

Arctic Corridors and Northern Voices

GOVERNING MARINE TRANSPORTATION IN THE CANADIAN ARCTIC

CORAL HARBOUR NUNAVUT



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2019



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**OCEANS
NORTH**



Fisheries and Oceans
Canada

Pêches et Océans
Canada

PARTICIPANT BIOGRAPHIES



Hanna Angutialuk was raised in Coral Harbour. She has a future here with her grandkids who will be here when she passes so she wants the best for them and the community. As Kivalliq Inuit Association Director, this has been talked about: the shipping routes to the mine (Agnico) affecting the mammals – the community's food.

Darcy Nakoolak



Peter Nakoolak is thankful for the opportunity to be approached by researchers. Thank you!

Willie Nakoolak is the current and past mayor of Coral Harbour. Other organizations he has served on include Aiviit Hunters' and Trappers' Organization, Keewatin Wildlife Board, Kivalliq Wildlife Board, Nunavut Wildlife Management Board and Nunavut Tunngavik Inc. His focus is on economic development.



Leonard Netser is married with 5 children and several grandkids. He is a trapper and carver. He loves boats and would love to do a bit of work with his beautiful boat. His hobbies include doing ancient practices like building knives, ulus, and other hunting implements using bones from our wildlife and rocks.

Troy Netser is the Conservation Officer for Coral Harbour. He is a personal hunter and spends a lot of time out on the land.



Ron Ningeongan was born and raised in Coral Harbour and has 4 sisters and 3 brothers. He is married to Annie Ningeongan and they have 3 children and 3 grandchildren. Ron has worked for the Kivalliq Inuit Association as the Community Liaison Officer since August 2009. He was a Hamlet Councillor from 2011 to 2017 and throughout the time he was sitting as a Deputy Mayor and at times as a Mayor. He has been running a small business locally renting out pickup trucks since 2009. Ron enjoys fishing, hunting, travelling, watching movies and repairing minor things on automobiles and recreational vehicles.



Danny Pee has lived in Coral Harbour his whole life. He is married and has 4 kids. He is a member of the Aiviit Hunters' and Trappers' Organization Board, and loves to hunt and fish. He is an outfitter and takes clients out hunting.





EXECUTIVE SUMMARY

Ship traffic in the Canadian Arctic nearly tripled between 1990 and 2015.¹ Most of that increase happened in Nunavut waters. The average annual kilometres travelled within 50 km of Coral Harbour from 2011-2015 was the third lowest in Nunavut. However, when comparing the 1990-2000 and 2011-2015 averages, vessel traffic within 50 kilometres of Coral Harbour nearly doubled during that time²; a significant increase that has been noted by community members, over the past 25 years. 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 knowledge and opinions gathered through participatory mapping and focus group discussions with Coral Harbour community members who were identified by community representatives and the Aiviit Hunters' and Trappers' Organization as key knowledge holders. This report was validated by the 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 potential strategies regarding management of the Low Impact Shipping Corridors and Arctic marine vessels.





KEY FINDINGS OF THE PROJECT ARE...

- Potential impact of marine vessels using the Low Impact Shipping Corridors include:
 - re-supply efficiency needs improvement;
 - lower delivery costs for essential materials and equipment than if delivered by plane;
 - disruption of walrus during breeding, feeding, and migration may result in fewer walrus in known, usual locations;
 - noise from ships, in particular mining ships, disturbing marine mammals, damaging their hearing, and affecting the entire food chain. Ships are even louder when ice is present;
 - lost revenue (from skin and tusk sales) and increased expenses (having to travel further) when harvesting;
 - increased incidence of dangerous ice conditions for local travel (if ice is broken);
 - increased food insecurity and reliance on expensive, less-nutritious store-bought food;
 - risk of lost culture and insufficient or no country food for future generations; and
 - limited income and employment opportunities.
- Existing spill-response capacity is not sufficient in Coral Harbour.

COMMUNITY-IDENTIFIED RECOMMENDATIONS INCLUDE...

- Areas where only ships providing essential services for Coral Harbour should travel;
- Recommended corridors for all non-essential services;
- No-go zones;
- Three areas that should be protected (Native Point, Walrus Island, and Coats Island);
- Reduced ship noise;
- Improved re-supply efficiency;
- Improved communications between vessel operators, mining companies, and Coral Harbour residents;
- Inclusion of Coral Harbour residents in permitting and decision-making related to cruise ships and pleasure crafts;
- Increased monitoring and research, and reporting of wildlife sightings; and
- All of the organizations who have heard the concerns and recommendations in this report should lobby Transport Canada, Canadian Coast Guard, and Canadian Hydrographic Service to change these corridors and re-route ships as described in this report.

Inuit and Northerners must be and wish to be included on an on-going basis in the development and management of the Low Impact Shipping Corridors.



BACKGROUND

Ship traffic in the Canadian Arctic nearly tripled between 1990 and 2015.¹ Most of that increase happened in Nunavut waters. When comparing the average annual number of kilometres of shipping activity from 1990-2000 to the annual average from 2011-2015, Coral Harbour experienced the third lowest increase in vessel traffic in Nunavut. However, during that time frame shipping traffic doubled within 50 km of Coral Harbour; a significant increase that has been noted by community members, over the past 25 years.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 (Figure 1). 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 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 documents Coral Harbour community members' knowledge and extensive year-round use of important marine areas (ecological, socio-cultural, archaeological, and travel routes), the potential impact of shipping on those areas and on community members, and potential management strategies for the Low Impact Shipping Corridors. This report was validated by the research participants.

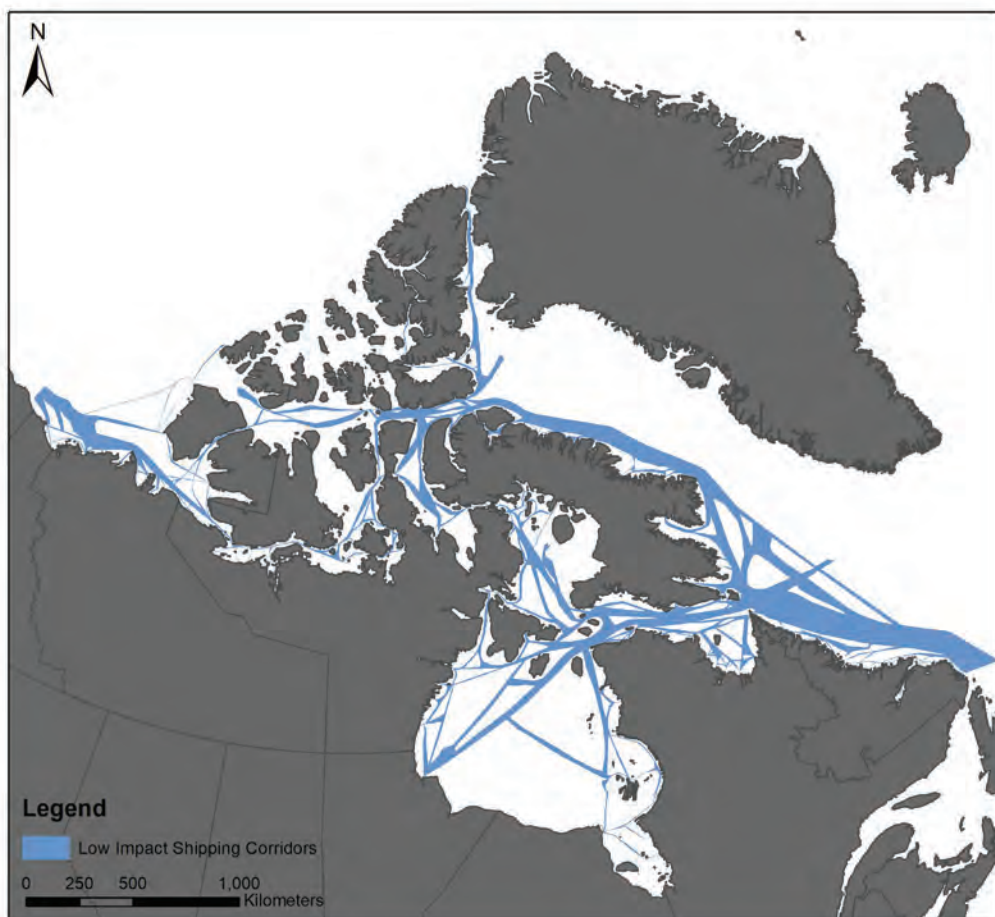


Figure 1. Example of Low Impact Shipping Corridors

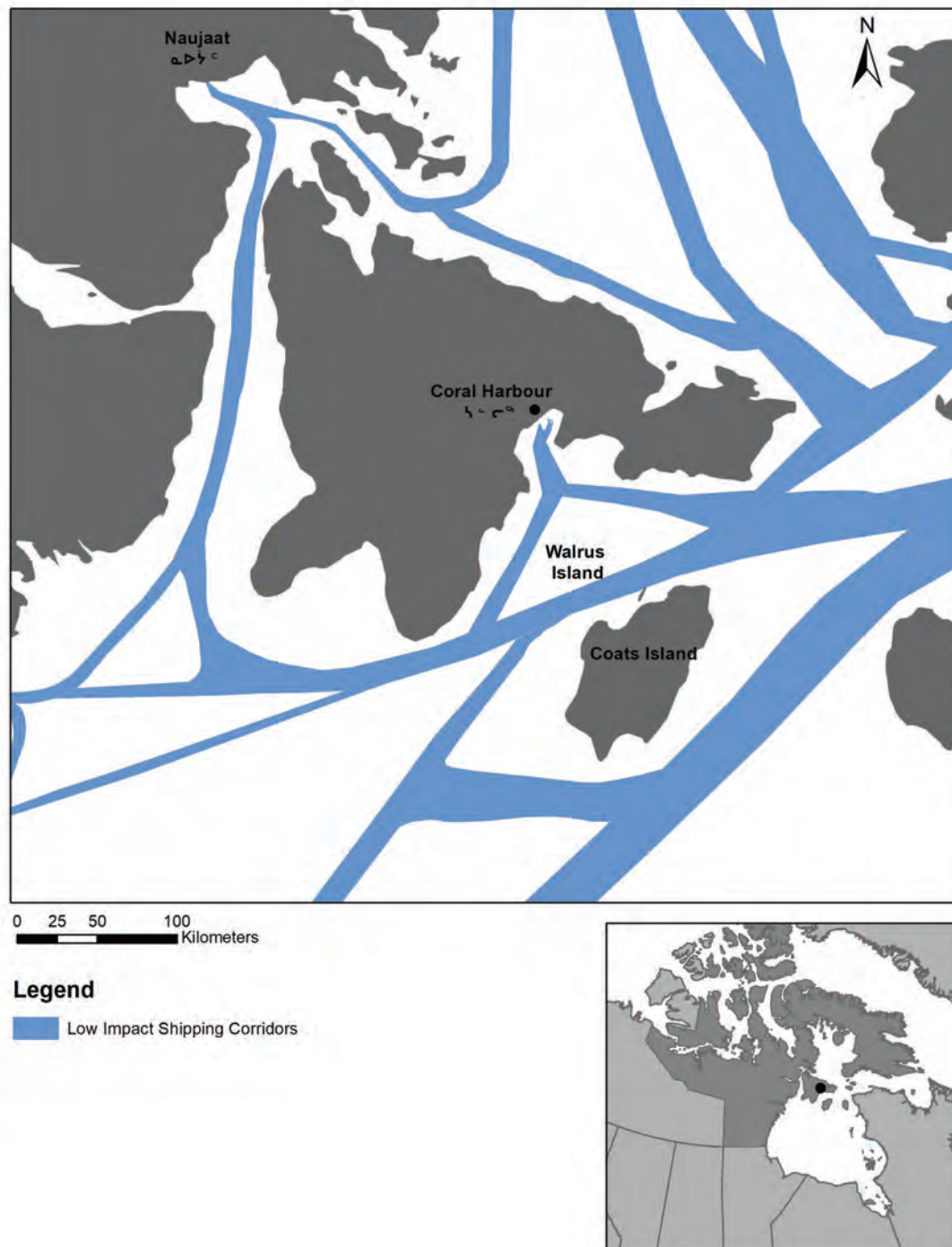


Figure 2. Example of Low Impact Shipping Corridors near Coral Harbour, Nunavut



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, Arctic Bay, Eureka). Coral Harbour experienced a 401 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 third lowest increase in vessel traffic in Nunavut (Figure 4).

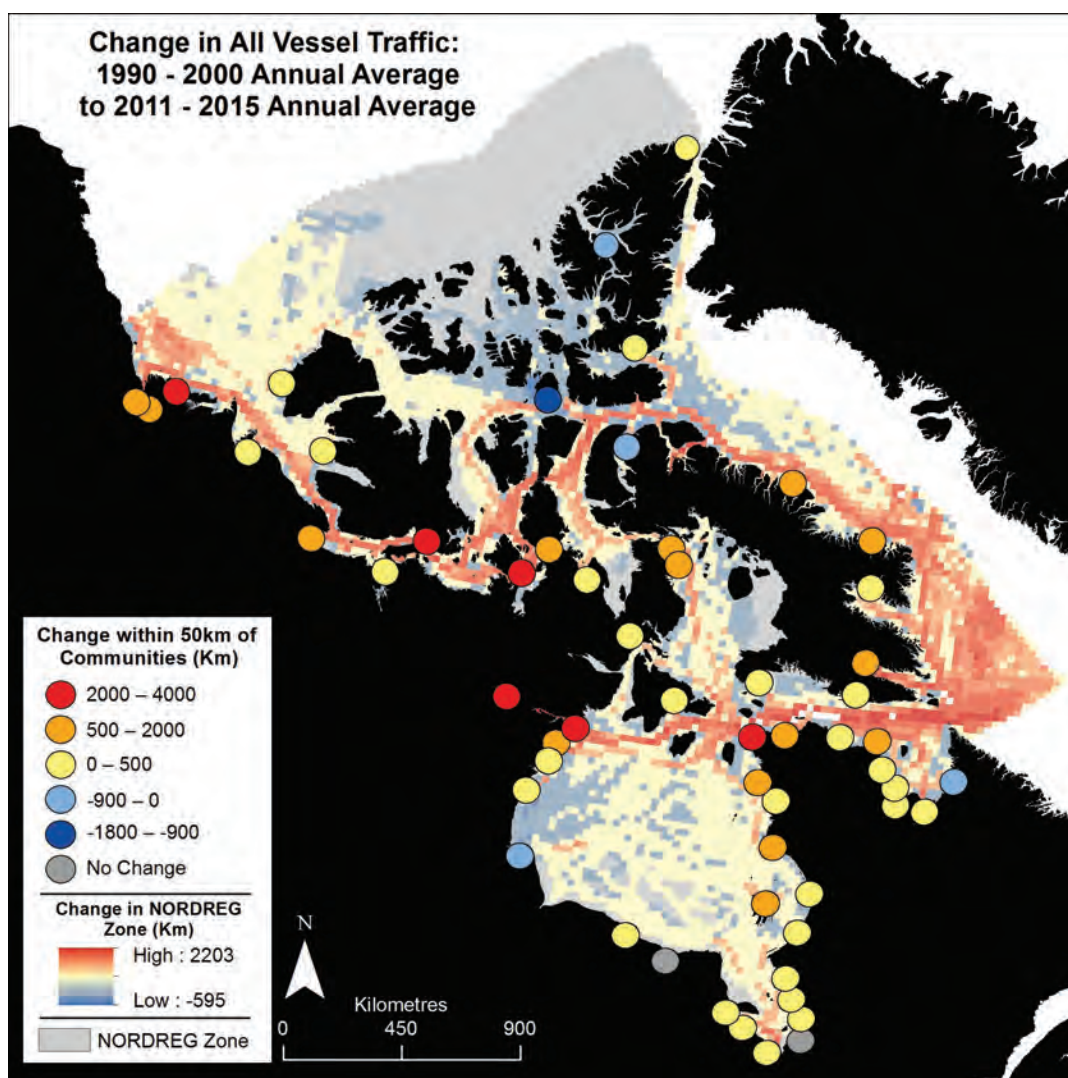


Figure 3. Change in shipping activity (km) in the Canadian Arctic: 1990–2000 annual average compared to 2011–2015 annual average¹

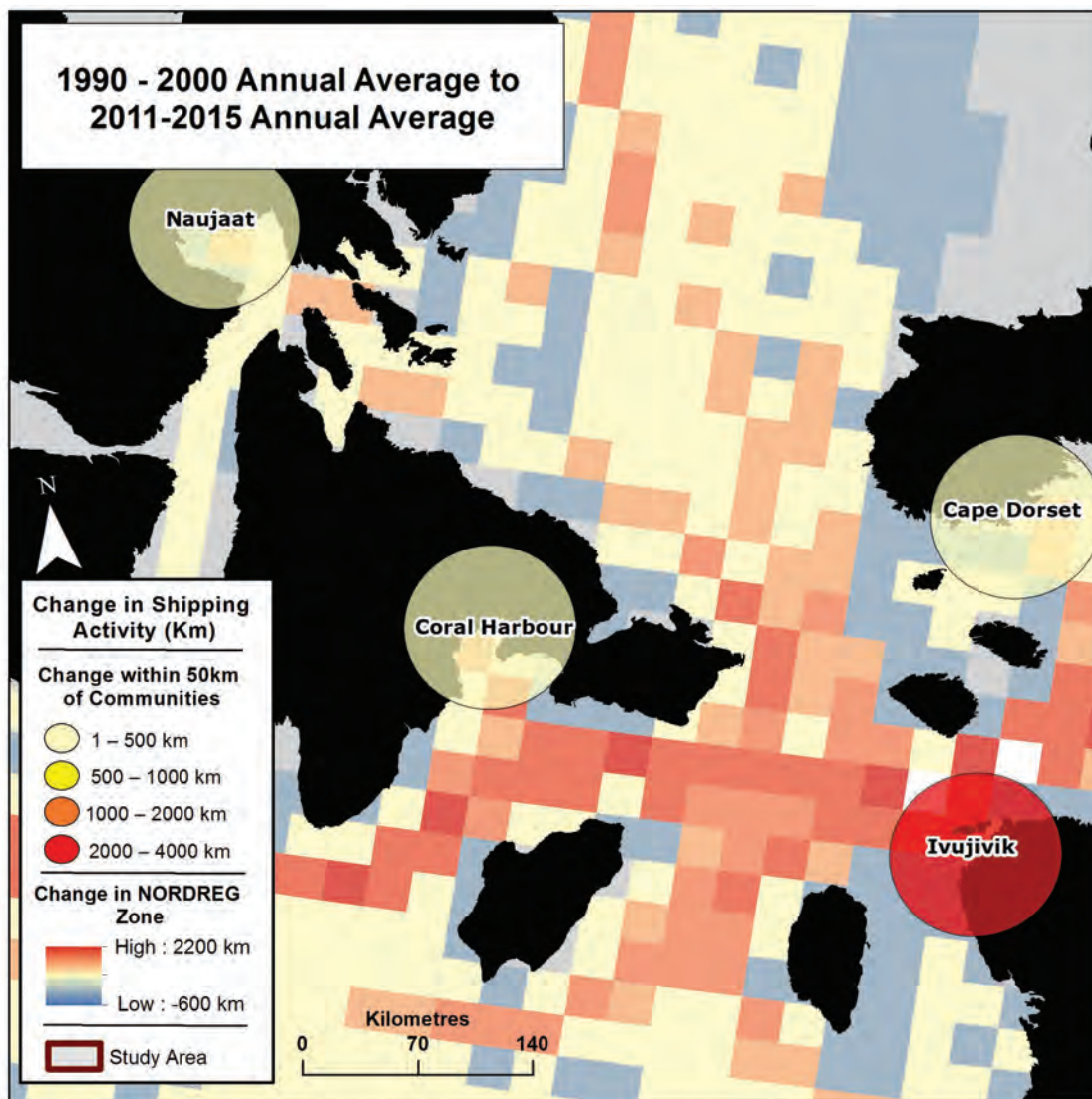


Figure 4. Change in shipping activity (km) near Coral Harbour, Nunavut: 1990–2000 annual average compared to 2011–2015 annual average.¹

SEASONS

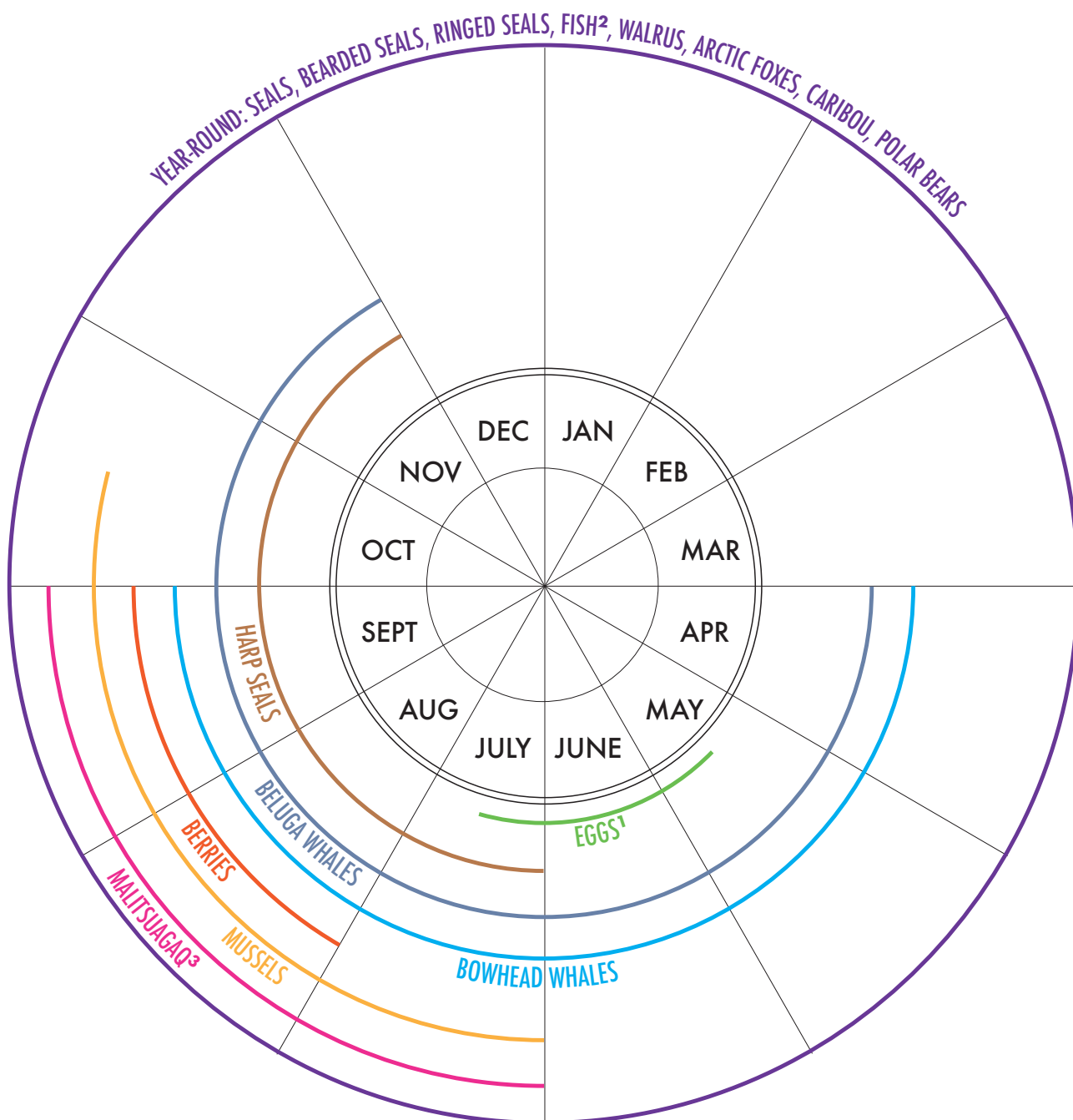
There are several seasons in Coral Harbour, Nunavut. The seasons are ice and weather dependent therefore, the months each season happens in are different each year. However, in general the ocean conditions are as follows:

MONTHS IN WHICH THEY HAPPEN	OCEAN CONDITION
April through June	Break up
July through October	Open water
November	Freeze up
December through March	Frozen



SEASONAL HARVESTING CYCLE

Harvesting happens according to seasons and follows an annual cycle.



¹ EGGS: Snow Goose, Ross' Goose, Crane, Tundra Swan, Canada Goose (locally called Honkers), Cackling Goose (locally called Canada), Common and King Eider Duck, Gull, Thick-billed Murre

² FISH: Cod, Arctic Char, Lake Trout, Land-locked Char

³ MALITSUAGAQ: Also known as Seabeach sandwort and *Honckenya peptides*.

Figure 5. Seasonal cycle of harvesting activities near Coral Harbour, Nunavut

MAPS OF CULTURALLY SIGNIFICANT MARINE USE AREAS

Maps include:

1. Location of animals, marine mammals, fish, and birds;
2. Location of community members' activities as well as camps, and local travel routes; and
3. Location of significant marine features which include monthly sea ice freeze-up patterns, high currents, and sea ice break-up.

Maps will be available at www.arcticcorridors.ca and in Coral Harbour at Aiviit Hunters' and Trappers' Organization, and the Wildlife Office.

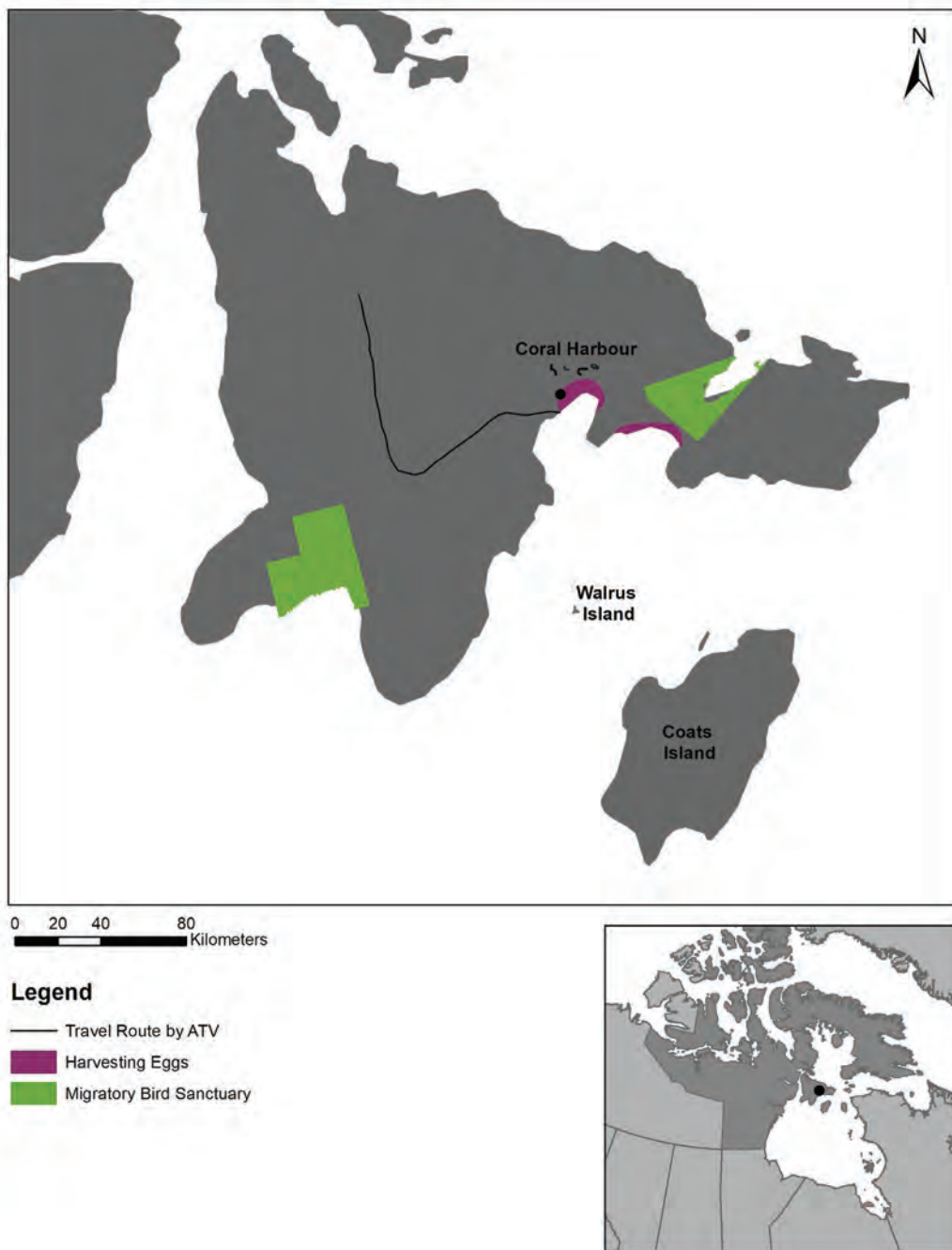


Figure 6. Location of community members' activities around the time of sea ice break-up

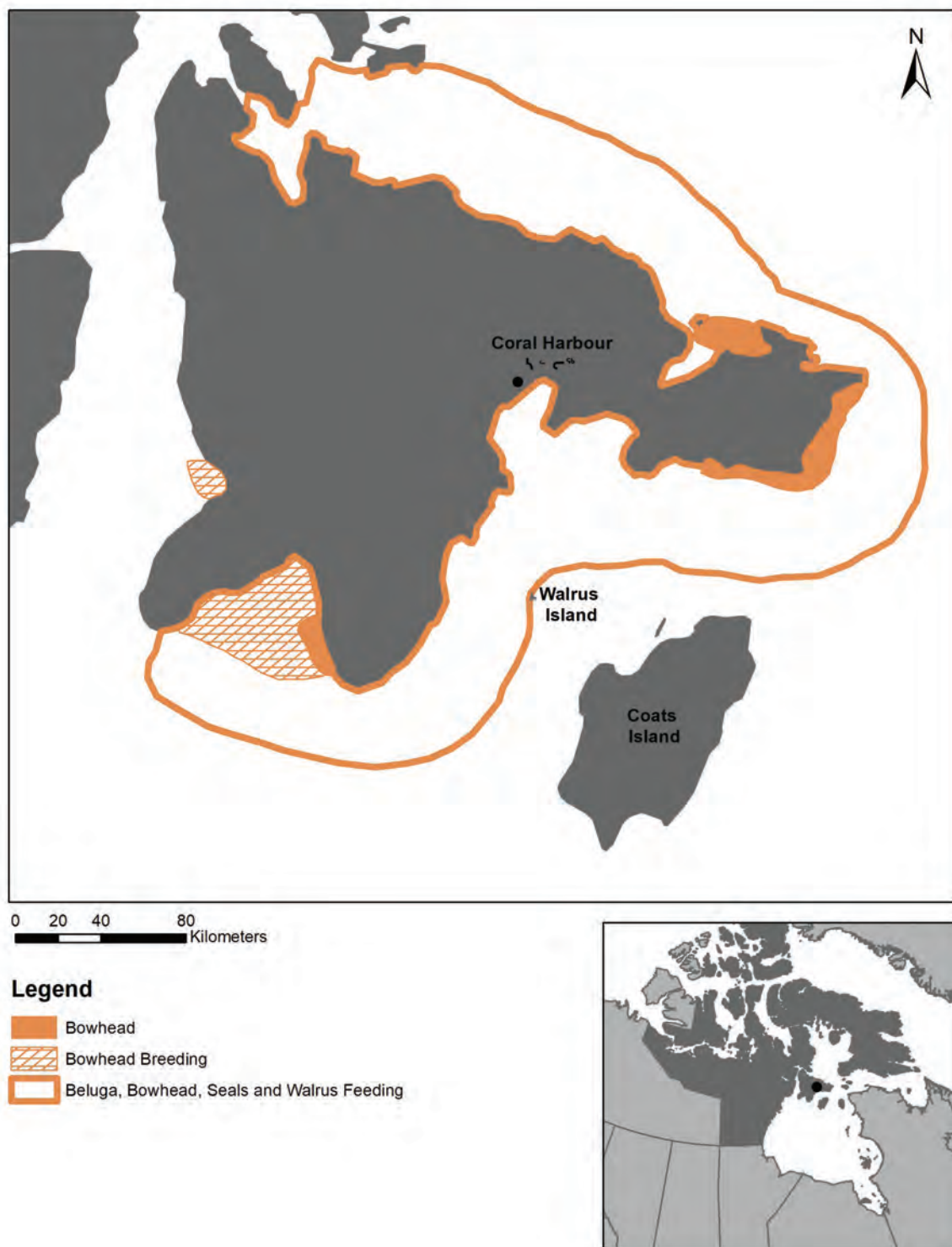


Figure 7. Location and behavioural activities of wildlife around the time of sea ice break-up

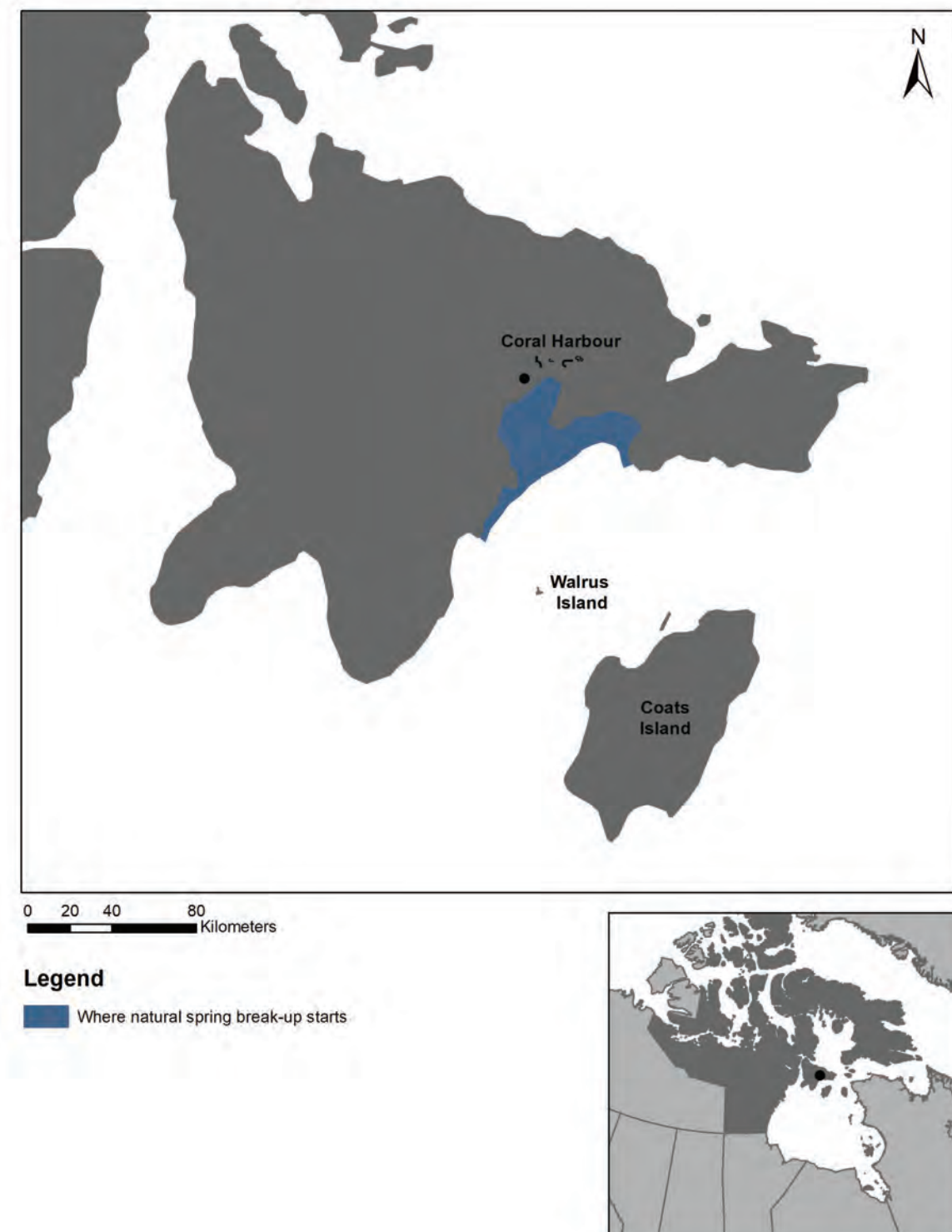


Figure 8. Location of significant marine features around the time of sea ice break-up

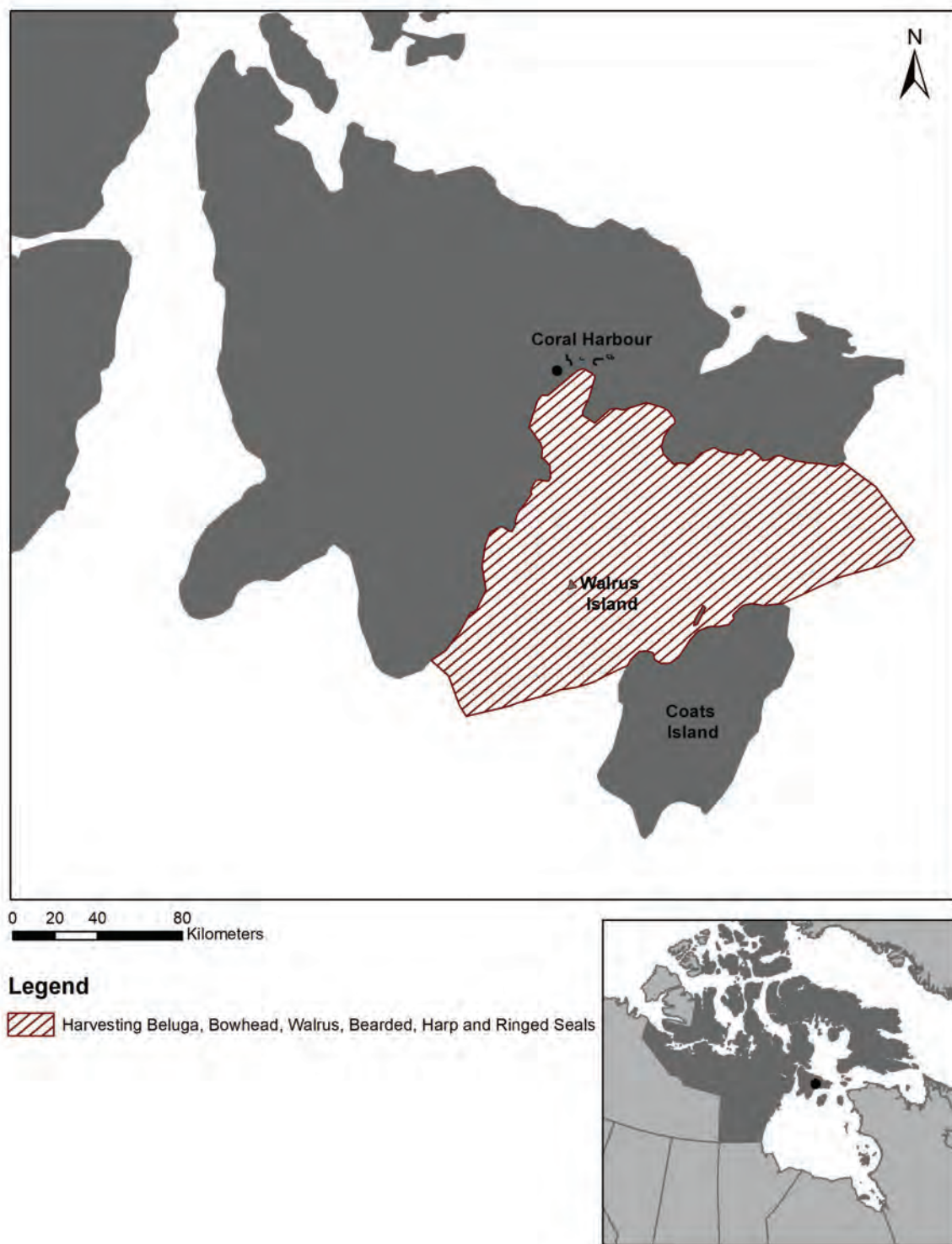


Figure 9. Location of community members' harvesting activities during open water

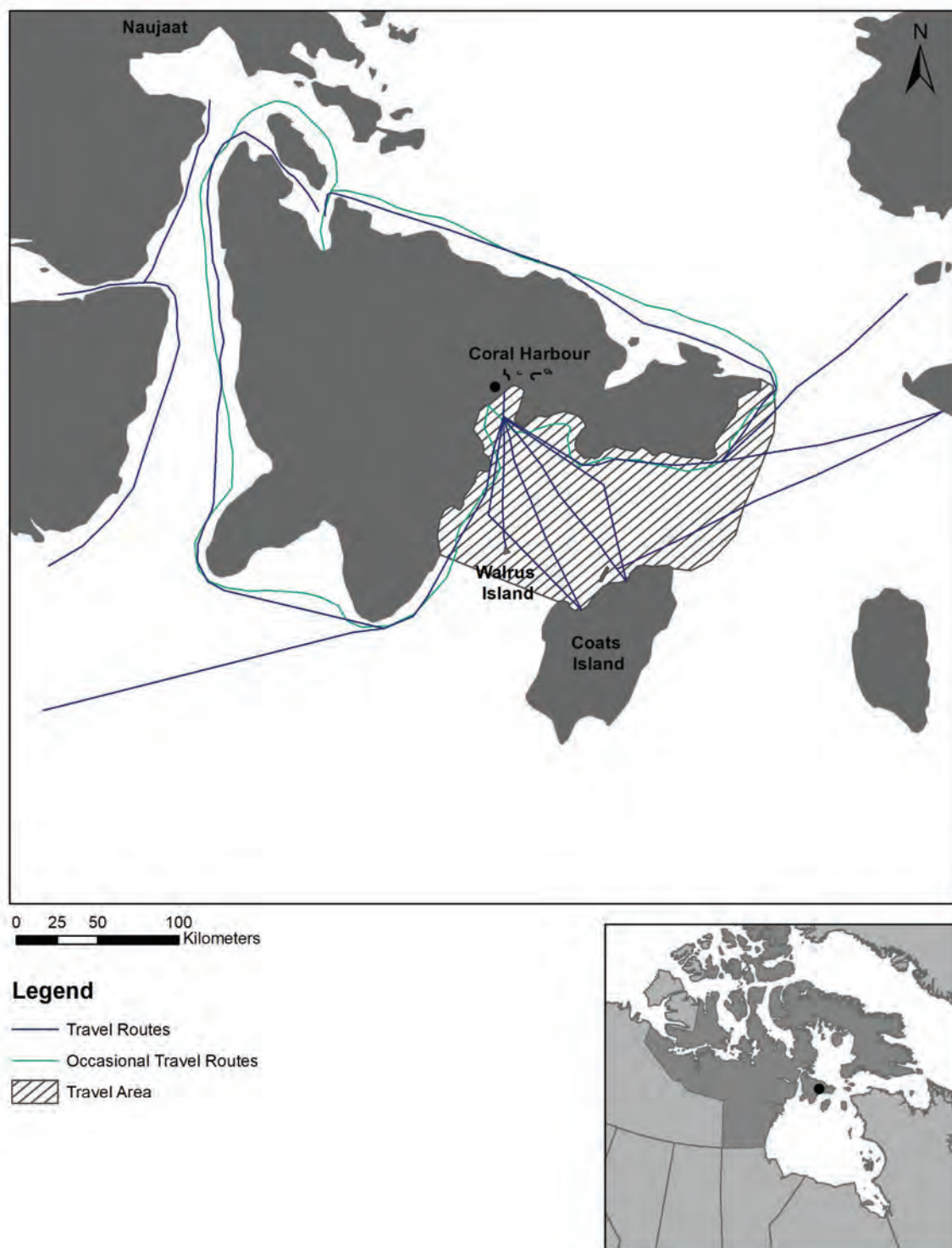


Figure 10. Location of community members' travel activities during open water

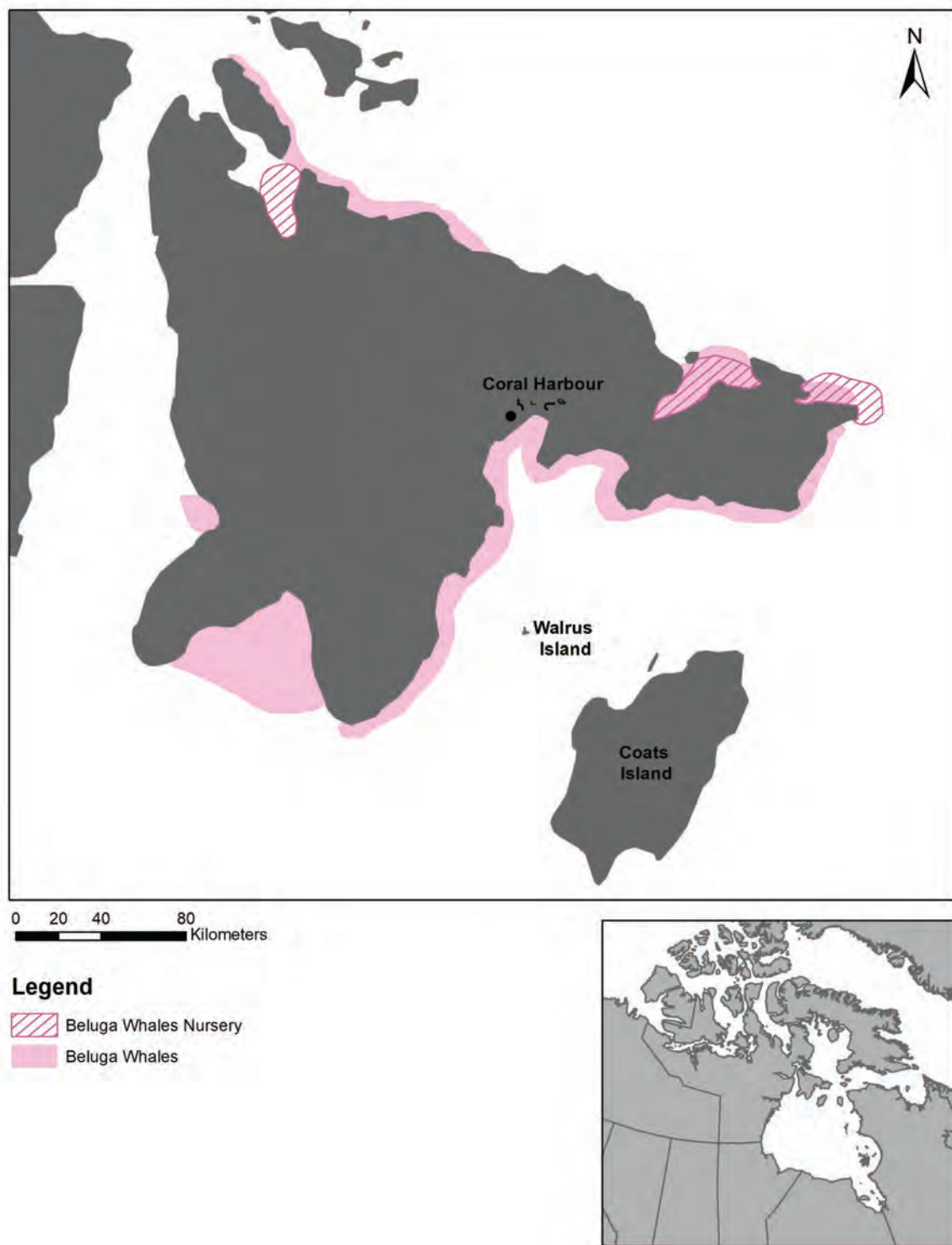


Figure 11. Location of beluga whales during open water

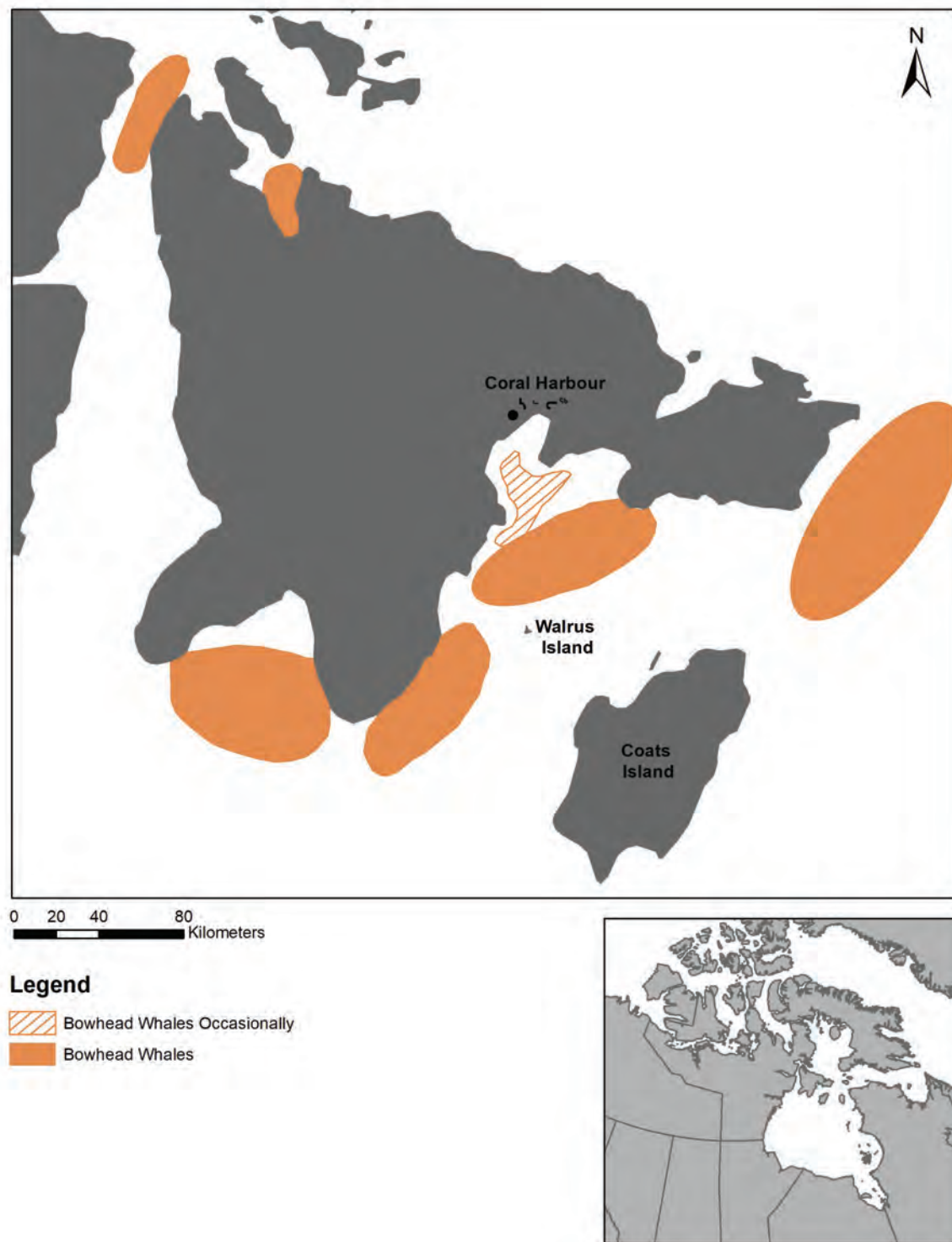


Figure 12. Location of bowhead whales during open water

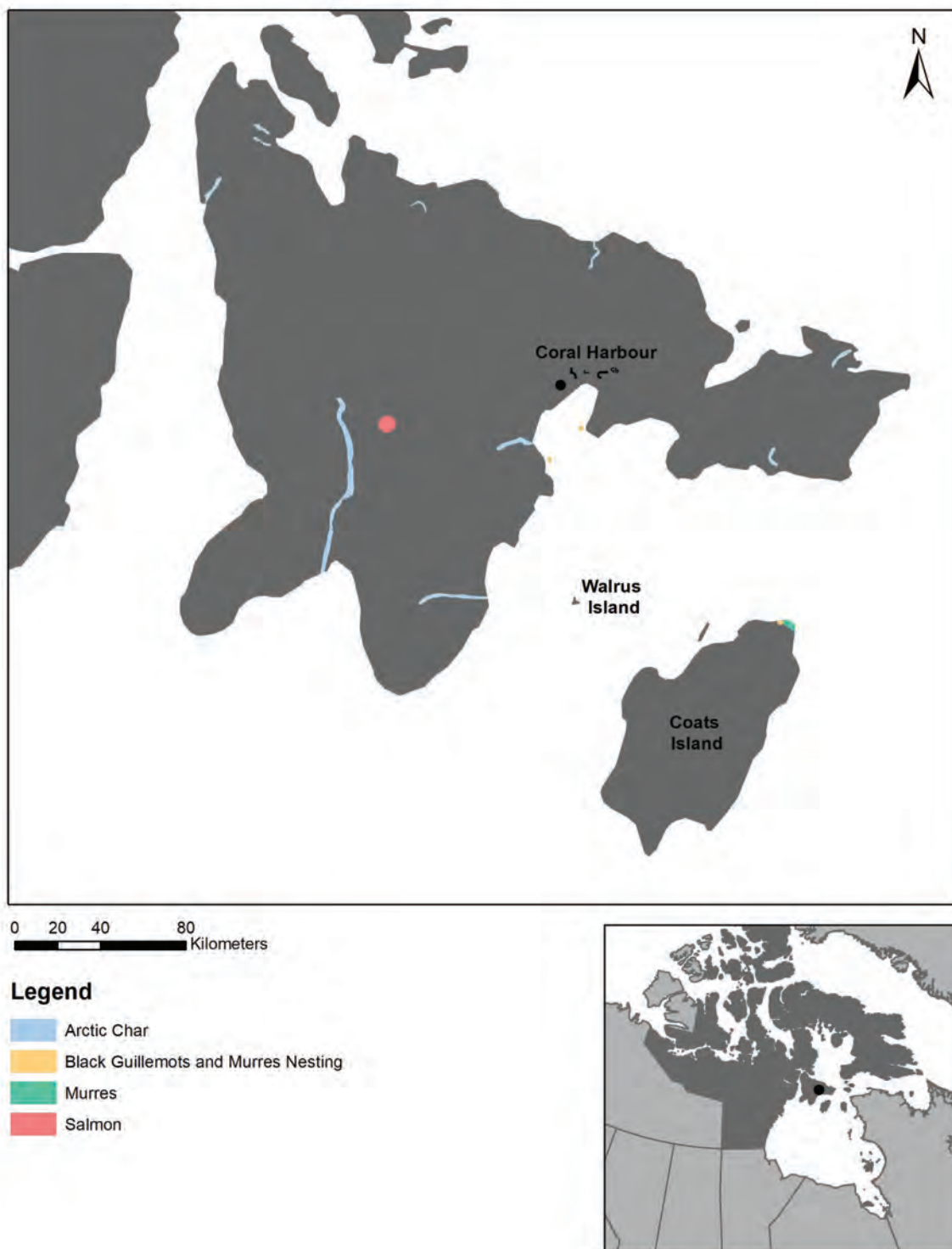


Figure 13. Location of fish and birds during open water

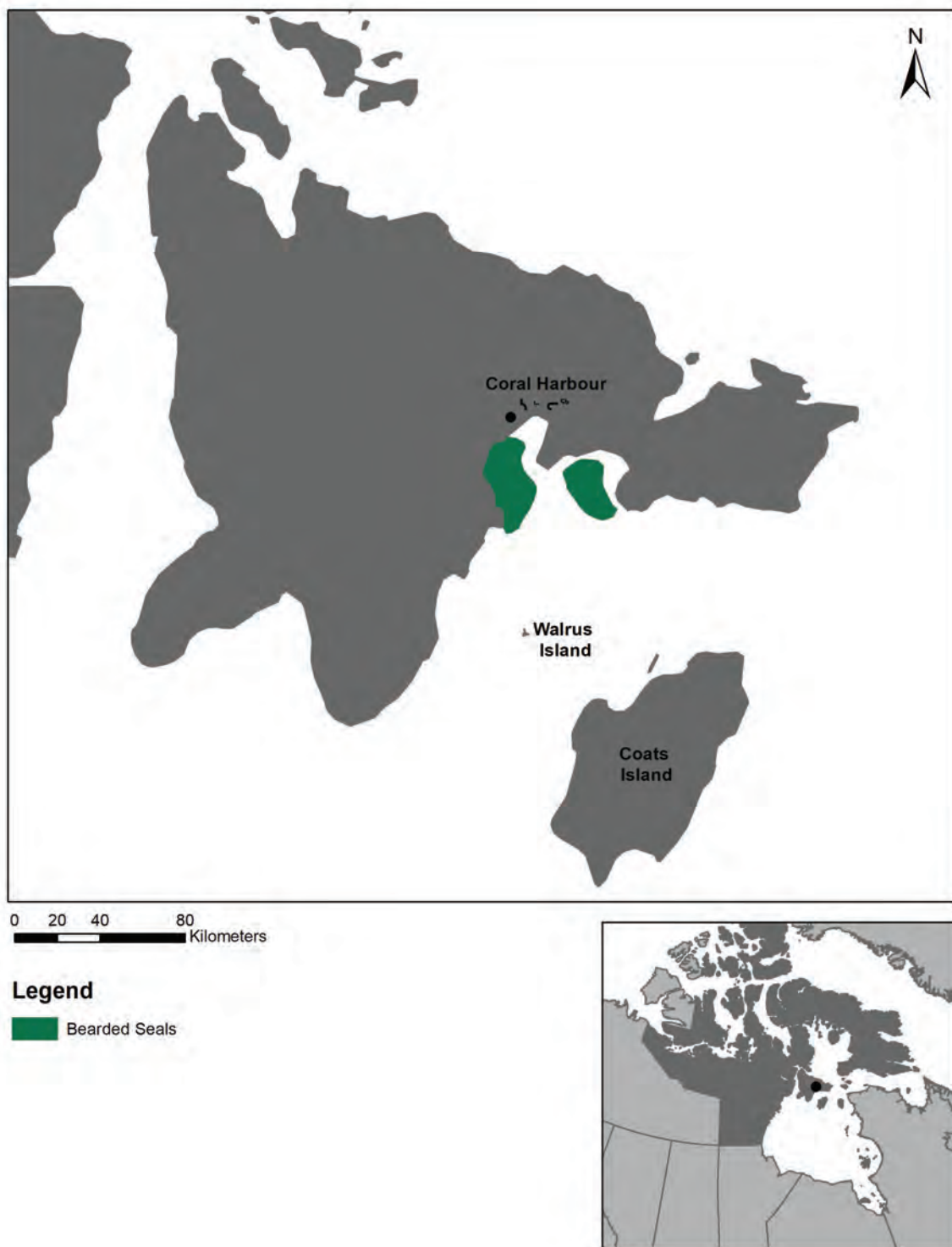


Figure 14. Location of bearded seals during open water

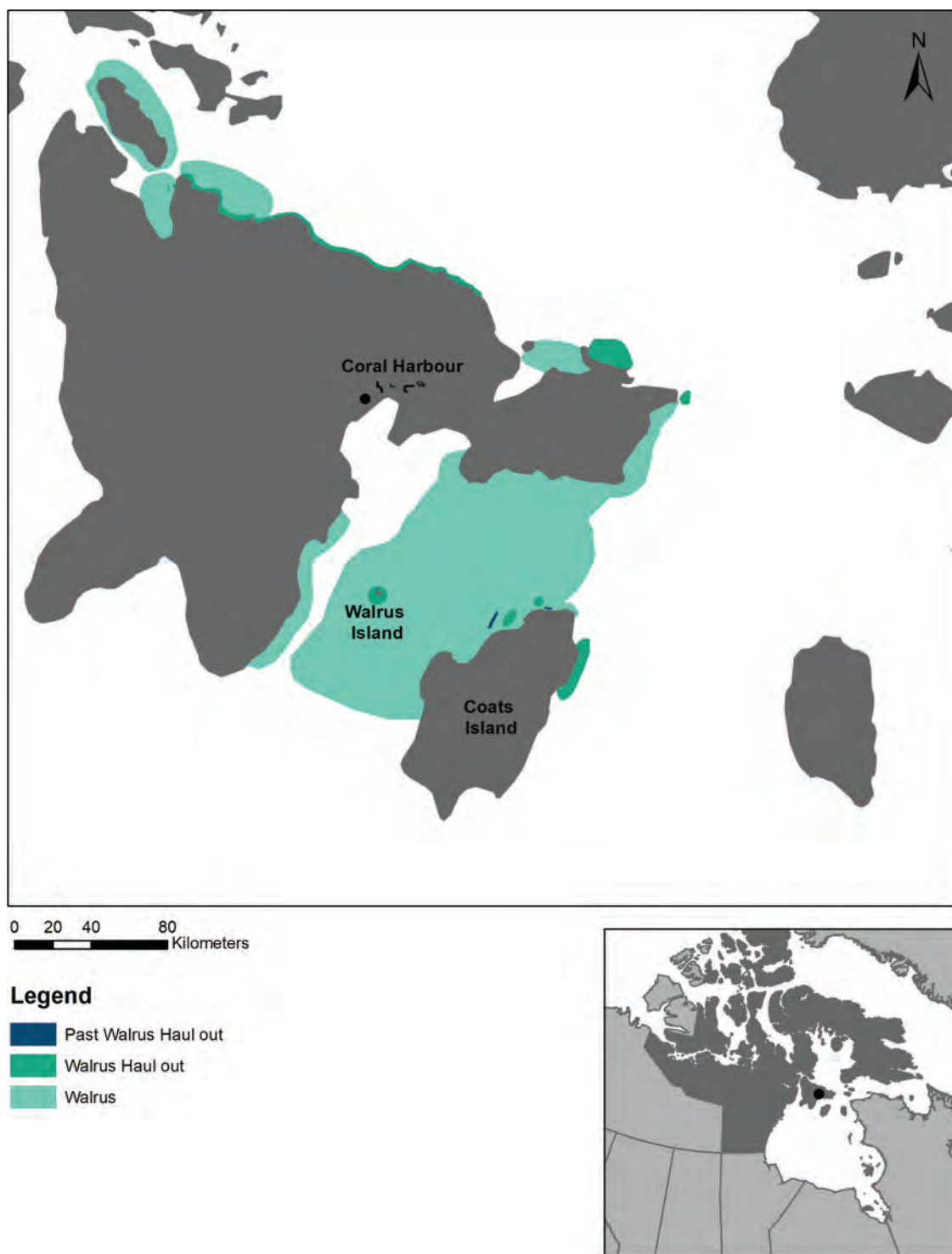


Figure 15. Location of walrus during open water

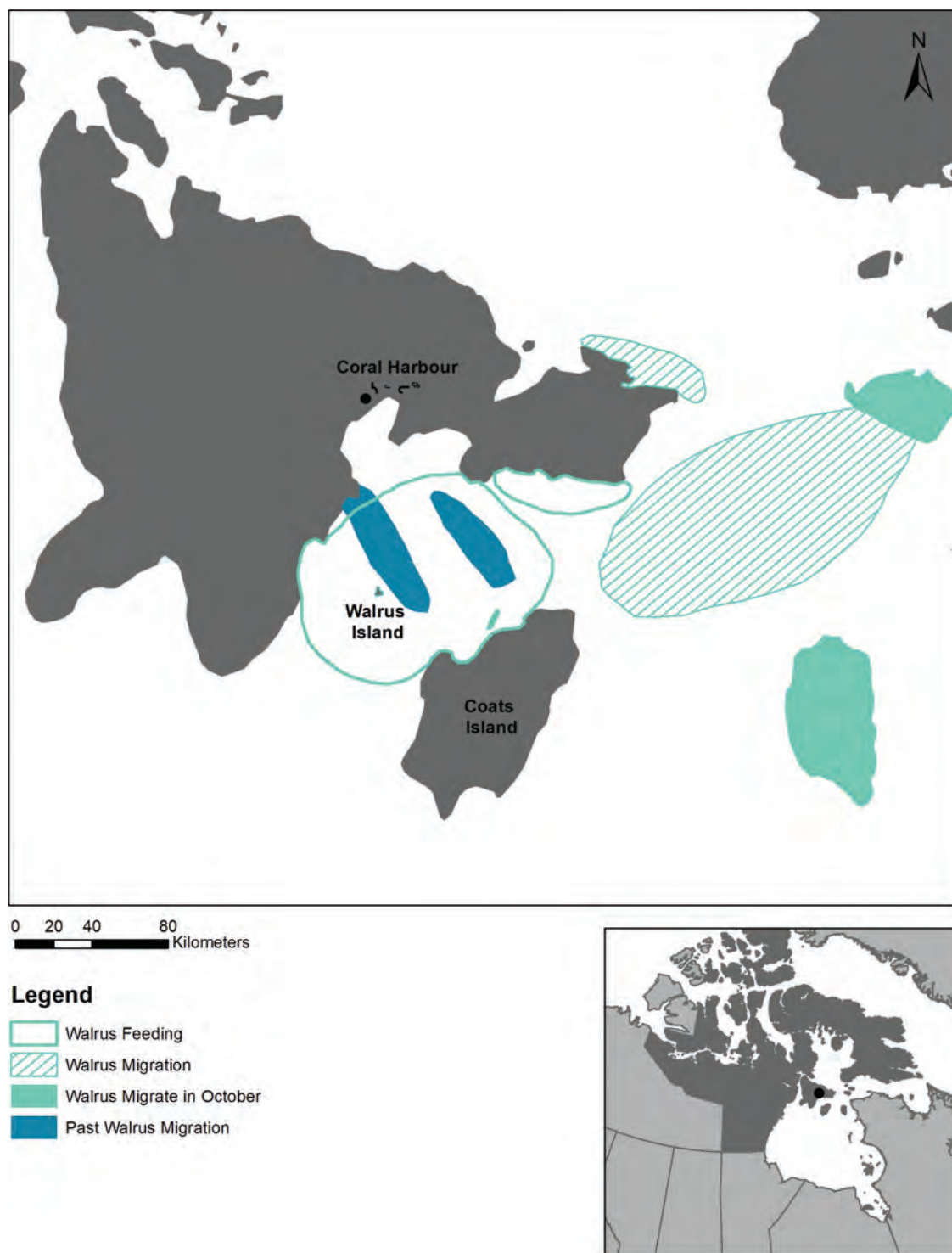


Figure 16. Location of walrus feeding and migration during open water



Figure 17. Past location of wildlife during open water

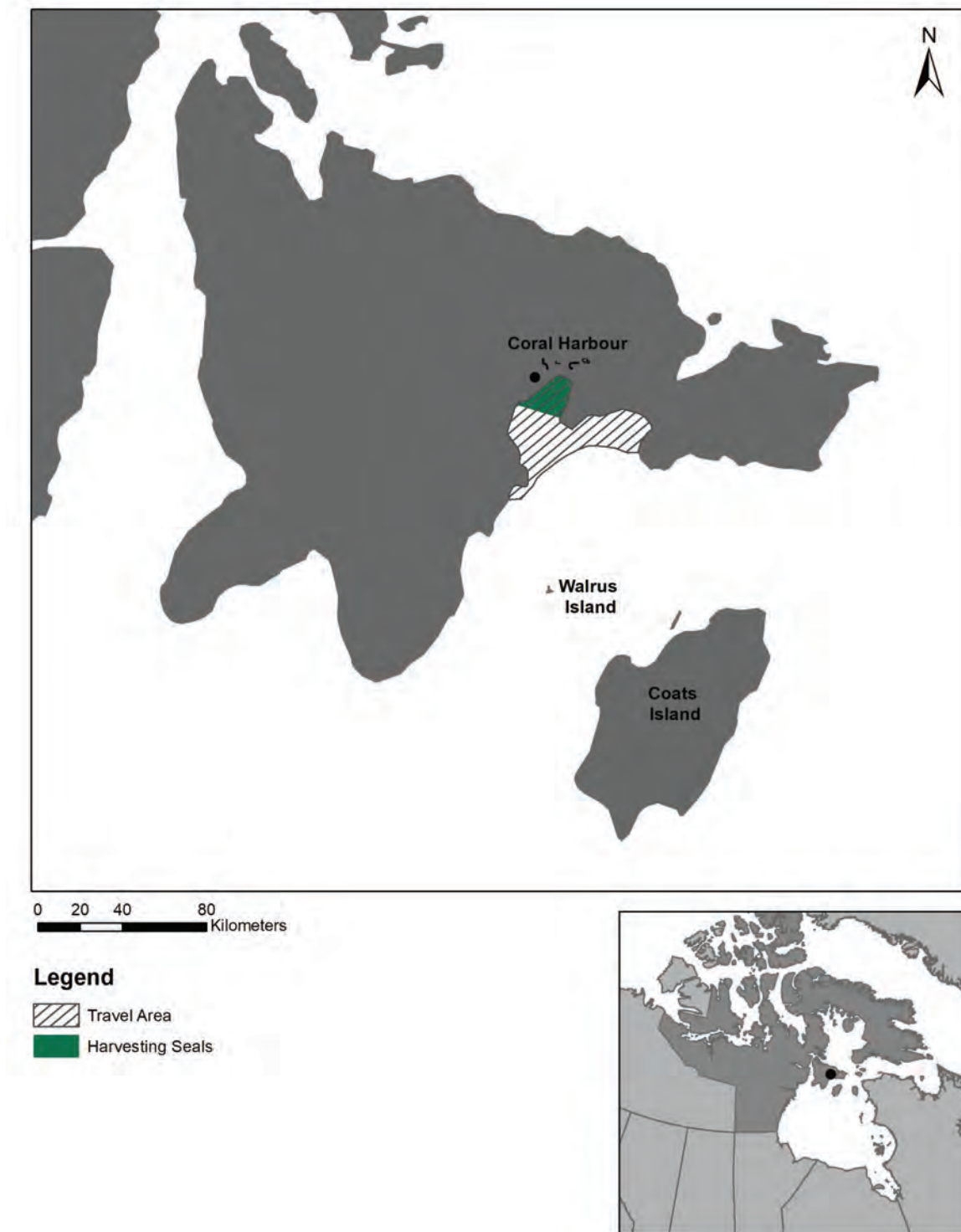


Figure 18. Location of community members' activities around the time of sea ice freeze-up

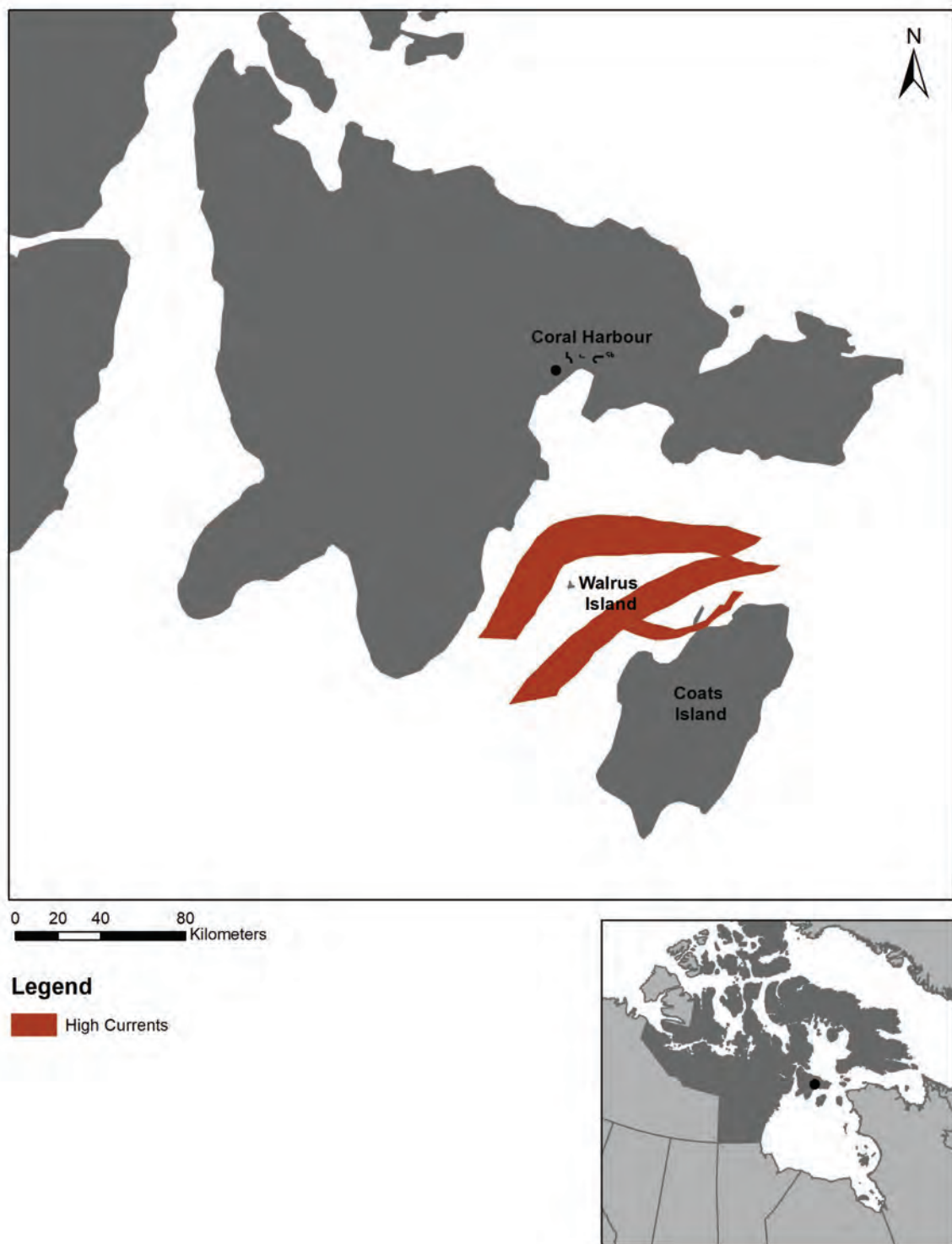


Figure 19. Location of significant marine features during open water

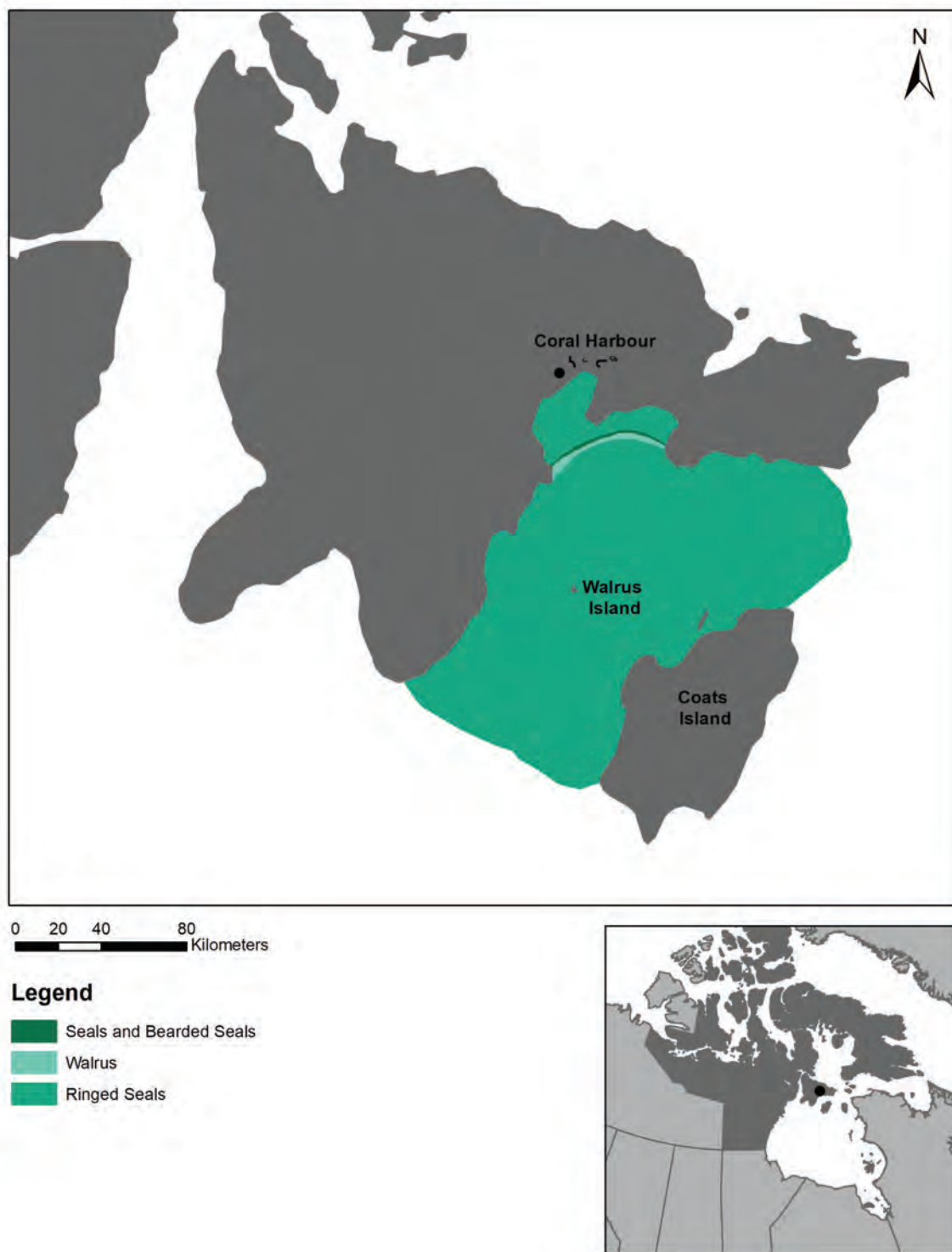


Figure 20. Location and behavioural activities of wildlife around the time of sea ice freeze-up

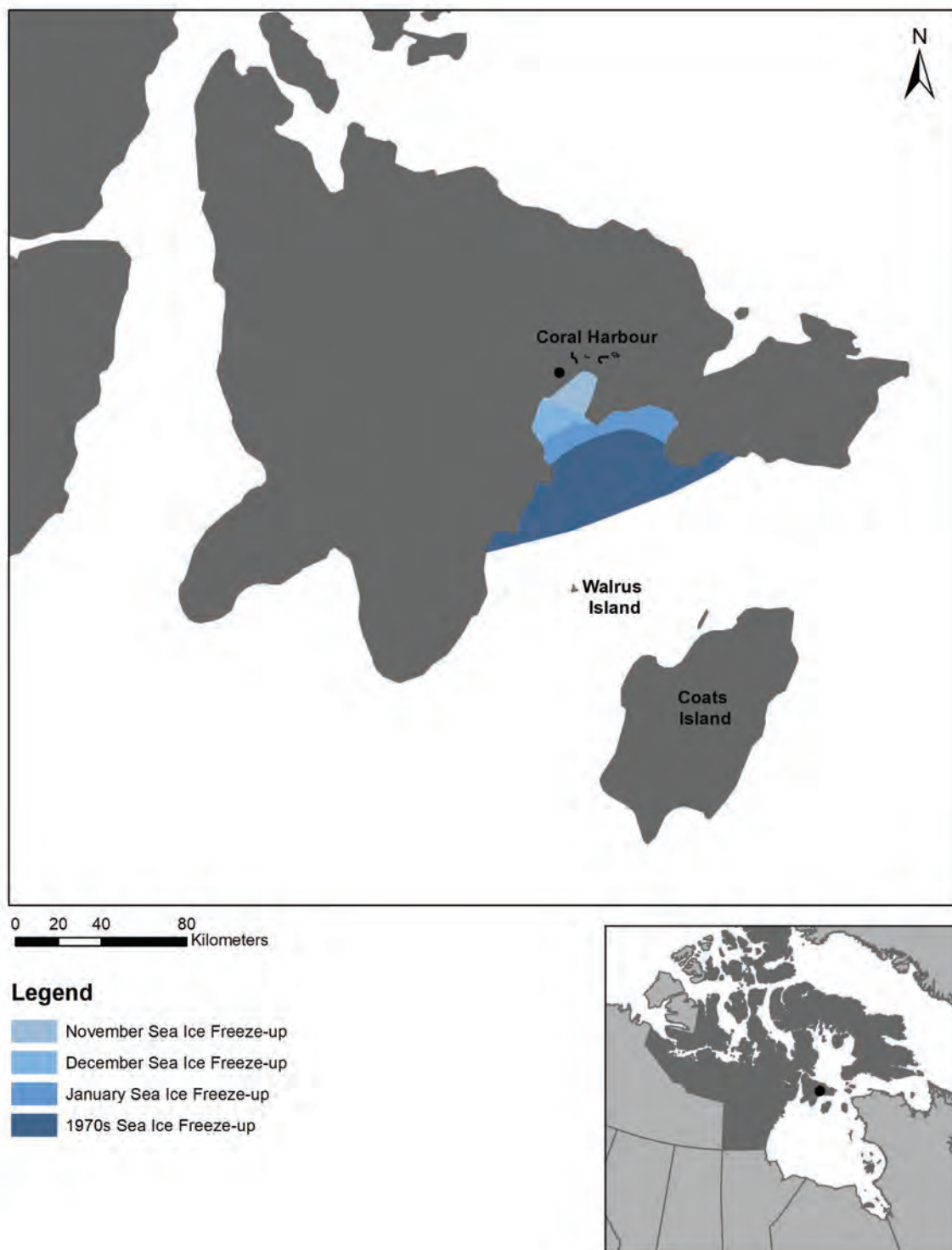


Figure 21. Location of significant marine features around the time of sea ice freeze-up

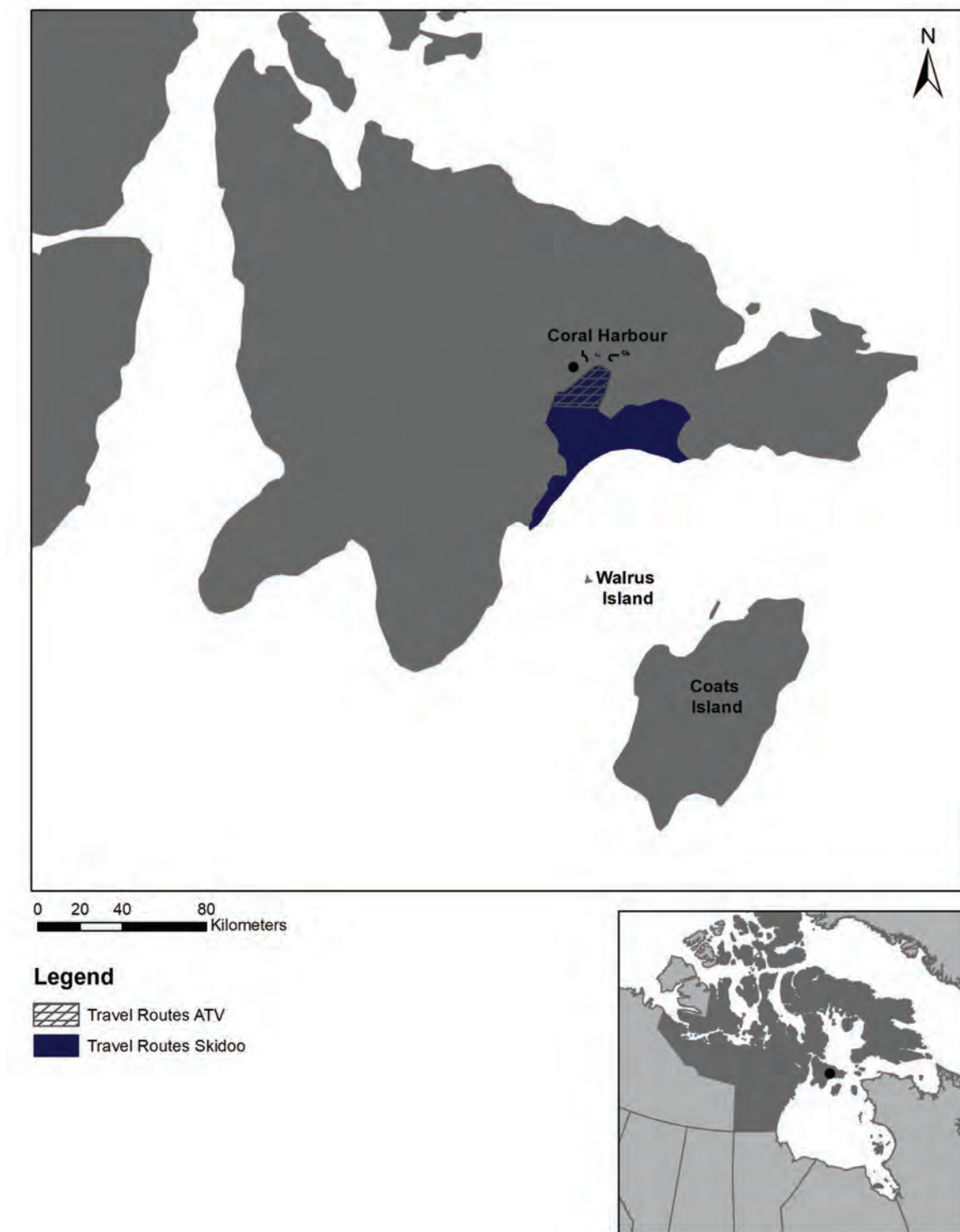


Figure 22. Location of community members' activities when the ocean is frozen



Figure 23. Location and behavioural activities of wildlife when the ocean is frozen

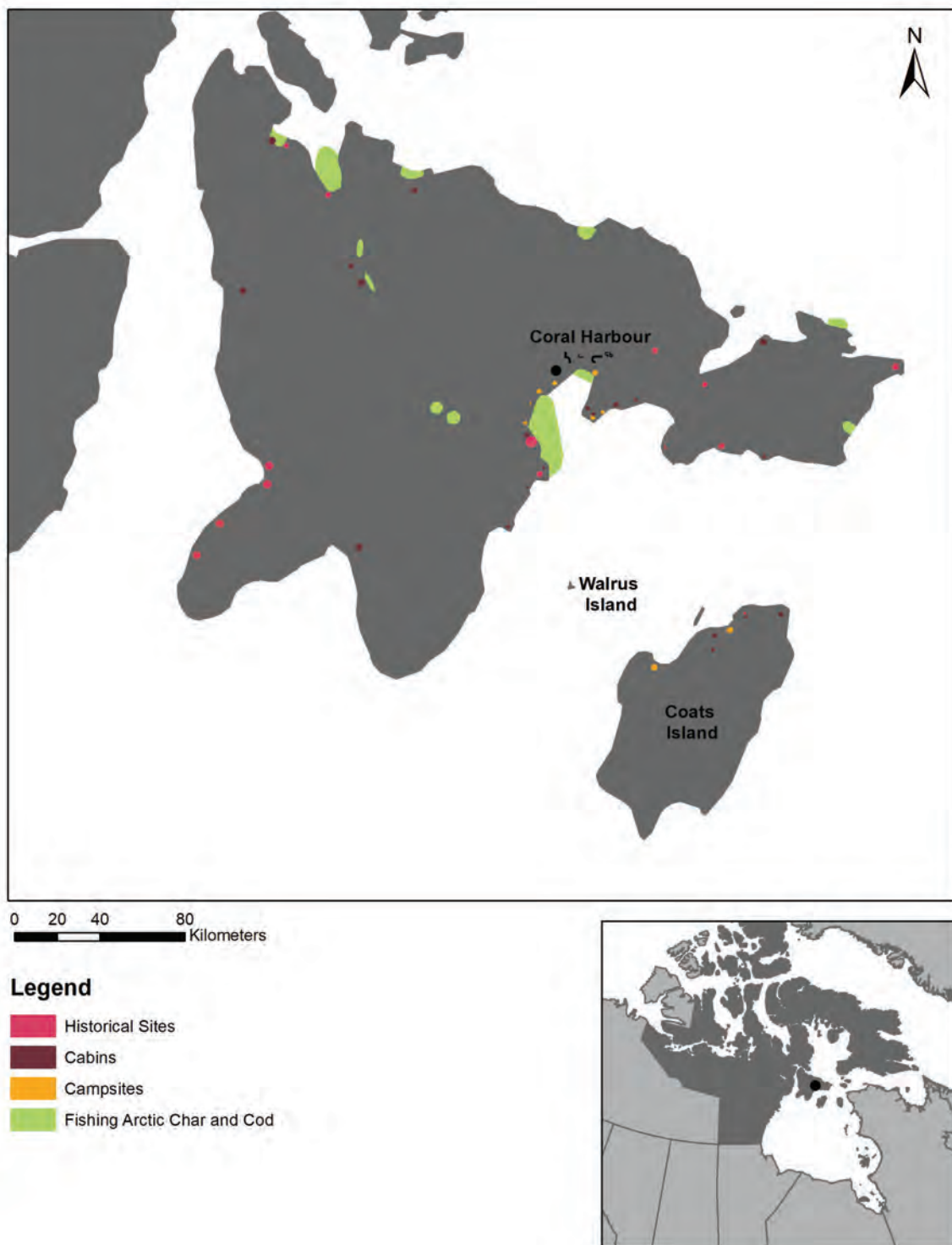


Figure 24. Location of community members' activities year-round



POTENTIAL IMPACT OF MARINE VESSELS

There are benefits to marine shipping and also related challenges. Ships are needed to deliver supplies and without them community members would need to move elsewhere. Delivery of materials and equipment by sea is less expensive than by air. Sealift has little impact on sea mammals due to the low number of sealift ships. Mine-related ships are a concern, and the increase of mine-related traffic is like an invasion through hunting grounds. Mine-related ships make more noise than other

types of ships. For some people on small boats it is a comfort and a relief to see a big ship nearby because help is not far away if needed. For other people on small boats, for instance hunters, it can be upsetting to see a big ship nearby.

Marine vessels using the Low Impact Shipping Corridors may impact wildlife. Related recommendations are provided.

Table 1. Potential impacts of marine vessels using the Low Impact Shipping Corridors on wildlife, and related recommendations

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
The animals are the community's first priority and their lifeline; without them the community would have to move somewhere else. With more shipping activity, less animals are seen which is upsetting. Even when far away, ships are disturbing Southampton Island.	<ul style="list-style-type: none">• Only ships that are going to Coral Harbour to provide essential services (for example re-supply, Canadian Coast Guard) should use the corridor between Southampton Island and Coats Island (Figure 25). It should be a no-go zone for all other ships including mine-related, cruise, and re-supply vessels going to other communities.• The area around Walrus Island, Uplikuluk, and Qaaluktaa and Bencas Island should be a no-go zone (Figure 25).• The waves and current are dangerous at times. Sometimes going south of Coats Island is not as safe as going between Southampton Island and Coats Island. Ships could call in to a (not yet existent) radio station on Coats Island to ask if the conditions will allow safe travel. If conditions are good, they should use the corridor south of Coats Island, in order to respect Inuit.• These proposed changes may cost ships more time and money. Not much time would be lost by ships though, and they can afford it.• All corridors should be 50 miles (80 km) from shore, except those coming into Coral Harbour and those where it is too narrow.• Re-supply ships should combine efforts, and be more efficient and organized i.e., drop off everything in one trip. It would be cheaper to come with one full ship. Fuel efficiency would improve so costs would decrease.
Sound is much louder underwater for marine mammals. Noise from ships and local boats disturbs wildlife. Ship motors and seismic testing for oil may damage the hearing of mammals and affect the entire food chain. Ships are even louder when going through ice.	<ul style="list-style-type: none">• With fewer ships there is less noise. Reduce the number of ships and trips made in order to reduce overall noise.• Build quieter ships.• Continue to use and improve quieter, efficient propellers.



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

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
<p>Walrus are community members’ main concern. Walrus feed in ocean currents. The shipping corridor goes through 3 feeding areas (Figure 25). The corridor between Southampton Island and Coats Island is used by walrus for breeding and migration. Fewer walrus are seen today than in the past. They have abandoned some areas and moved to new areas because ships are passing through their migration, feeding, and breeding area. If walrus migrate and abandon their haul outs it will be harder to harvest them, and will cost more money (gas) and time.</p>	<ul style="list-style-type: none"> • See above recommendations and Figure 25. • Walrus migrate to Nottingham Island. Baseline information (Inuit knowledge and scientific knowledge) about where else walrus migrate is needed so that community members can understand any changes that happen.
<p>Polar bears eat walrus which means polar bears are being affected by shipping as well. Ships might impact polar bear behaviour, which might explain why bears are closer to town, which may lead to a potential tragedy. Climate change is a big factor; bears are not able to fully hibernate, which causes them to wander around and come into the community during fall time.</p>	<ul style="list-style-type: none"> • See above recommendations and Figure 25.
<p>Beluga whales used to go right into the harbour, and the inlet river but no longer do because there is too much marine traffic. Aluminum boats and over-hunting are the reason this happened.</p>	<ul style="list-style-type: none"> • No recommendation was made at this time.





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

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
Seals and bearded seals used to be visible close to the community. Community members are not seeing as many ringed seals and harp seals anymore. There used to be thousands and now there are only a few hundred. They have moved to new areas. There are hardly any seal pups anymore. Traditionally, there were seasons for hunting and now it is a free-for-all. Over-hunting is the reason this happened.	No recommendation was made at this time.
Fewer thick-billed murres and black guillemots are seen than in the past. They have abandoned some areas and moved to new areas. Changing weather may also be causing the decrease in bird numbers. Thick-billed murres and black guillemots' food source (cod) is being affected by shipping. These days the birds stay on the ocean longer and spend less time feeding their chicks.	<ul style="list-style-type: none"> • See Figure 25. • Conduct research about the impact of noise on thick-billed murres and other shoreline and sea birds, and compare to previous studies done by Gaston and Gilchrist to see how the numbers have changed. • Bird biologists share their results in Coral Harbour, but sometimes people do not hear about it. A wider audience could be reached by sharing results on Facebook.





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

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
If ships are re-routing to the corridor south of Coats Island it may push sea mammals toward Coral Harbour, or further into Hudson Bay, where no one from Coral Harbour hunts.	<ul style="list-style-type: none"> • No recommendation was documented at this time.
Cruise ships and yachts are not communicating that they will be visiting Coats or Walrus Island where they anchor to watch walruses. Kivalliq Inuit Association tells the community when cruise ships will be coming to Coral Harbour but the community is not included in decision-making about permits.	<ul style="list-style-type: none"> • Involve the community in deciding if cruise ships should come to Coral Harbour. • Inform the community if cruise ships and/or pleasure craft will be in the area and at Walrus Island and Coats Island. • Ideally, cruise ships and pleasure craft should not go to Walrus Island or Coats Island. They are driving walruses away. Everyone will lose if there are no more walruses. • Cruise ships and pleasure craft should have a permit to pass through the route between Coats Island and Southampton Island. • Local outfitters will be able to hunt at Walrus Island and Coats Island, and members of other communities will be able to pass by in small boats. • Walrus Island, Coats Island and Native Point should be protected areas, and visitors should be required to have permits to visit. • Native Point requires protection as it is a shallow feeding area for walruses.





Marine vessels using the Low Impact Shipping Corridors may impact community members. Related recommendations are provided.

Table 2. Potential impacts of marine vessels using the Low Impact Shipping Corridors on community members, and related recommendations

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
<ul style="list-style-type: none"> • With fewer seals and walrus nearby due to shipping there will be fewer sales of seal skins and walrus tusks (ivory) for carvers. These are important sources of income. • It is becoming harder for community members to find the animals, and harder to hunt. Hunters have to go much farther than before. It costs more money, takes more time, and sometimes the weather makes it dangerous. • Hunters spend money on gas but may come home with nothing. It is increasingly expensive to put country food on the table. • The supply of country food is dwindling. Harvesting walrus is very important to the community; around 40 are harvested per year. • With just one bullet, hunters can have 1000 pounds of meat to share. One walrus can feed a lot of people (15 families) inexpensively. Store-bought food is much more expensive. • People love to eat sea mammals including fermented walrus meat, and organs. Belugas are hunted full-time every day in the fall time. • The community has more people to feed every year. They want the next generation to be able to eat country food too. It is their diet and their culture, and the community does not want it to disappear. • Country food is more nutritious than store-bought, so people’s health will suffer if there is less country food available. 	<ul style="list-style-type: none"> • Only ships that are going to Coral Harbour to provide essential services (for example re-supply, Canadian Coast Guard) should use the corridor between Southampton Island and Coats Island (Figure 25). It should be a no-go zone for all other ships including mining-related, cruise, and re-supply vessels going to other communities. • The area around Walrus Island, Uplikuluk, and Qaaluktaaq and Bencas Island should be a no-go zone (Figure 25).



Table 2 (continued). Potential impacts of marine vessels using the Low Impact Shipping Corridors on community members, and related recommendations

POTENTIAL IMPACT OF MARINE VESSELS	RELATED RECOMMENDATION
It is uncomfortable for hunters to hunt when tourists are around. Photographers disturb walrus and earn income from photos of Walrus Island; but only the local people who go there with photographers benefit.	Ideally, cruise ships and yachts should not go to Walrus Island or Coats Island. They are driving walrus away. Everyone will lose if there are no more walrus.
<p>If ships (icebreakers) were to break sea ice when hunters are travelling on the ice, it would be harder for hunters to get home.</p> <p>Walrus lie on the ice, so icebreaking would affect them.</p> <p>Ships that come in later than planned might get stuck in the ice. Ships are louder in ice than in water.</p>	Ships should avoid coming so late. They should arrive and leave while there is open water and no ice. There is too much noise and ice when they come late.
People travel back and forth to Coats Island to hunt caribou and guide sport hunters. Ecotourism opportunities also exist. Outfitters have speed boats and if it is foggy a collision could happen.	Install a communication station on Coats Island so that local boaters can access up-to-date, accurate weather data.
Shipping companies that carry mining products, and cruise ship companies, make money but there are no financial benefits from those types of ships for community members. Only a handful of Coral Harbour residents work on ships, so ships do not increase employment opportunities. Ships only pass by.	Increase opportunities for community members to work on ships. Ship operators are making money coming into these waters and the community should be able to get some employment (for example unloading sea cans to shore).
A fuel spill could happen. The biggest risk is when fuel is transferred from the tanker to shore. There are clean-up kits in Coral Harbour for spills on land; but not for spills on water. Ships might also dump garbage and bilge water.	<ul style="list-style-type: none"> • Have clean up kits for off-shore spills in every town. Coral Harbour residents would not be able to do much if an off-shore spill occurred. • Communicate with Coral Harbour residents about 1) the regulations surrounding ships, including cruise ships, dumping garbage and bilge water in the ocean; and 2) what compensation and assistance would be provided to Coral Harbour residents if any shipping damages occurred.



MAPS OF RECOMMENDATIONS FOR THE LOW IMPACT SHIPPING CORRIDORS

Maps include:

- Preferred routes for community re-supply
- A recommended route for all non-essential services
- Areas to avoid
- Potential dock and camera locations

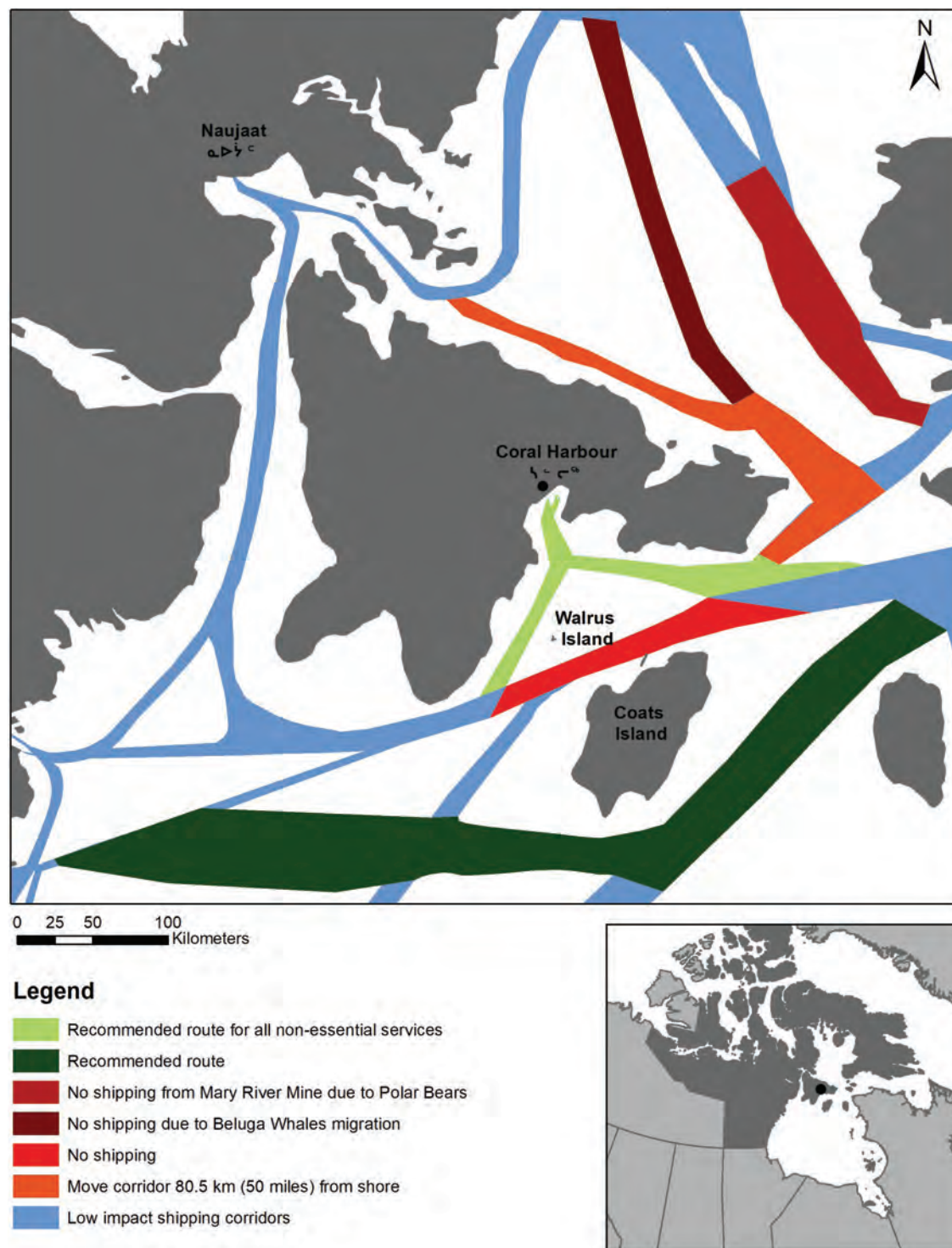


Figure 25. Recommendations for Low Impact Shipping Corridors

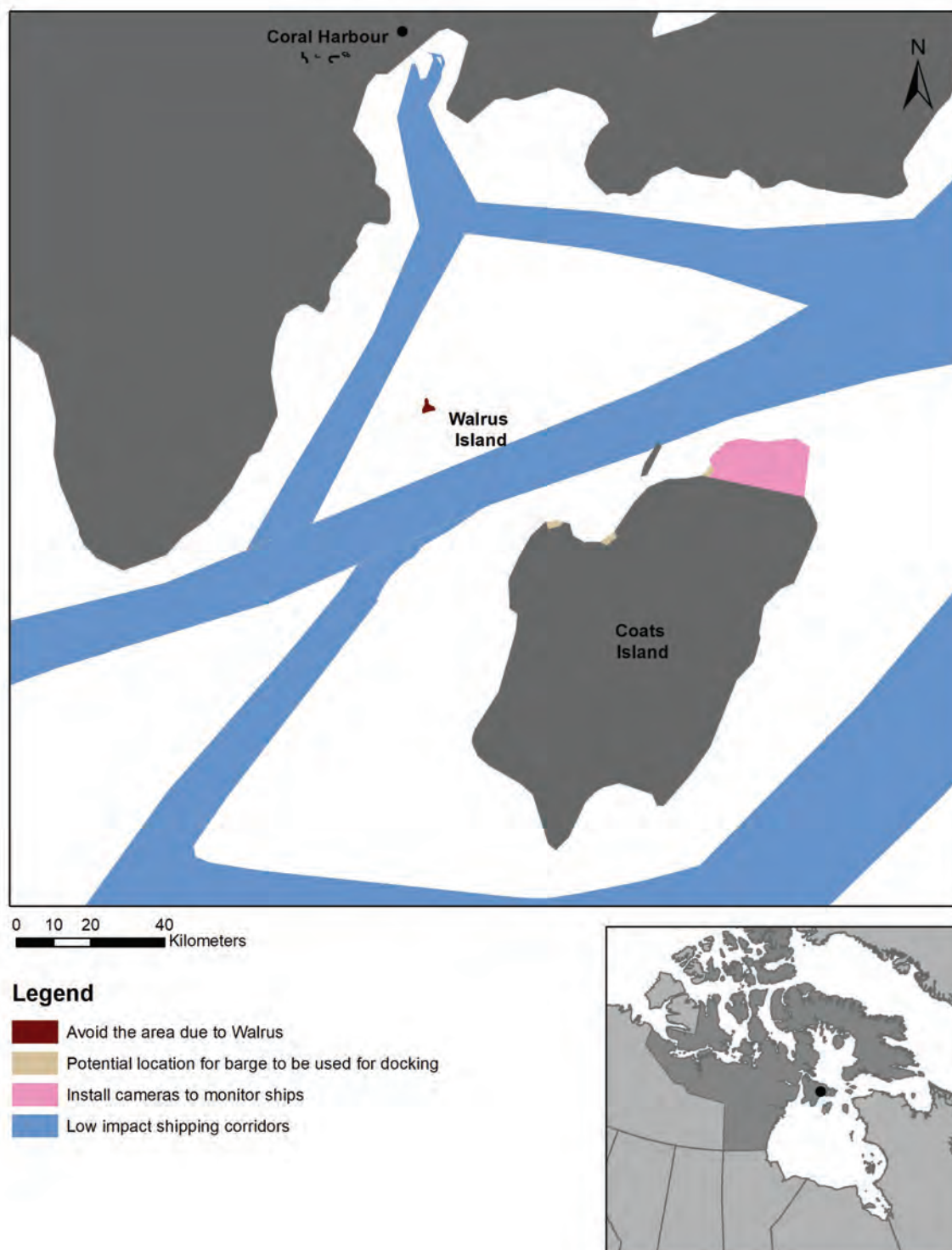


Figure 26. Recommendations for Low Impact Shipping Corridors near Coats Island



RECOMMENDATIONS FOR ENHANCED COMMUNICATION

1. Several years ago, Coral Harbour was consulted about the eastern route past Baffin (Figure 25). No information has been shared with the community about the outcome of those consultations and if that route is being used. Coral Harbour residents want to know.
2. The community has informed Kivalliq Inuit Association (KIA) that they want mining ships to travel south of Coats Island, instead of between Southampton Island and Coats Island (Figure 25). The community has asked them for help but KIA can only help with cruise ships. They authorize the cruise ships to come to Coral Harbour. They are ignoring the community's concerns.
3. Community members informed Agnico Eagle Mines to travel south of Coats Island instead of between Southampton Island and Coats Island (Figure 25), but they have not done so.
4. Transport Canada is never in the community but they mandate the routes ships take (land must be visible to ships). Land is visible south of Coats Island too and Mansel Island is also there so using the corridor south of Coats Island instead of between Southampton Island and Coats Island (Figure 25) should be a viable route.
5. All of the organizations who have heard the concerns and recommendations in this report should lobby Transport Canada, Canadian Coast Guard, and Canadian Hydrographic Service to change these corridors and re-route ships as described in this report.
6. Provide local boaters with VHF radios so that in emergencies, they can contact the Canadian Coast Guard on Channel 16.
7. As a good-will gesture, if ship companies would build a dock or drop off a barge at Coats Island, with a bulldozer, it would be good for local boaters and big ships during bad storms and emergencies (safe harbour).

RECOMMENDATIONS FOR MONITORING

1. The Department of Fisheries and Oceans (DFO) installed 10 cameras on Walrus Island in 2017. It is unknown if the cameras were there or operational in 2018 as well. The community needs more cameras in key locations (Figure 26). Nunavut Tunngavik Incorporated (NTI) hopes to install more cameras in summer 2019 as part of the Inuit Marine Monitoring Program.
2. It would be useful and should be mandatory for ships to report wildlife sightings and which way wildlife are heading.
3. People from Coral Harbour should be onboard ships as wildlife monitors.



CONCLUSION

The number of marine vessels in Canadian Arctic waters continues to grow overall.¹ Coral Harbour has experienced a significant increase in vessel traffic in recent decades.¹ This study has documented that the marine areas that are most significant to community members' subsistence harvesting and livelihood activities, are located exactly where ship traffic has increased. Given community members' concerns about this attention and growth, and its implications for the ecology, environment, and Inuit way of life, the perspectives of Coral Harbour community members and all communities, should be a fundamental consideration during the implementation and management of the Low Impact Shipping Corridors. The consequences of a marine incident, and the loss of walrus in the marine areas accessed by Coral

Harbour residents would have deep, lasting, and potentially irreversible ecological, environmental, and cultural impacts. Combining scientific knowledge and Inuit knowledge will provide the most effective approach for pro-active vessel management through a corridors approach. Infusing Inuit and Northerners' voices in the continued development of the Low Impact Shipping Corridors is critical to ensuring safe marine transportation near Coral Harbour, Nunavut and throughout the Canadian Arctic.

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>.

