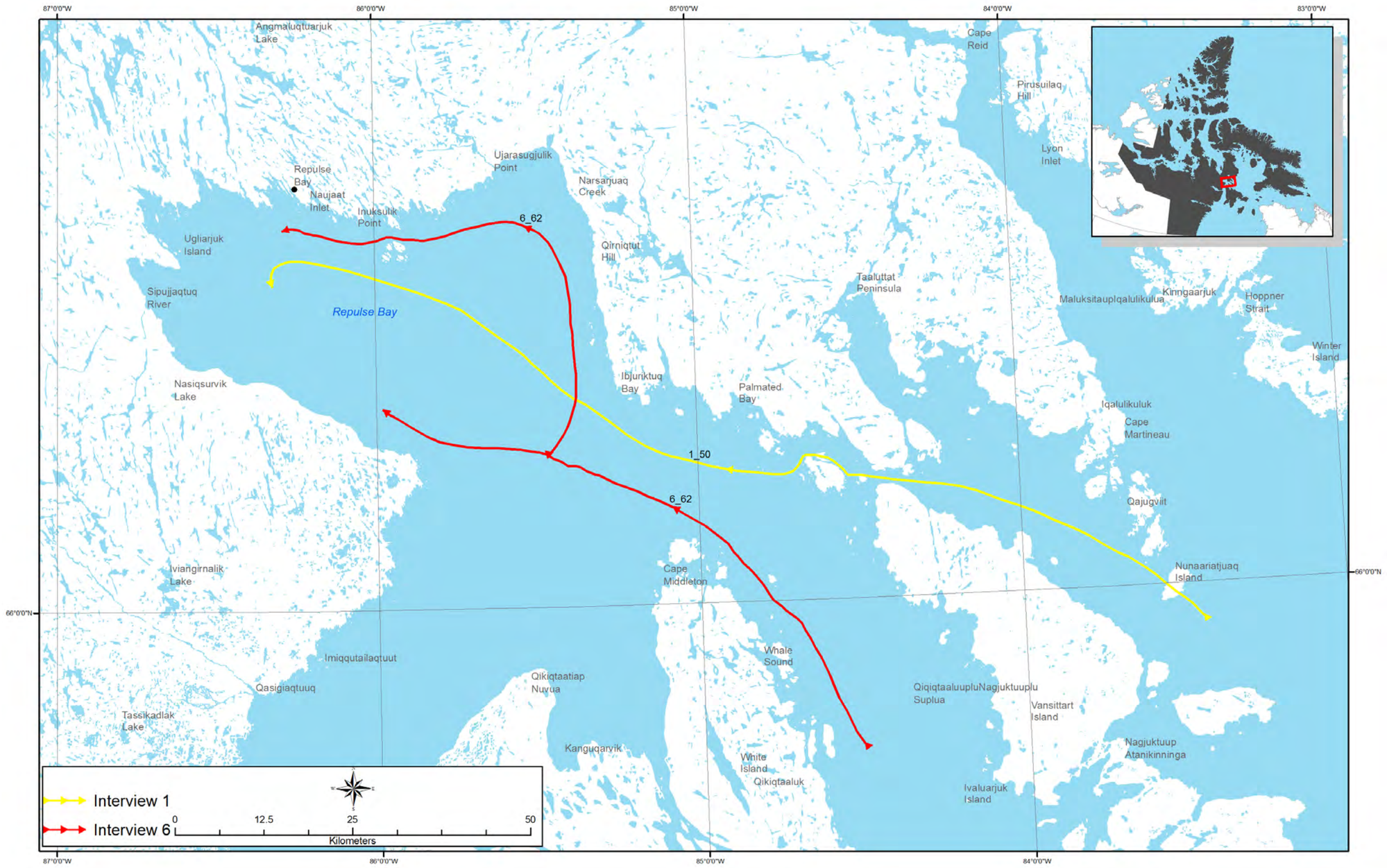


**Table 30.** Migration routes for Orca

| MAP CODE | INTERVIEW CODE | MONTHS |
|---|---|---|
| 1_50M | REP_01_0312 | Jun, Jul |
| 6_62M | REP_06_0312 | Jul, Aug |

**Figure 29.** Probability of occurrence for Bowhead Whale

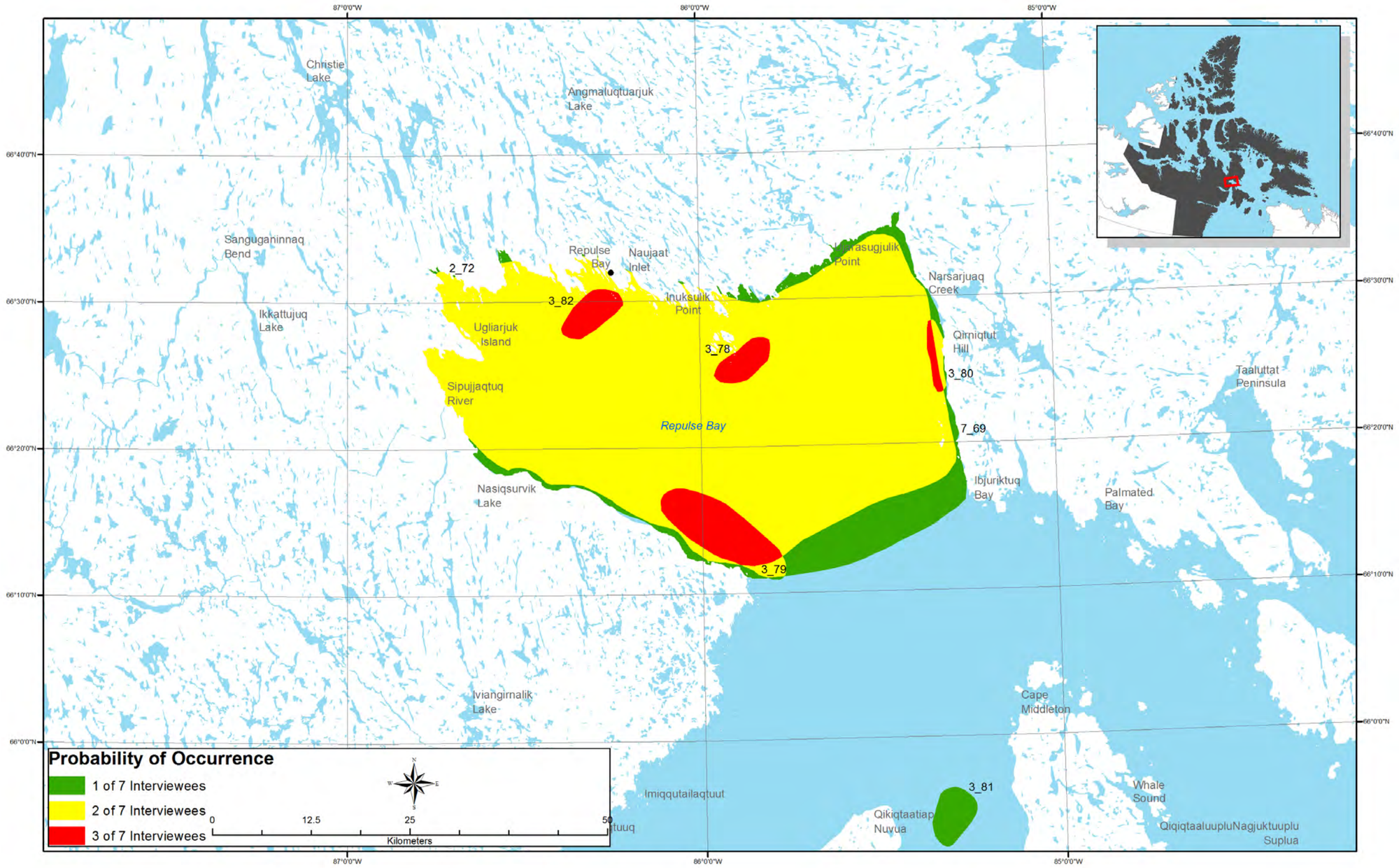


**Table 31.** Probability of occurrence for Bowhead Whale

| MAP CODE | INTERVIEW CODE | MONTHS | COMMENTS |
|---|---|---|---|
| 2_72 | REP_02_0312 | Jul, Aug | |
| 3_78 | REP_03_0312 | Aug, Sep | |
| 3_79 | REP_03_0312 | Jul to Sep | |
| 3_80 | REP_03_0312 | Jul, Aug | |
| 3_81 | REP_03_0312 | Aug, Sep | |
| 3_82 | REP_03_0312 | Aug, Sep | |
| 7_69 | REP_07_0312 | Jul, Aug | |
| 1_48E | REP_01_0312 | Jun to Aug | Everywhere |
| 2_73E | REP_02_0312 | Jul, Aug | Everywhere |
| 4_47E | REP_04_0312 | | Everywhere |
| 5_41E | REP_05_0312 | | Everywhere |
| 6_65E | REP_06_0312 | | They are everywhere as much as narwhal |

**Figure 30.** Migration routes or Bowhead Whale

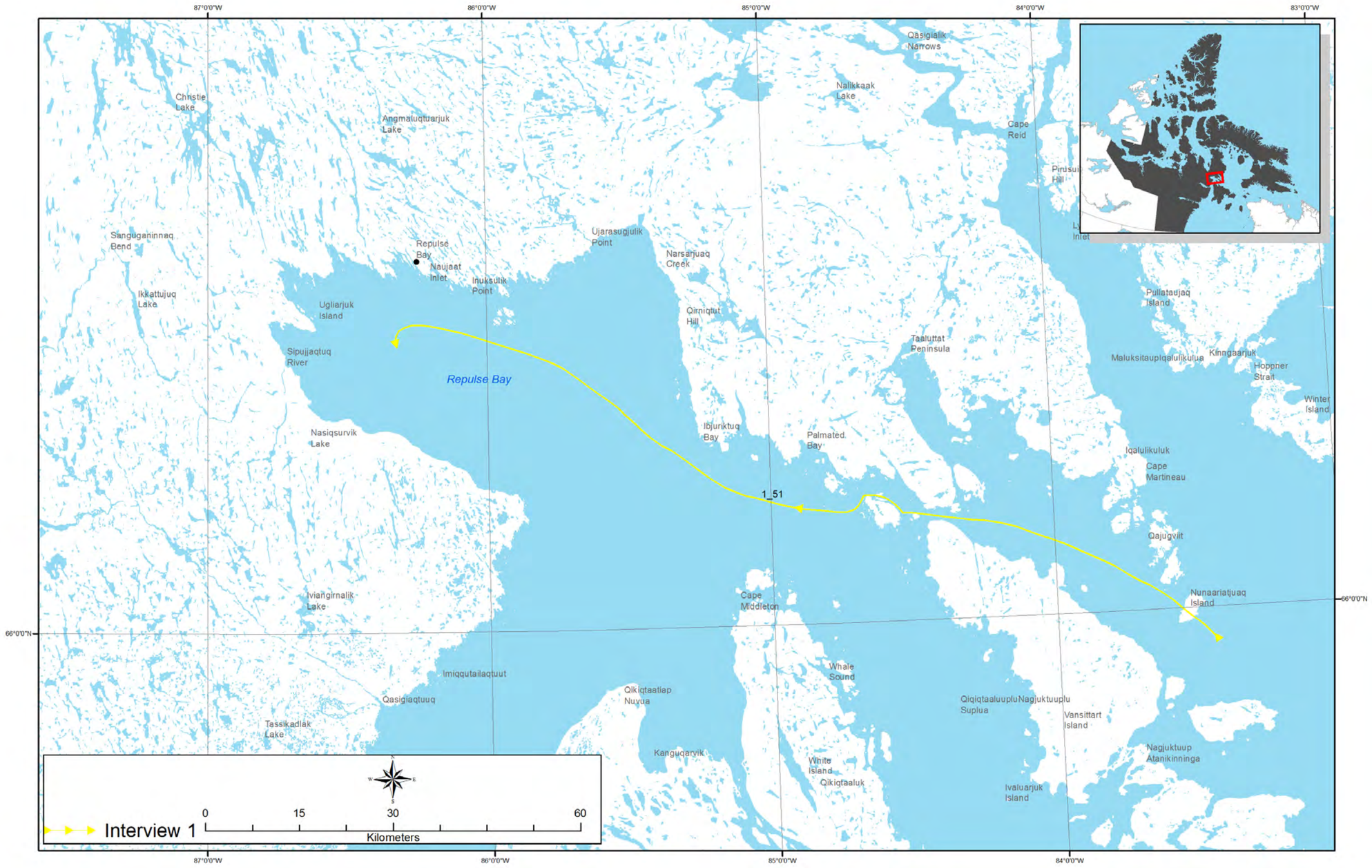


**Table 47.** Migration routes or Bowhead Whale

| MAP CODE | INTERVIEW CODE | MONTHS |
|---|---|---|
| 1_51M | REP_01_0312 | Jun, Jul |

**Figure 31.** Areas of occurrence for Minke Whale, and North Atlantic Right Whale

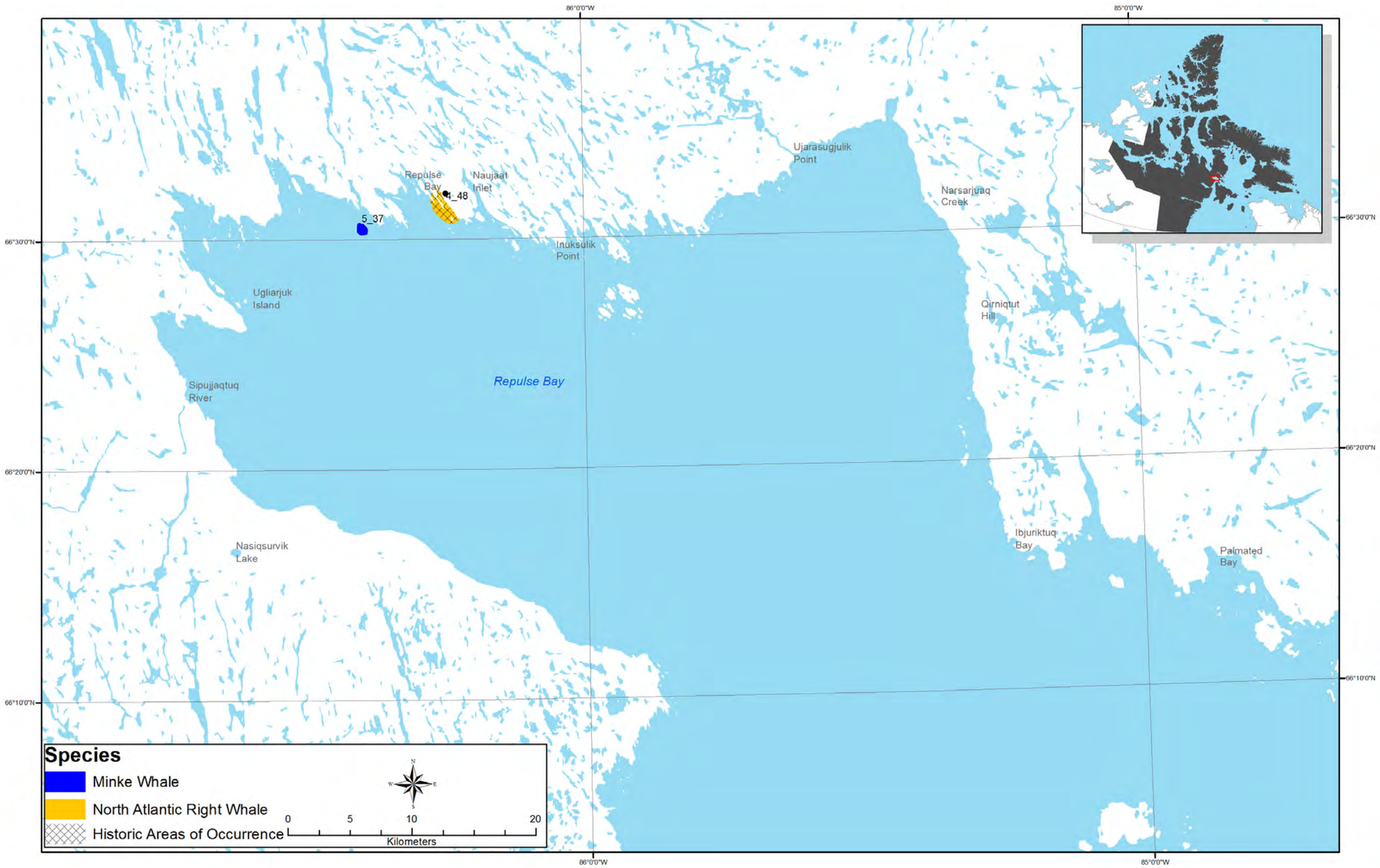


**Table 33.** Areas of occurrence for Minke Whale, and North Atlantic Right Whale

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS |
|---|---|---|---|
| 4_48H | REP_04_0312 | North Atlantic Right Whale | |
| 5_37 | REP_05_0312 | Minke Whale | Jul, Aug |

**Figure 32.** Areas of occurrence for Dulse, Edible Kelp, Hollow Stemmed Kelp, and Sea Colander

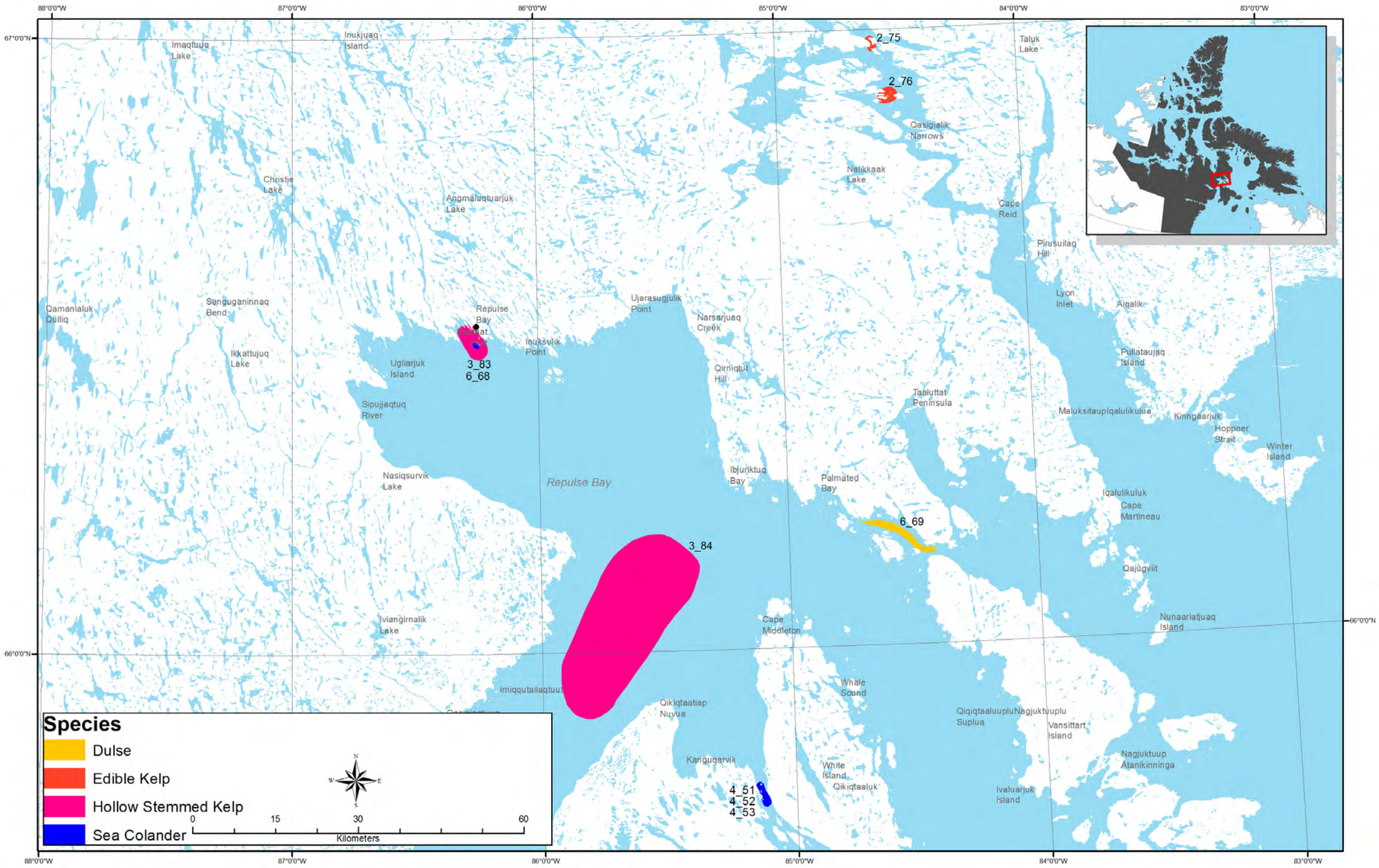


**Table 34.** Areas of occurrence for Dulse. Edible Kelp, Hollow Stemmed Kelp, and Sea Colander

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS | COMMENTS |
|---|---|---|---|---|
| 6_69 | REP_06_0312 | Dulse | | |
| 2_75 | REP_02_0312 | Edible Kelp | | |
| 2_76 | REP_02_0312 | Edible Kelp | | |
| 3_83 | REP_03_0312 | Hollow Stemmed Kelp | Jul, Aug | Found in areas with high currents |
| 3_84 | REP_03_0312 | Hollow Stemmed Kelp | Jul, Aug | |
| 4_51 | REP_04_0312 | Hollow Stemmed Kelp | | |
| 4_52 | REP_04_0312 | Edible Kelp | | |
| 4_53 | REP_04_0312 | Sea Colander | | |
| 6_68 | REP_06_0312 | Sea Colander | | |

**Table 35.** Hollow Stemmed Kelp, Edible Kelp, Bladder Wrack, Spiny Sour Weed, Dulse, Floating Buttercup, Semaphore Grass, Mare's Tail, and Sea Colander everywhere data

| MAP CODE | INTERVIEW CODE | SPECIES | MONTHS |
|---|---|---|---|
| 1_54E | REP_01_0312 | Hollow Stemmed Kelp | |
| 1_74E | REP_02_0312 | Hollow Stemmed Kelp | |
| 5_42E | REP_05_0312 | Hollow Stemmed Kelp | |
| 6_66E | REP_06_0312 | Hollow Stemmed Kelp | |
| 1_55E | REP_01_0312 | Edible Kelp | |
| 6_67E | REP_06_0312 | Edible Kelp | |
| 1_56E | REP_01_0312 | Sea Colander | |
| 1_77E | REP_02_0312 | Sea Colander | |
| 1_57E | REP_01_0312 | Bladder Wrack | |
| 1_78E | REP_02_0312 | Bladder Wrack | |
| 3_85E | REP_03_0312 | Bladder Wrack | Jul, Aug |
| 5_44E | REP_05_0312 | Bladder Wrack | |
| 6_71E | REP_06_0312 | Bladder Wrack | |
| 1_58E | REP_01_0312 | Spiny Sour Weed | |
| 6_70E | REP_06_0312 | Spiny Sour Weed | |
| 5_43E | REP_05_0312 | Dulse | |
| 5_45E | REP_05_0312 | Floating Buttercup | |
| 5_46E | REP_05_0312 | Semaphore Grass | |
| 5_47E | REP_05_0312 | Mare's Tail | |
| 6_72E | REP_06_0312 | Sea Colander | |

**Figure 33.** Areas of occurrence for Bald Eagle, Golden Eagle, Gyrfalcon, Rough-legged Hawk, Sharpe-shinned Hawk, and Snowy Owl

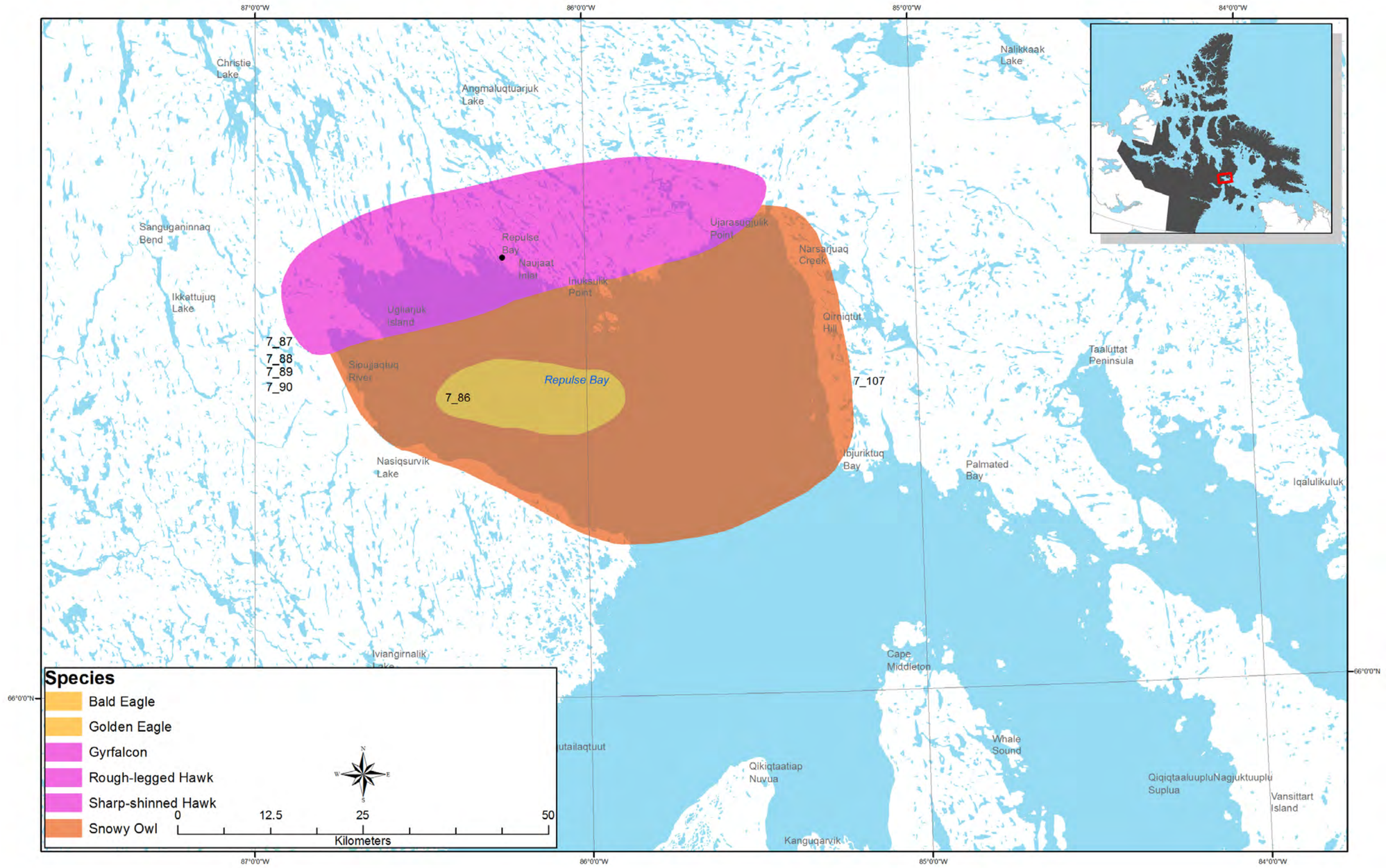


**Table 36.** Areas of occurrence for Bald Eagle, Golden Eagle, Gyrfalcon, Rough-legged Hawk, Sharpe-shinned Hawk, and Snowy Owl

| MAP CODE | INTERVIEW CODE | SPECIES |
|---|---|---|
| 7_86 | REP_07_0312 | Bald Eagle |
| 7_87 | REP_07_0312 | Rough-legged Hawk |
| 7_88 | REP_07_0312 | Sharp-shinned Hawk |
| 7_89 | REP_07_0312 | Golden Eagle |
| 7_90 | REP_07_0312 | Gyrfalcon |
| 7_107 | REP_07_0312 | Snowy Owl |

**Table 37.** Short-eared Owl, Ivory gull, Mew Gull, Herring Gull, Thayer's Gull, Iceland Gull, and Glaucous Gull everywhere data

| MAP CODE | INTERVIEW CODE | SPECIES | COMMENTS |
|---|---|---|---|
| 7_108E | REP_07_0312 | Short-eared Owl | Mainland |
| 7_96E | REP_07_0312 | Ivory Gull | |
| 7_97E | REP_07_0312 | Mew Gull | |
| 7_98E | REP_07_0312 | Herring Gull | |
| 7_99E | REP_07_0312 | Thayer's Gull | |
| 7_100E | REP_07_0312 | Iceland Gull | |
| 7_101E | REP_07_0312 | Glaucous Gull | |

**Figure 34.** Areas of occurrence for Long-tailed Jaeger, Parasitic Jaeger, and Pomarine Jaeger

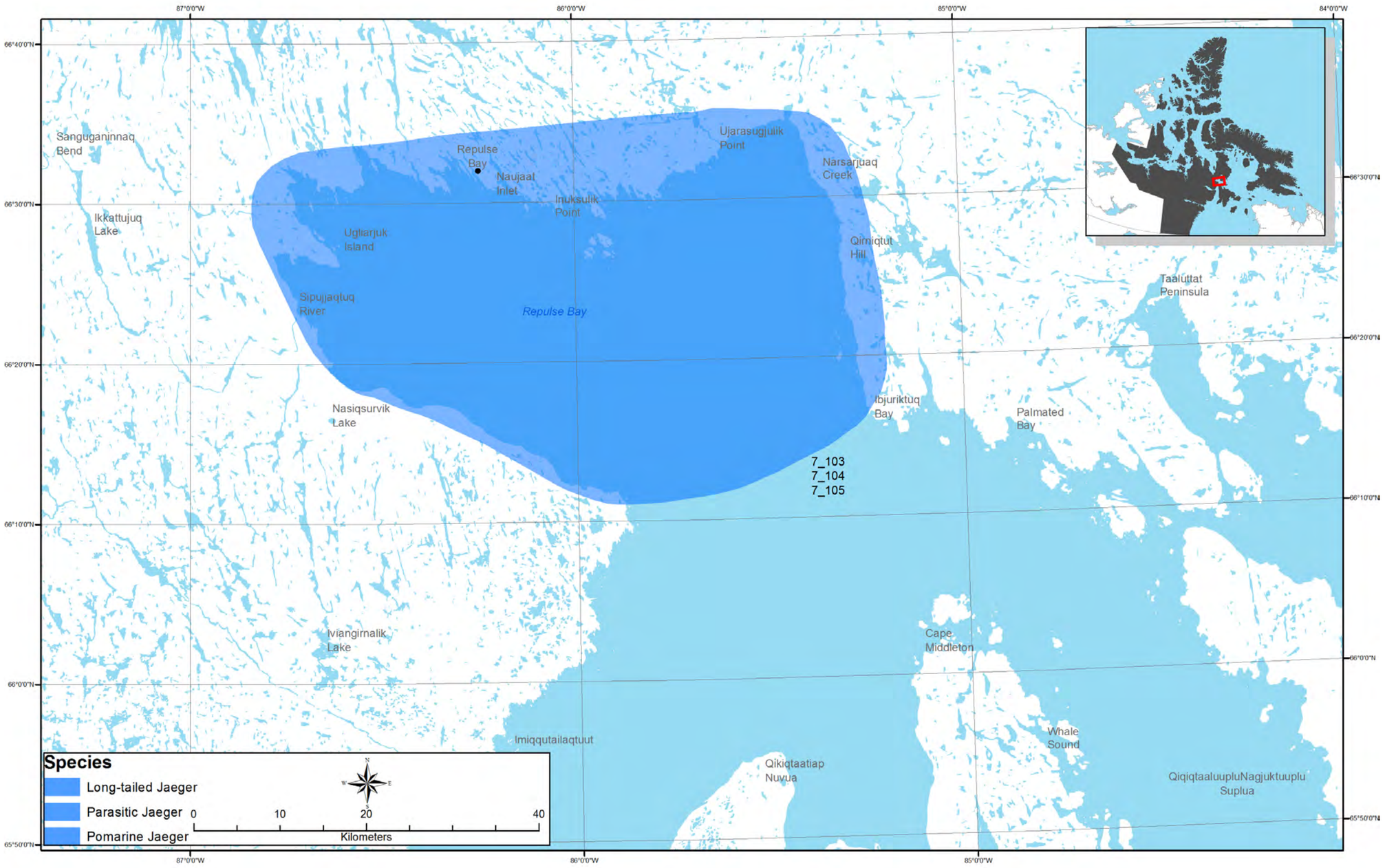


**Table 38.** Areas of occurrence for Long-tailed Jaeger, Parasitic Jaeger, and Pomarine Jaeger

| MAP CODE | INTERVIEW CODE | SPECIES |
|---|---|---|
| 7_103 | REP_07_0312 | Pomarine Jaeger |
| 7_104 | REP_07_0312 | Parasitic Jaeger |
| 7_105 | REP_07_0312 | Long-tailed Jaeger |

**Table 39.** King Eider, Common Eider, Long-tailed Duck, Willow Ptarmigan, White-tailed Ptarmigan, Red-throated Loon, and Pacific Loon everywhere data

| MAP CODE | INTERVIEW CODE | SPECIES |
|---|---|---|
| 7_77E | REP_07_0312 | King Eider |
| 7_78E | REP_07_0312 | Common Eider |
| 7_79E | REP_07_0312 | Long-tailed Duck |
| 7_80E | REP_07_0312 | Willow Ptarmigan |
| 7_81E | REP_07_0312 | Rock Ptarmigan |
| 7_82E | REP_07_0312 | White-tailed Ptarmigan |
| 7_83E | REP_07_0312 | Red-Throated Loon |
| 7_84E | REP_07_0312 | Pacific Loon |

**Figure 35.** Areas of occurrence for Barnacle Goose, Brant, Cackling Goose, Canada Goose, Ross's Goose, Snow Goose, Trumpeter Swan, and Whooping Crane

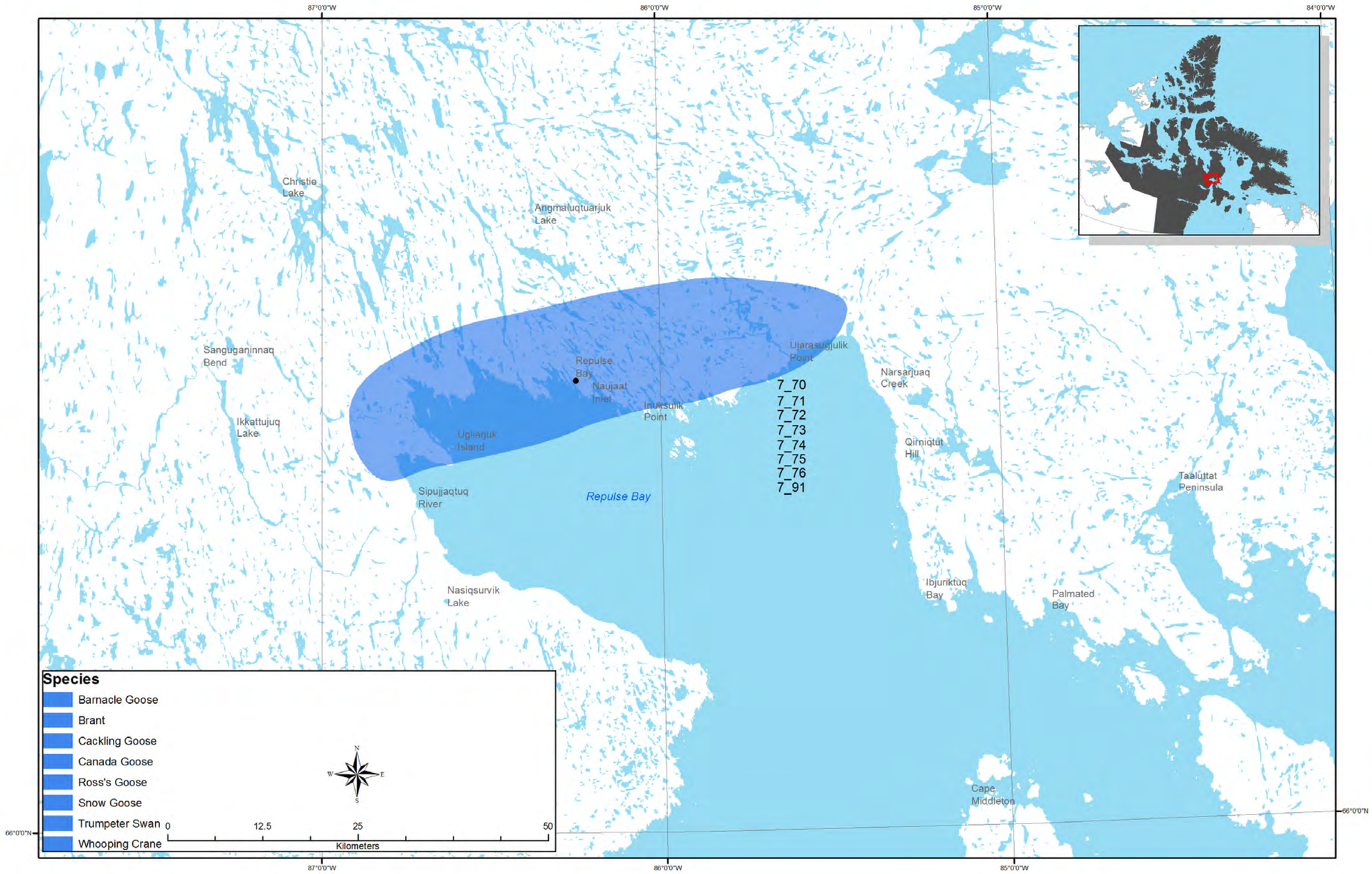


**Table 40.** Areas of occurrence for Barnacle Goose, Brant, Cackling Goose, Canada Goose, Ross's Goose, Snow Goose, Trumpeter Swan, and Whooping Crane

| MAP CODE | INTERVIEW CODE | SPECIES |
|---|---|---|
| 7_70 | REP_07_0312 | Snow Goose |
| 7_71 | REP_07_0312 | Ross's Goose |
| 7_72 | REP_07_0312 | Brant |
| 7_73 | REP_07_0312 | Barnacle Goose |
| 7_74 | REP_07_0312 | Cackling Goose |
| 7_75 | REP_07_0312 | Canada Goose |
| 7_76 | REP_07_0312 | Trumpeter Swan |
| 7_91 | REP_07_0312 | Whooping Crane |

**Table 41.** Northern Fulmar, Black-billed Plover, Greater Yellowlegs, Red-necked Phalarope, Black-legged Kittiwake, Arctic Tern, Black Guillemot everywhere data

| MAP CODE | INTERVIEW CODE | SPECIES |
|---|---|---|
| 7_85E | REP_07_0312 | Northern Fulmar |
| 7_92E | REP_07_0312 | Black-billed Plover |
| 7_93E | REP_07_0312 | Greater Yellowlegs |
| 7_94E | REP_07_0312 | Red-necked Phalarope |
| 7_95E | REP_07_0312 | Black-legged Kittiwake |
| 7_102E | REP_07_0312 | Arctic Tern |
| 7_106E | REP_07_0312 | Black Guillemot |

**Figure 36.** Repulse Bay Nunavut Atlas community map

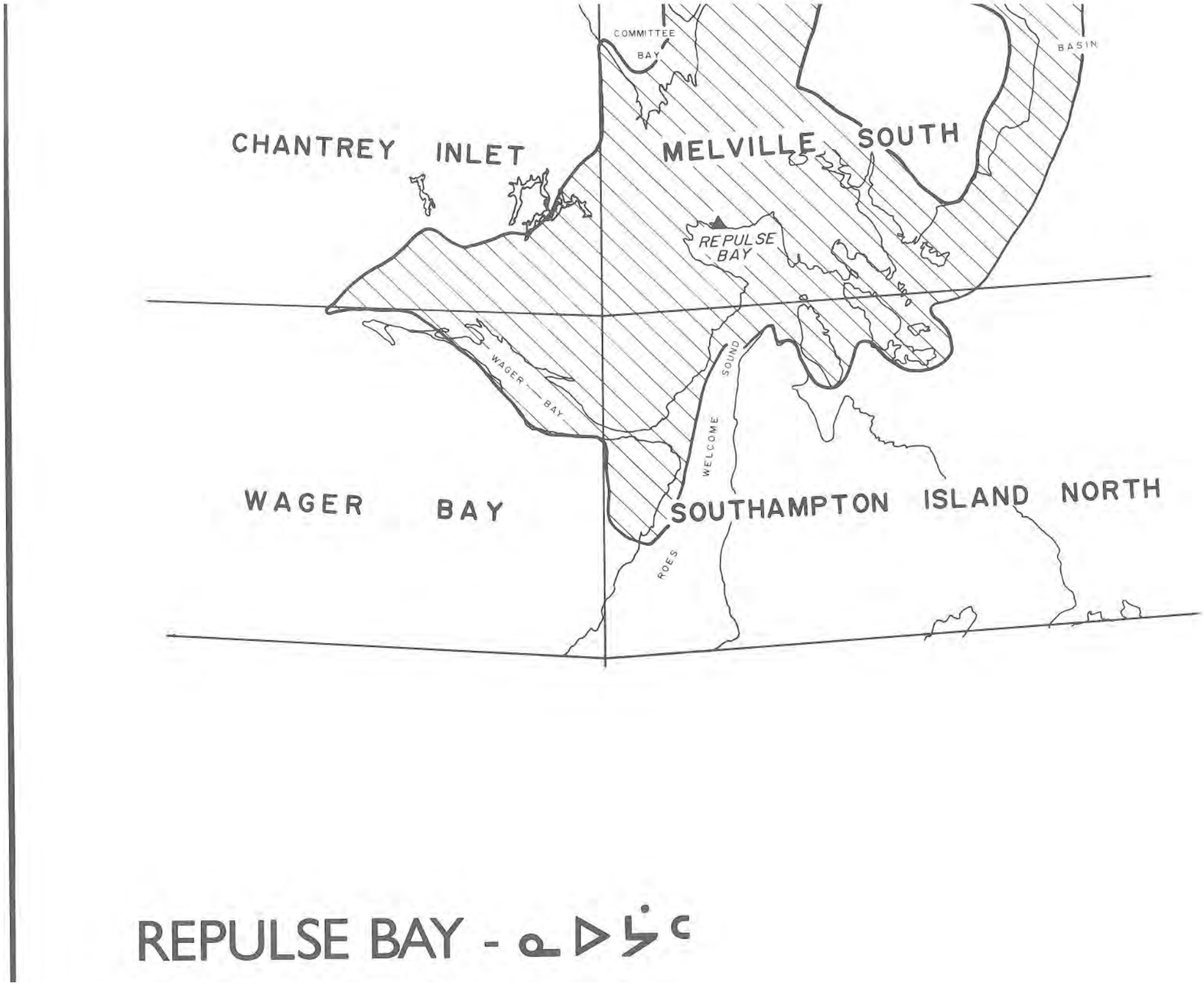
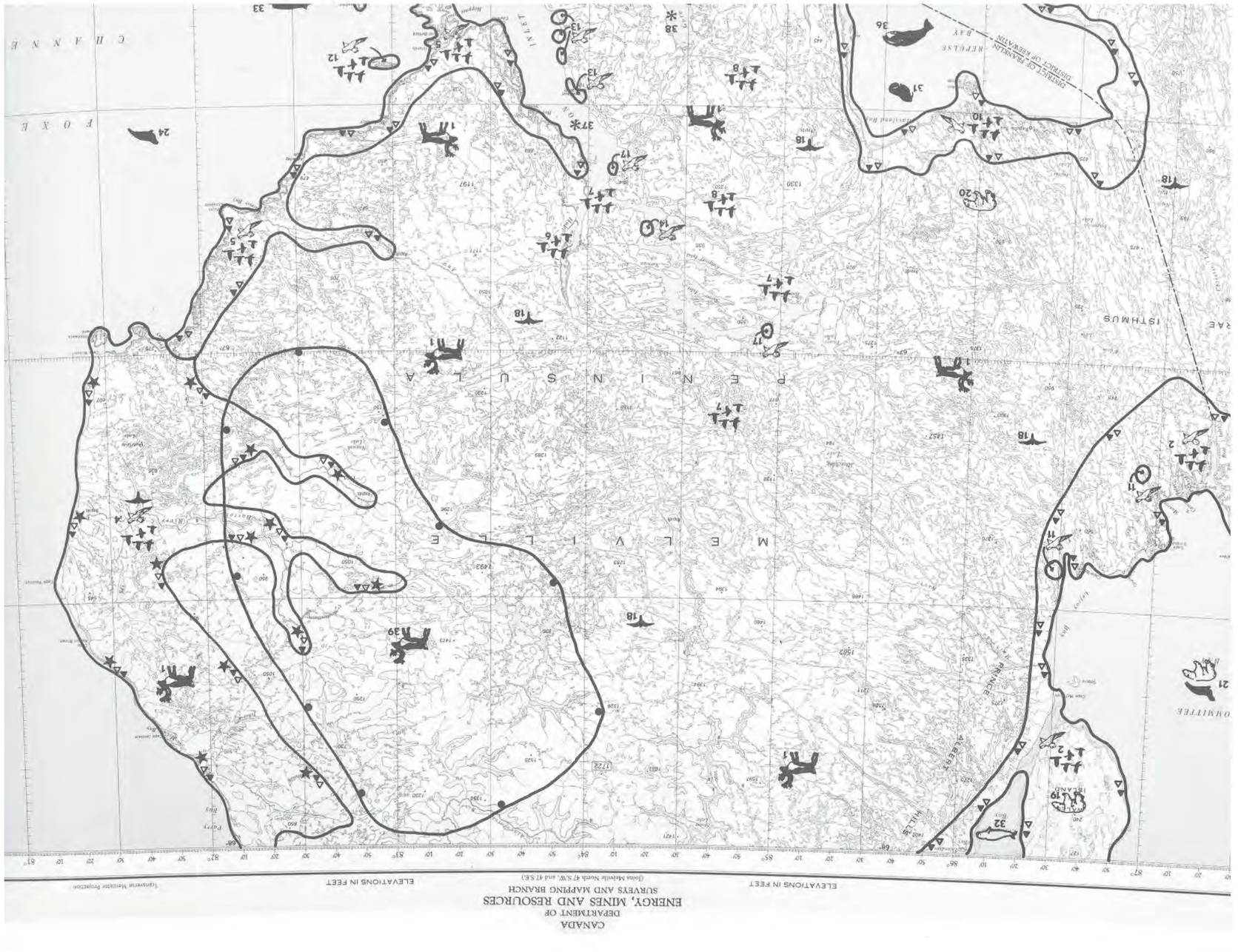


**Figure 37.** Nunavut Atlas Melleville Peninsula South



# MELLVILLE SOUTH

## INUIT LAND USE

**1RB & PB –** This area is part of a larger unit which extends to the north and south. It is a transition zone of use between hunters from Pelly Bay and Naujaat. The northern portion of this area appears to be currently little used for resource harvesting, but is used occasionally for caribou hunting by Pelly Bay hunters. The southern part is frequented by Naujaat residents for caribou hunting, along then west shore of Roes Welcome Sound, and for Arctic Fox trapping, between Naujaat and Qamanialuk Lakes.

**2RB –** This area is used by Naujaat residents for trapping and hunting. The NWT Wildlife Service estimates that up to several hundred Arctic Fox, several hundred caribou, 20-30 wolves and up to half dozen wolverines are harvested annually. March and April are major Arctic Fox trapping months. Caribou are generally hunted during winter near the settlement and during summer and fall along the coast. Arctic Char are heavily fished near the settlement and in Christie, North Pole, Amitut (Amittutjuaq) and Anigorchli (Aniguqliq) lakes and in the North Pole River.

**3RB –** This is part of a large area that has been heavily used by Naujaat trappers in the recent past for Arctic Fox trapping. March and April are now the main trapping months in this area between Haviland and Ross Bays, and Lyon Inlet. Hunters from Naujaat use this area for caribou hunting during winter. Caribou are hunted during late summer and early fall in the Gore Bay and Lyon Inlet vicinity. Wolves are hunted around Ross Bay during winter. Arctic Char are caught in the rivers adjacent to Ross Bay. An outpost camp has been established at Gore Bay as a base for caribou, waterfowl and marine mammal harvesting throughout this area.

**4RB –** Arctic fox are trapped, primarily during March and April, from Naujaat and south along the coast. Caribou and wolves are hunted year round in this area.

**5RB –** Ringed, bearded and harp seals are hunted throughout Naujaat during summer as are narwhals and beluga whales. The settlement of Naujaat has an annual narwhal quota of 25 and the NWT Wildlife Service estimates that hunters may harvest more than 25 beluga whales in Naujaat each year. Waterfowl are hunted throughout Naujaat and Haviland bays each summer and eggs are collected, especially in the vicinity of the settlement. Walrus are hunted in Naujaat, most notably around Harbour Islands. Nets are set for Arctic Char in Naujaat near the settlement and at river mouths along the north shore.

**6RB –** This large area along the Melville Peninsula coast is used by Naujaat hunters for polar bear hunting each winter. Gore Bay is the focal point for the Naujaat hunters' polar bear harvesting. Naujaat has an annual polar bear quota of 20. Ringed, bearded and harp seals are harvested in this area each year, especially around Vansittart and White islands. Beluga and occasionally narwhals are hunted throughout this area, including around Vansittart and White islands and Lyon Inlet. Walrus are hunted every year around White, Vansittart and Sturges Bourne Islands. Waterfowl are hunted along the shore by boat each summer. A travel route, along the coast, linking Naujaat and Hall Beach is used throughout the winter.

**7RB –** Naujaat hunters use the west side of Roes Welcome Sound as travel route to Wager Bay. Wildlife and marine mammals are hunted when seen.

**8HB, RB & IG –** Hall Beach hunters use this entire area of the Foxe Basin north of Freuchen Bay year round, for ringed and bearded seal hunting. Walrus are hunted in drifting pack ice during late winter and in spring, close to the floe edge and in open leads. The east coast of Melville Peninsula is used as winter travel route between Naujaat, Hall Beach and Igloolik.

**9RB & PB –** Arctic Fox are trapped along the coast and on Wales Island during March and April. Polar bears are hunted during winter, along the east coast of Committee Bay. The travel route along the west coast of Committee Bay is used by residents of Naujaat and Pelly Bay for winter travel between the settlements.

**10RB, IG & HB –** Caribou are hunted in this portion of the Melville Peninsula, north of Cape Jermain, during late fall by hunters from Hall Beach. Also, the Hall Beach HTA has initiated a sport caribou hunting program and may travel this far south by small boat along the coast, to seek trophy caribou. Arctic Char fishing occurs along the coast and in several of the lakes in this area.

**11HB –** This area is used every year by residents of Hall Beach for caribou hunting, wolf hunting and char fishing. Major travel routes traverse this area which is used by residents of Hall Beach and Naujaat for winter travel between the settlements.

**12RB & HB –** This area is occasionally used by hunters from Hall Beach and Naujaat for caribou hunting and Char fishing.

**13RB –** This route is used by residents of Naujaat for winter travel to and from the Bennett Bay area of Wager Bay.

## NOTES ON DOMESTIC AND COMMERCIAL FISHERIES

Arctic Char and lake trout are important food for residents of Naujaat, but fish caught near the community are often poor quality and fishermen must travel long distances to obtain large anadromous Arctic Char which are fat and in good condition. Between April and December, fishermen from Naujaat range as far afield as Wager Bay (65°16'N, 88°18'W), the Thomsen River (65°31'N, 85°16'W), the Aua River (67°07'N), Miertsching Lake (67°05'N, 85°09'W), and the Curtis River (67°08'N, 87°45'W). They travel by boat in the summer and by snowmobile for the rest of the year, and catch Arctic char, lake trout, and at least cisco using gillets, hooked lures and spears. Most fishing is done in the spring and fall, because summer pack ice makes coastal boat travel and gillnetting difficult.

In 1981m the Naujat Co-operative traded beluga whale and narwhal muktuk with the co-operative in Pelly Bay in exchange for 1,200 kg of anadromous Arctic char.

During May and November, lake trout and landlocked Arctic char are caught at lakes near the community. They are attracted to holes in the ice by jigging with shiny hookless lures and then they are speared with leisters. In June, lake trout and anadromous Arctic char are caught at North Pole Lake using the same technique.

High tides and moving summer pack ice often damage gillnets set along the coast of Naujaat, and limit summer coastal fishing efforts. However, anadromous Arctic char are caught in gillnets set at the mouth of the Sipujjaqtuq River in July.

In May, residents of Naujaat travel by snowmobile to Angmaluqtuq and nipvaavik lakes to jig through the ice for lake trout and anadromous Arctic char. In early June, they also catch lake trout and anadromous Arctic char at a lake east of Haviland Bay. They attract the fish to holes cut in the ice using shiny hookless lure, and then spear them with a leister.

A stone fish weir near mouth of a river at the head of Tinujjivik Inlet (66°23'N, 84°26'W) is still used in late June and early July. Anadromous Arctic char are trapped at the weirs, where they can easily be speared as they migrate downstream to the sea.

In July, anadromous Arctic char are caught in gillnets set along the east coasts on Haviland Bay, between Isatigaarjuk Point and Quirniqtut Hill, and along the coast of Gore Bay, near an outpost camp situated at the head of the bay.

Residents of Hall Beach, who sometimes camp at Arviqtujuq Bay during the summer, gillnet anadromous Arctic char along the coast near their camp in August.

In May, residents of Naujaat travel by snowmobile to a lake on the Aua River (67°07'N, 83°32'W) to jig through the ice for lake trout, using hooked lures.

The rivers which flow into palmer and Freuchen bays were fished in the past. Residents of Hall Beach often camp at Palmer Bay for a few days in late July and August to gillnet anadromous Arctic char along the coast of the bay.

Residents of Naujaat visit Miles Lake, Nassilingnaarjuk Lake, and the Curtis River by snowmobile in November and December to gillnet lake trout and anadromous Arctic char. Cisco are also caught in the Curtis River at the same time.

Residents of Naujaat visit Ingiqqanilik Lake in May by snowmobile to jig for lake trout.

Residents of Hall Beach occasionally camp at Cape Penrhyn in late July or August. They gillnet anadromous Arctic char along the coasts near their camp.

There are quotas on commercial catches of anadromous Arctic char of 2.300 kg, round weight (rnd) at the North Pole River, Gibson Cove, and the Snowbank River, and 4,500 kg at the Curtis River downstream from Miles Lake. The only records of commercial fishing are at the Gibson Cove, where fishermen from Naujaat caught 1,361 kg of char during a test fishery in 1978, and at the North Pole River, where they caught 700 kg of char in 1981 and 1,272 kg in 1982. Fish caught are sold within the community, whether directly or through the Naujat Co-operative. There was commercial fishing at the North Pole River and in Naujaat area in 1969.

There is a quota of 900 kg (rnd) on commercial catches of lake trout and Arctic char at Christie Lake. However, there is no record of commercial fishing at Christie Lake.

There are quotas on commercial catches of anadromous Arctic char at Haviland Bay (2,300 kg, rnd) and at Gore Bay (3,600 kg, rnd). In 1982, commercial fishermen from Naujaat harvested 1,290 kg of char from Haviland Bay and 200kg from Gore Bay. The fish were sold within the community by the Naujat Co-operative.

In 1981, Naujaat fishermen requested permission to conduct a test fishery of Ross Bay to assess its commercial fishing potential. A test quota of 2,041 kg was assigned, but there is no record that the test was conducted.

There is a quota of 4,500 kg (rnd) on commercial catches of anadromous Arctic char at the Curtis River. Domestic fishermen who fish the Curtis River sell some of their catch of Arctic char to the Naujat Co-operative, for resale within the community.

## WILDLIFE

### 1 CARIBOU

This map area provides range for barren-ground caribou of both the Wager herd and south Melville herd. The most recent population estimates (1986) have placed the sizes of Wager and South Melville herd at 100,000 to 300,000 and 50,000 to 100,000, respectively.

The seasonal distribution of these two caribou herds, particularly during winter, is largely undocumented. Generally, the seasonal ranges of Wager herd are considered to encompass the region between Wager Bay to the south and southern end of Committee Bay to the north. These caribou have been reported, on a number of occasions, to calve in the vicinities of Pearce, Curtis and Stewart lakes. The overall importance and fidelity of the Wager herd to this calving area is unknown. The seasonal ranges of the south Melville herd are considered to encompass the southern half of Melville Peninsula. Calving by the south Melville herd is believed to be confined mainly to the rolling uplands in the interior of southern Melville Peninsula. The Rae Isthmus is generally considered to be the division boundary between the ranges of these two herds, however, overlap in seasonal distributions almost certainly occurs within this area.

This area is thought to provide year-round range for caribou. The rugged, windswept uplands are likely important wintering range. In summer, many caribou concentrate on the well-vegetated interior meadow-lands and coastal lowlands. In July 1983, caribou numbering in the thousands occupied much of the area. In addition, the area is likely important as a post-calving area as cow-calf groups were very common. Vansittart Island and many adjacent smaller islands provide range for small numbers of barren-ground caribou, which are likely year-round residents within the area.

### 2 WATERFOWL AND SEABIRDS

Wales Island is the only area of significance for aquatic birds, particularly waterfowl, along the entire west side of Melville Peninsula. The island, which consists mainly of well-vegetated lowlands, supports moderate numbers of breeding birds, including Canada Goose, whistling swans, oldsquaw, king eider, snow goose, herring gull, glaucous gull, Sabine's Gull, Arctic Tern, long-tailed jaeger, parasitic jaeger and a variety of shorebirds.

The remainder of this wildlife area, particularly the river, coast and associated lowlands, provide some important habitat for aquatic birds. Waterfowl are fairly common. Small numbers of Canada Geese, belonging to a large race that occur in the area only as non-breeding molt migrant from populations that breed in southern Canada, are found here. A few other Canada geese, likely belonging to the Hutchin's race, probably breed within the area. Oldsquaw, followed by king eider are likely the most common breeding species of waterfowl in the area. A few whistling swans and snow geese may also breed in the area, but snow geese are more common as non-breeders.

Thayer's gulls, glaucous gulls and herring gulls breed in the area. Gulls are most common along the coast. Herring and glaucous gulls can be found nesting throughout the entire area, usually as scattered, isolated pairs. Thayer's gull nest at two known cliffs sites within this unit.

Other birds which breed within the area include Arctic loon, red-throated loon, parasitic jaeger, long-tailed jaeger and a variety of shorebirds.

### 3 POLAR BEARS

Polar bears are known to have maternity dens on Vansittart Island. The coastal areas of the island are plentiful with ringed seals, and serve as important feeding grounds for polar bears.

### 4 WATERFOWL, SEABIRDS AND RAPTORS

The numerous cliffs throughout the rugged eastern area of this map area provide optimal nesting habit for raptors, including peregrine falcons, rough-legged hawks and perhaps the occasional gyrfalcons Because of their relatively small overall population size, nesting success for peregrines and gyrfalcons is especially critical. The status of peregrines and gyrfalcons within the area is unknown. Rough -legged hawks are likely to be abundant in the area at times. Breeding activity of rough-legged hawks is highly cyclical, and is dependent upon the abundance of its main prey, lemmings. The cliffs within this area also provide suitable nesting sites for ravens which likely nest in the area.

Waterfowl are relatively common within the area. Small numbers of Canada Geese, mostly belonging to a large race which occurs in the area only as non-breeding molt migrants from populations that breed in southern Canada are found here. A few other Canada geese, likely belonging to the Hutchin's race, breed within the area. Oldsquaw and king eiders are fairly abundant, and breed throughout. The occasional whistling swan also nests in the area. Lesser snow geese occur in the area as non-breeders, but a few greater snow geese do nest in the area. Common eiders, probably non-breeders, are found in scattered locations along the coast.

Gulls are relatively common particularly along the coast. Other species that are thought to breed in the area include

Arctic Loon, red-throated loon, black guillemot, Arctic Tern, long-tailed jaeger and parasitic jaeger.

## 5 WATERFOWL AND SEABIRDS

Waterfowl are abundant within the area. Canada Geese, mostly belonging to a large race that occurs in the area only as non-breeding molt migrants from populations that breed in southern Canada, are relatively common. A few other Canada Geese, likely belonging to the Hutchin's race, breed within the area. Oldsquaws and king eiders frequently breed on many of the coastal islands. A few brant and the occasional whistling swan nest in the area. Snow geese occur in the area mainly as non-breeders or during migration, but a few also nest in the area.

Both herring and glaucous gulls occur in the area. Herring gulls are by far the most numerous of the two species. They are particularly common along the coast and nest throughout the entire area, usually as scattered isolated pairs or occasionally, in small colonies. Favoured nesting sites are usually offshore boulders or small islands, along the coast or in tundra lakes and ponds. Nesting colonies of Arctic Terns are found in scattered locations. In the areas where colonies occur, such as at Point Elizabeth and at the south end of Owlitteeweek Island, Arctic Terns are locally very abundant. Nesting activity by Arctic Terns within this map area is generally restricted to the small coastal islands.

Black guillemots in small numbers breed on some of the offshore islands. Other species that are thought to breed within this Wildlife area include red-throated loon, Arctic Loon, parasitic jaeger, long-tailed jaeger and possibly sandhill crane.

A large number and variety of shorebirds are likely found in this area, mostly associated with localized habitats. Some of the more common species of shorebirds that likely breed within this area include semipalmated plover, golden plover, black-bellied plover, ruddy turnstone, red pharlarope, white-rumped sandpiper, Baird's Sandpiper, dunlin, and sandering. The coastal lowlands and adjacent tidal flats may be important staging areas during migration.

## 6 WATERFOWL

Hoppner Inlet and the adjacent lowlands support moderate numbers of aquatic birds including oldsquaws, Canada Geese, king eiders, snow geese and red-throated loons.

## 7 WATERFOWL

The upper half of Lyon Inlet supports moderate numbers of aquatic birds, waterfowl being the most numerous. Oldsquaws are the most abundant and widespread in the area. Small numbers of snow geese, mostly non-breeders, utilize this area, but a few pairs of snow geese also nest in widespread scattered locations in the upper reaches of the inlet. Common eiders are fairly abundant and widespread, and likely breed in the area. Red-throated loons are also common and widespread.

## 8 WATERFOWL

Small numbers of Canada Geese are found during spring, summer and fall scattered in small flocks throughout much of the central portion of this map-area. These geese belong to a large race of Canada Geese that occur in the area only as non-breeding molt migrants from populations that breed in southern Canada.

The coast, large lakes and rivers with adjacent tundra lakes and ponds tend to be the favoured molting areas for Canada Geese. The water bodies are important in that they provide a refuge for geese from most predators. This is particularly important during the flightless period of the molt when geese are most vulnerable to predators. Lowlands immediately adjacent to these water bodies are important feeding sites for geese.

## 9 WATERFOWL AND SEABIRDS

The area, which encompasses Frozen Strait and the adjacent coasts, is utilized mainly during spring, summer and fall by significant concentrations of aquatic birds. Frozen Strait, because its waters open up much earlier than any of the adjacent major water bodies, is of particular importance as a spring staging and breeding area for many of the marine or predominantly marine feeding birds in the region. Included are species such as common eider, king eider, oldsquaw, black guillemot, Arctic Terns, herring gull, Thayer's Gull, glaucous gull, red-throated loon and Arctic Loon. Nesting by common eider, black guillemot and Arctic Tern, species that are particularly abundant within the area, is mostly restricted to small offshore islands within the strait. Gulls are numerous, particularly along the coasts, and nest throughout the entire area, either as isolated pairs or in colonies. Glaucous and herring gulls generally select small offshore islands in the strait or protruding boulders and islands in the strait or protruding boulders and islands in lakes for nesting sites. Thayers Gulls are restricted to colonies to the south of this map-area, on the coastal cliffs along the west side of Frozen Strait. Nesting by oldsquaws, king eiders, Arctic Loons, red-throated loons, and other aquatic birds such as Canada Geese, whistling swans, brant, sandhill cranes, and shorebirds occurs mostly in association with well-vegetated coastal lowlands.

The waters of Frozen Strait remain at least partially open during some winters. These open water areas provide important feeding site for any aquatic birds wintering in the area, which may, on occasion, include black guillemot, common eider and possibly, king eiders, oldsquaw and some gulls.

## 10 WATERFOWL AND SEABIRDS

Waterfowl are abundant within the area. Canada Geese, mostly belonging to a large race that occur in the area only as non-breeding molt migrants from populations that breed in southern Canada, are relatively common along the west side of Roes Welcome Sound. A few other Canada Geese, likely belonging to the Hutchin's race, breed within the area. Oldsquaws are particularly abundant and breed throughout. Common eiders frequently breed on many of the coastal islands. King eiders are likely common breeders on the mainland. A few brant and the occasional whistling swan may nest in the area. Snow geese occur in the area either as non-breeders or during migration.

Both herring and glaucous gulls occur in this area. Herring gulls are by far the most numerous of the two species. They are particularly common along the coast and nest throughout the entire area, usually as scattered isolated pairs or occasionally in small colonies. Favoured nesting sites are usually offshore boulders or small islands along the coast or in tundra lakes and ponds. Nesting colonies of Arctic Terns are found in scattered locations along the west side of Roes Welcome Sound. In the areas where colonies occur, such as at Anarnittuq Island, Arctic terns are locally very abundant. Nesting activity by Arctic Terns within this map-area is generally restricted to the small coastal islands.

Black guillemots are common along the west side of Roes Welcome Sound where they breed on many of the small offshore islands. Other species that are thought to breed within this wildlife area include red-throated loon, Arctic Loon, parasitic jaeger, long-tailed jaeger and possibly sandhill crane.

A large number and variety of shorebirds are likely found in this area, mostly associated with localized habitats. Some of the more common species of shorebirds that likely breed within this area include semipalmated plover, golden plover, black-bellied plover, ruddy turnstone, white-rumped sandpiper, Baird's sandpiper, dunlin, semipalmated sandpiper, and sanderling. The coastal lowlands and adjacent tidal flats may be important staging areas for shorebirds during migration.

## 11 SEABIRDS

These cliffs support nesting colonies of Thayer's and glaucous gulls. The colony at Lefroy Bay contains approximately 50-75 breeding pairs. The colony at Munroe

Inlet contains approximately 25-50 pairs. Both colonies are predominantly Thayer's Gulls.

### 12 WATERFOWL AND SEABIRDS

Thurton Island is a very important nesting area for aquatic birds, mostly common eiders. In 1983, the island supported an estimated 2.000-4.000 breeding pairs of common eiders. Other species observed nesting on the islands include Arctic Tern, black guillemot, herring gull, Canada Geese, brant, whistling swan and jaegers.

### 13 SEABIRDS

These areas support cliff nesting colonies of Thayer's and glaucous gulls. The three northern most areas each contain only one cliff site where nesting occurs. The two southern areas each contain two sites. Colonies range in size from approximately 25 to 200 breeding pairs. All of these colonies are predominantly Thayer's Gulls.

### 14 SEABIRDS

These islands support breeding colonies of herring and glaucous gulls. The largest colony, which occurs on a small island in the Kingmigjuaq Narrows, contains about 100 breeding pairs. The smallest colony, about 15 breeding pairs, is found on the small islands east of Gore Bay. The colonies on the north side of Frozen Strait each contain a few dozen breeding pairs.

### 15 WATERFOWL

Passage Island and the adjacent small island to the south appear to be important nesting areas for black guillemot and common eiders. Many hundreds of eiders and guillemots were observed on or near these islands in July 1983.

The group of small islands off the northwest coast of Vansittart Island supports large numbers of breeding birds, mostly common eiders and lesser numbers of herring gulls. Glaucous gulls, Canada Geese, brant, snow geese, red-throated loons and black guillemots were also observed, and likely nest in this area.

### 16 WATERFOWL

Small numbers of Canada Geese are found during spring, summer and fall in small flocks. These geese belong to a large race of Canada Geese that occur in the area only as non-breeding molt migrants from populations that breed in southern Canada.

The coast, large lakes and rivers with adjacent tundra lakes and ponds tend to be the favoured molting areas for Canada Geese. The water bodies are important in that they provide a refuge for geese from most predators. This is particularly important during the flightless period of the molt when geese are most vulnerable to predators. Lowlands immediately adjacent to these water bodies are important feeding sites for geese. Within the area, the Snowbank River valley appears to be particularly favoured as molting areas for Canada Geese.

With the completion of the molt by late summer, geese likely disperse throughout much of the area.

### 17 SEABIRDS

These cliffs support nesting colonies of Thayer's and glaucous gulls. The colonies each contain approximately 50-75 pairs of gulls. Both colonies are predominantly Thayer's Gulls.

### 18 RAPTORS

The numerous cliffs throughout this area provide optimal nesting habitat for raptors, including peregrine falcons, rough-legged hawks and the occasional gyrfalcon. The extreme southern and southwestern portions of Melville Peninsula have been identified as a particularly productive area for the endangered peregrine falcon. Because of their relatively small overall population size, nesting success for peregrines and gyrfalcons is especially critical. Rough-legged hawks are thought to be abundant in the area at times. Breeding activity of rough-legged hawks is highly cyclical, and is dependent upon the abundance of its main prey, lemmings. The cliffs within this area also provide suitable nesting sites for ravens which likely nest in the area.

### 19 POLAR BEARS

Wales Island is an important maternity denning and feeding area for polar bears. The complexity of the coastline delays the breakup of ice and hastens the freezeup, providing the bears with an extended hunting period.

### 20 POLAR BEARS

Polar bears are present in the areas surrounding the Naujaat community during autumn.

### 21 SEALS AND POLAR BEARS

Ringed seals are abundant along the west coast of Melville Peninsula, particularly in bays and inlets where fast ice persists well into summer. Polar bears occur in moderate numbers in Committee Bay due to the abundance of seals.

### 22 SEALS AND NARWHALS

Ringed seals are not plentiful along this portion of the eastern Melville Peninsula coast because of the simple coastline and corresponding lack of suitable fast ice habitat. Bearded seals are also uncommon in this area. Narwhals are known to summer along the eastern coast of Melville Peninsula.

### 23 SEALS AND POLAR BEARS

Ringed seals are particularly numerous in this area because of the abundance of stable landfast ice throughout most of the year. The less common bearded seal also occurs here year-round.

This area is an important hunting ground for polar bears. The complexity of the coastline delays the breakup of ice and hastens the freezeup, thus prolonging the period during which polar bears are able to hunt seals. The bears tend to concentrate at the flow edges and on the unstable offshore ice where sub-adult ringed seals are found.

### 24 SEALS

Ringed seals are found year-round throughout Foxe Channel, but are particularly numerous on the stable, landfast ice. The less common bearded seals prefer the pack and pan ice found farther offshore.

### 25 SEALS

Ringed and bearded seals are common on and around the ice of Lyon Inlet.

### 26 SEALS

Harp seals, ringed seals and bearded seals are found in Gore Bay. Seals in this area feed on mussels, sea slugs and shrimp.

### 27 WALRUSES, SEALS AND POLAR BEARS

Walruses reportedly occur year round in Frozen Strait. Ringed and bearded seals are plentiful in Frozen Strait.

Polar bears range throughout Frozen Strait and adjacent areas. They lend to concentrate at floe edges and on unstable offshore ice where sub-adult ringed seals are to be found.

Harp seals are seen during summer.

### 29 WALRUSES

Walruses are commonly found each year off the east coast of Melville Peninsula north of Cape Wilson.

### 30 WALRUSES
Walruses haul-out on the rocks of Sturges Bourne Islands during the summer.

### 31 WALRUSES
Walruses are present perennially in Haviland Bay.

### 32 BELUGAS
Belugas are hunted by Naujaat hunters in the narrows separating Wales Island and the east coast of committee Bay.

### 33 NARWHALS
Narwhals are known to summer along the east coast of Melville Peninsula.

### 34 BELUGAS AND NARWHALS
White whales and narwhals occur in Lyon Inlet during the summer.

### 35 BOWHEADS, BELUGAS AND NARWHALS
A number of twentieth century bowhead sightings have been recorded for this area during the summer. It is known whether the whales arrive in this area via Roes Welcome Sound from Hudson Bay or via Frozen Strait from Foxe Basin. Narwhals were historically reported to be abundant in Frozen Strait. Narwhals and beluga whales have been observed in this area during summer in recent years.

### 36 BOWHEADS, WALRUSES AND SEALS
Bowhead whales, once abundant, are now rarely seen. In recent years five or six bowheads may be seen throught the entire summer.

Belugas and narwhals are regularly present in Naujaat during summer. Twenty narwhals and 26 belugas were observed in Naujaat during and aerial survey conducted in July of 1982.

Walruses are present in small numbers of year-round in Naujaat.

Ringed seals are abundant in all season in Naujaat due to the persistance of fast ice into the summer weeks and the ealy freezeup in the fall. Bearded seals are also common, especially on the ice pans after the annual breakup.

Harp seals are regularly seen in Naujaat.

### 37 WHALES AND SEALS
White whales and narwhals occur in Lyon Inlet in summer. Ringed and bearded seals are common on and around the ice of Lyon Inlet.

### 38 BOWHEADS
Naujaat hunters observed two bowheads in Gore Bay during the summer of 1982.

In July of 1982, three belugas and five narwhals were spotted during an aerial surve. Walruses have also been observed at the head of Gore Bay in the past.

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**The Community of Naujaat**
Hamlet of Naujaat
Naujaat HTO board members and chairpersons

**Department of Environment, Government of Nunavut**

**Interviewees — Naujaat**
David Nuluk, David Tukturdjuk, Laurent Kringayark, Sala Kidlapik, Philip Kringayark, John Tinashlu, Charlie Tinashlu

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# APPENDIX 1
# BIOGRAPHIES OF NAUJAAT INTERVIEWEES

| INTERVIEW | NAME | BACKGROUND |
|---|---|---|
| REP_01_0312 | David Nuluk | David was born in 1952 at Ajaratulik. He grew up in Naujaat (Repulse Bay).. He started fishing and hunting when he was fourteen years old. David is still actively hunting and primarily hunts but is not limited to: polar bear, walrus, narwhal, bowhead whale, beluga, ringed seal, harp seal, arctic char, and lake trout. |
| REP_02_0312 | David Tukturdjuk | David was born in 1946 near Hall Beach. He grew up around Ross Bay, Lyon Inlet, and Gore Bay. He moved to Repulse BayNaujaat in 1965. David started hunting between the ages of eight and twelve. He is still an active hunter and primarily hunts but is not limited to ptarmigan, arctic hare, caribou, polar bear, walrus, beluga, and narwhal. |
| REP_03_0312 | Laurent Kringayark | Laurent was born in 1956 in Repulse BayNaujaat. He went to school in Churchill and Rankin Inlet but grew up in Repulse BayNaujaat. He started fishing and hunting around the ages of six or seven. He is still actively hunting and primarily hunts but is not limited to fish, seals, caribou, wolf, polar bear, narwhal, beluga, walrus, and migratory birds. |
| REP_04_0312 | Sala Kidlapik | Sala was born in 1945 in Cape Dorset. He grew up near Repulse BayNaujaat at Gore Bay. He started hunting when he was ten years old. He is still actively hunting; he primarily hunts but is not limited to caribou, bearded seal, ringed seal, walrus, fish and polar bear. |
| REP_05_0312 | Philip Kringayark | Philip was born in Repulse BayNaujaat in 1962. He grew up in Repulse bayNaujaat. He started hunting when he was fifteen or sixteen years old. He hunts but is not limited to; fish, seal, walrus, polar bear, wolf, whales. |
| REP_06_0312 | John Tinashlu | John was born in Repulse BayNaujaat in 1949. He grew up in Repulse BayNaujaat. He started hunting with his uncle when he was twelve years old. He is a very active hunter; he primarily hunts seals, ptarmigan, arctic hare, birds, char, lake trout, polar bear, bearded seal, walrus, narwhal, beluga, caribou, harbor seal, and bowhead whale. |
| REP_07_0312 | Charlie Tinashlu | Charlie was born in Repulse BayNaujaat in 1935. He grew up in Repulse BayNaujaat, although he has lived in other communities. He started hunting with his father when he was five or six years old, he started hunting on his own between the ages from sixteen to twenty. Charlie still hunts but is not as active as time goes by. He hunts any marine mammals; narwhal, walrus, polar bear, seals, and fish. |

# APPENDIX 2
# ACRONYMS AND ABBREVIATIONS

**CRI -** Coastal Resource Inventory

**CLEY -** Department of Culture, Language, Elders and Youth

**CWS -** Canadian Wildlife Service

**DFO -** Department of Fisheries and Oceans (Government of Canada)

**DOE -** Department of Environment (Government of Nunavut)

**DSD -** Department of Sustainable Development (Government of Nunavut)

**ED & T -** Department of Economic Development and Transportation (Government of Nunavut)

**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 (Government of Canada)

**NRI -** Nunavut Research Institute

**NTI -** Nunavut Tunngavik Incorporated

**NWMB -** Nunavut Wildlife Management Board

**TK -** Traditional Knowledge

**TEK -** Traditional Ecological Knowledge

# APPENDIX 3
# NAUJAAT - BIRD SIGHTINGS COMMENTARY

| SPECIES | GODFREY (1986) | SNYDER (1957) | CWS | RICHARDS AND WHITE (2008) | JOHNSTON, ET AL (2000) | GASTON, ET AL (1986) | MISC. | NCRI INTERVIEWS | COMMENTS ON INTERVIEW LIST ONLY |
|---|---|---|---|---|---|---|---|---|---|
| Snow Goose | B | B | | MB | | B | x | x | ok |
| Ross's Goose | | | | MB | | | | x | unlikely |
| Brant | B | B | | MB | | B | | x | ok |
| Barnacle Goose | | | | - | | | | x | highly unlikely |
| Cackling Goose | B | B | | MB | | | | x | ok |
| Canada Goose | B | B | | MB | | B | | x | ok |
| Tundra Swan | B | B | | MB | | | x | x | ok |
| Blue-winged Teal | | B | | - | | | | | |
| Green-winged Teal | B | B | | MB | | | | | |
| King Eider | B | B | x | MB | | B | | x | ok |
| Common Eider | B | B | | MBw | | B | x | x | ok |
| Surf Scoter | B | B | | MB | | | | | |
| Black Scoter | | B | | MB | | | | | |
| Long-tailed Duck | B | B | x | MB | | B | | x | ok |
| Red-breasted Merganser | | B | | MB | | | | | probable |
| Willow Ptarmigan | B | B | | PB | | | | x | ok |
| Rock Ptarmigan | B | B | | PB | | | x | x | ok |

| SPECIES | GODFREY (1986) | SNYDER (1957) | CWS | RICHARDS AND WHITE (2008) | JOHNSTON, ET AL (2000) | GASTON, ET AL (1986) | MISC. | NCRI INTERVIEWS | COMMENTS ON INTERVIEW LIST ONLY |
|---|---|---|---|---|---|---|---|---|---|
| White-tailed Ptarmigan | | | | - | | | | x | only in western Canada |
| Red-throated Loon | B | B | x | MB | | | | x | ok |
| Common Loon | | B | | MB | | | | | |
| Pacific Loon | B | B | x | MB | | | x | x | ok |
| Horned Grebe | | B | | MB | | | | | |
| Northern Fulmar | | | | A | | | | x | possible |
| Greater Shearwater | | | x | - | | | | x | possible |
| Bald Eagle | | | | VB | | | x | x | ok |
| Northern Harrier | B | | | V | | | | | |
| Rough-legged Hawk | B | B | | MB | | | x | x | ok |
| Sharp-shinned Hawk | | | | A | | | | x | highly unlikely |
| Golden Eagle | | | | MB | | | x | x | ok |
| Gyrfalcon | B | B | | PB | | | x | x | ok |
| Peregrine Falcon | B | B | | MB | | | x | | |
| Whooping Crane | | | | A | | | | x | highly unlikely |
| Sandhill Crane | B | B | | MB | | B | x | | |
| Black-bellied Plover | B | B | x | MB | | | | x | ok |
| American Golden-Plover | B | B | | MB | B | | | | |
| Semipalmated Plover | B | B | x | MB | B | | | | |
| Solitary Sandpiper | | B | | A | | | | | |
| Greater Yellowlegs | | | | A | | | | x | possible |

| SPECIES | GODFREY (1986) | SNYDER (1957) | CWS | RICHARDS AND WHITE (2008) | JOHNSTON, ET AL (2000) | GASTON, ET AL (1986) | MISC. | NCRI INTERVIEWS | COMMENTS ON INTERVIEW LIST ONLY |
|---|---|---|---|---|---|---|---|---|---|
| Hudsonian Godwit | B | | | M | | | | | |
| Ruddy Turnstone | B | | x | MB | | | | | |
| Red Knot | B | B | | MB | | | | | |
| Sanderling | B | B | | MB | | | | | |
| Semipalmated Sandpiper | B | B | x | MB | B | | | | |
| White-rumped Sandpiper | B | B | x | MB | B | | x | | |
| Baird's Sandpiper | B | B | | MB | B | | | | |
| Pectoral Sandpiper | B | B | | MB | B | | x | | |
| Purple Sandpiper | B | B | | Mb | | | | | |
| Dunlin | B | B | | MB | B | | x | | |
| Red-necked Phalarope | | | | MB | | | | x | highly unlikely |
| Red Phalarope | B | B | x | MB | B | | x | | |
| Black-legged Kittiwake | | | | V | | | | x | doubtful |
| Ivory Gull | | | | A | | | | x | highly unlikely |
| Mew Gull | | | | MB | | | | x | highly unlikely |
| Herring Gull | | B | x | MB | | B | | x | ok |
| Thayer's Gull | | | x | MB | | | x | x | ok |
| Iceland Gull | B | | x | A | | | | x | ok |
| Glaucous Gull | B | B | x | MB | | B | | x | ok |
| Arctic Tern | B | B | | MB | | B | x | x | ok |

| SPECIES | GODFREY (1986) | SNYDER (1957) | CWS | RICHARDS AND WHITE (2008) | JOHNSTON, ET AL (2000) | GASTON, ET AL (1986) | MISC. | NCRI INTERVIEWS | COMMENTS ON INTERVIEW LIST ONLY |
|---|---|---|---|---|---|---|---|---|---|
| Pomarine Jaeger | | B | x | MB | | | | x | ok |
| Parasitic Jaeger | B | B | | MB | | | x | | |
| Long-tailed Jaeger | B | B | | MB | | | | | |
| Black Guillemot | B | B | | MB | | B | x | x | ok |
| Snowy Owl | B | B | | PB | | | x | | |
| Northern Hawk Owl | | B | | V | | | | | |
| Short-eared Owl | | | | MB | | | | x | doubtful |
| Common Raven | B | | x | PB | | | x | | |
| Horned Lark | B | B | x | Mb | | | x | | |
| American Pipit | B | B | x | MB | | | | | |
| Lapland Longspur | B | B | x | MB | | | | | |
| Smith's Longspur | | B | | MB | | | | | |
| Snow Bunting | B | B | x | MBw | | | x | | |
| Dark-eyed Junco | B | | | MB | | | x | | |
| Common Redpoll | | | x | MB | | | | | |

**Note:** This report covers birds as noted in Ukkusiksalik National Park, per: CWS/Environment Canada

**Note:** Names and arrangements according to the A.O.U. Checklist (1998) and Supplements

**Note:** Comments are restricted to sightings claimed by NCRI interviewee. When comments like "highly unlikely, unlikely and doubtful" are used, it means that additional evidence is required.

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

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

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

### RICHARDS & WHITE CODES:

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

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

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

A = Accidental: rare; very few records

E = Extinct

B = Breeding confirmed: active nest or flightless young

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

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

### CODES FOR SPECIES LIST:

B = breeding

b = breeding suspected

x = reliably observed

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

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