

Arctic Corridors and Northern Voices

GOVERNING MARINE TRANSPORTATION IN THE CANADIAN ARCTIC

IQALUIT NUNAVUT



Natalie Carter
Jackie Dawson
Melissa Weber
2020



ACKNOWLEDGEMENTS

The authors wish to thank the Amaruq Hunters and Trappers Committee; those who participated in this study as discussion group participants (in alphabetical order): Jimmy Akavak, Noah Alookie, Adamee Itorcheak, Jeetaloo Kakee, Eeneasie Kunayuk, David Lawson, and Alena Stevenson; those who participated in the development and implementation of this research as community researchers and cultural advisors: Okalik Eegeesiak, Chantel Emiktaut, Lenny Emiktaut, Geneva Noble, Cynthia Pialaq, and Eelai Uniuqsaraq; Malachi Arreak (translation) and Abraham Tagalik (interpreting).

The authors appreciate the technical and general in-kind support provided by Canadian Coast Guard, Canadian Hydrographic Service, Carleton University, Dalhousie University, Environment and Climate Change Canada, Government of Nunavut, Kivalliq Inuit Association, Nunavut Arctic College, Nunavut Research Institute, Oceans North, Parks Canada, Polar Knowledge Canada, Qikiqtani Inuit Association, SmartICE, Transport Canada, University of Ottawa Geographic, Statistical and Government Information Centre, University of Ottawa Department of Geography, Environment, and Geomatics, and University of the Sunshine Coast.

The authors are grateful for the financial support provided by ArcticNet, Clear Seas, Department of Fisheries and Oceans Canada (DFO), Irving Ship Building Inc., Marine Environment Observation Prediction and Response Network (MEOPAR), Northern Scientific Training Program, Nunavut Arctic College, Nunavut General Monitoring Program (NGMP), Nunavut Research Institute, Oceans North, Pew Charitable Trusts, Students for Canada's North, and Social Sciences and Humanities Research Council (SSHRC) of Canada.

Photos by: ESA (cover); Canadian Coast Guard (cover inset, all ships); Nunavut Tourism (whale tail, polar bears); Luke Copland (iceberg); Destination Nunavut (narwhal, beluga); Natalie Carter (workshop, fishing boats)

Available at: www.arcticcorridors.ca

Recommended citation: Carter, N.A., Dawson, J., and Weber, M. (2020). Arctic Corridors and Northern Voices: governing marine transportation in the Canadian Arctic (Iqaluit, Nunavut community report). Ottawa: University of Ottawa.
<http://ruor.uottawa.ca/handle/10393/39976> DOI:10.20381/39976

For more information, please contact: Dr. Jackie Dawson – [jackie.dawson\[at\]uottawa\[dot\]ca](mailto:jackie.dawson@uottawa.ca) or Dr. Natalie Carter – [ncarte3\[at\]uottawa\[dot\]ca](mailto:ncarte3@uottawa.ca)



**OCEANS
NORTH**



**Fisheries and Oceans
Canada**

**Pêches et Océans
Canada**



PARTICIPANT BIOGRAPHIES



Noah Alookie is a board member of the Amaruq Hunters and Trappers Association, a hunter, and a teacher. Noah is originally from Qikiqtarjuaq but has lived in Iqaluit for quite awhile now.

Adamee Itorcheak



Jeetaloo Kakee is a board member of the Amaruq Hunters and Trappers Association. He was born in Ilunguit. He loves bear hunting and butchering using traditional practices and knowledge.

Eeneasi Kunayuk is a long-time resident of Iqaluit. He is a well-known hunter and community provider. He was previously a correction centre cook.



David Lawson is originally from Pangnirtung but has now lived in Iqaluit for the past 5 years. Although David is fairly new to Iqaluit, he feels more youth voices need to be heard. He was able to provide knowledge in the area where he recently built a cabin. David is a law student and gets out hunting and camping each time he has the opportunity.

Alena Stevenson recently moved to Iqaluit from Kuujjuaq. Alena is an avid hunter and fisher and recently built a cabin with her partner, David a couple of hours outside of Iqaluit. Alena was able to provide knowledge on the possible effects of increased marine traffic. She also encouraged the government to seek ways to better benefit Inuit with employment and opportunities.





EXECUTIVE SUMMARY

Ship traffic in the Canadian Arctic nearly tripled between 1990 and 2015, another study done by our research group revealed.¹ The traffic included tugs and barges, tanker ships, oil or gas exploration/exploitation vessels, government vessels and icebreakers, general cargo, fishing vessels, bulk carriers, pleasure craft and passenger ships.¹ The Government of Canada is developing a network of low-impact marine transportation corridors in the Arctic that encourages marine transportation traffic to use routes that pose less risk and minimize the impact on communities and the environment. The Low Impact Shipping Corridors will be a framework to guide future federal investments to support marine navigation safety in the North, including improved charting and increased hydrography, in partnership with Northerners. The corridors initiative is co-led by the Canadian Coast Guard, Transport Canada, and Canadian Hydrographic Service.

Key considerations in the current prioritization of the Low Impact Shipping Corridors include identification of Inuit and Northerners' perspectives on 1) the potential impact of marine vessels on marine areas used for cultural and livelihood activities, and on community members and 2) potential management strategies for the corridors.

This report reflects the knowledge and opinions of seven Iqaluit community members (see *Acknowledgements* and *Participant Biographies*) who were identified by local organizations as key knowledge holders. Participants' perspectives were documented in November 2019 during a two-day long participatory mapping and group discussion workshop, and hour-long interviews co-facilitated by local researchers (see *Acknowledgements*) and uOttawa researchers. This report was validated by the local researchers and research participants.

THE SPECIFIC PROJECT OBJECTIVES WERE TO...

- Describe local marine use areas including significant socio-cultural, archaeological and ecological areas, and local travel routes, for integration into the Low Impact Shipping Corridors;
- Outline the potential impacts of marine vessels on identified marine use areas and community members; and
- Provide community-identified recommendations for the placement and management of the Low Impact Shipping Corridors.

¹ Dawson J., Pizzolato, L., Howell, S.E.L., Copland, L., & Johnston, M.E. 2018. Temporal and Spatial Patterns of Ship Traffic in the Canadian Arctic from 1990 to 2015. *Arctic* 71(1):15-26. <https://doi.org/10.14430/arctic4698>.





KEY FINDINGS OF THE PROJECT ARE...

- Shipping is very important in Iqaluit. There are no roads into or out of Iqaluit. Ships bring equipment, vehicles, dry goods, fuel, and lumber.
- Ships create some, but only limited, employment opportunities.
- It is already very challenging and expensive to find animals when hunting. In Iqaluit there is a high demand for fresh country food (wild meat). Hunters are having to go farther to harvest whales and seals than in the past. Changing weather patterns are making it increasingly dangerous to travel. Increased marine vessel traffic creates additional hunting uncertainty because ships are disturbing whales and causing them to abandon traditional habitat, making it even harder for hunters to locate and harvest them. The resulting lack of country food affects residents' mental and physical health, and causes a financial strain.
- Ship traffic and noise pollution are disturbing whales, causing whales to leave their traditional areas and making it even harder for hunters to harvest them.
- Marine vessels risk running into rocks or reefs if they stray from the proposed Low Impact Shipping Corridors that the Government of Canada is developing. An environmental mishap could happen. If an oil spill occurred, it could be catastrophic.
- Oil spill response is inadequate. Iqaluit residents would not be able to respond adequately if a spill occurred. The tides in Iqaluit would increase the magnitude of the spill.
- Community members are concerned about ballast water and other products marine vessels are putting in the water, because residents have noticed and felt something on their boats while cleaning them.
- Every spring, Iqaluit residents cannot go boating until the sea ice in Frobisher Bay breaks up. Occasionally icebreakers enter the bay before break-up thus breaking up the ice, and enabling residents to go boating earlier than usual.
- When icebreakers disturb sea ice formation, freeze-up is delayed. This delays residents' travel (snowmobiling) on sea ice. It also creates rough ice that slows down local travel and results in increased expenses from repairs and having to buy snowmobiles sooner.





COMMUNITY-IDENTIFIED RECOMMENDATIONS INCLUDE...

- Establishing a no-go zone and a no-wake zone (not applicable to emergency services);
- Revising the proposed Low Impact Shipping Corridor near the south shore of Frobisher Bay, by moving it into the middle of Frobisher Bay (where the old shipping routes, markers, and anchoring points are), so long as charting indicates this corridor can be safely used by ships;
- Reducing ship noise ideally to zero;
- Increasing the number of ship-related employment and income opportunities;
- Prohibiting exchange of ballast water, as well as dumping of sewage, garbage or any other waste into Frobisher Bay;
- Conducting charting to determine if ships can safely use the community-preferred corridor location in the middle of Frobisher Bay;
- Implementing oil spill response including transportation and resources that are water-based (beyond the extent of the sea ice), in the Arctic, to improve response time;
- Prohibiting icebreaking at any time unless it is to support emergency services. Ships and icebreakers should not disturb sea ice when it is forming or frozen;
- Increasing Government of Canada Arctic-based resources (ships, patrols) in order to enforce Canadian sovereignty over Arctic waters;
- Implementing a coordinated ongoing community-based hunt that would support hunters in accessing the equipment and supplies needed to put food on the table; and
- Teaching young people skills including survival, hunting and Inuktitut language through community-based hunts.

The culturally significant marine areas shown and discussed in this report are based on the knowledge and opinions of the research participants. Other culturally significant marine areas exist in this area that have not been mapped during this project. The recommendations described in this report need to be reviewed periodically. The community reserves the right to revise or withdraw these recommendations in future according to changes in marine vessel traffic and the changing climate. This research project is only the beginning of the conversation about the Low Impact Shipping Corridors. Inuit must be and wish to be included on an on-going basis in the development and management of the Low Impact Shipping Corridors.

BACKGROUND

This report documents Iqaluit community members' knowledge and extensive year-round use of important marine areas (ecological, socio-cultural, archaeological, and travel routes), the potential impacts of shipping on those areas and on community members, and potential management strategies for the Government of Canada's proposed Low Impact Shipping Corridors. In November 2019, community partner Okalik Egeesiak, local researchers Chantel Emiktaut, Lenny Emiktaut, Geneva Noble, Cynthia Pialaq, Eelai Uniuqsaraq, and uOttawa researchers Melissa Weber and Natalie Carter co-facilitated a two-day long workshop and individual interviews. Abraham Tagalik provided Inuktitut and English interpreting. Seven Iqaluit residents (see *Acknowledgements* and *Participant Biographies*) who were recognized by the local co-facilitators and Amaruq Hunters' and Trappers' Association as topical experts within the community, participated. They included men and women, current and active users of local marine areas, holders of expert knowledge of significant socio-cultural, archaeological, and ecological marine areas and travel routes, and those with knowledge of the potential impacts of marine vessel traffic. Local co-facilitators led the recruitment of participants. Participants were remunerated for their time as per local guidelines. During the workshops participants identified 1) wildlife habitat (e.g., feeding and breeding locations, migratory routes), 2) local harvesting and camping sites, 3) local travel routes, 4) potential impacts of marine vessel traffic, and 5) marine vessel-management options for the proposed Low Impact Shipping Corridors. These five topics were discussed for each of four ocean conditions individually: open water, freeze-up, frozen, and break-up. These areas were documented on topographic maps covered with plastic overlays using coloured markers. Following the workshops and interviews, a digital set of preliminary maps showing a compilation of participants' knowledge was produced in a draft report summarizing the

key findings. One week after the mapping workshop and interviews, the report and maps were checked for accuracy and completeness during in-person meetings wherein all co-facilitators reviewed the findings together. Next, they co-facilitated in-person reviews with available participants, then shared with community organizations, and the broader community. Feedback was incorporated and this report is the resulting final version.

This report begins with an introduction to the Government of Canada's proposed Low Impact Shipping Corridors, and recent changes in shipping traffic activity in Arctic Canada. This is followed by participants' knowledge about the areas around Iqaluit including: 1) ocean conditions, 2) the seasonal harvesting cycle, 3) culturally significant marine areas, 4) potential impacts of marine vessel traffic on wildlife, the environment, and Iqaluit residents, and 5) their recommendations for the location and management of the proposed Low Impact Shipping Corridors. Maps of culturally significant marine areas and participants' recommendations for the Low Impact Shipping Corridors are presented.



Figure 1. Example of Entire Low Impact Shipping Corridors that Participants Reviewed

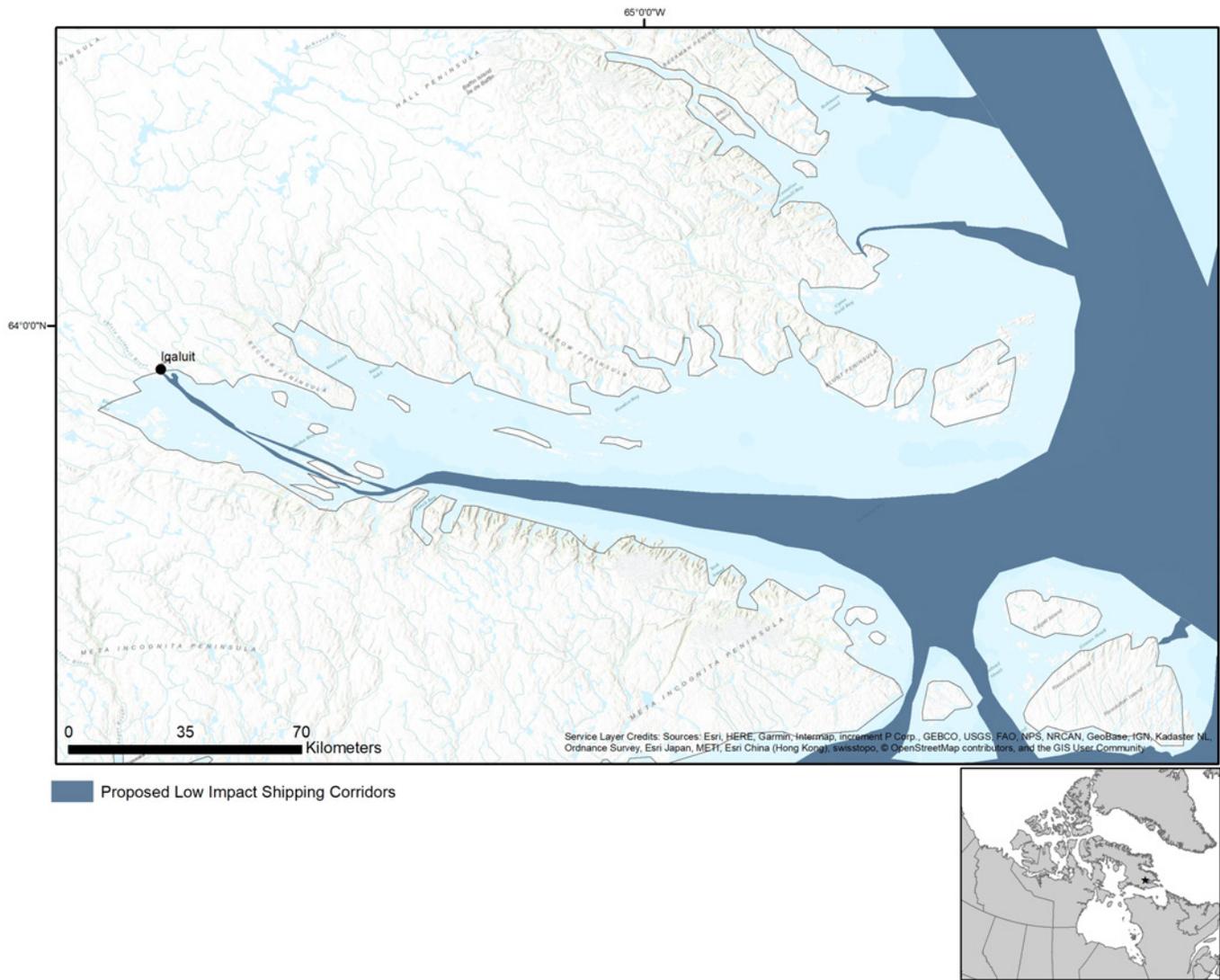


Figure 2. Example of Low Impact Shipping Corridors near Iqaluit, Nunavut that Participants Reviewed



CHANGE IN SHIPPING ACTIVITY

(1990–2000 ANNUAL AVERAGE COMPARED TO 2011–2015 ANNUAL AVERAGE)

In the Canadian Arctic, when comparing the average annual number of kilometres of shipping activity from 1990–2000 to the annual average from 2011–2015, shipping increases have been predominantly focused in the eastern Arctic, particularly around southwest Baffin Bay (e.g., Pond Inlet, Clyde River, Qikiqtarjuaq, Iqaluit), in the Queen Maud Gulf area (e.g., Cambridge Bay and Gjoa Haven), and northwest Hudson Bay (e.g., Chesterfield Inlet) (Figure 3). Changes in Hudson

Strait have been generally minor (e.g., Cape Dorset, Kimmirut), and changes in the High Arctic have been negative (e.g., Resolute Bay, Arctic Bay, Eureka). Iqaluit experienced an 1,682 km increase in shipping activity when comparing the average annual number of kilometres of shipping activity from 1990–2000 to the annual average from 2011–2015; the seventh largest increase in Nunavut, and the third largest increase in the Qikiqtaaluk Region (Figure 4).¹

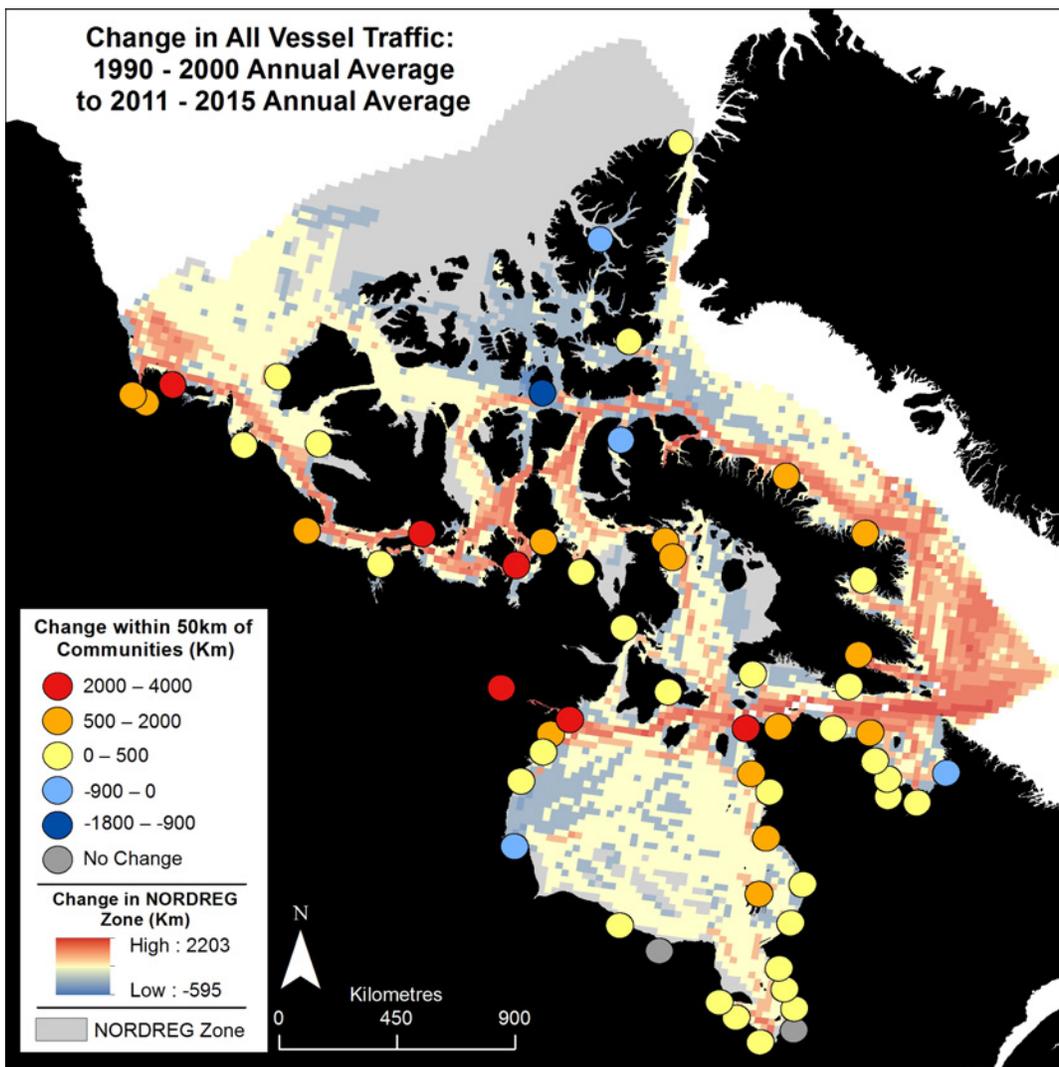


Figure 3. Change in shipping activity (km) in the Canadian Arctic: 1990–2000 annual average compared to 2011–2015 annual average¹

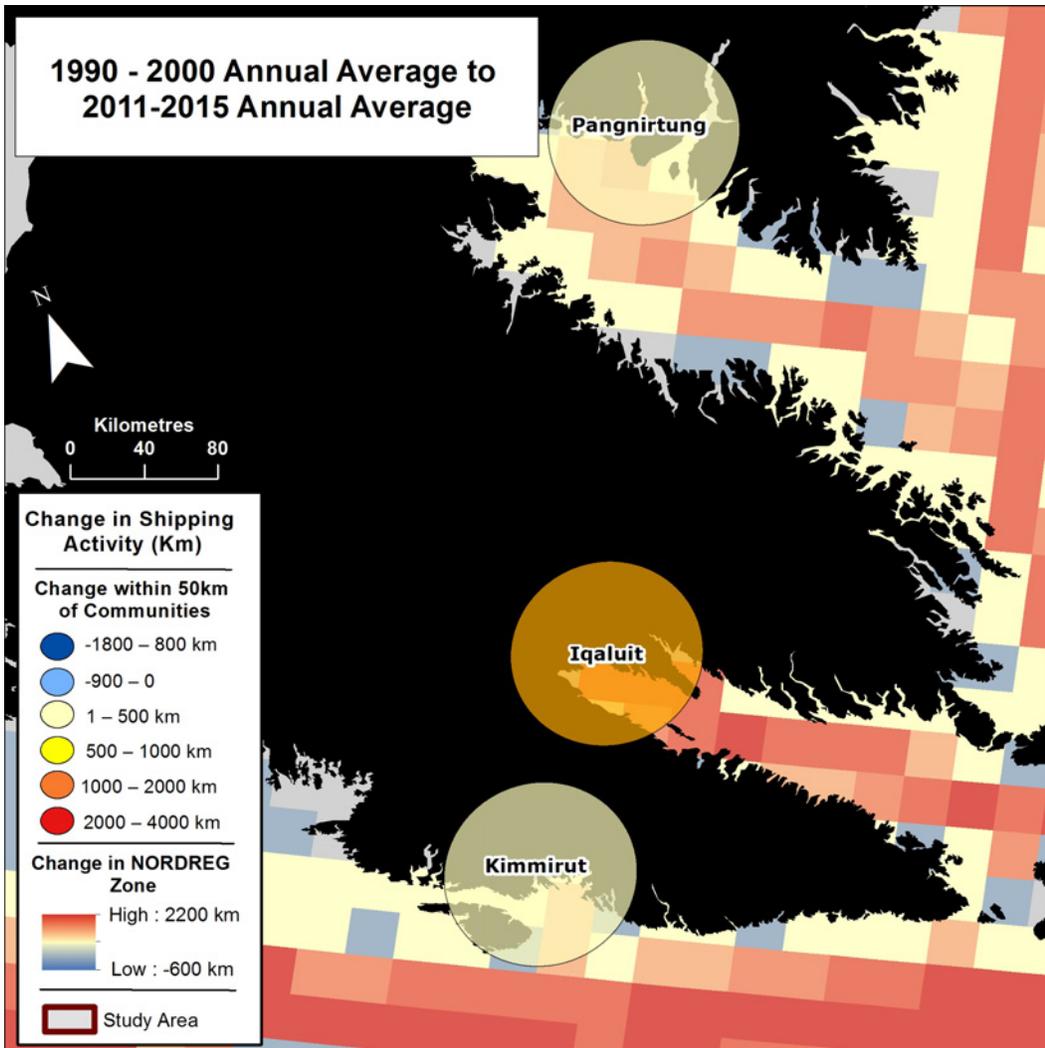


Figure 4. Change in shipping activity (km) near Iqaluit, Nunavut: 1990–2000 annual average compared to 2011–2015 annual average¹

OCEAN CONDITIONS

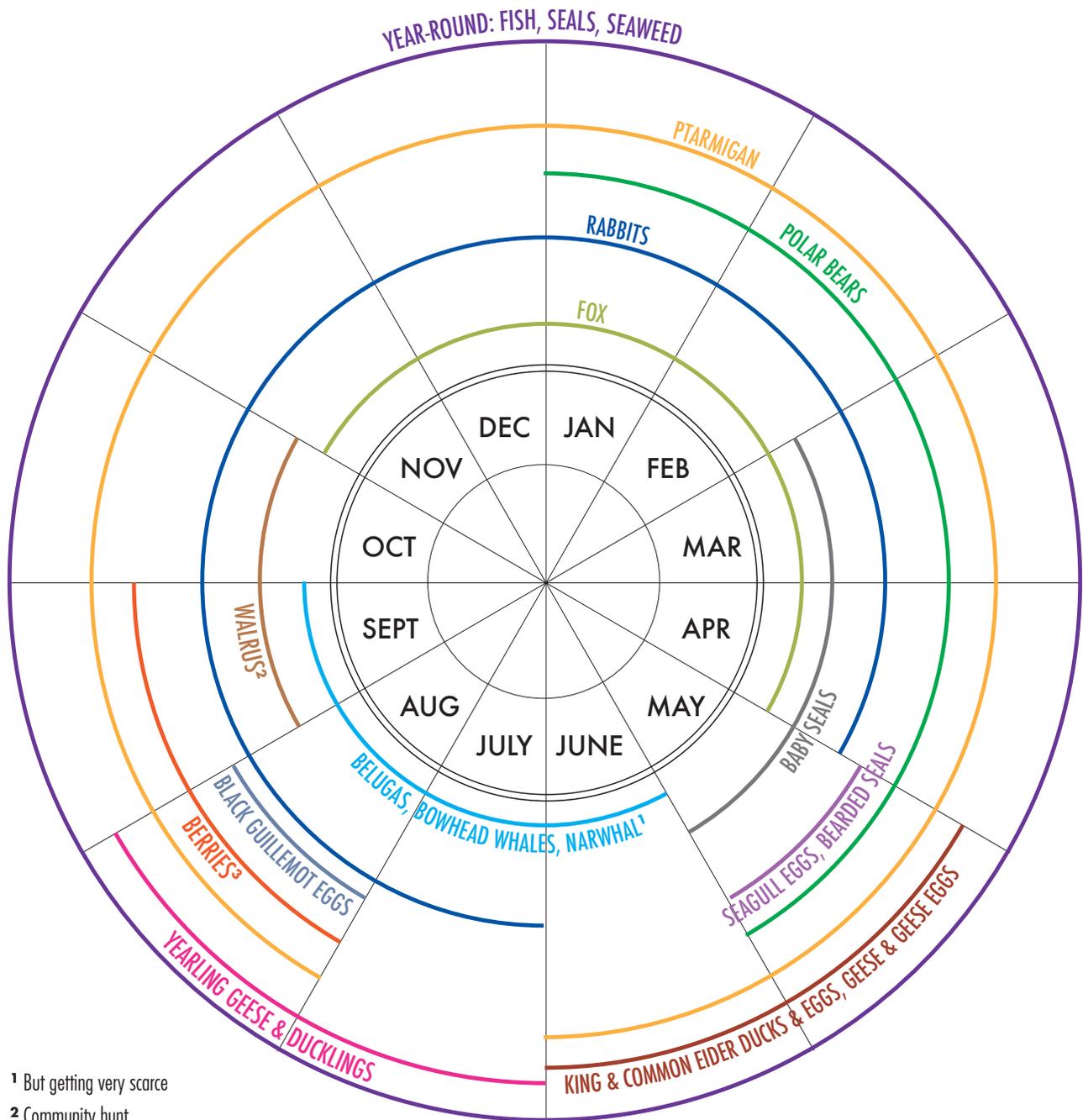
Participants identified that the ocean conditions change during certain months of the year. The water and ice conditions which heavily dictate the movement of local hunters, change during certain months. In general the ocean conditions are as follows:

MONTHS IN WHICH THEY HAPPEN	OCEAN CONDITION
Mid-June or July	Sea ice break-up
July through October	Open water
November and December	Sea ice freeze-up
January through May	Frozen



ANNUAL HARVESTING CYCLE

Research participants explained that their harvesting depends on the time of year, and follows this annual cycle.



¹ But getting very scarce

² Community hunt

³ BERRIES: Crow, black, blue, cran, bear

Figure 5. Annual cycle of harvesting activities in and near Iqaluit, Nunavut



MAPS OF CULTURALLY SIGNIFICANT MARINE AREAS

Through this research project, participants in Iqaluit identified and mapped culturally significant marine areas (CSMAs) around Iqaluit. The CSMAs presented here reflect the opinions of community members who participated in this research project. Thus, additional CSMAs may exist which have not yet been documented.

Maps include:

1. Location of terrestrial and marine mammals, fish, and birds;
2. Location of travel routes and harvesting areas;
3. Location of significant marine features;
4. Location of safe and dangerous anchorage areas for local boats during open water; and
5. Location of traditional sites.

Maps will be available at www.arcticcorridors.ca and at the Amaruq Hunters and Trappers Association office in Iqaluit.

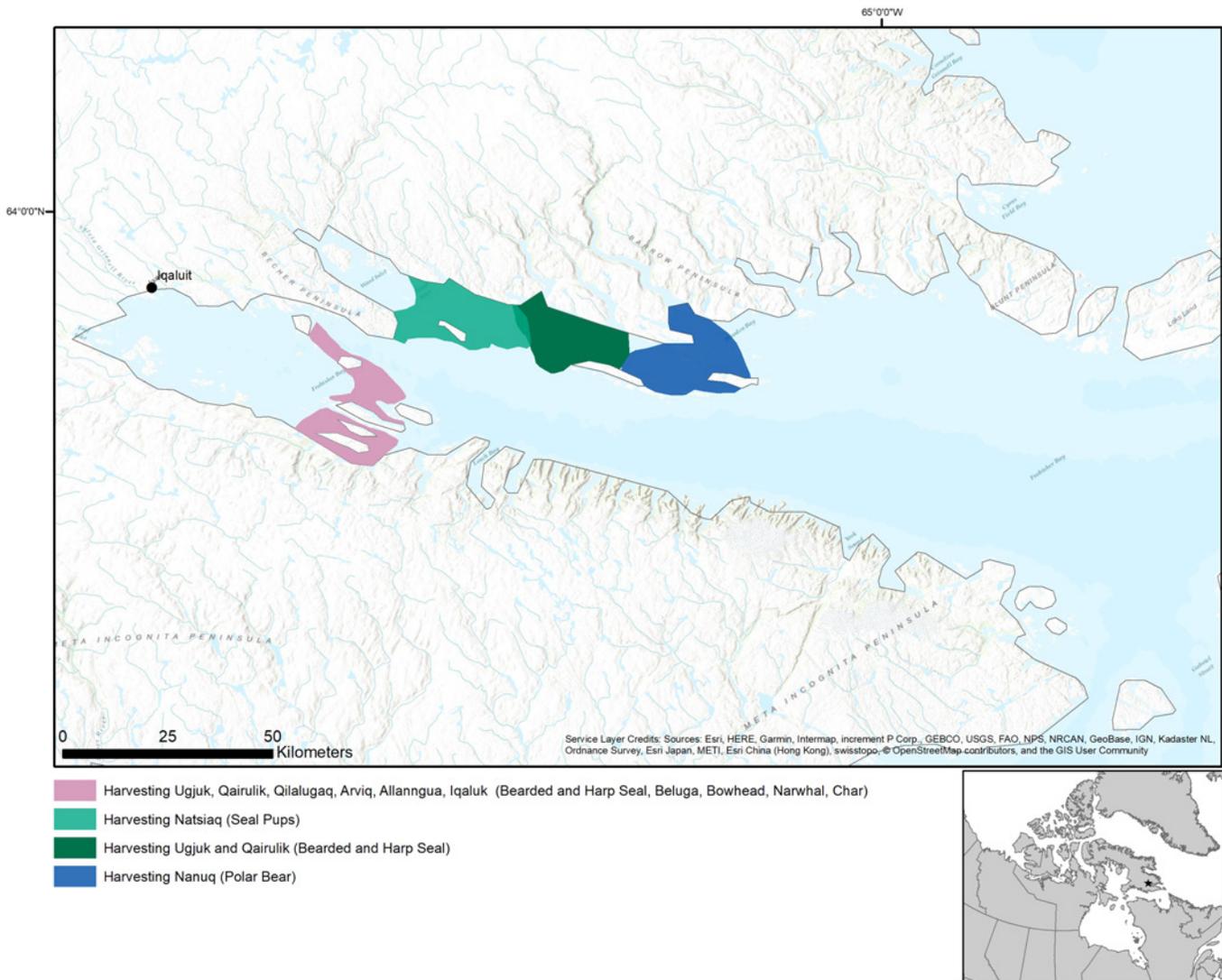


Figure 6. Location of marine mammal and char harvesting around the time of sea ice break-up

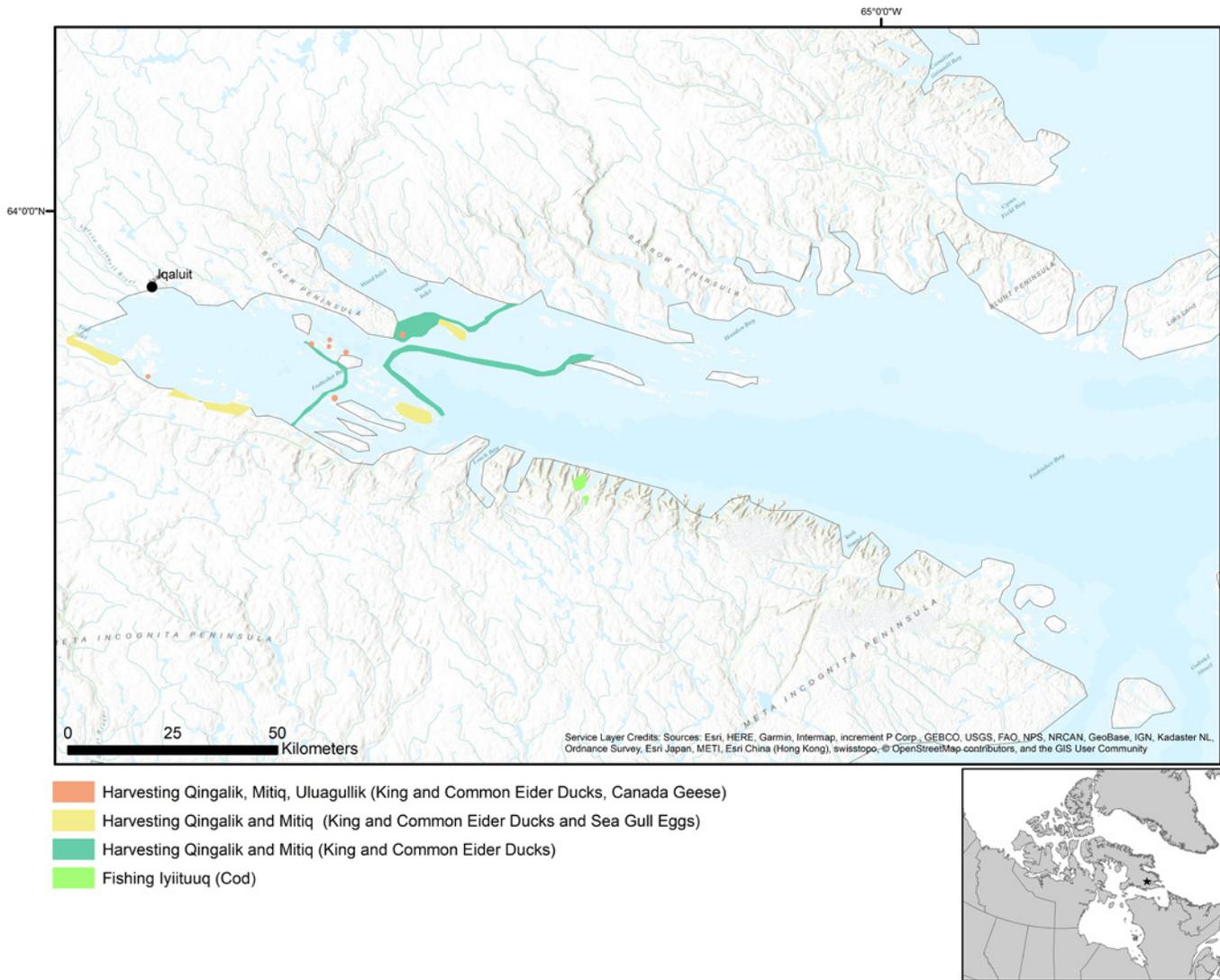


Figure 7. Location of fishing and bird and egg harvesting around the time of sea ice break-up

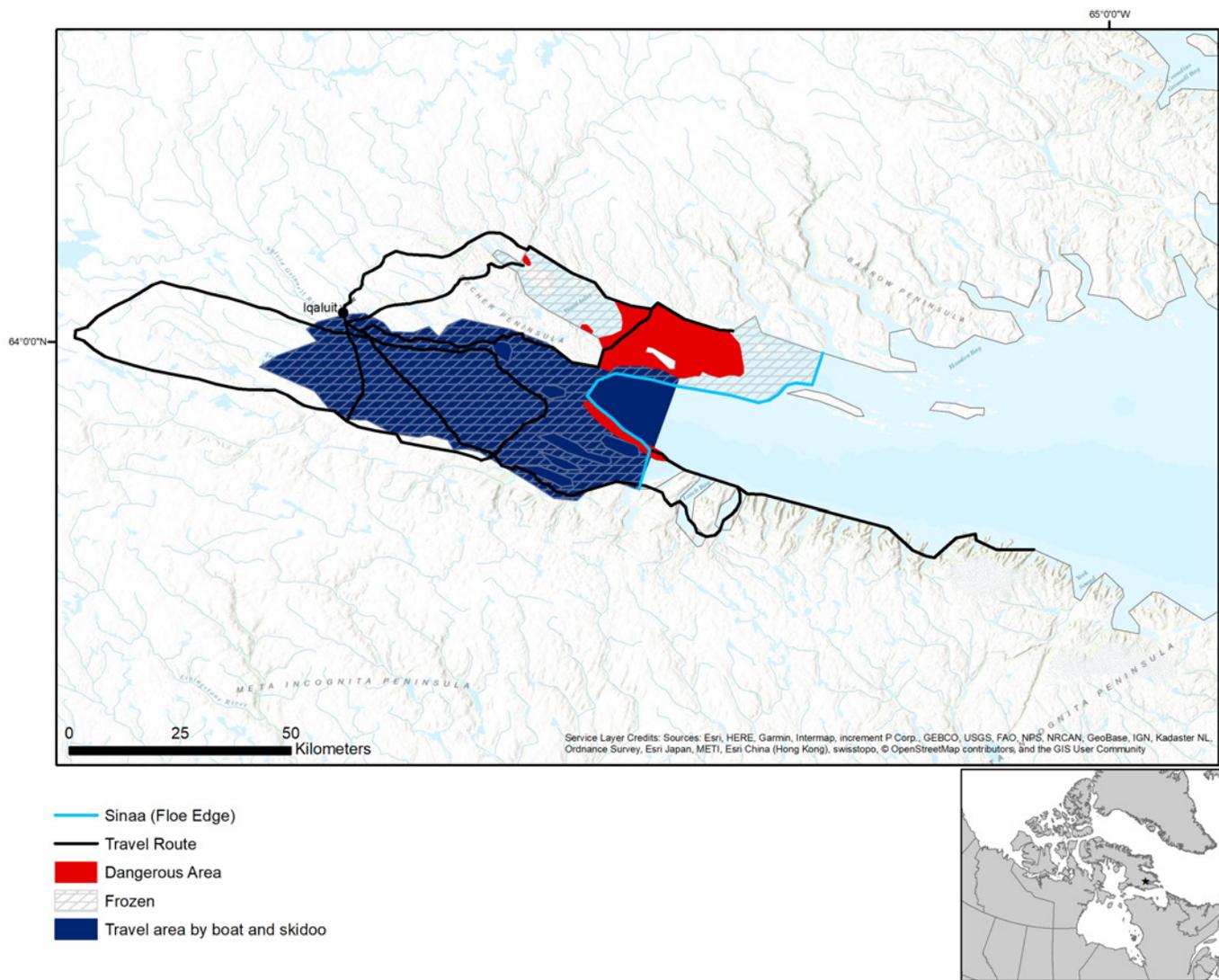


Figure 8. Location of community members' travel routes, and significant marine features, around the time of sea ice break-up

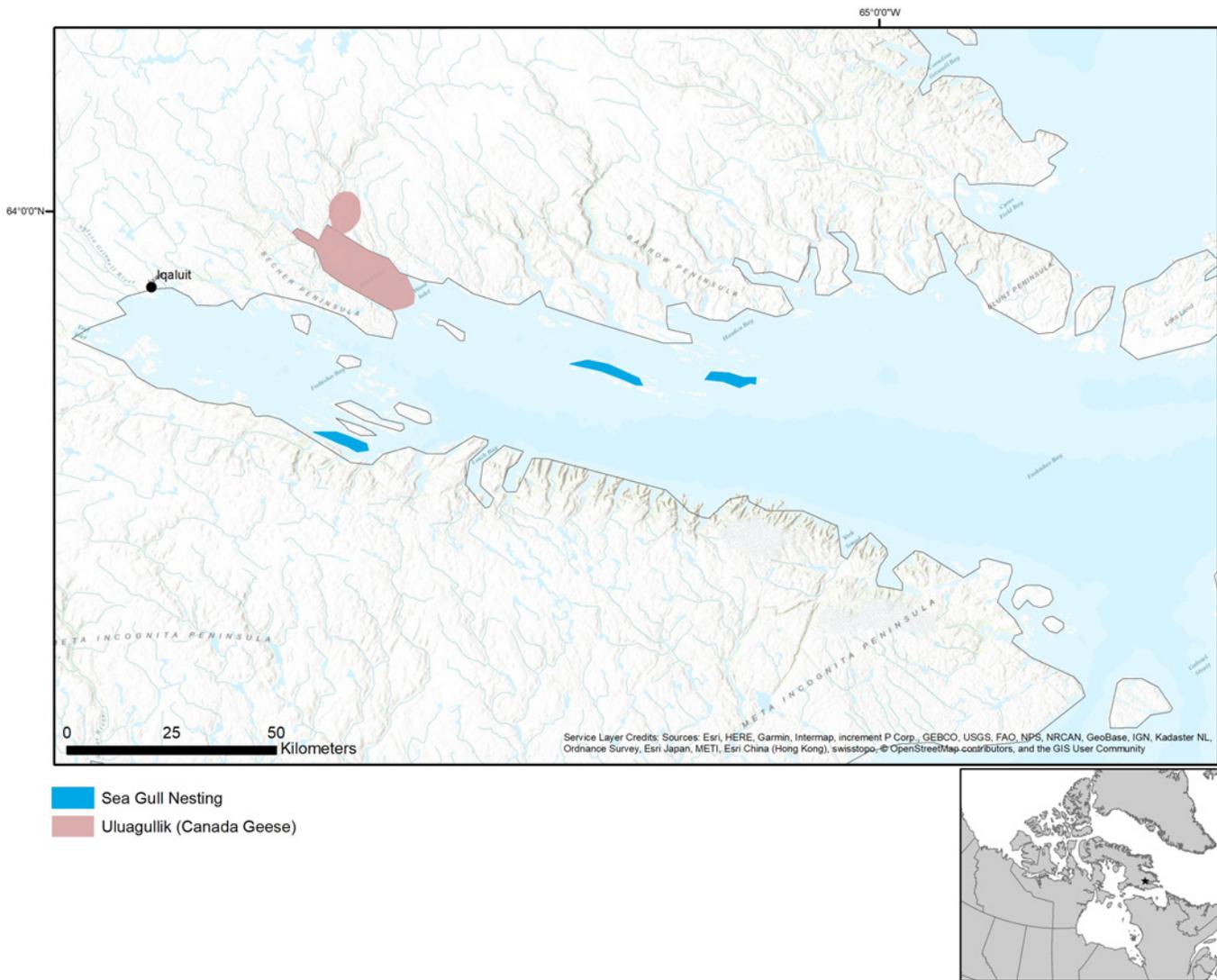
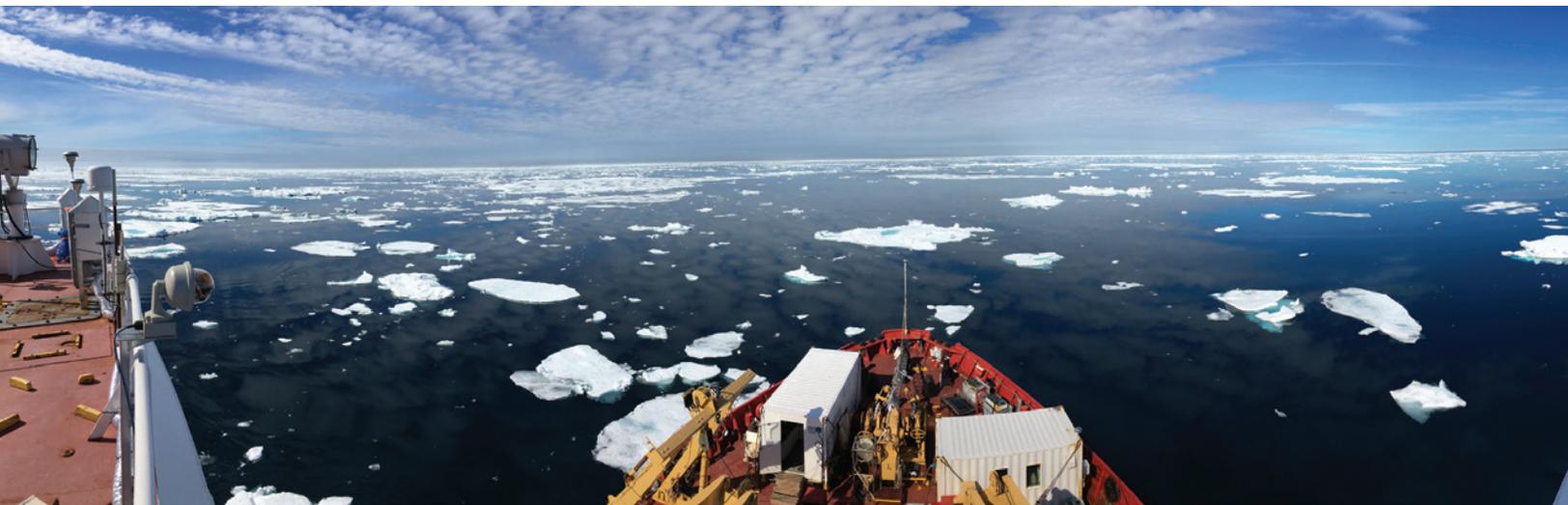


Figure 9. Location of wildlife around the time of sea ice break-up



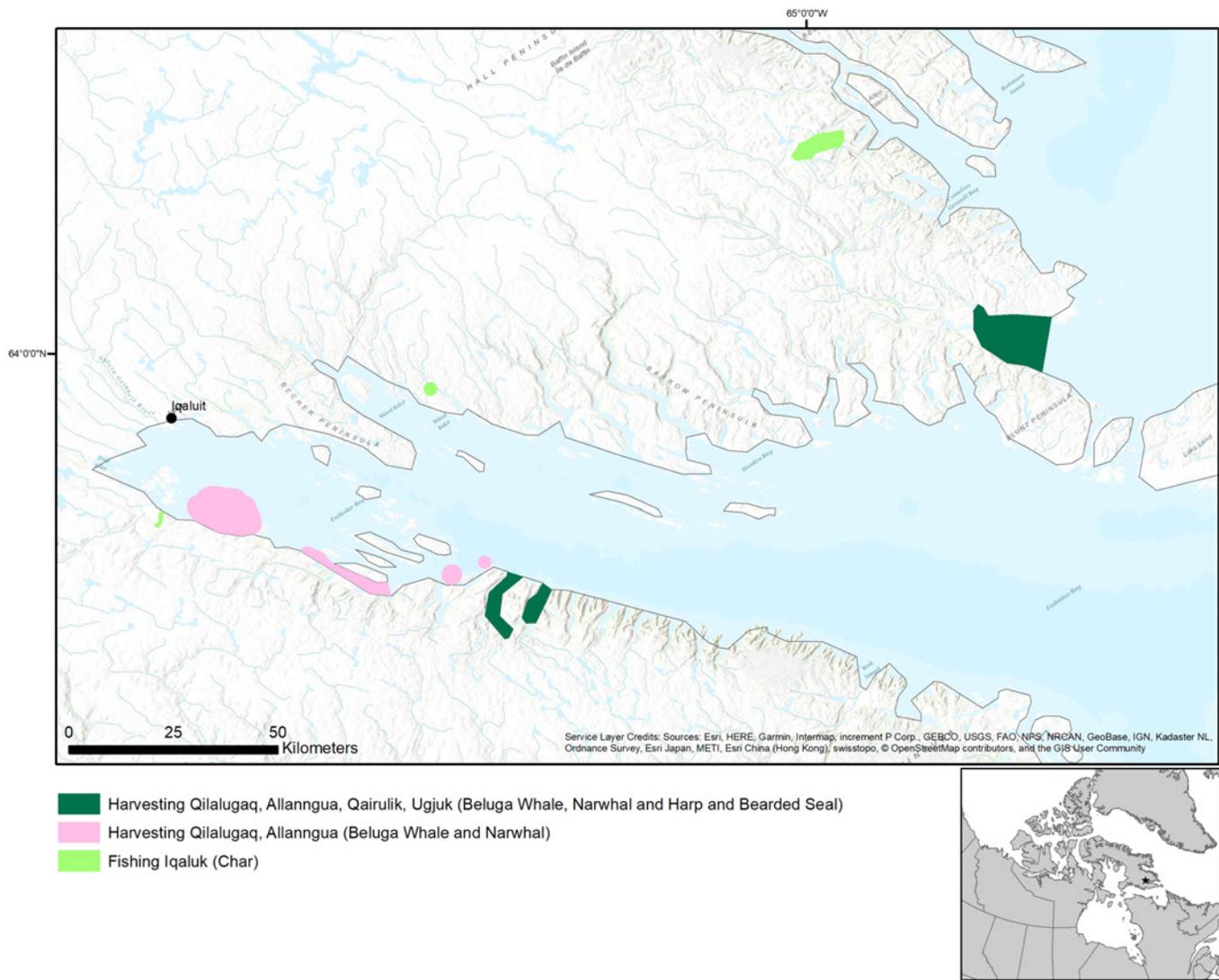
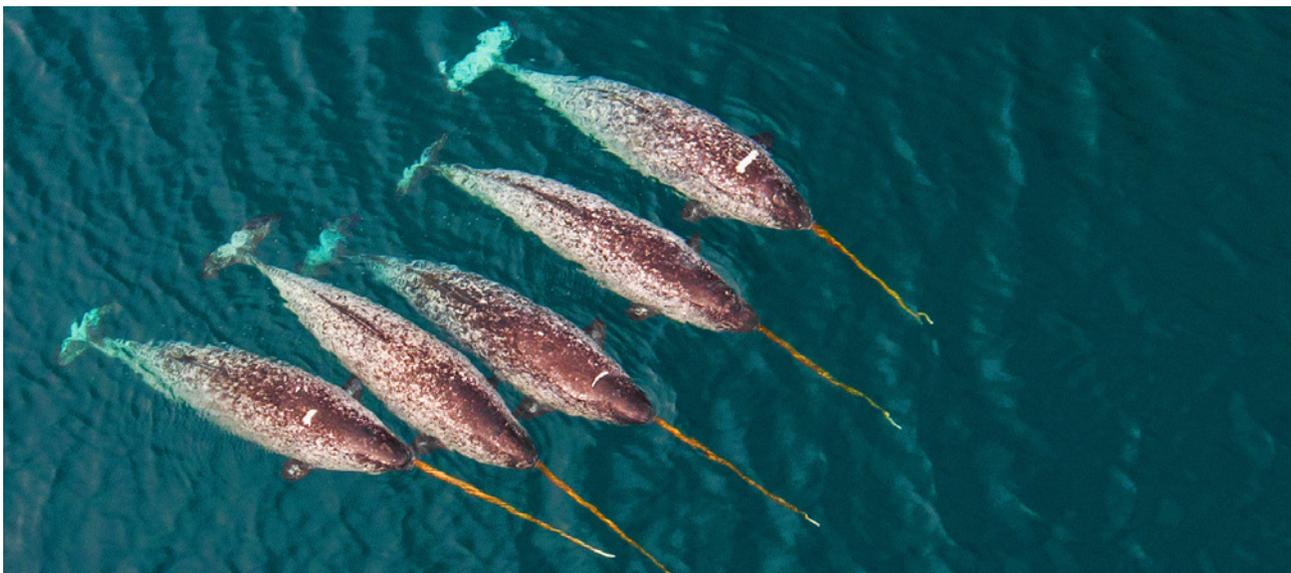


Figure 10. Location of community members' activities during open water



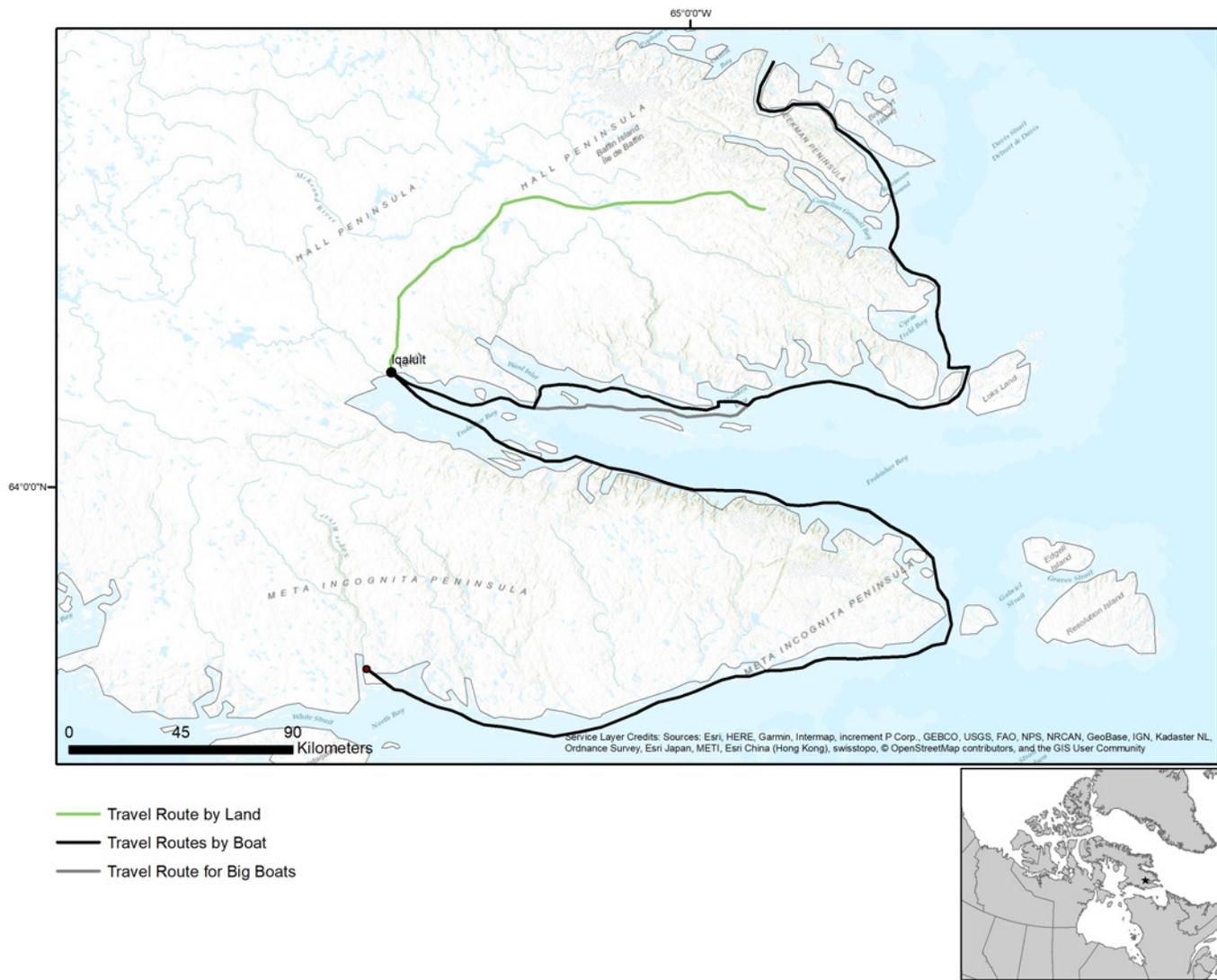


Figure 11. Location of community members' travel routes during open water

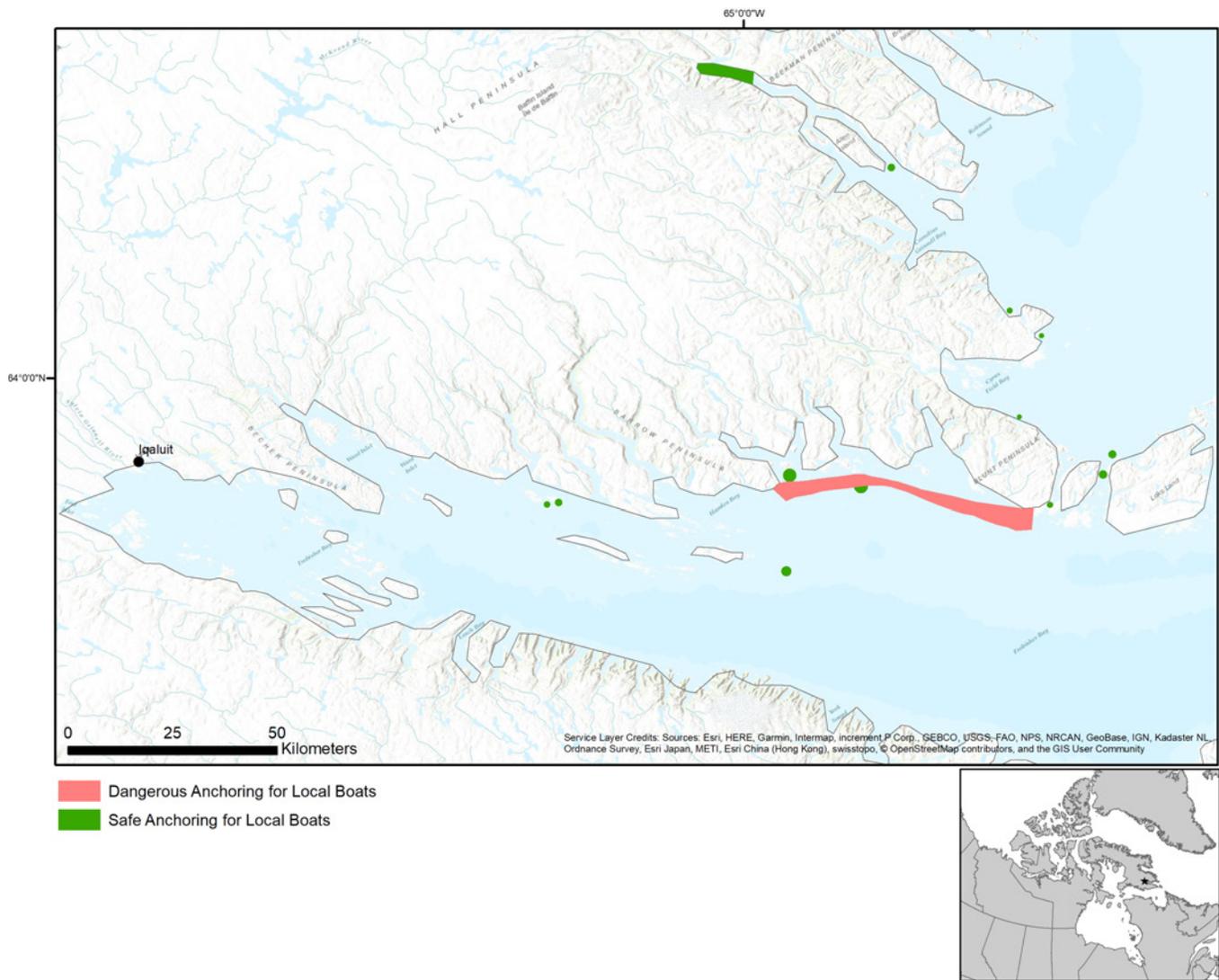


Figure 12. Location of safe and dangerous anchorage areas for local boats during open water

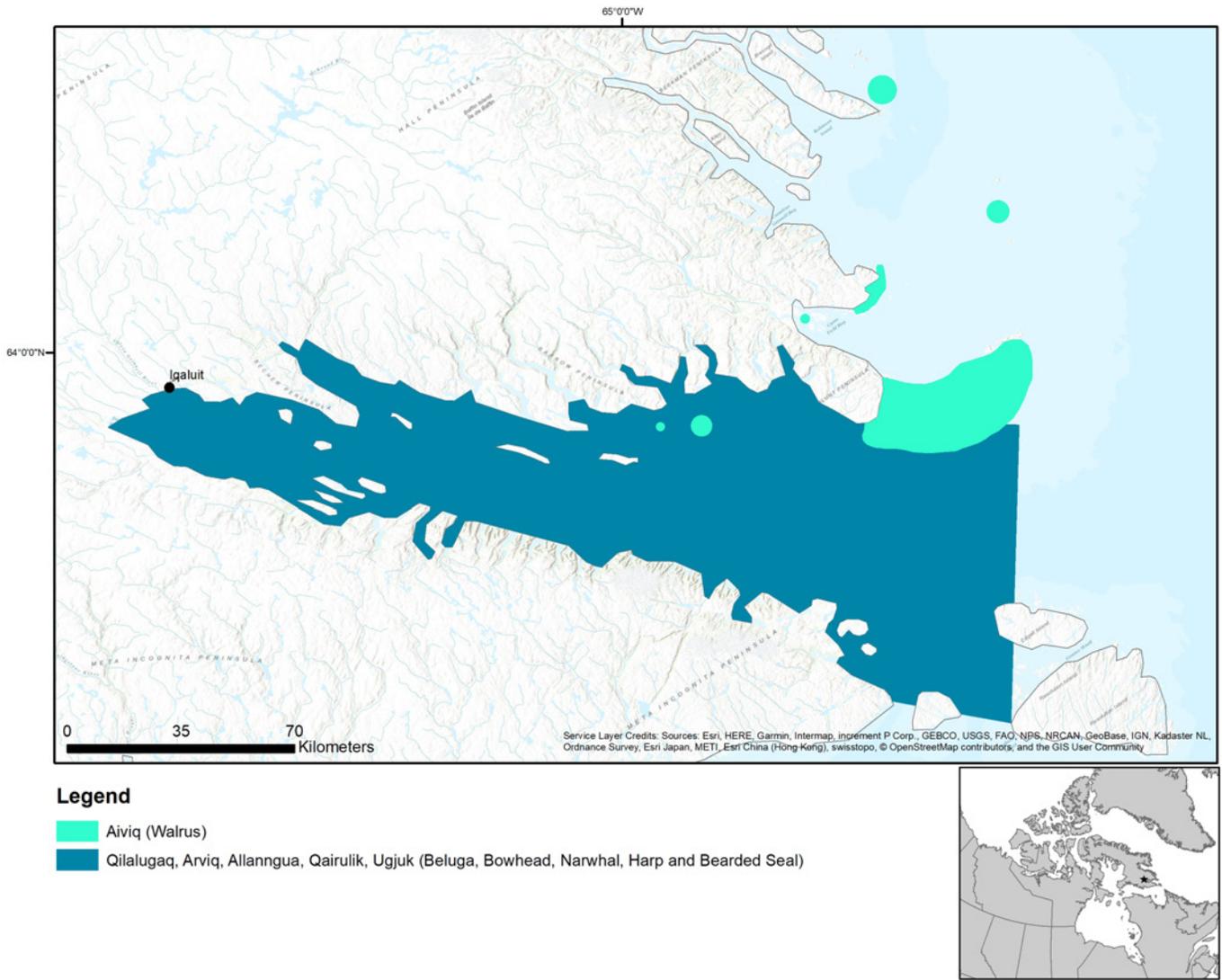


Figure 13. Location of marine mammals during open water



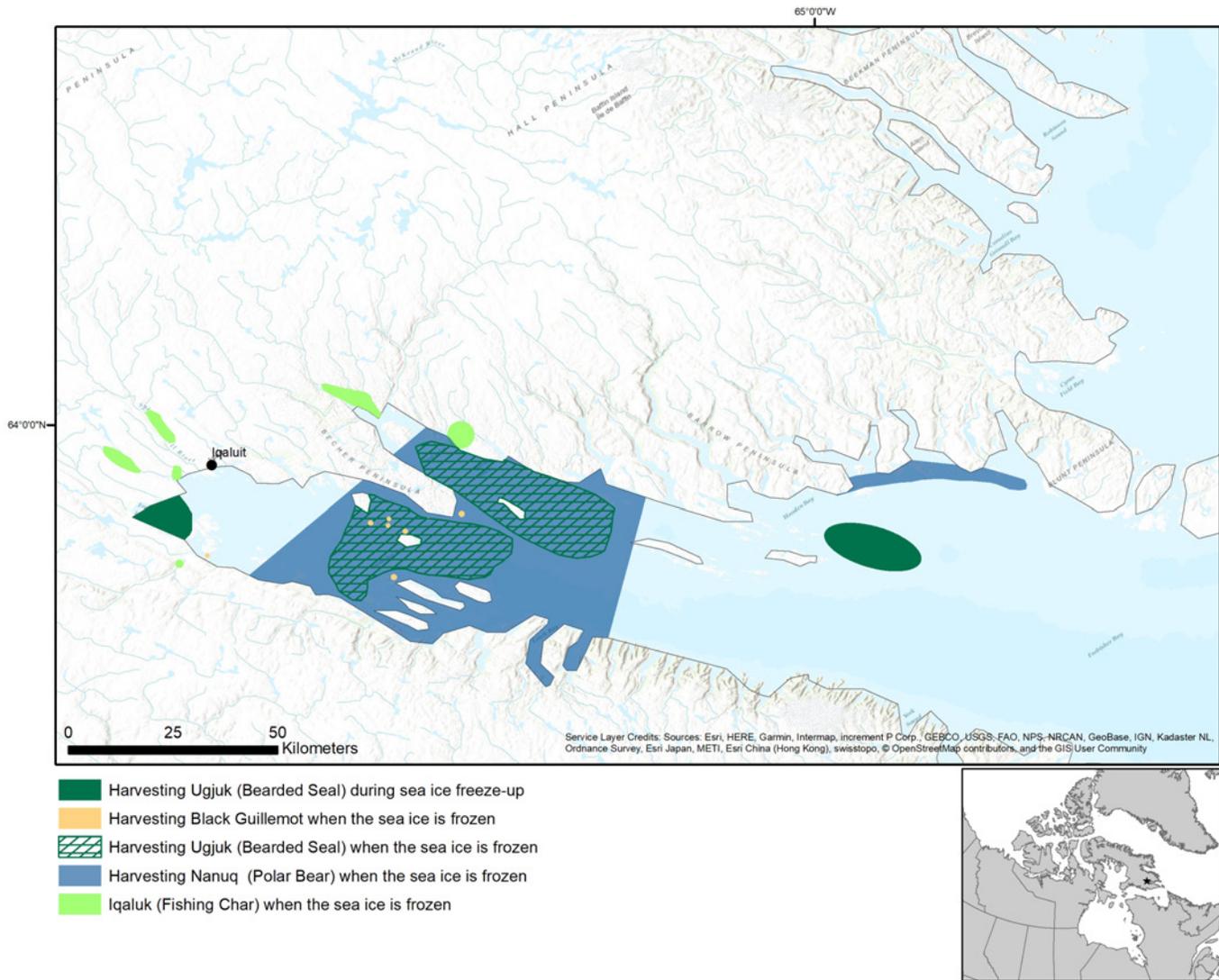


Figure 15. Location of community members' activities around the time of sea ice freeze-up and when the ocean is frozen

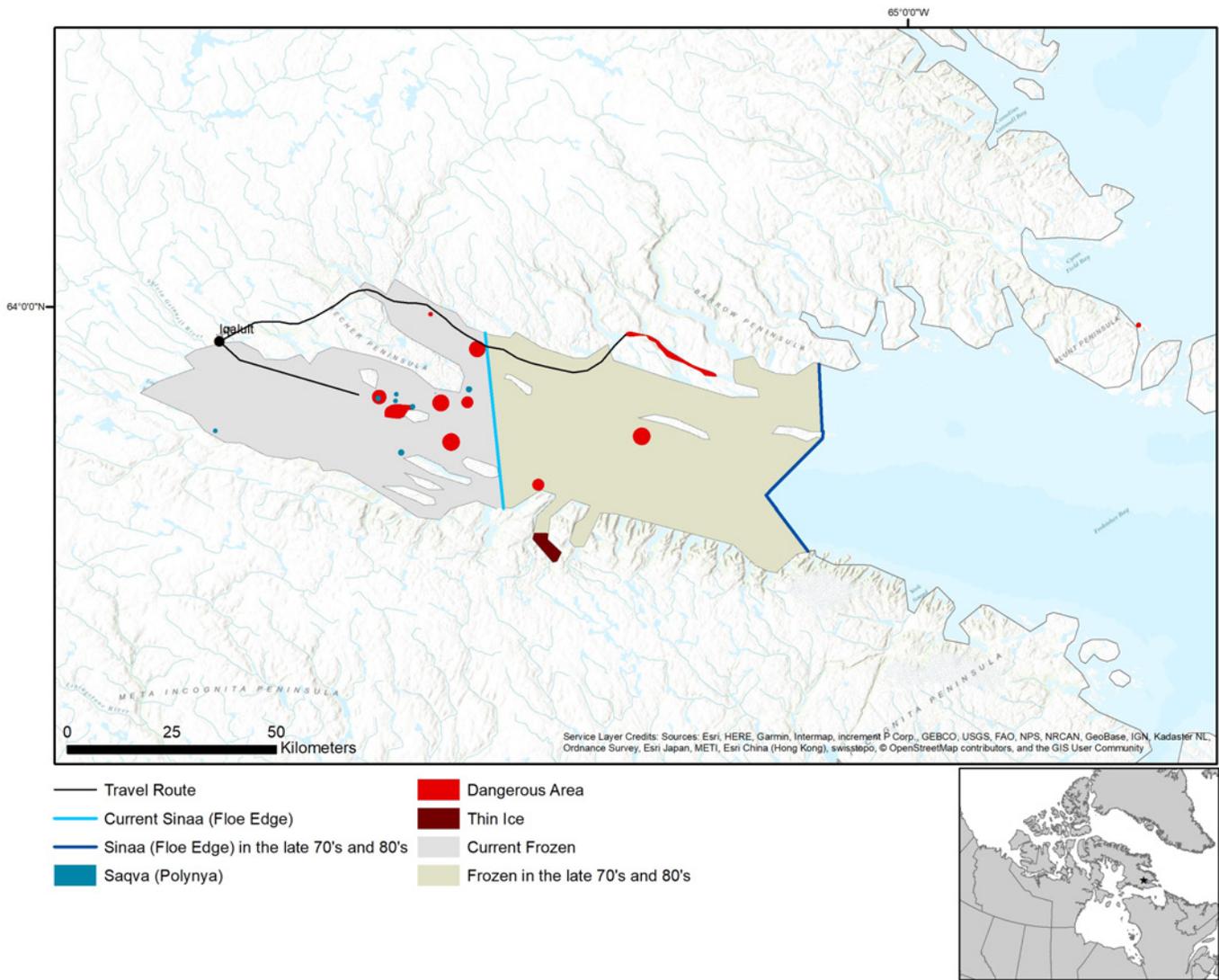


Figure 16. Location of community members' travel routes, and significant marine features, when the ocean is frozen

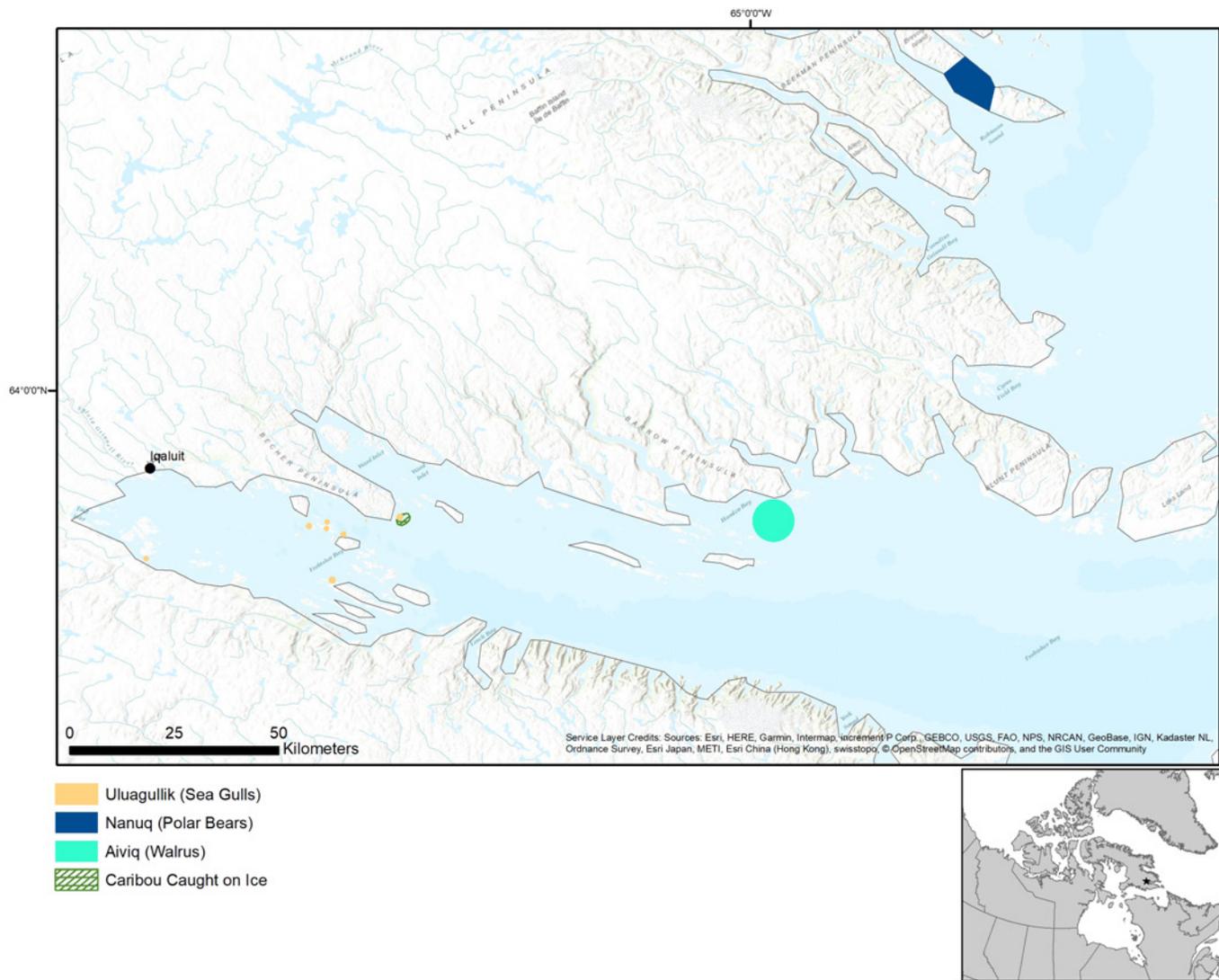
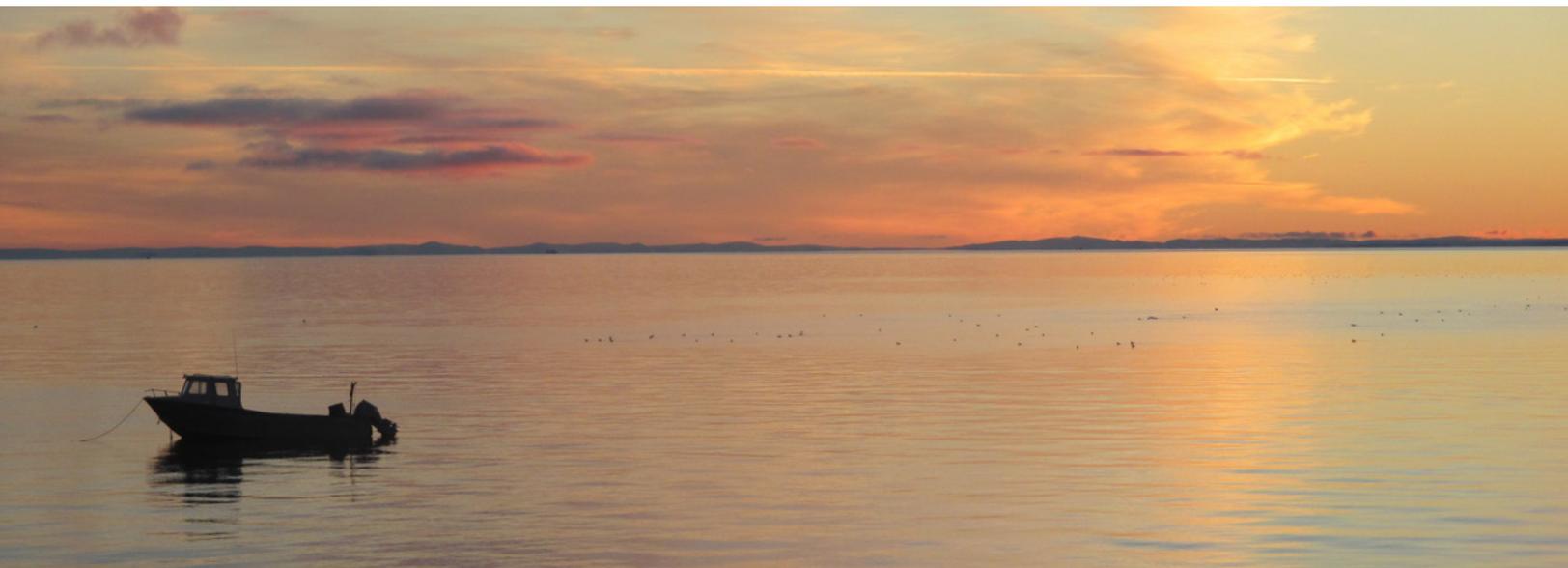


Figure 17. Location of wildlife when the ocean is frozen



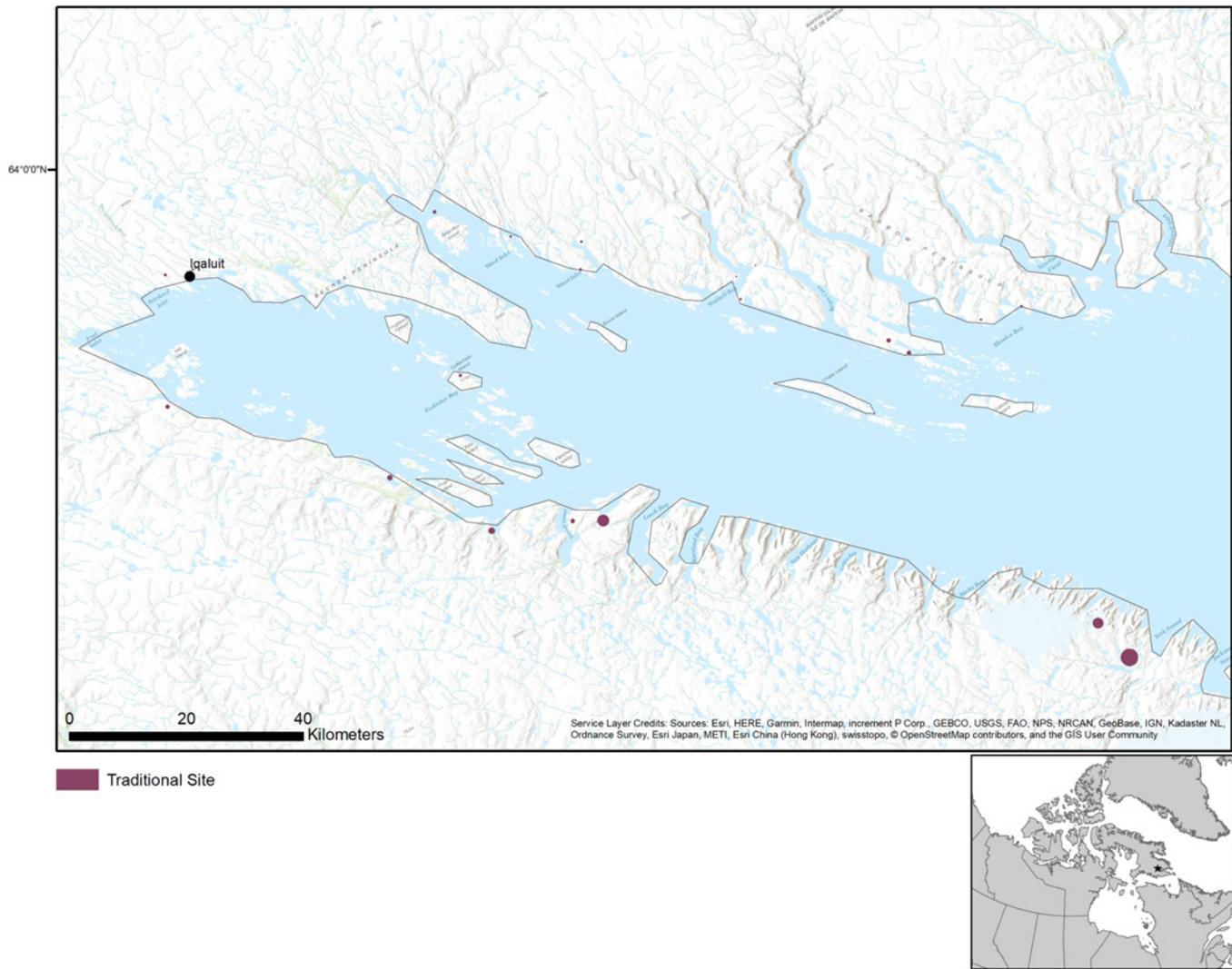


Figure 18. Location of traditional sites year-round





POTENTIAL IMPACT OF MARINE VESSELS AND RELATED RECOMMENDATIONS

Participants shared numerous observations and perspectives about shipping. For instance, they explained that there are no roads in to or out of Iqaluit. Ships bring re-supply e.g., vehicles, food, dry goods, lumber for all of the construction that is going on. They explained that construction in Iqaluit really starts after the ships deliver the supplies.

Participants also noted that international shipping is happening. They said that the number of ships is increasing, and that someday governments may have to limit the number of vessels allowed in some areas e.g., 5 ships in a certain area per year or summer. They also felt that the government may have to set regulations and rules for shipping, which would require companies, government, and Inuit to come together and agree about those regulations in certain areas.

Participants explained that when community members see a ship they know that hunters could possibly go look for whales (beluga, bowhead, narwhal) in the inlets. This is because the whales might have gone into the inlets to get away from the ship. This can make it easier to harvest whales.

Participants also identified that marine vessels using the Low Impact Shipping Corridors may impact the ecology, wildlife, and community members. Participants' related recommendations are provided.

Table 1. Potential impact of marine vessels using the Low Impact Shipping Corridors on the environment, wildlife, and community members and related recommendations

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
<p>It is already very challenging to find animals when hunting. It is expensive to go out boating and hunting (gas, grub/food, bullets, equipment). To add to this:</p> <ul style="list-style-type: none"> • There are fewer whales (mainly beluga, narwhal are more scarce, bowhead numbers seem to be increasing) in Frobisher Bay than in the past due to: <ul style="list-style-type: none"> ■ increased number of people harvesting and competing for a limited supply, ■ high demand for fresh meat, and ■ the lack of caribou has increased the demand for sea animals and the strain on sea animals. • People are having to go farther to harvest whales and seals. • Changing weather patterns are making it increasingly dangerous to travel. • People are having to buy caribou from other communities, which is very expensive. <p>Some families do not have a hunter so other hunters share their catch with them. Hunters also sell their catch and rely on the income to pay their bills. When fresh meat has to be bought the sharing circle is smaller due to the expense.</p> <p>Once hunters share their catch each person only gets a small amount; the hunter might even get the less preferred parts of the animal.</p> <p>All of this is resulting in uncertainty and competition when hunting, and sometimes people even hide their catch. Increased shipping traffic is adding to this uncertainty. Whales are in the inlets, and near shore, and that is also where community members harvest. Ships are disturbing whales and causing them to leave their traditional areas, making it even hard for hunters to find them and harvest them.</p>	<p>No ships, including cruise ships and yachts, should go in the inlets or the south side of Frobisher Bay (Figure 19). Hunters depend on hunting close to the south shore. The inlets are used by hunters. Ships should avoid these areas if possible (Figure 19). It is better if ships go in the preferred corridor (Figure 19) in the middle of Frobisher Bay versus along the shore so that the probability of animals being disturbed is lower.</p> <p>Ships should stay away from shore as far as possible (Figure 19). The community-identified proposed new corridor in the middle of Frobisher Bay is recommended as long as it is useable and safe. Charting needs to be done to confirm that the preferred corridor is safe because some of it is shallow and there are hazards (Figure 19).</p> <p>These recommendations apply to all types of ships except for emergency services. Emergency services, for example icebreakers/Coast Guard can go wherever they need to, with no restrictions.</p>



Table 1 (continued). Potential impact of marine vessels using the Low Impact Shipping Corridors on the environment, wildlife, and community members and related recommendations

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
<p>The corridors are limited especially when there is ice that forms in inlets and early in the summer; ships struggle with ice and need Coast Guard escort. Some ships are not rated for icebreaking capability so they cannot travel very fast when there is ice; they cannot go through like an icebreaker. Sometimes they have to go around some ice and away from shore. Just 2% of Nunavut waters are chartered. Ships are very limited in where they can go without running into rocks or reefs. Canadian Coast Guard is slowly improving or doing more charting over the years and there is still more needed.</p>	<p>Conduct additional charting.</p>
<p>Shipping operations and cargo staff communicate with local people early in the spring about ice conditions. Communication is the key to safe voyages as far as shipping. Shipping companies work closely with the Canadian Coast Guard, and ice reconnaissance people who rate the ice thickness from 1 to 10. Communication all over is good and it should stay that way.</p>	<p>Continue existing communication.</p>
<p>Cargo ships usually travel in chartered areas. Cruise ships and yachts go where people want to see wildlife. The areas cruise ships and yachts go to are not chartered properly, and they are putting themselves and other people at danger. An environmental mishap could happen, and animals may be disturbed.</p>	<p>For safety reasons, ships and passenger vessels should stay in the Low Impact Shipping Corridors since that is the safest route.</p>
<p>Noise pollution from ships, propellers, turbines, motors, the big waves ships make, and depth finders disturbs whales. Whales have very sensitive hearing. Whales use hearing to navigate, and find channels and inlets. Ship motors are very loud underwater. When there is ice coverage noise is muffled even if there is partial ice.</p>	<p>Zero noise is the ideal. Ships should take the community-identified proposed new corridor in the middle of Frobisher Bay to stay away from where whales are (Figure 19).</p>
<p>The middle of Frobisher Bay is too rough and wavy for community members to hunt there. It is a preferred low-impact shipping corridor. Community members do not have concerns about it.</p>	<p>Ships should take the community-identified proposed new corridor in the middle of Frobisher Bay. See Figure 19.</p>
<p>Community members do not have a say over the corridors going to Distant Early Warning (DEW) line sites. Marine traffic there is not heavy. Community members do not have concerns about those corridors.</p>	<p>No recommended changes for existing corridors near DEW Line sites. See Figure 19.</p>
<p>If there was a spill it could be catastrophic. Trying to clean it up would be a major hurdle. Accessing it right away might be an issue. Response vessels may take days to arrive if they are not in the area. The environment, wildlife, and community food supply would be affected. Oil spill response in Iqaluit and the Arctic is totally inadequate and basically non-existent. In the south there is more access to transportation and resources; in the Arctic there is none.</p>	<p>There should be a spill-response base in the north. The response base should not be land based. It should be water-based to beyond the extent of the sea ice so it can access anywhere a spill might occur. There are contingencies for DEW sites but none for Frobisher Bay.</p>



Table 1 (continued). Potential impact of marine vessels using the Low Impact Shipping Corridors on the environment, wildlife, and community members and related recommendations

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
<p>The Government of Canada is working on getting more Coast Guard vessels to cover the north and the south. It has been a hurdle over the years. Coast Guard prioritizing research, cargo, or fuel tankers has always been a struggle. If re-supply cannot get to a community it would be almost 2 seasons or the whole year before they get their cargo.</p>	<p>Ensuring re-supply safe passage needs to be a Coast Guard priority.</p>
<p>The Government of Canada wants to own the Arctic Ocean and yet they have no resources to claim it, manage it and run it. Community members are all for getting more ships and resources to do the work they need to do in order to claim that whole area, and to also provide services because there are more channels opening up, and ice-free zones. There is the Northwest Passage and so much going on in the north. It has become very busy. The resources for protecting Arctic security are southern-based, and none are Arctic-based.</p>	<p>The Government of Canada needs to provide more ships and more patrols. It needs to claim Canadian waters and enforce the claim.</p>
<p>Community members wonder about ballast water and what substances ships are putting in the water because Iqaluit residents notice and feel something on their boats while cleaning them. Traditionally there was no garbage. All of the garbage in Iqaluit was brought by ships.</p>	<p>No offloading ballast water or garbage or sewage from vessels in the bay at all because it works its way into the food chain and into the food supply.</p>

“Mostly we were thinking [for ships] to not go close to the shoreline, try to avoid the shoreline, because mainly all the hunters depend on going out hunting close to the shore.” – Research Participant



Table 1 (continued). Potential impact of marine vessels using the Low Impact Shipping Corridors on the environment, wildlife, and community members and related recommendations

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
<p>Ships create some employment opportunities but these are limited and need to be increased. Employment includes: 2 or 3 Inuit per re-supply vessel x 5 vessels; 10–12 barge operators or tug boat drivers; contract security; training through Nunavut Fisheries and Marine Training Consortium (NFMTC). NFMTC graduates can work for cargo ships in the summer and on fishing vessels through the winter and spring.</p> <p>Increasing ship-related employment and training opportunities locally would empower people, and create needed income for people. This could include going onboard ships to clean them, unloading the ships, or doing deliveries.</p>	<p>Increase the number and range of ship-related employment and income opportunities for Inuit.</p>
<p>Occasionally ships have a massive wake that could overturn the boat of an inexperienced boater and create delays for experienced boaters as they try to avoid big ships. It may be the speed of ships that causes the big wakes.</p>	<p>Reduce speed coming into the bay so that there is no wake (Figure 20).</p>
<p>Very occasionally in order to provide service or to rescue people, icebreakers enter the bay in the spring and speed up sea ice break-up. This means people can get out boating earlier than usual.</p> <p>When icebreakers come in after sea ice formation has started it delays freeze-up causing harvesting delays due to inaccessible travel routes. If the sea ice freezes roughly where the icebreaker has passed the rough ice is very hard on machinery and peoples’ backs. Travelling over rough ice creates delays and results in increased expenses from repairs and having to buy snowmobiles sooner.</p>	<p>No icebreaking in the fall, winter or spring unless it is for emergency services. Ships and icebreakers should not disturb sea ice when it is forming or frozen.</p>
<p>When Inuit, especially Elders, do not have access to fresh meat (country food) it affects their health; they become weak and then sick. They have to rely on store-bought food which is less nutritious and healthy than fresh meat. Lack of traditional country food affects mental and physical health, and creates a financial strain. Money is such a big factor now when it comes to having food. Community members must have money to be able to harvest whereas in the past people with less money ate more country food. When hunters are unable to harvest they must rely on social services and/or seek other employment rather than the preferred work of hunting. It is very expensive to hunt.</p> <p>“Our food is connected to our culture. When you go harvest the food you eat you are hunting, fishing, camping, living on the land. Our food is connected to our language. When learning techniques and activities on the land we also learn the language that goes with them. Being out on the land harvesting has so much to do with connecting with your family, especially compared to when you are in town doing your daily 9 to 5 job.” – <i>Research Participant</i></p>	<p>Implement the corridors recommendations presented here to minimize the impact of shipping on harvesters, wildlife, and the environment.</p> <p>Implement a community-based hunt that would support hunters in accessing the equipment and supplies needed to put food on the table.</p> <p>Teach young people skills including survival, hunting and Inuktitut language through community-based hunts.</p>



MAPS OF RECOMMENDATIONS FOR THE LOW IMPACT SHIPPING CORRIDORS

Through this research project, participants in Iqaluit identified and mapped recommendations for the Government of Canada's proposed Low Impact Shipping Corridors. The recommendations presented here are limited to the areas that participants in this research project utilize and felt they have knowledge about. Thus, additional recommendations may exist which have not yet been documented.

Maps include a community identified:

1. Proposed new corridor;
2. Second-choice corridor to be used only if necessary;
3. Area where charting is needed;
4. No-go zone; and
5. No-wake zone.

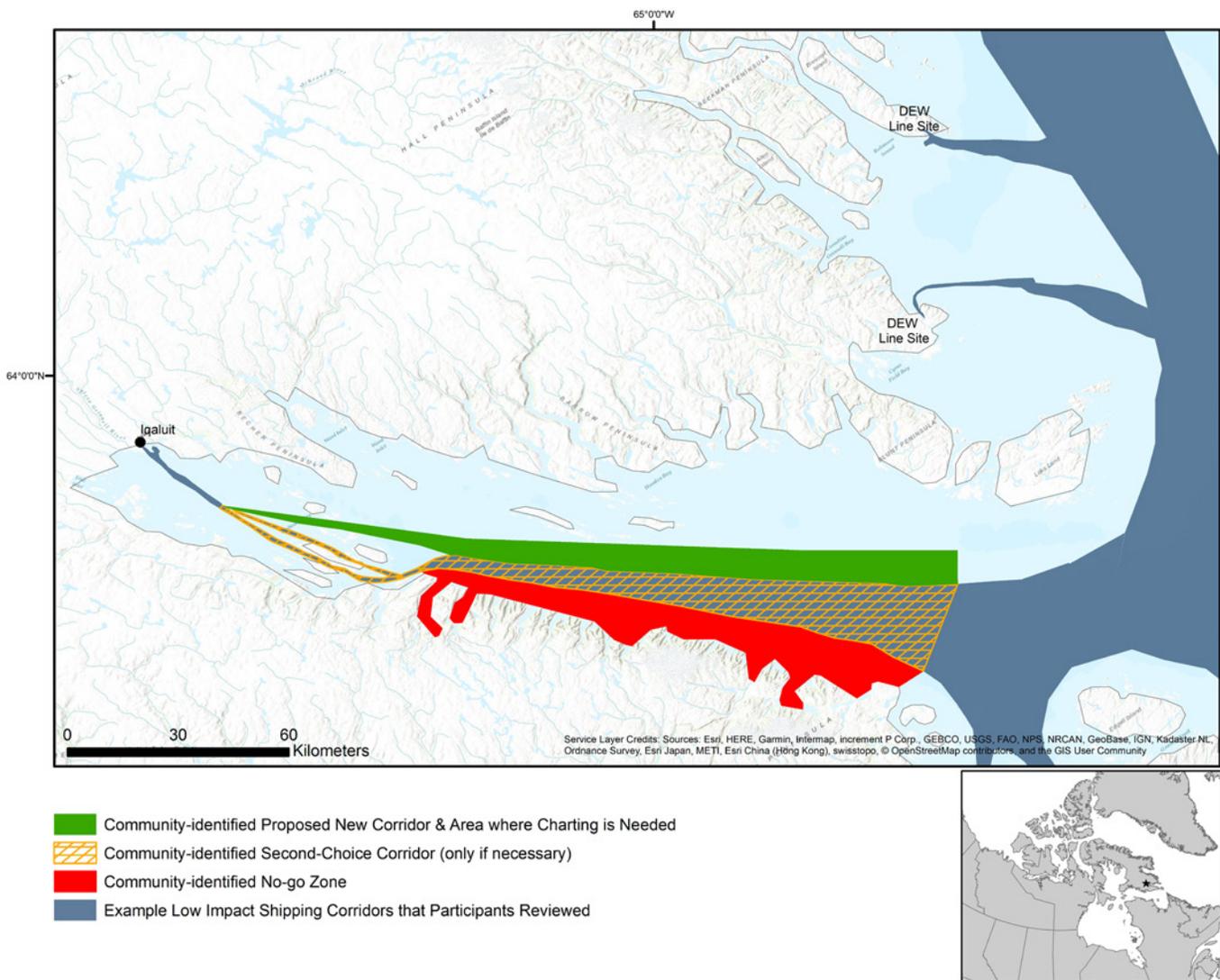


Figure 19. Participant-identified recommendations for revised Low Impact Shipping Corridors, a no-go zone, and an area where charting is needed

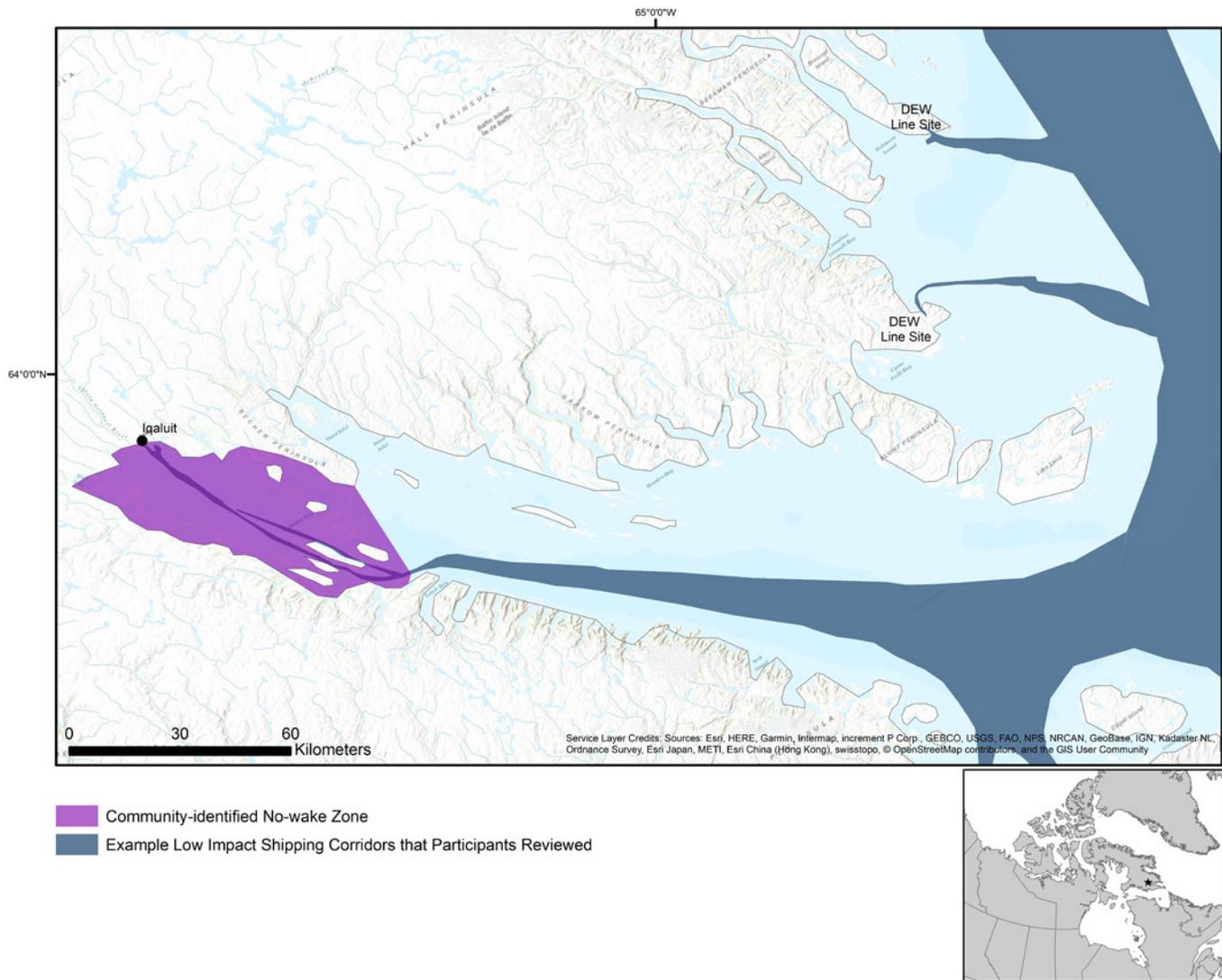


Figure 20. Participant-identified Low Impact Shipping Corridors no-wake zone

“Part of what we don’t want is [ships] to offload the ballast water here ‘cause we eat the animals, we eat the clams, we eat the shrimp, we eat the things that eat the shrimp, we eat the things that eat the clams. So, when [ships] spill, the clams, the shrimp, the things that we can’t see that eat this stuff will get it in them. And it will work its way into the food chain and into our food supply.” – Research Participant



CONCLUSION

The number of marine vessels in Canadian Arctic waters continues to grow.¹ Given community members' concerns about marine vessel traffic and its implications for the ecology, environment, and Inuit way of life, the perspectives of Iqaluit community members and all communities, should be a fundamental consideration during the implementation and management of Low Impact Shipping Corridors.

The consequences of a marine incident (e.g., oil or fuel spill; vessel collision, grounding or sinking causing environmental contamination) would have deep, lasting, and potentially irreversible ecological, environmental, and cultural impacts. Combining scientific and Inuit knowledge will provide the most effective approach for pro-active vessel management through a corridors approach.

