

INUVIK COMMUNITY CONSERVATION PLAN Inuvium Angalatchingit Niryutinik

A plan to provide guidance regarding the conservation and management of renewable resources and lands within the Inuvialuit Settlement Region in the vicinity of Inuvik, Northwest Territories



Prepared By

The Inuvik Hunters and Trappers Committee,
Inuvik Community Corporation,
The Wildlife Management Advisory Council (NWT),
The Fisheries Joint Management Committee,
And the Joint Secretariat

2016

A saying passed on to us from generation to generation
by our Inuvialuit Elders:

**"The most important thing that we have is our land
and waters and because we have looked after them,
they have supported us for many generations and if
we continue to ensure they are properly cared for -
they will support us for many more generations to
come."**


**ANGAYUQAPTA TAIMANGA INNA
UQAUTIAGIGATIGUT:**

**"Taimanga qanga nunapta munarriagigatigut huli
pangma nunakput, imirlu, munarimariq huptigu
taimunga inuuniarvigi uuminargikput."**


Billy Day
Inuvik, 1993

2016

The Inuvik Inuvialuit Community Conservation Plan has been prepared in consultation with the Inuvialuit Community in Inuvik and Inuvialuit and non-Inuvialuit bodies with an interest in the area. The undersigned representatives hereby adopt this document for the purpose of guiding policy and resource management in the planning area.



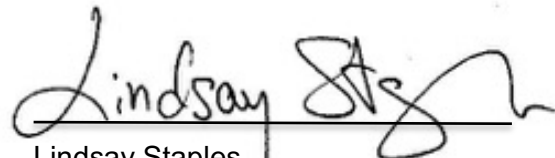
John Day
Vice-President
Inuvik Hunters and Trappers Committee



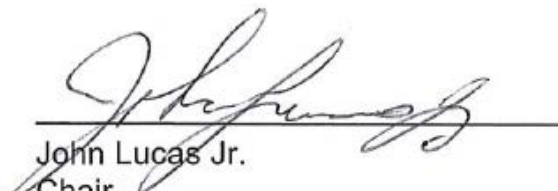
Larry Carpenter
Chair
Wildlife Management Advisory Council
(NWT)



Gerald Inglangasuk
Chair
Inuvik Community Corporation



Lindsay Staples
Chair
Wildlife Management Advisory Council
(North Slope)



John Lucas Jr.
Chair
Inuvialuit Game Council



Vic Gillman
Chair
Fisheries Joint Management Committee

IMPORTANT DEFINITIONS AND ABBREVIATIONS

The following important words and abbreviations have been used in the Community Conservation Plan and are explained below.

Community

Refers to all the Inuvialuit individuals living in the area and the local organizations, which represent them. Those organizations include the Hunters and Trappers Committee, Elders, Community Corporation, Community Education Council and Hamlet.

Conservation

Is ensuring that if we take caribou, there will be caribou the next year and the year after that; the same for anything else. This applies to all uses of the land: if it is used and enjoyed now, it must be left and preserved so that it will be there for the next year and for future years.

Ecosystem

Refers to all of the plants and animals in an area, including the air, water and land on which they depend. The parts of the ecosystem are interconnected and influence one another. Food and energy flow through the ecosystem and are returned to it. Successful conservation and management depend on the recognition that changing one part of the ecosystem may affect the other parts.

CWS - Canadian Wildlife Service

DFO - Department of Fisheries and Oceans

DoL – Department of Lands, GNWT

DOT - Department of Transportation

ENR - Department of Environment and Natural Resources, GNWT

EIRB - Environmental Impact Review Board

EISC - Environmental Impact Screening Committee

FJMC - Fisheries Joint Management Committee

GNWT - Government of the Northwest Territories

GRRB - Gwich'in Renewable Resource Board

GTC - Gwich'in Tribal Council

HTC - Hunters and Trappers Committee

ICC - Inuvik Community Corporation

IFA - Inuvialuit Final Agreement

IGC - Inuvialuit Game Council

IHTC - Inuvik Hunters and Trappers Committee

ILA - Inuvialuit Land Administration

IRC - Inuvialuit Regional Corporation

ISR - Inuvialuit Settlement Region

ITI – Department of Industry, Tourism and Investment

IWB – Inuvialuit Water Board

NWT - Northwest Territories

PWNHC - Prince of Wales Northern Heritage Centre

RRC - Renewable Resource Council (Gwich'in)

WMAC (NS) - Wildlife Management Advisory Council (North Slope)

WMAC (NWT) - Wildlife Management Advisory Council (Northwest Territories)

YTG - Yukon Territorial Government

TABLE OF CONTENTS

| | |
|--|-----------|
| TABLE OF MAPS | 7 |
| EXECUTIVE SUMMARY | 9 |
| ACKNOWLEDGEMENTS | 11 |
| 1 INTRODUCTION | 12 |
| 1.1 A BRIEF HISTORY OF THE INUVIK AREA..... | 15 |
| 1.2 INUVIALUIT FINAL AGREEMENT AND RENEWABLE RESOURCE MANAGEMENT 17 | |
| 1.2.1 <i>Inuvialuit Final Agreement</i> | 17 |
| 1.2.2 <i>Wildlife Management Advisory Councils (NWT and NS) and Fisheries Joint Management Committee</i> | 17 |
| 1.2.3 <i>Inuvialuit Game Council and Hunters and Trappers Committees</i> | 17 |
| 1.2.4 <i>Inuvialuit Land Administration</i> | 17 |
| 1.2.5 <i>Environmental Impact Screening Committee and Environmental Impact Review Board</i> 18 | |
| 1.3 GWICH'IN TRANSBOUNDARY ISSUES | 18 |
| 2 COMMUNITY VALUES | 20 |
| 3 GOALS | 21 |
| 4 SPECIAL AREAS AND RECOMMENDED LAND USE PRACTICES FOR THE PLANNING AREA | 22 |
| 4.1 SPECIAL DESIGNATED AREAS | 23 |
| 4.1.1 <i>General Land Use Guidelines</i> | 88 |
| 4.2 INUVIALUIT COMMUNITY PROCESS FOR LAND USE DECISIONS..... | 88 |
| 4.3 CUMULATIVE IMPACTS MANAGEMENT..... | 89 |
| 4.4 ENVIRONMENTAL SCREENING & REVIEW | 89 |
| 4.4.1 <i>Recommendations</i> | 90 |
| 5 EDUCATION, TRAINING AND INFORMATION EXCHANGE | 92 |
| 6 WILDLIFE MANAGEMENT AND RESEARCH | 93 |
| 6.1 GENERAL GUIDELINES..... | 93 |
| 6.2 SUBSISTENCE AND COMMERCIAL HARVESTING - GENERAL GUIDELINES | 95 |
| 6.3 TOURISM GUIDELINES | 95 |
| 6.4 SPECIES CONSERVATION SUMMARIES | 96 |
| BEAVER (<i>Castor canadensis</i>) / KIGIAQ | 97 |
| BLACK BEAR (<i>Ursus americanus</i>) / IGGARLIQ | 98 |
| CARIBOU (<i>Rangifer tarandus</i>) / TUTTU | 99 |
| FOXES/ KAYUQTUQ | 103 |
| GRIZZLY BEAR (<i>Ursus arctos horribilis</i>) / AKĽAQ..... | 104 |
| LYNX (<i>Lynx canadensis</i>) / NIUTUIYIQ | 106 |
| MARTEN (<i>Martes americana</i>) / QAVVIATCHIAQ..... | 107 |
| MINK (<i>Mustela vison</i>) / ITIRIAQPAK..... | 108 |
| MOOSE (<i>Alces alces</i>) / TUTTUVAK..... | 109 |
| MUSKOX (<i>Ovibos moschatus</i>) / UMINGMAK | 111 |
| MUSKRAT (<i>Ondatra zibethicus</i>) / KIVGALUK..... | 112 |
| POLAR BEAR (<i>Ursus maritimus</i>) / NANUQ | 113 |
| SNOWSHOE HARE or RABBIT (<i>Lepus americanus</i>) / UKALIQ | 116 |
| WOLF (<i>Canis lupus</i>) / AMARUQ..... | 117 |
| WOLVERINE (<i>Gulo gulo</i>) / QAVVIK | 118 |
| BELUGA WHALE (<i>Delphinapterus leucas</i>) / QILALUGAQ..... | 119 |
| BOWHEAD WHALE (<i>Balaena mysticetus</i>) / ARVIQ..... | 125 |

| | |
|--|------------|
| SEALS..... | 128 |
| MAMMALS SPECIES LIST..... | 134 |
| DUCKS / QAUGAIT..... | 135 |
| GEESE /KANNGUT AND TUNDRA SWAN / QUGRUK..... | 139 |
| LOONS..... | 143 |
| PTARMIGAN (<i>Lagopus spp.</i>) / QRIGIQ..... | 145 |
| SANDHILL CRANE (<i>Grus canadensis</i>) / TATIRGAQ..... | 146 |
| EAGLES..... | 147 |
| PEREGRINE FALCON (<i>Falco peregrinus anatum</i>) / KIRGAVIK..... | 148 |
| GYRFALCON (<i>Falco rusticolus</i>)..... | 148 |
| ROUGH LEGGED HAWK (<i>Buteo lagopus</i>) / QILGIQ..... | 148 |
| SNOWY OWL (<i>Nyctea scandiaca</i>) / UKPIK..... | 149 |
| BIRD SPECIES LIST..... | 150 |
| ARCTIC CISCO (<i>Coregonus autumnalis</i>)..... | 153 |
| ARCTIC GRAYLING (<i>Thymallus arcticus</i>) / HULUKPAUGAQ..... | 155 |
| BLUE or PACIFIC HERRING (<i>Clupea pallasii</i>) / QALUHAQ..... | 156 |
| BROAD WHITEFISH (<i>Coregonus nasus</i>) / AANAAKLIQ..... | 157 |
| BURBOT or LOCHE (<i>Lota lota</i>) / TITTAALIQ..... | 159 |
| CONEY or INCONNU (<i>Stenodus leucichthys</i>) / HIIGAQ..... | 161 |
| oLY VARDEN CHAR (<i>Salvelinus malma</i>) / IQALUAQPIK..... | 163 |
| JACKFISH or NORTHERN PIKE (<i>Esox lucius</i>)..... | 166 |
| LAKE TROUT (<i>Salvelinus namaycush</i>) / IQALUAQPAK..... | 167 |
| LAKE WHITEFISH / CROOKED BACKS (<i>Coregonus clupeaformis</i>) / PIKUKTUUQ..... | 169 |
| LEAST CISCO or BIG-EYED HERRING (<i>Coregonus sardinella</i>) / QALUHAQ..... | 170 |
| INSECTS / QUPILRUT..... | 172 |
| PLANTS / NAURIAT OF THE MAINLAND WESTERN ARCTIC..... | 173 |
| HARVEST SEASONS IN THE INUVIK PLANNING AREA..... | 179 |
| APPENDIX A: PRINCIPLES OF WILDLIFE HARVESTING AND MANAGEMENT FROM THE INUVIALUIT FINAL AGREEMENT..... | 180 |
| APPENDIX B: GOALS AND PRINCIPLES OF THE INUVIALUIT RENEWABLE RESOURCE CONSERVATION AND MANAGEMENT PLAN..... | 181 |
| APPENDIX C: GOALS OF THE NORTH SLOPE WILDLIFE CONSERVATION AND MANAGEMENT PLAN..... | 182 |
| APPENDIX D: ORGANIZATION CHART FOR RENEWABLE RESOURCE MANAGEMENT UNDER THE INUVIALUIT FINAL AGREEMENT..... | 183 |
| APPENDIX E: ORGANIZATION CHART FOR PRIVATE LAND MANAGEMENT UNDER THE INUVIALUIT FINAL AGREEMENT..... | 184 |
| APPENDIX F: INUVIALUIT LAND ADMINISTRATION APPLICATION REVIEW PROCESS..... | 185 |
| APPENDIX G: INUVIALUIT SETTLEMENT REGION ENVIRONMENTAL IMPACT SCREENING AND REVIEW PROCESS..... | 186 |
| APPENDIX H: INUVIK LAND USE DECISION PROCESS..... | 187 |
| APPENDIX I: CONDUCT OF OPERATIONS..... | 188 |

LIST OF MAPS

| | |
|--|-----|
| Map 1. Inuvialuit Settlement Region and Private Lands..... | 13 |
| Map 2. Inuvik Conservation Planning Area and Private Lands | 14 |
| Map 3. Overlay of All Sites in the Inuvik Planning Area by Management Category | 23 |
| Map 4. Site 201B Fall Moose Harvesting Area. | 25 |
| Map 5. Site 202B Fall/Winter Moose Harvesting Area. | 27 |
| Map 6. Site 701E Caribou Herds and Winter Range..... | 29 |
| Map 7. Site 702B Caribou Hills. | 32 |
| Map 8. Site 703D Kugaluk River Estuary..... | 34 |
| Map 9. Site 704C Fish Lakes and Rivers..... | 36 |
| Map 10. Site 705E Husky Lakes | 38 |
| Map 11. Site 706E Kendall Island Bird Sanctuary..... | 40 |
| Map 12. Site 707D Anderson River Migratory Bird Sanctuary. | 42 |
| Map 13. Site 708B Crossley Lakes | 44 |
| Map 14. Site 709E Fort Anderson..... | 46 |
| Map 15. Site 710CD Coastal Zones of the Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, and Baillie Islands..... | 48 |
| Map 16. Site 711E Tarium Niryutait Marine Protected Area/ Beluga Management Zone 1A. | 50 |
| Map 17. Site 712C Beluga Management Plan Zone 2 - All Mackenzie Shelf Waters Shallower than 20 Metres | 56 |
| Map 18. Site 714CDE Kugmallit Bay..... | 59 |
| Map 19. Site 715C Mackenzie River Delta Key Migratory Bird Habitat..... | 62 |
| Map 20. Site 716CE Mackenzie Bay and Shallow Bay | 65 |
| Map 21. Site 717D Outer Delta Islands..... | 67 |
| Map 22. Site 718D Central Mackenzie Estuary..... | 69 |
| Map 23. 719C Inner Mackenzie Delta | 71 |
| Map 24. 720DE Fish Hole and Big Fish River..... | 73 |
| Map 25. Site 725DE Eastern North Slope, East of Babbage River | 75 |
| Map 26. Site 726E Yukon North Slope Coastal Zone | 78 |
| Map 27. 727E Ivvavik National Park. | 80 |
| Map 28. Site 728E Pingo Canadian Landmark | 82 |
| Map 29. Site 729E Kitigaaryuit..... | 84 |
| Map 30. Site 730E Qikiqtaruk\Herschel Island Territorial Park | 86 |
| Map 31. Current Ranges of the Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds..... | 102 |
| Map 32. Grizzly Bear Management Areas | 105 |
| Map 33. Polar Bear Management Areas..... | 115 |
| Map 34. Percent Volume Contours of beluga sightings made during systematic aerial surveys in the Mackenzie Estuary during early (top), mid (middle), and late July (lower) time periods, 1977-1985 and 1992 (Harwood et al. 2014)..... | 123 |
| Map 35. Bowhead open water habitat use in South-East Beaufort Sea, August 2007-2009 based on DFO aerial surveys..... | 126 |
| Map 36. Adult ringed seal open water habitat use based on tagging studies: red = inferred feeding locations; blue = travelling (Harwood et al. 2015). | 130 |

| | |
|--|-----|
| Map 37. Subadult ringed seal open water habitat use based on tagging studies: red = inferred feeding locations; blue = travelling (Harwood et al. 2015). | 131 |
| Map 38. Adult ringed seal winter (1999-2001, 2010-2011) habitat use based on tagging studies (Harwood et al. 2015). | 131 |
| Map 39. Subadult ringed seal winter (1999-2001, 2010-2011) habitat use based on tagging studies (Harwood et al. 2015). | 132 |

EXECUTIVE SUMMARY

The **Inuvik Inuvialuit Community Conservation Plan** is a community-based planning document that was originally prepared in 1993 by the Inuvik Hunters and Trappers Committee, Inuvik Community Corporation, and Inuvik Elders Committee. Creation of community-based conservation plans was the first objective of the Inuvialuit Renewable Resource Conservation and Management Plan (1988), a document jointly prepared by the Wildlife Management Advisory Council (NWT) and the Fisheries Joint Management Committee (FJMC) in partial fulfilment of their obligations under the Inuvialuit Final Agreement. The Inuvik Inuvialuit Community Conservation Plan was prepared coincidentally with a similar plan for the community of Aklavik by a joint working group comprised of representatives of both communities. Numerous Inuvialuit and non-Inuvialuit organizations were consulted during the planning process. A wide range of existing conservation plans were considered by the joint working group and extensive use was made of the Land Use Plan for the Mackenzie Delta Beaufort Sea Region (1991).

The Inuvik Inuvialuit Community Conservation Plan was updated in 2000, 2008 and 2015 building upon the work of the original document. Working Groups were re-established as part of the review exercise, and extensive consultation was once again undertaken with Inuvialuit and non-Inuvialuit organizations. Government agencies and co-management bodies also contributed a significant amount of time and effort to update the information in the Plan.

The document is intended to provide guidance to all those with an interest in the planning area, but is not a legally binding document.

The Plan contains a brief description of the current conservation and resource management system in the Inuvialuit Settlement Region and describes the strategy to address five broad goals:

1. To identify important wildlife habitat and seasonal harvesting areas and make recommendations for their management.
2. To describe a community process for land use decisions and managing cumulative impacts, which will help protect community values and the resources on which priority lifestyles depend.
3. To identify educational initiatives for the Inuvialuit of Inuvik and others interested in the area, which will promote conservation, understanding and appreciation.
4. To describe a general system of wildlife management and identify population goals and conservation measures appropriate for each species of concern in the planning area using the knowledge of community and others with expertise.
5. To enhance the local economy by adopting a cooperative and consistent approach to community decision making and renewable resource management.

All excerpts of other documents included in this plan are not a substitute for the originals; original source documents should be used for legal accuracy or citation purposes.

The Inuvik Inuvialuit Community Conservation Plan will be subject to a progress review and potential amendment every five years or as needed. The HTC is responsible for initiating the review, to be conducted by the Community Conservation Plan Working Group. All feedback

should be provided to the Joint Secretariat for integration in updated versions of the Plan. Minor revisions or corrections to the Plan may be sent to the Joint Secretariat at any time, for entry into subsequent versions. A complete review of the Plan by all stakeholders will occur a minimum of every eight years.

Copies of the plan are available at the WMAC (NWT) P.O. Box 2120 Inuvik, NT X0E 0T0 Phone: (867) 777- 2828.

ACKNOWLEDGEMENTS

1993

On behalf of the Inuvik Community Conservation Planning committee we would like to take this time to thank the following people: Kathleen Hansen, Jim Edwards, Albert Oliver, Elijah Harley, Jim Kalinek and Billy Day. If it weren't for the elders we would never find out this valuable information. The story on the history of Inuvik and their knowledge about the land and animals will be very useful. We would also like to thank members of the various Inuvialuit and non-Inuvialuit organizations who were contacted and subsequently took time to offer comments and advice. We would particularly like to thank WMAC (NWT), WMAC (NS) and the FJMC for their encouragement and guidance.

2000

On behalf of the Inuvik Community Conservation Plan Working Group we would like to take this opportunity to thank the original Planning Committee for all their work in the original plan: Joey Amos, Alex Aviugana, Andy Carpenter, Billy Day, John Holman, Sandra Ipana, John Bailey, and Bob Bell.

As well, we would like to thank the following individuals who were involved in updating and revising the plan: Richard Binder, Johnny Lennie, Esther Price, Victor Allen, Frank Stefannson, Willie Stefannson, Emma Dick, Ian MacDonald, Robert Charlie, Burton Ayles, the Inuvik Community Corporation and Joint Secretariat Staff. Brian Johnston (Resource Person, WMAC (NWT)) and Michael Muller (GIS Specialist, Joint Secretariat) conducted community consultations and drafted the updated document, based on the recommendations of the community. The current plan is produced and distributed by the Joint Secretariat.

2008

The 2008 Inuvik Community Conservation Plan would have not been such a success if it were not for the following: The Inuvik Working Group; Ethel-Jean Gruben, Ada Carpenter, Melissa Kisoun, and Patrick Gruben, The Wildlife Management Advisory Council, Fisheries Joint Management Committee and the Joint Secretariat. Also a very big Thank You to the Environment and Natural Resources Department for making the old maps available to the Working Group and drafting the amended maps.

2016

The 2016 Inuvik Community Conservation Plan has the following individuals to thank for their considerate review of the documents: the Inuvik Working Group consisting of Hank Rogers Sr., Shirley Kisoun, Gerald Inlangasuk, Richard R. Gordon, Roy Goose, Hank Angasuk, and Douglas Esagok, the Wildlife Management Advisory Council, Fisheries Joint Management Committee and the Joint Secretariat. . Thanks to CWS, DFO and ENR for reviewing and providing comments and to IRC and ENR for providing GIS support to change the maps. The Inuvik Conservation Plan has evolved over the last 20 years from the signing of our *Inuvialuit Final Agreement*. Our review of this conservation plan reflects potential future amendments that may arise from climate change and resource development.

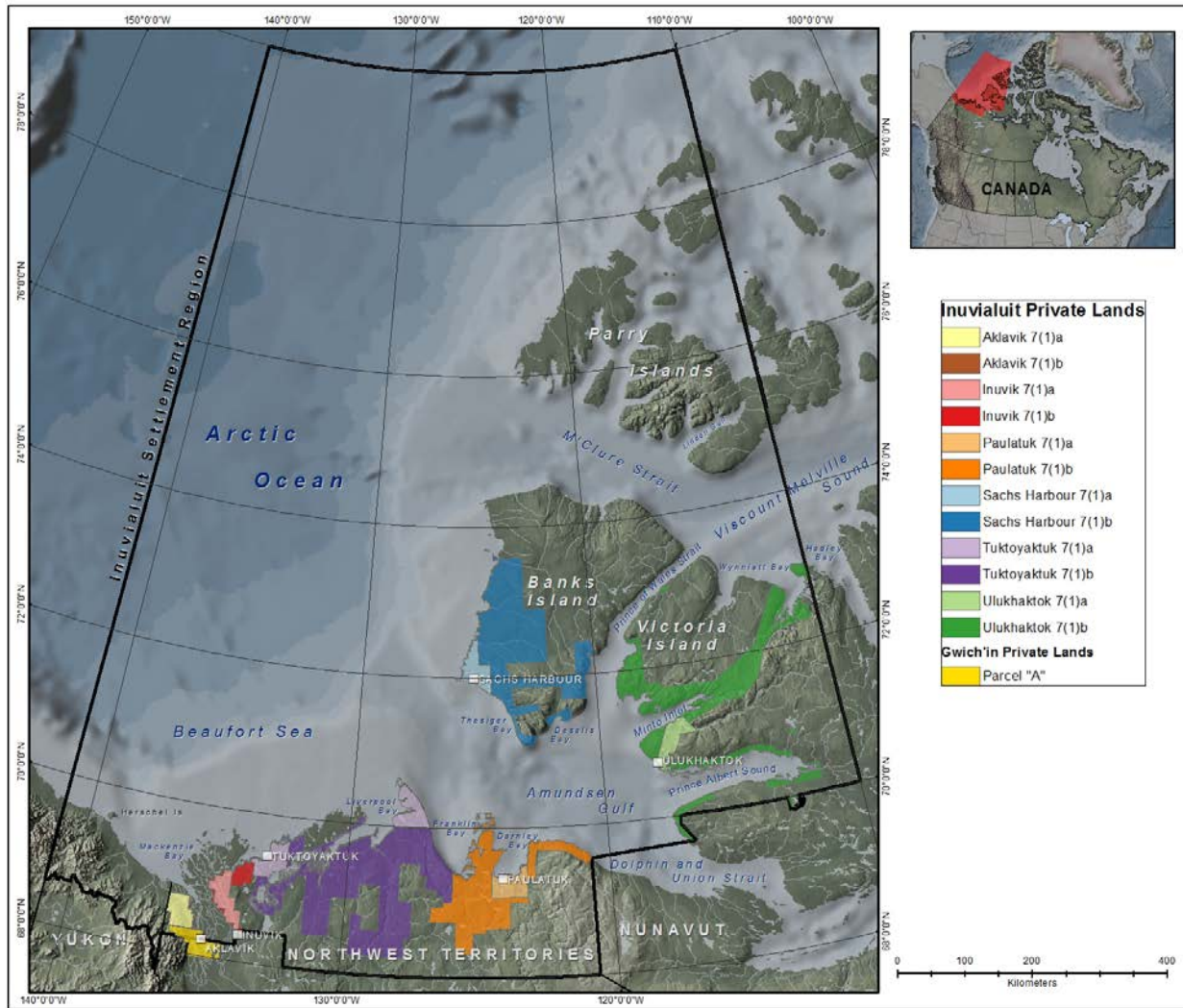
1 INTRODUCTION

The people of the Mackenzie Delta and Yukon North Slope have relied upon the area's wildlife for many years. This plan was developed to help protect the environment in the Delta area and onshore and offshore areas to ensure cultural survival of the Inuvialuit Community, in accordance with the *Western Arctic (Inuvialuit) Claims Settlement Act* and the Inuvialuit Renewable Resource Conservation and Management Plan.

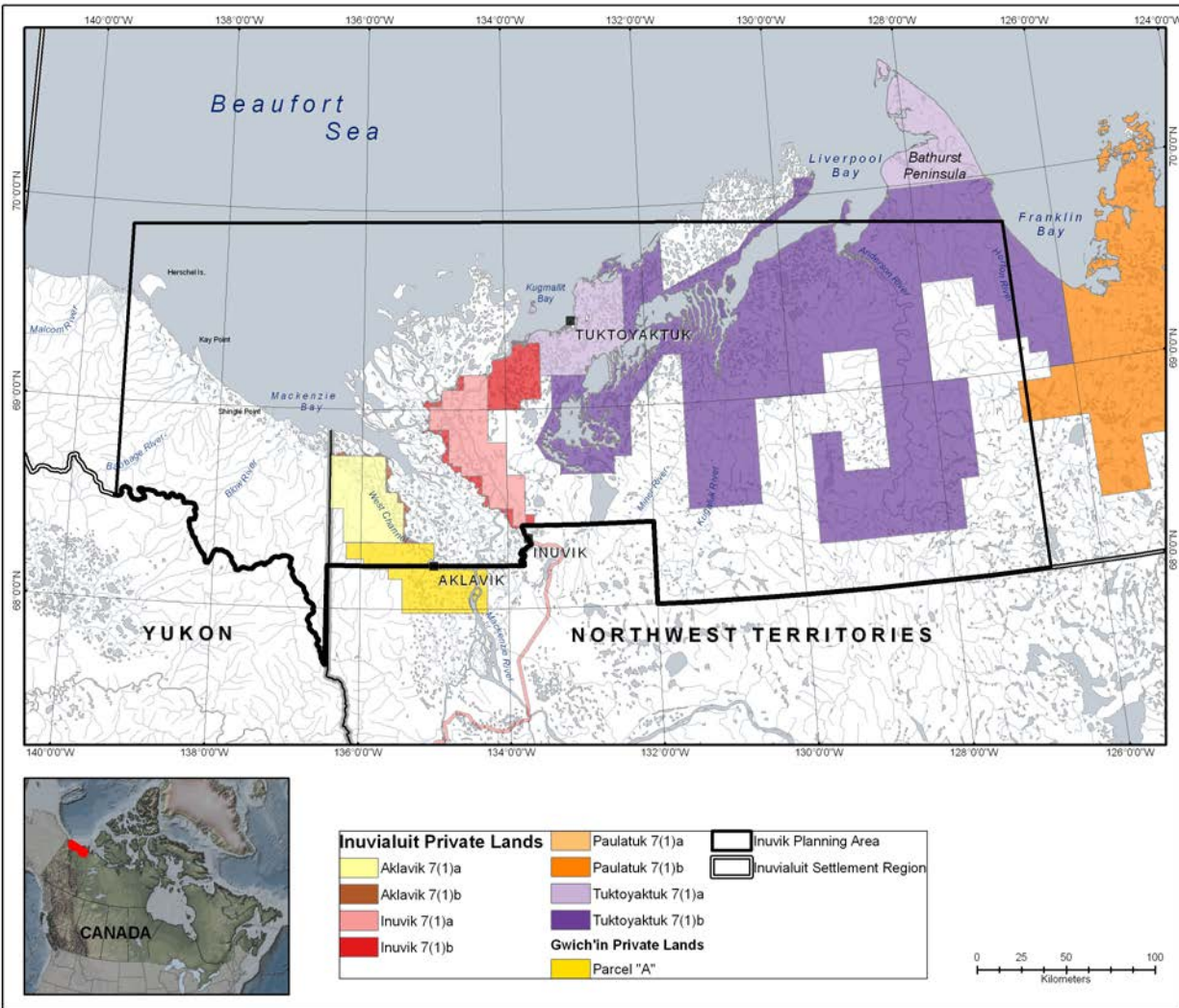
Development of the original plan has been coordinated by representatives of the Aklavik and Inuvik Hunters and Trappers Committees, the Community Corporations, the Elders and other community representatives. To prepare the original plan, the joint Inuvik-Aklavik Community Conservation Plan Working Group carefully reviewed conservation plans already completed in other Inuvialuit communities, species management plans, the Inuvialuit Renewable Resources Conservation and Management Plan, the Yukon North Slope Wildlife Conservation and Management Plan, the Regional Land Use Plan For the Mackenzie Delta- Beaufort Sea Region and relevant documents arising from the Inuit Circumpolar Conference.

In addition, considerable effort was made to obtain opinion and advice from Inuvialuit and Gwich'in members of the Community as well as government agencies. The plan is intended to express the Inuvialuit community's specific goals and objectives with respect to conservation of lands, waters and living resources in the Inuvialuit Settlement Region (Map 1), and in particular in the Inuvik Conservation Planning Area (Map 2). It makes recommendations and describes activities to be undertaken by individuals and organizations at the local, regional and national level. The plan describes a process for avoiding land use conflicts and dealing with cumulative impacts. We hope the plan will assist the Inuvialuit and others in ensuring conservation and environmental protection of the area.

The updating exercise that has produced the present version of the Plan was spearheaded by the IHTC and ICC, a newly re-established Community Working Group, and the staff of the Joint Secretariat. Once again, consultation with Inuvialuit and non-Inuvialuit organizations and co-management bodies played an important role in the review process. A multi-stakeholder workshop was held to exchange advice and recommendations before the final version of the Community Conservation Plans were drafted.



Map 1. Inuvialuit Settlement Region and Private Lands



Map 2. Inuvik Conservation Planning Area and Private Lands

***TO BE ADDED:**

Insert into introduction:

- Kendall Island map area and whale camps given category E designation
- Outer Mackenzie Delta Islands, Land fast ice areas, designated as category E to protect sensitive polar bear habitat
- Potential creation of moose zone
- Overlapping conservation agreements with Gwich'in in regards to I/BC/06

1.1 A BRIEF HISTORY OF THE INUVIK AREA

Inuvik is located on the east channel of the Mackenzie River Delta. It lays within the northern most reaches of the treeline and is 97 km (60 mi.) south of the Beaufort Sea.

The proper meaning of the name "Inuvik" is "living place" and not "place of man", as it has been misinterpreted.

Surveying of the Inuvik town site was completed in 1955 and work started in the spring of 1956. It was at that time called "Aklavik East Three". The intention was that Aklavik would be no more and that everyone would move to the new site.

The Inuvialuit and the Gwich'in have traditionally hunted and fished in the region where Inuvik is now situated, but a permanent settlement was established only in 1958 when the federal government moved its regional offices from Aklavik to the present site of Inuvik.

The Bluenose caribou had changed their migration route sometime in the early 1920's and did not come back to the Inuvik area for approximately 60 years.

In the 1920's, some government officials came up to Tuktoyaktuk to meet with our Inuvialuit Chief 'William Mangelaluk' to offer him a treaty of \$5.00 per year for all of the Inuvialuit, but the Chief refused and told them that we wanted reindeer to replace the caribou that were gone. That is the reason that the reindeer were brought over from Alaska and it was four and one half years before they made it to Tuktoyaktuk. The herders left Alaska with several thousand reindeer in December of 1929 and arrived with about 3,000 reindeer in the Delta area in the spring of 1935.

The Muskrat Jamboree was initiated during the year 1957 to celebrate the coming of spring and has become an annual event ever since and the Northern Games Committee was formed in 1969 and became an annual event as well.

Connie Miller was the first schoolteacher and she had set up her classes in a 512 building before the Sir Alexander Mackenzie School was built during the construction years.

Inuvik had set up a PTA during the year of 1957 and, during this time, Billy Day was the Chairman of the PTA for many years.

Among the first Inuvialuit to arrive to Inuvik were: Elijah Harley, Peter Joe, Billy Day, Rufus Tingmiak, John Keevik, Johnny Aviugana, Stanley (Shorty) Gordon, George Harry and a host of others that are too many to name.

Most of the Inuvialuit that moved to Inuvik were from the Mackenzie Delta Region, but had family ties with other settlements around the Western Arctic and even Alaska.

John Keevik was the last elected Inuvialuit Chief for the Mackenzie Delta in approximately 1953, before any land claims or politics had arisen.

Some of the first Gwich'in to arrive were Jim Koe, Alex Greenland, Johnny McDonald, Justin Stewart, Donald (Buster) Mcleod, Tom Wright and John Carmichael.

L.F. (Slim) Semmler was also one of the first fur traders to arrive in Inuvik, setting up a store in a tent along with his wife Agnes Semmler (Norberg). Slim had grubstaked a lot of the local and outlying trappers during the hard times. Slim very rarely turned any trapper away. After rapping season was finished, Slim's store was like a family gathering place to the local Inuvialuit and Gwich'in. Each relating to others what type of season they had. Not only did Slim assist a lot of the trappers, he also purchased a lot of rabbits and fish to supply to construction camps that were building the town. Slim mentioned that one time he sold 10,000 rabbits in one year.

Bruno Weideman and Fred Norris were two of the first members of the community to set up a taxi service. Freddie Carmichael and Lyle Trimble started up one of the first aeroplane services called Reindeer Air Service together. Mike Zubko had moved his Aklavik Flying Service business over. Davey Jones was the first Imperial Oil bulk agent for the community and was a prominent figure in the community.

Tom Butters had started up the Inuvik Drum in the late sixties with a lot of work and effort put into it, before selling out to Dan Holman. Tom became Inuvik's MLA for sixteen years. A few of the elders still remember Eric Hoffman. He had assisted William Chicksi to set up one of the first country food outlets in about 1958. During this time muskrats, rabbits, fish and other game meat were made available to the residents of Inuvik. The outlet eventually closed down and was later replaced by another country food outlet, Ulu Foods, which operated through the late 1980's.

The Mackenzie Hotel, Rec Hall, Polaris Theatre, R.C.M.P. Building and numerous '512's' were some of the first buildings to be built here but many of the residents still lived in tents down by the river until public housing was complete.

In the mid 1960s, a few of the residents of Reindeer Station had moved to Inuvik, as the government had sold the reindeer herd to Silas Kangekana. Many of the herders moved to Tuktoyaktuk as this was their traditional hunting and trapping area.

The residents of Inuvik still remember when the reindeer herders would bring the reindeer to Inuvik during Reindeer Days and offer rides on the sleighs that they would provide.

Father Adams was quite renowned for his ice sculptures outside of the famous Igloo Church, and for his favourite brand of snuff. Children would go to him to get a sniff of his snuff and to see the movies that the R.C. mission put up every Friday night.

The R.C. and Anglican Missions had hostels that housed students from both Inuvialuit and Gwich'in students. They came from all over the Western Arctic and Central Arctic.

The Armed Forces had moved here after the community was established and left in 1986 when satellites replaced their function.

People remember turning on their radios for the first time in 1960 to listen to Wally Firth and Nellie Cournoyea for messages and announcements.

During the 1970s and 80s, the oil patch was at its busiest and Inuvik flourished, as did other communities. The oil patch left Inuvik temporarily, however there is a renewed interest in natural gas development in the region. For the meantime, people have adapted to the serene life. The trapping of muskrat, fox and other furbearers created great employment and prosperity in the area. Because of the activities of the anti-fur lobby and animal rights activists, this culturally

supported opportunity has been significantly reduced. Many of the Inuvialuit and Gwich'in do not trap full time due to the decline in fur prices, but still trap occasionally on weekends and spring time for muskrats in the Delta, which at one time was one of the best fur markets in the world. Subsistence harvesting of animals and plants is still of vital importance to the Inuvialuit community.

Inuvik has gone through a lot of changes during its short history and has adapted well.

1.2 INUVIALUIT FINAL AGREEMENT AND RENEWABLE RESOURCE MANAGEMENT

1.2.1 Inuvialuit Final Agreement

To secure and protect the homeland of the Inuvialuit in the Beaufort Sea region, known as the Inuvialuit Settlement Region (ISR), the Inuvialuit and the governments of Canada, the Northwest Territories, and the Yukon, negotiated The Inuvialuit Final Agreement (IFA). Proclaimed on July 24, 1984, the IFA includes the Northern Mackenzie Delta, Yukon North Slope and the western portion of the Arctic Islands. The IFA established several new management bodies to help ensure that the land and its living resources are conserved for the benefit of the Inuvialuit (see Appendices D and E). In addition to the summaries presented below, additional detailed information is available from the organizations described.

1.2.2 Wildlife Management Advisory Councils (NWT and NS) and Fisheries Joint Management Committee

The IFA created three new co-management bodies: the Wildlife Management Advisory Council (NWT) (WMAC (NWT)), the Wildlife Management Advisory Council (North Slope) (WMAC (NS)) and the Fisheries Joint Management Committee (FJMC). The WMAC (NWT) provides advice to appropriate government ministers and Inuvialuit agencies on all matters relating to wildlife policy and the management, regulation and administration of wildlife, habitat and harvesting in the Northwest Territories portion of the Inuvialuit Settlement Region. The WMAC (NWT) also advises government on wildlife related issues of park planning and management. The WMAC (NS) fills a similar role as the WMAC (NWT) however; its focus is on the Yukon North Slope. In addition to providing advice to government ministers, the WMAC (NS) is also expected to provide advice to the Porcupine Caribou Management Board, the Environmental Impact Review Board (EIRB) and other groups. The FJMC assists Canada and the Inuvialuit in a similar fashion, managing the area's marine mammals and marine and freshwater fisheries. The FJMC also coordinates delivery of the HTC registration system for fishing by non-beneficiaries on private land.

1.2.3 Inuvialuit Game Council and Hunters and Trappers Committees

The IFA also created the Inuvialuit Game Council (IGC) and provided for the creation of a Hunters and Trappers Committee (HTC) in each of the six Inuvialuit communities. The IGC is intended to represent the collective or entire Inuvialuit interest in wildlife and to advise the government, often through the WMAC (NWT) and FJMC. The HTC is, among other things, responsible for local resource allocation and is expected to encourage and promote Inuvialuit involvement in conservation, research, management, enforcement and utilization.

1.2.4 Inuvialuit Land Administration

The Inuvialuit Land Administration (ILA) manages and administers access to Inuvialuit private

lands - 7(1)(a) and 7(1)(b) lands. The ILA screens development proposals on private land although they may also be referred to as the Environmental Impact Screening Committee (EISC) by the Inuvialuit.

All applications submitted to the ILA are distributed to the local HTC and Community Corporations for review and comment. Final approval of applications is made by the ILAC who generally will not grant permits without the support and approval of the HTC and Community Corporation. ILAC has the authority to attach a variety of conditions on development proposals on Inuvialuit 7(1)(a) and 7(1)(b) lands to ensure that land and resources are not harmed and that the Inuvialuit benefit. Further information is available in the ILA "Rules and Procedures".

1.2.5 Environmental Impact Screening Committee and Environmental Impact Review Board

Under the terms of the IFA, the Environmental Impact Screening Committee (EISC) screens all development proposals on Crown lands within the ISR to determine if there is potential for significant negative environmental impact (see Appendix H). Projects in the offshore are also screened by the EISC, in response to a request from the Inuvialuit Game Council. Projects that may have significant negative impact are referred to the Environmental Impact Review Board (EIRB) or other equivalent environmental review processes for a public assessment and review. The EIRB has the authority to conduct a detailed public review and make recommendations to the competent governmental authority with respect to proposed developments.

The community believes that the existing methods for environmental screening and review can be incorporated as part of the general conservation process for the Planning Area (see also Section 4.4). The community supports development where it is compatible with the Conservation Plan's land use and species management priorities. Copies of the EISC "Operating Guidelines and Procedures" and the EIRB "Operating Procedures" have been provided to the HTC for public information.

1.3 GWICH'IN TRANSBOUNDARY ISSUES

Private Lands

As identified in Map 1, the Gwich'in hold surface and sub-surface rights on Gwich'in private lands in the ISR, north of Aklavik. These private lands are known as "Parcel A".

Overlap Agreement

On April 2, 1992 an Overlap Agreement was signed between the Inuvialuit Game Council, Inuvialuit Regional Corporation and the Gwich'in Tribal Council with respect to transboundary rights of access for subsistence harvesters within an area known as the "Aklavik 1400 Lands". Any Gwich'in or Inuvialuit who are Aklavik residents may harvest wildlife in the Aklavik 1400 Lands. Under the Agreement, the Inuvialuit shall manage wildlife on the Gwich'in private land in the ISR, according to the IFA.

Overlapping conservation agreements with Gwich'in in regards to I/BC/06

For any of the following transboundary issues in the Gwich'in Settlement Area, please contact the

following organizations:

Renewable Resource Management: Gwich'in Renewable Resource Board in Inuvik

Land Use Planning: Gwich'in Land Use Planning Board in Inuvik

Land Use Regulatory Process: Gwich'in Land and Inuvialuit Water Board in Inuvik

2 COMMUNITY VALUES

The following principles express Inuvialuit community beliefs and values with respect to conservation and resource management in the planning area.

(a) Conservation is First Priority

All uses of the land in the Planning Area, including renewable and non-renewable resource development, must recognize conservation of the renewable resource base as the foremost priority. This applies to uses of the land by the community and by other interests.

(b) Integrated Management

All parts of the environment are interconnected, so they must be managed together. Conservation, stable economic development and sound resource management can only be achieved if all parties work toward a common goal. The Inuvialuit community of Inuvik recognizes the relationship between direct economic security and resource conservation and the importance of maintaining a spirit of cooperation between all people living in the region.

(c) Maximize Community Benefit

Renewable and non-renewable resource development in the Inuvik planning area should be of maximum benefit to community residents, with priorities for Inuvialuit as detailed in the IFA. Development projects should be scaled to retain opportunities and ensure the most lasting benefit to the local economy.

(d) Protect Priority Community Activities

Priority activities to be protected by the Inuvik Inuvialuit Community Conservation Plan are hunting, fishing, guiding, trapping, tourism and arts and crafts manufacturing.

(e) Cooperative Management of Shared Resources

The Inuvik Inuvialuit Community Conservation Plan recognizes a special need for cooperation in the management of migratory species which are also used by other Inuvialuit and non Inuvialuit.

(f) Maintain Healthy Environment

The Inuvialuit of Inuvik place a high priority on maintaining air and water quality and the health of the resources.

(g) Consistency

The Inuvik Inuvialuit Community Conservation Plan should be consistent with the Principles of Wildlife Harvesting and Management from the IFA, (Appendix A), the goals and principles of the Inuvialuit Renewable Resource Conservation and Management Plan (1988), (Appendix B), the goals of the North Slope Wildlife Conservation and Management Plan (1993) (Appendix C), the Regional Land Use Plan (1991), the Arctic Environmental Strategy (1991), and other conservation plans or agreements endorsed by the Community's representatives (e.g. Management Agreement for Polar Bears in the Southern Beaufort Population (1991), the Beaufort Sea Beluga Management Plan (1991).

3 GOALS

The Inuvik Community has identified an overall strategy for conservation and resource management in the Inuvik Planning Area. This strategy is based on five general goals:

1. Identify and Protect Important Habitats and Harvesting Areas

To identify important wildlife habitat, seasonal harvesting areas and cultural sites (for example, cabin sites) and make recommendations for their management.

2. Land Use Decisions

To describe the community process for making land use decisions and managing cumulative impacts that will help protect community values and conserve the resources on which priority lifestyles depend.

3. Education

To identify educational initiatives for the Inuvialuit of Inuvik and others interested in the area, which will promote conservation, understanding and appreciation.

4. Define Species Management

To describe a general system for wildlife management and conservation and identify population goals and conservation measures appropriate for each species of concern in the planning area. This will be done using the knowledge of the Community and others with expertise.

5. Enhance Economy

To enhance the local economy by adopting a cooperative and consistent approach to community decision making and resource management. This approach will help ensure economic stability and maintenance of all components of the Arctic ecosystem.

Information and recommendations required to satisfy the above goals for the Planning Area are described in the sections that follow.

4 SPECIAL AREAS AND RECOMMENDED LAND USE PRACTICES FOR THE PLANNING AREA

Some of the areas and recommended land use practices described in this section were originally identified in the Regional Land Use Plan for the Mackenzie Delta-Beaufort Sea Region (1991). These areas have been identified because they contain important wildlife habitat and/or harvesting areas. Recommendations have been revised and in some cases moved to more appropriate sections of this plan.

Guidelines for land use practices to be followed in these areas are included in the area descriptions, which follow, as well as in other sections of this plan. A set of general land use recommendations is provided at the end of Section 4.1. A Community-based process for arriving at land use decisions is presented in Section 4.2. Processes to assist with the management of cumulative impacts and recommendations for environmental screening and review of development proposals are presented in Sections 4.3 and Section 4.4, respectively.

In designating land use categories, the Inuvialuit Community has attempted to recognize priority land uses and activities, as well as areas of special ecological and cultural importance. Management designations may be modified as additional information becomes available and provided the health and biological productivity of the planning area is maintained. Each area of importance has been given a letter designation corresponding to the categories below:

Category A

Lands and waters where there are no known significant and sensitive cultural or renewable resources. Lands and waters shall be managed according to current regulatory practices.

Category B

Lands and waters where there are cultural or renewable resources of some significance and sensitivity but where terms and conditions associated with permits and leases shall assure the conservation of these resources.

Category C

Lands and waters where cultural or renewable resources are of particular significance and are sensitive during specific times of the year. These lands and waters shall be managed so as to eliminate, to the greatest extent possible, potential damage and disruption.

Category D

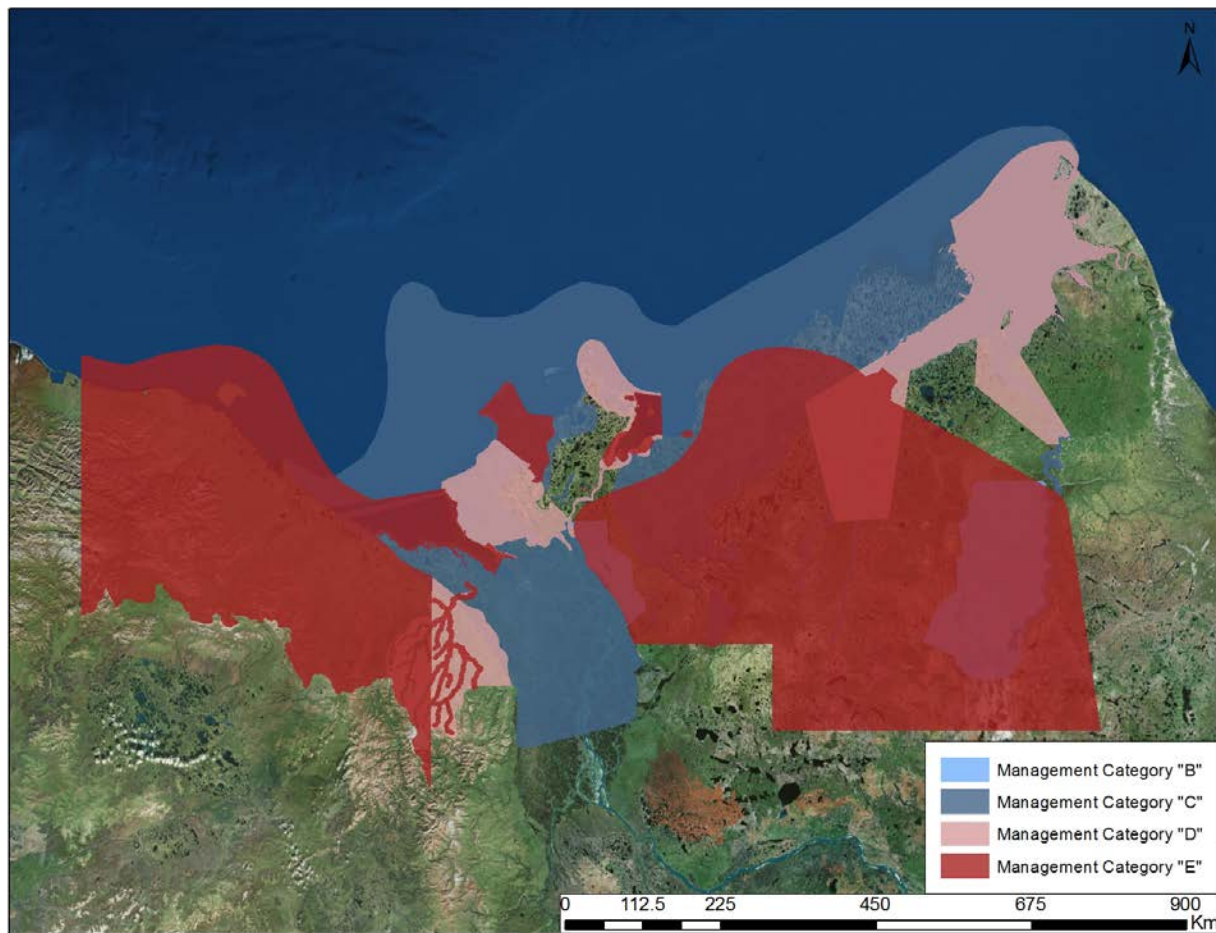
Lands and waters where cultural or renewable resources are of particular significance and are sensitive throughout the year. As with Category C, these areas shall be managed so as to eliminate, to the greatest extent possible, potential damage and disruption.

Category E

Lands and waters where cultural or renewable resources are of extreme significance and are sensitive. There shall be no development on these areas. These lands and waters shall be managed to eliminate, to the greatest extent possible, potential damage and disruption. This category recommends the highest degree of protection in this document.

4.1 SPECIAL DESIGNATED AREAS

Maps and detailed description of the special designated lands listed below are described in the text, which follows (see list of maps page X for list of Inuvik planning area sites). The following map (**Error! Reference source not found.**) Shows an overlay of all sites in the Inuvik planning area by management category.



Map 3. Overlay of All Sites in the Inuvik Planning Area by Management Category

SITE 200DE TRADITIONAL INUVIALUIT CAMPS AND CULTURAL SITES

Identified By

Inuvik Community Working Group

Management Category

D (Cabins)

E (All other sites)

Ownership

Private 7(1)(a), 7(1)(b) and Crown Lands within the ISR.

Description

The Inuvialuit of Inuvik has identified their traditional camps in the Inuvik Planning Area.

Importance of the Site to the Community of Inuvik

Inuvik wishes to protect and preserve all of its culturally important sites. The community can use these sites and others for historical, archaeological, educational and cultural purposes provided the Inuvialuit have been consulted.

Overlapping Nonrenewable Resource Interests and Activities

Since the late 1980s, nonrenewable resource activity in the ISR has been quiet, due mostly to poor global prices for oil and gas and minerals. However, there has recently been a renewed interest in exploration within the northern Mackenzie Delta region.

Granular deposits have been identified around Parsons Lake, south end of Husky Lakes, in the Caribou Hills in the ISR and Travailant Lake region in the GSA.

Overlapping Military, Transportation, and Tourism Interests and Activities

Sports hunting and wildlife viewing tours by boat or snowmobile, around Husky Lakes and the east channel of the Mackenzie Delta.

Inuvik to Tuktoyaktuk Highway project (all-weather road) currently under construction.

Community Working Group Concerns

The Inuvialuit of Inuvik are concerned that if these sites are not identified and protected they may be harmed by development and/or may lose their cultural significance.

Community Working Group Recommendations

1. The PWNHC should incorporate these sites into their list of protected sites. These sites would then be included in the PWNHC review of land use permit applications.
2. DoL should incorporate into the Territorial Land Use Regulations higher fines for violations of the protective measures identified in the land use permitting process: such violations would include the looting of sites for artifacts.
3. DoL should amend the Territorial Land Use Regulations and expand the buffer zone to protect archaeological sites from development to 100 metres (328 ft.).

Visitors should contact the HTC prior to undertaking activities in proximity to any camp or cabin area. (See also General Land Use Guideline 6 in Section 4.1.1).

SITE 201B FALL MOOSE HARVESTING AREA

Map 4. Site 201B Fall Moose Harvesting Area.

Identified By

Inuvik Hunters and Trappers Committee

Management Category

B

Ownership

Crown lands and Private 7(1)(a) and (b) lands within the ISR.

Description

The site includes the delta west and north of Inuvik to Richardson Mountains.

Importance of the Site to the Community of Inuvik

Important fall moose harvesting area and important habitat for Moose. Important past and present subsistence harvesting areas for the Inuvialuit.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall/Winter Harvesting Area (Site 202B)

Bluenose-West Caribou Herd Winter Range (Site 701E)

Caribou Hills (Site 702B)

Fish Lakes and Rivers (Site 704C)

Kendall Island Bird Sanctuary (Site 706E)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Mackenzie Bay and Shallow Bay (Site 716CE)

Outer Delta Islands (Site 717D)

Central Mackenzie Estuary (Site 718D)

Inner Mackenzie Delta (Site 719C)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Overlapping Military, Transportation, and Tourism Interests and Activities

Potential area for outfitting

Potential area for reindeer tours

Community Working Group Concerns

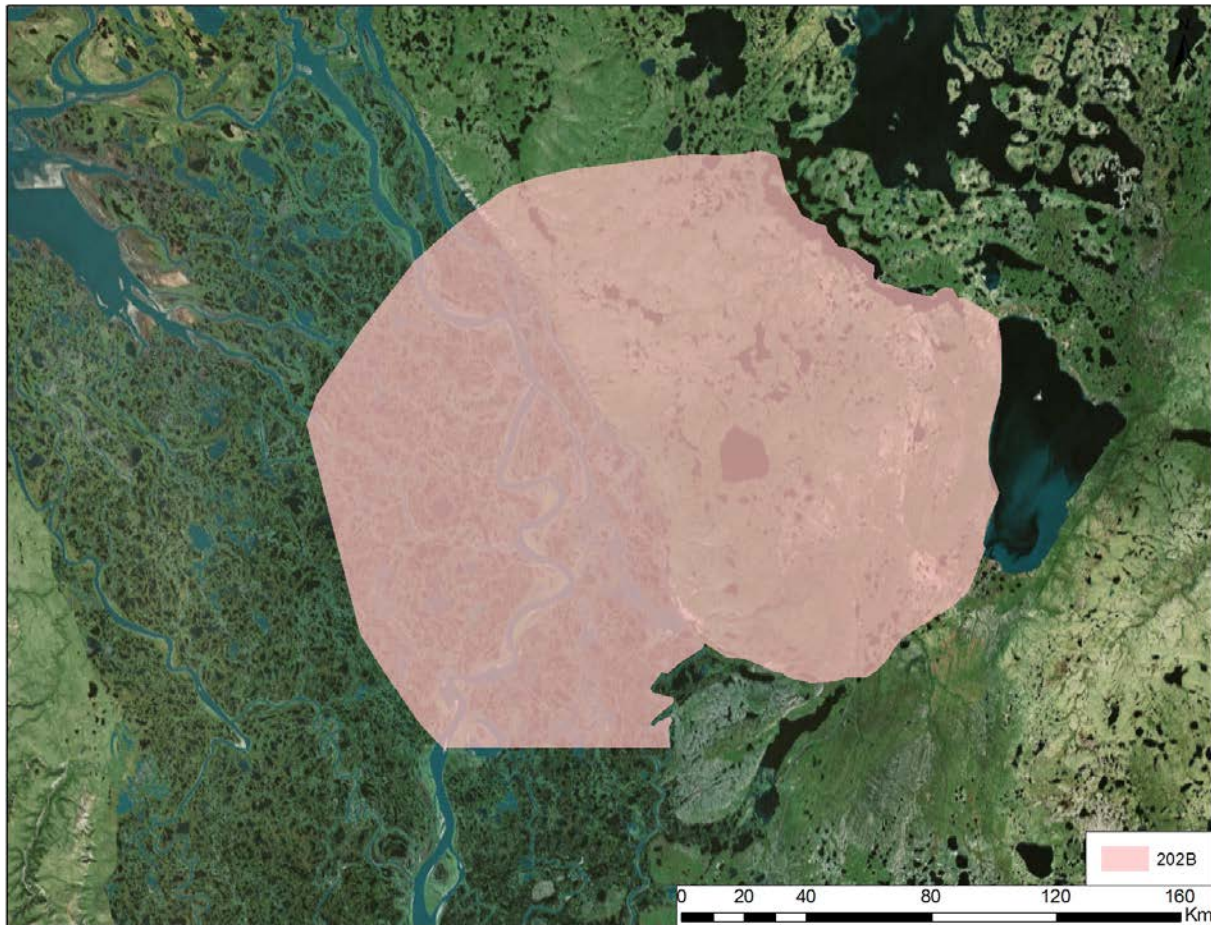
There are concerns that reduced caribou numbers and harvest restriction will increase the harvest pressure on moose.

Recommendation

Increase sample collection

Community Working Group Recommendations

1. IHTC requested a move sample collection to monitor harvest and health of the moose.
2. Regularly monitor moose densities in the area

SITE 202B FALL/WINTER MOOSE HARVESTING AREA

Map 5. Site 202B Fall/Winter Moose Harvesting Area.

Identified By

Inuvik Hunters and Trappers Committee

Management Category

B

Ownership

Crown lands and Private 7(1)(a) and (b) lands within the ISR.

Description

The site includes the area west of Sitigi Lake north to the south edge of Husky Lakes over to the delta and southeast to include areas south of Inuvik in the GSA.

Importance of the Site to the Community of Inuvik

Important Moose fall/winter harvesting area and important habitat for Moose.
Important past and present subsistence harvesting areas for the Inuvialuit.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site 201B)

Bluenose-West Caribou Herd Winter Range (Site 701E)

Caribou Hills (Site 702B)

Fish Lakes and Rivers (Site 704C)

Husky Lakes (Site 705E)

Inner Mackenzie Delta (Site 719C)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s, but activity slowed in 2010s.

Overlapping Military, Transportation, and Tourism Interests and Activities

Potential area for outfitting

The Inuvik – Tuktoyaktuk Highway bisects the area.

The Reindeer herd winters in this area and there is new interest in Reindeer tours.

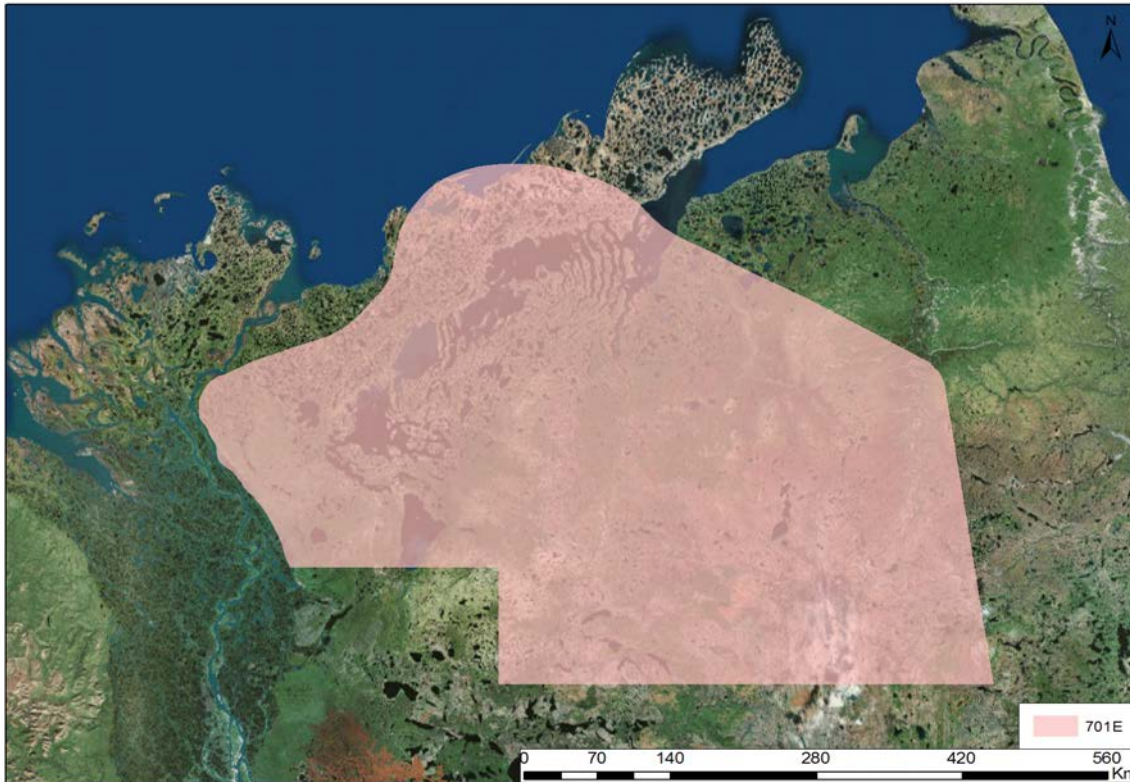
Community Working Group Concerns

There are concerns that the Inuvik – Tuktoyaktuk highway may increase access to the Moose harvesting area. There are also concerns that reduced caribou numbers and harvest restrictions will increase the harvest pressure on Moose.

Community Working Group Recommendations

1. IHTC requested a Moose sample collection to monitor harvest and health of the Moose.
2. Regularly monitor Moose densities in the area

SITE 701E CARIBOU HERDS WINTER RANGE



Map 6. Site 701E Caribou Herds and Winter Range.

Identified By

Inuvik, Aklavik and Tuktoyaktuk Working Groups, and ENR

Management Category

E

Ownership

Private 7(1)a and 7(1)b lands and Crown lands within the ISR.

Description

Starting at the southern ISR boundary, up to Tununuk, northeast to include the western portion of the Tuktoyaktuk Peninsula, southeast to include the Anderson River, and south to the ISR boundary. The winter range of the herd also extends into the Gwich'in Settlement Area and the Sahtu Settlement Area.

Importance of the Site to the Community of Inuvik

Important winter habitat for the Tuktoyaktuk Peninsula, Cape Bathurst and Bluenose-West caribou herd, which are valued for subsistence harvest year-round.

Due to the fact that the caribou herds are relied upon for subsistence use by various Inuvialuit communities as well as aboriginal communities outside of the ISR, the "Taking Care of Caribou Management Plan" and an Advisory Committee for Cooperative Wildlife Management (ACCWM) Agreement have been developed with the cooperation of all stakeholders, to ensure

proper management measures are in place.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site 201B)

Fall/Winter Harvesting Area (Site 202B)

Caribou Hills (Site 702B)

Kugaluk River Key Migratory Bird Terrestrial habitat (Site 703D)

Fish Lakes and Rivers (Site 704C)

Husky Lakes (Site 705E)

Crossley Lakes (Site 708B)

Fort Anderson (Site 709E)

Coastal Zones of the Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site 710CD)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Kugmallit Bay (Site 714CDE)

Inner Mackenzie Delta (Site 719C)

Overlapping Nonrenewable Resource Interests and Activities

Operations and maintenance of Ikhil pipeline.

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Granular deposits have been identified around Parsons Lake, south end of Husky Lakes, in the Caribou Hills and Travaillant Lake regions.

Overlapping Military, Transportation, and Tourism Interests and Activities

Sport hunting and wildlife viewing tours by boat or snowmobile, around Husky Lakes and the East Channel of the Mackenzie Delta.

Year-round road from Inuvik to Tuktoyaktuk, once completed, will see an estimated 200 vehicles per day transiting through the caribou range.

Reindeer herd on the wintering grounds of the caribou.

Community Working Group Concerns

Construction of the all-weather Inuvik to Tuktoyaktuk Highway and the increased access that the road provides will disrupt caribou migration routes and degrade habitat.

The relocation and proposed expansion of the reindeer herd to the wintering grounds of the caribou could cause disruption to caribou and degradation of habitat.

Potential oil and gas related activities within the ISR and the neighbouring Gwich'in Settlement Area and Sahtu Settlement Area might negatively affect caribou movements, which would in turn make subsistence hunting more difficult.

Growth in Tourism could disturb the herd or degrade their habitat.

Community Working Group Recommendations

See Caribou conservation measures in Section 6.4.

SITE 702B CARIBOU HILLS

Map 7. Site 702B Caribou Hills.

Identified By

Inuvik, Aklavik and Tuktoyaktuk Working Groups and ENR

Management Category

B

Ownership

Private 7(1)(a) lands within the ISR.

Description

Upland area west of Parson's Lake and paralleling East Channel of Mackenzie River.

Importance of the Site to the Community of Inuvik

Caribou Hills have a unique successional plant life.

The Middle Mackenzie Delta is a unique transition zone between alluvial taiga and low tundra habitats.

It is also an important subsistence berry picking area and important for subsistence harvesting, including fishing.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site 201B)
Fall/Winter Harvesting Area (Site 202B)
Bluenose Caribou Herd Winter Range (Site 701E)
Fish Lakes and Rivers (Site 704C)
Inner Mackenzie Delta (Site 719C)

Overlapping Nonrenewable Resource Interests and Activities

Operation and maintenance of Ikhil Natural Gas Pipeline.

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Several granular deposits identified in the area.

Overlapping Military, Transportation, and Tourism Interests and Activities

Tourism outfitting license for Reindeer Station/ Reindeer Station / Qunngilaaq and nearby Peter Lake. Various boat tours, which use the site when travelling down the Mackenzie River East Channel.

Reindeer Station / Qunngilaaq has been identified as a Historic Site, and is used as a cultural healing camp owned and operated by ICC.

Community Working Group Concerns

That land use activities such as seismic, oil and gas and road corridor development would have a negative impact on this sensitive area.

Community Working Group Recommendations

ILA should consider the sensitivity of this site when reviewing land use applications to ensure no negative impact on this area's unique habitat.

SITE 703D

KUGALUK RIVER ESTUARY



Map 8. Site 703D Kugaluk River Estuary.

Identified By

Inuvik, Aklavik and Tuktoyaktuk Working Groups, CWS and DFO

Management Category

D

Ownership

Crown Lands (lakebed) and Private 7(1)(a) lands (shoreline) within the ISR.

Description

From Liverpool Bay, southward including Kugaluk and Miner River estuaries, linking the Husky Lakes and Liverpool Bay.

Importance of the Site to the Community of Inuvik

Important spawning area for Pacific herring and lake trout.

Seals and occasionally beluga enter the Finger Lakes area to feed.

Birds are present during part of the year - breeding season in May-August, and until September 1. Nesting habitat for lesser snow geese, brant, white-fronted geese and tundra swans. Important area during the moulting period for greater white-fronted geese, Canada geese and Tundra swans. Moulting scoters, scaup and oldsquaw are present during mid- to late summer. A few

thousand fish-eating birds, notably red-breasted and common mergansers and glaucous gulls, feed in the area from June to mid-August.

Wetland habitat is sensitive year-round.

Important area for research of effects of fire on the tree line.

Denning and feeding habitat for barren-ground grizzly bear.

There is an archaeological site in the northeastern part of the Smoke River delta, and an outpost camp at the mouth of the Kugaluk River.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Caribou Herds Winter Range (Site 701E)

Fish Lakes and Rivers (Site 704C)

Husky Lakes (Site 705E)

Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site 710CD)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Overlapping Military, Transportation, and Tourism Interests and Activities

Air traffic.

Some tourism such as canoeing (unguided) - 1-2 trips per year.

Community Working Group Concerns

Increased aircraft traffic over the area could result from development activities in the Beaufort Sea and on the Tuktoyaktuk Peninsula.

Potential oil and gas development in the area.

SITE 704C FISH LAKES AND RIVERS



Map 9. Site 704C Fish Lakes and Rivers

Identified By

Inuvik and Tuktoyaktuk Working Groups

Management Category

C

Ownership

Crown lands and Private 7(1)(a); 7(1)(b) lands within the ISR.

Description

The site includes the rivers and lakes along the shoreline west of Tuktoyaktuk, inland to their headwaters, including Parsons and Yaya Lakes, Baby Island, Richard Island and Garry Island.

Importance of the Site to the Community of Inuvik

Important fish habitat and important historic and present subsistence harvest area for people of Inuvik and Tuktoyaktuk.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site 201B)
 Fall/Winter Harvesting Area (Site 202B)
 Bluenose Caribou Herd Winter Range (Site 701E)
 Kugaluk River and Estuary (Site 703D)

Husky Lakes (Site 705E)
Kendall Island Bird Sanctuary (Site 706E)
Anderson River Migratory Bird Sanctuary (Site 707D)
Crossley Lakes (Site 708B)
Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site 710CD)
Tarium Niryutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site 711E)
Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)
Kugmallit Bay (Site 714CDE)
Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)
Gary and Pelly Islands (Site 717D)
Central Mackenzie Estuary (Site 718D)
Pingo Canadian Landmark (Site 728E)
Kitigaaryuit (Site 729E)

Overlapping Nonrenewable Resource Interests and Activities

Operation and maintenance of Ikhil Natural Gas Pipeline.

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Several identified granular sources within this area, largely concentrated around Tuktoyaktuk, the coast, Yaya Lake, Jimmy Lake and Parsons Lake.

Overlapping Military, Transportation, and Tourism Interests and Activities

A North Warning System radar site borders this site.

Inuvik to Tuktoyaktuk Highway project (all-weather road) currently under construction.

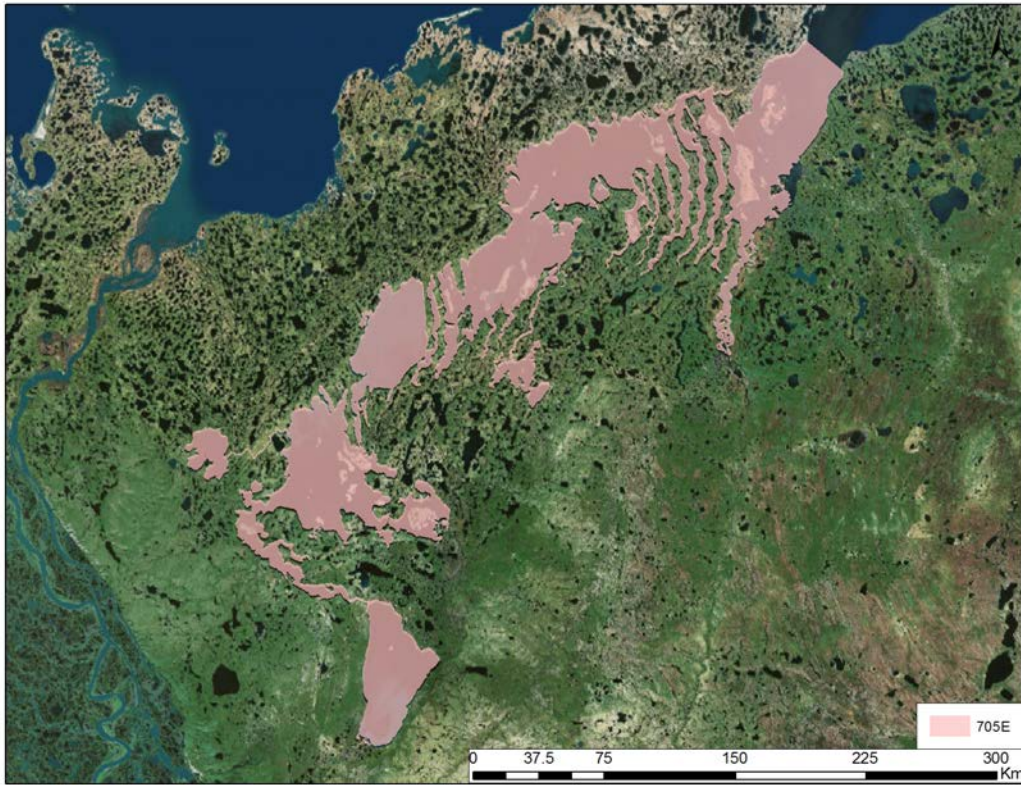
A number of lakes have been identified as potential sites for outdoor recreation and/or territorial parks: Parsons, Yaya, Sitidgi and Noel.

Community Working Group Concerns

The Community Working Group is concerned that some land use activities in the area are contributing to the destruction of fish spawning and over wintering habitat of rivers along the coast. There are concerns that the Inuvik to Tuktoyaktuk Highway project may impact fish habitat in the area. There is also concern regarding overfishing along the highway corridor.

Community Working Group Recommendations

1. FJMC should advise on, and DFO should regulate development activities near or on Fish Lakes and Rivers during the fall and winter.
2. HTC recommends no development activities at East Whitefish Station (Nallgugiak) and Kendall Island (subsistence whaling camp) from July 1 through August 31.
3. High priority to finish the Inuvik to Tuktoyaktuk Fisheries Management Plan and Wildlife Protection Plan for the Inuvik to Tuktoyaktuk Highway corridor. Once these plans have been finalized, management recommendations should be followed with regulations enforced by DFO and ENR.

SITE 705E**HUSKY LAKES****Map 10. Site 705E Husky Lakes****Identified By**

Aklavik, Inuvik and Tuktoyaktuk Working Groups and DFO

Management Category

E

Ownership

Private 7(1)(b) lands within the ISR.

Description

The site is south and east of Tuktoyaktuk, and includes the bays, islands and shorelines of the Husky Lakes beginning at Sitidgi Creek and extending northeastward to Liverpool Bay.

Importance of the Site to the Community of Inuvik

Past and present use by Inuvialuit for year-round subsistence fishing, hunting, trapping and berry picking. There are over 100 subsistence-harvesting cabins located throughout the area.

Important spawning area for Pacific herring, lake trout, and important area for beluga.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall/Winter Harvesting Area (Site 202B)

Bluenose West and Cape Bathurst Caribou Herds Winter Range (Site 701E)

Kugaluk River and Estuary (Site 703D)

Fish Lakes and Rivers (Site 704C)

Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site 710CD)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Inuvik to Tuktoyaktuk Highway project (all-weather road) currently under construction adjacent to area.

Granular deposits have been identified at Husky Lakes, Hans Creek, Parsons Lake, and Jimmy Lake areas.

Overlapping Military, Transportation, and Tourism Interests and Activities

Sport fishing by Tuktoyaktuk and Inuvik residents and tourists. An automated North Warning System radar site borders this site.

A year round road between Tuktoyaktuk and Inuvik is adjacent to area.

Canoe route to Inuvik from Anderson River.

Community Working Group Concerns

That sport fishing, particularly in spring, does not interfere with Inuvialuit enjoyment of their privately-held lands around the lakes, and with subsistence fishing activities.

That potential extraction of granular deposits may threaten the habitat.

There are concerns that the Inuvik to Tuktoyaktuk Highway project may impact fish habitat in the area, and increased access to sport fishers may impact fisheries.

Community Working Group Recommendations

1. ILA should continue to enforce IFA section 7(15)d which protects the Inuvialuit right to "peaceable enjoyment of the lands".
2. EISC and DFO should enforce Section 8(4) of the IFA that states no dredging or development activities such as the building of drilling platforms or fuel storage facilities shall be carried out on the waters of the area.
3. FJMC should produce fish species management plans for Husky Lakes, establishing quotas and restrictions on particular species. FJMC should continue to regulate sport fishing licenses through Inuvik and Tuktoyaktuk HTCs.
4. ILA should develop a land use/recreation plan for Husky Lakes to define travel-restricted zones, access points, tourism/fishing use areas and facilities.
5. The Wildlife and Wildlife Habitat Protection Plan for operations of the ITH should be finalized and implemented.

SITE 706E**KENDALL ISLAND BIRD SANCTUARY**

Map 11. Site 706E Kendall Island Bird Sanctuary

Identified By

Canadian Wildlife Service

Management Category

E: Legislatively protected under *Migratory Birds Convention Act, 1994*.

Ownership

Crown lands within the ISR.

Description

The sanctuary is represented by an area of land and sea with Middle Channel and Harry Channels as boundaries, and the northern boundary extending from the southern tip of Garry Island, extending northeastward, bisecting Kendall Island, as far as the mouth of Harry Channel. Garry and Pelly Island are also included.

Importance of the Site to the Community of Inuvik

Birds are present during only part of the year - breeding season is May-August. Wetland habitat is sensitive year round. In its review of bird sanctuaries in response to the Northern Mineral Policy, the Canadian Wildlife Service proposed changing the Kendall Island Bird Sanctuary to include an area of high use by geese and waterfowl (CWS 1989).

The islands of the outer delta are important staging grounds from late August to late September for several species of waterfowl and shorebirds.

Shallow Bay area is an important staging area for greater white-fronted geese, Canada geese, cackling geese and lesser snow geese. Black brants also migrate west through the outer Mackenzie Delta. Large numbers of shorebirds migrate through the delta area.

Small islands south of Kendall Island support a colony of lesser snow geese. Tundra swans, Greater white-fronted geese, Sandhill cranes, brant, ducks and shorebirds, nest and moult throughout this area.

Area is also important for belugas, polar bears, and caribou. This is a sensitive harvesting area.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site 201B)

Fish Lakes and Rivers (Site 704C)

Tarium Niryutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site 711E)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Outer Delta Islands (Site 717D)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

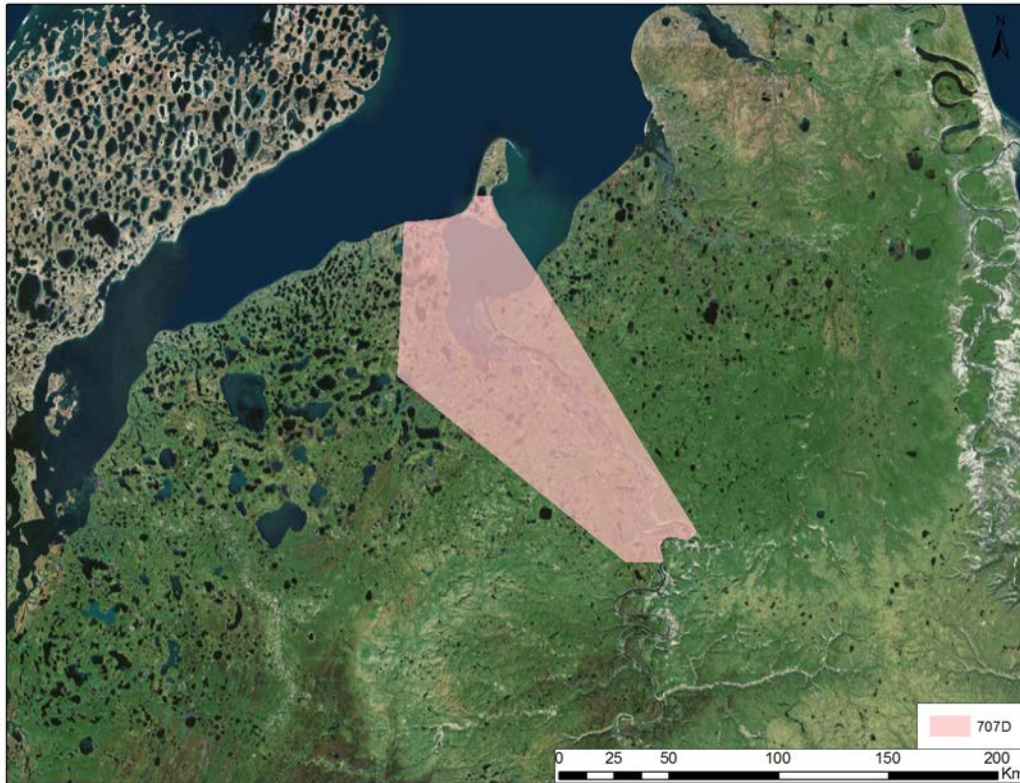
Community Working Group Concerns

This is a critical habitat for snow geese in spring and summer; grizzly bears have an impact on snow geese eggs.

Community Working Group Recommendations

If population declines are observed, a monitoring program should be developed to investigate impacts on egg predation in spring from gulls, jaegers, ruff-legged hawks and bears.

SITE 707D ANDERSON RIVER MIGRATORY BIRD SANCTUARY



Map 12. Site 707D Anderson River Migratory Bird Sanctuary.

Identified By

Canadian Wildlife Service

Management Category

D

Ownership

Private 7(1)(b) lands within the ISR.

Description

The site includes the land and water surrounding the lower Anderson River. The delta of low alluvial islands, channels and lakes extends northward into the shallow waters of Wood Bay.

Importance of the Site to the Community of Inuvik

Key nesting habitat for lesser snow geese, black brants, greater white-fronted geese, Canada geese. (Late May - end of August) and tundra swans (May - early October).

Key nesting and moulting habitat in Wood Bay for oldsquaw scaup and scoters. Wetland habitat is sensitive year round.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fish Lakes and Rivers (Site 704C)

Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site 710CD)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Overlapping Military, Transportation, and Tourism Interests and Activities

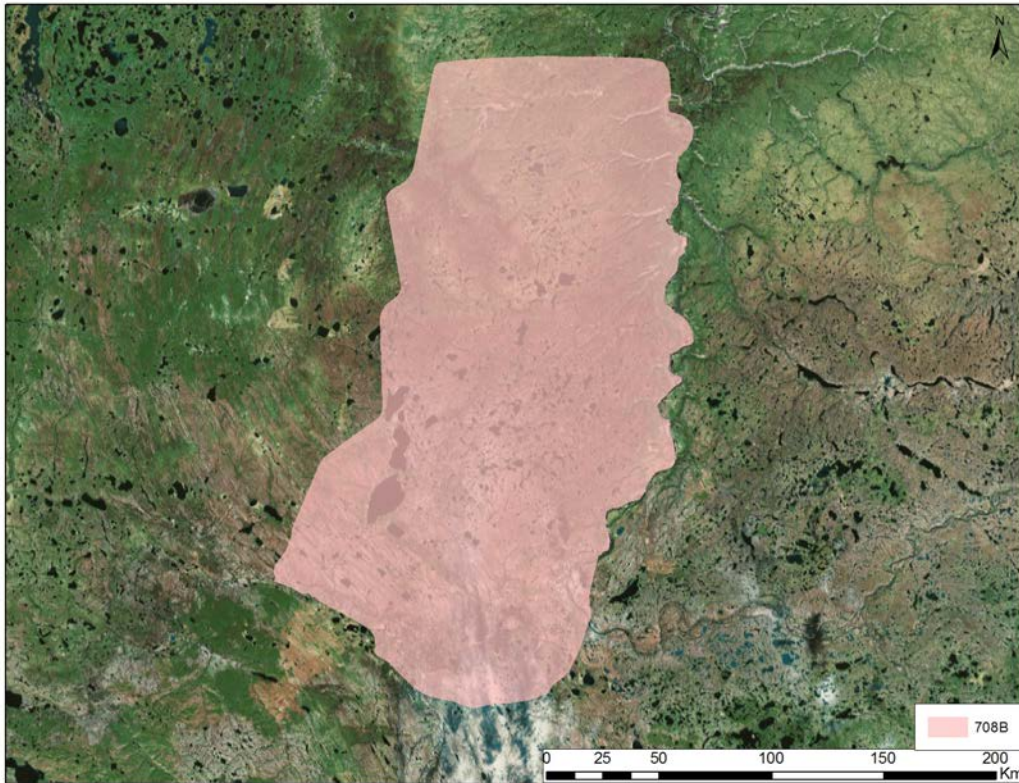
Ecotourism and self-guided canoe trips.

Community Working Group Concerns

This is a critical habitat for snow geese in spring and summer; grizzly bears may have an impact on snow geese eggs.

Community Working Group Recommendations

If population declines are observed, a monitoring program should be developed to investigate impacts on egg predation in spring from gulls, jaegers, ruff-legged hawks and bears.

SITE 708B CROSSLEY LAKES**Map 13. Site 708B Crossley Lakes****Identified By**

Inuvik, Aklavik and Tuktoyaktuk Working Groups, and ENR

Management Category

B

Ownership

Private 7(1)(b) lands and Crown lands within the ISR .

Description

Area of varied terrain east of Anderson River in proximity to Crossley lakes, Carnwath and Wolverine Rivers.

Importance of the Site to the Community of Inuvik

Crossley Lakes is a representative treeline area. Important habitat for moose, woodland and barren-ground caribou.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Bluenose West, Cape Bathurst and Boreal-Caribou Herds Winter Range (Site 701E)

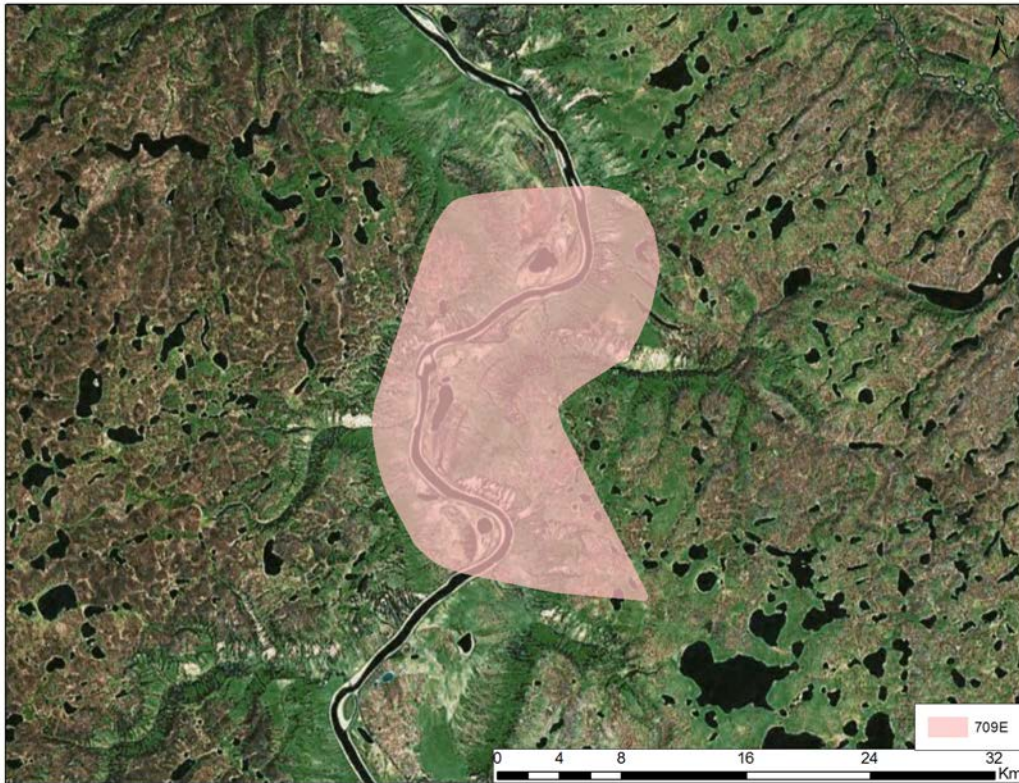
Fish Lakes and Rivers (Site 704C)

Fort Anderson (Site 709E)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

SITE 709E FORT ANDERSON



Map 14. Site 709E Fort Anderson.

Identified By

Inuvik, Aklavik and Tuktoyaktuk Working Groups, and ENR

Management Category

E

Ownership

Crown lands within the ISR.

Description

Located east of Crossly Lakes, on the shore of the Anderson River. This is a representative treeline area. Boreal forest species thrive in this area.

Importance of the Site to the Community of Inuvik

At the Fort Anderson site, flora, soil conditions, and the active soil layer have been undisturbed since 1866 when the Fort was abandoned.

Fort Anderson represents a notable archaeological site in the Western Arctic Region.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Bluenose West and Boreal Caribou Herds Winter Range (Site 701E)

Fish Lakes and Rivers (Site 704C)

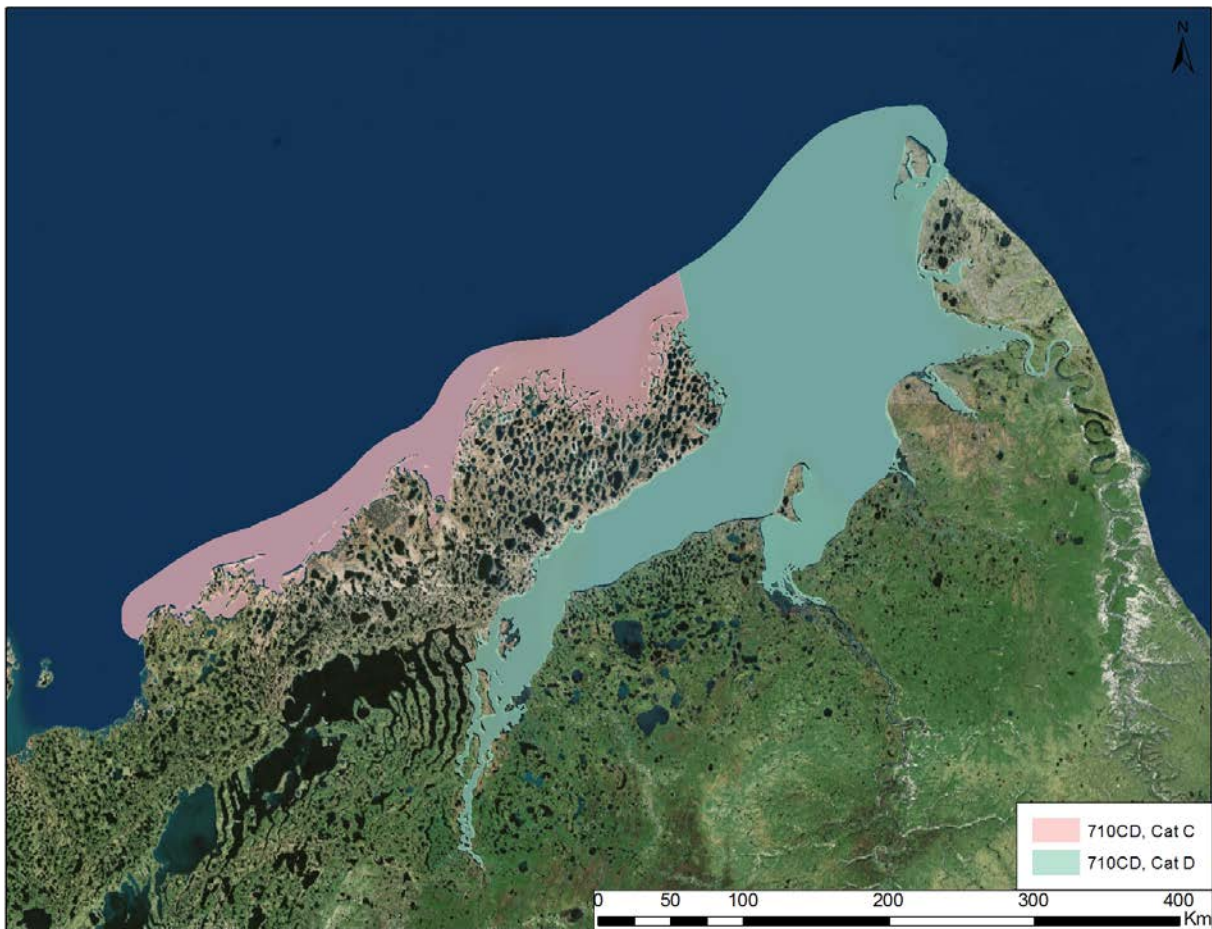
Crossley Lakes (Site 708B)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Community Working Group Recommendations

Site should be designated as a historical site.

SITE 710CD**COASTAL ZONES OF THE TUKTOYAKTUK PENINSULA,
LIVERPOOL BAY, WOOD BAY, BAILLIE ISLANDS**

Map 15. Site 710CD Coastal Zones of the Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, and Baillie Islands

Identified By

Inuvik, Aklavik and Tuktoyaktuk Working Groups, and DFO

Management Category

C: Western portion

D: all areas east and south to the Tuktoyaktuk Peninsula

Ownership

Crown waters within ISR.

Description

A 10 km (6 mi) coastline buffer, starting at Toker Point and extending east to the Baillie Islands, including Liverpool Bay, Wood Bay and Harrowby Bay.

Importance of the Site to the Community of Inuvik

Tuktoyaktuk Peninsula: Migrating fish and denning habitat for polar bears. Feeding and rearing

areas for sea ducks, seals, beluga, geese, fish, bowhead whales in bays and lagoons.

McKinley Bay: may be a spawning area for Pacific herring. Important summer beluga habitat.

Liverpool Bay: possible spawning habitat for Pacific herring, Arctic and Saffron cod, important habitat for sea ducks, geese, seals, beluga, bowhead, and marine invertebrates (spider crabs).

Wood Bay/Baillie Islands: Important feeding, nursery, overwintering areas for both anadromous and marine species, denning habitat for polar bears, and common murre.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Cape Bathurst, Tuktoyaktuk Peninsula and Bluenose West Caribou Herds Winter Range (Site 701E)

Kugaluk River Estuary (Site 703D)

Husky Lakes (Site 705E)

Anderson River Bird Sanctuary (Site 707D)

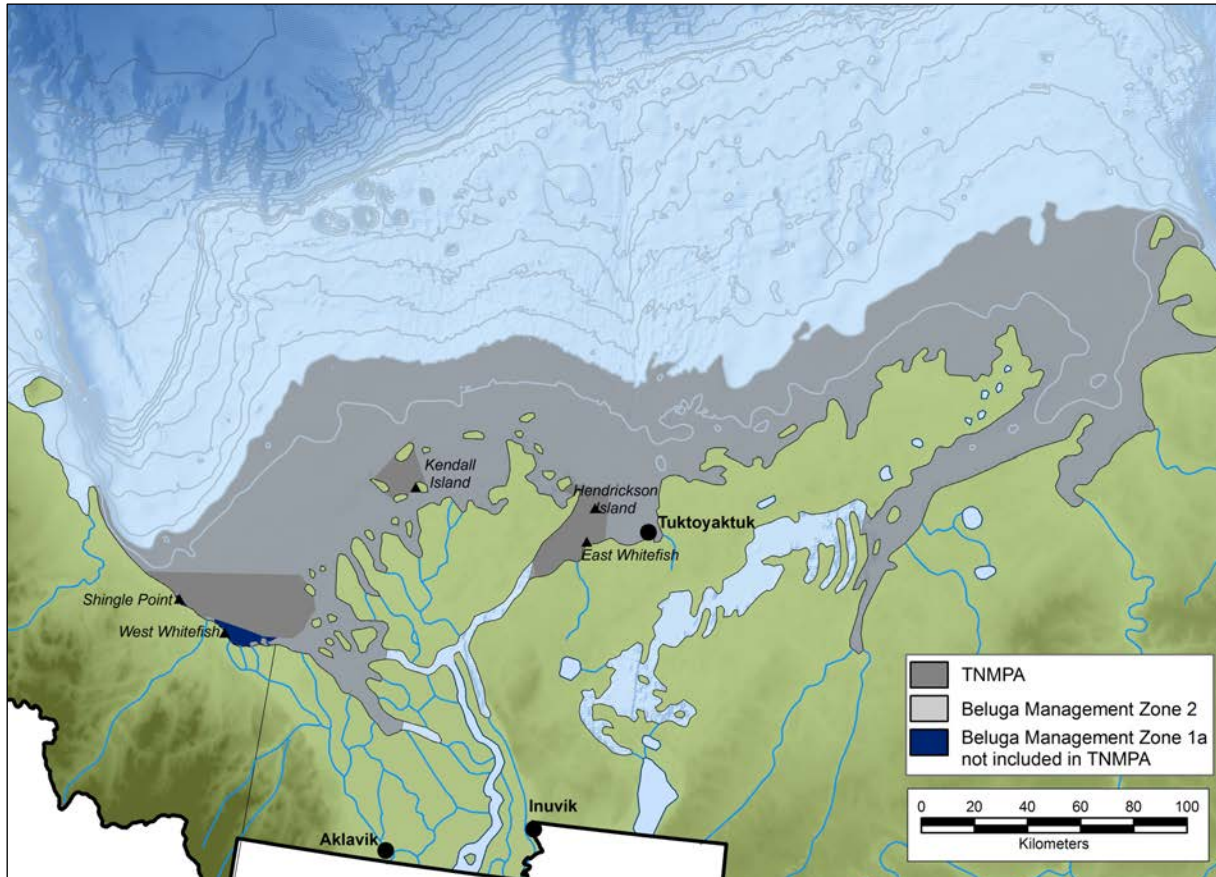
Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Kugmallit Bay (Site 714CDE)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

SITE 711E TARIUM NIRYUTAIT MARINE PROTECTED AREA (TNMPA) / BELUGA MANAGEMENT PLAN ZONE 1A



Map 16. Site 711E Tarium Niryutait Marine Protected Area/ Beluga Management Zone 1A.

Identified By

Fisheries Joint Management Committee, Fisheries and Oceans Canada

Land Management Category

E

Ownership

Crown lands within the ISR.

Description

The zone includes about 1800 km² (695 mi²) of shallow waters at the mouth of the Mackenzie River and encompasses the only known traditional summer concentration areas (Shallow Bay, east Mackenzie Bay and Kugmallit Bay) for the Beaufort Sea beluga stock. These areas are shallow (less than 2 m (6.6 ft.)), warm, brackish and highly turbid. These areas include the subsistence harvest camps of Shingle Point (Tapkak), Kendall Island (Okeevik), East Whitefish (Nallgugiak) and Hendrickson Island.

Importance of Site to the Community of Inuvik

Traditional beluga harvesting/concentration areas. Canadian Beaufort Sea beluga stock

concentrates in these areas in summer. Could be for calving, calf rearing, moulting and/or socializing. The Inuvialuit from Inuvik, Tuktoyaktuk and Aklavik harvests beluga in these areas.

Tarium Niryutait Marine Protected Area (TNMPA):

The Tarium Niryutait Marine Protected Area (TNMPA) was officially announced on August 26th 2010. It is Canada's first arctic MPA and consists of three individual areas called Niaqunnaq, Okeevik, and Kittigaryuit. Together these three areas cover approximately 1,800 square kilometres of the Mackenzie River Delta and estuary in the Beaufort Sea.

The TNMPA was created through a collaborative effort by Fisheries and Oceans Canada, the Inuvialuit people, the Fisheries Joint Management Committee, private industry, local stakeholders and governments. The MPA is part of Canada's expanding network of protected ocean areas; it also plays an important role in fulfilling Canada's commitments to managing Canada's oceans resources.

The purpose of the TNMPA is to conserve and protect the biological resources within the MPA and to support the viability of a healthy population of beluga whales. This area is particularly important to the Beaufort Sea beluga whale stock that travels to the Mackenzie Estuary during the summer months. These whales come to this area for feeding, rearing calves, moulting, socializing, and for energetics (i.e. thermal advantage).

The Tarium Niryutait MPA has traditionally been used by the Inuvialuit and is important from a cultural, subsistence and economic perspective. The MPA protects harvesting traditions central to the Inuvialuit culture in the communities of Aklavik, Inuvik and Tuktoyaktuk. It balances the cultural and economic aspirations of northerners, while advancing the Government's environmental conservation plans.

Key objectives of the TNMPA are:

- To conserve and protect beluga whales and other marine species (anadromous fish, waterfowl and seabirds), their habitats and supporting ecosystem.
- To ensure the long-term sustainable management of one of the world's largest summering stock of beluga whales and their habitat.
- To preserve the harvesting traditions of the Inuvialuit people in the ISR (Inuvialuit Settlement Region).
- To prohibit specific activities or classes of activities that could potentially negatively impact beluga or any part of the ecosystem in the areas upon which they depend.

TNMPA Regulations:

Tarium Niryutait Marine Protected Areas Regulations
SOR/2010-190

OCEANS ACT Registration 2010-08-25

Tarium Niryutait Marine Protected Areas Regulations
P.C. 2010-1081 2010-08-25

Her Excellency the Governor General in Council, on the recommendation of the Minister of Fisheries and Oceans, pursuant to subsection 35(3) of the *Oceans Act*, hereby makes the annexed *Tarium Niryutait Marine Protected Areas Regulations*. aS.C. 1996, c. 31

1. **INTERPRETATION:** The following definitions apply in these Regulations. “Agreement” means the Inuvialuit Final Agreement as approved, given effect and declared valid by the *Western Arctic (Inuvialuit) Claims Settlement Act*. (Convention) “Areas” means the Tarium Niryutait Marine Protected Areas. (Zones) “waters” includes the seabed and subsoil below the waters to a depth of five metres.
2. **DESIGNATIONS:** The Areas consist of
 - (a) the Niaqunnaq Marine Protected Area designated under section 3;
 - (b) the Okeevik Marine Protected Area designated under section 4; and
 - (c) the Kittigaryuit Marine Protected Area designated under section 5.
3. **Niaqunnaq Marine Protected Area:** The area of the sea in Mackenzie Bay consisting of the waters within the boundaries described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 2, which plans are deposited in the Canada Lands Survey Records, is designated as the Niaqunnaq Marine Protected Area.
4. **Okeevik Marine Protected Area:** (1) The area of the sea in the Mackenzie River Estuary consisting of the waters within the boundaries described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 3, which plans are deposited in the Canada Lands Surveys Records, is designated as the Okeevik Marine Protected Area. (2) The Okeevik Marine Protected Area is comprised of Special Management Zones 1 and 2 and the Primary Protection Zone as described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 3, which plans are deposited in the Canada Lands Surveys Records.
5. **Kittigaryuit Marine Protected Area:** The area of the sea in the Mackenzie River Estuary consisting of the waters within the boundaries described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 4, which plans are deposited in the Canada Lands Surveys Records, is designated as the Kittigaryuit Marine Protected Area.
6. **PROHIBITED ACTIVITIES:** No person shall
 - (a) disturb, damage or destroy in the Areas, or remove from them, any living marine organism or any part of its habitat; or
 - (b) carry out any activity in the Areas — including depositing, discharging or dumping any substance, or causing any substance to be deposited, discharged or dumped — that is likely to result in the disturbance, damage, destruction or removal of a living marine organism or any part of its habitat.
7. **EXCEPTIONS:** The following activities may be carried out in the Areas:
 - (a) fishing in accordance with the Agreement;
 - (b) dredging (i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, (ii) that is carried out in accordance with the *Navigable Waters Protection Act* and the *Fisheries Act* and their regulations, and (iii) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;
 - (c) fishing in accordance with the *Fisheries Act* and its regulations;
 - (d) a scientific activity that is carried out in accordance with the *Fisheries Act* and its regulations or (i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, and (ii) that is carried out for the purpose of managing the Areas or for monitoring the effectiveness of conservation measures implemented in the Areas;
 - (e) a geophysical operation, as defined in section 2 of the *Canada Oil and Gas Geophysical Operations Regulations*, (i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, (ii) that is carried out on, through or under the ice cover of the Areas, (iii) that is carried out in accordance with the *Navigable*

Waters Protection Act, Species at Risk Act, Fisheries Act and Canadian Environmental Protection Act, 1999 and their regulations, and (iv) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(f) exploratory drilling for oil or gas in the Special Management Zones of the Okeevik Marine Protected Area (i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, (ii) that is carried out on, through or under the ice cover of the Areas, (iii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act, Fisheries Act and Canadian Environmental Protection Act, 1999* and their regulations, and (iv) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(g) oil or gas production in the Special Management Zones of the Okeevik Marine Protected Area, (i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, (ii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act, Fisheries Act and Canadian Environmental Protection Act, 1999* and their regulations, and (iii) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(h) the construction or decommissioning of an oil or gas pipeline (i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, (ii) that is carried out on, through or under the ice cover of the Areas, (iii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act, Fisheries Act and Canadian Environmental Protection Act, 1999* and their regulations, and (iv) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(i) the maintenance of an oil or gas pipeline, (i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, (ii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act, Fisheries Act and Canadian Environmental Protection Act, 1999* and their regulations, and (iii) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(j) any movement or other activity of a ship, submarine or aircraft if the movement or other activity is carried out for the purpose of (i) public safety, law enforcement or national security or for the exercise of Canadian sovereignty and the ship, submarine or aircraft is owned or operated by or on behalf of Her Majesty in right of Canada or by a foreign military force acting in cooperation with, or under the command or control of, the Canadian Forces, or (ii) an emergency response under the direction, command or control of the Canadian Coast Guard; and

(k) any activity carried out for the purpose of public health and safety.

8. REPORTING OF ACCIDENTS: Every person who is involved in an accident that is likely to result in any disturbance, damage, destruction or removal prohibited under section 6 shall, within two hours after its occurrence, report the accident to the Canadian Coast Guard.
9. COMING INTO FORCE: These Regulations come into force on the day on which they are registered.

Guidelines for Beluga Management Zone 1a:

In the review of any development proposal Zone 1 is to be considered a Protected Area according to the guidelines described in the Inuvialuit Renewable Resource Conservation and Management Plan.

The oil and gas industry should not be permitted to explore for resources within Zone 1 waters nor to produce hydrocarbons or construct/operate any type of facility.

No mining activities (e.g. gravel removal) should be permitted within or on the shores of any Zone 1a waters.

Development activities such as hydroelectric developments, even if located outside of Zone 1 should be evaluated for their potential deleterious effects on water quality and quantity, or on the stability and integrity of ice in Zone 1a waters.

All shipping activities (including dredging) should be confined to designated routes and areas. Passage through or close to Zone 1 outside of designated routes, even if it's the shortest route, should be avoided from break-up to 15 August.

No port development should be allowed within or on the shores of any Zone 1 waters.

It is recommended that parties proposing industrial development and government agencies evaluating development proposals and other parties interested in development within the zone should seek the advice of the HTCs. To ensure the protection of the beluga resource and harvest, HTCs should be consulted regarding any licenses, permits or operating procedures approved for activities within the zones.

Commercial fishing proposals for Zone 1 should be evaluated and regulated with regard to beluga food species.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site no. 201B)

Fish Lakes and Rivers (Site no. 704C)

Kugmallit Bay (Site 714CDE)

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Mackenzie Bay and Shallow Bay (Site 716CE)

Outer Delta Islands (Site no. 717D)

Central Mackenzie Estuary (Site 718D)

Inner Mackenzie Delta (Site 719C)

Yukon North Slope Coastal Zone (Site no. 726E)

Kitigaaryuit (Site 729E)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Overlapping Military, Transportation, and Tourism Interests and Activities

Water traffic: barges, local harvesters. Increased tourism (e.g. canoes, kayaks) and aircraft in area.

Community Working Group Concerns and Recommendations

See above Guidelines.

References

- DFO and FJMC. 2013. Tarium Niryutait Marine Protected Areas Management Plan. http://beaufort.scottbuckingham.ca/wp-content/uploads/2015/04/TNMPA-Mgmt-Plan_Final.pdf
- DFO and FJMC. 2013. Tarium Niryutait Marine Protected Areas Monitoring Plan. http://beaufort.scottbuckingham.ca/wp-content/uploads/2015/05/TNMPA-Monitoring-Plan_Final.pdf
- FJMC. 2013. Beaufort Sea Beluga Management Plan. 4th Amended Printing. Inuvik, Northwest Territories.

SITE 712C**BELUGA MANAGEMENT PLAN ZONE 2 - ALL
MACKENZIE SHELF WATERS SHALLOWER
THAN 20 METRES**

Map 17. Site 712C Beluga Management Plan Zone 2 - All Mackenzie Shelf Waters Shallower than 20 Metres

Identified By

Inuvik, Aklavik and Tuktoyaktuk Working Groups and Fisheries Joint Management Committee

Management Category

C

Ownership

Crown waters within the ISR.

Description

Includes the Mackenzie Shelf waters shallower than 20 metres (66 ft.) that are not already included in Zone 1. It extends from Baillie Islands (Cape Bathurst) in the east to Kay Point on the Yukon coast to the west.

Importance of the Site to the Community of Inuvik

Major beluga travel corridor to move into, out of, and amongst bays of the Mackenzie estuary.

Each spring, beluga migrate from wintering areas in the Bering Sea to summering areas in the Beaufort Sea. Depending on a number of factors including time of year and ice conditions,

the migration occurs along the edge of the land fast ice (Zone 2), far offshore through leads in the pack ice (Zone 3), or both.

After the migration, from about late June through to late July or early August, a large proportion of the stock concentrates in the Mackenzie estuary (Zone 1a). However, at the same time, a large portion of the stock is widely distributed throughout both Zones 2 and 3. There is evidence to suggest calving may occur in these waters at this time.

During August, beluga is widely distributed throughout the offshore in both Zones 2 and 3. They tend to occur in greatest numbers in Zone 2 waters near headlands and in the lee of islands, where fishing is apparently most favourable. Feeding is probably their most important activity in these Zones during August. Beluga usually begins their return migration in mid-August, using both near shore waters (Zone 2) and offshore waters (Zone 3). Few whales remain in the region past early September.

Deep water generally precludes hunting of beluga in Zone 2.

Guidelines for Zone 2:

- Industrial activities or other projects may be permitted if they do not adversely affect the conservation of beluga and the protection of beluga habitat and beluga hunting, and they are conducted in a controlled and responsible manner.
- Assessment of proposed activities must consider the direct effects on beluga (e.g. contamination, disruption, displacement) as well as indirect effects (e.g. stability and integrity of ice, timing of breakup, food availability).
- Commercial fishing proposals should be evaluated and regulated with regard to beluga food species.
- Assessments must consider the potential for cumulative impact and long-term effects.
- It is recommended that parties proposing industrial development and government agencies evaluating development proposals and other parties interested in development within the zone seek the advice of the HTC's. To ensure the protection of the beluga resource and harvest, HTC's should be consulted regarding any licenses, permits or operating procedures approved for activities within the zones.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site no. 201B)

Bluenose-West Caribou Herd Winter Range (Site no. 701E)

Kugaluk River Estuary (Site no. 703D)

Fish Lakes and Rivers (Site no. 704C)

Husky Lakes (Site no. 705E)

Kendall Island Bird Sanctuary (Site no. 706E)

Anderson River Bird Sanctuary (Site 707D)

Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site 710CD)

Kugmallit Bay (Site 714CDE)

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Mackenzie Bay and Shallow Bay (Site 716CE)

Central Mackenzie Estuary (Site no. 718D)

Inner Mackenzie Delta (Site no. 719C)

Yukon North Slope Coastal Zone (Site no. 726E)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Community Working Group Concerns and Recommendations

See above Guidelines.

SITE 714CDE KUGMALLIT BAY



Map 18. Site 714CDE Kugmallit Bay.

Identified By

Inuvik, Aklavik, Tuktoyaktuk, Community Working Groups, and DFO

Management Category

- C (eastern half of the bay)
- D (western half of the bay)
- E (designated Beluga Management Zone 1a)

Ownership

East shoreline is Private 7(1)(a) and 7(1)(b) lands; west shoreline is Crown lands; islands are Private 7(1)(a) and Crown Lands within the ISR.

Description

Management Category C is the eastern portion of Kugmallit Bay, along the coastline and coastal waters, east to Warren Point.

Management Category D extends from Pullen Island in the north, southward through portions of Richards Island, surrounding Beluga Management Zone 1a with a buffer zone in Mackenzie Bay.

Management Category E is Beluga Management Zone 1a situated in Mackenzie Bay.

Importance of the Site to the Community of Inuvik

Important past and present beluga whale subsistence harvesting area from June 15 to August 15.

Whales concentrate in these shallow warm, brackish and highly turbid waters during the summer possibly to calve, rear calves, moult and/or socialize.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Bluenose-West Caribou Herd Winter Range (Site no. 701E)

Fish Lakes and Rivers (Site no. 704C)

Coastal Zones of the Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site no. 710CD)

Tarium Nirvutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site 711E, see also Section 6.4 Beluga).

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Outer Delta Islands (Site no. 717D)

Central Mackenzie Estuary (Site 718D)

Pingo Canadian Landmark (Site no. 728E)

Kitigaaryuit (Site no. 729E)

Prior to the development of a Beluga Management Plan, the Inuvialuit Regional Corporation had proposed a Beluga Whale Marine National Park for this area.

Overlapping Nonrenewable Resource Interests and Activities

Kugmallit Bay is a marine traffic zone.

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Overlapping Military, Transportation, and Tourism Interests and Activities

Canoe, kayak and boat trips to Tuktoyaktuk from Inuvik.

Shipping activity including possible marine traffic associated with oil and gas exploration and development.

During the summer several tourism outfitters travel the east channel to Tuktoyaktuk with visitors. There is potential for tourism activity at whaling camps within this site.

An automated North Warning System radar site borders this site.

Community Working Group Concerns

The Tuktoyaktuk and Inuvik Community Working Groups are concerned that shipping and oil and gas activities could interfere with the habitat of wildlife species they rely on for subsistence harvest, in particular beluga whales and fish. The concern is these land use activities take place during sensitive times of the species life cycle (i.e., beluga calving and bird nesting times).

There is also concern that tourism and some animal rights group might interfere with subsistence harvest practices. These people may unknowingly get between hunters and the whales, especially if they are alone or with unlicensed tourism operations.

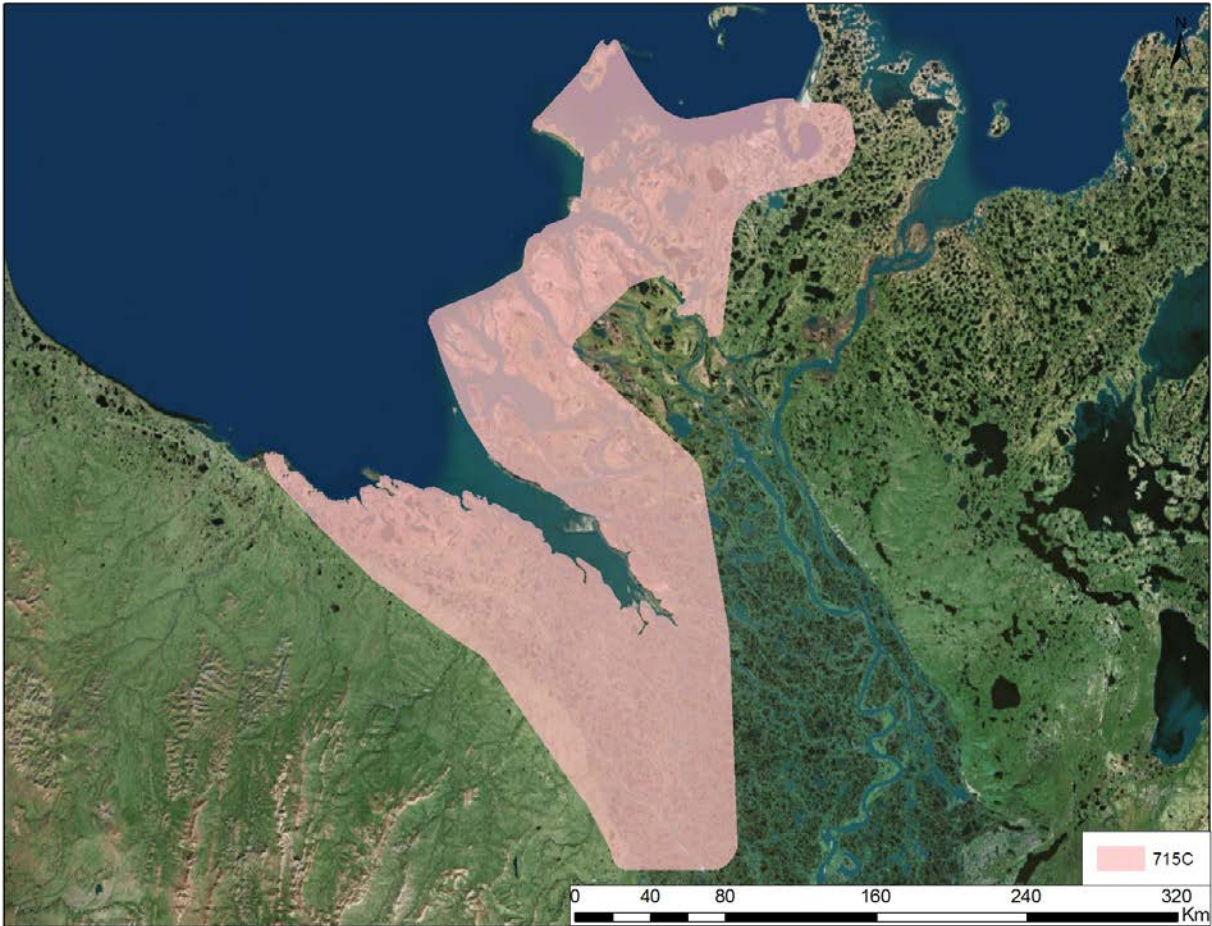
Community Working Group Recommendations

1. FJMC should designate a shipping channel through Kugmallit Bay to Tuk Harbour and if

- necessary through Zone 1a as stipulated in the Beluga Management Plan (FJMC 1998).
2. Beaufort Sea Beluga Management Plan tourism guidelines should be considered, along with consultation with the local HTC, in the review of all whale watching tourism proposals. Violations of *Marine Mammal Regulations* regarding the harassment of marine mammals should be enforced by DFO.
 3. DoL should ensure no oil and gas seismic or production activities are allowed in the Zone 1a of Kugmallit Bay year-round, as outlined in the Beluga Management Plan (FJMC 1998).
 4. FJMC and DoL should ensure that industrial activities or other projects permitted in Zone 2 areas do not adversely affect the conservation of beluga and their habitat, as outlined in the Beluga Management Plan (FJMC 1998).
 5. WMAC (NWT), CWS and DoL should ensure that waterfowl and their habitat are protected from industrial activities and other projects in the area from May 1 to September 30.
 6. FJMC and DoL should ensure seals, their habitat and food sources are protected from July to September during fish runs/migrations.
 7. FJMC and DoL should ensure that no dredging equipment or other facilities be deployed in Kugmallit Bay before the end of the first week of August.
 8. Community members should abide by the Beaufort Sea Beluga Management Plan Tourism Guidelines with the ISR (FJMC, 1994).

SITE 715C

MACKENZIE RIVER DELTA KEY MIGRATORY BIRD HABITAT



Map 19. Site 715C Mackenzie River Delta Key Migratory Bird Habitat.

Identified By

Inuvik and Aklavik Working Groups and CWS.

Management Category

C

Ownership

Private 7(1)(a) and 7(1)(b) lands and Crown lands and waters within the ISR and Gwich'in Private lands (Parcel A, surface/subsurface rights).

Description

The habitat zone includes part of the north end of the Delta, foothills, Shallow Bay, Olivier Island, Ellice Island, Pelly Island, and part of Richards Island.

Importance of the Site to the Community of Inuvik

Important nesting and breeding habitat for birds (May to September).

Important denning areas for grizzly bears from October to May.

The surrounding waters are important habitat to beluga whales from May to September.

Important as a polar bear denning area from November to April.

Important past and present subsistence harvesting area, especially for beluga whales (from June 15 to August 15) and waterfowl (May to October).

Small lakes along the foothills are important for waterfowl.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site no. 201B)

Fish Lakes and Rivers (Site no. 704C)

Kendall Island Bird Sanctuary (Site 706D)

Tarium Niryutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site 711E)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Mackenzie Bay and Shallow Bay (Site 716CE)

Garry and Pelly Islands (Site 717D)

Central Mackenzie Estuary (Site 718D)

Inner Mackenzie Delta (Site 719C)

Fish Hole/Cache Creek And Big Fish River (Site 720DE)

Eastern North Slope, East of Babbage River (Site no. 725DE)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

There are six main granular sources identified within the southern end of the existing boundaries of the bird sanctuary.

Overlapping Military, Transportation, and Tourism Interests and Activities

Tourism activity including canoe, kayak and some at Kendall Island whaling camps.

Shipping activity.

Possible access roads and air access points associated with oil and gas development.

Community Working Group Concerns

The Inuvik, Tuktoyaktuk and Aklavik Community Working Groups are concerned that oil and gas and tourism activities, and their associated air flights, may have a negative impact on the birds, beluga whales and traditional lifestyles.

Community Working Group Recommendations

1. CWS, EISC and DoL should ensure no non-renewable development permits are issued within the Bird Sanctuary for activities from May 1 to September 30.
2. CWS, EISC and DOT should ensure no air traffic related to non-renewable resource development is allowed within a 10-mile radius of the centre of the bird sanctuary and below 1,100 m (3500 ft) between May 1 and September 30. HTC should be involved in a monitoring program to enforce this regulation and should be involved in the establishment of regulations for tourism and traditional/domestic air traffic requirements in the area.
3. As a means of conserving the traditional life style of the Inuvialuit using Kendall Island, maintaining social harmony and avoiding unnecessary disturbance of whales, visitors to

Kendall Island are requested to abide by Sections 4.1.1, 6.3 and the Beluga Conservation Measures (Section 6.4) of this plan.

SITE 716CE MACKENZIE BAY AND SHALLOW BAY**Map 20. Site 716CE Mackenzie Bay and Shallow Bay****Identified By**

Inuvik, Tuktoyaktuk, and Aklavik Community Working Groups and DFO

Management Category

C

E (designated Beluga Management Zone 1a)

Ownership

Crown waters and land within the ISR.

Description

Management Category C: represents all of the site, with the exception of the Beluga Management Zone 1a in Mackenzie Bay, but includes a shoreline/water buffer around the Beluga Management Zone, extending southward into Shallow Bay.

Importance of the Site to the Community of Inuvik

Important habitat for beluga whales and various species of waterfowl. Important past and present subsistence harvesting area for the Inuvialuit.

Overwintering area for anadromous Coregonids (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) (whitefish). Feeding and nursery area for young fish. Concentration area for major part of beluga population - late June to early August.

Important traditional fishing area.

The North Slope Wildlife Conservation and Management Plan has designated the area referred to as “Work Boat Passage/Shallow Bay” extending from Herschel Island to the Mackenzie River Delta as deserving of special protection.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site no. 201B)

Tarium Niryutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site 711E)

Beluga Management Zone 2 (Site 712C)

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Central Mackenzie Estuary (Site 718D)

Inner Mackenzie Delta (Site 719C)

Eastern North Slope and Babbage River (Site 725DE)

Yukon North Slope Coastal Zone (Site no. 726E)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Overlapping Military, Transportation, and Tourism Interests and Activities

Shipping activity.

An automated North Warning System radar site borders this site.

Several tourism outfitters conduct boat tours through the west part of the Delta to camps at Running River and Shingle Point in the Yukon.

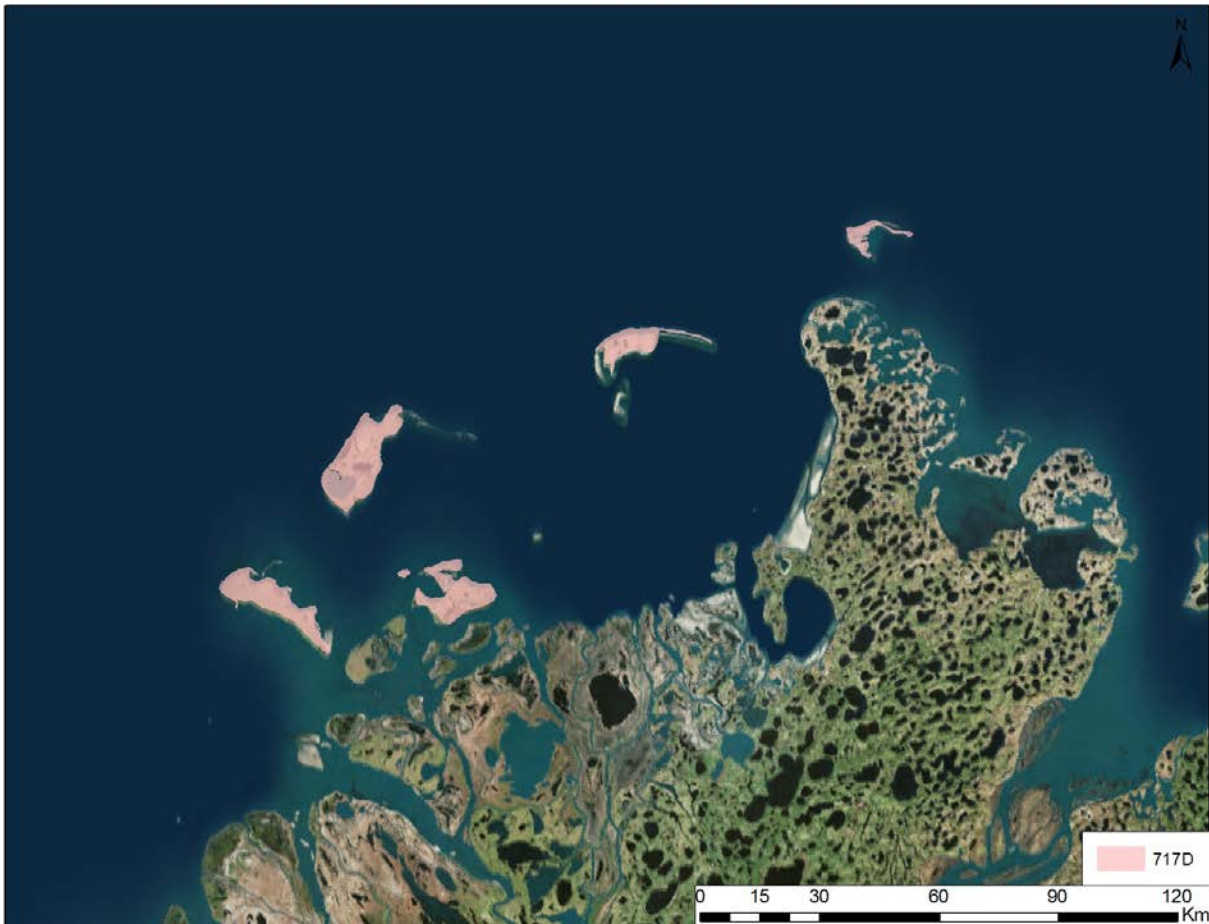
Unguided kayak tourism.

Community Working Group Concerns

The Inuvik, Aklavik and Tuktoyaktuk Community Working Groups are concerned that marine transportation, oil and gas development, tourism and animal rights groups may interfere with the calving of belugas, nesting of birds and subsistence harvesting by local people.

Community Working Group Recommendations

1. As stated in the Beluga Management Plan, FJMC should see that a shipping channel is designated through Zone 1a when necessary.
2. Beaufort Sea Beluga Management Plan tourism guidelines should be considered, along with consultation with the local HTC, in the review of all whale watching tourism proposals. Violations of *Marine Mammal Regulations* regarding the harassment of marine mammals should be enforced by DFO.
3. DFO/NEB should enforce the Beluga Management Plan recommendation that in Zone 1a, no oil/gas seismic or production activities will be allowed at any time of the year.
4. EISC and CWS should recommend that any non-renewable resource land use activity proposed for the bird sanctuary between May 1 and September 30 be referred to the EIRB.

SITE 717D**OUTER DELTA ISLANDS**

Map 21. Site 717D Outer Delta Islands

Identified By

Inuvik, Aklavik and Tuktoyaktuk Working Groups and ENR

Management Category

D

Ownership

Crown lands within ISR.

Description

These islands (Garry, Pullen, Kendall, Baby, Pelly, and Hooper) are located on the eastern end of Mackenzie Bay, as it meets the Beaufort Sea.

Importance of the Site to the Community of Inuvik

Important geomorphology features, vegetation, and waterfowl nesting.

Important polar bear denning area.

Important polar bear habitat.

Subsistence hunting of beluga.

Inuvialuit gravesites present on the islands.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fish Lakes and Rivers (Site no. 704C)

Kendall Island Bird Sanctuary (Site no. 706E)

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region.

There was increased industry interest in the 2000s but activity slowed in 2010s.

Community Working Group Concerns

The Inuvik, Aklavik and Tuktoyaktuk Community Working Groups are concerned that increased erosion and sediment runoff in area is causing changes to fish habitat.

Community Working Group Recommendations

None.

SITE 718D**CENTRAL MACKENZIE ESTUARY**

Map 22. Site 718D Central Mackenzie Estuary

Identified By

DFO

Management Category

D

Ownership

Private 7(1)(a) lands and Crown lands within ISR.

Description

Lands and waters defined by the eastern edge of Mackenzie Bay, bordered to the south by Reindeer Channel, with the eastern border as Main Channel, with an extension along the East Channel.

Importance of the Site to the Community of Inuvik

Concentration area for beluga.

Transit area between Shallow and Kugmallit bays.

Used extensively by feeding anadromous Coregonids (whitefish) Overwintering and nursery areas for a variety of fish.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site no. 201B)

Fish Lakes and Rivers (Site no. 704C)

Tarium Niryutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site 711E)

Beluga Management Zone 2 (Site 712C)

Kugmallit Bay (Site 714CDE)

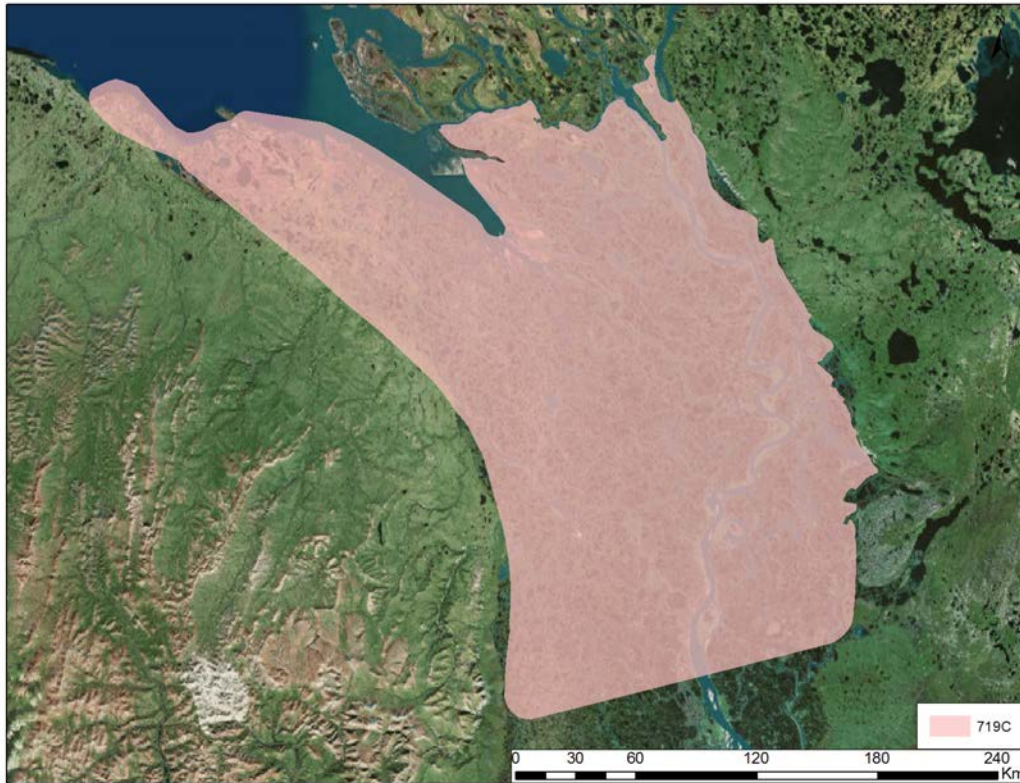
Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Mackenzie Bay and Shallow Bay (Site no. 716CE)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region.

There was increased industry interest in the 2000s but activity slowed in 2010s.

SITE 719C INNER MACKENZIE DELTA**Map 23. 719C Inner Mackenzie Delta****Identified By**

Inuvik and Aklavik Working Groups and DFO

Management Category

C

Ownership

Private 7(1)(a) and 7(1)(b) lands, Crown lands within the ISR, and Gwich'in private lands (Parcel A, surface/subsurface rights).

Description

The boundary is marked by the western edge of the Mackenzie Delta, along Shallow Bay, with a northern border being Reindeer Channel, an eastern border being the East Channel, and the southern border extending into the Gwich'in Settlement Area.

Importance of the Site to the Community of Inuvik

Important habitat for fish, waterfowl, moose and furbearers.

Important area to the people of Inuvik for trapping and hunting muskrats during the spring and setting fishnets at all times of the year. There are also areas in the Gwich'in Settlement Area that are important for fishing and hunting.

Many historical, cultural and archaeological sites.

The Peel, East, Husky and West Channels are important migration and spawning areas for numerous fish species that migrate inland from the Beaufort Coast. People of Inuvik use the fish for subsistence purposes throughout the year, but specifically during summer and fall. These channels are zoned for commercial fishing.

Lakes and channels, including the Rat River are important nursery areas for larval Coregonids (whitefish) and smelt. Migration routes for anadromous Arctic char and coregonids (whitefish). Spawning areas - overwintering. Lakes are feeding areas, or suspected spawning, nursery, overwintering areas for Coregonids (whitefish) and other fish.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fall Harvesting Area (Site no. 201B)

Fall/Winter Harvesting Area (Site no. 202B)

Tarium Niryutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site 711E)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Mackenzie Bay and Shallow Bay (Site 716CE)

Central Mackenzie Estuary (Site 718D)

Fish Hole/Cache Creek And Big Fish River (Site 720DE)

Eastern North Slope, East of Babbage River (Site no. 725DE)

Overlapping Nonrenewable Resource Interests and Activities

There is fluctuating interest in oil and gas activity in the Mackenzie Delta and Beaufort region. There was increased industry interest in the 2000s but activity slowed in 2010s.

Gravel deposits on western edge of site.

Overlapping Military, Transportation, and Tourism Interests and Activities

Inuvik Channel is an important transportation route for shipping and barging. The Peel, Husky and West channels are used occasionally by small barges.

Unguided canoe and kayak tourism. Guided boat tours.

Community Working Group Concerns

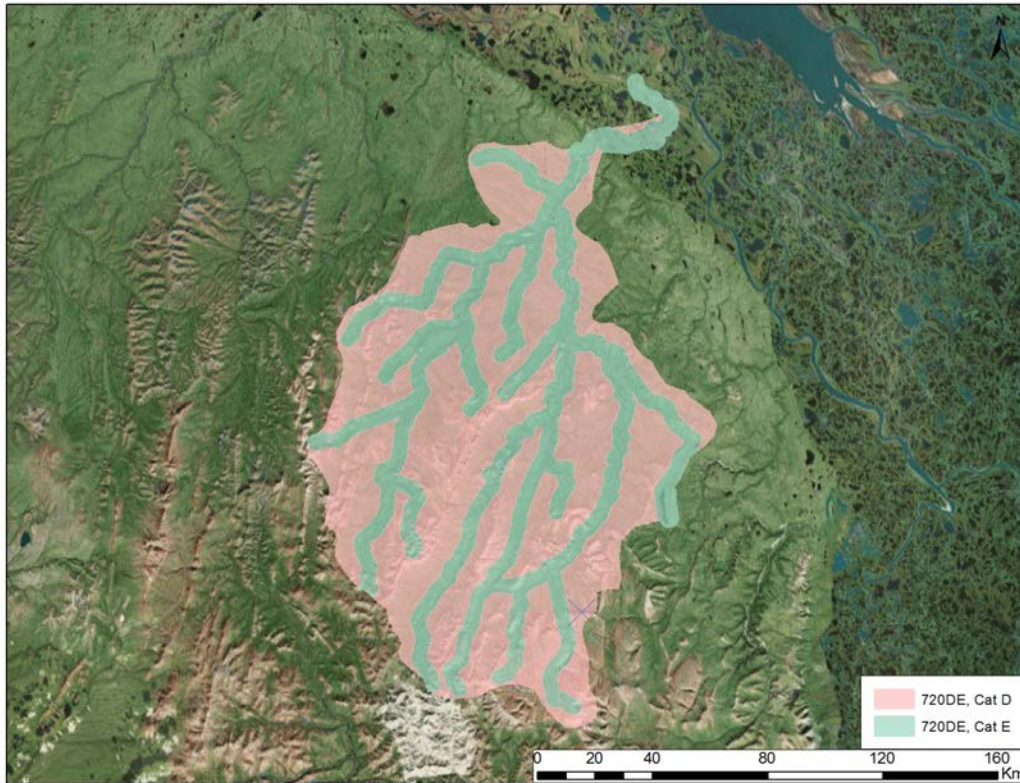
Concern that industrial development will have a major impact on sensitive wildlife habitat that the community has traditionally used for subsistence harvesting.

Concern that industrial development; especially hydrocarbon exploration/production and shipping and barging operations will have a major impact on the fish resources.

Community Working Group Recommendations

1. DFO or DoL should provide more thorough clean-up conditions to each permit holder. These conditions must state that all land and water used will be returned to its natural state.
2. DFO should continue to closely monitor the conduct of commercial fishing in the area to ensure it is only conducted in areas and in a manner consistent with regulations.
3. Commercial fishing should not be undertaken near Jiggling Creeks.

SITE 720DE FISH HOLE AND BIG FISH RIVER



Map 24. 720DE Fish Hole and Big Fish River

Identified By

Inuvik and Aklavik Working Groups, and DFO

Management Category

E (Fish holes, riparian areas)
D (Remainder of Watershed)

Ownership

Private 7(1)(a) lands, Crown lands within the ISR and the Gwich'in Settlement Area (Parcel A, surface/subsurface rights).

Description

The site is west of Aklavik in a zone along both sides of Cache Creek and includes Fish Hole, the riparian corridor associated with the Big Fish River, Big Fish River Watershed and Canoe Lake.

Importance of the Site to the Community of Inuvik

The area has historically been important for harvesting Dolly Varden char. Cache Creek has overwintering and spawning habitat. Big Fish River fishery was closed in 1987; however a DFO Aboriginal Communal Fishing Licence was issued to the Aklavik HTC in 2014, 2015 and 2016 to allow a harvest of 150 Dolly Varden char from the Fish Hole area. This is reviewed annually by the West Side Working Group and AHTC.

Important habitat for caribou and furbearing animals. Canoe Lake is an important caribou harvesting area from the last week of September to December.

Unglaciated and rich in plant species.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Mackenzie River Delta Key Migratory Bird Habitat (Site 715C)

Eastern North Slope and Babbage River (Site 725DE)

Community Working Group Concerns

Aklavik remains concerned about the population of Big Fish River Dolly Varden char, following stock decline and the closure to all fishing in the river in 1987. However, since 2012, a harvest of 150 Big Fish River Dolly Varden char (at the mouth of the river in 2012-2013, and at the Fish Hole in 2014-2016) has been approved through the co-management process. The stock is stable, but at a reduced level in comparison with population estimates from the 1970s and 1980s.

Locals believe water quality has changed (became less salty). The community has also noticed that grayling have become scarce in these waters.

Community Working Group Recommendations

Refer to Dolly Varden Intergrated Fisheries Management Plan recommendations.

SITE 725DE EASTERN NORTH SLOPE, EAST OF BABBAGE RIVER**Map 25. Site 725DE Eastern North Slope, East of Babbage River****Identified By**

Aklavik and Inuvik Community Working Groups

Management Category

D (Area west of Mackenzie Delta in the NWT)
E (Yukon North Slope area)

Ownership

Private 7(1)(a) lands, and Crown lands within the ISR and the Gwich'in Settlement Area (Parcel A, surface/subsurface rights).

Description

Land base lying between the eastern border of Ivvavik National Park (with the exception of the fish hole at the top of the Babbage River, inside the Park) and the west side of the Mackenzie Delta, the southern boundary of the ISR and the Beaufort Sea.

Importance of the Site to the Community of Inuvik

Yukon portion of the area has been withdrawn from any commercial development requiring the acquisition of rights to occupy land or extract resources from the area.

The site is important habitat for Porcupine caribou and in some years the calving occurs in the area. In the past and at present, the people of Aklavik and other nearby communities hunt caribou year-round in this area.

The Community Working Group of Aklavik also considered this site as critical furbearer and waterfowl habitat. Geese use the area for fall-staging, and swans use the area for summer moulting and nesting.

The area is important habitat for grizzly bears and the people of Aklavik use the area for grizzly bear harvesting.

The area is important habitat for Dall's Sheep (winter range, lambing areas, and migration corridors), for wolves (spring and summer denning areas), polar bears (winter denning), moose and muskoxen (year- round).

A number of raptors use the area for summer nesting sites including golden eagle, bald eagle, rough- legged hawk, peregrine falcon, gyrfalcon, and alpine raptors.

Important fish hole at the top of the Babbage River, for Char and grayling (April).

Yukon Heritage Branch - archaeological sites throughout the region of cultural and historic importance.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Mackenzie River Delta Key Migratory Bird Habitat (Site no. 715C)

Mackenzie Bay and Shallow Bay (Site no. 716CE)

Inner Mackenzie Delta (Site no. 719C)

Fish Hole/Cache Creek And Big Fish River (Site 720DE)

Overlapping Nonrenewable Resource Interests and Activities

Presently there is a moratorium on mineral exploration on the eastern section of the North Slope outside of the park boundary.

Stokes Point was a base for the petroleum industry. An airstrip and gravel pads remain.

Past proposal for a pipeline from Alaska to the Mackenzie Delta.

Overlapping Military, Transportation, and Tourism Interests and Activities

Stokes Point and Komakuk Beach are Department of National Defence north warning system sites with unmanned short-range radar stations.

Bar-2 DEW line site near Shingle Point is an automated long-range radar site with airstrip and road access to the coast.

Several other development proposals have been made for the North Slope including a harbour at King Point, and a road to the Coast.

Increased tourism in the area including kayak tourism.

Community Working Group Concerns

Oil and gas development could have a negative impact on caribou, moose, fur-bearer and waterfowl habitat, and therefore on community subsistence harvest.

The past proposals for oil and gas development infrastructure at Stokes Point and King Point on the Beaufort coast, if implemented, may negatively affect habitat, especially that related to caribou and waterfowl.

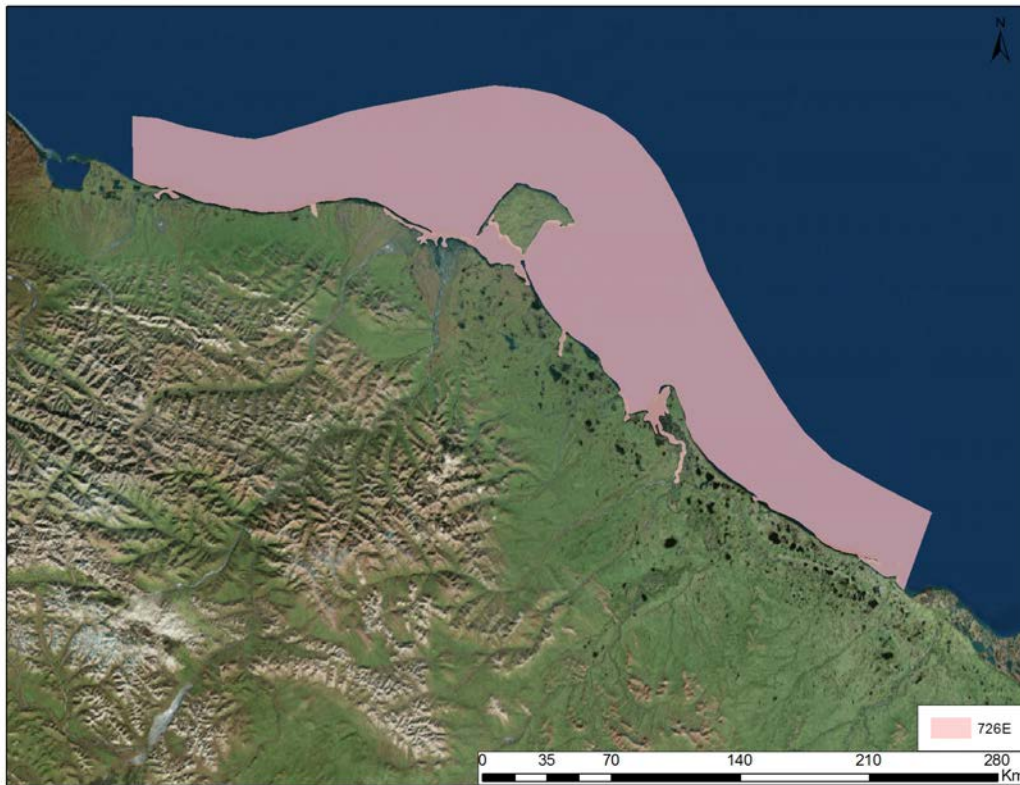
Concern about the impact of increased tourism including cruise ships, on the wildlife and habitat of the area.

Community Working Group Recommendations

1. Regulatory bodies should ensure there be no hydrocarbon activity within the area including pipelines and harbours.
2. The Community should continue to support and promote the recommendations of the International and Canada Porcupine Caribou Management Plans and the Yukon North Slope Wildlife Conservation and Management Plan.
3. The WMAC (NS) and GRRB should finalize and implement the DRAFT Dall's sheep Management Plan for North Richardson Mountains.

SITE 726E

YUKON NORTH SLOPE COASTAL ZONE



Map 26. Site 726E Yukon North Slope Coastal Zone

Identified By

Aklavik and Inuvik Working Groups, and DFO

Management Category

D

Ownership

Crown lands and waters within the ISR.

Description

A 16 km (10 mi) area of coastal waters from the Yukon/Alaska border to the eastern boundary of Escape Reef in Mackenzie Bay.

Importance of the Site to the Community of Inuvik

Major feeding area for fish species from North Slope and Mackenzie River. Major migration route for cisco from Mackenzie River to Alaska.

Important habitat for bowhead whales from June to September. Area also used by seals and belugas. Traditional harvesting area of bowhead whales.

Important habitat for breeding of migratory birds.

Important feeding area for polar bears.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Tarium Niryutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site no. 711E)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site 712C)

Mackenzie Bay and Shallow Bay (Site no. 716CE)

Ivvavik National Park (Site no. 727E)

Overlapping Military, Transportation, and Tourism Interests and Activities

Cruise ship traffic, small private yachts and daily air traffic to Qikiqataruk/Herschel Island

Territorial Park during the summer.

Rafting on the Firth River. Kayaking along the coast.

SSDC stored in Rolland Bay and Tarsuit Caissons outside of Pauline cove.

Community Working Group Concerns

Concern about the impact of increased shipping in the area including cruise ships, barges, and private yachts on the wildlife and habitat of the area.

Concern about air traffic in the area flying too low.

SITE 727E

IVVAVIK NATIONAL PARK



Map 27. 727E Ivvavik National Park.

Identified By
Parks Canada

Management Category

E: Legislatively protected under *National Parks Act* and the *Western Arctic (Inuvialuit) Claim Settlement Act*.

Ownership

Crown lands within the ISR.

Description

Yukon North Slope west of Babbage River to Alaskan border.

Importance of the Site to the Community of Inuvik

Unglaciaded areas resulting in exceptional geomorphology. Exceptional permafrost phenomena. Diverse vegetation.

Highly productive wildlife habitat. Migration route and calving area of Porcupine caribou herd.

Important fish habitat.

Important grizzly bear habitat. Muskox, furbearers, and Dall's Sheep in area.

Highly significant archaeological and historic sites.

Tourism values.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area
Yukon North Slope Coastal Zone (Site no. 726E)

Overlapping Military, Transportation, and Tourism Interests and Activities
Rafting on the Firth River. Canoe and kayak tourism. Hiking.

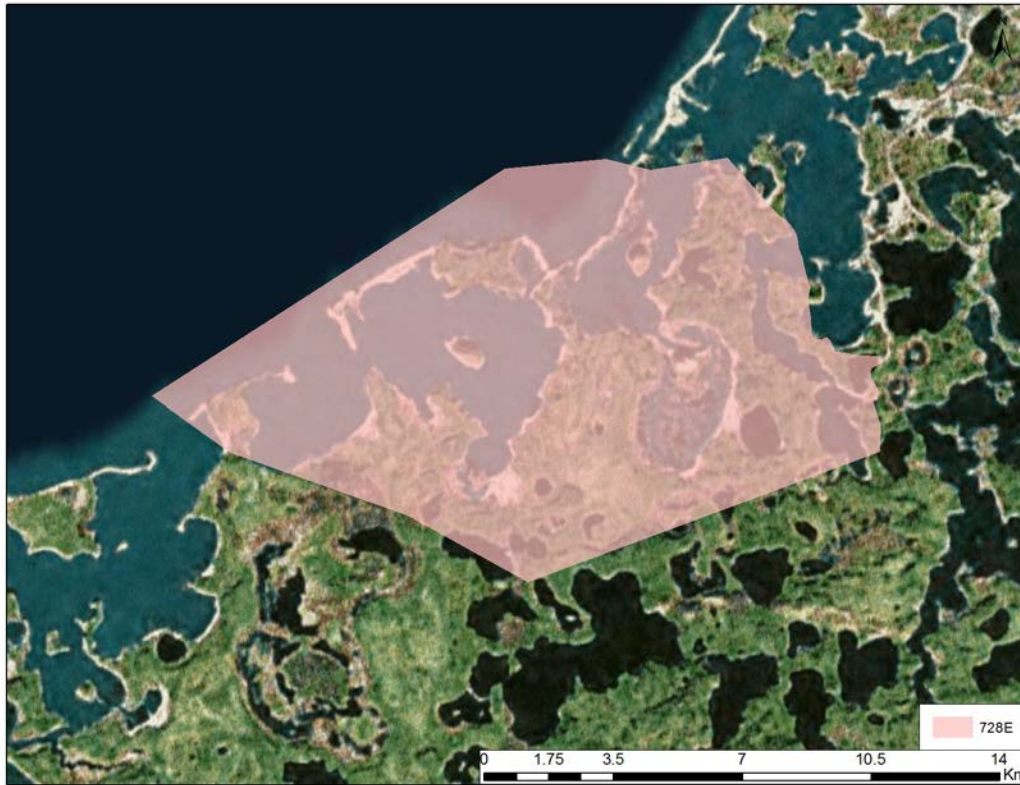
Community Working Group Recommendation

The community supports the Ivvavik National Park Management Plan.

Any burial sites should be respected. Any new sites should be reported immediately to the AHTC, ACC for advice and PWNHC.

SITE 728E

PINGO CANADIAN LANDMARK



Map 28. Site 728E Pingo Canadian Landmark

Identified By

Parks Canada and Tuktoyaktuk Working Group

Management Category

Legislatively protected under *National Parks Act* and *Western Arctic (Inuvialuit) Claims Settlement Act*.

The IFA (s. 7.(73)) states that:

“The Pingo Canadian Landmark shall be managed under the National Parks Act, in consultation with the Inuvialuit Land Administration and the people of Tuktoyaktuk, as a joint management regime”.

Ownership

Private 7(1)(a) lands within the ISR. The IFA (s. 71, 72) provides for an exchange of land so surface would be Crown owned.

Description

The Landmark is located approximately 4 km (2.4 mi) southwest of Tuktoyaktuk, covering a total of 16.4 km² (6.3 mi²).

Importance of the Site to the Community of Inuvik

Rare geological landforms of ice-cored hills. The greatest concentration (approx. 1,450) and

some of the largest pingos in the world occur in the vicinity of Tuktoyaktuk. Ibyuk Pingo is 50m (164 ft) and approximately 1,000 years old. Ibyuk pingo is the highest pingo in Canada and the second-highest pingo in the world.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fish Lakes and Rivers (Site no. 704C)

Beluga Management Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres (Site no. 712C)

Kugmallit Bay (Site no. 714CDE)

Overlapping Military, Transportation, and Tourism Interests and Activities

An automated North Warning System is operating in Tuktoyaktuk.

SITE 729E KITIGAARYUIT

Map 29. Site 729E Kitigaaryuit.

Identified By
Parks Canada

Management Category
E

Ownership
Private Lands within the ISR.

Description

The village and adjacent graveyards sit near the south end of an island which lies at the mouth of the Mackenzie River, on the east side of Kugmallit Bay. The peninsula is 1.5 km (0.9 mi) in length. The village is located south of the isthmus.

Importance of the Site to the Community of Inuvik

Established as a National Historic Site in 1978. Kitigaaryuit, as a semi-permanent settlement, has played a vital role for the Inuvialuit for centuries, and continues to be occupied today on a seasonal basis; it represents a significant archaeological site in the Western Arctic Region.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Fish Lakes and Rivers (Site no. 704C)

Tarium Nirvutait Marine Protected Area (TNMPA) / Beluga Management Zone 1A (Site no. 711E)

Kugmallit Bay (Site no. 714CDE)
Central Mackenzie Estuary (Site no. 718D)

Overlapping Military, Transportation, and Tourism Interests and Activities

Increased tourism in area.

SITE 730E QIKIQTARUK \ HERSCHEL ISLAND TERRITORIAL PARK



Map 30. Site 730E Qikiqtaruk\Herschel Island Territorial Park

Identified By

YTG

Management Category

Legislatively protected under *Yukon Territorial Parks Act*; *Western Arctic (Inuvialuit) Claim Settlement Act*. Managed as a wilderness park, similar to Ivvavik National Park.

Ownership

Crown lands within the ISR; and within the Yukon.

Description

Herschel Island is located approximately 5 km (3 mi) off the north coast of the Yukon, in the Beaufort Sea.

Importance of the Site to the Community of Inuvik

Important archaeological and historical sites.

Exceptionally rich vegetation. Diverse fauna. Rare insects only found on Herschel Island.

Caribou and muskox are yearly round inhabitants.

Important area for grizzly and polar bear denning. Foxes den on island.

One of few known nesting sites in the western Arctic for black guillemot. Canadian geese nesting on island. Important stop for migrating birds. Rare bird sightings increasing.

Overlapping with Other Special Designated Areas within the Inuvik Planning Area

Yukon North Slope Coastal Zone (Site 726E)

Overlapping Military, Transportation, and Tourism Interests and Activities

Day and overnight visitors. Hikers. Cruise ships.

Community Recommendation

The community supports the implementation of the Herschel Island Territorial Park Management Plan.

4.1.1 General Land Use Guidelines

These recommended guidelines relate to all lands in the Inuvialuit Community Planning Area for Inuvik:

1. The Inuvialuit Community, the WMAC (NWT), FJMC, IGC, EISC, EIRB and ILA will rely on their procedures, the Inuvik Inuvialuit Community Conservation Plan and the provisions of the IFA to ensure the protection of the Inuvik community harvesting areas that are within the ISR.
2. All Inuvialuit and non-Inuvialuit bodies with an interest in the planning area acknowledge and actively support the Inuvik Inuvialuit Community Conservation Plan, associated land use designations and recommendations.
3. The Community supports the maintenance of the bird sanctuaries.
4. The protective status of all other candidate areas (areas identified by non-Inuvialuit) for protection be resolved by having the government (e.g. Minister of the Environment, Minister of Fisheries and Oceans and GNWT and YTG, Minister of Renewable Resources) demonstrate to the satisfaction of the Community, WMAC (NWT and NS), FJMC and IGC that such areas are necessary.
5. All regulatory agencies support the priority land uses as outlined in the Inuvik Inuvialuit Community Conservation Plan.
6. Individuals wishing to build a camp on private land will abide by any camp-building bylaw specified by the HTC. That bylaw is presented in points (a) to (g) following:
 - (a) Contact your local HTC for information before applying.
 - (b) Secure lease for the land you want to build on through ILA.
 - (c) No one may build within an 8 km (5 mi) radius of another camp already established, unless they have written permission from the person of the established camp to build a cabin and must respect their wishes to the fullest degree.
 - (d) People must respect already established traplines and must not hunt within a 1.6 km (1 mi.) radius of an established camp.
 - (e) When applying to build, the person must apply on his own and not through someone else.
 - (f) No one can cut wood within a 1.6 km (1 mi.) radius of an established camp.
 - (g) Jiggling creeks used for many years for the purpose of catching fish in the fall time should be respected.
7. The permission granting authority for camps on private land is the ILA. ILA has adopted a practice to canvass for comments from existing cabin owners within a 8 km (5 mi) radius and will base a decision for a permit on the merits of each case and not on an HTC bylaw. Reasonable concerns or comments will be considered.
8. The Community, HTC, WMAC (NWT) and FJMC will encourage the people of Inuvik and others using and visiting the area to keep the land clean and to bring back any garbage for disposal at the local dump or other appropriate location (as determined by the Community).
9. The Prince of Wales Northern Heritage Centre and DoL should implement protection of heritage resources through a strengthened *Heritage Resources Act*.

4.2 INUVIALUIT COMMUNITY PROCESS FOR LAND USE DECISIONS

The community land use decision-making process involves a number of steps, which are described below and also presented graphically in Appendix H.

1. The Community Corporation and Hunters and Trappers Committee receive notification of development proposals from the ILA, DoL and/or the EISC.
2. The Community Corporation and HTC hold separate meetings to discuss the proposal.
3. The Community Corporation and HTC review relevant sections of the Community Conservation Plan with careful consideration of management categories (Section 4) and independently pass on their concerns to the ILA and/or the EISC.
4. The HTC and Community Corporation formally work together to develop a consensus or community- based land use decision in special cases.
5. The HTC and Community Corporation will hold a secret ballot when considered necessary.
6. The Community Corporation and HTC review relevant sections of the Community Conservation Plan with careful consideration of management categories (Section 4).
7. The ILA or EISC (see Section 4.4) review the responses and decide whether to grant approval (where the ILA is involved) or to refer the project to the Environmental Impact Review Board (for further public review) or to the appropriate government departments for permitting (where the EISC is involved).

4.3 CUMULATIVE IMPACTS MANAGEMENT

Cumulative impacts occur when changes to the environment, both good and bad, add to one another over time. Several small impacts may appear unimportant when they occur but, if continued, may result in a large impact over time. Successful management of cumulative impacts involves the following three steps:

- Clearly identify the type of environment and lifestyle you want in the future;
- Monitoring environmental change;
- Appropriate decision making.

In order to better account for incremental or gradual losses of wildlife habitat resulting from changes in land use over time, the Community, as represented by the HTC and Inuvik Community Corporation, will re- designate areas of remaining habitat in a given land use category (Category A, B, C, D) to a more protective category (Category B, C, D, E) in proportion to the amount of effective habitat lost or affected by the authorized land use.

For example, if a proposed land use has negative effects on five percent of Category A wildlife habitat, then five percent (or any other amount) of what Category A habitat remains would be re-designated Category B or higher until such time as the impact of the land use has stopped and the land restored to its original ecological productivity.

This process acknowledges the principle that as wildlife habitat is lost, that which remains becomes more valuable and should require greater public support to alter. Re-designation will be carried out coincident with the two-year conservation plan review by the Community Working Group, and the complete review by all stakeholders every four years.

4.4 ENVIRONMENTAL SCREENING & REVIEW

Review of development proposals within the Inuvialuit Settlement Region is carried out in a cooperative manner and primarily involves the Environmental Impact Screening Committee (EISC), the Environmental Impact Review Board (EIRB) and Inuvialuit Land Administration

(ILA) (as described in Section 1.2 and Appendices F and G). These committees routinely seek the advice and comments of the community in reaching their decisions.

At the present time, the ILA is able to specify enforceable conditions for attachment to ILA Land Use Permits on Inuvialuit 7.1(a), 7.1(b) Lands. On Crown lands within the Inuvialuit Settlement Region non- Inuvialuit bodies, such as Department of Lands – GNWT (DoL), are responsible for attaching conditions to land use permits. ENR issues wildlife research permits and ITI issues tourism licences. The Prince of Wales Northern Heritage Centre issues permits for archaeological research. Within a national park, Parks Canada issues permits.

4.4.1 Recommendations

1. The consideration of the Community Conservation Plans by EISC, ILA, and DoL when making land use decisions.
2. DoL and ILA work together wherever possible to develop a consistent set of general land use procedures.
3. The Community recommends that the ILA require developers to indicate the extent to which relevant elements of their development are at variance or consistent with Section 19, Conduct of Operations in the ILA Rules and Procedures (Appendix I of this plan).
4. Environmental Screening Procedures - The HTC, IGC, WMAC (NWT), WMAC (NS) and the FJMC will periodically review the Environmental Impact Screening Committee, Environmental Impact Review Board and Inuvialuit Land Administration operating rules/guidelines and procedures, and offer advice with regard to any changes that may be required to help improve environmental screening and review.
5. Regulatory bodies with jurisdiction over lands within the ISR should work with the Community to ensure that developers are bound to adequately address the Community's environmental concerns. These regulatory bodies should also work with the Community to identify practical state-of-the-art mitigation and reclamation techniques and to involve local people as environmental inspectors (see Section 5.0).
6. Reclamation Plans - As part of land use permits, reclamation plans should be agreed to and a costing mechanism (e.g. bond, promissory note) established to ensure compliance.
7. Consultation - The Community should be consulted on all land use activities in the Inuvik Planning Area.
8. Revoke Permits - Where there is a violation of land use permit conditions deemed serious by the IHTC or Inuvik Community Corporation, the permitting agency (e.g. ILA, DoL) shall investigate immediately and take appropriate action which, with HTC support, may include revoking permits.
9. Education - The Environmental Impact Screening Committee, Environmental Impact Review Board, and Inuvialuit Land Administration should increase community awareness of their mandates and activities (see also Section 5.0).
10. The Inuvialuit Community in Inuvik will:
 - (a) Carefully review all land use proposals and only give their support to land use activities where they are consistent with the Inuvik Inuvialuit Community Conservation Plan;

Through the HTC, IGC or the IRC, refer any projects on Inuvialuit Land that may be in conflict with the Inuvik Inuvialuit Community Conservation Plan to the environmental screening and review process;

- (a) Through its HTC, consult with developers on projects proposed within the Inuvik Planning Area;

- (b) With the assistance of the IGC, familiarize itself with the terms and conditions of any relevant Wildlife Compensation Agreements prior to signing off by the IGC, HTC and Developer.
- (c) Through its HTC, advise the EISC or ILA of community concerns about development projects in the Inuvik Planning area;
- (d) Develop a monitoring system with industry, transportation companies and local tourist operators to determine the numbers, impacts and rate of increase of activity to provide the data for increased regulations as required.

Through the HTC, ensure that community harvest data are kept current in order to facilitate development of practical and fair Wildlife Compensation Agreements.

5 EDUCATION, TRAINING AND INFORMATION EXCHANGE

The successful implementation of the Inuvik Inuvialuit Community Conservation Plan will require ongoing efforts to educate, train and exchange information. The community recommends that the WMAC (NWT and NS) and FJMC work with other Inuvialuit and non-Inuvialuit agencies to obtain funding and expertise to fulfill the following initiatives:

- (a) Prepare an educational audio and videotape or tapes on the local ecosystem, the people, conservation practices and the Inuvialuit Final Agreement.
- (b) For ILA to organize training for local Inuvialuit in environmental inspection and monitoring of development.
- (c) Organize training for local Inuvialuit on proper harvesting techniques including sharing of ENR Hunter Educational manual.
- (d) Prepare summaries (written summaries and as translated audio tapes in the local dialect) of the Inuvik Inuvialuit Community Conservation Plan suitable for school use, social media, and for elders.
- (e) Prepare home education package to convey cultural language and conservation.
- (f) Develop and implement a Community Information Program to present and explain the Inuvik Inuvialuit Community Conservation Plan.
- (g) Promote the use of environmentally friendly products and proper handling of hazardous wastes.
- (h) Encourage researchers visiting the area to make presentations to the Community, and to convey the results of their studies.
- (i) Continue to record and convey traditional knowledge of the land, culture, wildlife and conservation.
- (j) The Community should actively assist with the undertaking of the above initiatives.
- (k) Continue to promote the use of the local language among the young and others with an interest.

6 WILDLIFE MANAGEMENT AND RESEARCH

The Community supports the general wildlife management process as described in the Inuvialuit Renewable Resource Conservation and Management Plan (1988), the IFA and the goals of the Yukon North Slope Wildlife Conservation and Management Plan. Interested readers are advised to consult both of these documents. All three documents provide for the full consultation and participation of the Community and its representatives in the management process.

Improvements to the system can be made in terms of more use of local knowledge, more community involvement in wildlife research and better communication between the Community, government agencies, researchers and the joint management groups. To that end, the Community has developed preliminary guidelines for wildlife management and conservation, including subsistence and commercial harvesting, tourism and local enjoyment. The Community has incorporated local knowledge and outside expertise in developing a conservation summary for each species of concern in the area (Section 6.4).

6.1 GENERAL GUIDELINES

To implement the strategy for wildlife management and research the following steps will be taken:

6.1.1 The Inuvik HTC will:

- (a) Provide input to the IGC and the joint management groups on wildlife management and research programs in the Planning Area.
- (b) Through the IGC and the joint management groups, inform government agencies of its priorities for wildlife research in the Planning Area.
- (c) Support conservation initiatives for shared migratory species developed by others, where the Inuvialuit bodies with a mandate for wildlife management endorse those initiatives.
- (d) Participate in wildlife research projects in the Inuvik Planning Area when they have been consulted and support such projects.
- (e) Discourage the use of aircraft for low level (<610 m) (<2,000 ft.) wildlife spotting at anytime unless being done in conjunction with authorized research in order to avoid unnecessary disturbance or harassment of wildlife (see also Section 6.3(c)).
- (f) Monitor the state of the wildlife and habitats in the Planning Area in cooperation with the biologists employed by the Government of the NWT, FJMC, DFO and DOE and report any concerns to the WMACs and FJMC through the HTC and the IGC.
- (g) Regulate Inuvialuit harvesting using bylaws and traditional conservation methods as described in this plan (see Section 6.4), or when this is recommended through community monitoring, by the joint management committees or the IGC.
- (h) Pass a bylaw which provides a strong and positive incentive for trappers to carefully manage their harvest. This bylaw will define individual trapping areas and allow trappers to rotate their harvest within their trapping area from one year to the next. The system to be covered by the bylaw will be biologically and culturally based.
- (j) Where appropriate, participate in the development and delivery of education programs (see Section 5.0).
- (k) Encourage active participation in implementing the Inuvik Inuvialuit Community Conservation Plan. Membership and privileges associated with membership in the HTC will only be granted where individuals support the plan to the satisfaction of the HTC

- membership.
- (l) Manage all harvests on a sustained yield basis.
- (n) Participate in the regulation of the subsistence harvest and the collection of subsistence harvest information.

6.1.2 The WMAC's (NWT and NS), FJMC and IGC will:

- (a) Assist the Community in obtaining regular monitoring information on water quality and ecosystem integrity. (This is a very high priority within the community). The Community would also like to know more about change in water levels in the Delta and its impacts.
- (b) Recommend to the Minister of Environment and Climate Change Canada, the Minister of Fisheries and Oceans, the Minister of GNWT Environment and Natural Resources and the Minister of YTG Department of Environment that species management plans continue to be developed for important wildlife populations identified by the Community in the Inuvik Planning Area, in consultation with the Community and joint management groups. These plans should build upon the species conservation summaries presented in Section 6.4.
- (c) Make more use of the media to publicize their activities in the Inuvik Planning Area.
- (d) Recommend to the Aurora Research Institute of the Northwest Territories, the CWS, the DFO, GNWT and YTG that they continue to work with the WMACs to develop a consistent process for community consultation on wildlife research and the distribution of research results to the Community (see also Section 5.0). They (FJMC, WMAC (NWT), WMAC (NS), IGC) will further recommend that as part of their research permit, all researchers in the Planning Area mail or fax a one-page summary of the work undertaken to the HTC, within two weeks of leaving the area.
- (e) Respond to Community initiatives for conservation measures and education programs.
- (f) Develop a consistent set of criteria for establishment of harvest quotas in cooperation with the HTC.

6.1.3 Community, the WMAC (NWT), FJMC and IGC will:

- (a) Support the development of species management plans, when such plans are prepared in consultation with all groups. In the interim, these bodies and the people represented will endorse and follow conservation guidelines provided in the species summaries (Section 6.4).
- (b) Ensure that Inuvialuit are aware that animal numbers typically increase and decrease with the seasons and over the years as part of natural cycles. Ensure that harvesting and management programs consider natural cycles of animal abundance.
- (c) Support proposals for renewable resource development in the Planning Area, when they are consistent with the Principles of the Inuvialuit Final Agreement, the Regional Conservation Plan, and with the Community Conservation Plan.
- (d) Revise the species conservation summaries listed in Section 6.4 every two years.

6.2 SUBSISTENCE AND COMMERCIAL HARVESTING - GENERAL GUIDELINES

Under the Inuvialuit Final Agreement (Section 14(36)(a)) the Wildlife Management Advisory Councils are required to determine the total allowable harvest for game to ensure long term resource conservation. The effectiveness of this activity is very dependent on the cooperation of local subsistence harvesters in Inuvik and those involved in promotion of commercial wildlife harvesting.

In addition to recommendations and guidelines described elsewhere in this document, the guidelines below will be followed:

- (a) Subsistence harvest and traditional patterns of land use associated with subsistence harvesting will take precedence over commercial harvesting.
- (b) Subsistence and commercial harvesting will be done in a manner consistent with the Inuvik Inuvialuit Community Conservation Plan, specific population goals and conservation measures stated in the species conservation summaries.
- (c) Commercial harvesting of wildlife will be undertaken in a manner developed cooperatively with and endorsed by the FJMC (for crustaceans, fish, seals, whales), WMAC (NWT and NS) (for all other animals) and the GNWT.
- (d) Where a commercial quota is identified and considered consistent with conservation for a given species (for example, caribou) a percentage of tags will be retained for small-scale operations (for example, sport hunting, individual supply to commercial market).
- (e) The ISR Community-Based Monitoring Program (CBMP) will monitor harvests monthly in order to provide information necessary for compensation resource conservation.
- (f) Well managed commercial fishing will be allowed in the rivers, but is not recommended for the lakes.
- (g) The community will consider and support the use of alternate harvesting methods (e.g. humane traps, steel shot) where there is a demonstrated need.

6.3 TOURISM GUIDELINES

The Community of Inuvik believes tourism is a valuable economic activity within the area, which is compatible with conservation and cultural needs, provided it is properly managed. The Community recognizes the need to maintain the environment and cultural lifestyles in order to promote tourism. To do this the Community recommends the following:

- (a) The total number of tourist operators and/or tourists should be restricted in certain areas at certain times of the year (e.g. nesting and moulting areas for migratory birds, calving areas, denning areas.)
- (b) The ILA, and ENR will request that all tourist operators (Inuvialuit and non-Inuvialuit) endorse the Inuvik Inuvialuit Community Conservation Plan and follow its recommendations as one of the conditions of operators license or permit. Licences may be revoked when operators contravene the recommendations and guidelines of this Plan and the conditions of their permit.
- (c) Aircraft should fly no lower than 1,100 m (3,500 ft.) over a migratory bird sanctuary during times when nesting birds are present.
- (d) Aircraft will not be used to land at sites where concentrations of nesting birds may occur.
- (e) Aircraft will not be used for low level <610 m (<3,500 ft.) wildlife spotting at any time unless

being done in conjunction with authorized research.

- (f) Wolf dens should be approached no closer than 500 m (1,640 ft) if wolves are present.
- (g) Tourists and tourist operators should not handle or harass wildlife.
- (h) DoL and ILA, in conjunction with the HTC, should establish a Travel Restricted Area to protect heritage resources when necessary.
- (i) ENR and ITI should inform tourist operators of concerns regarding protection of heritage resources when issuing tourism operators or outfitting licences.
- (j) Tourists and tourist operators shall respect any bylaws passed by the HTC with respect to tourism.

6.4 SPECIES CONSERVATION SUMMARIES

The following Species Conservation Summaries have been prepared in consultation with the WMAC (NWT), FJMC, IGC, DFO, CWS and ENR. Both local indigenous knowledge and that of others with expertise has been used. General conservation measures are provided in addition to those to be followed in the event of declining wildlife populations. Additional information on important wildlife habitat is contained in the Land Use Section (4.1).

Regularly updated, detailed Species Status Reports can be found in the Yukon North Slope Wildlife Conservation and Management Plan. Research review tables outlining the current state of knowledge for a number of wildlife species on the Yukon North Slope can be found in the Yukon North Slope Long-term Research and Monitoring Plan.

The WMAC (NWT) commissions ENR and CWS to provide updated Species Status Reports on an annual basis for species in the NWT portion of the ISR.

Species Conservation summaries will be updated every two years by the WMAC (NWT), with input from the appropriate agencies. In most cases, precise population or threshold levels remain to be specified. The WMAC (NWT), WMAC (NS), FJMC, IGC, CWS, ENR and DFO are encouraged to continue moving forward with species management plans, with priority to species of importance to the Community and which may be impacted by developments.

BEAVER (*Castor canadensis*) / KIGIAQ

Mating occurs in the water during late winter (February and March). After spring break-up, 3 to 4 kits are born in the lodge or burrows. One litter is produced per year and kits mature at 2 years of age or older. Beavers were abundant in Delta in 1960-61, but later declined and are abundant again. Locals believe that beaver have been important in maintaining the health of the Delta and influence the distribution of fish and other animals.

Traditional Use

Furbearer and food to lesser extent.

Important Habitat

Inhabit the streams and lakes of Mackenzie Delta. Beavers need plenty of food and building material readily available and shore and bottom areas should be muddy and easy for burrowing, channelling and damming.

Management Plans/Agreements

No management plans specifically for beaver; managed under general hunting and trapping regulations. Draft Co-management Plan for the Fur Industry (2000).

Research Priority

Moderate: Community interested in movement and census information considered moderate priority. (Consider community concerns about impacts in increased beaver numbers and activities impact on local fisheries.) Community concerns of beaver dams affecting fish populations in all feeding areas, i.e. jigging areas.

Population Status

Population in the Delta and adjacent areas has been increasing steadily. Notice an increase of illness to our community members through *Giardia* (aka Beaver Fever).

Population Goal

Over abundant in the Delta and on the coast.

Conservation Measures

- Harvest on a sustainable basis.
- Harvest targeted at areas where fish passage is a concern.
- Identify and protect important habitats from disruptive land uses.
- Support HTC bylaw (proposed) on designated trapping areas.
- Like to see an increase in harvest on beaver due to overabundance.

BLACK BEAR (*Ursus americanus*) / IGGARLIQ

Biology

The most northern black bear population in Canada occurs in the ISR but their numbers or densities are unknown. Black bears occur in forested areas and den from October to May. Breeding peaks in June and July and cubs are born toward end of January, early February. Cubs tend to leave mother in second year of life. Females mature at 3-5 years of age and have an average of 2 cubs per litter every 3 years. Black bears may live to 20 years of age though average maximum age about 10. Average weights for females are 40-70 kg (88-154 pounds), and males weigh 60-140 kg (132-308 pounds). While they feed on a wide variety of plants and animals, black bears are primarily herbivorous.

Traditional Use

Furbearer.

Important Habitat

Mackenzie River valley, treed areas, creeks and river valleys with trees and Bell River drainage.

Management Plans/Agreements

No management plans specifically for black bears; managed under the *NWT Wildlife Act* and its related regulations.

Research Priority

Low.

Population Status

Fairly common but at northern extent of range.

Population Goal

Maintain natural densities, adequate supply at present.

Conservation Measures

- Keep camps clean, properly dispose of garbage.
- Identify and protect important habitats from disruptive land uses.
- Reduce bear-people conflict situations and the number of bears destroyed in problem bear situations.

CARIBOU (*Rangifer tarandus*) / TUTTU Pangniq (bull), Kulavak (cow), Narraq (calf)

Biology

Barren-ground caribou (*Rangifer tarandus groenlandicus*) that occupy the northern portion of the Northwest Territories and western Nunavut, Canada, were considered to be part of the Bluenose herd. Work completed by ENR (formerly RWED) in 1999 indicated that there are three herds within that area: the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds. Since the reindeer were moved off the Tuktoyaktuk peninsula in 2001 there appears to be another group of caribou calving at the upper end. The degree of hybridization occurring is unknown.

Calving occurs late May or early June; typically a single calf. Cows calve every year if in good condition. Sexual maturity is reached at 2 to 4 years of age. The Porcupine herd winters in high mountains (Richardson, Ogilvie and Barn Mountains), migrate to calving grounds April and May, spend spring and summer on Alaskan and Yukon North Slope, return to wintering grounds September and October, with rut occurring in October. Bluenose-West and Cape Bathurst herds generally winter near or below the treeline east, northeast and southeast of Inuvik, and calve and summer in Brock, Hornaday and Horton River area.

Traditional Use

Highly valued food resource, historically also for clothing and tools.

On the mainland, the Cape Bathurst herd is typically harvested by 5 Inuvialuit and Gwich'in communities. The Bluenose-West herd is harvested by Inuvialuit, Gwich'in, and Sahtu Dene and Metis in 12 communities. In addition, Inuvialuit from Sachs Harbour on Banks Island have historically relied on caribou from the Bluenose-West and Cape Bathurst herds.

Important Habitat

Porcupine Caribou Herd: Coastal plain N.E. Alaska and N.W. Yukon North Slope for calving and insect relief, also Northern Richardson Mountains. Winter habitat in Richardson, Ogilvie and Hart Basins and Eagle Plains/Whitestone River area.

Bluenose-West Caribou Herd: Hornaday, Brock and Horton Rivers area for calving (Tuktut Nogait National Park).

Cape Bathurst Herd: Bathurst peninsula for calving and insect relief; winter habitat northeast of Inuvik.

Tuktoyaktuk Peninsula Herd: north end of Tuktoyaktuk peninsula for calving and insect relief

Management Plans/Agreements

Porcupine:

Canadian (1985) and International (1987) Porcupine Management Agreements in place for the Porcupine Caribou Herd.

Harvest Management Plan for the Porcupine Caribou Herd in Canada (2010) and Implementation Plan

Draft North Yukon Land Use Plan (2009).

Cape Bathurst, Bluenose-West and Tuktoyaktuk Peninsula

Taking Care of Caribou – the Cape Bathurst, Bluenose-West and Bluenose-East Barren-Ground Caribou Herds Management Plan (2014)
ACCWM Terms of Reference

The drafting and implementation of the Bluenose and Porcupine Caribou management plans has involved the cooperation of the various land claim groups and co-management boards in each jurisdiction, thereby reflecting the trans-boundary nature of the herds.

Research Priority

Study conducted to prove the Boreal Caribou herd is expanding their range into the ISR.
See Porcupine Caribou Strategic Framework
Taking Care of Caribou Management Plan

Population Status

Porcupine:

approximately 178,000 (1989)
approximately 160,000 (1992)
approximately 152,000 (1994)
approximately 129,000 (1998)
approximately 123,000 (2001)
169,000 (95% CI 153,493-184,403) (2010)
197,228 (95%CL 168,667-225,789) (2013)
218,457 (95% CL 202, 106-234, 808) (2017)

Census attempted every year between 2003 and 2009 with no success due to various reasons. Radio collars (conventional and satellite) continue to be monitored to provide calf birth rate, calf survival rate, and adult female survival rates.

Another attempt on the Bluenose-East is planned for 2010. Next population survey for all the herds is scheduled for July 2012.

| Herd | Estimate | 95% Confident Intervals | Year |
|-----------------------|----------|-------------------------|------|
| Tuktoyaktuk Peninsula | 3,078 | | 2006 |
| | 2,752 | 276 | 2009 |
| | 2,192 | 178 | 2012 |
| | 1,701 | | 2015 |
| Cape Bathurst | 13,476 | | 1986 |
| | 12,516 | 3,504 | 1987 |
| | 19,278 | 5,397 | 1992 |
| | 11,089 | 1,756 | 2000 |
| | 2,434 | 257 | 2005 |
| | 1,821 | 149 | 2006 |
| | 1534 | 349 | 2009 |
| | 2,427 | | 2012 |
| | 2,259 | 84 | 2015 |
| Bluenose-West | 88,369 | 6,899 | 1986 |
| | 106,887 | 4,655 | 1987 |

| | | | |
|----------------------|----------------|---------------|-------------|
| | 112,360 | 25,566 | 1992 |
| | 76,376 | 14,347 | 2000 |
| | 20,800 | 2,040 | 2005 |
| | 18,050 | 527 | 2006 |
| | 17,897 | 1,310 | 2009 |
| | 20,465 | 3,489 | 2012 |
| | 15,268 | 1369 | 2015 |
| Bluenose-East | 119,584 | 25,419 | 2000 |
| | 70,081 | 8,120 | 2005 |
| | 66,754 | 5,182 | 2006 |
| | 98,600 | 7,100 | 2010 |
| | 68,295 | 18,040 | 2013 |
| | 34,223 | 8,681 | 2015 |

Population Goal

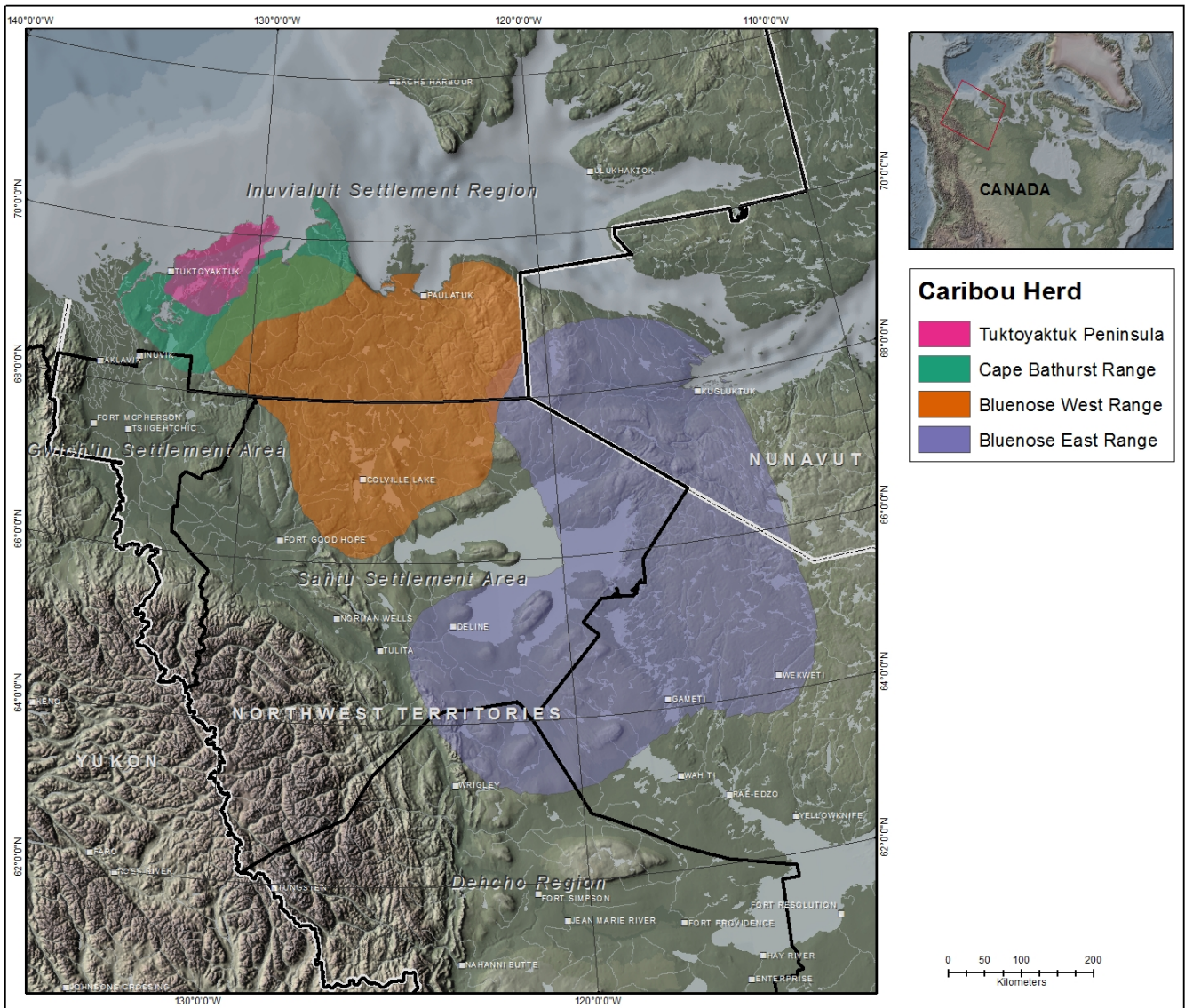
Porcupine:

To keep the herd in the green zone, above 115,000 caribou, allowing for enough caribou to meet local demands — see Draft Harvest Management Strategy

Cape Bathurst, Bluenose-West and Tuktoyaktuk Peninsula
Maintain herds within the known natural range of variation.

Conservation Measures

- Support Porcupine Caribou Management Board and Management Plan.
- Support implementation of Porcupine Caribou Harvest Management Plan.
- Identify and protect important habitats from disruptive land uses.
- Avoid shooting mature bulls during the rut. (Supportive Educational Video)
- Do not harvest more than is needed.
- Convey and promote traditional means of using all of each animal harvested, discourage waste of meat.
- Develop cooperative management relationship between the co-management boards of each relevant land claim group through the ACCWM.
- Harvest on sustainable basis, and in manner consistent with recommendations of the management plans and HTC bylaws.
- Support the Barren-ground Caribou Management Strategy.



Map 31. Current Ranges of the Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds.

FOXES/ KAYUQTUQ**RED FOX** (*Vulpes vulpes*) /**AUKPILAQTAQ****ARCTIC FOX** (*Vulpes lagopus*)/**TIRIGANNIAQ****Biology**Arctic Fox

Arctic Foxes breed in March and den in April. Females have on average 5 to 8 pups that become active in May, and may stay near den until fall. There appears to be a four-year population cycle (likely coincident with cycle in lemmings). Foxes are known to move great distances (e.g. Alaska to Banks Island).



Trevor Lucas

Red Fox

Breed February to April, with 1-13 young, average 5. Family stays together until fall. Sexually mature at approximately 10 months. May live up to 12 years of age. Fur may be various colours (coloured, silver (Marraq), cross (Kaihirutilik)).

Traditional Use

Furbearer.

Important Habitat

Arctic fox are widespread above, often near coastal areas and are widespread below the treeline.

Management Plans/Agreements

No management plans specifically for foxes; managed under general hunting and trapping regulations. Information can be found in Draft Co-management Plan for the Fur Industry (2000).

Research Priority

Low: though there is interest/concern over rabies.

Population Status

Can be highly variable year to year.

Population Goal

Unspecified.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- Only trap in season.
- Do not disturb denning foxes.

GRIZZLY BEAR (*Ursus arctos horribilis*) / AKĻAQ

Biology

Grizzly bears in the ISR den from approximately October to May and breed mainly in June-July. On average, females might not begin producing cubs until 5-8 years of age, have 1-3 cubs per litter, and produce a litter every 3-5 years. Grizzly bears are primarily vegetarians, although they will take advantage of any high-energy food source available. Some foods and areas may be more important than others from season to season, and from year to year. In the NWT, home range sizes of females average approximately 2000km², whereas males average approximately 7000km², much larger than those reported in other North American populations. Average weight for adult females is 125 kg (276 lb), and 250 kg (551 lb) for adult males. Bears may live to 25 years – the oldest aged bear in ISR is 35.

Traditional Use

Furbearer.

Important Habitat

Richardson Mountains, Richards Island, Delta, Major river drainages, eskers and southerly slopes for denning. More sightings on Arctic Islands in recent years.

Management Plans/Agreements

Co-Management Plan for Grizzly Bears in the Inuvialuit Settlement Region, Yukon Territory and Northwest Territories, with Work Plans for the Years 1997/98 to 2001/2002. (WMAC (NWT), 1998)

In 1994 community hunting areas were established for Inuvik and Aklavik and the boundaries of all hunting areas were extended to conform to the ISR boundary in the Yukon and NWT.

Grizzly bear bylaws were written for each hunting area in consultation with the affected HTC's and were approved by the WMACs and IGC. Quotas established for entire ISR in 1993-94. WMAC (NWT) and WMAC (NS), based on local knowledge, made interim quota adjustments. Work is underway to get new scientific estimates. Quotas are adjusted when new information is available.

Research Priority

Research on grizzly bear populations to provide information to set sustainable harvest quotas and look at impacts of human disturbance. Research along the Yukon North Slope (completion in 2010), the Oil and gas activity area in Delta (completion 2008), and the ISR east of Delta (completion 2011) is aimed at obtaining more accurate information on population densities and habitat use by grizzly bears. Hair and scat collection at cabins for DNA provides additional information on bears visiting cabins. DNA hair snag grid conducted between Inuvik and Tuktoyaktuk (2013-2015) provided densities in area.

Population Status

In most areas hunters are reporting more grizzly bears. More grizzly bears are being sighted and harvested on the arctic islands indicating an expanding population. Recent work on Yukon North Slope indicates that the grizzly bear population is healthy and stable

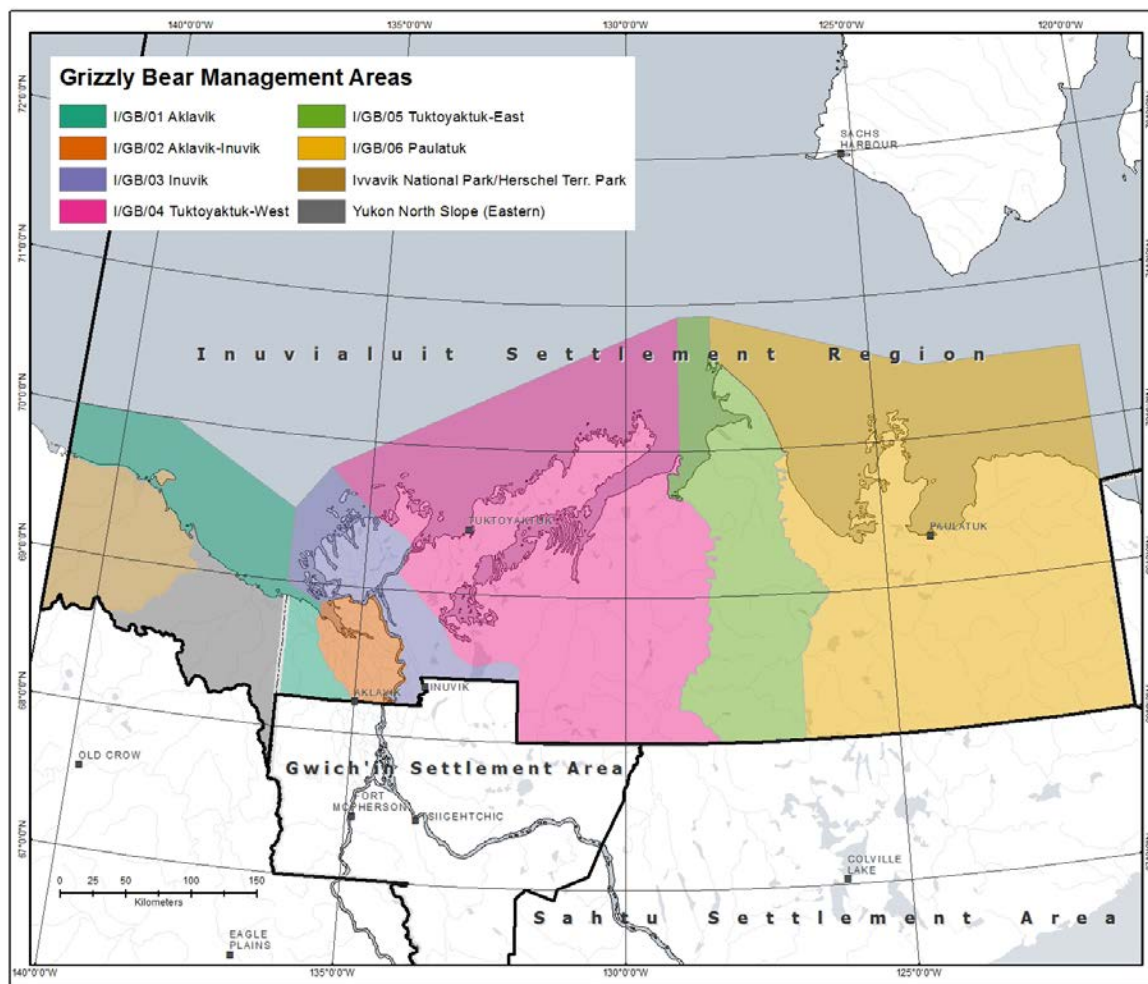
Population Goal

Stable population that can sustain an annual harvest.

Research will be used to determine appropriate harvest rate.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- Reduce bear-people conflict situations and the number of bears destroyed in problem situations.
- Do not hunt females and cubs.
- Do not hunt bears in or constructing dens.
- Selectively harvest males.
- Harvest on a sustainable basis and in a manner consistent with Management Plan and HTC bylaws.
- Camp assessment and Electric fence program maintained to reduce interactions
- Guidelines for mitigating impacts of development.
- Quota established for the Delta region (zone C2-2G Grizzly Management Areas)



Map 32. Grizzly Bear Management Areas

LYNX (*Lynx canadensis*) / NIUTUIYIQ

Biology

Lynx breed in March to May with young observed June through August. Usually 2 to 6 young are born. Numbers of lynx in area tends to cycle with number of snowshoe hare/rabbits. Local observations indicate that lynx are fat when there are lots of rabbits and thin when rabbits are few. Lynx travel when rabbits are scarce.

Traditional Use

Lynx are highly valued for their fur and as food.

Important Habitat

River valleys and Mackenzie Delta.

Management Plans/Agreements

No management plans specifically for lynx; managed under general hunting and trapping regulations. Information can be found in Draft Co-management Plan for the Fur Industry (2000).



Research Priority

The community would like to know more about what data has already been collected as well as information on:

1. Population status;
2. Movements;
3. Habitat productivity.

Population Status (as indexed by NWT wide pelt sales): Population cycles through highs and lows. Peaks at beginning of decade lows at center. Hare abundance surveys undertaken to track changes.

Population Goal

Unspecified.

Conservation Measures

- Harvest on sustainable basis.
- Identify and protect important habitats from disruptive land uses.

MARTEN (*Martes americana*) / QAVVIATCHIAQ

Biology

Martens occur throughout forested regions of Canada and to a limited extent in Rocky Mountains of Northwestern U.S. Males may weigh up to or greater than 1.8 kg (4 pounds), females to 1.2 kg (2.6 pounds). Marten mature at about 15 months of age but may not breed until 2 years old. May live to 13 years in wild. Pairs breed in mid-summer, with young born mid-March to late April. Females produce one litter of 3-5 young per year. Martens den in tree hollows high off ground or under rocks, squirrel middens, logs, tree roots or in snow dens. While generally active within a range of a 1-20 km² (0.4 - 7.8 mi²), males use larger area than females. Martens feed on small mammals (e.g. lemmings, hares), birds, insects and fruits.

Traditional Use

Furbearer.

Important Habitat

Usually older evergreen forests with abundant small mammals (squirrels, mice, voles). Some regenerated forests following fire are also important. Rarely leave the tree line.

Management Plans/Agreements

No management plans specifically for marten; managed under general hunting and trapping regulations. Information can be found in Draft Co-management Plan for the Fur Industry (2000).

Research Priority

Unspecified.

Population Status

Unknown but variable seasonally and annually.

Population Goal

Unspecified.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- Only trap in season when pelt is prime.
- Support HTC bylaw (proposed) on designated trapping areas.

MINK (*Mustela vison*) / ITIRIAQPAK

Biology

Mink may occur at densities of 1 to 8 animals per km² (per 0.4 mi²) and are usually solitary. Mink mate February to April, and give birth late April to early May to 2-10 young. Young leave the den in 7-8 weeks. Females mature in approximately 12 months, while males in approximately 18 months. Mink can dive to depths of at least 5-6 m (16 - 20 ft.) and swim underwater for up to 30 m (98 ft.). They are usually active at night, early morning and evening, with minimal daytime activity, feeding on small mammals, fish, small birds, insects. Mink may travel to 25 km (15.5 mi) in a night if food is scarce

Traditional Use

Furbearer.

Important Habitat

Delta and small creeks; prefer densely vegetated areas.

Den in vacant beaver or muskrat houses, burrows, under tree roots or stones near water. Burrows may be up to 3 m (10 ft.) long and 1 m (3.3 ft.) beneath the surface with more than one entrance.

Management Plans/Agreements

No management plans specifically for mink; managed under general hunting and trapping regulations. Information can be found in Draft Co-management Plan for the Fur Industry (2000).

Research Priority

Moderate to high: The community is interested in knowing more of the local biology, population status and important habitat areas. Interest has also been expressed in determining what the best time for a trapping season would be.

Population Status

Unknown.

Population Goal

Unspecified.

Conservation Measures

- Trap only when pelt is in prime condition.
- Identify and protect important habitats from disruptive land uses.
- Support HTC bylaw (proposed) on designated trapping areas.

MOOSE (*Alces alces*) / TUTTUVAK

Biology

Calving occurs in May or early June, typically single calf, however mature females may have two calves. Males mature by about 2 1/2 years, and cows by 2 to 4 years of age. Breeding occurs approximately third week of September (September 20).

Traditional Use

Important alternate food source for community when caribou are unavailable. Preferred by most over Dall's sheep. Historically also used for clothing and tools.

Important Habitat

Wintering areas; typically valleys and creeks with abundant growth of willows. Richardson Mountains, Bell River, Babbage River, Yukon North Slope, and Mackenzie Delta.

Management Plans/Agreements

Suggest Inuvik HTC regulated resident harvest from September through to November in specified moose management area (pending ENR moose survey).

Research Priority

Implement periodic population and productivity surveys.

ENR directed to conduct a moose survey over the Mackenzie Delta region and East of the East Channel of the Mackenzie every five (5) years (TBD).

Population Status

Moose were abundant in the northern Delta area around 1948 but are believed to have declined since. Moose densities vary between 0 to 13 moose per 100km² in the Inuvik region. There is no trend in moose population seen in the population estimates as presented in the table below. It is worth noting that survey blocks have changed over time.



| Survey Block | Density (moose/ 100 km ²) | Year |
|---------------------------------------|--|---------------|
| Arctic Red River | 5.5 | (1999) |
| | None seen | (2006) |
| | 0.53 | (2011) |
| | 3.23 | (2017) |
| Northern Richardson Mtns | 4.8 | (2000) |
| | 3.5 | (2006) |
| | 2.23 | (2011) |
| | 4.28 | (2017) |
| Fort McPherson – Peel River | 3-13 | (1980) |
| | 0.84 | (2006) |
| | None seen | (2011) |
| | 3.51 | (2017) |
| Inuvik-Tsiigehtchic | 0.09 | (1996) |
| | 6.0 | (1998) |
| | 1.62 | (2006) |
| | 1.94 | (2011) |
| Inuvik-Tsiigehtchic (E. Delta) | 3.65 | (2017) |
| Delta | 5.57 | (2017) |
| Delta North | 4.49 | (2011) |
| Kugaluk-Miner Rivers | 1.08 | (2011) |
| Ikhil Pipeline | 9.66 | (2011) |
| Inuvik 7(1)a lands | 3.94 | (2017) |
| MGP route | 2.31 | (2006) |
| | 3.33 | (2011) |
| | 0.91 | (2017) |
| Yukon North Slope | 2.8 | (1989) |
| | 4.8 | (2000) |
| | 7.2 | (2013) |

Population Goal

Unspecified. Maintain population at level, which will provide maximum sustained yield.

Conservation Measures

- Do not hunt more than is needed.
- Harvest on sustainable basis.
- Avoid shooting mature bulls during the rut.
- Identify and protect important habitats from disruptive land uses.
- Forestry management strongly considered in moose habitat.

MUSKOX (*Ovibos moschatus*) / UMINGMAK

Biology

The muskox on the Yukon North Slope today are an introduced subspecies from Greenland originally introduced to Alaska in 1969 and 1970. Calving generally occurs from about mid April to mid May with the majority born by May 1; normally cows produce single calf annually. It is approximately 3 weeks before calf can keep up with herd. Breeding occurs throughout August and early September. Females are generally sexually mature at 3 years of age; males at 5 and can live to at least 24 years of age. Wolves are the main predator. Muskox winter along valleys, drainages and hilltops. In summer, the range includes river valleys and lakeshores where there is growth of grasses, sedges, crowberry, blueberry and willow.

Traditional Use

Food, hides for bedding, horns for hooks and carving.

Important Habitat

North Slope, some use of Hendrickson and Herschel Islands. Riparian corridors of the Malcolm, Firth and Babbage rivers.

Management Plans/Agreements

Draft Canadian North Slope Muskoxen Co-Management Plan, 2002-2007.

Research Priority

There is interest in knowing more about muskox diets, and relationship with caribou. Information on population numbers and movements of high to moderate priority.

Population Status

Muskox population estimates: approximately 101 (portion of YNS) (2011)
 approximately 190 (YNS);
 110 (NWT west of Mackenzie River) (2004)(W of Delta)
 approximately 116 (1998)
 approximately 121 (1996)
 approximately 146 (1995)
 approximately 157 (1993)

Population appears to be expanding eastward, with sightings in Richards Island area. In the NWT muskox are not protected and can be harvested. There have been sightings as far west as Parson's lake of muskox from the east. Preliminary DNA analysis indicates these two populations are genetically different but both have low genetic diversity.

Population Goal

Unspecified.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- Allow population to increase, but not to point where this might have impact on caribou (if there is an impact).



Trevor Lucas

MUSKRAT (*Ondatra zibethicus*) / KIVGALUK

Biology

Young are born from June through mid-August, 6-8 young typically. The average weight at maturity is 1.4 - 2.3 kg (3-5 lb). Muskrats move around a lot in spring. Feed on aquatic weeds from the lake bottoms. There seems to be a cycle in the number of muskrats as with many other animals, some times they are scarce other times abundant. Local trappers feel that muskrats were healthier in delta when there was more trapping. There seem to be more muskrats with poor hair condition/colour and abnormal lives with the decline in trapping.

Traditional Use

Furbearer, also a food resource, to a lesser degree.

Important Habitat

Mackenzie Delta. Parts of Northern Yukon. Tuktoyaktuk Peninsula. Anderson River.

Management Plans/Agreements

No management plans specifically for muskrat; managed under general hunting and trapping regulations. Information can be found in draft Co-management Plan for the Fur Industry (2000).

Research Priority

There is local interest in knowing about the health of muskrats.
Muskrat pushup survey along the Inuvik-Tuktoyaktuk Highway corridor.
Muskrat carcass collection through Jeremy Brammer and the GRRB?

Population Status

Muskrat numbers are on the rise. Recent concerns about high numbers of beavers and otter and less muskrats.

Population Goal

Adequate numbers at present.

Conservation Measures

- Hunt only in specific seasons (October 15 - June 15).
- Identify and protect important habitats from disruptive land uses.

POLAR BEAR (*Ursus maritimus*) / NANUQ

Biology

Females den from November to late March, early April and breed late April early May. Average litter size is between 1 and 3 cubs. Females may have young every 3 to 4 years. Females may successfully breed at 4 years of age but most do not breed until 5 years of age. Though bears can live close to 30 years in the wild, most do not survive beyond 20-25 years of age. Ringed seals are eaten more frequently than bearded seals.



Trevor Lucas

Traditional Use

Furbearer, occasionally used for clothing. Historically food; still eaten in some communities.

Important Habitat

Denning areas along North Slope of Yukon, Herschel Island, Kay Point, shear zone offshore from coast. Outer Mackenzie Delta islands. Baillie Island. Tuktoyaktuk Peninsula. Coastal areas.

Management Plans/Agreements

Inuvialuit Settlement Region Polar Bear Joint Management Plan and the Framework for Action for Management of Polar Bears in the Inuvialuit Settlement Region (2017).

Inuvialuit-Inupiat Polar Bear Management Agreement in the Southern Beaufort Sea (1988, latest revision 2011)

Polar Bear Management Agreement between the Inuvialuit and the Inuit of the western Kitikmeot region (2006)

Hunters and Trappers Bylaw written into Regulations under the NWT Wildlife Act.

Research Priority

Moderate: Community interest in movements. Population estimates provide information to try to ensure sustainable harvest. International interest very high.

Population Status

| | | |
|--------------------|----------------------------|--|
| Southern Beaufort: | 1,215 | (2006 - based on new boundary |
| (Likely declining) | 1,526 (95% CI 1211 – 1841) | (2006) |
| | 1,800 | Used for management purposes until 2006 estimate |
| | 1,778 (SD 803) | (1983) |
| Northern Beaufort: | 1,711 | (2006 – based on new boundary) |
| | 1,400 | (2006 – adjusted for negative sampling bias) |

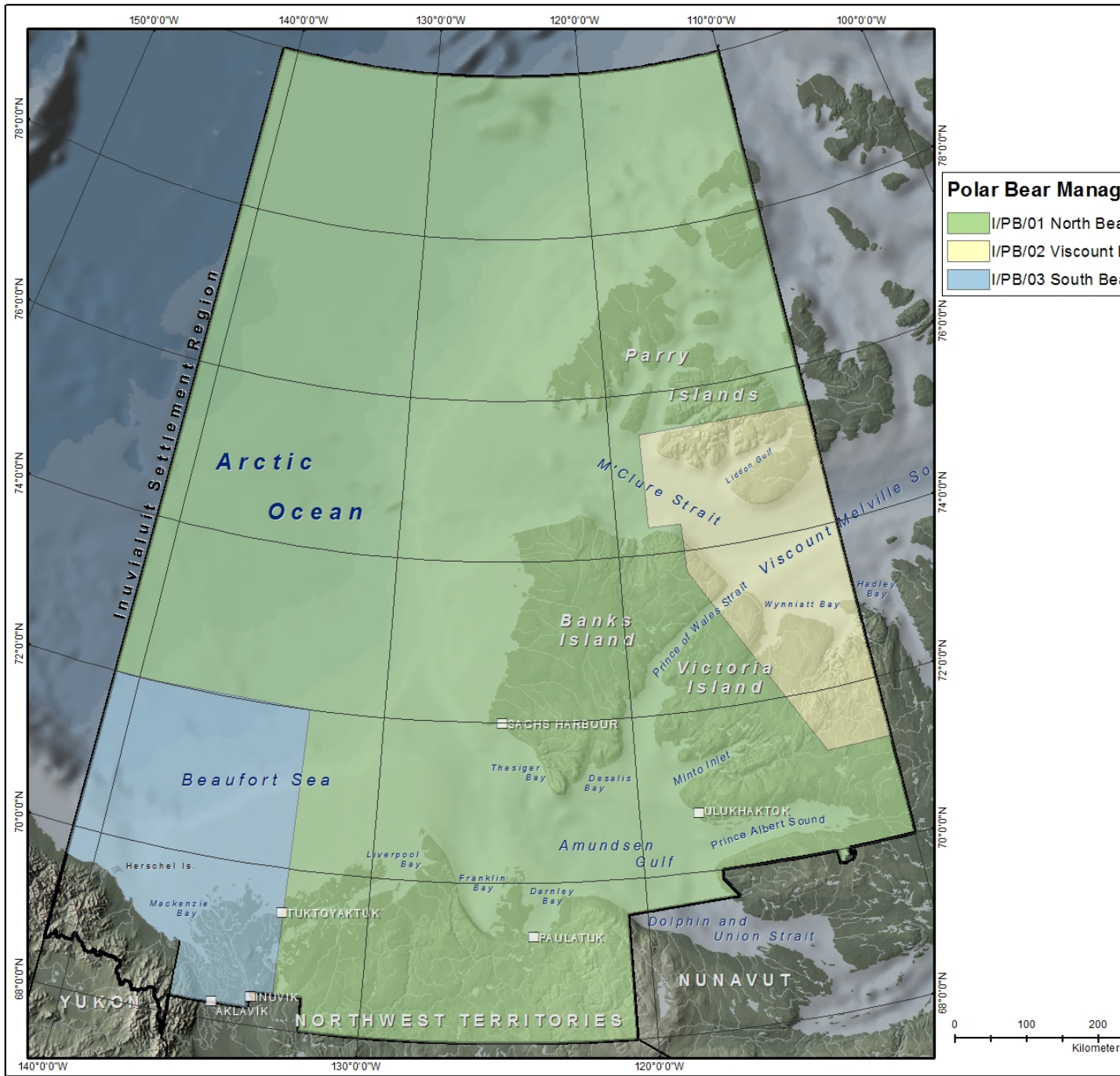
| | | |
|-------------------------|------------------|--|
| (Stable) | 980 (825 – 1135) | (2006) |
| | 867 (726 – 1008) | (1987) |
| | 745 (499 – 991) | (1975) |
| Viscount Melville Sound | 215 (SE 57.4) | (1999- based on RISKMAN modeling of 5 year moratorium) |
| | 161 (SE 34) | (1992) |

Population Goal

Unspecified. Maintain at level, which can produce the maximum sustained yield.

Conservation Measures

- Follow regulations agreed to in HTC bylaws and follow the Inuvialuit and Inupiat.
- Agreement and the Inuvialuit and West Kitikmeot Agreements.
- Do not kill females with cubs and restrict female harvest to no more than 33% of total harvest.
- Do not disturb bears in dens or constructing dens.
- Only hunt from December 1 to May 31 (Varies depending on community).
- Collect and report all information requested in bylaws after making a kill.
- Identify and protect important habitats from disruptive land uses.



Map 33. Polar Bear Management Areas

SNOWSHOE HARE or RABBIT (*Lepus americanus*) / UKALIQ

Biology

Rabbits breed in May with up to 8 young born per litter in June and July. Rabbits are very important in food chain for other animals (e.g. lynx, fox, owls, eagles). Populations naturally cycle.

Traditional Use

Highly valued as food item and hides for trim, duffles for mukluks, blankets, and arts and crafts.

Important Habitat

Mackenzie Delta, First Creek, Fish Creek, Foothills to coast, east slope of Richardson Mountains.

Management Plans/Agreements

No management plans specifically for rabbit; managed under general hunting and trapping regulations. Information can be found in Draft Co-management Plan for the Fur Industry (2000).

Research Priority

High interest in population biology and role in ecosystem.

Population Status

Population cycles. A long-term snowshoe hare monitoring program (annual pellet count) being undertaken by GNWT in collaboration with GRRB.

Population Goal

Adequate numbers to provide for subsistence harvest by local people.

Conservation Measures

- Harvest on sustainable basis.
- Identify and protect important habitats from disruptive land uses.



WOLF (*Canis lupus*) / AMARUQ

Biology

Wolves are at dens from May to late July, with from 2 to 9 pups observed. Average litter size on mainland in ISR is 4.5. Wolves may be sexually mature at about 2 years of age though younger and older ages of maturity are possible. Maximum age of wolves observed in ISR is 12 years old, however, the average age of adult wolves is about 3. Local people report that there were many wolves in the 1930s and 1940s. Wolves appeared to decline due to control programs in 1950s, and then began to recover in mid 1970s. Density of wolves in Western Richardson areas was approximately 3+ wolves/1,000 km² (386 mi²) (late 1980s).

Traditional Use

Furbearer, help maintain balance of nature.

Important Habitat

Treeline tundra transition area. Bluenose caribou and Porcupine caribou wintering range. Mackenzie Delta, uplands, coastal areas, treeline.

Management Plans/Agreements

No management plans specifically for wolves; managed under general hunting and trapping regulations. Information can be found in Draft Co-management Plan for the Fur Industry (2000).



Travor Lucas

Research Priority

Investigate wolf movements, predation, pup production and survival, denning areas, and mortality. Biological samples have been collected over the last decade.

Population Status

Stable. Local people report that there were many wolves in the 1930s and the 1940s. Wolves appeared to decline due to control programs in 1950s, then began to recover in mid 1970s. Density of wolves in Western Richardson areas approximately 3+ wolves/1,000 km² (386 mi²).

Population Goal

Decrease the population through traditional hunting and trapping techniques. Harvest is monitored through sample\carcass collections.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- Do not harvest in summer when fur is poor.
- Hunt by traditional means; do not use aircraft or poison to control wolves.
- Do not disturb wolves or remove pups from den. Keep at least 500 m from active dens.
- If guiding tourists do not hunt wolves.
- Submit information / samples from wolves harvested to ENR.

WOLVERINE (*Gulo gulo*) / QAVVIK

Biology

Wolverine breed in March to May and generally have 1-2 young (may have up to 5) which appear in June to July. Young are nursed 8-10 weeks, and leave mother in the fall. Wolverine are sexually mature at 2-3 years of age. In the north wolverine may be active for 3-4 hour intervals between rests and may travel up to 45 km (28 mi) per day. Caves, rock crevices, fallen logs, holes in snow and burrows are used for shelter. Home-range sizes in the central Arctic vary between 126 km² (females) and 404 km² (males). Dispersal distances by females average 133 km (range 69 - 225 km), and males average 231 km (range 73 – 326 km). Wolverine feed on dead animals, eggs, small and large mammals (lemmings, caribou, sheep); most large mammals are obtained from kills of wolves or bears.

Traditional Use

Fur very important for local use, also important for maintaining balance in nature.

Important Habitat

North Slope, Cache Creek, Sheep Creek, Big Fish River, Foothills west of Aklavik, Mackenzie Delta, uplands, coastal areas, treeline.

Management Plans/Agreements

No management plans specifically for wolverine; managed under general hunting and trapping regulations. Information can be found in Draft Co-management Plan for the Fur Industry (2000).

Research Priority

Low: Some interest in population status, biology, important habitat areas and information from carcass collections.

Population Status

Increase in population in the Mackenzie Delta.

Population Goal

Unspecified. Harvest monitored by carcass/sample collections

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- Do not disturb dens.
- Do not hunt in summer.
- Do not poison.

BELUGA WHALE (*Delphinapterus leucas*) / QILALUGAQ

Biology

The beluga is an odontocete, or toothed whale, having up to 40 teeth that are similar in shape and size. They are dark grey and about 1.5 m (5 ft.) in length when they are born. Calving occurs in spring. With each passing year, the skin lightens in colour, by the time a beluga is about 9 years of age, it is white in colour. Adult males are larger than adult females. Belugas primarily feed on Arctic cod

and squid; however, they also feed on a variety of other fish including sandlance and capelin that appear to be becoming a more prominent food source in recent years. Belugas harvested in Ulukhaktok in 2014 had been feeding primarily on sandlance based on stomach contents; the stomachs of belugas harvested in the Mackenzie Delta are generally empty. They themselves are preyed upon by polar bears, killer whales and humans, and to a limited extent walrus.



Frank Pokiak

They are a very vocal species, having earned the name of “the sea canary”. They make sounds that are used for echolocation, that is to help them find their way and their food, as well as sounds to communicate, which are those that can be heard by other whales. They have a habit unique among whales, and that is that they concentrate in estuaries during the summer. This has made them well accessible to hunters and well known to the general public.

Traditional Use

Highly valued food resource.

Important Habitat

Mouth of Horton River. Calving in Mackenzie Bay and Shallow Bay and Kugmallit Bay. East Whitefish Station, Shingle Point, Pauline Cove, Niaqunnaq (Head Hill).

Major summer concentrations occur in mid-July in Mackenzie Bay, Kendall Island, Shallow Bay and Kugmallit Bay. Also smaller summer aggregations occur at the mouth of the Horton River and Liverpool Bay. During the summer, large male beluga travel to feed in offshore areas such as Viscount Melville Sound, while smaller males, females with calves tend to remain in more shallow coastal areas.

Management Plans/Agreements

- Beaufort Sea Beluga Management Plan (FJMC, 2013)
- Inuvik HTC Beluga Hunting Bylaws and Guidelines
- Inuvialuit Inupiat Beaufort Sea Beluga Whale Agreement (2000)
- Tarium Nirvutait Marine Protected Area (TNMPA) Monitoring and Management Plans

Recent Research & Monitoring

FJMC Fish & Marine Mammal Community Monitoring Program (formerly Beluga Monitoring Program):

- Inuvialuit beluga harvest monitoring began in the Mackenzie Delta in the 1970s through the Fisheries and Marine Service of the Government of Canada (1973-1975) and the oil and gas industry (1977-1982). DFO led this program between 1981-1986, and the FJMC took over the

program in 1987. This program is the largest and longest database of beluga harvest monitoring in the Arctic.

- Currently monitors are selected by local HTC's to sample belugas harvested at Hendrickson Island, East Whitefish, Kendall Island, and Paulatuk, with on-call monitors in Ulukhaktok. Harvesters from the communities of Aklavik and Sachs Harbour, in addition to the other communities, have the option of sampling their own whales through the Harvester Rewards Program. Where and when a monitor is not present, the harvester may sample their whale by using sampling kits that are available at their HTC office.
- The monitoring information collected through this program includes the date and location of each harvested whale, measurements from each whale (length, fluke width, girth, blubber thickness), sex, colour and whether or not any scars or skin abnormalities were observed. A number of samples (blubber, muscle, blood, milk, skin, eyeball, liver, kidney, lower jaw) are also collected and sent for analyses.

Aerial Surveys:

- 1970s and 1980s by oil and gas industry contractors
- 2007-2009 surveys led by DFO repeated previous work for comparison (used same methods as 1980s surveys)
- 2011-2013 surveys led by DFO focused on how the arrival of beluga in the Mackenzie River estuary and Tuktoyaktuk Peninsula is influenced by ice conditions

DNA:

- Beaufort Sea beluga constitute one of the largest stocks of beluga in Canada, and one of four that over-winters in the Bering Sea. Together these four stocks make up the Bering Sea population.
- Genetic studies have shown the stocks are discreet, with the exception of some wanderings by the large males.

Local and traditional ecological knowledge:

- A DFO program (2013-2016) has begun to document the local knowledge of beluga from harvesters in Tuktoyaktuk, Inuvik, Paulatuk and Ulukhaktok. The findings will be used to build upon existing long-term beluga monitoring in the ISR.

Satellite Telemetry:

- A total of 27 beluga whales were tagged with satellite transmitters in the Mackenzie Delta in 1993 (n=4), 1995 (n=16), 1997 (n=7)
- In two of the study years, when the whales were tagged earlier in the season, the largest males travelled to Viscount Melville Sound where they spent 2-3 weeks diving/feeding, before undertaking their migration back to the Bering Sea where they overwinter
- Females and calves tended to swim counter-clockwise circuits in Amundsen Gulf and fed in shallower waters along the coast.

Research Priority

High - Community interest in the following:

1. Improve collection and analysis of information obtained from harvest, process and summarize all existing data, compare data with other data sets, record traditional knowledge.
2. Regular census including survey of summering range.
3. Inshore and Offshore Movement Study.

Population Status

- The Eastern Beaufort Sea Beluga population is estimated at approximately 40,000 (COSEWIC 2004).
- Growth rate 2.5%
- Stock is stable or increasing (recent surveys show a 3x greater abundance in the surveyed area when compared to 1970 observations (Harwood and Kingsley 2013)).
- Present annual harvests are less than 1% of conservative estimate of stock size.

Population Goal

Unspecified, adequate numbers at present.

Conservation Measures

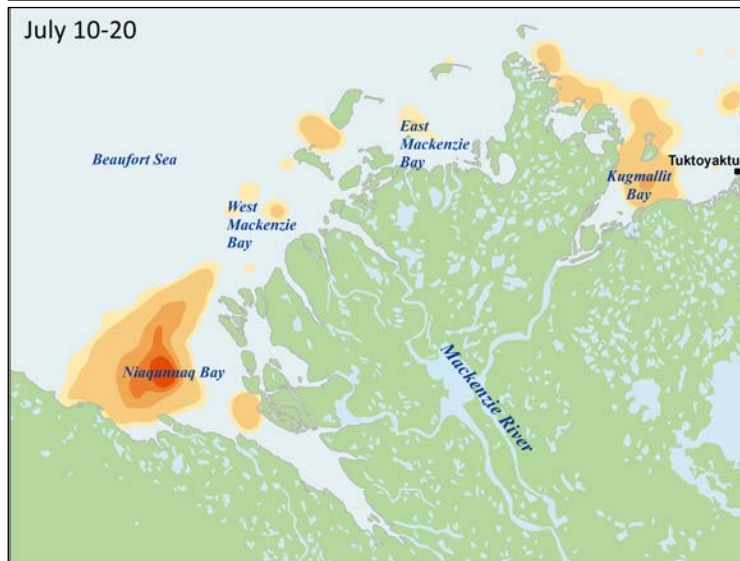
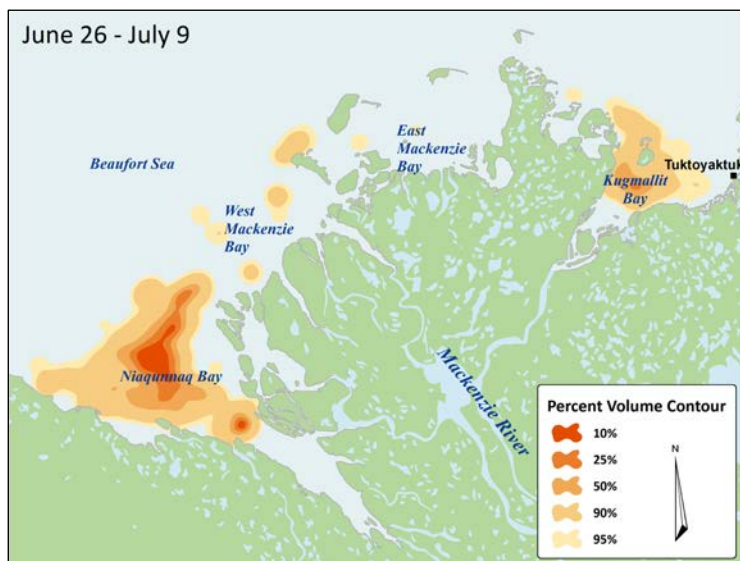
- Support the Beaufort Sea Beluga Management Plan (1998).
- Follow HTC Beluga Bylaw.
- Identify and protect important habitats from disruptive land uses.
- Support TNMPA regulations and monitoring plan.

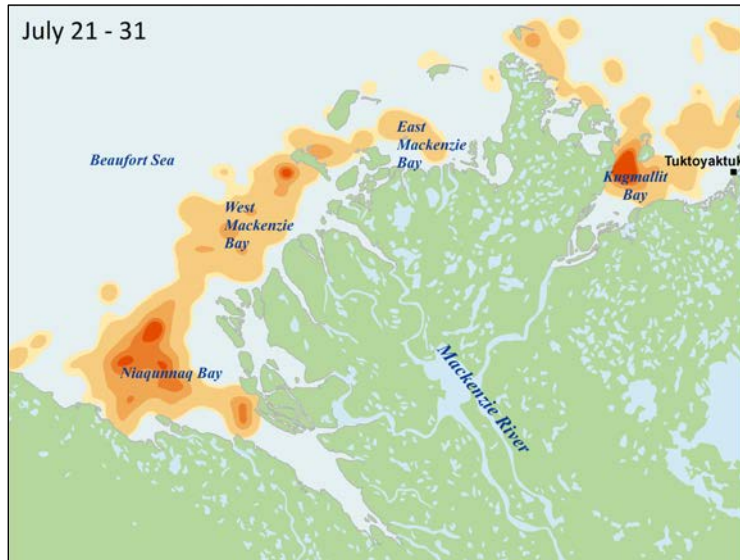
INUVIK HUNTERS & TRAPPERS COMMITTEE BELUGA HUNTING BYLAWS

1. Each boat will have the following equipment:
 - a) A rifle of no less than 30-30 calibre;
 - b) Two harpoons equipped with line and float, or one such harpoon and a “seal hook”;
 - c) One grapple hook attached to a thirty foot (30’) length of line, sufficient to reach the ocean bottom in the area being hunted;
 - d) One float marker with thirty feet (30’) of line to reach the ocean bottom in the area being hunted, and equipped with an anchor or sinker;
 - e) A towing line.
2. Each hunter must attempt to retrieve sunken or wounded whales before hunting for another whale;
3. No person shall knowingly waste, abandon or discard any edible product (muktuk or meat) of a harvested beluga.
4. No person shall, at any time, take more whales on a hunt than can adequately be taken care of considering limitations of the boat, weather, the towing distance, and the number of people in the camp available for processing.
5. Beluga hunters must provide Beluga Harvest Monitors with the requested information and reasonable access to harvested whales for measurements and samples;
6. There shall be no hunting in “No Hunting Zones” if applicable;
7. There shall be no interference during the hunt by tourists or operators.

Beluga Hunting Guidelines

1. A proven method by some hunters has reduced loss rates considerably, by harpooning first. Whales should be harpooned before shooting.
 2. No person should hunt alone.
 3. Each boat must carry at least one experienced hunter.
 4. A hunting leader shall be appointed at each camp, and approved by the Inuvik Hunters and Trappers Committee (IHTC). Hunting leaders will be appointed at the Annual General Meeting of the IHTC. The hunting leader will advise and make any necessary decisions on matters concerning the safety and efficiency of beluga hunting based from that camp, according to guidelines for hunting leaders provided by the IHTC.
 5. Each boat must be equipped with artificial life preservers for all passengers.
 6. Hunters should follow the directions of the appointed hunting leader in each camp.
 7. All carcasses must be towed out to deep water or burned after processing.
- NOTE: These rules may from time to time be changed by the IHTC.





Map 34. Percent Volume Contours of beluga sightings made during systematic aerial surveys in the Mackenzie Estuary during early (top), mid (middle), and late July (lower) time periods, 1977-1985 and 1992 (Harwood et al. 2014).

References

- Asselin, N.C., Barber, D.G., Stirling, I., Ferguson, S.H., and Richard, P.R. 2011. Beluga (*Delphinapterus leucas*) habitat selection in the eastern Beaufort Sea in spring, 1975–1979. *Polar Biol.* DOI 10.1007/s00300-011-0990-5.
- Asselin, N.C., Barber, D.G., Richard, P.R., and Ferguson, S.H. 2012. Occurrence, Distribution and Behaviour of Beluga (*Delphinapterus leucas*) and Bowhead (*Balaena mysticetus*) Whales at the Franklin Bay Ice Edge in June 2008. *Arctic.* 65-2. P. 121-132.
- Barber, D.G., Saczuk, E., and Richard, P.R. 2001. Examination of beluga-habitat relationships through use of telemetry and a geographic information system. *Arctic* 54: 305-316.
- Brennin, R., Murray, B.W., Friesen, M.K., Maiers, D., Clayton, J.W. and B.N. White. 1997. Population genetic structure of beluga whales (*Delphinapterus leucas*): mitochondrial DNA sequence variation within and among North American populations.
- Brown-Gladden, J.G., Ferguson, M.M. and J.W. Clayton. 1997. Matriarchal genetic population structure of North American beluga whales, *Delphinapterus leucas*, (Cetacea: Monodontidae).
- Byers, T. and L.W. Roberts. 1995. Harpoon and Ulus: Collective wisdom and traditions of Inuvialuit regarding the beluga (qilalugaq) in the Mackenzie River estuary. Unpublished Report. DIAND / FJMC.
- 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 p.
- Desforges J.P., Ross P.S., Dangerfield N., Palace V.P., Whiticar M., and Loseto LL. 2013. Vitamin A and E profiles as biomarkers of PCB exposure in beluga whales (*Delphinapterus leucas*) from the western Canadian Arctic. *Aquatic Toxicology* 2013.142-143:p.317-28.
- de March, B.G.E., Maiers, L.D. and M.K. Freisen. 1999. Genetic differences among Canadian and adjacent beluga whale stocks as determined by mitochondrial DNA and 15 nuclear DNA microsatellite loci. NAMMCO Scientific Committee.

- Harwood, L.A., Innes, S., Norton, P. and M.C.S. Kingsley. 1996. Distribution and abundance of beluga whales in the Mackenzie Estuary, Southeast Beaufort Sea, and west Amundsen Gulf during late July 1992. DFO.
- Harwood, L.A., and Smith, T.G. 2002. Whales of the Inuvialuit settlement region in Canada's Western Arctic: An overview and outlook. *Arctic* 55(Suppl. 1):77 – 93.
- Harwood, L.A. and Kingsley, M. 2013. Trends in the Offshore Distribution and Relative Abundance of Beaufort Sea Belugas, 1982 – 85 vs 2007 – 09. *Arctic*: 66-3: 247-256.
- Harwood, L.A., Iacozza, J., Auld, J.C., Norton, P., and Loseto, L. 2014. Belugas in the Mackenzie River estuary, NT, Canada: Habitat use and hot spots in the Tarium Niryuutait Marine Protected Area. *Ocean & Coastal Management* 100: 128-138.
- Harwood, L.A., Smith, T.G., George, J.C., Sandstrom, S.J., Walkusz, W. and Divoky, G.J. 2015. Change in the Beaufort Sea ecosystem: Diverging trends in body condition and/or production in five marine vertebrate species. *Progress in Oceanography* 136: 263-273
- Hornby, C., Hoover, C., Joynt, A., Torontow, V., Hynes K., and Loseto, L. 2014. Arrival of beluga (*Delphinapterus leucas*) to the Mackenzie Estuary in relation to sea ice: report on spring 2011-2013 aerial surveys. *Can. Data Rep. Fish. Aquat. Sci.* 1251: vii + 25 p.
- Loseto, L.L., Richard, P., Stern, G.A., Orr, J., and Ferguson, S.H. 2006. Segregation of Beaufort Sea beluga whales during the open-water season. *Can. J. Zool.* 84, 1743–1751.
- Loseto, L.L., Stern, G.A., and Ferguson, S.H., 2008. Size and biomagnification: how habitat selection explains beluga mercury levels. *Environmental Science and Technology* 42, 3982-3988.
- Loseto, L.L., Stern, G.A., Connelly, T.L., Deibel d, D., Gemmill, B., A. Prokopowicz, A., Fortier, L., and Ferguson, S.H. 2009. Summer diet of beluga whales inferred by fatty acid analysis of the eastern Beaufort Sea food web. *Journal of Experimental Marine Biology and Ecology* 374 (2009) 12–18.
- Luque, S. P. and Ferguson, S.H. 2010. Age structure, growth, mortality, and density of belugas (*Delphinapterus leucas*) in the Canadian Arctic: responses to environment? *Polar Biology* 33:163–178
- Martin, A.W. and T.G. Smith. 1999. Strategy and capability of wild belugas, *Delphinapterus leucas*, during deep benthic diving. *Cdn Jnl of Zoology* 77: 1783-1793.
- Richard, P.R., Martin, A.R. and J.R. Orr. 2001. Summer and autumn movements of belugas of the Eastern Beaufort Sea. DFO.
- Wagemann, R., Innes, S. and P.R. Richard. 1996. Overview and regional and temporal differences of heavy metals in Arctic whales and ringed seals in the Canadian Arctic. *Science and the Total Env't* 186: 41-66.
- Wong, P.L. 1999. Beluga whale (*Delphinapterus leucas*), bowhead whale (*Balaena mysticetus*) and ringed seal (*Phoca hispida*) in southeastern Beaufort Sea. DFO.

BOWHEAD WHALE (*Balaena mysticetus*) / ARVIQ

Biology

The bowhead whale is a baleen whale, black in colour except for white markings on chin and tail that usually come with age. Bowheads may reach a length of up to 20 m (65 ft.), with 12-15 m (40-50 ft) being the usual size. A small adult weighs 13,608 kg (30,000 lb). Blubber can be up to 51 cm (20 in.) thick. They reach adulthood at about 20 years, and have one calf every 3 to 5 years. They feed lower in the food chain than beluga, choosing areas where zooplankton is concentrated. They usually travel alone or in small groups. They make vocalizations that are a lower frequency than beluga.



Bowheads from the Bering-Chukchi-Beaufort population winter (November to April) in the western and central Bering Sea amongst broken pack ice. In spring (April through June) the whales migrate north and east along the northern coast of Alaska to the eastern Beaufort Sea, initially appearing in western Amundsen Gulf in offshore lead areas (>200 m) as break-up is under way. Their summer (June to September) distribution is centred in the southeastern Beaufort Sea, along the southern and western coasts of Banks Island, in Amundsen Gulf, and along the waters offshore of the Tuktoyaktuk Peninsula approximately 20-50 m in depth, Yukon coastal waters, the shelf break, and the Mackenzie and Kugmallit Canyon areas. Recent satellite tracking indicates that they also occur around northwestern Banks Island and into M'Clure Strait (Heide-Jørgensen, et al, 2012).

The Alaskan Inupiat harvest about 60 whales per year. Aklavik took one bowhead in 1991, and another in 1996.

Important Habitat

King Point, Shingle Point, Mackenzie Bay, Herschel Island, Baillie Island, Darnley Bay, and Kay Point.

Management Plans/Agreements

Management Plan for the Bering-Chukchi-Beaufort population of Bowhead Whale (*Balaena mysticetus*) in Canada (SARA, 2014).

Recent Research

Satellite tagging of bowhead in the Alaskan and Canadian Beaufort Sea has been a cooperative effort by DFO, Alaska Department of Fish and Game, Alaska Eskimo Whaling Commission, Aklavik HTC, Tuktoyaktuk HTC, Greenland Institute of Natural Resources, and the BC Center for Animal Health. Between 2006 and 2014, 68 bowhead whales were tagged in Alaska and the ISR (the 23 whales from the ISR were tagged between 2007-2010 and in 2014). This program will continue in 2016, and potentially until 2017 (dependent on funding).

In the 1980s, extensive, multi-year programs were undertaken to monitor distribution of bowheads in both the Canadian and Alaskan Beaufort Sea areas, to study the effects of industry on bowheads, and photogrammetry to identify individuals.

Currently, if a bowhead whale is harvested, a community monitor takes the measurements and samples, with a biologist from DFO.

Research Priority

High: Community interested in knowing more about species biology.

Population Status

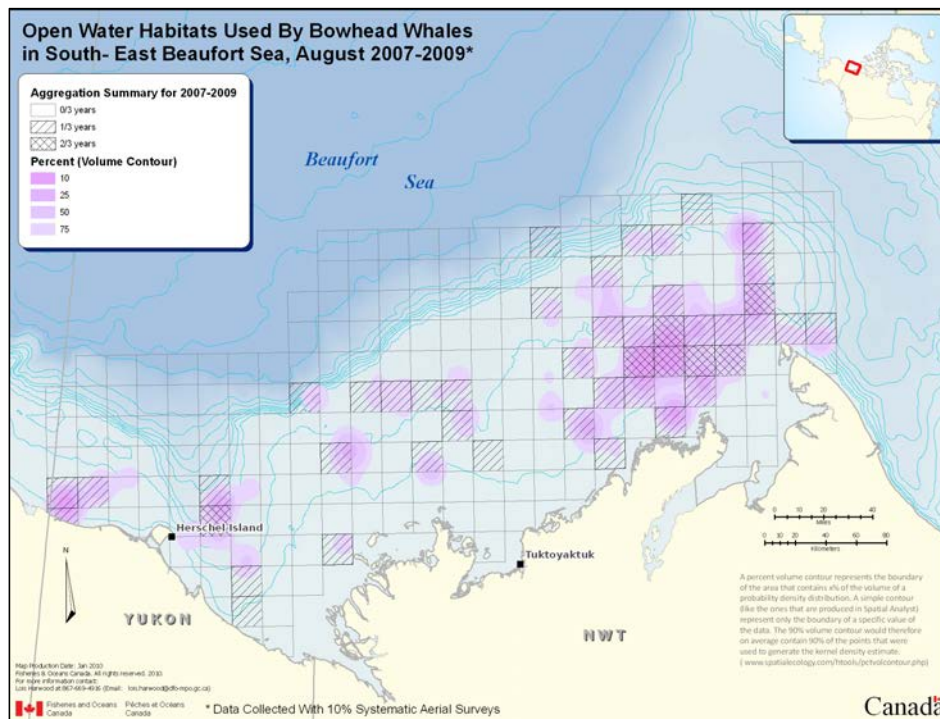
- The 2001 Bering-Chukchi-Beaufort bowhead population estimate is 10,470 (95% confidence intervals 8,100-13,500).
- Population growth rate from 1978-2001 was 3.4%
- Since 2009, the Bering-Chukchi-Beaufort population of bowhead has been designated as a species of 'special concern' under COSEWIC (Committee on the Status of Endangered Wildlife in Canada). The SARA (Species at Risk Act) status of this population is also 'special concern'.

Population Goal

Maintain thriving population for subsistence harvest. Unspecified. Currently being managed for population recovery.

Conservation Measures

Identify and protect important habitats from disruptive uses.



Map 35. Bowhead open water habitat use in South-East Beaufort Sea, August 2007-2009 based on DFO aerial surveys.

References

- Asselin, N.C., Barber, D.G., Richard, P.R., and Ferguson, S.H. 2012. Occurrence, Distribution and Behaviour of Beluga (*Delphinapterus leucas*) and Bowhead (*Balaena mysticetus*) Whales at the Franklin Bay Ice Edge in June 2008. *Arctic*. 65-2. P. 121-132.
- Braithwaite, L.F., Aley, M.G. and D.L. Slater. 1983. The effects of oil on the feeding mechanism of the bowhead whale.
- COSEWIC. 2009. COSEWIC assessment and update status report on the Bowhead Whale *Balaena mysticetus*, Bering-Chukchi-Beaufort population and Eastern Canada-West Greenland population, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 49 pp. (www.sararegistry.gc.ca/status/status_e.cfm).
- George, J.C., Bada, J., Zeh, J., Scott, L., Brown, S.E., O'Hara, T. and Suydam, R. 1999. Age and growth estimates of bowhead whales, *Balaena mysticetus*, via aspartic acid racemization.
- Harwood, L.A. and T.G. Smith. 2000. Whales of the Beaufort Sea: an overview and outlook. DFO.
- Harwood, L.A., Auld, J., Joynt, A., and Moore, S.E. 2010. Distribution of Bowhead Whales in the S.E. Beaufort Sea during late summer, 2007-2009. DFO Can. Sci. Advis. Sec. Res. Doc. 2009/111. iv + 22 p.
- Harwood, L.A., Smith, T.G., George, J.C., Sandstrom, S.J., Walkusz, W. and Divoky, G.J. 2015. Change in the Beaufort Sea ecosystem: Diverging trends in body condition and/or production in five marine vertebrate species. *Progress in Oceanography* 136: 263-273
- Heide-Jørgensen, M. P., Laidre, K.L., Quakenbush, L.T. and Citta, J.J. 2012. The Northwest Passage opens for bowhead whales. *Biol. Lett.* 8, 270-273.
- Koski, W.R., Miller, G.W. and R.A. Davis. 1988. The potential effects of tanker traffic on the bowhead whale in the Beaufort Sea. NOGAP.
- Richardson, W.J., Greene, C.R., Koski, W.R., Smultea, M.A., Cameron, G., Holdsworth, C., Miller, G., Woodley, T. and Wursig, B. 1991. Acoustic effects of oil production activities on bowhead and white whales visible during spring migration near Pt. Barrow, Alaska, 1989 phase: sound propagation and whale responses to playbacks of continuous drilling noise from an ice platform, as studied in pack ice conditions. LGL Limited.
- Treacy, S.D. 1998. Aerial surveys of endangered whales in the Beaufort Sea, fall 1997. U.S. Minerals Management Service.
- Wagemann, R., Innes, S. and P.R. Richard. 1996. Overview and regional and temporal differences of heavy metals in Arctic whales and ringed seals in the Canadian Arctic. *Science and the Total Environment* 186: 41-66.
- Walkusz, W., Williams, W.J., Harwood, L.A., Moore, S.E., Stewart, B.E., and Kwasniewski, S. 2012. Composition, biomass and energetic content of biota in the vicinity of feeding bowhead whales (*Balaena mysticetus*) in the Cape Bathurst upwelling region (south eastern Beaufort Sea). *Deep-Sea Research I* 69 25–35.
- Wong, P.L. 1999. Beluga whale (*Delphinapterus leucas*), bowhead whale (*Balaena mysticetus*) and ringed seal (*Phoca hispida*) in southeastern Beaufort Sea. DFO.
- Zeh, J.E. 1995. Population size and rate of increase, 1978-1993, of bowhead whales, *Balaena mysticetus*. International Whaling Commission.

SEALS

RINGED SEAL (*Pusa hispida*) / NATCHIQ and BEARDED SEAL (*Erignathus barbatus*) / UGRUK

Biology

Ringed seals and bearded seals are important components of the marine ecosystem. Ringed seals are the main prey of polar bears.

Ringed Seals

Ringed seals are the smallest of all pinnipeds (seals, sea lions, and walruses) with adults in the Beaufort Sea rarely exceeding 1.5 m (5 ft.) in length and 68 kg (150 lb) in weight. Ringed Seals weigh the most in the winter and early spring when they have a thick layer of blubber under their skin. The blubber serves as insulation and as an energy source during the breeding and pupping season. The weight of ringed seals declines with the decrease in feeding during the reproductive and moulting season.



Lois Harwood

The colouration of ringed seals is quite variable, but the basic pattern is a grey back with black spots and a light belly. The seal gets its name from the black spots that are ringed with light marks.

Ringed seals eat a variety of invertebrates and fish. The particular species eaten depends on availability, depth of water, and distance from shore. In the Beaufort Sea, the most important food species is arctic cod, with saffron cod, shrimp, mysids and other large crustaceans being important locally and at certain times of the year.

The ringed seal is an important element of the arctic marine ecosystem, both as the main prey of polar bears and a major consumer of marine fish and invertebrates. It continues to be an important species in the subsistence harvests and economy of Ulukhaktok, and to a lesser extent in Sachs Harbour, Tuktoyaktuk and Paulatuk. Seals are harvested for food, for dog food, and for pelts for handicrafts and clothing. Seal harvests in the ISR between 1988-1996 averaged 1,050 per year, with more than 70% of this coming from Ulukhaktok. Present day harvests are 20-30% of what they were in the 1960s.

Bearded Seals

The bearded seal is the largest true seal that is normally found in the Beaufort Sea. Bearded seals are heaviest during winter and early spring when they may attain a weight of more than 340 kg (750 lb). From June through September adults usually weigh from 216-239 kg (475-525 lb). This seasonal loss of weight results from decreased feeding during spring and summer and is most obvious in changes of the thick layer of blubber under the skin. Measured from nose to tip of tail (not including hind flippers), adults average about 2.4 m (93 in.). Colour varies from a tawny-brown or silver-grey to dark brown.

Bearded seals have neither spots nor bands. They have comparatively long whiskers, rounded fore-flippers of which the middle one of the five digits is longest, relatively small eyes, and four mammary teats rather than two as in the ringed seal.

Females give birth to a single pup on the moving sea ice, usually during late April or early May. The average weight of pups at birth is around 34 kg (75 lb), and average length is about 1.3 m (52 in.). By the end of a brief nursing period, which lasts only 12 to 18 days, pups have increased their weight almost three times, to around 86 kg (190 lb).

Bearded seals eat a wide variety of invertebrates and some fishes, mainly in benthic habitats in the Beaufort, Chukchi and Bering seas. Their main prey are crabs, shrimp, clams and snails.

Traditional Use

Clothing (boots, mittens) and some used for food.

Important Habitat

Shingle Point, Herschel Island, King Point, North Slope Coast, Outer Mackenzie Islands, and Kugmallit Bay.

Management Plans/Agreements

None

Recent Research & Monitoring

Ringed Seal:

- A study was conducted to examine the effect of activities related to a drilling program on ringed seals off the Mackenzie Delta area between 2003-2006.
- Paulatuk: seal monitoring program was conducted from 1992-1994 (reproduction and condition), and from 2014-2015 (diet), and a tagging program was conducted in 2001 and 2002.
- Sachs Harbour:
 - Seal monitoring programs (reproduction and condition) were conducted from 1987-1989, in 1992, and again from 2003-2007.
 - Since 2005, ringed seals (4 to 25 animals per year) have been sampled by a community monitor for contaminant analyses (this work is part of the Northern Contaminants Program and is led by Environment Canada). Samples of blubber have been analyzed for persistent organic pollutants such as PCBs, DDT and flame-retardants, while liver and muscle have been analyzed for mercury and toxic metals. In addition to contaminants measurements, data is available for the ages and diet (carbon and nitrogen stable isotope ratios) of each seal. Overall, contaminant levels in the seals are similar to other locations in the Canadian arctic.
- Ulukhaktok: have been monitoring reproduction and condition of seals each year from 1992-2014, and in Minto Inlet for five years from 1992-1996. Satellite tagging program for ringed seals was conducted in Ulukhaktok in 1999, 2000 and 2010.

Bearded Seal:

None at the present time. Vocalizations were studied in the 1970s near Ramsay Island, near Ulukhaktok.

Research Priority

Moderate priority: interest in biology and in monitoring health and presence of contaminants.

Population Status

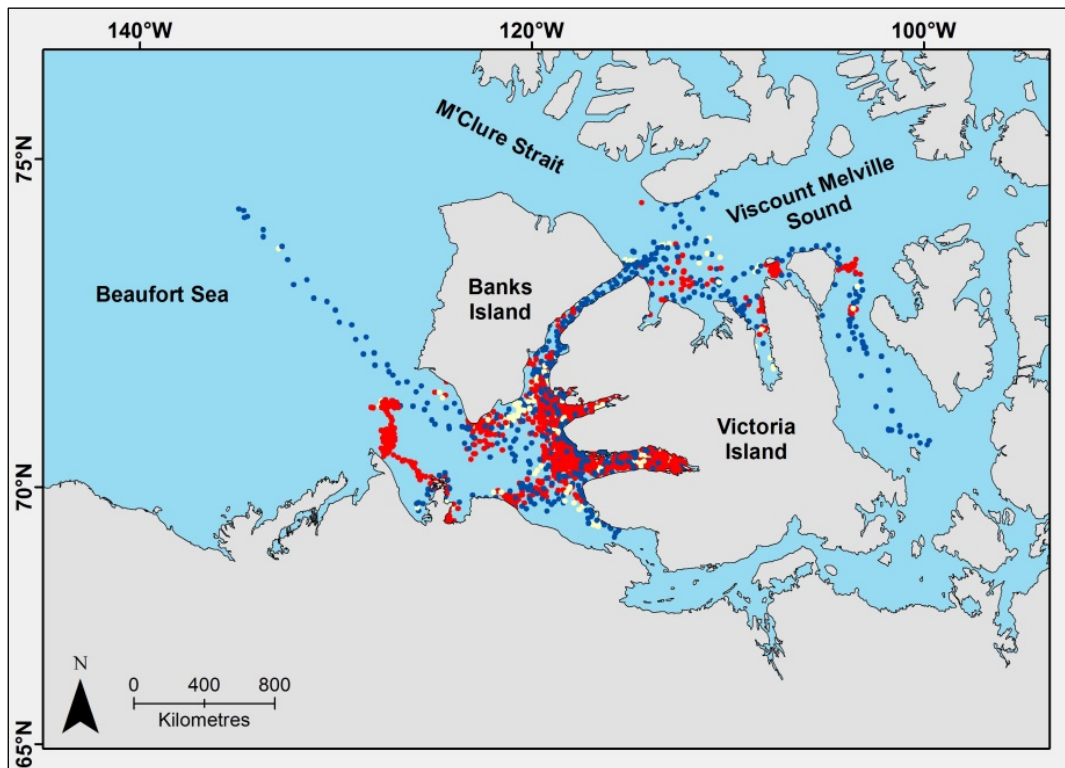
Ringed seals generally more abundant than bearded seals; surveys in the 1970s estimated their ratio to be 17:1. Bearded seals are more common in certain localized areas.

Population Goal

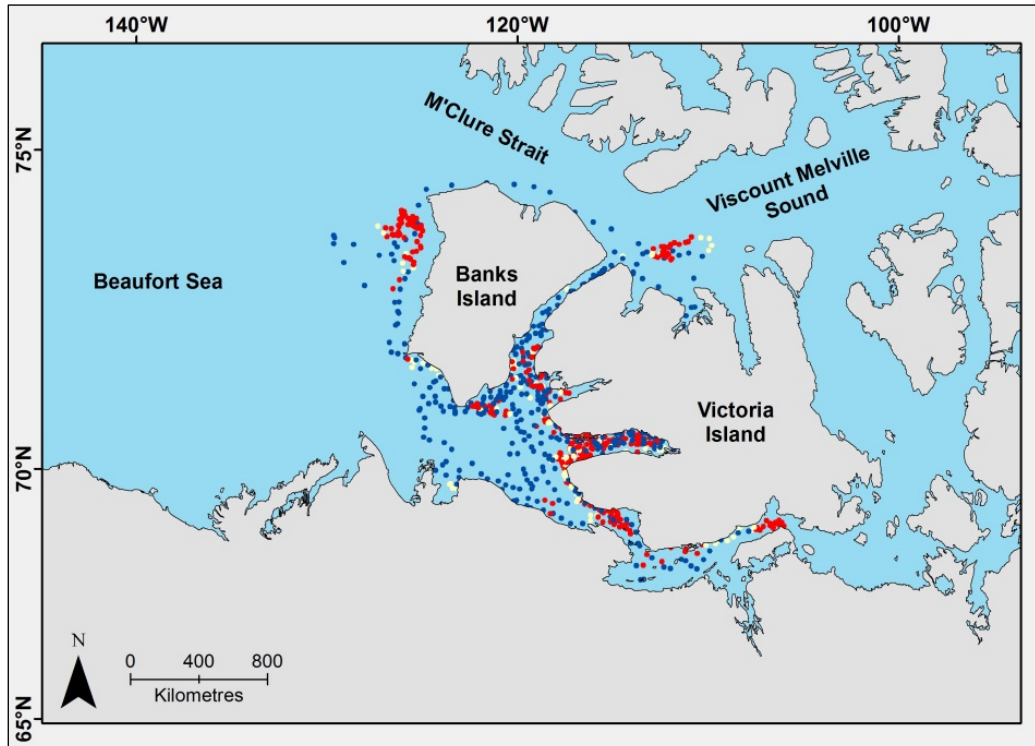
Adequate supply at present.

Conservation Measures

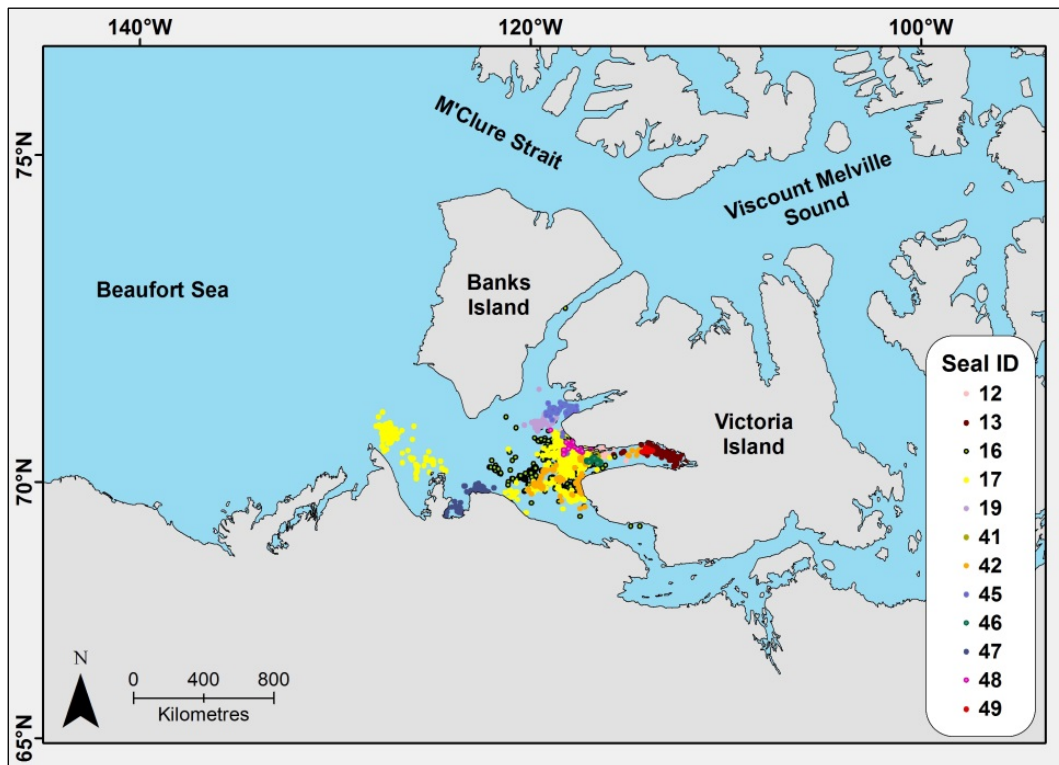
- Share hunt among elders.
- Identify and protect important habitats from disruptive land uses.
- Only harvest what is needed.



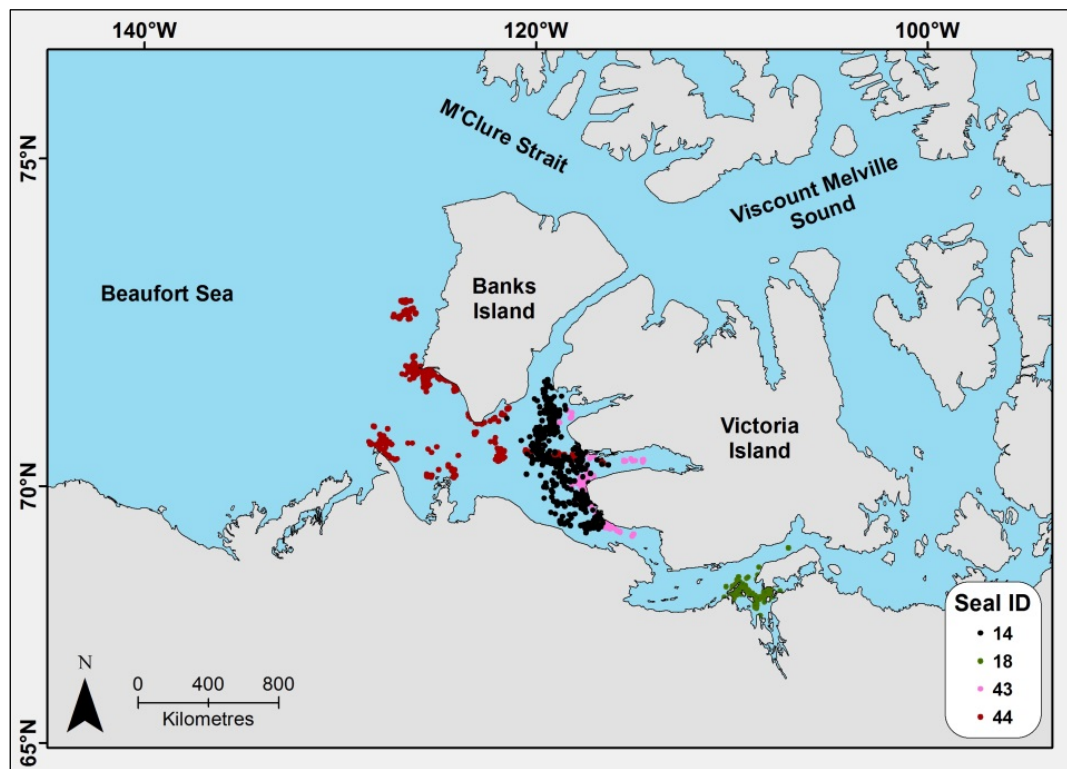
Map 36. Adult ringed seal open water habitat use based on tagging studies: red = inferred feeding locations; blue = travelling (Harwood et al. 2015).



Map 37. Subadult ringed seal open water habitat use based on tagging studies: red = inferred feeding locations; blue = travelling (Harwood et al. 2015).



Map 38. Adult ringed seal winter (1999-2001, 2010-2011) habitat use based on tagging studies (Harwood et al. 2015).



Map 39. Subadult ringed seal winter (1999-2001, 2010-2011) habitat use based on tagging studies (Harwood et al. 2015).

References

- Addison, R.F. and T.G. Smith. 1998. Trends in organochlorine residue concentrations in blubber of ringed seal (*Phoca hispida*) from Holman, N.W.T., 1972-1989. *Arctic* 51: 253-261
- Harwood, L.A. 1989. Distribution of Ringed Seals in the southeast Beaufort Sea during late summer. Thesis (M.Sc.), University of Alberta, Edmonton, AB.
- Harwood, L.A., and Stirling, I. 1992. Distribution of ringed seals in the southeastern Beaufort Sea during late summer. *Can. J. Zool.* 70: 891-900.
- Harwood, L., Smith, T.G., and Melling, H. 2007. Assessing the Potential Effects of Near Shore Hydrocarbon Exploration on Ringed Seals in the Beaufort Sea Region 2003-2006. Environmental Studies Research Funds Report No. 162. 103 p.
- Harwood, L.A., Thomas G., Smith, T.G., and Auld, J.C. 2012. Fall Migration of Ringed Seals (*Phoca hispida*) through the Beaufort and Chukchi Seas, 2001 - 02. *Arctic* Vol. 65, No. 1 (March 2012) P. 35 - 44.
- Harwood, L. A., Smith, T. G., Auld, J. C., Melling, H. and Yurkowski, D. 2015. Seasonal movements and diving of ringed seals, *Pusa hispida*, in the western Canadian Arctic, 1999-2002 and 2010-2011. *Arctic* 68(2): 193-209.
- Harwood, L.A., Smith, T.G., George, J.C., Sandstrom, S.J., Walkusz, W. and Divoky, G.J. 2015. Change in the Beaufort Sea ecosystem: Diverging trends in body condition and/or production in five marine vertebrate species. *Progress in Oceanography* 136: 263-273
- Kingsley, M.C.S. and Byers, T. 1989. Status of the ringed seal population of Thesiger Bay, N.W.T., 1987-1988. Report prepared for the Fisheries Joint Management Committee, #89-002.36 p.

- Kingsley, M.C.S. and Byers, T. 1990. Status of the ringed seal population of Thesiger Bay, N.W.T., 1987-1989. Report prepared for the Fisheries Joint Management Committee, #89-004.
- Paulatuk, Holman and Tuktoyaktuk Hunters and Trappers, 2007. Tagging and Tracking Ringed Seals in the Western Arctic using Satellite Telemetry - 1999 to 2003.
- Pilfold NW, Derocher AE, Stirling I, Richardson E, Andriashek D (2012) Age and Sex Composition of Seals Killed by Polar Bears in the Eastern Beaufort Sea. PLoS ONE 7(7): e41429. doi:10.1371/journal.pone.0041429
- Smith, T.G. 1987. The ringed seal, *Phoca hispida*, of the Canadian Western Arctic. Canadian Bulletin of Fisheries and Aquatic Sciences 216. 81 p.
- Stirling, I. 2002. Polar bears and seals in the eastern Beaufort Sea and Amundsen Gulf: A synthesis of population trends and ecological relationships over three decades. Arctic 55(suppl.1): 59-76.
- Wagemann, R., Innes, S. and P.R. Richard. 1996. Overview and regional and temporal differences of heavy metals in Arctic whales and ringed seals in the Canadian Arctic. Science and the Total Env't 186: 41-66.
- Wong, P.L. 1999. Beluga whale (*Delphinapterus leucas*), bowhead whale (*Balaena mysticetus*) and ringed seal (*Phoca hispida*) in southeastern Beaufort Sea. DFO.

MAMMALS SPECIES LIST

A total of 36 species of mammals occur in the western arctic. Successful conservation depends on the recognition that all of these species have special habitat requirements and often have significant relationships with all other components of the land and water.

Arctic Fox (*Alopex lagopus*)/Tiriganniq
 Arctic Ground Squirrel, *Spermophilus parryii*
 Arctic Hare (*Lepus arcticus*)/ Ukaliq
 Arctic Shrew, *Sorex arcticus*
 Bearded Seal (*Erignathus barbatus*)/Ugruk
 Beaver (*Castor canadensis*)/Kigiaq
 Beluga Whale (*Delphinapterus leucas*)/Qilalugaq
 Black Bear (*Ursus americanus*)/Iggarlik
 Bowhead Whale (*Balaena mysticetus*)/Arviq
 Caribou (*Rangifer tarandus*)/Tuttu
 Cinereus Shrew (Masked Shrew), *Sorex cinereus*
 Collared Pika, *Ochotona collaris*
 Dall's Sheep (*Ovis dalli*)/ Imnaiq
 Ermine (Stoat), *Mustela ermine*
 Grizzly Bear (*Ursus arctos*)/Akłaq
 Hoary Marmot (*Marmota caligata*)
 Least Weasel (*Mustela nivalis*)
 Lynx (*Lynx canadensis*)/Niutuyiq
 Marten (*Martes americana*)/Qavviatchiaq
 Meadow Vole (*Microtus pennsylvanicus*)
 Mink (*Neovison vison*)/Itiriaqpak
 Moose (*Alces americanus*)/Tuttuvak
 Muskox (*Ovibos moschatus*)/ Umingmak
 Muskrat (*Ondatra zibethicus*)/Kivgaluk
 Nearctic Brown Lemming (*Lemmus trimucronatus*)
 Nearctic Collared Lemming, *Dicrostonyx groenlandicus*
 Northern Flying Squirrel (*Glaucomys sabrinus*)
 Polar Bear (*Ursus maritimus*)/Nanuq
 Porcupine (*Erethizon dorsatum*)
 Red Fox (*Vulpes vulpes*)/Aukpilaqtaq
 Richardson's Collared Lemming, *Dicrostonyx richardsoni*
 Ringed Seal (*Pusa hispida*)/Natchiq
 River Otter (*Lontra canadensis*)
 Root Vole (*Microtus oeconomus*)
 Snowshoe Hare (*Lepus americanus*)/Ukaliq
 Northern Tundra Red-backed Vole (*Myodes rutilus*)
 Wolf (*Canis lupus*)/Amaruq
 Wolverine, *Gulo gulo*/ Qavvik

DUCKS / QAUGAIT**Mallards** (*Anas platyrhynchos*) /**KURUGAQPAK****Pintail** (*Anas acuta*) / **KURUGAK****Wigeon (Baldpate Duck)** (*Anas americana*) / **UGIUHIUQ****Long-tailed Duck (Oldsquaw)**(*Clangula hyemalis*) / **AAHAANLIQ****Scoters, Surf and White-winged****(Black Duck)** (*Melanitta spp.*) /**TAAKLAGRUAQ****King Eider** (*Somateria spectabilis*) /**QINGALIK****Common Eider** (*Somateria mollissima*) / **QUINGALIK****Mergansers, Red-breasted and Common** (*Mergus spp*)**Biology**

Arrival and departure of ducks are closely tied to breakup and freeze up. Occasional mass die offs of eiders may occur when breakup is delayed.

Mallards

Winter throughout the U.S. and Mexico. Leave wintering grounds in early February through March to early April. Arrive on breeding grounds early to mid-May. May nest up to 500 m or more from water but usually within 100 m. Clutch size may range from 1- 18 eggs though average is about 9. Incubate an average of 28 days. Eats both aquatic plants and invertebrates, will also eat cereal grains in south. Along with pintails, one of the last ducks to leave in fall.

Pintail

Largest number of breeding pintails in the western Canadian Arctic occurs in the Mackenzie Delta, large numbers also occur at Anderson River Delta. Winter in southern U.S., Mexico, and Central America. Leave wintering grounds in late January, early February through March, arrive in delta mid-May. Prefer open areas with low vegetation to nest. May nest up to 1.6 km (1 mi) from water but average about 40 m (131 ft.). Clutch size ranges from 3-14 eggs, average about 8. Incubate eggs 22 to 23 days. All eggs tend to hatch within about 8 hours. Eats shoreline vegetation, some aquatic plants, cereal grains (in south) and to some extent aquatic invertebrates. Fall migration begins late August.

Wigeon

The highest density of breeding wigeon in North America occurs in the Mackenzie Delta and Old Crow Flats. Winter through central U.S. to Mexico. Leave wintering grounds in early February through March and early April; arrive on breeding grounds in early to mid-May. May nest up to 400 m (1,313 ft.) from water, average about 36 m (118 ft.). Prefer clumps of brush for nesting. Average clutch size 7 to 9 eggs. Incubate eggs for about 24 days. Prefer stems and leafy parts of aquatic plants and terrestrial grasses. Will eat some cereal grains. Begin fall migration in mid-August.

Long-tailed duck (Old Squaw)

Nest in greater numbers in Arctic than any other duck. Winter along west coast as far as California. Leave wintering areas in mid-March to mid-April, arrive on breeding grounds late May, early June. Prefer to nest on small islands or on upland areas near tundra ponds. May nest up to 200 m (656 ft.) or more from water but most are quite close, average is less than 10 m (33 ft.). Clutch size may range from 2 to 14 eggs, average about 7. Incubate eggs for about 26 days. Have the most varied diet of all the sea ducks. Prefer aquatic organisms for food, eg. crustaceans, mollusks, aquatic invertebrates, small fish and fish eggs, rarely eat aquatic plants. Begin fall migration late August or early September.

Scoters (Surf and White-winged)

Winter along west coast from Alaska to Mexico. Leave wintering areas in March, arrive on breeding grounds late May to early June. Prefer to nest in dense cover, often forested or very bushy areas. Nests are very hard to locate. May nest over 200 m from water, average perhaps about 30 m to 100 m (98 - 328 ft.). Clutch size ranges from 5-19 eggs, average about 9 eggs. Incubate for about 28 days. Prefer aquatic organisms for food, eg. mussels, crustaceans and aquatic invertebrates, rarely eat aquatic plants. Begin fall migration early September.

Eiders (King and Common)

Winter in northern waters in Alaska and Russia, rarely as far south as B.C. and Washington. Leave wintering areas in late April; arrive on breeding grounds early June. Common Eiders often nest in dense colonies on offshore islands or sometimes near tundra ponds distant from coast. King Eiders often nest in low densities, or semicolonially on islands, much farther from the coast. Common Eider clutch size ranges from 1 to 14 eggs, average about 4 to 6. King Eider clutch size ranges from 2 to 6 eggs, average about 5. Common Eiders incubate eggs about 24-26 days, King Eider about 22-24 days. Common Eider have been observed diving to about 10m (33 ft.) depth to feed, while King Eider feed in deeper water between 15 and 40 m. There is a record of a king eider diving about 55 m (181 ft.). Both prefer aquatic organisms for food, e.g. mussels, crabs, aquatic insect larvae and King Eiders will eat some aquatic plants. Begin fall migration as early as July (e.g. male king eiders) and runs through to late fall (immature birds).

Mergansers (Red-breasted and Common)

Winter along west and east coasts and Gulf of Mexico. Leave wintering grounds in late March, through late April, arrive in breeding areas mid-late May. Red-breasted Mergansers nest on ground with shelter of some sort, generally within 30m of water. Common Mergansers often nest in tree cavities, but also on the ground, usually close to water. Clutch size ranges from 3-20 eggs, average about 10. Red-breasted Mergansers incubate eggs 30-31 days, Common Mergansers, about 32-35 days. Both eat fish, aquatic insects, and amphibians. Fall migration begins mid-September.

Traditional Use

Subsistence food in spring and fall.

Important Habitat

King Eider: S.W. Banks Island, Tuktoyaktuk Peninsula, and Cape Bathurst

Common Eider: S. Banks Island, N.W. Victoria Island

Long-tailed Duck: Banks Island, Victoria Island, and Tuktoyaktuk Peninsula (distribution in the ISR is not well-documented)

Surf Scoter: shallow bays along Arctic coast, Tuktoyaktuk Peninsula, mainland south of Liverpool Bay and Eskimo-Husky Lakes, Mackenzie Delta; large numbers in open sea in October

White-winged Scoter: shallow bays along Arctic coast, Tuktoyaktuk Peninsula, mainland south of Liverpool Bay and Eskimo-Husky Lakes

Lesser and Greater Scaup: Mackenzie Delta, coastal areas

Wigeon: Mackenzie Delta and Old Crow Flats

Northern Pintail: Mackenzie Delta, Anderson River Delta, Mason River Delta, tundra areas

Red-breasted Merganser: Mackenzie Delta, Tuktoyaktuk Peninsula, Old Crow Flats

Common Merganser: Mackenzie Delta, Old Crow Flats

Management Plans/Agreements

North American Waterfowl Management Plan (NAWMP 2012).

Migratory Birds Convention Act, 1994.

Sea Duck Joint Venture (formed under NAWMP)

Recent Research

Standardized annual breeding pair survey conducted jointly by CWS and US Fish and Wildlife. Migration and harvest of King Eiders, CWS

Dickson, D.L. 2012. Seasonal movement of Pacific Common Eiders breeding in arctic Canada. Technical Report Series 521, Canadian Wildlife Service, Edmonton, Alberta. 58 p.

Dickson, D.L. 2012. Seasonal Movement of King Eiders Breeding in Western Arctic Canada and Northern Alaska. Canadian Wildlife Service Technical Report Series Number 520, Canadian Wildlife Service, Edmonton, Alberta. 94p.

Research Priority

High: Local interest in biology, also concern here and elsewhere on impact of changing water levels and water quality.

King Eider

- Monitor King Eider numbers as part of multi-species surveys to determine population trends in the ISR.
- Determine the breeding range limits of the western arctic King Eider population using stable isotope analysis.
- Document importance of staging areas in the southeastern Beaufort Sea of King Eiders during moult migration (aerial surveys).
- Document the migration routes and the distribution of King Eiders in moulting and wintering areas in the Chukchi and Bering Sea (satellite telemetry).

Common Eider

- Document the migration routes and the distribution of Common Eiders in moulting and wintering areas in the Chukchi and Bering Seas.
- Determine the reproductive success and annual survival of Common Eiders, including factors affecting productivity and survival.
- Locate critical habitat for brood-rearing Common Eiders.

All Species of Waterfowl

- Analyze, summarize and map harvest study data to determine the total harvest, spring staging areas, and the biological and management significance of these data.

| | | |
|--------------------------|---------|--------|
| Population Status | | |
| King Eider: | 592,000 | (2004) |

| | | |
|-----------------------|-------------|--|
| | 371,000 | (1996) |
| | 802,000 | (1976) (North America) |
| Pacific Common Eider: | 110,500 | (2004) |
| | 73,000 | (1996) |
| | 153,000 | (1976) |
| Long Tailed Duck: | 314,216 | (1988-2008 average) |
| | 406,751 | (1993-1998 average) (Western Canadian Arctic and Alaska) |
| Scoters: | 1.1 million | (2002-2011 average) |
| | 873,500 | (1993-98 average) (North America) |
| Lesser Scaup: | 4.6 million | 2014 (North America) |
| Continental Goal: | 6.2 million | |
| Wigeon: | 3.1 million | 2014 (North America) |
| Continental Goal: | 3.0 million | |
| Northern Pintail: | 3.2 million | 2014 (North America) |
| Continental Goal: | 5.6 million | |

Population Trends:

Scoters: decreasing

Scaups: decreasing

Pintails: decreasing

Mallards: fluctuating but stable

Wigeon: fluctuating but stable

Oldsquaw: decreasing

King Eider: decreasing

Common Eider: decreasing

Population Goal

Maintain thriving population for subsistence harvest.

NAWMP (2012) has a combined goal of 60 million ducks for 29 species of duck in North America. See above continental goals, based on NAWMP (2012).

Conservation Measures

- Do not disturb nesting birds.
- Harvest only what is needed.
- Identify and protect important habitats, including wintering areas, from disruptive land uses.

GEESE / KANNGUT AND TUNDRA SWAN / QUGRUK**Cackling Goose** (*Branta hutchinsii hutchinsii*) / **ULUGULLIK****Canada Goose** (*Branta Canadensis parvipes*) / **ULUAGULLIK****Snow Goose** (*Chen caerulescens*) / **KANGUQ****White-fronted Goose** (*Anser albifrons frontalis*) / **NIRLIQ****Brant** (*Branta bernicla*) / **NIRLIRNAQ****Tundra swan** (*Cygnus columbianus*) / **QUGRUK****Biology**

Timing of goose, brant and swan arrival and departure is closely associated with availability of open water and freeze up.

Cackling Geese – Cackling Geese and Canada Geese were identified as separate species in 2004. Cackling Geese are smaller than Canada Geese; they nest above the tree line and make up the majority of the birds in this area. They are part of the "Mid-continent Cackling Geese" population. Winter central U.S. to Colorado and Texas. Arrive in May. Wide variety of nest sites. Average clutch size about 4-5 eggs. Incubate eggs about 26 days. Feed on grasses, sedges, berries, seeds, and cereal grains. Leave early September.



Canada Geese - Slightly larger than Cackling Geese, Canada Geese nest below the tree line and are present in smaller numbers in the Inuvialuit Settlement Region mainly as non-breeders that migrate north to molt.

Snow Geese - Local birds part of Western Arctic Population. Winter California and Mexico. Arrive mid-May. Lay 2-10 eggs (average 6) first week of June. Incubate approximately 22-33 days, off nest first week of July. Feed on terrestrial and aquatic vegetation. Leave early September. Western Arctic Population designated as overabundant by CWS in 2014, in order to hopefully stabilize the population and prevent habitat damage as observed in Midcontinent Snow Goose colonies.

White-fronted Geese - Also known locally as "Yellow legs". Winter in Coastal Texas, Mexico. Leave winter grounds early February through March, arriving Mackenzie Delta mid May through early June. Nest in coastal and upland areas. Typically less down used in nest than other geese. Lay 2-10 eggs, average about 5. Incubate eggs 23-25 days. Feed on seeds and grass.

Brant– Two populations of Brant breed in the ISR, Black Brant and Western High Arctic (Grey-belly) Brant, referred to collectively as Pacific Brant. Winter along Pacific Coast Mexico to B.C. Arrive late May, early June. Nest close to water. Lay 1- 10 eggs, average 3-5 eggs, approximately second week of June. Incubate eggs about 24 days, off nest late July. Some local observation that brant will nest near snowy owls to avoid fox predation.

Swans - Local nesting birds are from the Eastern Population. Winter east coast U.S. Arrive mid-May. Lay 2-6 eggs (average 5) in June. Remain on nest until mid-August and remain in vicinity until fall migration. Prefer marshy areas, aquatic plants. Fall migration in September.

Traditional Use

Very important food source in spring, down from waterfowl also traditionally used in pillows and blankets.

Important Habitat

Tundra Swan: Mackenzie Delta, Yukon North Slope, mainland coast, southern Banks Island.

White-fronted Goose: Outer Mackenzie Delta, Tuktoyaktuk Peninsula, Liverpool and Wood bays, Cape Bathurst, Parry Peninsula, estuary of Kugaluk and Miner rivers, Anderson River Delta, old Horton Channel.

Cackling Goose: Old Horton Channel / Harrowby Bay, deltas of the Mason, Smoke/Moose and Anderson Rivers.

Lesser Snow Goose: Kendall Island, Anderson River Delta, Egg River, and Thomsen River.

Brant: Anderson River delta, Tuktoyaktuk Peninsula, Smoke/Moose Delta, Campbell area.

Management Plans/Agreements

Migratory Birds Conventions Act, 1994

Co-Management Plan for Caribou, Muskox, Arctic Wolves, Snow Geese, and Small Herbivores on Banks Island, with Work Plans for Years 1998/1999 to 2002/2003 (2000).

North American Waterfowl Management Plan (NAWMP 2012).

Arctic Goose Joint Venture (part of NAWMP).

Draft Pacific Coast Brant Management Plan (1991).

Eastern Tundra Swan Management Plan

White Front Goose Management Plan

Recent Research

- Population of Brant on the Mainland of the ISR, CWS
- Productivity of Lesser Snow Geese, Banks Island, CWS
- Monitoring of Snow Goose Habitat on Banks Island, CWS
- Impact of Harvest on Snow Goose Populations in the ISR, CWS
- Hines, J.E., P.B. Latour, C.S. Machtans. 2010. The effects on lowland habitat, breeding shorebirds and songbirds in the Banks Island Migratory Bird Sanctuary Number 1 by the growing colony of lesser snow geese (*Chen caerulescens caerulescens*). Occasional Paper no. 118, Canadian Wildlife Service, 42 p.
- Obst, J., J. E. Hines, J.-F. Dufour, P. F. Woodard, and R.G. Bromley. 2013. Habitat Conditions, Grizzly Bear Predation of Nests, and Spring Use of the Anderson River Delta by Lesser Snow Geese and Brant, 2005–2006. Technical Report Series No. 523, Canadian Wildlife Service, Yellowknife, NT.

Research Priority

High - The community is interested in knowing more about the biology and ecology of these species. Improving census methods, and identifying important habitat.

White-fronted Goose

- Repeat a subset of aerial transects to determine the population trend in the ISR (Multi-species surveys).

Snow Goose

- Habitat studies to determine impact of snow geese on the lowland habitat of Banks Island, and to develop a long-term goal for the population.
- Evaluate impacts of increased spring harvest on the different colonies
- Delineate areas where Banks Island geese can be selectively harvested by the mainland communities without impacting the small colonies.
- Monitor continuing eastward shift of migrating and wintering geese.
- Carry out air photo surveys at 5-year intervals to document population trends at the three Western Arctic colonies.

Brant

- Complete analysis and write-up of recent studies of the distribution, abundance, survival rates and productivity of brant in the ISR.
- Evaluate the impact of grizzly bear predation and other factors on the colonies of brant and snow geese at Anderson River.

Population Status

| | |
|-------------------------------|--|
| <u>Tundra Swan - E. Pop'n</u> | 105,000 (2014 mid-winter count) 84,000 (1993-98) (North America) |
| Continental Goal | 80,000 |
| <u>White-fronted Goose</u> | 891,732 (2012 and 2014 average) (North America) 70,000 (1989-93) (ISR) 797,000 (1992-98 average) (North America) |
| Continental Goal | 320,000 |
| <u>Lesser Snow Goose</u> | 420,128 (2013) (ISR) 486,000 (1995) (ISR) 169,600 (1976) (ISR) |
| Western Arctic Goal | 200,000 breeding population |
| <u>Cackling Goose</u> | 687,000 (2002-2011) (mid-winter count, North America) |
| Canada Goose | 164,000 (2004-2013) (Waterfowl Breeding Population and Habitat Survey for boreal habitat ion AB, SK, MB, and NWT) |
| <u>Brant</u> | 163,300 (2013 midwinter index) 137,400 (1993 winter average) (North America) |
| Continental Goal | 162,000 (Goal for Black Brant = 150,000; Western High Arctic Brant = 12,000) |

Population Trends:

| | |
|---------------------|------------|
| Canada Geese | Increasing |
| Lesser Snow Geese | Increasing |
| White-Fronted Geese | Stable |
| Brant | Stable |
| Swans | Stable |

Population Goal

See continental goals above, based on the North American Waterfowl Management Plan (NAWMP 2012).

Conservation Measures

- Identify and protect important habitats, including wintering areas and key resting sites, from disruptive land uses.
- Do not harvest more than is needed.
- Support North American Waterfowl Management Plan (1986) and Arctic Goose Joint Venture.
- Support the "Principles for the Conservation of Migratory Birds in the Inuvialuit Settlement Region" WMAC (NWT).

LOONS

Common Loon (*Gavia immer*) / **TUUTLIK**

Yellow-billed or King Loon (*Gavia adamsii*) / **SUGLIA**

Pacific Loon (*Gavia pacifica*) / **MALIRI**

Red-throated Loon (*Gavia stellata*) / **QAQRAUQ**

Biology

Arrive in May 1 - 2 eggs laid in June, migrate south in September. Feed on small fish. Arctic and Red-throated arrive mid-June, leave late August early September. Pacific and Red-throated Loons are more numerous in the ISR and will nest on smaller, shallower tundra ponds than the other 2 species.

Important Habitat

Common Loon: Mackenzie Delta

Red-throated Loon: Mackenzie Delta, North Slope coast, Tuktoyaktuk Peninsula

Yellow-billed Loon: coastal areas, (distribution in the ISR is not well-documented)

Pacific Loon: Mackenzie Delta, North Slope coast



Management Plans/Agreements

Migratory Bird Convention Act, 1994.

Recent Research

Barr, J.F. 1997. Status report on the yellow-billed loon, *Gavia adamsii*, in Canada. COSEWIC.

Dickson, D.L. 1988. Monitor reproduction and life history of Red-throated Loons in event of pollution. CWS.

Dickson, D.L., 1992. The Red-throated loon as an indicator of environmental quality. CWS. Occasional Paper No. 73.

Dickson, D.L., 1993. Breeding biology of red-throated loons in the Canadian Beaufort Sea Region. Vol. 46, No. 1.

Vogel, H. 1997. COSEWIC status report on the common loon (*Gavia immer*) in Canada. COSEWIC.

Dickson, D.L. and J. Beaubier. 2011. Red-throated Loon monitoring in the southeast Beaufort Sea region: 2007–2008 update. Technical Report Series Number 517, Canadian Wildlife Service, Edmonton, Alberta. 38 p.

Research Priority

High: Community interested in more information on biology.

Population Status

Local Indigenous observation suggests that Yellow-billed loons used to be abundant, but now are less so.

Population Goal

Thriving population.

Conservation Measures

- Do not disturb nesting birds.
- Identify and protect important habitats from disruptive land uses.

PTARMIGAN (*Lagopus spp.*) / QRIGIQ
Rock Ptarmigan (*Lagopus mutus*) / Nikhaaqtungiq
Willow Ptarmigan (*Lagopus lagopus*) / Qargiq



Biology

Birds breed in early May, and females lay eggs in June. Willow ptarmigan lay 5-10 eggs, and rock ptarmigan lay 6-15 eggs.

Traditional Use

Ptarmigan are a well-liked food source within the community.

Important Habitat

Willow ptarmigan use willow sedge, muskeg areas, sheltered valleys. Common on Delta and Richardson Mountain foothills, Running River. Rock ptarmigan found along coastal hills, rocky tundra, North Slope and above timber line in mountains.

Management Plans/Agreements

None.

Research Priority

Low.

Population Status

Varies from year to year.

Population Goal

Unspecified though community would be interested in having more around.

Conservation Measures

Identify and protect important habitats from disruptive land uses.

SANDHILL CRANE (*Grus canadensis*) / TATIRGAQ

Biology

Winters in southern U.S. to Mexico. Arrive end of April or early May before snow geese. Nest is grass mound in marsh or wet meadow. Lay 2 eggs around middle of May, hatching in mid-June. Feed on insects, lemmings, aquatic plants, grains, amphibians. Fall migration late August early September.

Important Habitat

Foothills, upland areas, Shallow Bay, Coastal Areas

Management Plans/Agreements

Migratory Bird Convention Act, 1994

Recent Research

Austin, J. 1997. Delineation of Sandhill Crane subspecies and their distribution. 1996-1997. Canadian Wildlife Service.

Reed, J.R. 1988. Arctic Adaptations in the Breeding Biology of Sandhill Cranes, *Grus canadensis*, on Banks Island, Northwest Territories. In *Canadian Field-Naturalist*, 102(4): 643-648.

Research Priority

Unspecified.

Population Status

Appear to be increasing.

Population Goal

Unspecified.

Conservation Measures

- Do not disturb nesting birds.
- Identify and protect important habitats from disruptive land uses.



EAGLES**BALD EAGLE** (*Haliaeetus leucocephalus*)**GOLDEN EAGLE** (*Aquila chrysaetos*) / **TINGMIAQPAK****Biology**

Bald eagles are more common in the Delta than outlying areas. They usually nest in trees, beginning in April-May, and incubate eggs approximately 34-35 days. Young leave nest (fledge) by 70- 80 days. Bald Eagles feed primarily feed on fish, often dead or dying fish. Birds begin fall migration in September.

Golden Eagle

Golden Eagles are much more common in Richardson Mountains than Bald Eagles. Goldens use both cliff and tree nests and begin nesting in April-May. Goldens incubate their eggs for approximately 35-45 days, producing 1-2 young per year that leave the nest (fledge) after 65-75 days. Primarily feeding on rabbits, hares, ground squirrels, goldens will occasionally prey on young of larger mammals. Goldens have a late fall migration.

Important Habitat

Willow River, Fish Creek, First Creek, Mackenzie Delta, Herschel Island, North Slope Coast (birds of prey generally).

Management Plans/Agreements

None.

Research Priority

Moderate - Community interested in ecological relationship, role in food chain.

Population Status

Bald Eagles have been more common in delta in early 1990's. Overabundant bald eagle population in the Delta (2016).

Golden Eagles have also been more common in delta in early 1990's but less common than bald eagles.

Population Goal

Unspecified.

Conservation Measures

- Do not harass or disturb nesting birds.
- Do not export birds.
- Identify and protect important habitats (including southern wintering habitat) from disruptive land uses.

**PEREGRINE FALCON (*Falco peregrinus anatum*) / KIRGAVIK
GYRFALCON (*Falco rusticolus*)
ROUGH LEGGED HAWK (*Buteo lagopus*) / QILGIQ**

Biology

Peregrine Falcon nest in cliffs, laying 2-4 eggs and feed on small to medium sized birds.

Gyrfalcon nest in cliffs and occasionally trees, laying 3-4 eggs. They feed on ground squirrels, ptarmigan, and occasionally hare. Populations cycle with prey availability.

Rough-legged Hawk nest on cliffs, laying 2-5 eggs. They feed on lemmings, and ground squirrels.



Trevor Lucas

Important Habitat

Richardson Mountains, Coastal areas with suitable cliff nesting habitat. Herschel Island important for rough-legged hawk.

Management Plans/Agreements

GNWT and Yukon Birds of Prey Regulations.

Convention on International Trade in Endangered Species (CITES); Peregrine Falcon - Appendix 1.

Research Priority

Moderate - Interest in ecological relationships, role in food chain.

Population Status

Local indigenous observation suggests there appears to be fewer gyrfalcons in vicinity of Herschel Island than in past. Gyrfalcons were abundant apparently in the early 1940's. Appear reasonably stable in the Richardson Mountains. Evidence of long term occupation. Survey conducted every 5 years indicates Mackenzie River Peregrine population has steadily increased since the 70s.

Population Goal

Unspecified, adequate numbers at present.

Conservation Measures

- Do not export.
- Do not harass or disturb nesting birds.
- Identify and protect important habitats from disruptive land uses.

SNOWY OWL (*Nyctea scandiaca*) / UKPIK

Biology

Most snowy owls migrate to region in spring, however, a few may overwinter. Owls arrive in April, and nest mid to late May, preferably on elevated ground. They typically lay 5-7 eggs, with some reports of 12 and incubation is 32 to 33 days. Birds are off nest in late August. Snowy Owls feed on lemmings, birds, and fishes. Owl numbers are usually low but are variable year to year and appear to have ecological association with brant.

Traditional Use

Have been used as food in past.

Important Habitat

Coastal Areas.

Management Plans/Agreements

None

Research Priority

Low.

Population Status

Appear to be decreasing, though some sense they were abundant in 1991. The Population appears to be high in some years and low in others.

Population Goal

Unspecified. Adequate numbers for community needs.

Conservation Measures

- Hunt only when needed.
- Identify and protect important habitats from disruptive land uses.



BIRD SPECIES LIST

At least 125 species of birds may visit and nest in the mainland western arctic portions of the ISR. Some may only rarely occur and do not routinely breed in the area. A list of birds, which may occur in the area, is presented below. These species are important components of the ecosystem contribute to the quality of life in the area and are an attraction for tourists. Many of these species migrate to wintering areas outside of the ISR; their conservation depends on cooperative work with people outside the region.

| Species | Wintering Areas |
|-----------------------------------|--|
| Alder Flycatcher | South America. |
| American Wigeon / Ugiuhiuq | West and south U.S. to South America and Caribbean. |
| American Robin | U.S. to Mexico. |
| American Tree Sparrow | Southern Canada to central U.S. |
| Arctic Tern / Mitqutailaq | Sub-Antarctic seas. |
| Baird's Sandpiper | South America. |
| Bald Eagle | Southwest Canada, west and central U.S. |
| Bank Swallow | South America. |
| Black Guillemot | Pacific Ocean (at sea). |
| Black-bellied Plover | Coastal U.S. to Southern Hemisphere. |
| Blackpoll Warbler | South America. |
| Bohemian Waxwing | Southern Canada, U.S. |
| Bonapartes Gull | West coast U.S. to Mexico. |
| Boreal Chickadee | Boreal Forests North America. |
| Brant / Nirilinaq | Local concentrations on Pacific coast. |
| Buff-breasted Sandpiper | South America, especially Argentina. |
| Canada Goose / Uluagulik | North Mexico north to limits of open water. |
| Canvasback | West and east coast U.S. to Mexico. |
| Cliff Swallow | Southern Brazil, central Argentina. |
| Common Loon / Tuutlik | West coast North America. |
| Common Goldeneye | West Coast Canada and U.S. central U.S. |
| Common Eider / Quingalik | West coast of Alaska and Aleutians. |
| Common Snipe | Southwest coast Canada, U.S., Brazil. |
| Cowbird (Brown-Headed) | California, S. Arizona |
| Dark-eyed Junco | Southern Canada, U.S. |
| Dunlin | West coast Canada and U.S. |
| Fox Sparrow | Southern U.S. and west coast U.S. |
| Glaucus Gull (Ross's Gull) | West coast of Alaska, Canada, U.S. to southern California. |
| Golden Eagle / Tingmiaqpak | B.C., Alberta, Saskatchewan, U.S. |
| Gray Jay | Boreal forests North America. |
| Gray-cheeked Thrush | Caribbean to Brazil. |
| Green-winged Teal | Mid-U.S. south to Argentina. |
| Gyrfalcon | West coast of Alaska and northern B.C. |
| Harlequin Duck | West coast Canada and U.S. |
| Harris's Sparrow | Southwestern Canada, U.S. |
| Herring Gull | West coast Canada and U.S. |
| Horned Grebe | West coast North America. |
| Horned Lark | Vancouver Island, Mexico, South America. |
| Iceland Gull | Great Lakes and east coast to Maryland. |
| Killdeer | South and central U.S. to central Mexico, Peru. |
| King Eider / Qingalivik | Aleutians and northern west coast of North America. |
| Lapland Longspur | Southern Canada to southern U.S. |

| | |
|--|--|
| Least Sandpiper | Southern U.S. to Brazil. |
| Lesser Golden Plover | Mainly east of Rockies, southern South America. |
| Lesser Yellowlegs | Southern U.S. to Argentina. |
| Long-billed Dowitcher | West coast U.S. to Guatemala. |
| Long-tailed Jaeger | Migrant at sea, well off-shore, Southern Hemisphere. |
| Mallard / Kurugakpak | Southern Canada to Mexico. |
| Marsh Hawk | SW Canada, central U.S. to South America. |
| Merlin | Southern Canada |
| Mew Gull | West coast Canada and U.S. |
| Northern Flicker | West coast Canada, U.S. |
| Northern Fulmar | Off coast of western North America to northern Mexico. |
| Northern Goshawk | Year round resident, though may move. |
| Northern Hawk Owl / Naiquqtauruk | South to western Oregon, Idaho, Wyoming, Nebraska. |
| Northern Pintail / Iruqaq | Along Pacific coast, southern U.S. to northern S. America. |
| Northern Shoveler | West and south U.S. to South America. |
| Northern Shrike | Southern Canada to U.S. |
| Northern Waterthrush | Central and South America. |
| Oldsquaw / Ahaliq | Aleutians and west coast of North America. |
| Orange-crowned Warbler | Southern U.S. to Guatemala. |
| Pacific Loon / Maliri | Along coast S.E. Alaska to N.W. Mexico. |
| Parasitic Jaeger | At sea from southern U.S. to Tierra del Fuego. |
| Pectoral Sandpiper | South America. |
| Peregrine Falcon / Kirgavik | Sparingly along west coast of Canada and throughout U.S. |
| Pine Grosbeak | Western N.W.T., Yukon, Alaska, B.C., Rocky Mountains. |
| Pomarine Jaeger | At sea from southern U.S. to southern hemisphere. |
| Raven | Year round in North America - widespread. |
| Red Knot | Coast of southern U.S., Mexico, also S. Hemisphere. |
| Red Phalarope | Coast of California south, range at sea poorly known. |
| Red-breasted Merganser | West coast Canada and U.S. |
| Red-necked Grebe | West coast North America. |
| Red-necked Phalarope | Pacific Ocean (at sea). |
| Red-tailed Hawk | U.S. |
| Red-throated Loon / Qaqrauc | Along coast to northern Mexico and Florida. |
| Red-winged Blackbird | Northern U.S. south. |
| Redpoll | N.W.T., Yukon, Alaska, central Canada |
| Rock Ptarmigan / Nikhaqtungiq | Some withdrawal from higher to lower elevations. |
| Ross's Goose | Mainly in SW U.S. |
| Rosy Finch | Southwestern Canada, west central U.S. |
| Rough-legged Hawk / Qilgiq | Southern Canada to southern U.S. but rarely to Mexican |
| Ruby-crowned Kinglet | Southern U.S. to Guatemala. |
| Ruddy Turnstone | Coastal U.S., Hawaii. |
| Rusty Blackbird | Southeastern U.S. |
| Sabine's Gull | In Pacific to Chile, local in Atlantic. |
| Sanderling | West coast of North America. |
| Sandhill Crane / Tatigaq | Mexico, locally in southern U.S. |
| Savannah Sparrow | Southern U.S. to Honduras and Caribbean. |
| Say's Phoebe | Southern U.S. to Mexico. |
| Scaup (Greater) | West coast of Canada and locally throughout U.S. |
| Scaup (Lesser) | West coast of U.S., southern U.S. to northern S. America. |
| Scoter (Common or Black) / Taakruaq | Aleutians and along Pacific coast. |
| Semi-palmated Plover | West coast of southern North America to South America. |
| Semi-palmated Sandpiper | Mainly east of Rockies to South America. |

| | |
|--------------------------------------|--|
| Sharp-shinned Hawk | Northern U.S. to South America. |
| Short-eared Owl / Nipaixuktaq | Southern U.S. to central Mexico. |
| Smith's Longspur | South central U.S. |
| Snow Bunting | West coast and central North America, in open country. |
| Snow Goose / Kangua | North Mexico, Gulf Coast, migrant through interior. |
| Snowy Owl / Ukpik | Cyclic winters to central U.S., Canada except Arctic. |
| Solitary Sandpiper | Gulf of Mexico to Argentina |
| Spotted Sandpiper | Southern U.S. to Argentina. |
| Stilt Sandpiper | Southern U.S. to Argentina. |
| Tennessee Warbler | Mexico to Venezuela. |
| Three-toed Woodpecker | West. N.W.T., Yukon, Alaska, N. provinces, Rocky Mtns. |
| Tree Swallow | Southern U.S. to northern South America. |
| Tundra Swan / Quqruk | Seaboards of eastern and western North America, end of Alaskan peninsula and locally throughout U.S. |
| Upland Sandpiper | Argentina. |
| Varied Thrush | West coast Canada and U.S. |
| Wandering Tattler | S.W. Coast to U.S. to Ecuador. |
| Water Pipit (American) | West coast of U.S., southern U.S. south to El Salvador. |
| Whimbrel | West coast of S. North America to S. South America. |
| White Fronted Goose / Nirliq | Mexico, Gulf states and occasionally north to Washington. |
| White-crowned Sparrow | Southwestern Canada, U.S. |
| White-rumped Sandpiper | South America. |
| White-winged Crossbill | Western N.W.T., Yukon, Alaska, northern Alberta, B.C. |
| Willow Ptarmigan / Qarigiq | Resident year-round. |
| Wilson's Warbler | Mexico to Panama. |
| Yellow Warbler | Mexico to Peru. |

ARCTIC CISCO (*Coregonus autumnalis*)

Biology

The Arctic cisco is the most saline-tolerant of the anadromous Coregonids (whitefish) and is thus found more often and further from the Mackenzie basin than the other species. It is distinguishable from the least cisco by smaller eyes and scales, more silver colour, white pectoral and pelvic fins, and terminal mouth (at the tip of the body).



The Arctic cisco is found in arctic Canada and Siberia. They are common along the Yukon coast and in the Mackenzie Delta during summer. The food fishery targets Arctic cisco during its departure or return from overwintering areas, such as in Tuktoyaktuk Harbour, and during spawning migrations during fall. They are believed to spawn only in the large tributaries of the Mackenzie River or in the Mackenzie itself. Spawning probably takes place over gravel in fast water areas such as rapids. They reach a maximum length of near 38 cm (15 in.) and may live for up to 20 years. Arctic cisco feed on small fish and crustaceans.

Important Habitat

Mackenzie River and estuary, tributaries to the Mackenzie (spawning habitat) and inland lakes. Inner Shallow Bay/Niaqunnaq Bay and Kugmallit Bay are important overwintering and nursery areas. Blue Herring are found off Shingle Point, Bailey Island, N.E. Richards Island, and Tuktoyaktuk.

Management Plans/Agreements

None.

Recent Research

- Index netting program began in 1999 in Aklavik and Inuvik (also included RRCs in Aklavik, Inuvik, Fort McPherson and Tsiigehtchic) to document average lengths/weights and abundance of all captured species.
- FJMC North Slope Stock Identity Study (Char and Cisco) conducted in 1989.

Research Priority

Community considers research on the biology and ecology of these species a high priority.

Population Status

Abundant.

Population Goal

Adequate supply at present.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- No drilling in areas where these species concentrate for spawning or migration.
- Ensure all oil related activities are closely monitored.

References

- Dillinger et al. 1992. Can Field Nat 106: 175-180. *Arctic cisco distribution, migration and spawning in the Mackenzie River.*

- Harwood, L. 1997. Measurement and tagging of arctic cisco in Tuktoyaktuk Harbour to test the netting program. DFO.
- Harwood, L.A., Pokiak, F., and Walker-Larsen, J. 2008. Assessment of subsistence fishery and biological data for Arctic cisco in Tuktoyaktuk Harbour, NT, Canada, 1997-1999. Can. Manusc. Rep. Fish. Aquat. Sci. 2845: ix + 31p.

ARCTIC GRAYLING (*Thymallus arcticus*) / HULUKPAUGAQ

Biology

Distributed throughout the northern regions of western provinces, the Northwest Territories, Yukon, Alaska and the headwaters of the Missouri River in Montana. Also present in Eurasia. Grayling require clear water typically associated with small streams or medium rivers and therefore, they are rare in the turbid Mackenzie River. In the western Arctic, they are known to occur in the groundwater fed springs on the Yukon North Slope and in most rivers to the east of the Mackenzie. Grayling can be highly migratory, using different streams for spawning, juvenile rearing, summer feeding, and overwintering, or may complete their entire life without leaving a short section of stream or lake. Grayling may over-winter in lakes or the lower reaches and deeper pools of medium-sized rivers. Grayling are primarily a shallow water fish and mainly feed at the surface on terrestrial and aquatic insects, but will also consume crustaceans, small fish and fish eggs. Unlike most other members of the salmon family, grayling spawn in spring, typically as the ice is just breaking up. Spawning occurs over gravel areas in running water and no redds are built. Grayling fry hatch about three weeks after spawning and occupy the quieter waters near where they were hatched. Most grayling do not become sexually mature until 6-9 years of age. Average length is approximately 35 cm (14 in.). Maximum weight is approximately 2.5 kg (5.5 lb).

Important Habitat

Kugaluk River, Coastal rivers of North Slope. Occasionally Richards Island.

Management Plans/Agreements

None.

Recent Research

Some grayling were tagged in the Babbage River in fall 1992 as part of a FJMC sponsored project.

Research Priority

Unspecified.

Population Status

Locally common in certain streams.

Population Goal

Adequate supply at present.

Conservation Measures

- Harvest only what is needed.
- Identify and protect important habitats from disruptive land uses.



BLUE or PACIFIC HERRING (*Clupea pallasii*) / QALUHAQ

Biology

Pacific herring are true marine fish and can be identified from other “herring” species (Arctic and least ciscos) by the absence of the adipose fin (a small fleshy “knob” posterior to the dorsal fin) found on salmon, Char, grayling, whitefish, coney and ciscos. Pacific herring are very important to the coastal waters of the Beaufort Sea and are utilised by people in the community of Tuktoyaktuk. Pacific herring are preyed upon by beluga whales, seals and a large number of marine and anadromous fish species. Pacific herring spawn around the time of ice break-up (late June) in the deep coastal bays in which they have overwintered. Tuktoyaktuk Harbour is a major overwintering area. Spawning is confined to shallow, vegetated areas in the intertidal and subtidal zones. Following spawning, they disperse throughout the Beaufort for feeding and return to overwintering sites beginning in late August. Herring probably spawn every year after reaching sexual maturity at about 6-7 years of age in this area. The number of eggs varies with the age/size of the fish and averages 20,000 annually. Average life span for these fish is up to 16 years in the Bering Sea. Their food consists of small fish, crustaceans and copepods.

Important Habitat

Mackenzie River and estuary, tributaries to the Mackenzie (spawning habitat), inland lakes. Inner Shallow Bay/Niakunak Bay and Kugmallit Bay are important overwintering and nursery areas. Blue Herring are found off Shingle Point, Bailey Island, N.E. Richards Island, Tuktoyaktuk.

Management Plans/Agreements

None.

Recent Research

FJMC North Slope Stock Identity Study (Char and Cisco) conducted in 1989.

Research Priority

Community considers research on the biology and ecology of these species a high priority.

Population Status

Abundant.

Population Goal

Adequate supply at present.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- No drilling in areas where these species concentrate for spawning or migration.
- Ensure all oil related activities are closely monitored.

BROAD WHITEFISH (*Coregonus nasus*) / AANAAKĪIQ

Biology

Distributed in fresh and brackish waters of arctic drainages of northwestern North America and northern Eurasia, south to approximately the 60th parallel. Spawning mainly occurs over gravel areas in rivers in October or November. Downstream migration of post-spawning fish may occur gradually over the winter. Maturation occurs at approximately seven years of age. Broad whitefish are more frequently encountered in rivers than lakes, although distinct anadromous and non-migratory lake dwelling stocks (e.g., Wolf Lake) are known from the Mackenzie River basin. Additionally broad whitefish are often found in coastal areas of the Beaufort Sea (e.g., Shingle Point). Diet includes aquatic insects, small molluscs and crustaceans. They contain a strong organ similar to a bird gizzard that aides in the digestion and breakdown of shelled organisms. It is a deep-bodied fish with a blunt snout and short head. Average length is near 45 cm (18 in.).

Important Habitat

Several overwintering areas in East Channel and Whitefish Bay. Tuktoyaktuk Harbour, Mason Bay, Mallik Bay, Shallow Bay, streams of Tuktoyaktuk Peninsula, spawning throughout Mackenzie system.

Management Plans/Agreements

None

Research Priority

Unspecified.

Population Status

Locally abundant.



Population Goal

Maintain abundant population to support subsistence harvest.

Conservation Measures

- Only harvest what is needed.
- Identify and protect important habitats from disruptive land uses.

References

- Bond, W.A. 1982. A study of the fish resources of Tuktoyaktuk Harbour, southern Beaufort Sea coast, with special reference to life histories of anadromous Coregonids (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) (whitefish). Can. Tech. Rep. Fish. Aquat. Sci. 1119: vii +90 p.
- Chang-Kue, K.T.J., and E.F. Jessop. 1992. Coregonid migration studies at Kukjuktuk Creek, a coastal drainage on the Tuktoyaktuk Peninsula, Northwest Territories. Can. Tech. Rep. Fish. Aquat. Sci. 181 1: ix +112 p.
- Chang-Kue, K. T. J., and Jessop, E. 1997. Broad whitefish radio tagging studies in the lower Mackenzie River and adjacent coastal region, 1982–1993. Pages 117–146 in R. F. Tallman and J. D. Reist, editors. The proceedings of the broad whitefish workshop: the biology, traditional knowledge and scientific management of broad whitefish in the lower Mackenzie River. Canadian Technical Report Fisheries and Aquatic Sciences 2193.

- Freeman, M.M.R. and Stevenson, M.G. 1995. "They knew how much they needed": Inuvialuit traditional knowledge and the Broad Whitefish. Canadian Circumpolar Institute, University of Alberta, Edmonton, AB.
- Greenland, B.J. and J. Walker-Larsen. 2001. Community concerns and knowledge about broad whitefish (*Coregonus nasus*) in the Gwitch'in Settlement Area. GRRB Board Report 01-08.
- Harris, L.N., Loewen, T.N., Reist, J.D., Halden, N.M., Babaluk, J.A., and Tallman, R.F. (2012): Migratory Variation in Mackenzie River System Broad Whitefish: Insights from Otolith Strontium Distributions, Transactions of the American Fisheries Society, 141:6, 1574-1585.
- Howland, K.L., VanGerwen-Toyne, M., and Tallman, R. 2009. Modeling the Migratory Patterns and Habitat Use of Migratory Coregonids (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) in the Mackenzie River System. American Fisheries Society Symposium 69:895–897.
- Tallman, R.F., and J.R. Reist. 1997. Proceedings of the broad whitefish workshop: the biology, traditional knowledge and scientific management of broad whitefish (*Coregonus nasus* (Pallus)) in the lower Mackenzie River. Can. Tech. Rpt. Aquat. Sci. 2193.
- Treble, M. 1994. Lower Mackenzie River broad whitefish, *Coregonus nasus*: central Delta biological characteristics (1984-1990), commercial and subsistence harvest trends, and local management issues. University of Manitoba.

BURBOT or LOCHE (*Lota lota*) / TITTAALIQ**Biology**

Burbot, along with Northern Pike are the most widely distributed freshwater fish in the world, and are the only freshwater member of the cod family, and are one of few Canadian freshwater fish species that spawns in mid-winter (January-March) under the ice. Burbot usually spawn at night in less than 3 m (10 ft.) of water, lakes or slow sections of rivers. Burbot call at spawning time, these calls attracts other burbot. Males arrive to spawning areas before females, and spawning often takes place in large groups. Each female can release hundreds of thousands of eggs. Burbot are a top-level predator and important to the aquatic ecosystem. Young burbot feed primarily on aquatic insects, while adult burbot are voracious fish predators. In the Mackenzie Delta young burbot and Northern Pike are an important part of the diet of adult burbot. The average size of an adult burbot is about 5 lbs. and 75 cm, however individuals of over 25 lbs. have been reported.

Burbot have large fatty livers have traditionally been used as a high-energy, nutritious, vitamin rich food for people living along the lower Mackenzie River and Mackenzie Delta. Local fishers often target burbot in early winter at the mouths of creeks where they come to feed before spawning.

Important Habitat

Creek mouths. Winter and spring may be abundant in fresh or brackish waters of Kugmallit Bay's coastal embayments.

Burbot live in a variety of habitats including creeks, lakes, and large rivers. Burbot have found in brackish waters of the outer Mackenzie Delta. Burbot require, clean, cold, well oxygenated water to survive.

Management Plans/Agreements

None.

Research Priority

Unspecified.

Population Status

Appear locally common and stable.

Population Goal

Maintain abundant population to support subsistence harvest.

Conservation Measures

- Only harvest what is needed.
- Identify and protect important habitats from disruptive land uses.

References

- Carrie et al. 2010. Increasing contaminant burdens in an Arctic fish, burbot (*Lota lota*), in a warming climate. *Environmental Science & Technology* 44(1): 316-322
- Lockhart, L. Study of loche Livers from Mackenzie River Near Norman Wells. DIAND Environmental Studies No. 61.

CONEY or INCONNU (*Stenodus leucichthys*) / HIIGAQ

Biology

The largest member of the whitefish family, but distinguishable from the more common whitefish by the strong extended lower jaw. Often called “coney” by resident of the area, inconnu are present in northwestern North America and Eurasia. Coney are anadromous in some areas, making long (up to 1000 km (621 mi.) migrations to upstream spawning areas, whereas in other areas, they are lake dwelling. Coney may reach weights in excess of 20 kg (44 lb) and lengths greater than 1 m (3.3 ft.). Upstream, spawning migrations of coney from coastal overwintering areas begin during the period of ice break-up. Some fish move to feeding grounds while mature fish migrate to spawning areas. Coney spawn in 1-3 m (3.3-9.8 ft.) of water with fast current over a bottom composed of different sized gravel. Spawning occurs during late afternoons and evenings in late September and early October. Coney do not dig a redd, or spawning nest. The slightly adhesive fertilised eggs fall to the stream bottom where they lodge in the gravel. Unlike Pacific salmon, which die after spawning, coney are capable of spawning several times. A rapid downstream migration occurs after spawning as coney move back to coastal areas. Eggs hatch in approximately six months with fry being washed downstream by spring runoff to delta or coastal areas. Fry begin to feed on plankton, but their diet rapidly changes to insect larvae and small fish. By the second year of life, their diet is almost entirely fish.



Age at first spawning varies with the population, but males mature from ages 7 to 11. Some coney may spawn every year, but every other year is probably the rule in most populations.

Important Habitat

Mackenzie River and Mackenzie River Estuary (rearing habitat).

Management Plans/Agreements

None at present. Integrated Fisheries Management Plan for Coney (*Stenodus leucichthys*) in the Gwich'in Settlement Area, Inuvialuit Settlement Region, and the Sahtu Settlement Area, Northwest Territories 2000-2005.

Recent Research

- DFO stock status report released in September 1998. (Stock Status Report D5-04, Mackenzie River inconnu). Strontium analysis of inconnu from the Mackenzie River and Shingle Point in 1997.
- Radio tagging of inconnu at Shingle Point and Mackenzie Delta in 1996.
- Has been extensively studied in Russia. Information being collected as part of Mackenzie River Test Fishery (1989-1994).

Research Priority

Unspecified.

Population Status

Locally common.

Population Goal

Maintain abundant population to sustain subsistence harvest.

Conservation Measures

- Harvest only what is needed.
- Identify and protect important habitats from disruptive land uses.

References

- Harwood, L. A., Pokiak, F., and Walker-Larsen, J. 2008. Assessment of the subsistence fishery and biological data for Arctic cisco in Tuktoyaktuk Harbour, NT, Canada, 1997-1999. Can. Manusc. Rep. Fish. Aquat. Sci. 2845: ix + 31 p.
- Howland, K.L., VanGerwen-Toyne, M., and Tallman, R. 2009. Modeling the Migratory Patterns and Habitat Use of Migratory Coregonids (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) (whitefish) in the Mackenzie River System. American Fisheries Society Symposium 69:895–897.
- Stephenson, S.A., Burrows, J.A., and Babaluk, J.A. 2005. Long-Distance Migrations by Inconnu (*Stenodus leucichthys*) in the Mackenzie River System. Arctic. 58:1, p. 21-25.

DOLLY VARDEN CHAR (*Salvelinus malma*) / IQALUAQPIK

Biology

Dolly Varden belong to a group of fish called char. The light spots on their sides distinguish them from most trout and salmon, which are usually black, spotted or speckled. In the ISR, Dolly Varden Char occur to the west of the Mackenzie River (e.g., the Big Fish River, the Babbage River, the Firth River, Joe Creek and the Rat River), while Arctic Char occur to the east of the Mackenzie (Hornaday River, Ulukhaktok rivers).

Dolly Varden spawn in groundwater-fed mountain streams, usually during the fall from late September to November. The female, depending on her size, may deposit from 2,500 to 10,000 eggs in depressions, or redds, which she constructs in the streambed gravel by digging with her tail fin. The male usually takes no part in these nest-building activities and spends most of his time fighting and chasing other males.

When the female is ready to deposit her eggs, the male moves to her side and spawning begins. Sperm and eggs are released simultaneously into the redd. The eggs develop slowly in the cold water temperatures usually present during the incubation period.

Hatching of the eggs may occur in February, four to five months after fertilization. After hatching, the young Dolly Varden obtain food from their yolk sac and usually do not emerge from the gravel until spring.

The young Dolly Varden rear in streams before beginning their first migration to sea. Most Dolly Varden migrate to sea in their third or fourth year, but some wait as long as their sixth year. At this time, they are about 30 cm (12 in) long and are called a smolt. This migration usually occurs in May or June. After their first seaward migration, Dolly Varden usually spend the rest of their lives conducting seasonal migrations between rivers and the sea.

At maturity, Dolly Varden returns to spawn in the stream from which they originated. The fish possesses the ability to find their “home” stream without randomly searching. Northern Dolly Varden reach maturity at age 6 after having spent two or three summers at sea. Northern Dolly Varden may live as long as 16 years, but individuals over age 8 are uncommon.



Traditional Use

A food source.

Important Habitat

Fish Hole, Rat River, Big Fish River, Fish Creek, Babbage River, Peel River, Vittrekwa River, Shingle Point, King Point, Kay Point, Ptarmigan Bay, Herschel Island. Char occasionally travel the Mackenzie near Inuvik and are caught.

Management Plans/Agreements

- Integrated Fisheries Management Plan for Dolly Varden (*Salvelinus malma malma*) of the Gwich'in Settlement Area and Inuvialuit Settlement Region Northwest Territories and Yukon North Slope 2011-2015.
- Big Fish River Fishing Plan: community harvest of char at Shingle Point, the mouth of the river and the Fish Hole. 2014 draft submitted to the Dolly Varden IFMP Steering Committee and supported by the West Side Working Group.
- Local char management recommendations are made in the ISR by the West Side Working Group (AHTC, FJMC, DFO, Aklavik Elders, Parks Canada, Herschel Island Territorial Park) and for the Rat River by the Rat River Working Group (AHTC, ERRC, TRRC, GRRB, DFO, FJMC).

Recent Research & Monitoring

- Big Fish River Fish Hole harvest and sampling program approved under a DFO Aboriginal Communal Fishing Licence, and completed in November 2014 and October 2015. Plans to continue program in 2016.
- Mixed-stock genetics analyses and char monitoring at Shingle Point and other coastal sites in summer (ongoing since 2011)
- Mark-recapture studies in the Big Fish, Babbage, Rat, Firth / Joe Creek for population estimates
- Weir assessments for Dolly Varden Char at the Babbage River, Big Fish River and Rat River were done in 1990-1992, 1991 and 1989 respectively. Mark-recapture, radio and Floy tagging studies have been on most stocks, led by the Dept. of Fisheries and Oceans and with community-based technicians undertaking or participating in the field work. Estimates of the size of the stocks are available, and the subsistence fisheries at each system are monitored each year in community-based programs. Monitors are sometimes stationed at Shingle Point.
- Index netting program began in 1999 in Aklavik and Inuvik (also included RRCs in Aklavik, Inuvik, Fort McPherson and Tsiigehtchic) to document average lengths/weights and abundance of all captured species.
- DFO/Aklavik HTC mark-recapture study at the fish holes on Big Fish River in 1998. FJMC North Slope Stock Identity Study (Char and Cisco) conducted in 1989.

Research Priority

High: The community is very interested in knowing more about the biology and movement of Dolly Varden char. There is also great concern over change in char abundance and water quality in the Fish Hole.

Population Estimates (based on DFO mark-recapture studies in Fish Hole)

- Babbage River (2013): 10,659 (95% confidence interval: 7,227-19,673; for char ≥ 365 mm in length). Population appears to be increasing in recent years (in comparison with 2010-2012 estimates).

- Big Fish River (2010): 5,794 (95% confidence interval: 4,127-9,723; for char ≥ 365 mm in length). Population appears stable, but at a reduced level in comparison with 1970s or 1980s estimates.
- Rat River (2013): 11,919 (95% confidence interval: 7,773-23,638; for char ≥ 365 mm in length)

Population Goal

Unspecified. Maintain adequate numbers to sustain (current / increased) harvest. Would generally like more.

Conservation Measures

- Ensure harvest is sustainable.
- Do not take more than needed.
- Identify and protect important habitats from disruptive land uses.

JACKFISH or NORTHERN PIKE (*Esox lucius*)

Biology

Northern pike, also called “jackfish”, are present in most waters of the western Arctic. The northern pike has a long, streamlined body and rows of sharp teeth in an “alligator” type mouth. Pike are typically considered non-migratory although on occasion they have been noted to move large distances (100 km (161 mi.)). Northern pike spawn on aquatic vegetation in early spring, sometimes before the ice has melted. Pike are voracious and opportunistic feeders, feeding mainly on fish, but also consuming muskrats and ducklings. Preferred habitats are lakes and the warm, clear main channels of rivers or slack water areas. They have also been observed in the brackish waters of Husky Lakes and Mackenzie Estuary. Maximum weight of pike is likely near 20 kg (44 lb) in North America, although there are many unconfirmed reports of larger fish. Pike may live 24-26 years in this area.

Important Habitat

Tributaries, creeks and shallow lakes in Mackenzie Delta, Husky Lakes.

Management Plans/Agreements

None.

Research Priority

Unspecified.

Population Status

Abundant.

Population Goal

Maintain adequate populations to sustain subsistence harvest.

Conservation Measures

- Harvest only what is needed.
- Identify and protect important habitats from disruptive land uses.
- Harvest within quota where one has been established.

LAKE TROUT (*Salvelinus namaycush*) / IQALUAQPAK

Biology

Lake trout are most common in large, deep lakes, but are occasionally captured in rivers, brackish (salty) water, and the ocean. Lake trout are slow growing, fall spawning fish (early-September) that, unlike salmon and other char, do not build redds for their eggs. Spawning typically occurs over windswept shoals of lakes at depth greater than 2 m to avoid ice scouring and is rarely observed in rivers. Spawning takes place over clean, rocky lake bottoms, most often at night. Eggs hatch before ice breakup and the young live off a yolk sack until they are able to feed on zooplankton. Lake trout are long-lived (50+ years) and the largest of the local chars, potentially weighing over 20 kg (44 lb.). Sexual maturity is reached at different ages in different areas, but in many Arctic populations, spawning may not take place until fish reach 13-16 years. Mature lake trout have been observed to skip spawning between years to save up energy reserves. In most areas, lake trout feed on cisco, smelt, sticklebacks, sculpins, plankton and crustaceans and food preferences can shift throughout life and vary between lakes. Lake trout are distinguished from other char and salmon by their deeply forked tail, light-coloured spots, and worm-like pattern on their backs. During spawning some lake trout fins can become dark red in colour with a white stripe on the edge. Their bellies also can change to dark red, orange or yellow similar to other char. Because of the lake trout's slow growth, late maturation, skipped spawning events and selectivity of spawning habitat, they can be very sensitive to ecological disturbances.



Important Habitat

King Point Lakes, Husky Lakes, Noell Lake, Jimmy Lake, Ya Ya Lake, Peter Lake, Sitidgi Lake, Big Lake and numerous lakes on Richards Island (e.g., Wolf Lake).

Management Plans/Agreement

HTC Bylaw requires minimum 11 cm (4.5 in.) mesh size on nets.

Recent Research

- Baseline assessment of fish populations along the Inuvik to Tuktoyaktuk Highway: key fishes, their ecology and lake trout population connectivity (DFO), 2014-2016
- Tuk-177 fisheries assessment, 2012
- DFO ecological assessment of Husky Lakes and Sitidgi Lake, 2000-2004

Research Priority

High: The community is very interested in knowing more concerning the biology and movement of lake trout in the area and in monitoring water quality where lake trout are harvested.

Population Status

Appears to be stable though no formal studies to date.

Population Goal

Unspecified. Maintain adequate population to support current harvest.

Conservation Measures

- Where commercial fishing is undertaken mesh size should be no smaller than 14 cm (5.5 in.).
- Ensure harvest is sustainable.
- Do not take more than is needed.
- Identify and protect important habitats from disruptive land uses.

References

- Kissinger, B.C., Gantner, N., Anderson, W.G., Gillis, D.M., Halden, N.M., Harwood, L.A. and Reist, J.D. 2015. Brackish-water residency and semi-anadromy in Arctic lake trout (*Salvelinus namaycush*) inferred from otolith microchemistry. J. Great Lakes Res. Supp. (*in press*)
- Roux, M.-J., Harwood, L. A., Illasiak, J., Babaluk, J.A., and de Graff, N. 2011. Fishery resources and habitats in a headwater lake of the Brock River, NT, 2003-2005. Can. Manuscr. Rep. Fish. Aquat. Sci. 2932: viii + 61 p.
- Roux, M.-J., Sparling, P., Felix, J., and L.A. Harwood. 2014 Ecological Assessment of Husky Lakes and Sitidgi Lake, Northwest Territories, 2000-2004. Canadian Technical Report of Fisheries and Aquatic Sciences 3071.

LAKE WHITEFISH / CROOKED BACKS (*Coregonus clupeaformis*) / PIKUKTUUQ

Biology

Lake whitefish are also called “crooked back” or “humpback whitefish” in this area. They are widely distributed across Canada as far south as the Great Lakes in large rivers and lakes. Lake whitefish in the Mackenzie Delta tend to have softer flesh and more parasites than broad whitefish and are thus less sought after by local fishermen. Lake whitefish spawn in late September or early October in this area and individual fish may spawn only every second or third year. Lake dwelling and anadromous fish, Lake whitefish can often be distinguished by differences in colour and physical characters. Lake whitefish feed on aquatic insects, molluscs, amphipods and a variety of small fish and fish eggs. They possess a strong organ similar to a bird gizzard that aides in the digestion and breakdown of shelled organisms. They reach a maximum weight of approximately 13kg (29 lb) and can live for at least 16 years. Most lake whitefish captured in area fisheries range from 6-10 years.

Important Habitat

Several overwintering areas in East Channel and Whitefish Bay. Tuktoyaktuk Harbour, Mason Bay, Mallik Bay, Shallow Bay, Husky Lakes, streams of Tuktoyaktuk Peninsula, spawning throughout Mackenzie system.

Management Plans/Agreements

None.

Research Priority

Unspecified.

Population Status

Locally abundant.



Population Goal

Maintain abundant population to support subsistence harvest.

Conservation Measures

- Only harvest what is needed.
- Identify and protect important habitats from disruptive land uses.

LEAST CISCO or BIG-EYED HERRING (*Coregonus sardinella*) / QALUHAQ**Biology**

The least cisco is common in the lower Mackenzie Delta and almost all lakes and rivers. Least cisco are much less migratory than the Arctic cisco and in coastal areas tend to be associated with the plume of their home river. The least cisco has a weak lower jaw that projects beyond the upper and has a larger eye than the Arctic cisco. Adults are brown to olive green and silvery below. Least cisco reach sexual maturity at 6-7 years of age. Mature least cisco migrate upstream in the fall to spawn in clear streams with gravel bottoms. Spawning takes place in early October. Least cisco found in lakes seldom exceed 23 cm (9 in.), while those in the Mackenzie River or coastal areas reach almost 40 cm (16 in.) in length. Least cisco are very important in the food chain, as they are eaten by predacious coney, pike, and burbot and undoubtedly, a large number of mammals and birds.

Important Habitat

Mackenzie River and estuary, tributaries to the Mackenzie (spawning habitat), inland lakes. Inner Shallow Bay/Niakunak Bay and Kugmallit Bay are important overwintering and nursery areas. Blue Herring are found off Shingle Point, Bailey Island, N.E. Richards Island, Tuktoyaktuk.

Management Plans/Agreements

None.

Recent Research

FJMC North Slope Stock Identity Study (Char and Cisco) conducted in 1989.

Research Priority

Community considers research on the biology and ecology of these species a high priority.

Population Status

Abundant.

Population Goal

Adequate supply at present.

Conservation Measures

- Identify and protect important habitats from disruptive land uses.
- No drilling in areas where these species concentrate for spawning or migration.
- Ensure all oil related activities are closely monitored.

FISH SPECIES LIST

Many species of fish occur within the freshwater and marine environments of the mainland western Arctic. Most lakes and rivers support fish populations. A partial list of these including those already mentioned is presented below. It is recognized that these species may be important components of the food chain on which other species (e.g. Arctic Char, seals, polar bear) depend. As with other species, protection should be given to important habitats or ecological relationship where these become known. The outer Mackenzie Delta area, particularly Mason and Mallik Bays, is very important overwintering and nursery habitat for a variety of marine and anadromous fish.

| Species | Scientific Name |
|---|--|
| Marine Species | |
| Arctic Cod | <i>Boreogadus saida</i> |
| Blue Herring | <i>Clupea pallasii</i> / Qaluhaq |
| Capelin | <i>Mallotus villosus</i> |
| Chum Salmon | <i>Oncorhynchus keta</i> ¹ |
| Fourhorn Sculpin, Deepwater Sculpin or Devil Fish | <i>Myoxocephalus quadricornis</i> / Kanayuq |
| Greenland Cod | <i>Gadus ogac</i> |
| Pink Salmon | <i>Onchorhynchus gorbuscha</i> ¹ |
| Saffron Cod | <i>Elegiums navaga</i> |
| Sand Lance | <i>Amodytes</i> sp. |
| Starry Flounder | <i>Platichthys stellatus</i> |
| Tom Cod | <i>Microgadus proximus</i> / Ulugaq |
| Freshwater | |
| Arctic Char | <i>Salvelinus alpinus</i> / Qalukpik ¹ (land locked) |
| Arctic Cisco | <i>Coregonus autumnalis</i> |
| Arctic Grayling | <i>Thymallus arcticus</i> / Hulukpaugaq |
| Broad Whitefish | <i>Coregonus nasus</i> / Anaqkiq |
| Burbot or Loche | <i>Lota lota</i> / Tittaaliq |
| Dolly Varden | <i>Salvelinus malma</i> / Qalukpik |
| Finescale Dace | <i>Phoxinus neogaeus</i> |
| Flathead Chub | <i>Platygobio gracilis</i> |
| Inconnu or Coney | <i>Stenodus leucichthys</i> / Higaq |
| Lake Chub | <i>Couesius plumbeus</i> |
| Lake Trout | <i>Salvelinus namaycush</i>) / Iqaluaqpak |
| Lake Whitefish | <i>Coregonus clupeaformis</i>) / Pikuktuuq |
| Least Cisco or Big-eyed Herring | <i>Coregonus sardinella</i> / Qaluhaq ¹ |
| Longnose Dace | <i>Rhinichthys cataractae</i> |
| Longnose Sucker | <i>Catostomus catostomus</i> |
| Nine-spine Stickleback | <i>Pungitius pungitius</i> |
| Northern Pike | <i>Esox lucius</i> / Hiulik |
| Pond Smelt | <i>Hypomesus olidus</i> |
| Rainbow Smelt | <i>Osmerus mordax</i> |
| Round Whitefish | <i>Prosopium cylindraceum</i> |
| Slimy Sculpin | <i>Cottus cognatus</i> |
| Spoonhead Sculpin | <i>Cottus ricei</i> |
| Trout Perch | <i>Percopsis omiscomaycus</i> |
| Walleye | <i>Stizostedion vitreum</i> |

1. These fish spend part of their life in salt water and part in fresh water. This life style is called "anadromous".

INSECTS / QUPILRUT

A great number of terrestrial and aquatic insects and other invertebrates occur in the mainland western Arctic portion of the ISR. It is recognized that these species may form an important part of the food chain on which other animals or plants depend and may perform important functions, such as flower pollination and the breakdown of organic matter. Some species such as mosquitoes (**Kikturiat**) also have a significant effect on the behaviour and habitat use patterns of by other animals (e.g. caribou) while others, such as butterflies (**Taqalukiat**), may be a potential tourist attraction. Species such as the green dragonfly (**Niulriq**) known as the "Timberline Emerald" (*Somatochlora sahlbergi*) have characteristics of particular interest to scientists. This species is found across Asia and has a preference for deep mossy ponds. It is one of the few dragonfly species, which is known to interbreed with other species of dragonfly. The Community recognizes that the unregulated collection of certain rare insects can be a problem.

Important Habitats

Insect habitat is generally abundant and widespread in the western Arctic, however, there are certain habitat areas that tend to support species which have very limited distribution in North America and/or the northern hemisphere.

Examples of these habitats include the following:

- Unglaciaded areas where dolomite or limestone is common;
- West side of the Richardson Mountains in "White Mountains" area;
- South facing slopes dominated by pasture sage (*Artemisia frigida*).

Conservation Measures

- Protect important habitats and ecological relationships (as appropriate) where these become known.
- Become more familiar with the insect life of the region.

PLANTS / NAURIAT OF THE MAINLAND WESTERN ARCTIC

A large number of plant species occur in the mainland western Arctic portion of the ISR. The flora of the area includes approximately 523 species of vascular plants (**nauriat**), at least 100 mosses, 121 lichen, 6 species of liverwort, and 11 species of fern. These latter non-vascular plants are collectively known as **Ivut**. Plants provide an essential component of the ecosystem on which all animals depend. They provide food and shelter for wildlife, influence water quality, provide food for humans and make a valued contribution to the overall appearance of the land. The picking of berries (**asiat**) is an important summer activity.

Research Priority

The community considers research on plants, particularly monitoring the health of important food plants (for humans and animals) a very high priority.

Conservation Measures

Protect important habitats and ecological relationships when these become known. Do not export.

A partial list of plants, which have been or may be found in the area is provided below. Not included are the many species of moss, lichen and liverwort referred to above. Plants used for food or other purposes by the Inuit are marked with an asterisk (*). Those which are considered rare are marked with a "+" sign. Where an asterisk is in brackets, there is uncertainty about the plant's identification



Trevor Lucas

PLANT SPECIES LIST

| | |
|---|--|
| <i>Achillea sibirica</i> | <i>Antennaria friesiana</i> subsp. <i>compacta</i> |
| <i>A. borealis</i> | <i>A. f.</i> subsp. <i>friesiana</i> |
| <i>Aconitum delphinifolium</i> subsp. <i>delphinifolium</i> | <i>A. isolepis</i> |
| <i>Agoseris glauca</i> | <i>A. monocephala</i> subsp. <i>philonipha</i> |
| <i>Agropyron boreale</i> subsp. <i>alaskanum</i> | <i>Aquilegia brevistyla</i> |
| <i>A. b.</i> subsp. <i>boreale</i> | <i>Arabis hirsuta</i> subsp. <i>pyrocarpa</i> |
| <i>A. b.</i> subsp. <i>hyperarcticum</i> | <i>A. drummondii</i> |
| <i>A. macrourum</i> | <i>A. divaricarpa</i> |
| <i>Agrostis borealis</i> | <i>Arctagrostis latifolia</i> var. <i>latifolia</i> |
| <i>A. scabra</i> | <i>A. l.</i> var. <i>arundinacea</i> |
| <i>Allium schoenoprasum</i> var. <i>sibiricum</i> | <i>Arctophila fulva</i> |
| <i>Alnus crispa</i> subsp. <i>crispa</i> | <i>Arctostaphylos alpina</i> (Black bearberry, Paungat - food)(*) |
| <i>A. incana</i> subsp. <i>tenuifolia</i> | <i>A. rubra</i> |
| <i>Alopecurus alpinus</i> subsp. <i>alpinus</i> | <i>A. uva-ursi</i> var. <i>uva-ursi</i> |
| <i>Amerorchis rotundifolia</i> | <i>Arenaria capillaris</i> |
| <i>Andromeda polifolia</i> | <i>A. humifusa</i> |
| <i>Androsace chamaejasme</i> subsp. <i>lehmanniana</i> | <i>Armeria maritima</i> subsp. <i>arctica</i> |
| <i>A. septentrionalis</i> | <i>Arnica alpina</i> subsp. <i>angustifolia</i> |
| <i>Anemone drummondii</i> | <i>A. a.</i> subsp. <i>attenuata</i> |
| <i>A. multifida</i> | <i>A. a.</i> subsp. <i>tomentosa</i> |
| <i>A. narcissiflora</i> subsp. <i>interior</i> | <i>A. frigida</i> |
| <i>A. parviflora</i> | <i>A. lessingii</i> subsp. <i>lessingii</i> |
| <i>A. Richardsonii</i> | |

- Artemisia arctica* subsp. *arctica*
A. a. subsp. *comata*
A. borealis
A. frigida
A. furcata
A. tilesii subsp. *elator*
A. tilesii subsp. *tilesii* (Wormwood - medicine)*
Aster sibiricus
Astragalus aboriginum
A. alpinus subsp. *arcticus*
A. alpinus subsp. *alpinus*
A. bodinii
A. eucosmus subsp. *eucosmus*
A. eucosmus subsp. *sealei*
A. umbellatus
Atriplex gmelini
Beckmannia erucaeformis subsp. *baicalensis*
Betula glandulosa
B. nana subsp. *exilis* (Dwarf Arctic Birch - food)*
Betula occidentalis
B. papyrifera
Boschniakia rossica
Botrychium boreale
B. lunaria
Braya humilis subsp. *Arctica*

B. purpurascens
Bromus pumpellianus var. *arcticus*
B. p. var. *pumpellianus*
Bupleurum triradiatum subsp. *articum*
Calamagrostis canadensis subsp. *canadensis*
C. c. subsp. *langsdoiffii*
C. deschampsoides
C. holmii
C. inexpansa
C. lapponica
C. neglecta
C. purpurascens
Calla palustris
Callitriche hermaphroditica
C. verna
Caltha palustris subsp. *arctica* (Marsh marigold
- food)*
Campanula uniflora
Capsella bursa-pastoris
Cardamine bellidifolia
C. hyperborea
C. pratensis subsp. *angustifolia*
Carex albo-nigra
C. amblyorhycha
C. aquatilis
C. atrofusca
C. aurea
C. bicolor
C. bigelowii

C. bonanzensis
C. canescens
C. capillaris
C. capitata
C. chordorrhiza
C. concinna
C. diandra
C. dioica
C. disperma
C. eburnea
C. garberi subsp. *bifaria*
C. glacialis
C. glareosa subsp. *glareosa*
C. holostoma
C. lachenalii
C. laxa
C. limosa
C. livida
C. magellanica
C. machenziei
C. macloviana
C. maritima
C. media
C. membranacea
C. microchaeta
C. microglochis
C. misandra
C. nardina
C. obtusata
C. petricosa
C. podocarpa
C. Ramenskii+
C. rariflora (var. *androgyra* considered rare)+
C. rostrata
C. rotundata
C. rupestris
C. saxatilis
C. scirpoidea
C. subspathacea
C. tenuiflora
C. ursina
C. vaginata
C. williamsii
Cassiope tetragona subsp. *tetragona*
Castilleja caudata
C. elegans
C. hyperborea
C. raupii
Cerastium arvense
C. beeringianum var. *grandiflorum*
Chamaedaphne calyculata
Chenopodium berlandieri subsp. *zschackei*
C. capitatum
Chrysanthemum arcticum subsp. *polare*
C. bipinnatum subsp. *huronense*

- C. integrifolium*
Chrysosplenium tetrandrum
Cicuta mackenzieana
Cnidium cniidiifolium
Cochlearia officinalis subsp. *arctica*
Corallorrhiza trifida
Cornus canadensis
Corydalis sempervirens
Crepis nana var. *nana*
Cypripedium guttatum subsp. *guttatum*
C. passerinum
Cystopteris fragilis subsp. *dickieana*
C. f. subsp. *fragilis*
Delphinium glaucum
Deschampsia brevifolia
D. caespitosa var. *caespitosa*
D. c. subsp. *orientalis*
Draba cinerea
D. hirta
D. lactea
D. macrocarpa
D. nivalis
Descurainia sophioides
Diapensia lapponica
Dodecatheon pulchellum subsp. *pauciflorum*
D. frigidum
Douglasia arctica
D. ochotensis
Draba aurea
D. caesia
D. crassifolia
D. lanceolata
D. longipes
D. oligosperma
D. pilosa
D. pseudopilosa
Drosera rotundifolia
Dryas integrifolia subsp. *integrifolia*
D. i. subsp. *sylvatica*
D. octopetala
Dryopteris fragrans
Dupontia fischeri subsp. *fischeri*
D. F. subsp. *psilosantha*
Eleocharis acicularis
E. palustris
Elymus arenarius subsp. *mollis* var. *mollis*
E. a. subsp. *mollis* var. *villosissimus*
E. innovatus
Empetrum nigrum subsp. *hermaphroditum*
 (Crowberry / **Paungat** - food, fuel)(*)
Epilobium angustifolium (Fireweed - food, medicine)*
E. davuricum
E. latifolium (River beauty, willowherd - food)*
E. palustre
Equisetum arvense (Horsetail - food, medicine)*
E. fluviatile
E. palustre
E. pratense
E. scirpoides
E. silvaticum (Horsetail - medicine)*
E. variegatum subsp. *variegatum*
Erigeron acris subsp. *politus*
E. compositus
E. elatus
E. eriocephalus
E. grandiflorus subsp. *grandiflorus*
E. humilis
E. hyperboreus
E. lonchophyllus
Eriophorum angustifolium subsp. *subarcticum*
 (Lettergrass - food, weaving)*
E. brachyantherum
E. callitrix
E. scheuchzeri var. *scheuchzeri*
E. Scheuchzeri var. *tenuifolium*
E. russeolum
E. vaginatum subsp. *spissum*
E. vaginatum subsp. *vaginatum*
Erysimum cheiranthoides
E. inconspicuum
Erysimum pallasii
Eutrema edwardsii
Festuca altaica
F. baffinensis
F. brachyphylla
F. rubra
Galium boreale
G. brandegei
G. trifidum subsp. *trifidum*
Gentiana detonsa
G. glauca
G. propinqua subsp. *arctophila*
G. p. subsp. *propinqua*
G. raupii
Geocaulon lividum
Geum glaciale
Goodyera repens var. *ophioides*
Halimolobus mollis
Hedysarum alpinum subsp. *americanum*
 (Licoriceroot, Eskimo potato, **Masu** - food)*
H. hedysaroides
H. mackenzii
Hierchloe odorata
H. alpina
H. pauciflora
Hippuris tetraphylla
H. vulgaris (Mare's tail - food)*
Honckenya peploides (Seabeach sandwort - food)*

Hordeum jubatum
Juncus arcticus subsp. *ater*
J. biglumis
J. bufonius
J. castaneus subsp. *castaneus*
J. triglumis subsp. *albescens*
J. triglumis subsp. *triglumis*
Juniperus communis subsp. *nana*
J. horizontalis
Kobresia myosuroides
K. sibirica
K. simpliciuscula
Koeleria asiatica+
Lagotis glauca subsp. *minor*
Lappula occidentalis
Larix laricina var. *alaskensis*
Ledum palustre subsp. *decumbens*
L. p. subsp. *groenlandicum* (Laborador Tea -
 medicine)*
Lemna trisulca
Lesquerella arctica
Linnaea borealis
Linum perenne subsp. *lewisii*
Listera borealis
Lloydia serotina
Loiseleuria procumbens
Lomatogonium rotatum
Lupinus arcticus
Luzula arctica
L. arcuata subsp. *unalaschcensis*
L. multiflora subsp. *multiflora*
L. parviflora subsp. *parviflora*
L. spicata
L. tundricola
L. wahlenbergii
Lycopodium annotinum
L. confusa
L. selago subsp. *appressum*
L.s. subsp. *selago*
Matricaria matricarioides
Melandrium affine
L. apetalum subsp. *articum*
M. taimyrense
M. taylorae
Menyanthes trifoliata
Mertensia maritima subsp. *maritima*
M. paniculata
Minuartia biflora
M. dawsonensis
M. obtusiloba
M. rossii
M. rubella
Moehringia lateriflora
Monenses uniflora
Montia fontana subsp. *fontana*
Myosotis alpestris subsp. *asiatica*
Myrica gale var. *tomentosa*
Myriophyllum spicatum
Nuphar polysepalum
Oxycoccus microcarpus
Oxyria digyna (Mountain sorrel - food,
 medicine)*
Oxytropis arctica
O. borealis
O. campestris subsp. *gracilis*
O. deflexa
O. maydelliana
Papaver hultenii
P. lapponicum subsp. *occidentale*
P. macounii
Parnassia kotzebuei
P. palustris subsp. *neogaea*
Parrya nudicaulis subsp. *septentrionalis*
Pedicularis capitata
P. kanei subsp. *kanei* (Wooly Lousewort -
 food)*
P. labradorica
P. langsdorffii subsp. *arctica* (Lousewort - food)
 (*)
P. lapponica
P. sudetica subsp. *albolabiata*
P. s. subsp. *interior* (Lousewort - food)(*)
P. verticillata
Petasites frigidus (Sweet Coltsfoot - food)*
P. hyperboreus (Sweet Coltsfoot - food)*
P. palmatus
P. sagittatus
Phippsia algida
*Phlox alpigena*¹
P. hoodii
P. sibirica subsp. *richardsonii*
P. s. subsp. *sibirica*
Picea glauca
P. mariana
Pinguicula vulgaris subsp. *vulgaris*
P. villosa
Plantago canescens
P. eriopoda
P. maritima subsp. *juncoides*
Platanthera hyperborea
P. obtusata
Poa alpina
P. arctica subsp. *arctica*
P. glauca
P. lanata
P. paucispicula
P. pratensis
Polemonium acutiflorum
P. boreale subsp. *boreale*
P. pulcherrimum

- Polygonum alaskanum* (Eskimo rhubarb / **Qaugaq** - food)*
P. amphibium subsp. *laevimarginatum*
P. aviculare
P. bistorta subsp. *plumosum* (Bistort - food)*
P. viviparum (food)*
Populus balsamifera subsp. *balsamifera*
Potamogeton berchtoldi
P. filiformis
P. friesii
P. gramineus
P. pectinatus
P. perfoliatum
P. praelongum
P. subsibiricum
P. vaginatum
P. zosterifolium subsp. *zosteriformis*
Potentilla egedii subsp. *egedii*
P. E. subsp. *grandis*
P. E. subsp. *yokonensis*
P. fruticosa
P. hookeriana subsp. *chamissonis*
P. H. subsp. *hookeriana* var. *hookeriana*
P. hyparctica
P. nivea
P. norvegica subsp. *monspeliensis*
P. palustris
P. pennsylvanica
P. pulchella
P. rubricaulis
P. vahliana
Primula borealis
P. egaliksensis
P. stricta
Puccinellia andersonii+
P. artica+
P. borealis
P. interior
P. phryganodes
P. vaginata
Pulsatilla patens subsp. *multifida*
Pyrola asarifolia var. *purpurea*
P. chlorantha
P. grandiflora
P. minor
P. secunda subsp. *obtusata*
Ranunculus confervoides
R. cymbalaria
R. eschscholtzii
R. gelidus subsp. *grayi*
R. gmelini subsp. *gmelini*
R. hyperboreus
R. lapponicus
R. nivalis
R. pallasii (Buttercup - food)*+
R. pedatifidus subsp. *affinis*
R. pygmaeus subsp. *pygmaeus*
R. p. subsp. *sabinei*
R. reptans
R. sceleratus subsp. *multifidus*
R. sulphureus var. *sulphureus*
R. trichophyllus var. *trichophyllus*
R. turneri+
Rhododendron lapponicum
Ribes hudsonianum
R. triste
Rorippa calycina
R. hispida var. *barbareaefolia*
R. islandica subsp. *fernaldiana*
Rosa acicularis
Rubus arcticus subsp. *stellatus* (Arctic raspberry - food)*+
R. chamaemorus (Cloudberry, **Aqpik** - food)*
R. idaeus subsp. *melanolasius*
R. pubescens
R. acetosa subsp. *alpestris*
R. sibiricus
R. arcticus (Arctic Dock - food)*
Sagina intermedia
Salix alaxensis (Alaska willow - food, additive to chewing tobacco)*
S. arbusculoides
S. arctica subsp. *arctica*
S. arctolitoralis
S. arctophila
S. chamissonis+
S. fuscescens
S. glauca subsp. *acutifolia*
S. g. subsp. *callicarpaea*
S. g. subsp. *desertorum*
S. hastata
S. lanata
S. myrtilifolia
S. niphoclada
S. phlebophylla
S. phyllicifolia
S. polaris subsp. *pseudopolaris*
S. pulchra (food, medicine, additive to chewing tobacco and snuff)*
S. reticulata subsp. *reticulata*
Sanguisorba officinalis
Saussurea angustifolia
Saxifraga caespitosa
S. cernua (Bulblet saxifrage - food)(*)
S. exilis
S. foliolosa var. *foliolosa*
Saussurea angustifolia
Saxifraga caespitosa
S. cernua (Bulblet saxifrage - food)(*)
S. exilis

| | |
|--|---|
| <i>S. foliolosa</i> var. <i>foliolosa</i> | <i>S. edwardsii</i> |
| <i>S. hieracifolia</i> | <i>S. humifusa</i> |
| <i>S. hirculus</i> (Bog saxifrage - food)(*) | <i>S. laeta</i> |
| <i>S. nivalis</i> | <i>S. longipes</i> |
| <i>S. oppositifolia</i> subsp. <i>oppositifolia</i> | <i>S. media</i> |
| <i>S. punctata</i> subsp. <i>nelsoniana</i> (Cordate-leaved Saxifragi - food)* | <i>S. monantha</i> |
| <i>S. reflexa</i> | <i>Taraxacum alaskanum</i> |
| <i>S. rivularis</i> var. <i>flexuosa</i> | <i>T. ceratophorum</i> |
| <i>S. rivularis</i> var. <i>rivularis</i> | <i>T. lacerum</i> (Dandelion - food)* |
| <i>S. tricuspidata</i> | <i>T. phymatocarpum</i> |
| <i>Sedum rosea</i> subsp. <i>integrifolium</i> | <i>Thellungiella salsuginea</i> |
| <i>Selaginella sibirica</i> | <i>Thlaspi arcticum</i> |
| <i>Senecio atropurpureus</i> subsp. <i>frigidus</i> | <i>Tofieldia coccinea</i> |
| <i>S. a.</i> subsp. <i>tomentosus</i> | <i>T. pusilla</i> |
| <i>S. congestus</i> | <i>Trichophorum caespitosum</i> |
| <i>S. hyperborealis</i> | <i>Triglochin maritimum</i> |
| <i>S. lugens</i> | <i>T. palustris</i> |
| <i>S. pauperculus</i> | <i>Tripleurospermum phaeocephalum</i> |
| <i>S. resedifolius</i> | <i>Trisetum spicatum</i> subsp. <i>molle</i> |
| <i>S. yukonensis</i> | <i>T. s.</i> subsp. <i>spicatum</i> |
| <i>Shepherdia canadensis</i> | <i>Utricularia intermedia</i> |
| <i>Sibbaldia procumbens</i> | <i>U. vulgaris</i> subsp. <i>macrorhiza</i> |
| <i>Silene acaulis</i> subsp. <i>acaulis</i> | <i>Vaccinium uliginosum</i> subsp. <i>alpinum</i> (Blueberry, Asivit - food, fuel)* |
| <i>S. a.</i> subsp. <i>subacaulescens</i> | <i>V. u.</i> subsp. <i>microphyllum</i> (Blueberry, Asivit - food, fuel)* |
| <i>Silene repens</i> | <i>V. vitis-idaea</i> subsp. <i>minus</i> (Lingonberry, Cranberry, Kimingnat - food)* |
| <i>Smelowskia calycina</i> | <i>Valeriana capitata</i> (Valerian - medicine)* |
| <i>Solidago multiradiata</i> | <i>Viola epipsila</i> subsp. <i>repens</i> |
| <i>Sparganium hyperboreum</i> | <i>Wilhelmsia physodes</i> |
| <i>S. multipedunculatum</i> | <i>Woodsia alpina</i> + |
| <i>Spiraea beauverdiana</i> | <i>W. glabella</i> |
| <i>Stellaria calycantha</i> subsp. <i>interior</i> | <i>Zygadenus elegans</i> |
| <i>S. calycantha</i> var. <i>isophylla</i> | |
| <i>S. crassifolia</i> | |

+ Listed as rare vascular plants in: Argus, G.W. and K.M. Pryer 1990 Rare Vascular Plants in Canada. Canadian Museum of Nature.

* Locally used food or medicine plant.

Source:

Hulten, E., 1968. Flora of Alaska and Neighboring Territories. A Manual of the Vascular Plants. Stanford University Press. Stanford, California.

Argus G.W. and K. Pryer, 1990. Rare Vascular Plants in Canada. Canadian Museum of Nature. Ottawa.

APPENDIX A: PRINCIPLES OF WILDLIFE HARVESTING AND MANAGEMENT FROM THE INUVIALUIT FINAL AGREEMENT

1. A basic goal of the Inuvialuit Land Rights Settlement is to protect and preserve the arctic wildlife, environment and biological productivity through the application of conservation principles and practices.
2. In order to achieve effective protection of the ecosystems in the Inuvialuit Settlement Region, there should be an integrated wildlife and land management regime, to be attained through various means, including the coordination of legislative authorities.
3. It is recognized that in the future it may be desirable to apply special protective measures under laws, and from time to time enforcement to lands determined to be important from the standpoint of wildlife, research or harvesting. The appropriate ministers shall consult with the Inuvialuit Game Council from time to time on the application of such legislation.
4. It is recognized that one of the means of protecting and preserving the Arctic wildlife, environment and biological productivity is to ensure the effective integration of the Inuvialuit into all bodies, functions and decisions pertaining to wildlife management and land management in the Inuvialuit Settlement Region.
5. The relevant knowledge and experience of both the Inuvialuit and the scientific communities should be employed in order to achieve conservation.

APPENDIX B: GOALS AND PRINCIPLES OF THE INUVIALUIT RENEWABLE RESOURCE CONSERVATION AND MANAGEMENT PLAN

GOALS

1. **Conserve Resource Base.** To conserve arctic animals and plants and their associated ecosystems within the Inuvialuit Settlement Region.
2. **Integrated Management.** To provide for integrated renewable resource and land management.
3. **Co-operation.** To co-operatively manage shared resources.
4. **Enhance Understanding.** To enhance understanding and appreciation of arctic ecosystems.

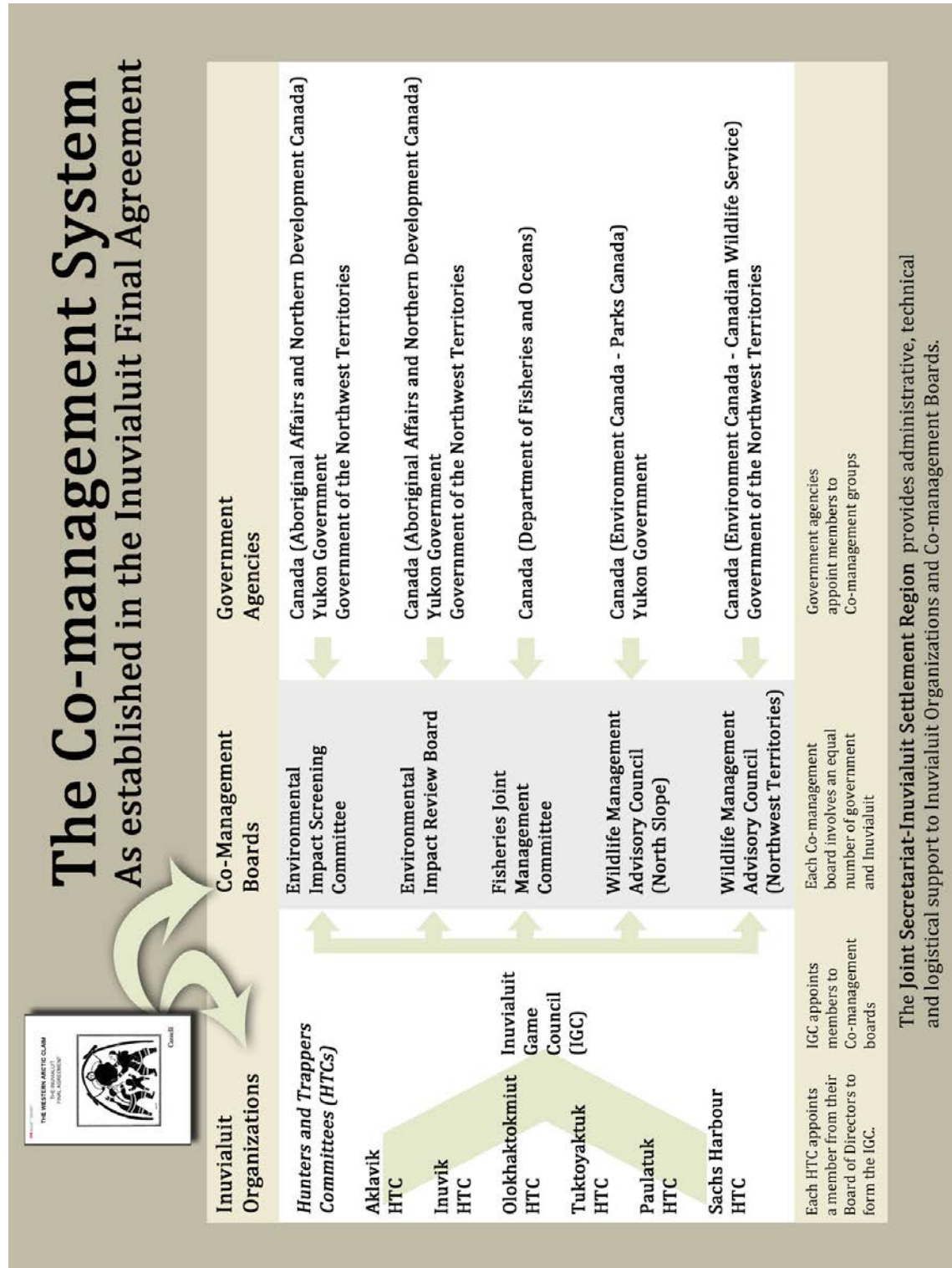
PRINCIPLES

1. **Diversity.** Maintaining the great variety of animals and plants will help ensure the stability and productivity of the arctic ecosystem.
2. **Productivity & Culture.** Maintenance of productive arctic ecosystems is essential for the survival of Inuvialuit cultural values, social systems, local economy and sense of wellbeing.
3. **Communication, Co-operation.** Long-term protection of ecosystems can best be achieved through active communication and co-operation of all parties concerned, including the combination of renewable resource and land management activities.
4. **Future Options.** Maintenance of the renewable resource base and its enhancement, where appropriate, will maximize Inuvialuit future options.
5. **Protection.** Special conservation measures, including new legislation, may be necessary from time to time, to protect the renewable resource base.
6. **Population Management.** Management of fish and wildlife resources as discrete populations, where these can be identified is essential to their conservation.
7. **Habitat.** Careful management of habitat is vital to the maintenance of abundant fish and wildlife populations.
8. **Resource Use.** Subsistence and recreational use of well-managed renewable resources is desirable and consistent with their conservation.
9. **Participation.** Participation of the Inuvialuit in renewable resource and land management is essential for the conservation of Arctic plants and animals and the habitats on which they depend.
10. **Indigenous Knowledge.** Inuvialuit knowledge and experience are essential elements in the proper management of renewable resources in the Settlement Region.

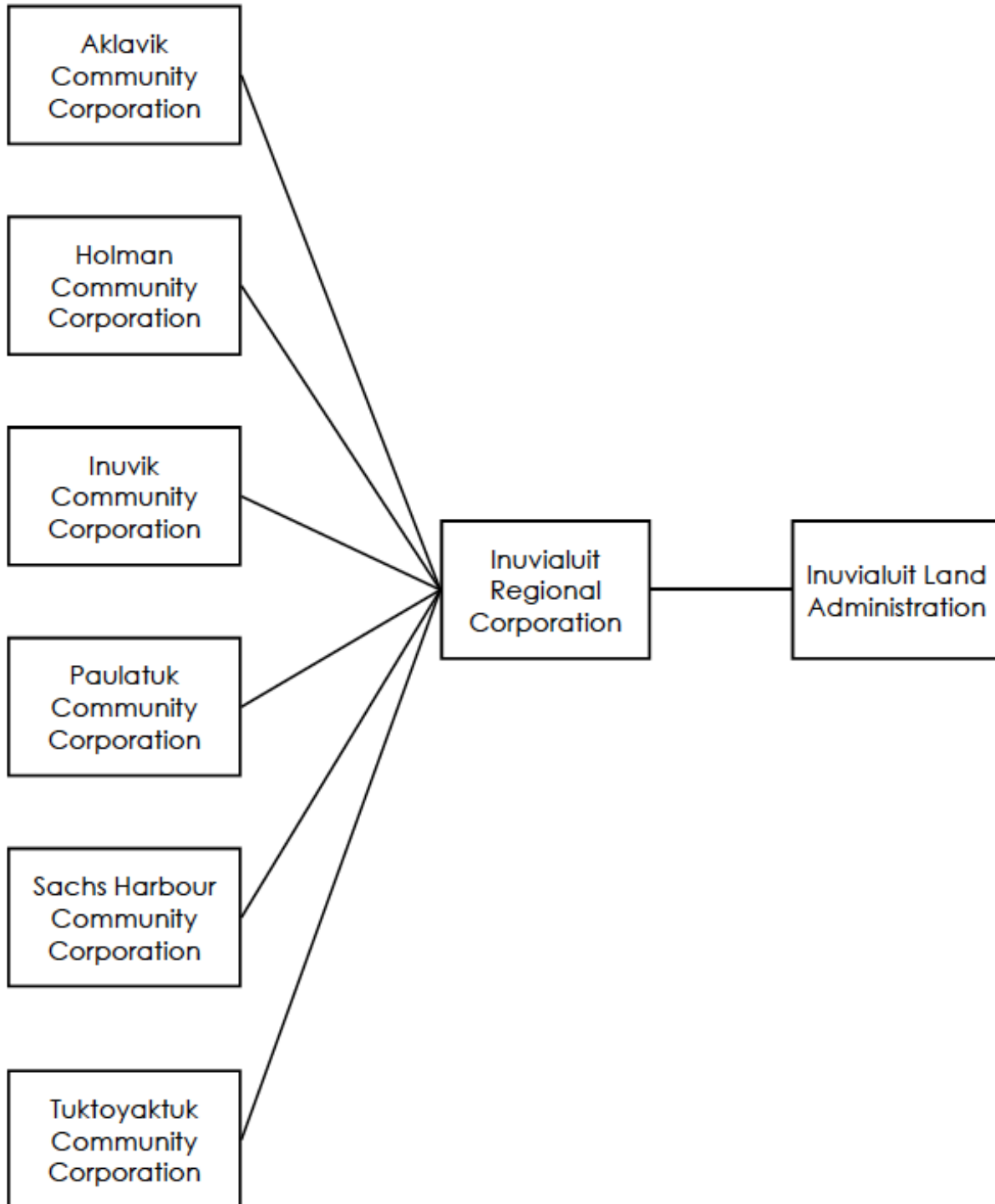
APPENDIX C: GOALS OF THE NORTH SLOPE WILDLIFE CONSERVATION AND MANAGEMENT PLAN

1. **Conservation of Wildlife and Habitat.** Ensure that the management of fish and other wildlife, as well as habitat and harvesting, occur according to conservation principles.
2. **Protection of the North Slope Environment.** Ensure a healthy North Slope environment to maintain its natural state, including its biological diversity and productivity.
3. **Enhanced inter-jurisdictional Cooperation.** Ensure integrated and coordinated management of North Slope wildlife and habitat through inter-jurisdictional and international cooperation.
4. **Involvement with User Groups in Management Decisions.** Ensure participation of all North Slope user groups in management decisions.
5. **Development within Environmental Limits.** Ensure that development activity does not compromise the environment, wildlife, habitat or native use of the Yukon North Slope.

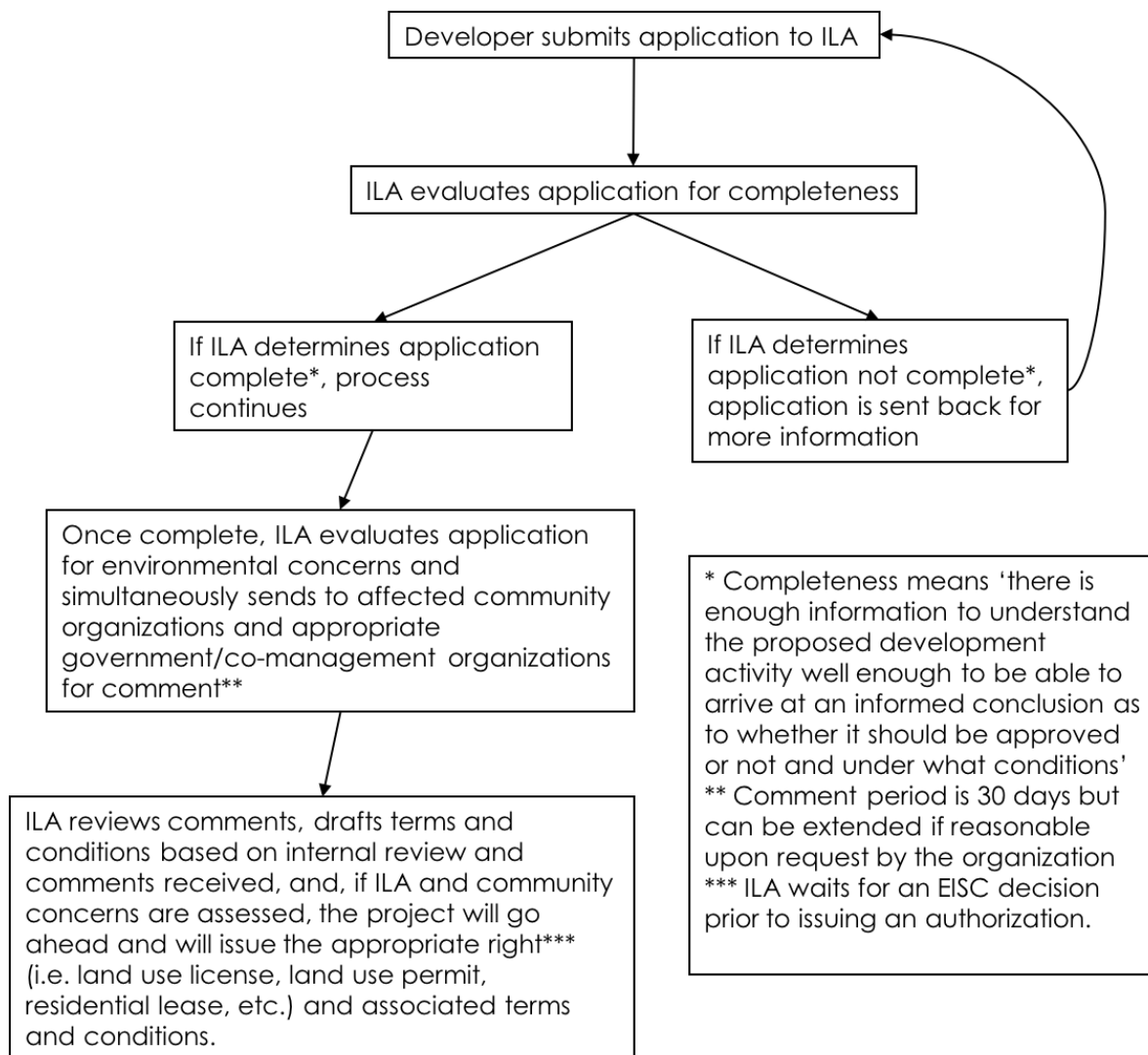
APPENDIX D: ORGANIZATION CHART FOR RENEWABLE RESOURCE MANAGEMENT UNDER THE INUVIALUIT FINAL AGREEMENT



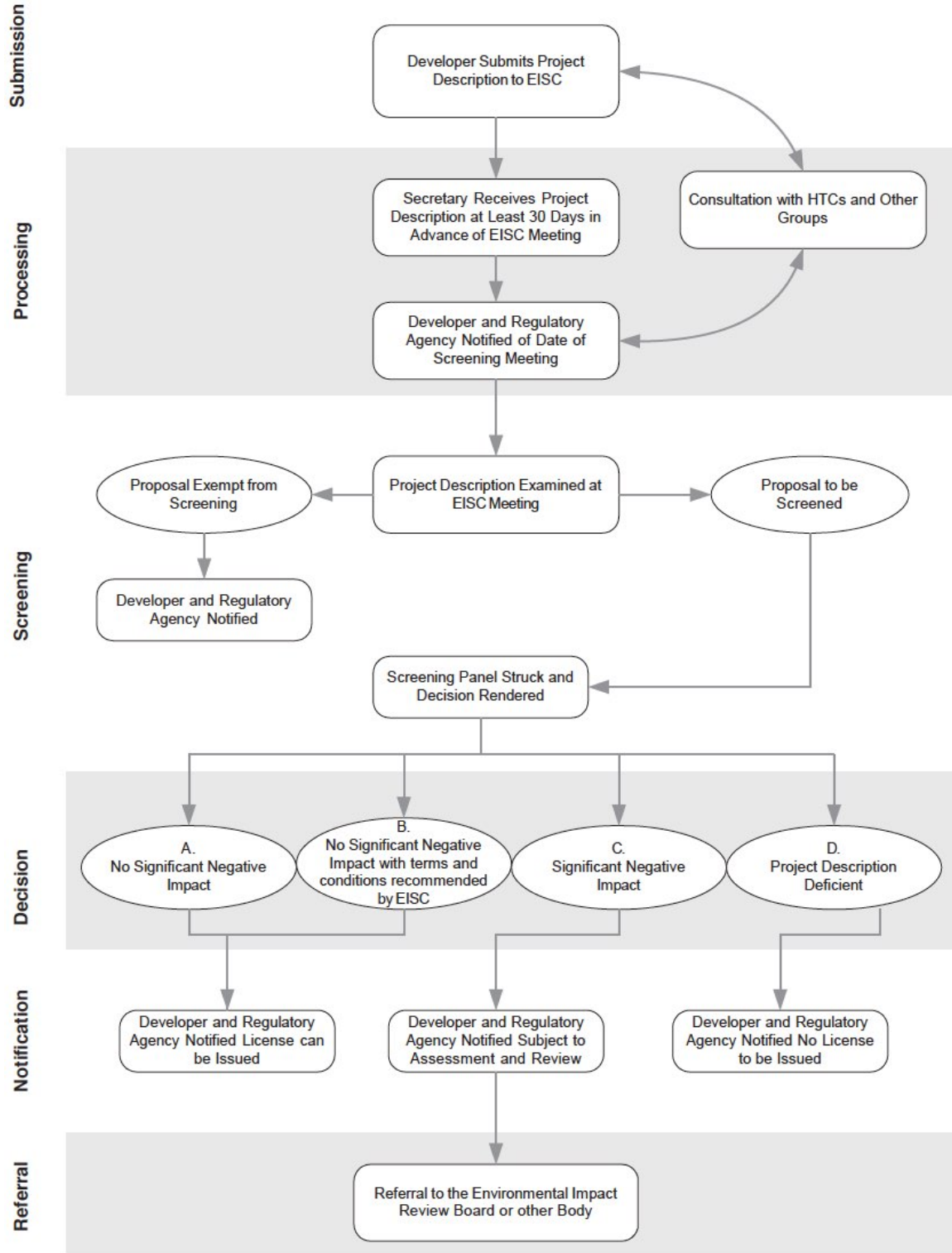
APPENDIX E: ORGANIZATION CHART FOR PRIVATE LAND MANAGEMENT UNDER THE INUVIALUIT FINAL AGREEMENT



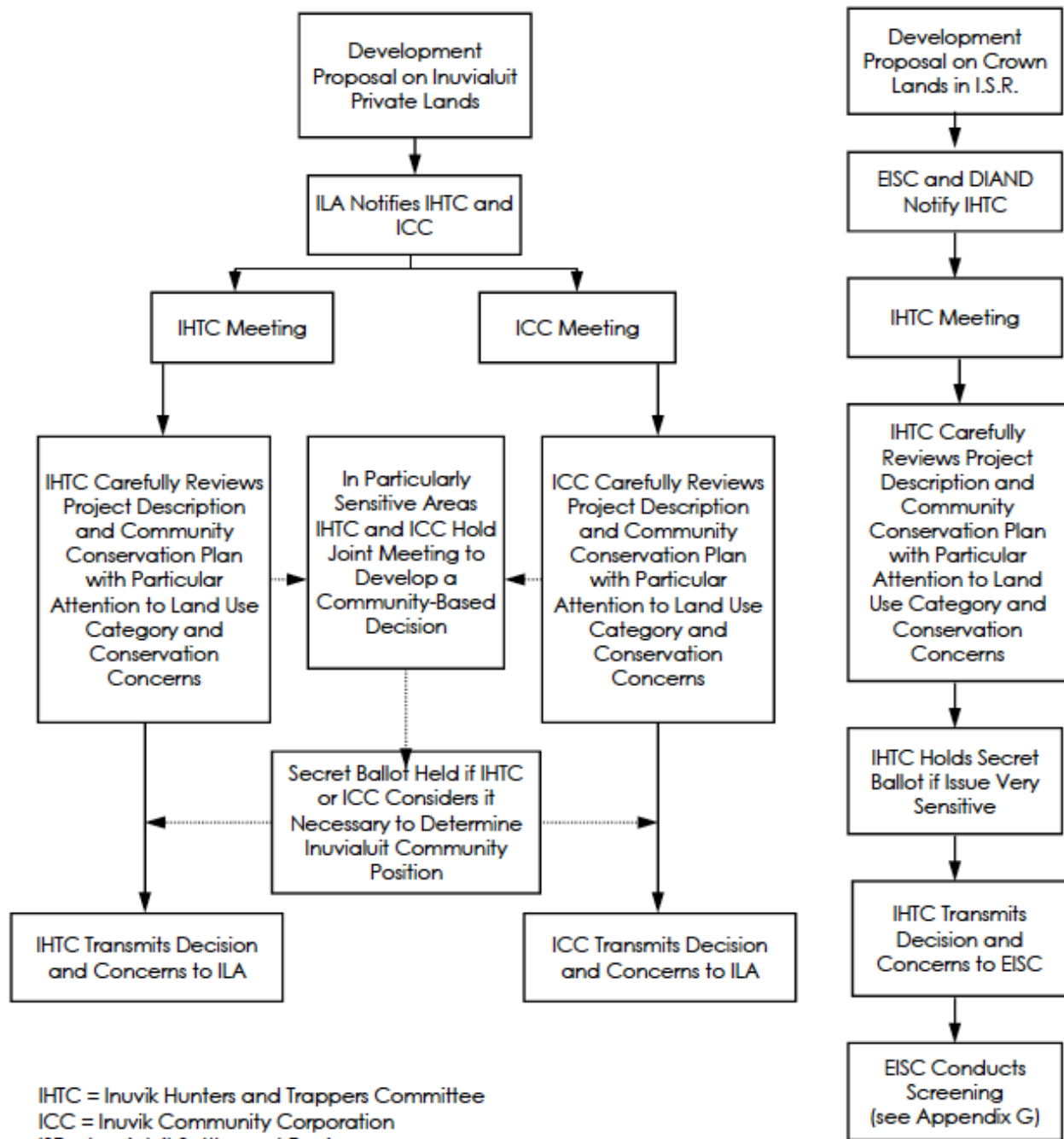
APPENDIX F: INUVIALUIT LAND ADMINISTRATION APPLICATION REVIEW PROCESS



APPENDIX G: INUVIALUIT SETTLEMENT REGION ENVIRONMENTAL IMPACT SCREENING AND REVIEW PROCESS



APPENDIX H: INUVIK LAND USE DECISION PROCESS



IHTC = Inuvik Hunters and Trappers Committee
 ICC = Inuvik Community Corporation
 ISR = Inuvialuit Settlement Region
 EISC = Environmental Impact Screening Committee
 DIAND = Department of Indian Affairs and Northern Development

APPENDIX I: CONDUCT OF OPERATIONS

Section 19. From Inuvialuit Land Administration Manual of Rules and Procedures

- 19(1) Activities Prohibited on Inuvialuit Land
- 19(2) Excavation
- 19(3) Water Crossings
- 19(4) Clearing of Lines, Trails or Rights of Way
- 19(5) Survey Monuments
- 19(7) Contingency Plans
- 19(8) Pingos
- 19(9) Archaeological Sites
- 19(10) Campsites
- 19(11) Sewage
- 19(12) Restoration of an Area
- 19(13) Removal of Buildings and Equipment
- 19(16) Emergencies
- 19(17) Display of Rights
- 19(18) Staking
- 19(19) Cutting of Trees
- 19(20) Availability of Rules and Procedures

CONDUCT OF OPERATIONS

ACTIVITIES PROHIBITED ON INUVIALUIT LAND

- 19(1) No Holder shall, unless expressly authorized in his Right or in writing by the Administrator or Inspector:
 - (a) Conduct an operation within 30 m (98 ft.) of a known monument or a known or suspected archaeological site or burial ground;
 - (b) When excavating Inuvialuit Land within 100 m (328 ft.) of any stream excavate at a point that is below the normal high water mark of that stream, except for buried pipelines;
 - (c) Deposit on the bed or on the ice of any waterbody any excavated material; or
 - (d) When placing a fuel or supply cache within 100 m (328 ft.) of any stream or waterbody, place the fuel or supply cache below the normal high water mark of that stream or waterbody;

EXCAVATION

- 19(2) Subject to the terms and conditions of his Right or the express written authority of an Inspector, every Holder, other than the Holder of a Quarry Licence, Quarry Concession or Concession, shall replace all materials removed by him in the course of excavating, other than rock trenching, and shall level and compact the area of excavation, except for backfill over buried pipelines and sumps.

WATER CROSSINGS

- 19(3) Subject to the terms and conditions of his Right or the express written authority of an Inspector, every Holder shall:
 - (a) Remove any material or debris deposited in any stream or waterbody in the course of an operation, whether for the purpose of constructing a crossing or otherwise, and
 - (b) Restore the channel and bed of the stream or waterbody to their original alignment and cross-

section, prior to the completion of the operations or prior to the commencement of spring break-up, whichever occurs first.

CLEARING OF LINES, TRAILS OR RIGHTS OF WAY

19(4) unless expressly authorized in a Right, no Holder shall:

- (a) Clear a new line, trail or right-of-way where there is an existing line, trail or right-of-way that can be used;
- (b) Clear a line, trail, or right-of-way wider than 10 m (33 ft.); or,
- (c) While clearing a line, trail or right-of-way, leave leaners or debris in standing timber.

19(5) Where, in the opinion of an Inspector, serious erosion may result from an operation, the Holder shall adopt such measures to control erosion as may be required by the Inspector.

SURVEY MONUMENTS

19(6) where a boundary, geodetic or topographic monument is damaged, destroyed, moved or altered in the course of an operation, the Holder shall, in accordance with these Rules and laws generally applicable:

- (a) report the fact immediately to the Administrator and respective authorities, and pay the costs of:
 - (i) investigating such damage, destruction, movement or alteration, and
 - (ii) restoring or re-establishing the monument to its original condition or its original place;or
- (b) cause the monument to be restored or re-established at his own expense.

CONTINGENCY PLANS

19(7) Holders of a Land Use Permit Class A, Commercial Lease Class 1, Well-Site Lease, Public Lease, Quarry Concession, Concession, Reconnaissance Permit, or Right of Way shall submit to the Administrator and, from time to time, update comprehensive contingency plans to cope with possible major accidents, disasters or catastrophic events during the operations.

PINGOS

19(8) No vehicle shall have access to any Pingo, including a zone of 100 meters (328 ft.) Surrounding such Pingo.

ARCHAEOLOGICAL SITES

19(9) Where in the course of an operation, a suspected archaeological site or burial ground is unearthed or otherwise discovered, the Holder shall immediately:

- (a) suspend the operation on the site; and
- (b) notify the Administrator or an Inspector of the location of the site and the nature of any unearthed materials, structures or artifacts.

CAMPSITES

19(10) Subject to the terms and conditions of the Right, every Holder shall dispose of all garbage, waste and debris from any campsite used in connection with an operation by removal, burning or burial or by such other method as may be directed by an Inspector.

SEWAGE

19(11) Sanitary sewage produced in connection with operations, shall be disposed of in accordance with the Public Health Ordinance of the Northwest Territories and any regulations made under the applicable Ordinance, or as stipulated by the Administrator.

RESTORATION OF AN AREA

19(12) Subject to the terms and conditions of the Right, every Holder shall, after completion of the operations, restore the area as nearly as possible to the same conditions as it was prior to the commencement of the operations.

REMOVAL OF BUILDINGS AND EQUIPMENT

19(13) Subject to subsections 19(14) and 19(15) hereof, every Holder shall, on completion of the operation, remove all buildings, machinery, equipment, materials and fuel drums or other storage containers used in connection with the operations.

19(14) A Holder may, with the prior written approval of the Administrator, leave on Inuvialuit Lands such buildings, equipment, machinery and materials as the permittee deems may be required for future operations or other operations in the area, but any equipment, machinery or materials so left shall be stored in a manner, at a location and for a duration approved by the Administrator, and apply for the reduction of the Land Occupancy Rent as provided for in subsection 17(14) hereof. Where applicable, the Holder may also make an Application for the reclassification of his Right.

19(15) Subject to any applicable mining legislation on 7(1)(b) Lands, a Holder may, without the prior approval of the Administrator, leave diamond drill cores at a drill site on Inuvialuit Lands.

EMERGENCIES

19(16) Any person may, in an emergency that threatens life, property or the natural environment, carry out such operations as he deems necessary to cope with the emergency, whether or not the operation is carried out in accordance with these Rules or any Right that he may have and such person shall immediately thereafter send a written report to the Administrator describing the duration, nature and extent of the emergency operation.

DISPLAY OF RIGHTS

19(17) Every Holder engaged in a work or undertaking authorized by a Right shall display:

- (a) an exact copy of the Right, including the conditions thereof, in a prominent place of the operations; and
- (b) the ILA number assigned to the Right on such articles and equipment, in such a manner and at such places as the Administrator may require.

STAKING

19(18) A person who desires to obtain a Quarry Concession, Coal Concession or Mineral Concession, shall stake such lands in the following manner:

- (a) the area shall not exceed the maximum area permitted by these Rules and the length of any areas shall not exceed twice its width;
- (b) the area shall be rectangular in form except where a boundary of a previously staked tract is adopted as common to both areas;
- (c) the land shall be marked by the applicant with posts firmly fixed in the ground, one at each corner; alternatively, rock cairns may be used in lieu of posts;
- (d) each post shall be at least 25 sq. cm (4 sq. in.) and when firmly planted shall not be less than 1.25 m (4 ft.) above the ground;
- (e) each post shall bear markings showing the number of the post, the name of the applicant, the date of the staking and the kind of materials which it is desired to remove;
- (f) when rock cairns are used they shall be well constructed and shall not be less than two feet high and two feet in diameter at the base and a metal container shall be built into the cairn, and a notice bearing the number of the cairn, name of the applicant, the date of the staking and the kind of material which it is desired to remove shall be placed therein;
- (g) in a timbered area the lines between the posts shall be clearly marked; and in treeless areas mounds of earth or rock not less than 6 m (2 ft.) high and 6 m (2 ft.) in diameter at the base may be used to mark the lines between the cairns;
- (h) the applicant shall post a written or printed notice on a post or in a cairn setting out his intention to apply for a Quarry Concession within the time prescribed by these Rules; or
- (i) if two or more persons apply for the same area, the person who first staked the area in accordance with these Rules shall be entitled to priority in respect to the issuance of a Quarry Concession.

CUTTING OF TREES

19(19) Holders shall only cut trees where there is no reasonable alternative than cutting trees for the creation of seismic lines, Right-of-Ways, or areas necessary for work camps or buildings. Otherwise, Holders shall under no circumstances cut trees unless specifically authorized in writing by the Administrator.

