

Western Hudson Bay and Its Beluga Estuaries:

PROTECTING ABUNDANCE FOR A SUSTAINABLE FUTURE





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CREDITS

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*Western Hudson Bay and Its Beluga Estuaries:
Protecting Abundance for a Sustainable Future*

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Acknowledgment

This report could not have been created without the generous contributions of citizens of Churchill, Arviat and other Hudson Bay communities.

This report greatly benefited from the input and in-kind support of the Churchill Beluga Whale Tour Operators Association.

“The Churchill Beluga Whale Tour Operators Association is a group of independent beluga whale viewing operators who have created a series of voluntary understandings, policies and protocols that protect beluga whales and that educate, inspire and communicate the values of this social marine species in the world.”

“It is our mission to provide guests with an experience through which they can learn about, respect, care for and enjoy marine wildlife and Manitoba and Nunavut coastal environment without causing harm to that environment or its inhabitants.”

<http://cbwtoa.ca>



Credit: Mike Macri

Foreword

An incoming tide and an outgoing current made for steep waves in a 12-foot Zodiac. It was my first trip into Hudson Bay from Churchill and I was following Jack Batstone, Conservation Officer, outfitter and local legend, renowned for his vast knowledge of the Bay. We were running boats up the coast to Seal River, farther up the coast. I was doing my best to keep up with Jack as he confidently climbed the standing waves in his much more sensible aluminium vessel. On the other side of those waves, I finally caught my breath. The sky was an endless blue. The Prince of Wales Fort loomed to our left like a fortress from a fairy tale. And then I saw the belugas, hundreds of white whales surfacing in the dark water, as far as the eye could see. I was awestruck. And I am awestruck still.

Back then, in 2012 we partnered with Fisheries and Oceans Canada and Manitoba Conservation to learn more about beluga habitat use and migration patterns. A hunter from Arviat, Johnny Mamgark, joined the Oceans North team. A lucky hire, at the recommendation of the Arviat Hunters and Trappers Organization, turned into a lifelong friendship. Johnny took us to Hubbard Point, an Inuit hunting site that has been in use for over a thousand years. The monumental features of this magical place, and Johnny's prompting, convinced us to help fund an archaeological dig with the Inuit Heritage Trust and with Dene partners from Tadoule Lake. At Hubbard Point, we found evidence that humans have relied on this incredible beluga whale migration for centuries.

The case for habitat protection in Western Hudson Bay is strong. In the summer, this area is home to the greatest concentration of beluga whales on the planet. Year after year, belugas return from their winter range in Hudson Strait to the estuaries of the Seal, Churchill and Nelson rivers. During this migration, they pass many hamlets – Arviat, Whale Cove, Rankin Inlet and Coral Harbour, to name a few. All depend on the health of the beluga population as a vital food source in a region where store-bought options are deficient.

The bonds between Churchill and the Nunavut communities along Hudson Bay run deep. Health care, transportation, shipping, and family ties bind Churchill and Nunavut. Much like its northern neighbours, Churchill is a community whose resilience and ingenuity mirror the hardiness of the iconic Arctic species that thrive in this region. In the span of a generation, the town has transformed itself into a major international destination for tourism and research. These two economic drivers complement the community's strategic location as Canada's only deepwater port in Hudson Bay and the Arctic.

This report builds on connections – connections between our communities, as well as our connections to a vital marine environment. It's also a call for action. Community members have shown us the outstanding nature of this coast, these estuaries and Hudson Bay as an enduring meeting place of waters, people and wildlife. It is up to us to listen.

-Chris Debicki, Vice-President of Policy Development, Oceans North

Executive Summary

Western Hudson Bay is a globally significant wildlife habitat, home to some of the largest concentrations of beluga whales and polar bears in the world.¹ For most of the year, its rugged shoreline is bound by a platform of sea ice where hundreds of polar bears roam and hunt for seals. As the ice melts, some 55,000 beluga whales (28 per cent of the global population) migrate to the region's major estuaries on the Churchill, Nelson and Seal rivers, to moult, calve, feed and seek protection from predators, while over 170 species of birds nest on its rocky coast.

The opportunity to experience the abundance of these iconic marine mammals in their natural habitat has transformed the Town of Churchill, located at the mouth of the Churchill River, into an international tourist destination, attracting over 10,000 visitors annually.² Accessible by rail, sea and air, the town's close proximity to seasonal habitats makes it the most popular location in the world for viewing polar bears and beluga whales. This biologically rich coastline also features historic and cultural sites from the fur-trade era and ancient Inuit and Indigenous sites. Churchill also features significant infrastructure, including Canada's only deep-water port in the Arctic and the terminus of the Hudson Bay Railway, as well as scientific research centres.

The Government of Canada has committed to protect 10 per cent of Canada's marine and coastal areas by 2020.³ Currently, only slightly more than 1 per cent of Canada's marine areas are protected. That total is expected to climb to almost 3 per cent when the federal government finalizes a conservation area in the Arctic region of Tallurutiup Imanga (formerly known as Lancaster Sound).⁴

This report examines the suitability of Western Hudson Bay as a candidate site for conservation. The report explores both the natural values of this exceptional region as well as the human connections to this ecosystem. The report has been guided by

interviews and consultations with regional stakeholders. A common message emerged – Western Hudson Bay and its estuaries are world treasures. Further, community members across the region emphasize the human connection to this habitat.⁵ Any conservation tools used to protect Western Hudson Bay must also protect the sustainable cultural and economic relationships between local communities and this thriving marine ecosystem.

The national and international benefits from marine conservation of Western Hudson Bay would be significant, including:

- Providing legal protection to and management of a critical ecological marine area and its iconic Arctic wildlife;
- Putting the tools in place to harmonize economically important tourism and port operations while protecting wildlife and their habitats;
- Helping to prepare for the impacts of climate change by providing tools for the monitoring, mitigation and coordinated management of wildlife, tourism and port operations;
- Creating an opportunity to develop and preserve nationally significant Inuit cultural heritage sites and historical fur trade locations;
- Establishing an inclusive management partnership of Indigenous, government and local partners for the long-term management of this unique marine area;
- Making a major contribution toward Canada's marine conservation targets;
- Providing an international example of innovative conservation involving multiple jurisdictions committed to maintaining healthy wildlife habitat and populations, while preserving and involving sustainable human activities.

Marine Conservation should include local benefits:

- **Jobs:** A marine conservation area will require staff, and could include an Indigenous Watchmen program or equivalent. It could also generate scientific and research jobs and construction jobs for new facilities.
- **Capital infrastructure investment:** Responsible federal agencies, including Parks Canada, have been allocated financial resources for marine conservation areas to assist with the creation of docks, wharfs, pathways and other enhancements to ensure visitor safety, in addition to structures and visitor centres.
- **Tourism promotion:** Federal promotion, including the Parks Canada brand on marine activities, brings increased credibility and consumer confidence, and highlights the region's international and national profile.
- **Improved wildlife management and integration with human activity:** A conservation area designation would provide resources to gather important baseline information and support ongoing monitoring studies for the critical species in the region.
- **Strengthened business case for investments in rail service and the Port of Churchill:** More visitor traffic will increase demand for reliable and safe rail service to the Town of Churchill. Shipping routes that are well managed, predictable and environmentally conscious would be of value to shipping companies and increase the attractiveness of the Port of Churchill for the transport of goods.

Discussion of a federal designation will run up against strongly felt concerns about the future of the Hudson Bay Railway and the deep-water port.⁶ While the establishment of a conservation area can proceed independently, there are issues that overlap, particularly around tourist access and shipping. The continuation of an affordable passenger rail service facilitates access for the public to learn first-hand about Arctic wildlife and supports small tour operators that attract independent and budget-minded travellers, including students and youth.

The business operations of the port will also derive benefits from reliable freight rail service, and an adaptive management structure would enhance operations by establishing shipping corridors that provide safe and environmentally sensitive passage. These flexible corridors could be designed in consultation with shipping companies to enhance the safety of ships, local boat operators, tourists, wildlife and habitat in the face of changing ice conditions.

DESIGNATION – NATIONAL MARINE CONSERVATION AREA:

There are three principal options under federal law for the creation of a marine protected area (MPA). An MPA can be (1) created under s.35 of the Oceans Act; (2) created as a protected marine area under the terms of the Canada Wildlife Act; (3) established as a national marine conservation area (NMCA) under the Canada National Marine Conservation Areas Act. A marine area may also be protected as a migratory bird sanctuary, national wildlife area or national park.

We conclude that the NMCA framework best meets the needs and aspirations of this region and its communities in balancing world-class conservation and community connectedness. In short, an NMCA provides a platform for community participation, benefit agreements and economic development while also ensuring that management tools are in place to safeguard this habitat for future generations.

GOING FORWARD:

To meet its own 2020 deadline, the Government of Canada needs to immediately take steps to engage local government partners in the study, design and establishment of a marine conservation area. This review finds that while much needs to be done to inform and bring local partners on board, focused and energetic federal leadership would create the mechanisms for participation and foster ongoing discussions.

Such a process would bring together diverse stakeholders and Indigenous partners to consider the benefits of the NMCA designation and its suitability for the area.

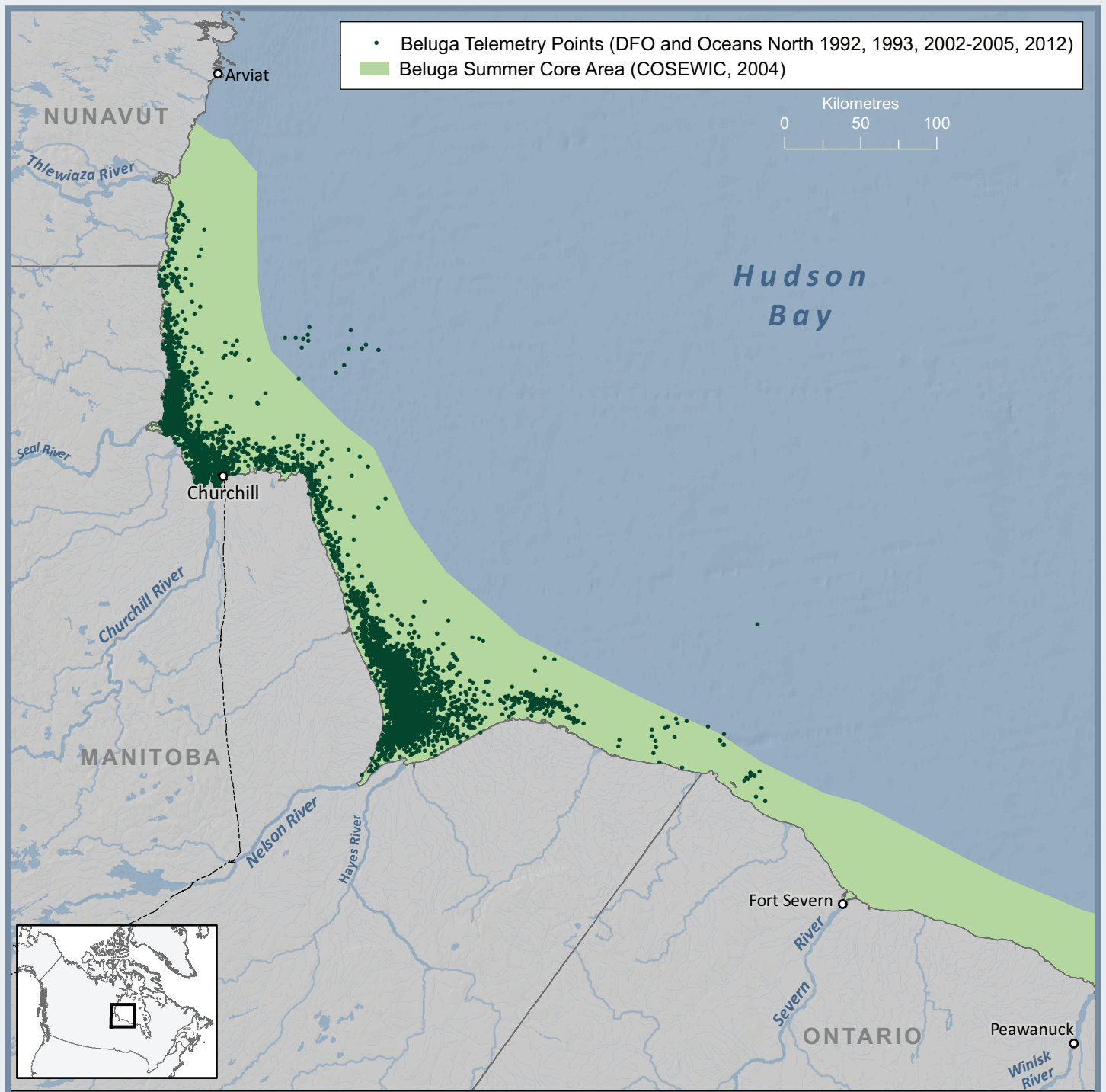


Figure 1. Western Hudson Bay beluga summer core area (COSEWIC, 2004) and August satellite telemetry data from 7 years of data between 1993-2015 (DFO and Oceans North)

Report Recommendations

These recommendations will help advance and establish an National Marine Conservation Area in Western Hudson Bay in order to protect and manage this globally significant wildlife habitat based on science, traditional knowledge, local knowledge and participation while affirming Indigenous rights.

The report suggests that the Government of Canada, represented by Parks Canada, immediately take steps to:

1. *Develop and implement a critical path to establish an NMCA in Western Hudson Bay by 2020.*
2. *Engage the governments of the Town of Churchill, Manitoba, Ontario, Nunavut, Inuit organizations and regional First Nations*, as well as industry and other non-governmental organizations to promote the benefits of an NMCA and obtain their participation in its development.
3. *Establish a steering committee to guide a formal feasibility assessment for an NMCA.* This committee should include key contributors including governments, Indigenous partners and local stakeholders.
4. *Consult relevant partners and stakeholders on options for the boundaries of the NMCA, including an option to extend the boundaries beyond the river estuaries in Manitoba to encompass the connected beluga whale summering areas in Nunavut and Ontario.* Extending the boundaries in this way could add 1 per cent more area toward the federal target of 10 per cent protection of Canada's marine areas by 2020.
5. *Conduct an infrastructure assessment for the NMCA in consultation with the Town of Churchill and other stakeholders.* This could include new/upgraded docks, wharfs, moorings, secure pathways, additional Parks Canada visitor centres, general access and facilities at national historic sites.
6. *Commission a tourism market study as a basis for developing a long-term tourism industry strategy*, in consultation with partners and stakeholders, that complements and promotes the new NMCA designation.
7. *Gather the knowledge and experience of local tour operators' observations about tours and visitors* and engage tour operators in management of the marine and coastal habitat.
8. *Consult and work with regional Indigenous organizations* to ensure the protection of their harvesting rights in the conservation area and the fulfillment of relevant land claims agreements.
9. *Determine the amount of federal investment required for an NMCA in Western Hudson Bay that takes into account:*
 - the unique ecological features that support the exceptional concentrations of beluga whales, polar bears and sea bird populations;
 - the potential to further develop the profile of the area as an international tourist destination and the resulting economic and tax benefits;
 - the value of hiring more staff and building new visitor centres to enhance visitor experiences;
 - the existing capacity of tour operators and the value of creating customized certified training programs as well as improving tourism-related infrastructure;
 - the need to coordinate programming at Wapusk National Park, surrounding national historic sites, along with provincial wildlife managements areas and parks;
 - the cultural heritage of the area for Inuit, Dene, Cree and Metis Indigenous peoples and the potential to preserve and make it accessible to the public, including through the employment of Indigenous guides and stewards;
 - the challenges of travel to the remote region, including the lack of road access and the role played by rail passenger service in supporting affordable access to the area, and;
 - the opportunity to support and utilize scientific research and educational programming undertaken at the Churchill Northern Studies Centre and new Churchill Marine Observatory.

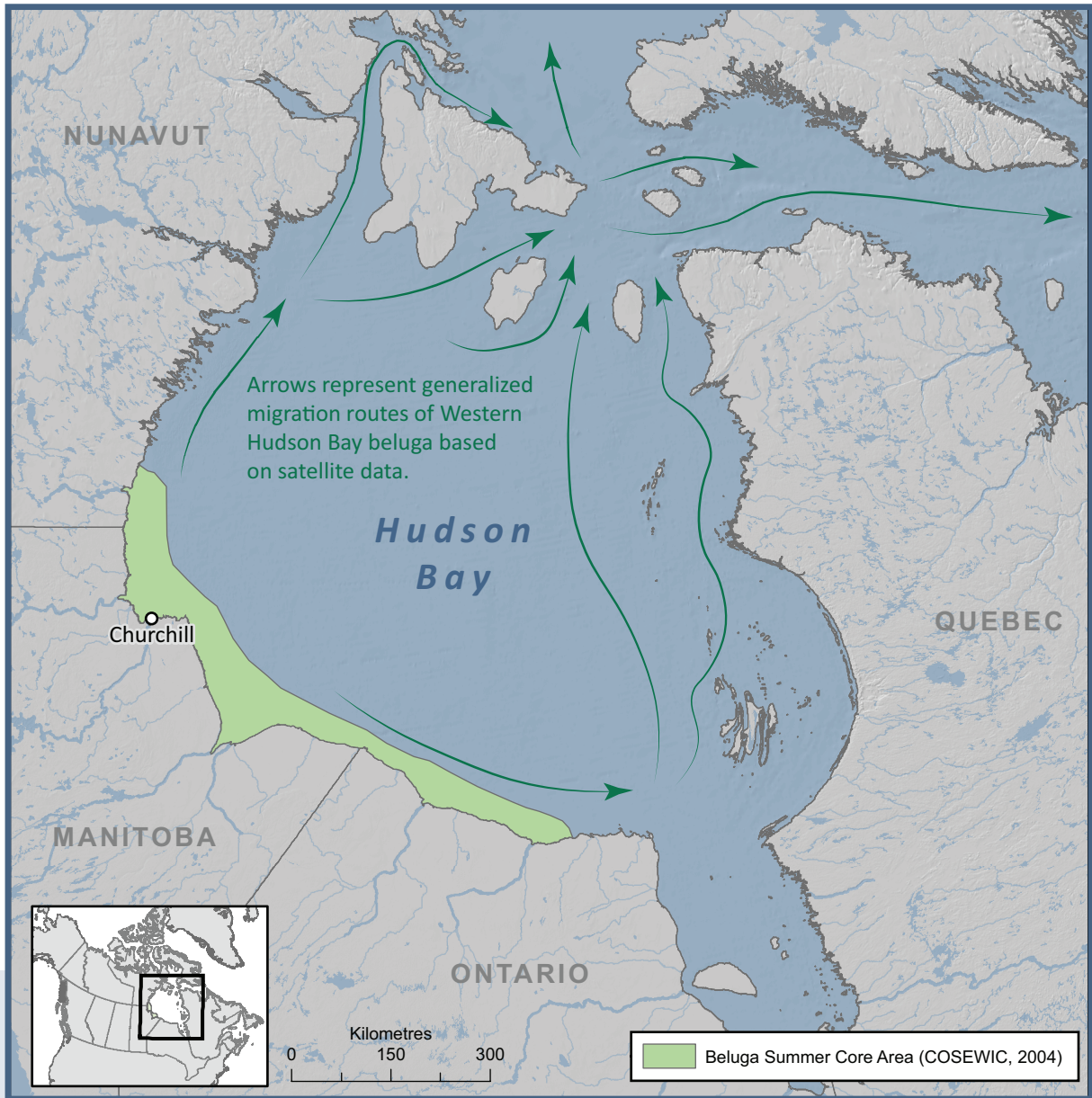


Figure 2. High density areas for belugas in Hudson Bay and known migration routes

Introduction

Canada's Marine Conservation Targets

In 2015, the new federal government announced its goal to meet the international commitment to protect marine and coastal areas by increasing the number of areas that are protected from the current 1 per cent to 10 per cent by 2020. The Prime Minister renewed this commitment in 2016, adding a commitment to “go beyond” the national targets in the Arctic and Arctic marine areas.⁷ The federal government’s plan to meet these targets identifies legislative and policy tools to achieve marine protected areas. These include the Oceans Act and other means of establishing marine protected areas, national wildlife areas and national marine conservation areas.⁸



Credit: Build Films



Credit: Frontiers North Adventures



Credit: Sam Hearnel/Travel Manitoba

National Marine Conservation Area (NMCA) Program

The 2017 federal budget prioritized the Western Hudson Bay (Churchill and Nelson rivers) for assessment as a marine protected area under the NMCA program.⁹ This goal was reaffirmed in a subsequent letter from the Minister of Environment and Climate Change.¹⁰

The NMCA designation is “for the purpose of protecting and conserving representative marine areas for the benefit, education and enjoyment of the people of Canada and the world”¹¹ and extends to marine ecosystems many of the protections previously afforded to land under the Canada National Parks Act. An NMCA designation covers larger areas, allows for flexibility of operations and is generally regarded as a superior tool for promoting and managing tourism in spatial protected areas.¹²

Activities such as ocean dumping, undersea mining and oil and gas exploration and development are completely prohibited. Harvesting of wildlife and fish are permitted but are managed using ecosystem-based conservation. Traditional harvesting rights are respected. Furthermore, the government is committed to adopting the precautionary principle in the conservation and management of the marine environment.¹³ An area designated as an NMCA includes the seabed and water column above it and may also include wetlands, estuaries, islands and other coastal lands.¹⁴

WHY AN NMCA?

An NMCA is designed to promote the ecologically sustainable use of marine areas by harmonizing conservation practices with human activities, including shipping and tourism. A significant benefit of the NMCA designation is the requirement for local support along with a collaborative management approach. This includes a management plan and a management advisory committee to advise the minister of the formulation, review and implementation of the NMCA.

This structure provides the flexibility and resources that are ideal for the Churchill region, an area that combines critical habitat for globally significant wildlife with well-established human activities. The designation also offers federal investment and co-management with local partners to ensure sustainable integration with human activities, including tourism, shipping, town life and scientific research. Further, established and future commercial and recreational activities that may be unique to individual areas (e.g., beluga and floe-edge tours) are allowed under an NMCA designation.

KEY FEATURES OF NMCAS:

- A type of marine protected area with conservation and economic benefits administered by Parks Canada under the Canada National Marine Conservation Areas Act and managed collaboratively with others.
- Protect and conserve areas representative of Canada's marine and Great Lakes environments for the benefit, education and enjoyment of Canadians.
- Multi-use areas which balance protection and sustainable use through management as well as zoning.
- Mineral and hydrocarbon exploration and development are prohibited.
- Ocean dumping (i.e. disposal of any substance in the waters of an NMCA) is prohibited under the Canada National Marine Conservation Areas Act except in special circumstances.
- Traditional harvesting rights are not affected.
- Must be zoned, including zones which fully protect special features and sensitive elements of ecosystems and zones where the ecologically sustainable use of renewable marine resources may occur.
- Commercial uses are permitted, so long as they are ecologically sustainable, including fishing and shipping but they may be prohibited in the special protection zones which must be put into place in each NMCA.
- Fisheries and Oceans Canada and Transport Canada continue to regulate fishing and marine transportation activities, in keeping with the purpose of NMCAs and the specific conservation objectives of each NMCA.
- Local support and continued involvement in management is essential.

(Excerpted from: Parks Canada. (2017). *A National Marine Conservation Area Proposal for Lancaster Sound – Feasibility Assessment Report*, p. 16.)

Full report available on request at:

<https://www.pc.gc.ca/en/amnc-nmca/cnamnc-cnnmca/lancaster/rapport-report>

LOCAL BENEFITS OF AN NMCA IN WESTERN HUDSON BAY

Jobs: Influenced by the growth in visitor traffic, it is expected that Parks Canada will initially require an estimated six to 12 permanent and seasonal staff to manage new marine visitor centre(s), develop and deliver new interpretive programming, conduct wildlife monitoring and management, enhance visitor services and safety at historic and cultural sites in the Churchill region and meet administrative needs for these new services and programs. Other local employment could include an Indigenous Watchmen program, including interpretive roles at the Inuit/Thule cultural sites at Hubbard Point and Seahorse Gully Remains National Historic Site. The case for scientific and research jobs would be bolstered by the need for baseline studies for the NMCA feasibility study and ongoing ecological and wildlife monitoring. Construction jobs would be created by infrastructure enhancements.

Capital infrastructure investment: Parks Canada has been allocated financial resources to enhance NMCAs with docks, wharfs, pathways and improvements for visitor safety, in addition to structures such as a new or expanded visitor centre.¹⁵ Support could also be sought from Transport Canada under the newly established Marine Infrastructure in Northern Communities Initiative.¹⁶

Tourism promotion: The NMCA designation would present a permanent investment by Parks Canada. Once an area is listed as an NMCA, it cannot be downgraded without legislative action. The Parks Canada brand brings increased credibility and consumer confidence. An increased national and international profile will build on the existing multi-million dollar tourist industry in Churchill.¹⁷

Improved wildlife management and integration with human activity: An NMCA designation would provide resources to gather important baseline information and support ongoing monitoring of the critical species in the region. The incorporation of scientific as well as local and traditional knowledge that is required under an NMCA designation will capitalize on the strengths of all knowledge bases to ensure the sustainability of both wildlife and the human

activities that depend on healthy ecosystems. An NMCA requires designation of different zones of activity. This could help protect the areas of sensitive habitat and ecology, while facilitating human activities such as tourism, shipping and sustainable use of renewable marine resources.

Strengthened business case for investments in rail service and the Port of Churchill: Increased visitor traffic will increase demand for reliable and safe rail service to the Town of Churchill, which has historically been the more affordable transportation option for tourists seeking to view and learn more about its iconic wildlife. Shipping routes that are well-managed, predictable and environmentally conscious would be of value to shipping companies and increase the attractiveness of the Port of Churchill for the transport of goods.

NMCA MANAGEMENT PLAN

An NMCA requires a management plan aimed at protecting the ecosystem(s) and managing the permitted human use of the area. This plan must be developed in consultation with relevant partners via a management advisory committee. An interim plan is developed in the assessment stage and a final plan is approved within five years of establishment.¹⁸ The management plan provides guidance about the day-to-day administration and use of the area, and requires regular consultation with resource users and residents, ensuring respect for Indigenous cultural uses.



Credit: Mike Macri



Credit: Danita Delimont



Credit: Paul Souders

Description of the Area

Ecological Features

Western Hudson Bay is a conduit for fresh water flowing from its estuaries into the Arctic Ocean. The estuaries act as arteries connecting much of Canada's southern landmass to its northern seas. The Seal, Churchill and Nelson rivers are key freshwater inputs into Hudson Bay, which receives 30 per cent of Canada's freshwater flow. Hudson Bay in turn contributes 20 per cent of the Arctic Ocean's freshwater.¹⁹ Large estuaries feature extensive low-lying marshes and coastal plains with wide tidal mudflats that provide a seasonal home for an incredible range of both Arctic and sub-Arctic species. The Nelson, Churchill and Seal rivers significantly shape this coastal landscape and provide an ideal habitat for the world's largest congregation of beluga whales and polar bears. The region constitutes the extreme southern range of iconic Arctic marine mammals.²⁰

Over 170 species of migratory birds arrive every year to nest and feed in its vast salt marshes and eelgrass meadows, which provide some protection from the ravens, Arctic foxes, gulls and jaegers that depend on them for food. These birds raise their young amongst waters that host approximately 60 species of fish, including Arctic cod, Arctic char and whitefish, which all play important roles in the food chain. No commercial fishing occurs in this region.

It is no surprise that the area has been identified by the Department of Fisheries and Oceans Canada as an ecologically or biologically significant area (EBSA), a designation that underlines the need for appropriate management. The chart on the opposite page identifies key aspects used to determine the significance of the area.



BELUGA WHALE (*DELPHINAPTERUS LEUCAS*)

QILALUGAQ IN INUKTUT

- Up to 5 m in length and weigh up to 1,500 kg
- Lifespan of 60–70 years
- Females give birth to a single calf every two to three years
- Born pink or brown, turn dark grey and gradually white as they reach maturity
- Varied diet of small fish and crustaceans such as Arctic Cod, capelin, and shrimp
- Use sound and echolocation to communicate, navigate, and search for food
- Migration occurs seasonally with animals generally moving toward estuaries and open water in summer, foraging grounds in fall, and mobile pack ice for the winter
- Considered to be highly sensitive to climatic changes and changing ice conditions due to their preference for dense pack ice in winter
- Most recent global population estimate is near 200,000
- Western Hudson Bay is home to the largest summer population of belugas in the world, estimated at 55,000

Beluga Illustration: Ann Sanderson

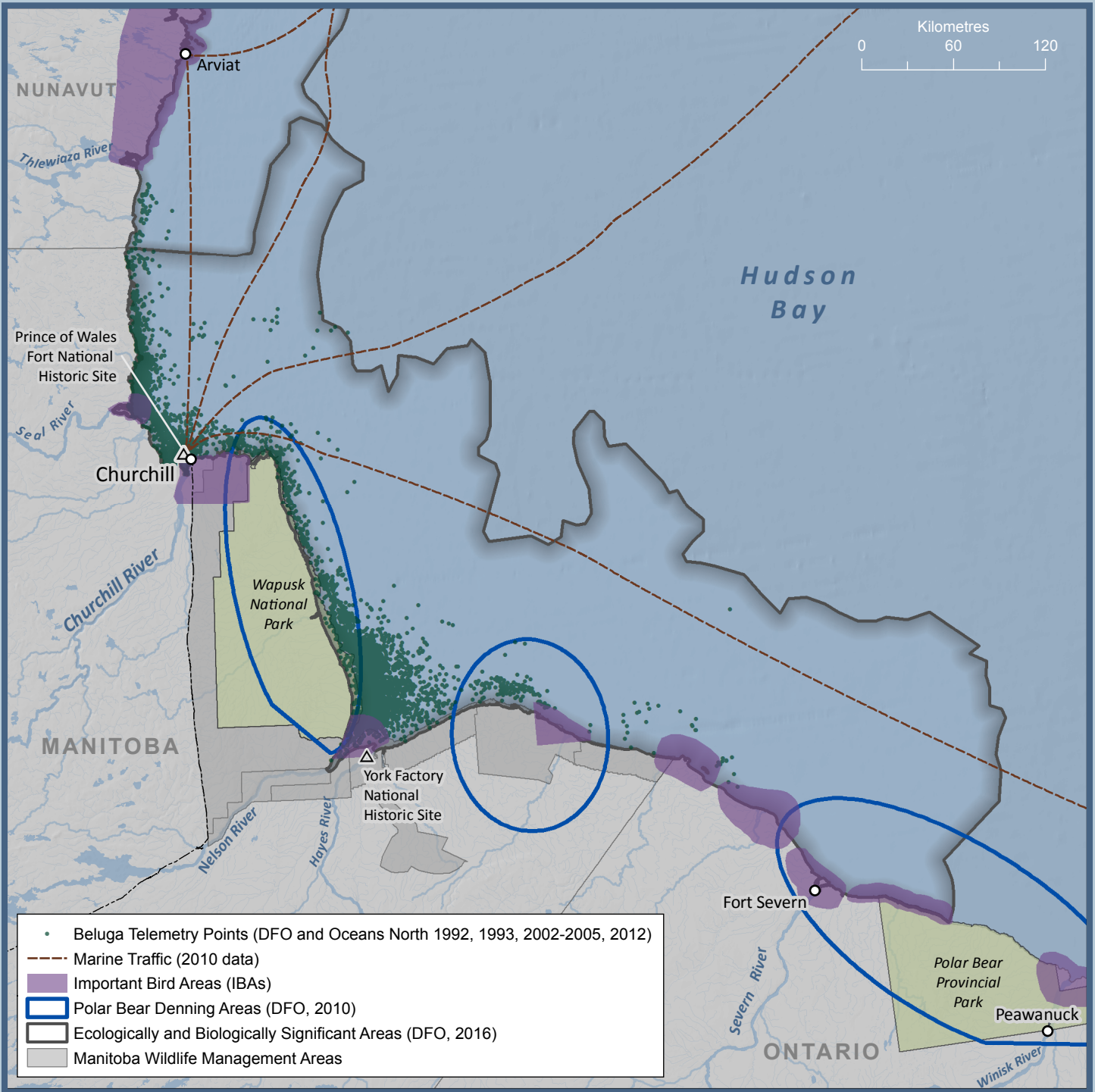


Figure 3. Western Hudson Bay

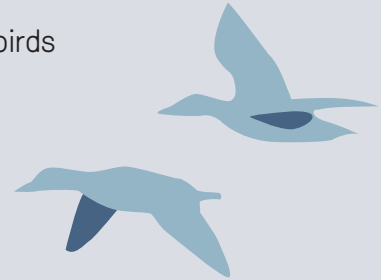
EBSA	Physical Features	Uniqueness	Aggregation	Fitness Consequences	Rare or Endangered Species	Level of Confidence	Heterogeneity of the EBSA
1.7 Southwestern Hudson Bay Estuaries	Three estuaries (Churchill, Nelson and Seal rivers)	World's largest summering Beluga aggregation Harbour Seals	Beluga aggregation Polar Bear denning, feeding and rearing High benthic diversity and production	Polar Bear denning and feeding Beluga aggregation High food supply for benthos	Western Hudson Bay Beluga Ross's Gull Western Hudson Bay Polar Bear (Threatened under Province of Manitoba)	High	No distinct areas

Figure 3a. Ecologically and Biologically Significant Areas 1.7

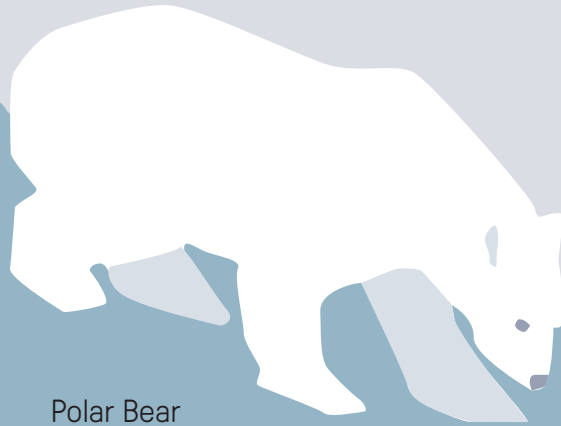
BIRDS

Seasoned bird researchers and enthusiasts know that Churchill is the place to visit to see millions of migratory geese and shorebirds that feed and breed in the nutrient-rich coastal salt marshes and productive eel grass in the summer. One hundred and seventy species of birds can be found in the region, including birds that are hard to spot anywhere else. Ducks and geese provide an important subsistence harvest for local Indigenous peoples.²¹

Seabirds



Polar Bear
URSUS MARITIMUS



Ringed Seal
PUSA HISPIDA



POLAR BEARS

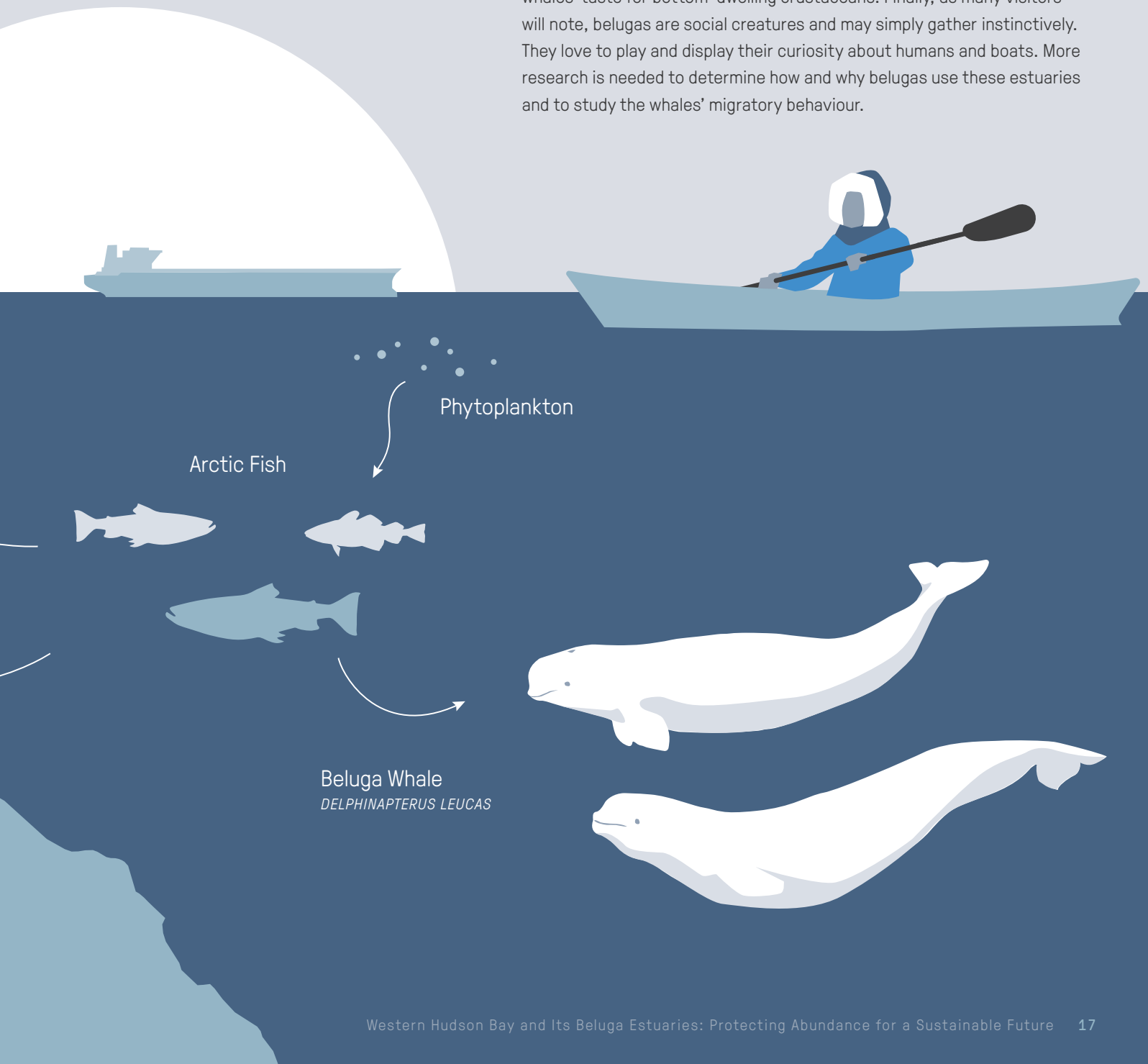
There are approximately 1,000 polar bears in the southern Hudson Bay area.²² Polar bears are very dependent on the marine ecosystem, relying on the formation of sea ice to be able to hunt seals. Every year as winter approaches, they gather along the coast and wait for the ice, a phenomenon that draws people from all around the world. Mother bears den and raise their cubs on land, with many dens in Wapusk National Park. When the young bears are old enough, their mothers migrate with them to the ice.

While evidence over the past decade indicates that this polar bear population is stable in terms of numbers, studies indicate that their health is deteriorating, particularly for females.²³ Longer waits for the sea ice to form, and earlier melting, mean less time for the bears to hunt fatty seals and gain the weight that is critical for them to reproduce, raise healthy young and survive the lean summer months on land. The average life expectancy of a polar bear is 15 to 18 years, with few bears living longer than 25 years.

BELUGA WHALES

As summer approaches and sea ice melts, an estimated 55,000 beluga whales migrate from their winter home south of Baffin Island into the Churchill, Seal, and Nelson river estuaries.²⁴ One of eight distinct beluga populations in Canada, this group makes up 28 per cent of the world's beluga population, the largest concentration of these whales in the world.²⁵

There are a few theories as to why these curious ocean creatures make their way into the estuaries every year. The waters here are warm and of low salinity, making them ideal for not only skin moulting, but also calving and nursing. Despite their proximity to humans, the estuaries provide protection for young belugas and their mothers from predators, such as killer whales, that frequent deeper ocean waters. Western Hudson Bay and its estuaries are home to a number of Arctic fish that belugas eat, and also cater to the whales' taste for bottom-dwelling crustaceans. Finally, as many visitors will note, belugas are social creatures and may simply gather instinctively. They love to play and display their curiosity about humans and boats. More research is needed to determine how and why belugas use these estuaries and to study the whales' migratory behaviour.



Climate Change and Other Threats

The coastline of Hudson Bay provides habitat for a range of globally significant species, including very high concentrations of beluga whales and polar bears. Climate change and the resulting reduction of sea ice in the region will impact this habitat and the species that rely on it for survival. Over the past few decades, there has been a substantial decrease in spring sea ice concentration in the region. The results of one study show a loss of spring sea concentration of between 15.1 per cent and 20.4 per cent in each decade.²⁶ Less sea ice will impact polar bears who use the ice as a platform for hunting seals. Less sea ice could also mean a longer and busier shipping season, particularly in and around the Port of Churchill. This could, in turn, impact beluga whale habitat such as river estuaries and migration corridors and intensify threats such as ship traffic, noise and pollutants.²⁷

The effect of climate change in Hudson Bay on belugas is not yet fully understood. However, predicted changes to Arctic sea ice may mean that they become more vulnerable to new threats such as increased predation from orca whales. Orcas have not been known to appear regularly in this region until recent decades, coinciding with an increase in the length of open-water periods.²⁸ Other potential threats to Hudson Bay belugas, including hydroelectric development and increased ship traffic, have led to this population being identified as a population of “special concern” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and it is also being considered for listing under the federal Species at Risk Act (SARA). It is recognized that upstream hydroelectric development has changed the water flow to some of the river estuaries that belugas rely upon. While study of these water flows is ongoing, the exact impacts of hydroelectric development on the belugas have been difficult to assess and measure conclusively due to the absence of baseline studies before the development took place.²⁹

The establishment of an NMCA in this region will provide for more detailed studies of habitat use, as well as ongoing monitoring programs to detect changes and impacts. The NMCA would establish a management plan designed to mitigate threats with adaptive mechanisms to respond to changes, while working with the Port of Churchill and shipping industry to design preferred minimal-impact shipping routes and prohibit ocean dumping of hazardous pollutants. Furthermore, an NMCA could ensure that future actions by Manitoba Hydro are coordinated and consistent with the NMCA management plan and that Manitoba Hydro is directly engaged as a partner in the conservation and management of beluga habitat in the area.



Credit: Travel Manitoba

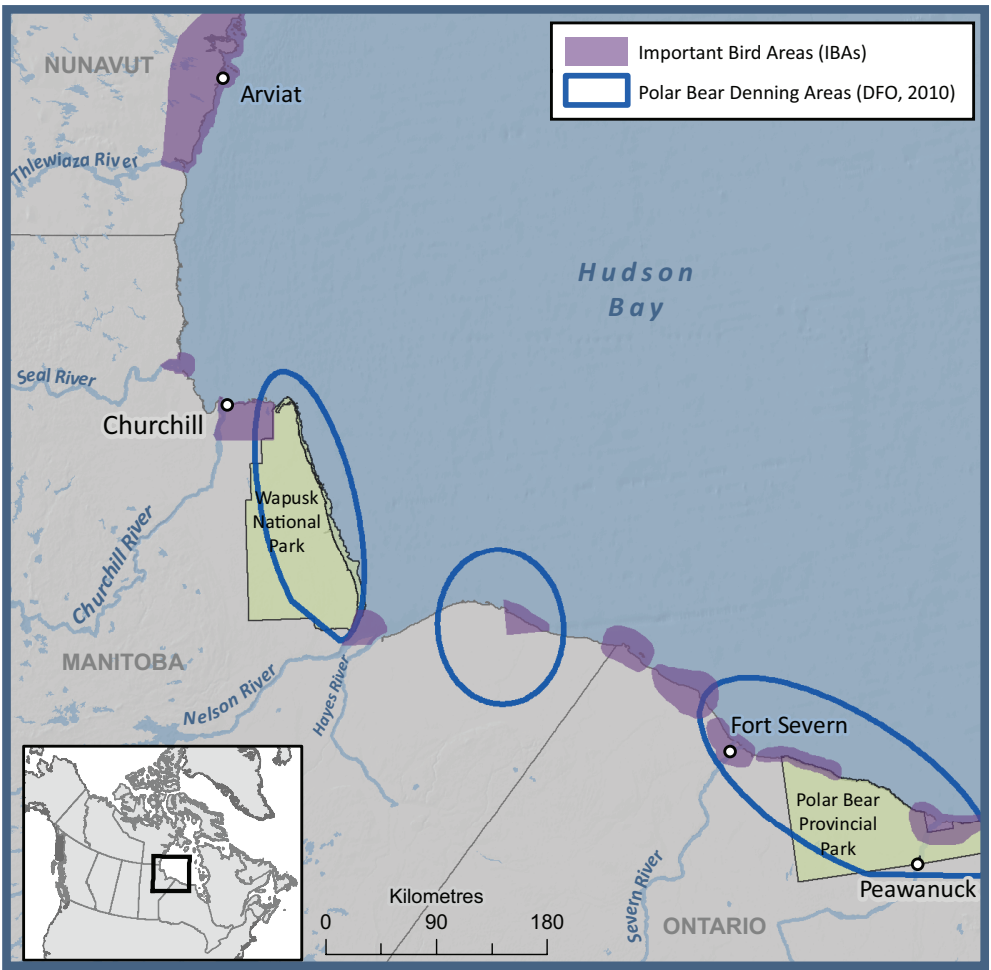


Figure 4. Important Bird Areas and Polar Bear Denning Sites



Credit: Renato Granieri



Prince of Wales Fort. Credit: Alamy



York Factory. Credit: Mike Macri

Historic and Cultural Features

The history of Canada's fur trade is rooted in Hudson Bay. The Hudson's Bay Company's discovery of the Churchill and Nelson rivers as continental access points for Europeans led to the full development of this ocean trade route, and, in turn, allowed for the establishment of the Red River Colony and the settlement of Western Canada.³⁰ From this era, two major structures remain, preserved by Parks Canada. Located on the shoreline of Hudson Bay, they are strong contenders for integration into tourist promotion and interpretive programming within an NMCA.

At the mouth of the Churchill River stands the Prince of Wales Fort National Historic Site. The Hudson's Bay Company constructed this impressive stone fort over a period of forty years (1731 to 1771) during an era of conflict between the English and French. The site also includes Cape Merry, the cannon battery on the town side of the estuary, and Sloop Cove, which was the former harbour for the fort.³¹

The York Factory National Historic Site is located near the mouth of the Hayes River. Between 1684 and 1957, as the Hayes River became the main route for York Boats to travel to the Red River Colony in Winnipeg, it served as a major trading post, distribution point and administrative centre for the Hudson's Bay Company.³²



Hubbard Point archaeological dig. Credit: J Davies



Figure 5. Coastal Historic Sites

Cultural Heritage Sites

The coastline of Western Hudson Bay has been occupied by Indigenous peoples for millennia, including the Thule, Inuit, Dene, and Cree. At remote locations such as Hubbard Point (north of the Seal River), the Thule, ancestors of modern Inuit, built homes and communities along the shore, and archeological evidence suggests that the area was used extensively. Some artifacts have been identified that are believed to be approximately 1,000 years old.³³

Contemporary Inuit communities along the western shore include Arviat, Whale Cove and Rankin Inlet in Nunavut. These communities continue to practise important traditional activities such as hunting, trapping, and fishing, which underscore the importance of the water, food and lands of this region.

Located on a peninsula that forms the west side of the Churchill River, directly across from the Town of Churchill, is a relatively unknown historical site called Sea Horse Gully Remains.³⁴ This site has one of the larger Dorset and pre-Dorset assemblages in Canada, containing dwellings, tools and other domestic artifacts that point to occupation between 500 BCE and 130 BCE, and was likely used by Inuit for trading and whale hunting.

Establishment of an NMCA could facilitate and fund further research and excavation of these ancient Indigenous sites, particularly those related to beluga hunting. Discovered material culture and remains would be valuable to Indigenous communities while demonstrating and showcasing this important history for visitors.



Credit: Renato Granieri



Credit: Paul Souders



Credit: Randy Green



Credit: Frontiers North Adventures

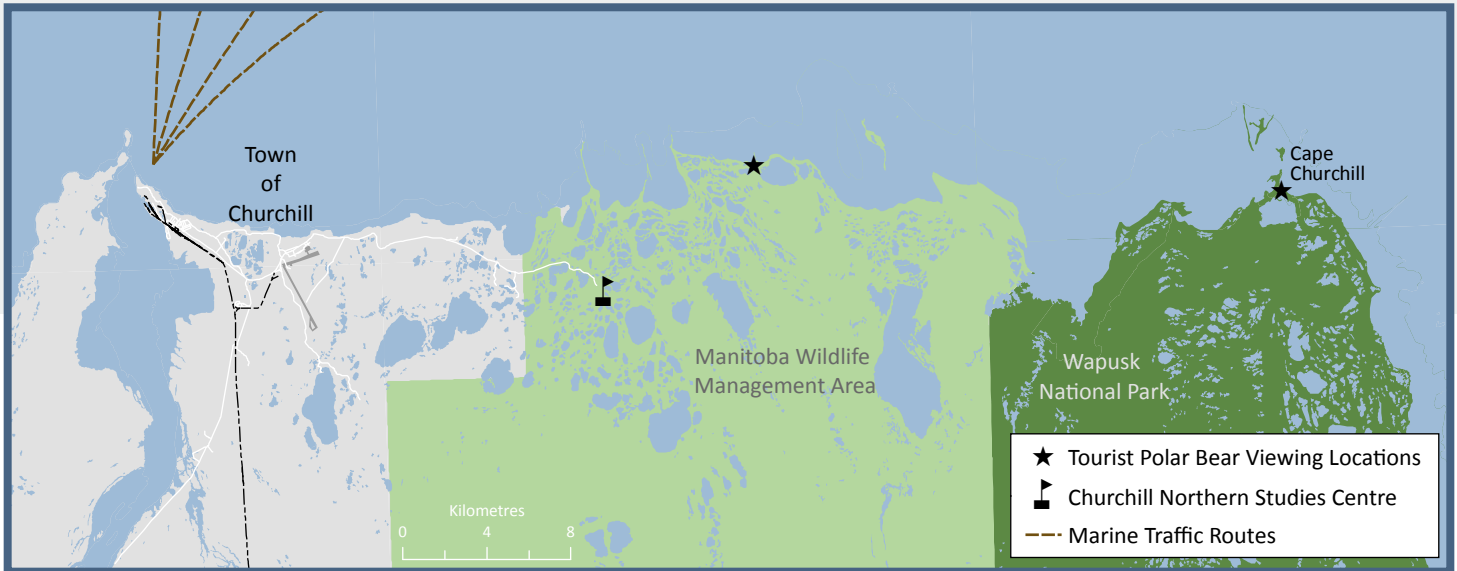


Figure 6. Churchill East

Research Centres

The Churchill Northern Studies Centre (CNSC) has the capacity to support a full range of study activities, from scientific research to general-interest learning vacations led by scientists and expert guides.³⁵ This non-profit education and research facility, located 23 km to the east of Churchill, provides food and lodging along with equipment and logistical support and is currently partnering with Parks Canada to develop an archaeological experience for visitors to the Prince of Wales Fort National Historic Site. The goal is to provide a “hands-on” connection to Canada’s heritage through an interpretive discovery dig guided by Parks Canada archaeologists.³⁶

The Churchill Marine Observatory (CMO) is currently under construction adjacent to the Port of Churchill. Led by the University of Manitoba, the project is funded primarily through the Canada Fund for Innovation and the Province of Manitoba, along with support from the provinces of Alberta and British Columbia, for a combined investment of \$32 million. The CMO will become the leading research and learning facility on the effects of climate change and pollutants on sea ice and is expected to draw scientists from around the world.³⁷

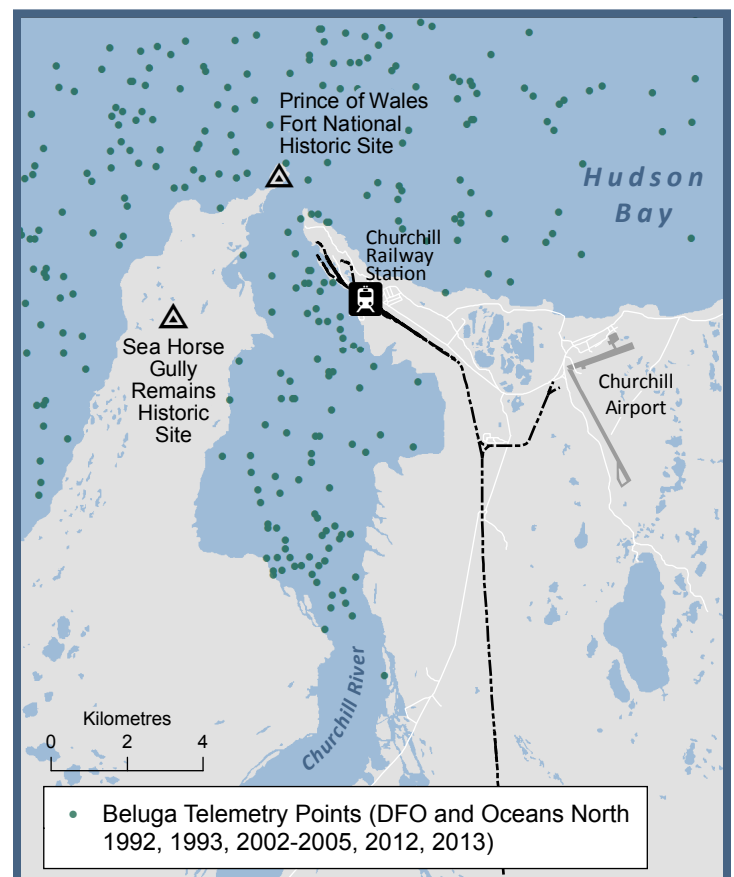


Figure 7. Churchill River Estuary



Credit: Alamy

The Tourism Market

Churchill is an internationally recognized tourist destination that draws between 10,000 and 15,000 visitors per year. It is best known for its terrestrial-based polar bear watching tours, with the season starting in summer and peaking in late fall and early winter, when hundreds of polar bears gather on the shorelines, waiting for freeze-up, ice formation and seal hunting. Churchill is also one of the best spots on the planet to view the northern lights, with auroral displays over 300 nights a year. Tourist experiences here are promoted by Destination Canada through packages called Canadian Signature Experiences.³⁸

More recently, beluga whale tours have been gaining in popularity, with the season beginning in June and extending over the summer. As thousands of whales gather in the river estuaries, Travel Manitoba advertises six different ways to experience the whales first-hand under the guidance of experienced guides and tour operators. Tourists flock to take in the unique experiences of kayaking with belugas, snorkelling with whales and boat viewings complete with listening to the conversations of the “canaries of

the sea” via hydrophones. Beluga-related tourism in the summer months alone contributes over \$2.4 million to Manitoba’s GDP annually, with Manitobans earning \$1.3 million in wages and salaries working directly or indirectly with the beluga tourism industry.³⁹

Visitors are willing to overcome significant obstacles to get to Churchill, including the high cost of travelling to a relatively remote location, short seasons and weather-dependent tours, all to have encounters with iconic Arctic wildlife in their natural habitats. Despite the recent disruption in rail service to Churchill, local tour operators report that demand from tourists remains high.⁴⁰ Even with these obstacles, Churchill is still the most accessible and affordable sub-Arctic destination in the world, providing the chance for wildlife viewing that would be a luxury experience elsewhere.



Credit: Frontiers North Adventures



Credit: Paul Souders

As of 2015, tourism in Manitoba represents 2.5 per cent of that province's GDP, and provides for 11,790 direct tourism jobs across the province. While representing only 1 per cent of visits, international tourists represent 6 per cent of tourism spending. A total of \$582.3 million in taxes through tourism wages and expenditures were remitted to federal, provincial, and municipal governments.⁴¹ The Manitoba government reports that tourism is a \$1.5 billion industry in Manitoba, welcoming 10.5 million visitors annually.⁴²

In late 2017 the Manitoba government and Travel Manitoba launched a new Northern Manitoba Tourism Strategy, including a five-year plan to increase provincial expenditures on northern tourism by \$35 million. The strategy aims to increase tourism marketing for the region and identify enhancements to northern infrastructure that would boost tourism. The Manitoba government estimates that tourism in Manitoba's north generates \$116 million in tourism expenditures from 530,000 visitors annually. The government has set a goal to increase total tourism expenditures in the north to \$151 million annually by 2022.⁴³

While the tourism market for viewing marine Arctic wildlife in Churchill is robust and ripe for growth, a detailed study of the existing and potential tourist market would help to identify and better understand the key assets and attraction of this industry. Such a market study could then be used to develop a long-term strategic plan of investment and promotion for use by engaged local partners as well as the governments of Manitoba and Canada.

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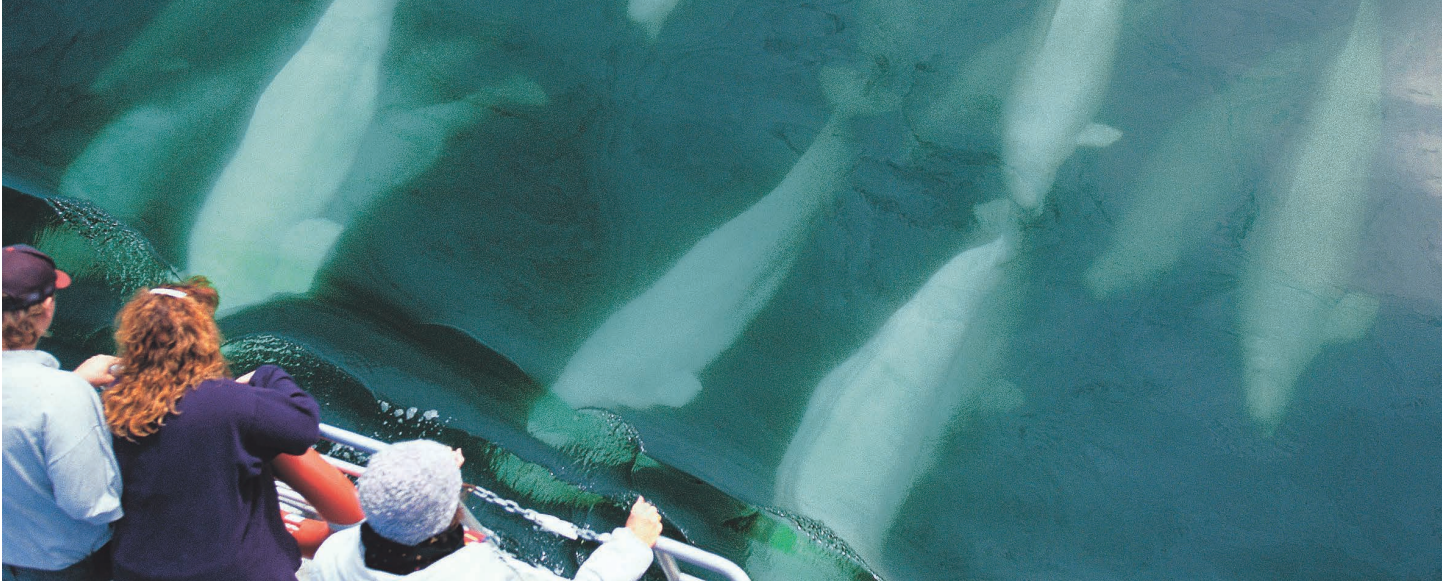
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Credit: Travel Manitoba. Churchill Promotional Materials, 2017.



Credit: Mike Macri/Travel Manitoba

Tour Operators

Many of Churchill's tour operators are local residents who consider themselves stewards of the land and water upon which their families and livelihoods depend. Beluga tour operators champion a self-regulated "code of conduct" amongst themselves and traditional land users to support healthy beluga populations along the western coast of Hudson Bay. Local tour operators need to be assured that they will have meaningful mechanisms to provide their input into the design and management of the NMCA.

Tour operators are eager to share their experience and local knowledge in the establishment of protected areas. In a recent example, the Churchill Beluga Whale Tour Operators Association prepared a submission to the Department of Fisheries and Oceans (DFO) in 2015 opposing proposed marine mammal regulations.⁴⁴ Tour operators do not oppose regulations that protect the critically important species upon which they depend, but were able to demonstrate how the proposed regulations could not practically be applied in the context of Churchill and its beluga population. As such, establishing an NMCA should include proactive involvement of all stakeholders and incorporate lessons learned and input from similar processes in the past.⁴⁵



Credit: Frontiers North Adventures



Credit: Mike Macri

Coastal Communities

TOWN OF CHURCHILL

The Town of Churchill resonates with a small town feel. In particular, it hosts Canada's only deep-water port with direct access to Arctic waters. Historically, this port was used primarily to transport grain from the central Canadian prairies to overseas markets.

During the Cold War, the population of Churchill grew to approximately 5,000 to support a national rocket testing station and military base, now recognized as a National Historic Site.⁴⁶ The 2016 Canadian census reported a population of 899 people (up from 813 in 2011), with 68.7 per cent of residents being between the ages of 15 and 64 and a median age 35.8 years. English is spoken by virtually all residents, in addition to those who speak Indigenous languages such as Cree, Inuktitut and Dene. In 2011, almost 50 per cent of residents identified as being Indigenous. Today, Churchill's population still balloons in the summer months with tourists and seasonal workers.⁴⁷

For much of the last century, Churchill's economy was based on shipping, transportation and military activity. The Port and rail line were together an important centre for the transport of agricultural products. Although today, 40 per cent of Churchill's economy comes from tourism, local residents do not perceive themselves as simply a "tourist town." Approximately 100 local jobs depend on the operation of the port, largely used for Nunavut resupply and international grain shipments in recent years. A reinvestment of the port and the diversification of its uses remains a high priority for the town, as is promoting its position as a centre for research on Arctic species and habitat. In addition, Churchill is a regional health hub, with a full-service hospital, including dental care, that serves both the local community and Nunavut.⁴⁸

Churchill's growing tourism and hospitality industry benefits from modern amenities not often found in remote communities, such as kindergarten-to-grade-12 schools. The Churchill town centre is a key asset for residents, hosting the hospital, local gathering spaces, and recreational and educational facilities. In 2016, an in-depth community needs assessment consultation and report was produced. It identified needs and emerging opportunities to address first the concerns of local residents, and second, those of the tourist industry. The report's recommendations focused on supporting year-round living, pedestrian access and safety. It emphasized infrastructure that not only builds the community's image, but provides recreational opportunities for both tourists and residents.⁴⁹



Credit: Yvette Cardozo



Credit: John Zada

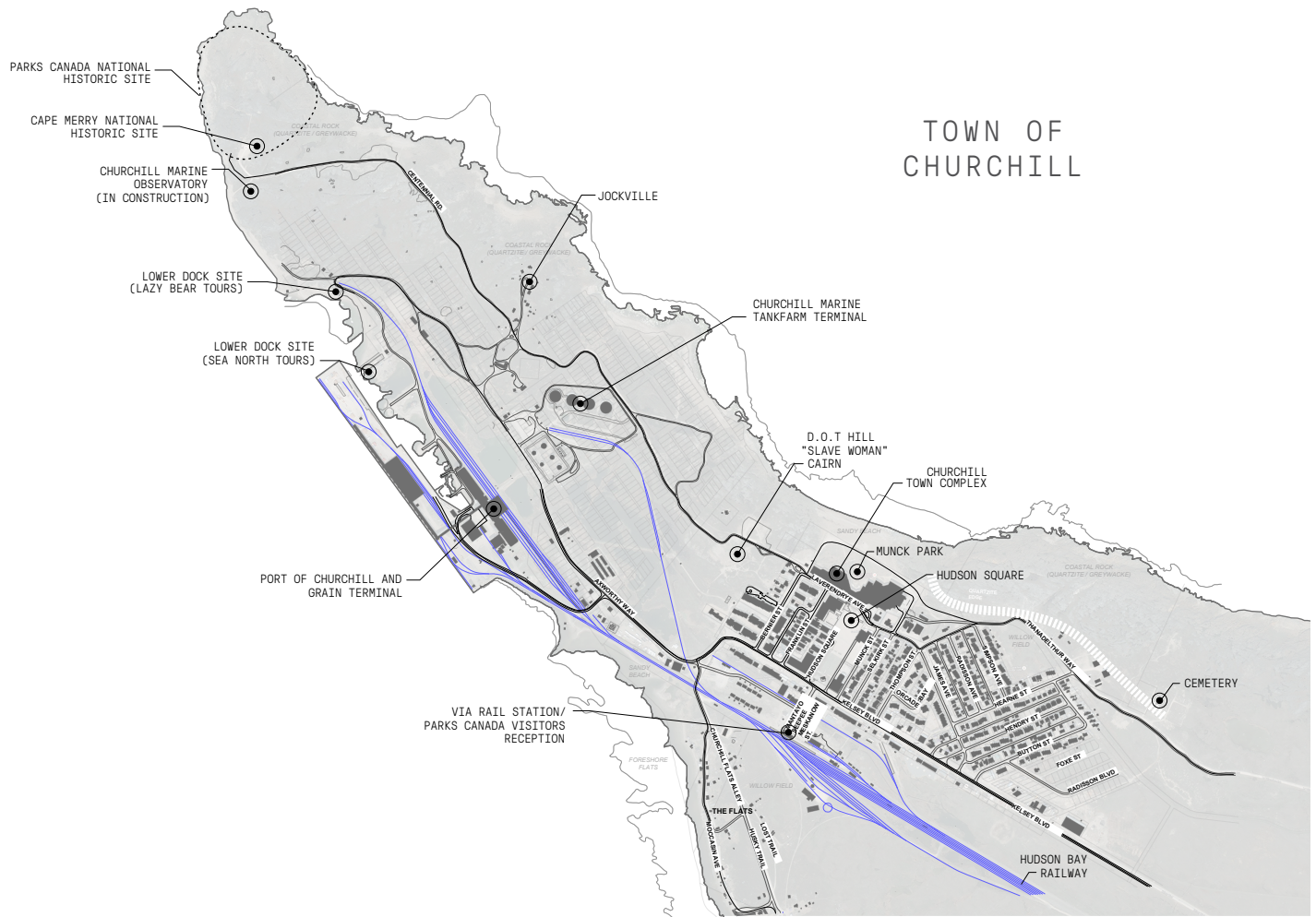


Figure 8. Town of Churchill



Credit: Mike Macri



Credit: Mike Macri

Indigenous Peoples of the Western Hudson Bay Area

INUIT

Inuit families residing on Western Hudson Bay rely on the harvesting of beluga whales for their food security, as they have for centuries. Archeological evidence found at Hubbard Point, Sea Horse Gully Remains National Historic Site and other sites, provide ample evidence of the traditional use and occupancy of this area by Inuit.⁵⁰ The establishment of a National Marine Conservation Area in this region would provide enhanced conservation measures, monitoring and management to assist in protecting beluga whales, as well as other wildlife and their habitat, and, in turn, help secure vital food resources for Inuit and other Indigenous communities in this region.

Discussions around the creation of an NMCA will need to address the rights of Inuit under the Nunavut Land Claims Agreement. Should the northern boundary of the NMCA extend beyond the Manitoba border and into the Nunavut land claim settlement area, Parks Canada may be required to negotiate an Inuit Impact and Benefit Agreement with the regional Inuit organization as defined by the Nunavut Land Claims Agreement. Should the NMCA boundary not extend beyond the Manitoba border, Inuit marine harvesting rights would be recognized and upheld in an NMCA established within the Manitoba portion of Western Hudson Bay as provided for in the land claims agreement (see figure 9).⁵¹ In addition, Inuit-Crown boards have been established for the co-management of marine mammals in the Nunavut land claim settlement area.⁵²

Establishing a marine conservation area in Western Hudson Bay provides the federal government the opportunity to work with Inuit and other Indigenous communities in the region on a Guardian or Watchmen program.⁵³ This type of program operates at the Gwaii Haanas National Park Reserve and Haida Heritage Site. Under such a program members of Indigenous communities could be employed to help monitor and protect sensitive cultural sites and wildlife and also act as guides and interpreters for visitors.

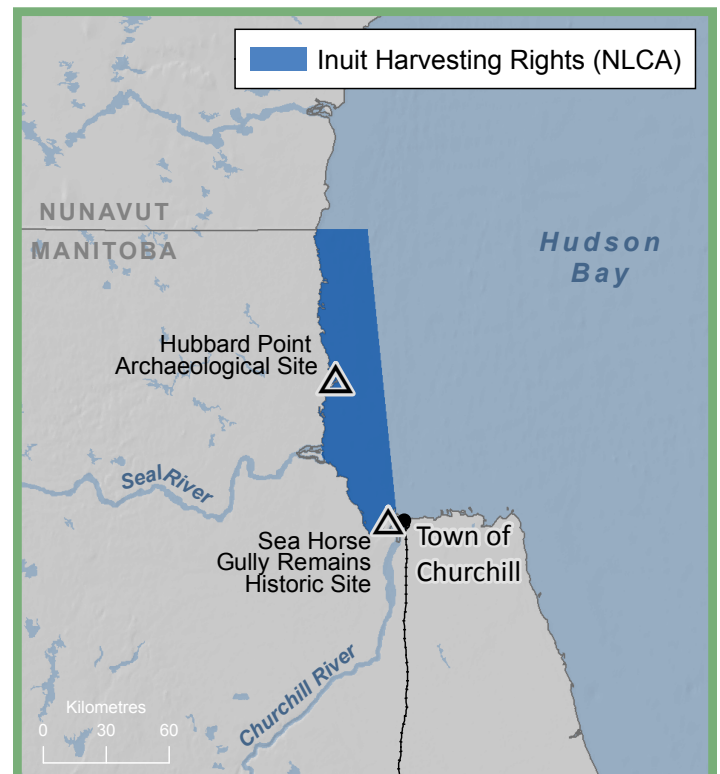


Figure 9. Inuit Harvesting Rights and Coastal Heritage Sites



DENE

The Western Hudson Bay region is home to the Sayisi Dene First Nation and Northlands Denesuline First Nation (collectively Ghotelnene K'odtineh Dene or GKD.)⁵⁴ The GKD have, since 2001, been negotiating a resolution of their land claims in Nunavut and the NWT. Resolution of the GKD claims in Nunavut is linked to resolution of Inuit claims led by Nunavut Tunngavik Inc. (NTI) in Manitoba. The government of Manitoba entered into an Agreement-in-Principle (AIP) with NTI and Ghotelnene K'odtineh Dene regarding several agreements that are integral to resolving Inuit claims in Manitoba and GKD claims in Nunavut, and will result in a large area of Western Hudson Bay coastline in Manitoba being protected from industrial development, including sections owned by the two Indigenous groups. With this agreement in place and as land owners, the Ghotelnene K'odtineh Dene, along with Inuit as represented by NTI, will be in a position to increase the role of these Indigenous peoples in the management and conservation of the Western Hudson Bay region.⁵⁵

CREE

The traditional territory of York Factory Cree Nation extends along both sides of the Nelson River estuary and the coastline eastward. An agreement with the Government of Manitoba and Manitoba Hydro has designated areas herein as a Resource Management Area (RMA). Led by resource management boards, the RMA process brings together local communities, Indigenous communities and industry to discuss proposed development or potential impact on a particular resource management area.⁵⁶ The Fox Lake RMA, covering parts of the traditional territory of Fox Lake Cree Nation, begins at a section of the north side of the Nelson River estuary and opens up inland to include large parts of the upstream watershed. The process to establish an NMCA in these areas should involve discussions with these Cree nations to determine impacts, if any, as well as reviewing opportunities for participation and benefits.

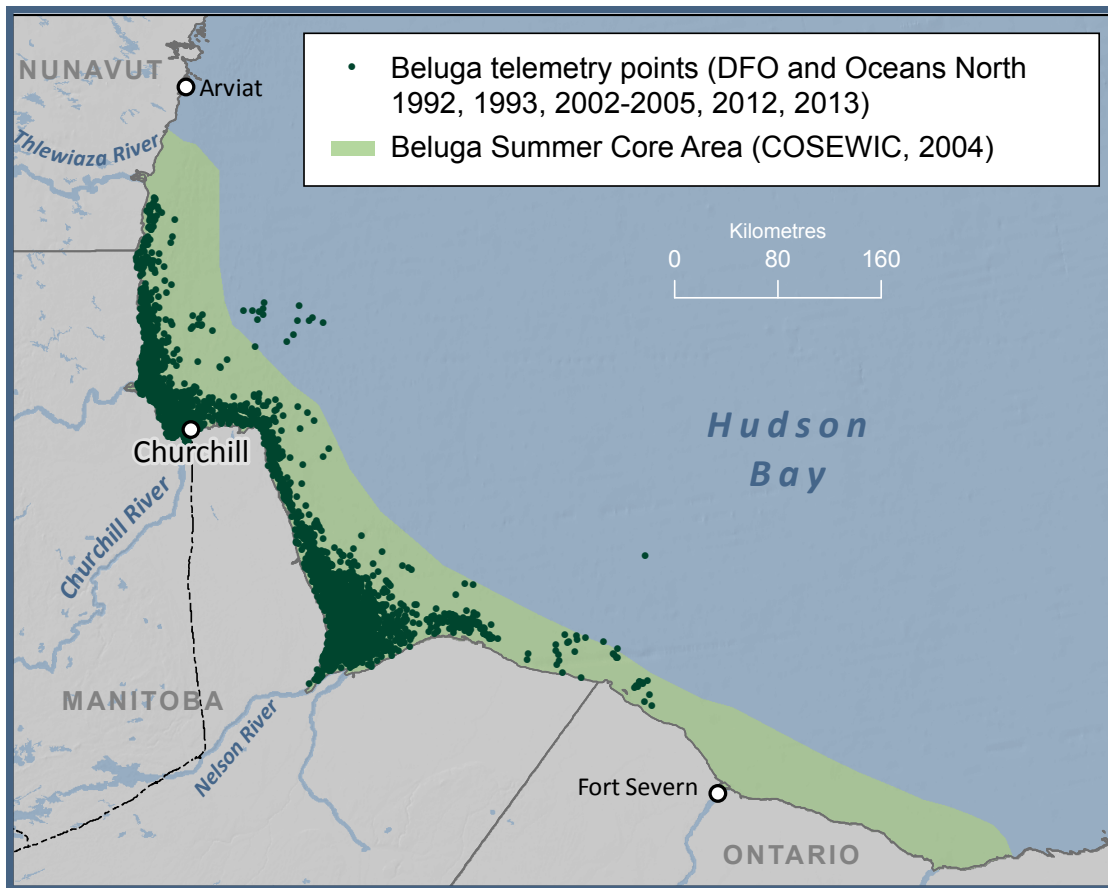


Figure 10. Beluga Summer Core Area and Combined Telemetry Points (August 1992-2012)

Considerations for the NMCA Boundary

The federal government has referred to the area being proposed for an NMCA as “southwestern Hudson Bay.” However, there are factors and options to be considered in consultations with local partners around the exact boundaries. These considerations include:

- Evidence presented in the Province of Manitoba’s *Beluga Habitat Sustainability Plan* demonstrates beluga whale summer habitat is concentrated in the Churchill, Nelson and Seal estuaries, which are located within the Manitoba coastline.
- Manitoba’s *Beluga Habitat Sustainability Plan* makes the case for extending beluga protection to 60 km offshore along the coast, as this is where 98 per cent of belugas are found throughout the summer months. The size of this area is in the range of 35,000 to 40,000 sq. kms or 0.6 per cent of Canada’s oceans.
- Beluga whale summer habitat extends into Ontario and Nunavut, with whales showing some movement north and south in this area during the summer months.
- Federal studies⁵⁷ identify the beluga summering areas as extending northward to the estuary of the Thlewiaza River in Nunavut.
- Conservation measures directed at beluga habitats should consider more than just core summering areas for protection. There are broader threats, such as climate change and an increased presence of predators that suggest belugas require more space than previously thought.⁵⁸
- Existing science, traditional and local knowledge can all inform a decision regarding boundaries. Ongoing study of beluga whale migration as well as other marine wildlife populations would help in identifying additional habitat, and would further inform responsible management.
- Protection for a contiguous summering area would protect area in the range of 50,000 to 60,000 sq. km. This would add approximately 1 per cent more area toward to the federal goal of achieving protection of 10 per cent of Canada’s oceans by 2020.
- A boundary determination can also be informed by existing science, traditional and local knowledge of the polar bear wintering range.⁵⁹



Credit: Travel Manitoba

Conclusion

Longer ice-free periods, climate change, upstream industrial activity, and easier shipping access all have the potential to impact the healthy beluga and polar bear populations in Western Hudson Bay. This in turn would affect the livelihoods of those that live and work in the region as well as traditional harvesting rights. Tour operators, local residents and Indigenous peoples have a vested interest in the health and well-being of the coastal land and waters and the species that depend upon it as habitat.

A unique and robust marine ecosystem combined with exceptional historic and cultural sites make Western Hudson Bay an ideal candidate for the NMCA program. Designating the region as an NMCA will not only enhance protections for beluga, bear and other wildlife populations, but the inherent flexibility of the NMCA structure will serve the best interests of the human population of the area. Protecting the area will also make a contribution to Canada's national commitments and international goals of increasing protection of global biodiversity.

Appendix and References

APPENDIX A: Steps to establish an NMCA

Parks Canada has prioritized Western Hudson Bay as a candidate area for further assessment as a potential NMCA. Parks Canada's next steps are local engagement, consultations and conducting a feasibility study.

PARKS CANADA'S STEPS TO ESTABLISH AN NMCA:

1. Identify areas representative of a marine region.
2. Select an optimum national marine conservation area candidate from the list of representative areas.
3. Assess the feasibility of establishing the proposed marine conservation area through studies and consultations, including the development of an interim management plan. Assessing the feasibility of a NMCA requires the cooperation and support of:
 - other federal departments and provincial or territorial governments,
 - local communities, regional stakeholders and Indigenous peoples,
 - Extensive local consultations are undertaken. Working groups or advisory bodies may be set up to develop and assess proposals. Proposals may also be considered within other appropriate planning processes.
4. Negotiate new national marine conservation area agreements, including any that may be required with Indigenous peoples or organizations. If the feasibility study demonstrates support for the initiative, a federal/provincial or federal/territorial agreement will be negotiated to set out the terms and conditions under which the NMCA will be established and managed.
5. Establishment of an NMCA formally establishes the national marine conservation area in federal legislation under the Canada National Marine Conservation Areas Act (EN).

Adapted from: <https://www.pc.gc.ca/en/amnc-nmca/plan>

Appendix B: Existing and proposed NMCAs

There are currently only four established NMCAs in Canada: Fathom Five (Ont.) and Lake Superior (Ont.), Gwaii Haanas (B.C.), and Saguenay-St. Lawrence (Que.) As Parks Canada's goal is to represent each of the 29 marine regions, establishment of new NMCAs is focused on the unrepresented regions such as Western Hudson Bay.⁶⁰ The map on the opposite page shows completed and proposed NMCAs. The following observations on conservation areas are provided in context of the establishment of an NMCA in the Western Hudson Bay area.

GWAII HAANAS NATIONAL MARINE CONSERVATION AREA RESERVE

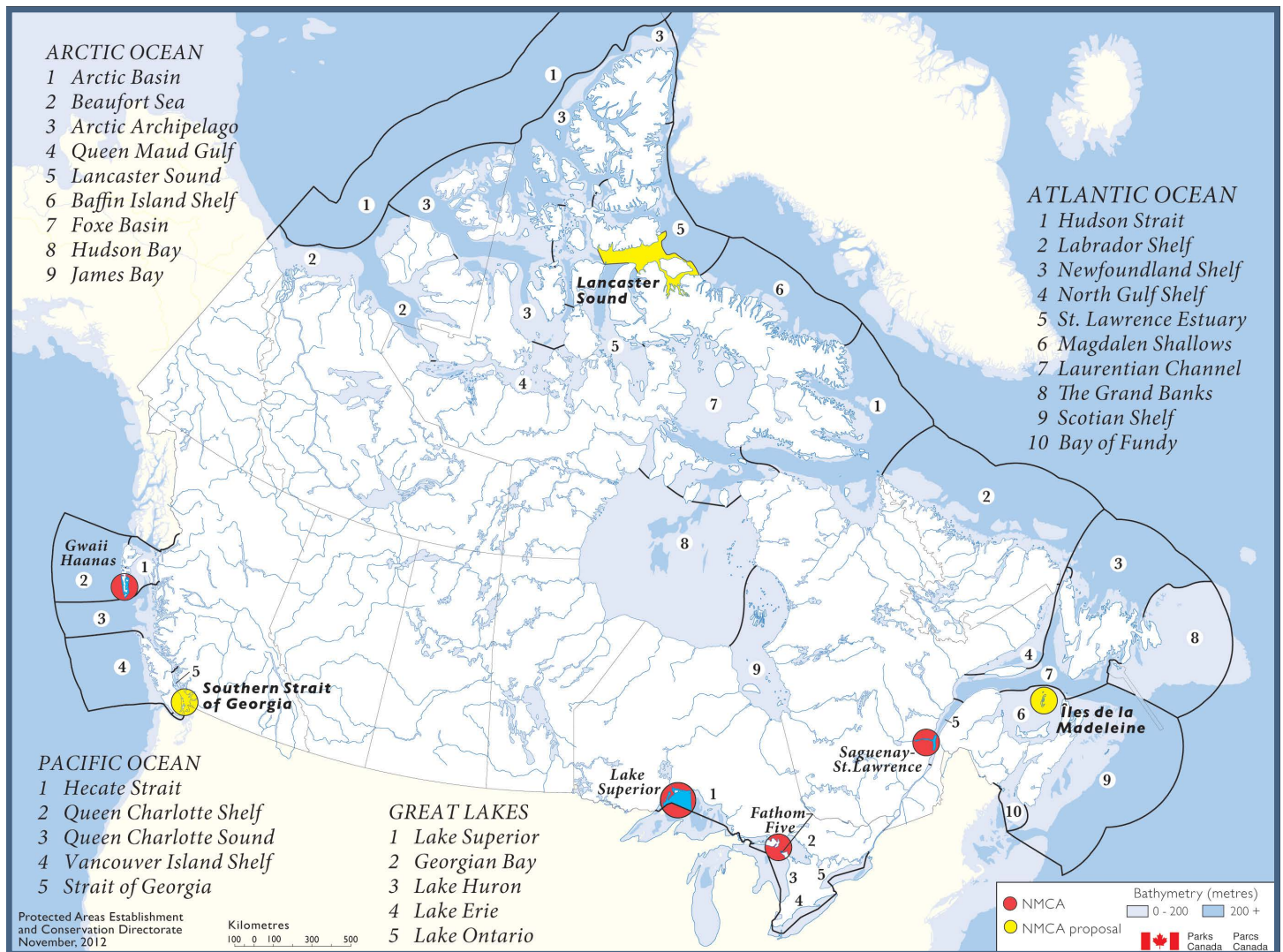
In 2010, the Gwaii Haanas National Marine Conservation Area Reserve was established through an agreement between Canada and the Haida Nation. The area is managed by the Archipelago Management Board (AMB), which is made up of three representatives from the Government of Canada (Parks Canada and the Department of Fisheries and Oceans) and three from the Haida Council. AMB uses a consensus decision-making model and has a dispute resolution process in place. Included in the development of the area was the creation of a visitor centre. Parks Canada also supported the creation and funding of a Watchmen program which employs Haida residents at five culturally significant sites. It is estimated that \$2.5 million in salaries is paid to Parks Canada employees in the protected marine area. Parks Canada continues to maintain and upgrade the facilities at Gwaii Haanas. Recent federal investments in local infrastructure include boardwalks for use by both resident Haida and visitors.

SAGUENAY-ST. LAWRENCE NMCA

The Saguenay-St. Lawrence Marine Park is considered by Parks Canada as a federal NMCA. However, the area, its conservation measures and its management structure are legally constituted by a unique federal statute as well as special legislation of the Province of Quebec. The Saguenay-St. Lawrence Marine Park Management receives input from a coordination committee that consists of the interpretation and education sectors as well as the scientific community. The marine park has facilitated the creation of the Eco-Whale Alliance, which consists of whale-watching tour operators, a scientific NGO and the federal and provincial park authorities. The alliance has collaboratively created an offshore management plan, regulations, and the Eco-Whale Fund to support research and training within the park. It has been reported that a significant percentage of tourists to the area want to know what safeguards are in place to ensure the safety of the whales and the sustainability of marine life and ecosystems. See: <http://parcmarin.qc.ca> and the Eco-Whale Alliance at: <http://www.eco-baleine.ca>

PROPOSED NMCA: TALLURUTIUP IMANGA (LANCASTER SOUND)

The August 2017 announcement of the proposed NMCA for Tallurutiup Imanga (Lancaster Sound) demonstrates the federal will and capacity to design large, mixed-use, northern NMCAs in partnership with communities. Lancaster Sound is at the eastern entrance of the Northwest Passage, an area that is a vital hunting ground for Inuit, who began advocating for its protection in the 1960s. This proposed NMCA covers a total protected area of approximately 109,000 sq. kms. Now that the boundaries have been announced, consultations will continue and management decisions will integrate Inuit traditional knowledge. Five Inuit communities are within the boundaries of the protection area, and an Inuit Impact and Benefit Agreement is expected to be negotiated. As part of the announcement for this proposed NMCA, Canada opened a new \$1.95-million Pond Inlet Research Facility to support research into Arctic wildlife programs.



This map shows progress towards completing Canada's National Marine Conservation Areas. (<https://www.pc.gc.ca/en/amnc-nmca/cnamnc-cnmca/carte-map>)

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Endnotes

- 1 Stewart, D.B., & Lockhart, W.L. (2004, March Draft).
- 2 The number of annual visitors to Churchill in recent years could be as high as 15,000. In Manitoba's northern region, there are 234,000 overnight visitors per year, including 185,000 from that province. See: http://www.gov.mb.ca/sd/parks/consult/pdf/CarryingCapacityReview_FinalReport.pdf Comments by Churchill tour operators on 2017 include, a "banner year" and their "busiest summer ever." See: <https://www.winnipegfreepress.com/local/tourism-not-a-total-loss-in-churchill-440860693.html>
- 3 See: <http://www.dfo-mpo.gc.ca/oceans/conservation/plan-eng.html>
- 4 See: https://www.canada.ca/en/parks-canada/news/2017/08/tallurutiup_imangalancastersoundinhighArctic tobecanadaslargestpr.html
- 5 These impressions are gathered from Oceans North field work in the area as well as interviews, and discussions with relevant parties in 2016 and 2017.
- 6 A few of the stakeholders interviewed for this report suggested that the economic uncertainty in the region may make the timing of establishing an NMCA in the area challenging unless the benefits to the local economy via the creation of new jobs and increased profile are clearly communicated by Parks Canada.
- 7 See: <http://pm.gc.ca/eng/news/2016/03/10/us-canada-joint-statement-climate-energy-and-Arctic-leadership>
- 8 <http://www.dfo-mpo.gc.ca/oceans/conservation/plan-eng.html>

The Government of Canada identifies three main policy tools to achieve marine spatial protection. The government's description of these three tools is excerpted as follows:

"Fisheries and Oceans Canada establishes Marine Protected Areas (MPAs) to protect and conserve marine species, habitats, and/or ecosystems, which are ecologically significant and/or distinct. The nature of the activities allowed or prohibited within a MPA depends on the area's conservation objectives. Economic opportunities that are compatible with these conservation objectives are typically allowed within the protected area within specific zones of the protected area."

"National Marine Conservation Areas (NMCAs) established by Parks Canada protect and conserve representative samples of Canada's oceans and Great Lakes for the benefit and enjoyment of the public. NMCAs are required to include at least two types of zones: one that fosters and encourages ecologically sustainable use and another that fully protects special features or sensitive elements of ecosystems."

"National Wildlife Areas are established by Environment and Climate Change Canada for wildlife conservation, research, and interpretation. Activities that are prohibited and authorized vary by site."

Retrieved from: <http://www.dfo-mpo.gc.ca/oceans/conservation/plan-eng.html>
- 9 Government of Canada, Budget 2017, p. 123
- 10 Government of Canada (June, 2017) response to the report of the House of Commons Standing Committee of Environment and Sustainable Development, titled: *Taking Action Today: Establishing Protected Areas for Canada's Future*. The response was provided in the form of letter from the Hon. Catherine McKenna, Minister of the Environment and Climate Change. Retrieved from: https://www.ourcommons.ca/content/Committee/421/ENVI/GovResponse/RP9056718/421_ENVI_Rpt05_GR/421_ENVI_Rpt05_GR-e.pdf
- 11 Canada National Marine Conservation Areas Act (2002.) Section 4(1)
- 12 The Marine Protection Act program provides protection for sensitive marine areas, is recognized as a vital piece of the broader network of marine protection, and is generally applied to more specific features than an NMCA.
- 13 Canada National Marine Conservation Areas Act (2002.) Preamble.
- 14 See: <https://www.pc.gc.ca/en/amnc-nmca/plan>
- 15 Parks Canada describes the infrastructure funding as follows: "Parks Canada is investing an unprecedented \$3 billion over five years to support infrastructure work to heritage, visitor, waterway, and highway assets located within national historic sites, national parks, and national marine conservation areas across Canada. These investments represent the largest federal infrastructure plan in the history of Parks Canada." <https://www.pc.gc.ca/en/agency-agency/infrastructure>
- 16 New infrastructure in marine areas of Western Hudson Bay and the Port of Churchill could be supported by Transport Canada under the newly established "Marine Infrastructure in Northern Communities Initiative" as part of the Ocean Protection Plan. See: https://www.canada.ca/en/transport-canada/news/2017/08/government_of_canada_introduces_new_measures_to_protect_the_marine_envir.html
- 17 Parks Canada Agency, Report on Plans and Priorities (2016-17) includes a summary of the agency's Sub-Program 1.4.3: National Marine Conservation Area Visitor Experience. The summary describes examples of supports provided to NMCAs, including, "visitor safety services, and visitor facilities (e.g., visitor reception centres, docks, day-use areas) establishing the first trail network on islands within the Lake Superior National Marine Conservation Area...renewing docks and mooring facilities in national marine conservation areas such as Saguenay-St. Lawrence and Fathom Five to meet current and future needs." Retrieved from: <http://www.pc.gc.ca/en/agency-agency/bib-lib/plans/dp/rpp2016-17/index>
- 18 Canada National Marine Conservation Areas Act (S.C. 2002, c. 18)

The section of the Act that describes Management plans reads as follows: "Management plans: 9 (1) The Minister shall, within five years after a marine conservation area is established, in consultation with relevant federal and provincial ministers and agencies, with affected coastal communities, aboriginal organizations, aboriginal governments and bodies established under land claims agreements, and with other persons and bodies that the Minister considers appropriate, prepare a management plan for the marine conservation area that includes a long-term ecological vision for the marine conservation area and provision for ecosystem protection, human use, zoning, public awareness and performance evaluation, which shall be tabled in each House of Parliament."

- 19 Canadian Geographic. Protect Your Watershed facts. Retrieved from: <http://www.canadiangeographic.com/watersheds/map/?path=english/watersheds/udson-bay>
- 20 Stewart, D.B., & Lockhart, W.L. (2004, March Draft).
- 21 Ibid.
- 22 See: <http://pbsg.npolar.no/en/status/population-map.html>
- 23 See: https://polarbearsience.files.wordpress.com/2017/09/western-hudson-bay-pb-2016-population-assessment_gn-report_27-june-2017.pdf
- 24 Canadian Science Advisory Secretariat Research Document 2017/061, Estimated abundance of the Western Hudson Bay beluga stock from the 2015 visual and photographic aerial survey http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2017/2017_061-eng.html
- 25 Manitoba's Beluga Habitat Sustainability Plan, 2016
- 26 Ibid.
- 27 Ibid.
- 28 See: <http://www.cbc.ca/news/canada/north/greenland-hunting-more-killer-whales-as-climate-changes-1.2782297>
<http://pubs.aina.ucalgary.ca/Arctic/Arctic66-3-279.pdf>
- 29 Manitoba's Beluga Habitat Sustainability Plan (2016) lists impacts as follows: "Potential direct and indirect impacts on belugas of hydroelectric development include water temperature, sedimentation load, river discharge, and water levels, water chemistry, and contaminant loads, blockage of water flows and access up river, and disruption of species preyed upon by belugas prior to water diversion."
- 30 Exploration into the Hudson Bay region began in the 1600s with the search for the Northwest Passage, but it was the 1668 voyage of the *Nonsuch* that confirmed the theory that there was a quicker route to north through the Bay that would provide access to the lucrative trade in fur pelts. The first permanent Hudson's Bay Company settlement was established in the area in 1717. A full size replica of the *Nonsuch* is on display at the Manitoba Museum in Winnipeg.
- 31 See: <http://www.pc.gc.ca/en/lhn-nhs/mb/prince>
- 32 See: <http://www.pc.gc.ca/en/lhn-nhs/mb/yorkfactory>
- 33 See: <http://Arcticjournal.ca/featured/hubbard-point-excavating-ancient-thule-ruins>
- 34 See: <http://historicplaces.ca/en/rep-reg/place-lieu.aspx?id=18791>
- 35 The Churchill Northern Studies Centre describes itself as follows: "Founded in 1976, the Churchill Northern Studies Centre is an independent, non-profit research and education facility located 23 km east of the town of Churchill, Manitoba. We provide accommodations, meals, equipment rentals, and logistical support to scientific researchers working on a diverse range of topics of interest to northern science. In addition to research, the Centre facilitates a wide range of educational programming ranging from general interest courses for the visiting public to university credit courses for students." Retrieved from: <https://www.churchillscience.ca>
- 36 See: <http://www.pc.gc.ca/en/lhn-nhs/mb/prince/info/partenaires-partners>
- 37 The Churchill Marine Observatory (CMO) is expected to house twenty scientists and serve as a year-round centre for scientific research and technology development in the north, including transportation and oil and gas exploration, with involvement from universities in Canada, the United States and Europe. One of the leaders of the project, Dr. David Barber has predicted the CMO will, "bring more science to Churchill to understand a lot of the complexities going on around climate change and transportation there." Retrieved from: <https://www.winnipegfreepress.com/local/govt-will-pour-9m-into-churchill-scientific-facility-389757691.html>
- 38 Manitoba has nine Destination Canada CSE accredited tourist experiences and four of them are tour packages offered by four different Churchill tour operators in and around Churchill. The CSE designation allows tour operators access to resources to promote their products to international markets. See: <https://www.destinationcanada.com/en/programs>
- 39 Churchill Beluga Whale Tour Operators Association & Town of Churchill, 2015. Appendix 1. It is estimated that the hotel sector in Churchill accounts for 150 jobs during this summer season. Large multinational tour companies utilizing vertically integrated hotels, tour operators and travel guides, do not operate in the area. An overview of visitors to northern Manitoba is as follows: "The biggest spenders in the northern region are overseas visitors. They spend an average \$2,229 per person per visit, compared to \$184 per person per visit for Manitobans. In total, there are 234,000 overnight visitors per year, which includes 185,000 from Manitoba." (Tourism North Manitoba 2016).
- 40 Despite the railway closure in 2017, Churchill remained accessible by air. The Churchill tour operator, Frontiers North Adventures, indicated most group tours rebooked by flight, while some did postpone. Comments by Churchill tour operators on 2017 include, a "banner year" and their "busiest summer ever." See: <https://www.winnipegfreepress.com/local/tourism-not-a-total-loss-in-churchill-440860693.html>
- 41 For tourism statistics see: <https://www.travelmanitoba.com/>
- 42 See: Government of Manitoba, news release of December 8, 2017 <http://news.gov.mb.ca/news/index.html?item=42718>
- 43 The Government of Manitoba announced a five-year plan in December 2017 plans to increase northern tourism expenditures by \$35 million. See: Government of Manitoba, news release of December 8, 2017 <http://news.gov.mb.ca/news/index.html?item=39092>
- 44 Churchill Beluga Whale Tour Operators Association & Town of Churchill, (2015).
- 45 The experience of Wapusk National Park is worthy of consideration. Created by the federal government in 1996, Wapusk is located east of Churchill and covers the polar bear habitat along the shoreline of Hudson Bay. There is in place an advisory board that includes area stakeholders that provides input to Parks Canada, which is ultimately responsible for the park. However, among local residents and tour operators there is some sensitivity about how consultation for the park was done and the perceived restrictions

- that come with its operations. There is a perception that the “regulation of the area” is cumbersome and unneeded. As a result, some tour operators have expressed skepticism about the benefit of designating an official federal marine conservation area in Western Hudson Bay and uncertainty regarding the motivation to do so. There is an expectation that the federal government would consult with tour operators in a meaningful way should the NMCA project move ahead in earnest. (Interviews with Churchill residents and tour operators, 2016–17).
- 46 See the description of the Churchill Rocket Range National Historic Site at: <http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=12776>
- 47 Statistics Canada, Census Profile (2016), Churchill, Manitoba <http://www.statcan.gc.ca>
- 48 Town of Churchill Mayor Mike Spence made the following remarks at the 2016 announcement of the Churchill Marine Observatory: “The community of Churchill has four pillars, there’s the port and the rail line, that’s one. There’s the Churchill regional health authority, that’s two, and there’s tourism and then research and education, that’s three and four.” He added that no one announcement can replace the port and the people employed there. See: Winnipeg Free Press (August 10, 2016).
- 49 See: https://churchill.allnetmeetings.com/_docs/ChurchillCommunityRevitalization-Phase1Report-2016-Reduced_1a3a8ed2b5.pdf
- 50 Seahorse Gully Remains National Historic Site see: David Meyer, <http://historicplaces.ca/en/rep-reg/place-lieu.aspx?id=18791>. For information on archaeological evidence see David Meyer, The Churchill Archaeological Investigations August 1978. <http://parkscanadahistory.com/series/mrs/368.pdf>. Hubbard Point continues to be used as a hunting ground and stopping point for Inuit. See: http://nunatsiaq.com/stories/article/65674ancient_thule_site_in_northern_manitoba_still_used_by_kivalliq_inuit/
- 51 For the legal articles relating to Inuit marine harvesting rights off the Manitoba shoreline in Hudson Bay see, Section 42, Nunavut Land Claims Agreement <http://nlca.tunnngavik.com>
- 52 Fisheries and Oceans Canada describes its approach as follows: “In order to meet its mandate and the obligations under Inuit land claim settlements, DFO is adopting a cooperative approach to the management of marine mammals in the land claim settlement areas. Resource management boards, composed equally of Inuit and government representatives, have been established in accordance with the claim agreements. These resource boards assist DFO in varying degree, in jointly managing Canadian Arctic Beluga populations,” (DFO [2013b]. Underwater world: Beluga Whale. Ottawa: Fisheries and Oceans Canada. Available at: <http://www.dfo-mpo.gc.ca/Science/publications/uww-msm/articles/beluga-eng.htm>.
- 53 Parks Canada observes that “...Indigenous Guardians program supports Indigenous land management and oversight in their territories based on a cultural responsibility for the land. The program provides training and career opportunities for Indigenous Peoples to work as equal partners with governments and industry on the protection and management of land and resources.” <https://www.pc.gc.ca/en/culture/autochtones-indigenous/gardiens-guardians>
- 54 The Sayisi Dene First Nation was forcibly relocated in 1956 from its traditional area of Little Duck Lake to the Churchill area. In 1967, the community relocated south of Churchill to Dene Village, and again in 1981 when a reserve was established at Tadoule Lake. The Manitoba and Canadian governments have apologized for their role in the forced relocation. See Government of Manitoba news release of August 3, 2010 <http://news.gov.mb.ca/news/index.html?item=9346&posted=2010-08-03> and Government of Manitoba news release, September 20, 2017 <http://news.gov.mb.ca/news/index.html?item=42171>
- 55 See: <https://www.eia.gov.nt.ca/en/priorities/concluding-and-implementing-land-claim-and-self-government-agreements/ghotlennene-kodtineh>
- 56 See map at: <https://www.gov.mb.ca/imr/ir/resources/resource-management-boards.html>
- 57 Interview, Parks Canada employee, September 25, 2016
- 58 Westdal, K. 2016. Behavioural changes in belugas (*Delphinapterus leucas*) during a killer whale (*Orcinus orca*) attack in southwest Hudson Bay: <http://journals.sfu.ca/cfn/index.php/cfn/article/view/1925>
- 59 See: <http://polarbearsinternational.org/polar-bears/tracking/>
- 60 See: <https://www.pc.gc.ca/en/amnc-nmca/plan>

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Telemetry: DFO and Oceans North (1992, 1993, 2002-2005, 2012, 2013)

Basemap: NRCan (2017)

Topography: Topography: The GEBCO_2014 Grid, version 20150318, www.gebco.net.

FIGURE 2. BELUGA MIGRATION ROUTES

Core Area: COSEWIC (2004). COSEWIC assessment and update status report on the beluga whale *Delphinapterus leucas* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 70 pp.

Generalized Routes: Based on COSEWIC (2004). COSEWIC assessment and update status report on the beluga whale *Delphinapterus leucas* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 70 pp.; Summer Telemetry Data, DFO and Oceans North (1992, 1993, 2002-2005, 2012, 2013).

Basemap: NRCan (2017)

Topography: Topography: The GEBCO_2014 Grid, version 20150318, www.gebco.net.

FIGURE 3. WESTERN HUDSON BAY

Marine Traffic: DFO (2017). Arctic Voyage Planning Guide. <http://geoportal.gc.ca/eng/Maps/Viewer/5#fc>

Important Bird Areas: Bird Studies Canada. (2015). Important Bird Areas of Canada Database. Port Rowan, Ontario: Bird Studies Canada. <http://www.ibacanada.org>

Polar Bear Denning Areas: Stephenson, S.A., and L. Hartwig. (2010). The Arctic Marine Workshop: Freshwater Institute Winnipeg, Manitoba, February 16-17, 2010. Can. Manuscript Rep. Fish. Aquat. Sci. 2934: vi+67p.; Manitoba Wildlife Management Areas: Manitoba Sustainable Development (2017). Manitoba Land Initiative. <http://mli2.gov.mb.ca>

Ecologically and Biologically Significant Areas: Fisheries and Oceans Canada (2016); Telemetry: Oceans North (2012); DFO (2012); National Historic Sites: Parks Canada (2017)

Protected Areas: Canadian Council on Ecological Areas (2016). Conservation Areas Reporting and Tracking System (CARTS). Version 2016.12.31. <http://www.ccea.org/carts>

Basemap: Natural Resources Canada (2017)

Topography: Topography: The GEBCO_2014 Grid, version 20150318, www.gebco.net.

Telemetry: DFO and Oceans North (1992, 1993, 2002-2005, 2012, 2013)

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Credit: Fisheries and Oceans Canada Canadian Science Advisory Secretariat Science Advisory Report 2011/055

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Important Bird Areas: Bird Studies Canada. (2015). Important Bird Areas of Canada Database. Port Rowan, Ontario: Bird Studies Canada. <http://www.ibacanada.org>;

Polar Bear Denning Areas: Stephenson, S.A., and L. Hartwig. (2010). The Arctic Marine Workshop: Freshwater Institute Winnipeg, Manitoba, February 16-17, 2010. Can. Manuscript Rep. Fish. Aquat. Sci. 2934: vi+67p. ; Protected Areas Canadian Council on Ecological Areas (2016). Conservation Areas Reporting and Tracking System (CARTS). Version 2016.12.31. <http://www.ccea.org/carts>;

Basemap: NRCan, 2017

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Tundra Buggy Locations: Frontiers North (2017); Protected Areas Canadian Council on Ecological Areas (2016). Conservation Areas Reporting and Tracking System (CARTS). Version 2016.12.31. <http://www.ccea.org/carts>

Marine Traffic Routes : DFO (2010). Arctic Voyage Planning Guide. <http://geoportal.gc.ca/eng/Maps/Viewer/5#fc> ;

Basemap: NRCan, 2017

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Credit: HTFC Planning & Design. Churchill Community Revitalization, Phase 1 Report-2016

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Telemetry: DFO and Oceans North (1992, 1993, 2002-2005, 2012, 2013)

Basemap: NRCan (2017)

About Oceans North

Oceans North is a Canadian non-governmental organization that promotes science and community-based conservation of northern oceans and the resulting well-being of the local residents who depend on their natural wealth. Working with communities, we promote science-based policies consistent with Indigenous treaties and traditional practices for sustainable commercial fishing, environmentally responsible offshore development and oil spill standards, and appropriate shipping safety rules.

Oceans North has conducted scientific research in and around Western Hudson Bay as part of its mission to protect sensitive habitat and living resources upon which northern peoples rely. Oceans North has benefited from the support of local partners as it designed and implemented a multi-year beluga study (in co-operation with the Province of Manitoba and Fisheries and Oceans Canada) to gather data on the Western Hudson Bay beluga population. This research has provided more information about why belugas are drawn to the region and how this key habitat can be protected. Oceans North also conducted an archaeological survey at Hubbard Point, in partnership with the Inuit Heritage Trust, that explored how Inuit and their Thule ancestors used, and Inuit continue to use, this biologically rich area on the shores of Hudson Bay.

This review is an extension of the previous work of Oceans North in this region. The review explores the benefits and considerations of marine conservation in the Western Hudson Bay area. The observations and conclusions of the report are drawn from a series of interviews and publicly available data, reports and media.



Visit the Oceans North website to watch a short documentary on the work of Oceans North in Western Hudson Bay:
www.oceansnorth.org/belugavideo

