# INUVIK INUVIALUIT COMMUNITY CONSERVATION PLAN

**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 Community of Inuvik,**
**the**
**Wildlife Management Advisory Council (NWT)**
**and the**
**Joint Secretariat**

**November 2008**

## 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
**DIAND -** Department of Indian Affairs and Northern Development
**DOT -** Department of Transportation
**DENR** - Department of Environment and Natural Resources (ENR)
**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
**IBP -** International Biological Programme
**IFA -** Inuvialuit Final Agreement
**IGC** - Inuvialuit Game Council
**IHTC** - Inuvik Hunters and Trappers Committee
**ILA -** Inuvialuit Land Administration
**ILAC** - Inuvialuit Land Administration Commission
**IRC -** Inuvialuit Regional Corporation
**ISR -** Inuvialuit Settlement Region
**NWMB -** Nunavut Wildlife Management Board
**NWT -** Northwest Territories
**PCMB** - Porcupine Caribou Management Board
**PWNHC** - Prince of Wales Northern Heritage Centre
**RRC -** Renewable Resource Council (Gwich'in)
**SRRB -** Sahtu Renewable Resource Board
**WMAC(NS)** - Wildlife Management Advisory Council (North Slope)
**WMAC(NWT) -** Wildlife Management Advisory Council (Northwest Territories)
**YTG -** Yukon Territorial Government

**June 2000**

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.

Inuvik Elders Committee

Inuvik Hunters and Trappers Committee

Inuvik Community Corporation

Frank Pokiak
Vice-Chair
Wildlife Management
Advisory Council (NWT)

Duane Smith
Chair
Inuvialuit Game Council

Robert Bell
Chair
Fisheries Joint
Management Committee

**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**

# TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY ..... 9
ACKNOWLEDGEMENTS ..... 10

1 INTRODUCTION ..... 11

1.1 A BRIEF HISTORY OF THE INUVIK AREA ..... 14

1.2 INUVIALIUT FINAL AGREEMENT AND RENEWABLE RESOURCE MANAGEMENT ..... 16
1.2.1 Inuvialuit Final Agreement ..... 16
1.2.2 Wildlife Management Advisory Councils (NWT and NS) and Fisheries Joint Management Committee ..... 16
1.2.3 Inuvialuit Game Council and Hunters and Trappers Committees ..... 16
1.2.4 Inuvialuit Land Administration ..... 16
1.2.5 Environmental Impact Screening Committee and Environmental Impact Review Board ..... 16

1.3 GWICH'IN TRANSBOUNDARY ISSUES ..... 17

2 COMMUNITY VALUES ..... 18

3 GOALS ..... 19

4 SPECIAL AREAS AND RECOMMENDED LAND USE PRACTICES FOR THE PLANNING AREA ..... 20

4.1 INUVIK SUBREGION - SPECIAL DESIGNATED LANDS ..... 21
4.1.1 General Land Use Guidelines ..... 53

4.2 INUVIALUIT COMMUNITY PROCESS FOR LAND USE DECISIONS ..... 54

4.3 CUMULATIVE IMPACTS MANAGEMENT ..... 54

4.4 ENVIRONMENTAL SCREENING & REVIEW ..... 55
4.4.1 Recommendations ..... 55

5 EDUCATION, TRAINING AND INFORMATION EXCHANGE ..... 57

6 WILDLIFE MANAGEMENT AND RESEARCH ..... 58

6.1 GENERAL GUIDELINES ..... 58
6.2 SUBSISTENCE AND COMMERCIAL HARVESTING - GENERAL GUIDELINES ..... 60
6.3 TOURISM GUIDELINES ..... 61
6.4 SPECIES CONSERVATION SUMMARIES ..... 62
*Beaver* ..... 63
*Black Bear* ..... 64
*Caribou* ..... 65

# TABLE OF CONTENTS (cont'd)

**Page**

*Foxes* ..... 71
*Grizzly Bear* ..... 72
*Lynx* ..... 75
*Marten* ..... 76
*Mink* ..... 77
*Moose* ..... 78
*Muskox* ..... 79
*Muskrat* ..... 80
*Polar Bear* ..... 81
*Snowshoe Hare* ..... 84
*Wolf* ..... 85
*Wolverine* ..... 87
*Beluga Whale* ..... 88
*Bowhead Whale* ..... 94
*Seals* ..... 97
Mammals Species List ..... 99

*Ducks* ..... 100
*Geese and Tundra Swan* ..... 103
*Loons* ..... 106
*Ptarmigan* ..... 107
*Sandhill Crane* ..... 108
*Eagles* ..... 109
*Peregrine Falcon, Gyrfalcon and Rough Legged Hawk* ..... 110
*Snowy Owl* ..... 111
Bird Species List ..... 112

*Arctic Charr* ..... 115
*Arctic Cisco* ..... 116
*Arctic Grayling* ..... 117
*Blue or Pacific Herring* ..... 118
*Broad Whitefish* ..... 119
*Burbot or Loche* ..... 120
*Coney or Inconnu* ..... 121
*Dolly Varden Charr* ..... 123
*Jackfish or Northern Pike* ..... 126
*Lake Trout* ..... 127
*Lake Whitefish / Crooked Backs* ..... 128
*Least Cisco or Big-Eyed Herring* ..... 129
Fish Species List ..... 130

*Insects* ..... 131

*Plants* ..... 132

HARVEST SEASONS IN THE INUVIK PLANNING AREA ..... 137

# APPENDICES


| | | Page |
|---|---|---|
| Appendix A | Principles of Wildlife Harvesting and Management from the Inuvialuit Final Agreement | 138 |
| Appendix B | Goals and Principles of the Inuvialuit Renewable Resource Conservation and Management Plan | 139 |
| Appendix C | Goals of the North Slope Wildlife Conservation and Management Plan | 140 |
| Appendix D | Organization Chart for Renewable Resource Management Under the Inuvialuit Final Agreement | 141 |
| Appendix E | Organization Chart for Private Land Management Under the Inuvialuit Final Agreement | 142 |
| Appendix F | Inuvialuit Land Administration Application Review Process | 143 |
| Appendix G | Inuvialuit Settlement Region Environmental Impact Screening and Review Process | 144 |
| Appendix H | Inuvik Land Use Decision Process | 145 |
| Appendix I | Conduct of Operations | 146 |

# MAPS

Page

Map 1. Inuvialuit Settlement Region and Private Lands ..... 12

Map 2. Inuvik Conservation Planning Area and Private Lands ..... 13

Map 3. Inuvik - West of Mackenzie Delta ..... 22

Map 4. Inuvik - Mackenzie Delta #1 ..... 23

Map 5. Inuvik - Mackenzie Delta #2 ..... 24

Map 6. Inuvik - East #1 ..... 25

Map 7. Inuvik - East #2 ..... 26

Map 8. Overlay of All Site Designations in the Inuvik Planning Area ..... 27

Map 9. Current Ranges of the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds ..... 69

Map 10. Entire Range and Calving Grounds of the Porcupine Caribou Herd ..... 70

Map 11. Grizzly Bear Management Areas ..... 74

Map 12. Polar Bear Management Zones ..... 83

Map 13. Beluga - Offshore Distribution in Summer ..... 92

Map 14. Summer Beluga Habitat and Traditional Whaling Camps ..... 93

Map 15. Summer Bowhead Whale Habitat ..... 96

Map 16. Locations of Lesser Snow Goose colonies in the Western Arctic and Wrangel Island ..... 105

## 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 updated 2000 Inuvik Inuvialuit Community Conservation Plan built upon the work of the original document. A Working Group was re-established as part of the review exercise, and extensive consultation was once again undertaken with Inuvialuit and non-Inuvialuit organizations.

In the spring of 2008 the conservation plans were updated with new working groups from each of the Inuvialuit communities.

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 two years. 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 four years.

## 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 wasn'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.

# 1 INTRODUCTION

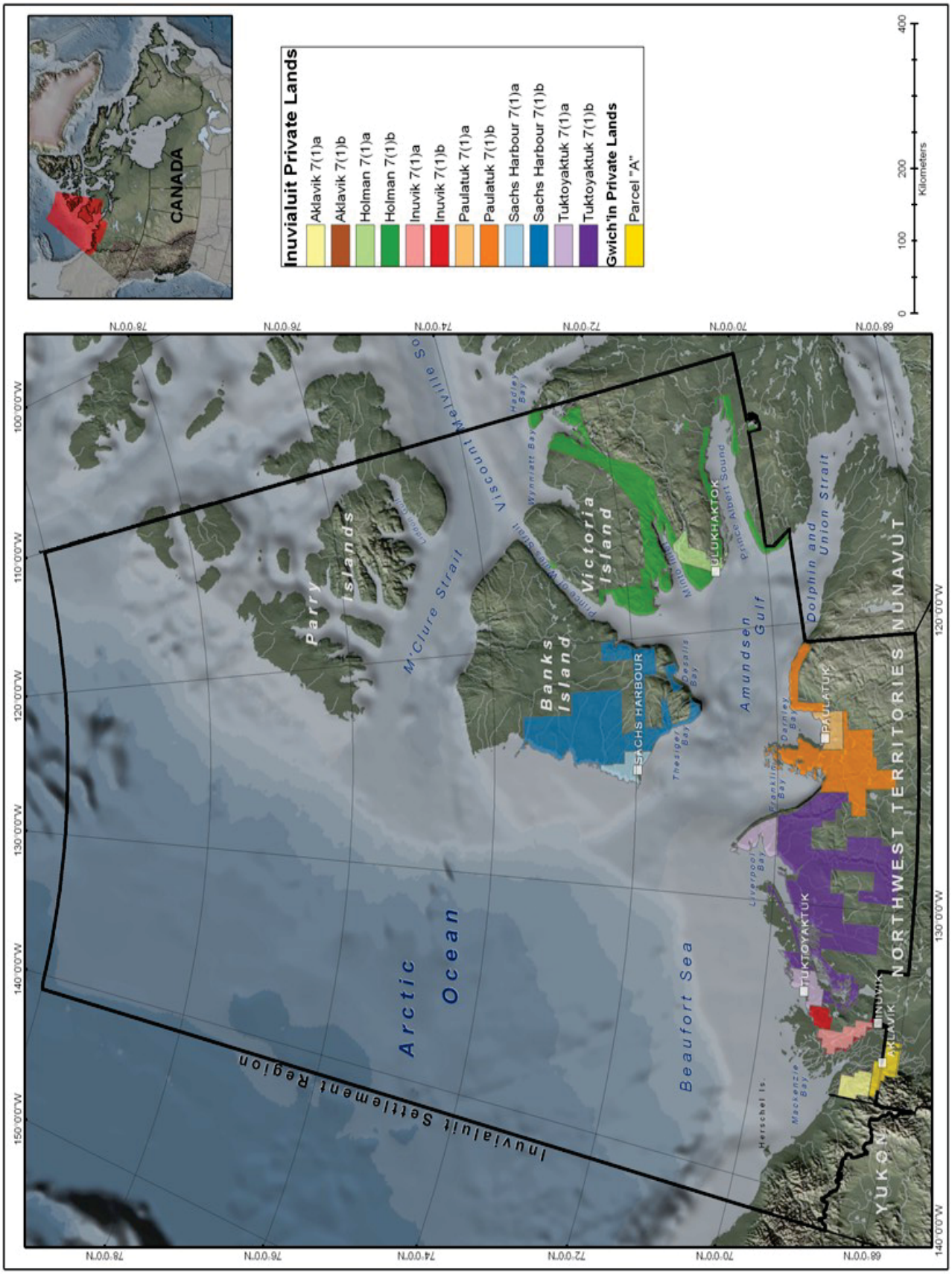
The people of the Mackenzie Delta and Yukon North Slope have relied upon the area's wildlife for many years. This plan was developed to help protect the environment in the Delta area and onshore and offshore areas to ensure cultural survival of the Inuvialuit Community, in accordance with the *Western 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.

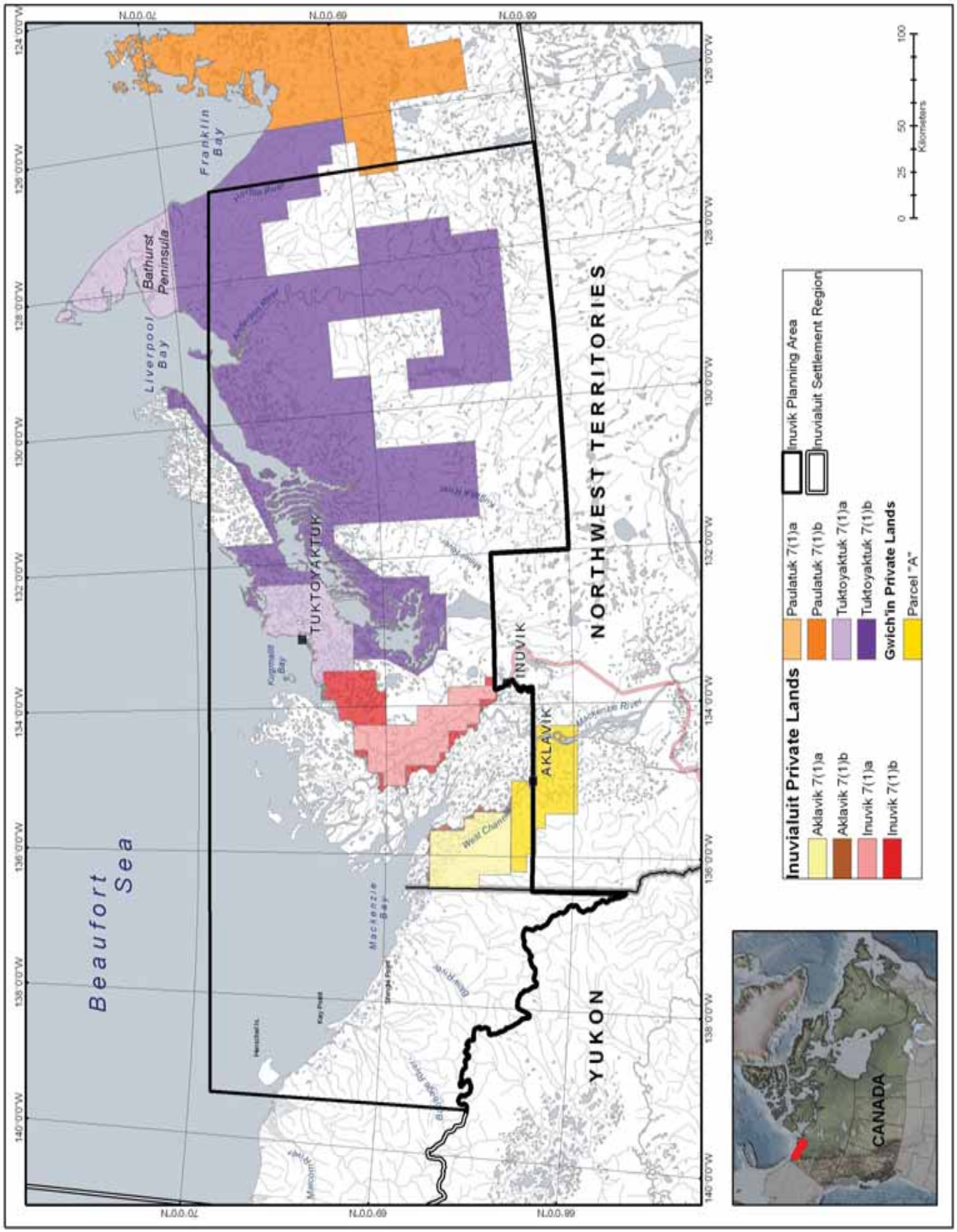
In addition, considerable effort was made to obtain opinion and advice from Inuvialuit and Gwich'in members of the Community as well as government agencies. The plan is intended to express the Inuvialuit community's specific goals and objectives with respect to conservation of lands, waters and living 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 of 1998-2000 that has produced the present version of the Plan was spearheaded by the IHTC, 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 in March 1999 to exchange advice and recommendations before the final version of the Community Conservation Plans were drafted.

The Inuvik Inuvialuit Community Conservation Plan has been formally adopted by the Inuvik Hunters and Trappers Committee (IHTC). The plan will be reviewed every two years by the Inuvik Community Conservation Plan Working Group and amended at that time if necessary. An additional annual progress evaluation will be conducted simultaneously by the IHTC. The Species Conservation Summaries will be updated every two years by the WMAC(NWT), with input from the appropriate agencies. A complete review of the plan, with all stakeholders, will occur a minimum of every four years.




Map 1: Inuvialuit Settlement Region and Private lands.




**Map 2. Inuvik Conservation Planning Area and Private Lands**

## 1.1 A BRIEF HISTORY OF THE INUVIK AREA

Inuvik is located on the east channel of the Mackenzie River Delta. It lies 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 school teacher 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 ratting 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 Kangegana. 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 (Maps 1 and 2). Development proposals on private land are screened by the ILA although they may also be referred to the Environmental Impact Screening Committee (EISC) by the Inuvialuit.

All applications submitted to the ILA are distributed to the local HTCs 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 which 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 among 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.

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 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 which 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 which 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 sensitivity 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.

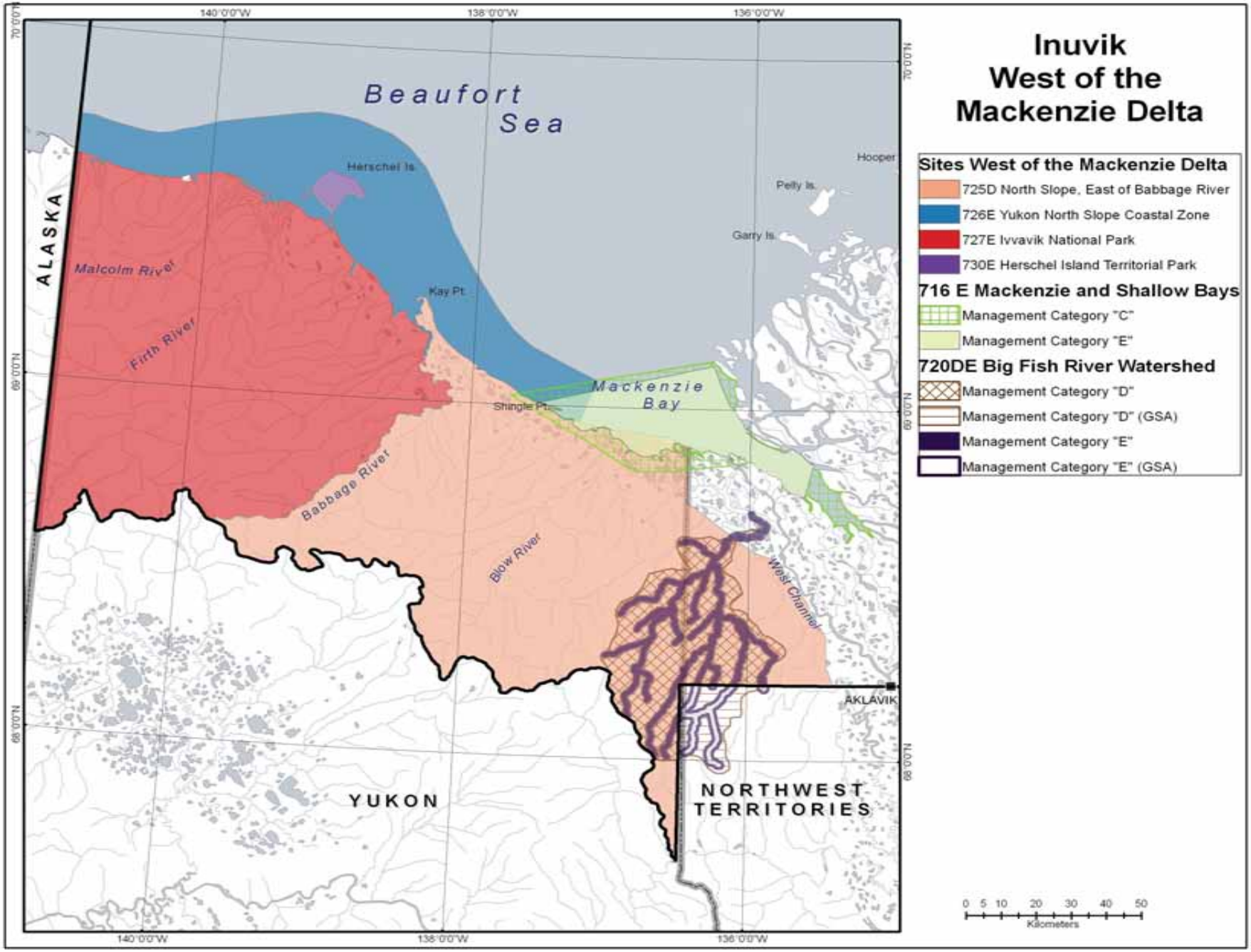
**Category D**
Lands and waters where cultural or renewable resources are of particular significance and sensitivity throughout the year. As with Category C, these areas shall be managed so as to eliminate, to the greatest extent possible, potential damage and disruption.

**Category E**
Lands and waters where cultural or renewable resources are of extreme significance and sensitivity. 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.

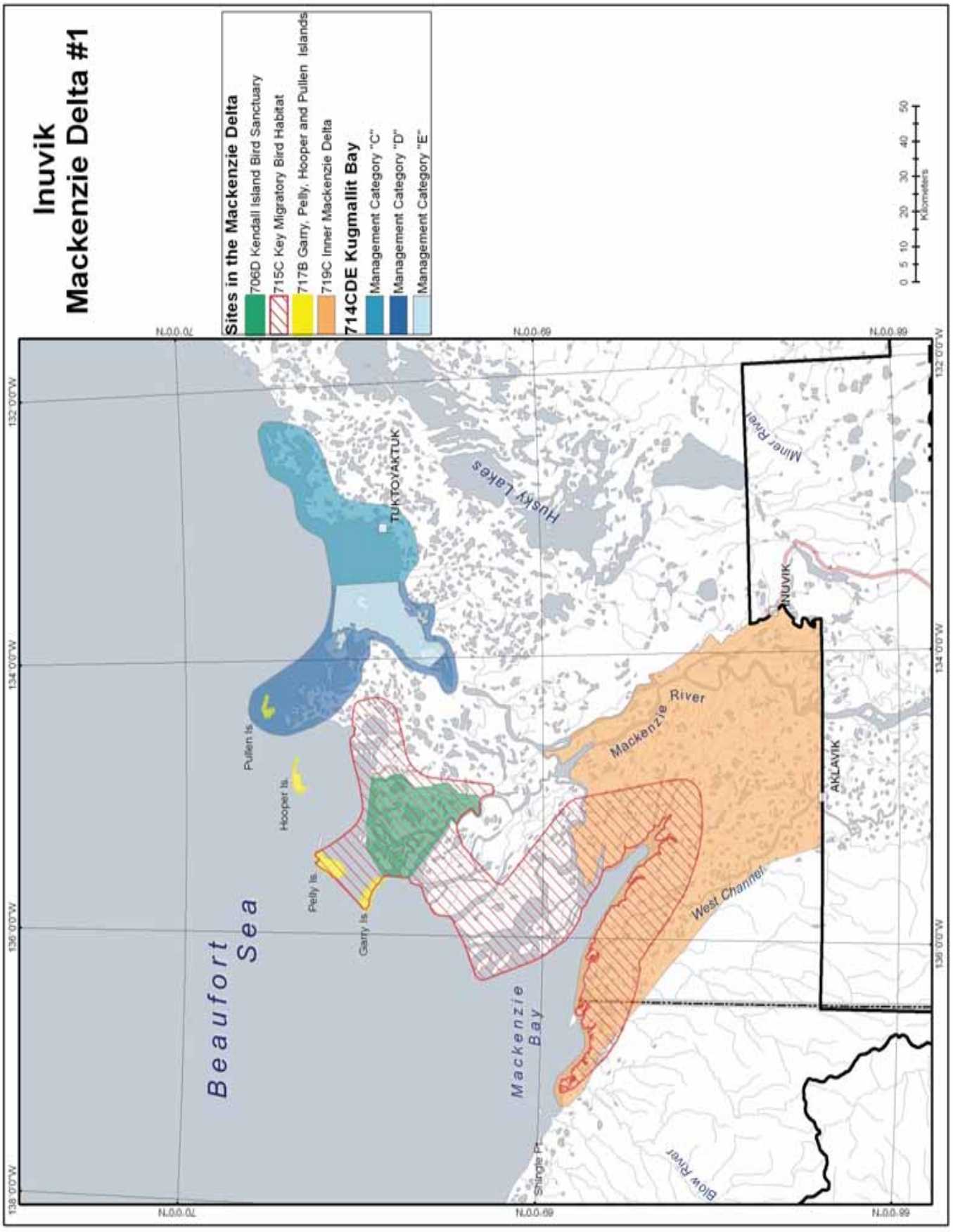
## 4.1 INUVIK SUBREGION - SPECIAL DESIGNATED AREAS

Maps and detailed description of the special designated lands listed below are described in the text which follows:

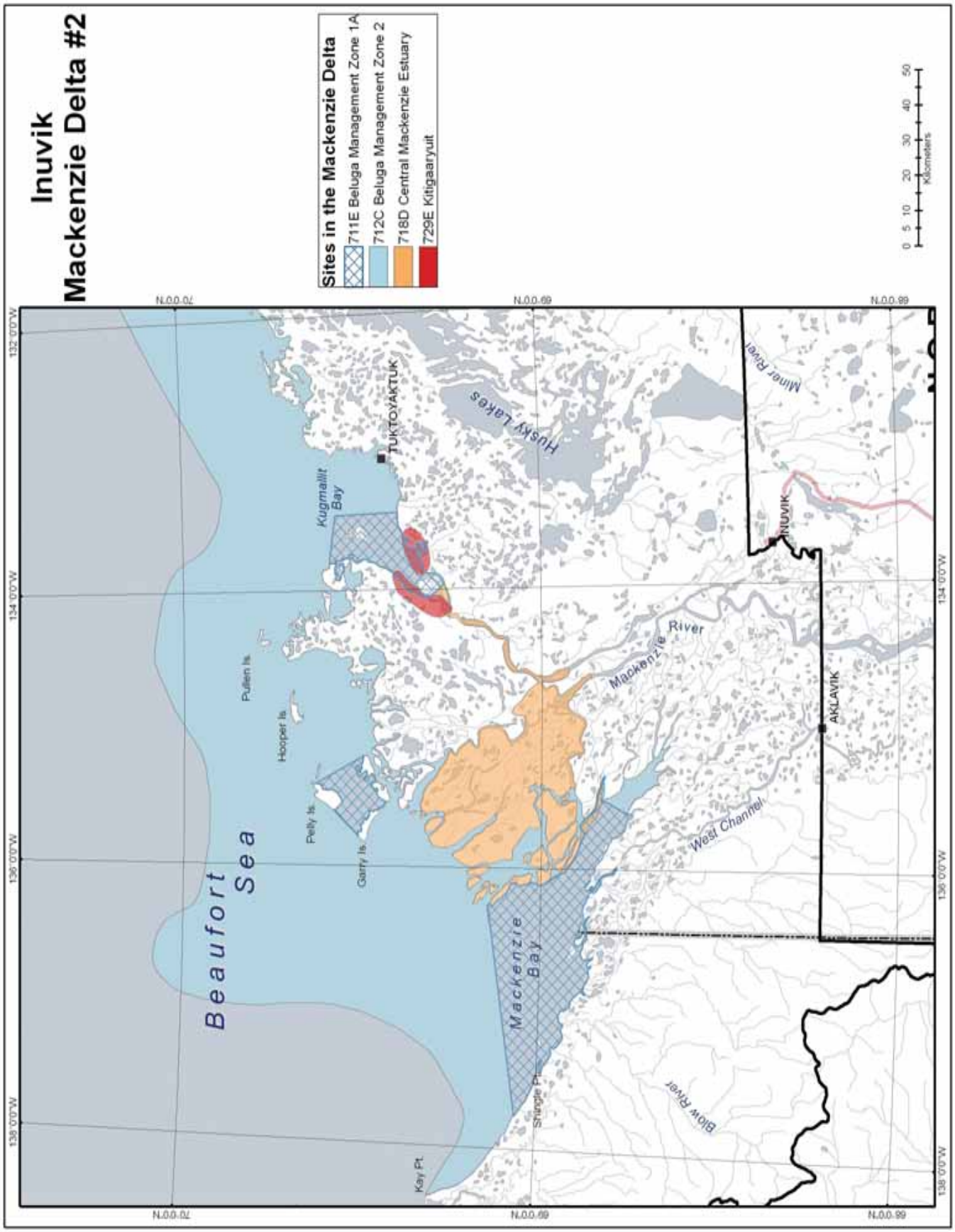

| Site No. | Name | Map No. |
|---|---|---|
| 200DE | Traditional Inuvialuit Camps and Cultural Sites | Map Not Available |
| 701E | Bluenose-West Caribou Herd Winter Range | 6 |
| 702B | Caribou Hills | 7 |
| 703D | Kugaluk River Estuary | 6 |
| 704C | Fish Lakes and Rivers | 6 |
| 705E | Husky Lakes | 7 |
| 706D | Kendall Island Bird Sanctuary | 4 |
| 707D | Anderson River Migratory Bird Sanctuary | 6 |
| 708B | Crossley Lakes | 7 |
| 709E | Fort Anderson | 7 |
| 710CD | Coastal Zones of the Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands | 7 |
| 711E | Beluga Management Plan Zone 1A | 5 |
| 712C | Beluga Management Plan Zone 2 - All Mackenzie Shelf Waters Shallower than 20 metres | 5 |
| 714CDE | Kugmallit Bay | 4 |
| 715C | Mackenzie River Delta Key Migratory Bird Habitat | 4 |
| 716CE | Mackenzie Bay and Shallow Bay | 3 |
| 717B | Garry & Pelly Islands | 4 |
| 718D | Central Mackenzie Estuary | 5 |
| 719C | Inner Mackenzie Delta | 4 |
| 720DE | Fish Hole / Cache Creek and Big Fish River | 3 |
| 725D | Eastern North Slope, East of Babbage River | 3 |
| 726E | Yukon North Slope Coastal Zone | 3 |
| 727E | Ivvavik National Park | 3 |
| 728E | Pingo Canadian Landmark | 7 |
| 729E | Kitigaaryuit | 5 |
| 730E | Herschel Island Territorial Park | 3 |



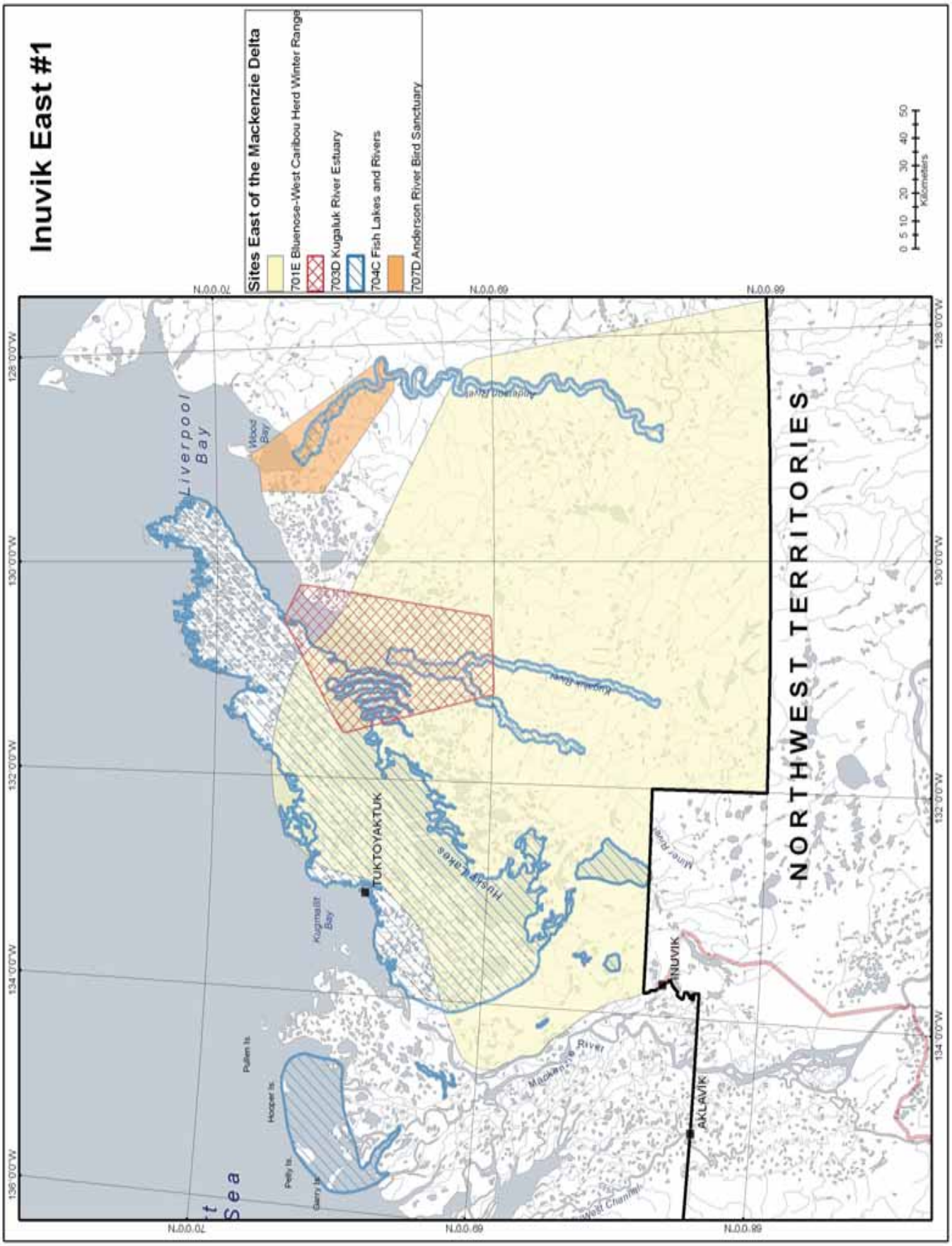

**Map 3. Inuvik - west of the Mackenzie Delta**



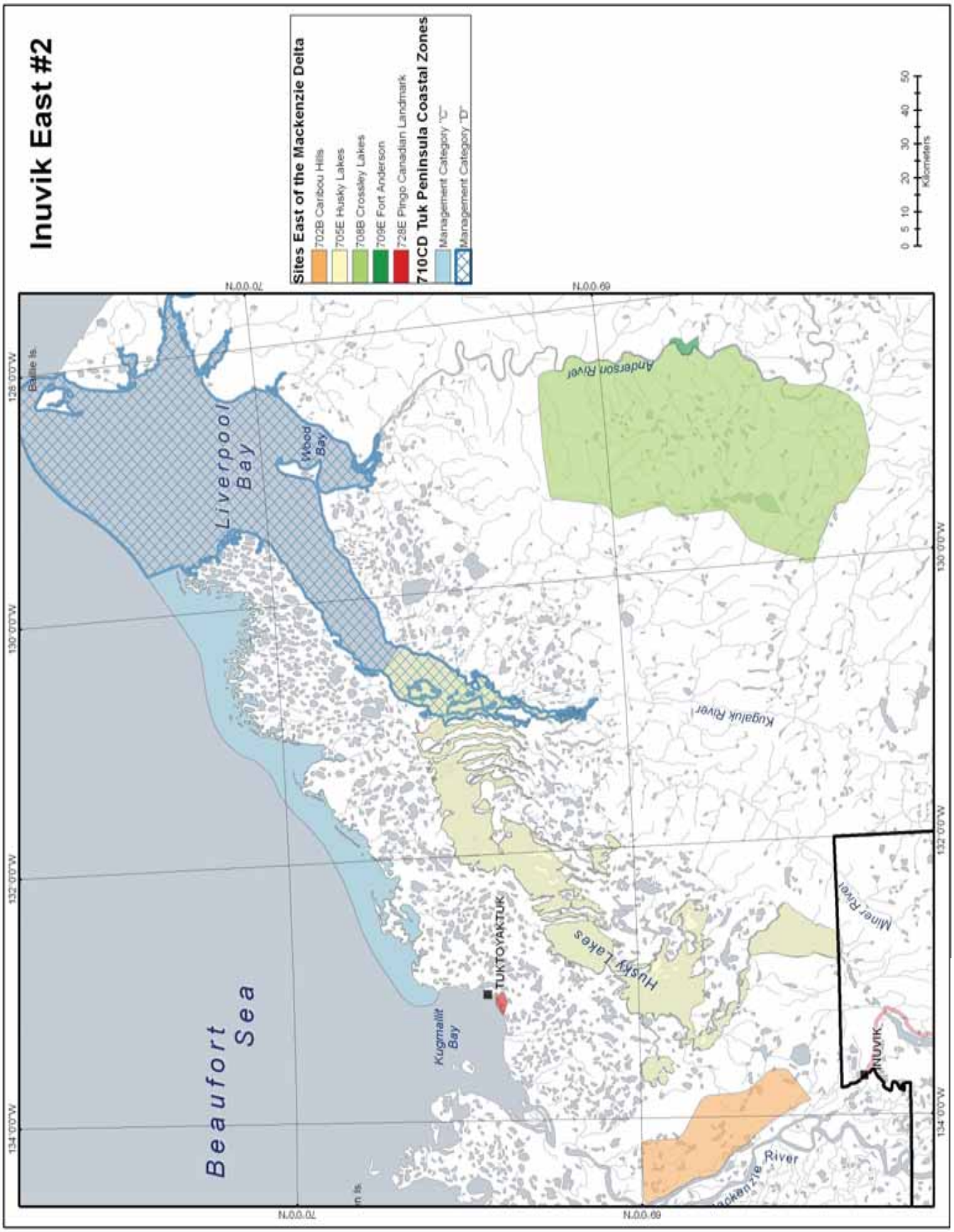

**Map 4. Inuvik - Mackenzie Delta #1**



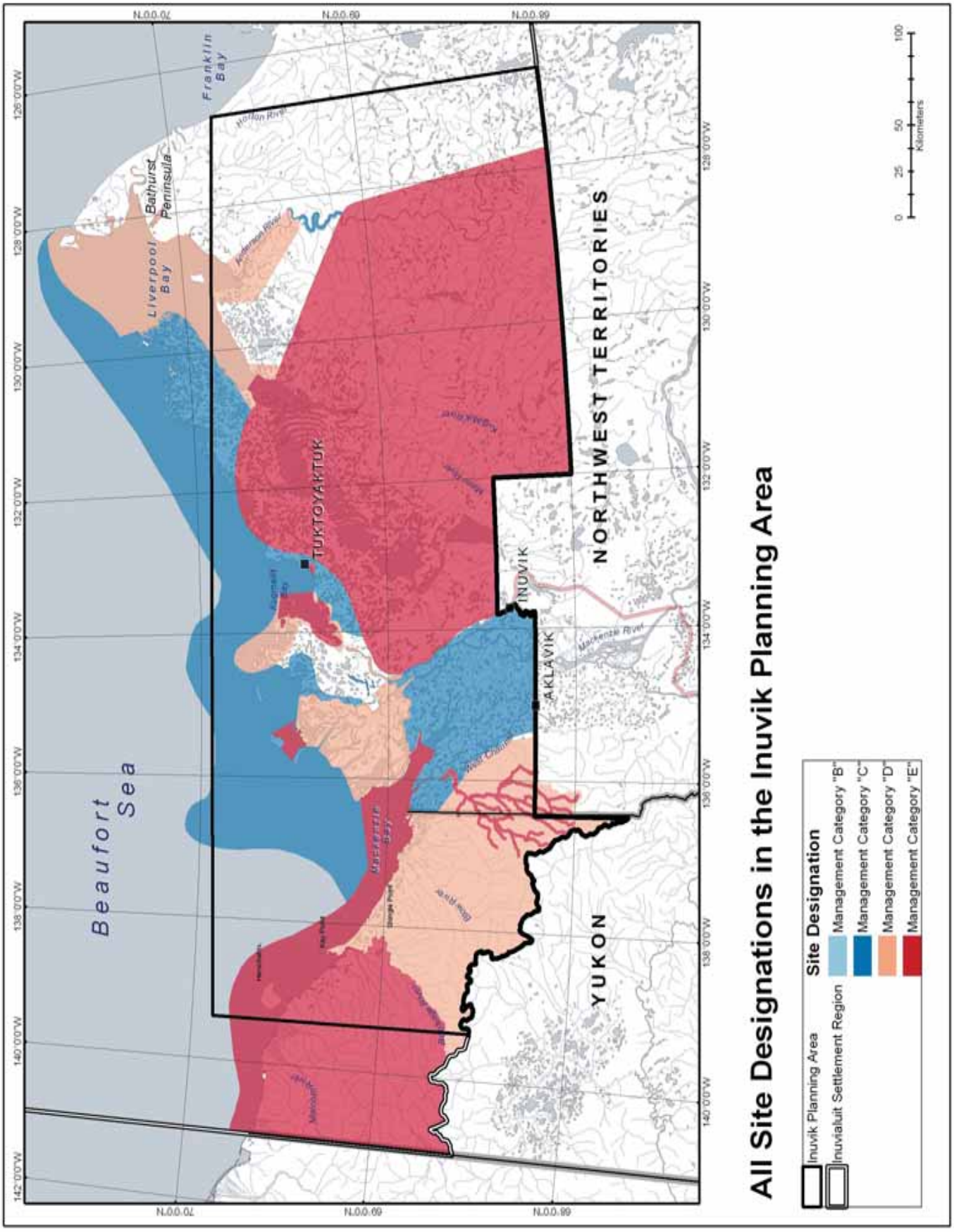

**Map 5. Inuvik - Mackenzie Delta #2**




Map 6. Inuvik - East #1




**Map 7. Inuvik - East #2**




**Map 8. Overlay of All Site Designations in the Inuvik Planning Area**

# INUVIK SUBREGION - SPECIAL DESIGNATED LANDS

## SITE NO. 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 Inuvialuit Settlement Region.

**Description**
The Inuvialuit of Inuvik have 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. These sites can be used by the community 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 Travaillant 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.

Proposed year-round road from Inuvik to Tuktoyaktuk.

**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. DIAND 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. DIAND should amend the Territorial Land Use Regulations and expand the buffer zone to protect archaeological sites from development to 100 metres (328 ft.).

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

## SITE NO. 701E BLUENOSE-WEST CARIBOU HERD WINTER RANGE

**Identified By**
Inuvik, Aklavik and Tuktoyaktuk Working Groups, and RWED

**Management Category**
B

**Ownership**
Private 7(1)a and 7(1)b lands and Crown lands within the ISR (Maps 1 and 2); Crown lands within the Gwich'in Settlement Region and the Sahtu Settlement Area.

**Description**
Starting at the southern ISR boundary, up to Tununuk, northeast to include the weatern 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 Bluenose-West caribou herd, which are valued for subsistence harvest year-round.

Due to the fact that the Bluenose caribou herd is relied upon for subsistence use by various Inuvialuit communities as well as aboriginal communities outside of the ISR, a Bluenose Caribou Co-management Plan and a Bluenose Caribou Herds Cooperation Management Agreement have been drafted with the cooperation of all stakeholders, to ensure proper management measures are in place.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Caribou Hills (Site No. 702B)
Kugaluk River Key Migratory Bird Terrestrial habitat (Site No. 703D)
Fish Lakes and Rivers (Site No. 704C)
Husky Lakes (Site No. 705E)
Crossley Lakes (Site No. 708B)
Fort Anderson (Site No. 709E)

**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 and Travaillant Lake regions.

**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.

Proposed year-round road from Inuvik to Tuktoyaktuk.

Proposed expansion and re-location 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 might negatively affect caribou movements which would in turn make subsistence hunting more difficult.

**Community Working Group Concerns**
That growth in tourism could disturb the herd or degrade its habitat.

**Community Working Group Recommendations**
See Conservation Measures in Section 6.4. (p.69)

## SITE NO. 702B CARIBOU HILLS

**Identified By**
Inuvik, Aklavik and Tuktoyaktuk Working Groups

**Management Category**
B

**Ownership**
Private 7(1)(a) lands within the Inuvialuit Settlement Region (Maps 1 and 2).

**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.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Bluenose Caribou Herd Winter Range (Site No. 701E)

**Overlapping Nonrenewable Resource Interests and Activities**
Operation and maintenance of Ikhil Natural Gas Pipeline.

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.

Several granular deposits identified in the area.

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Ikhil onshore natural gas pipeline to Inuvik has been constructed.

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

Reindeer Station has been identified as a potential Territorial Park or Historic Site.

**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 of this area's unique habitat.

## SITE NO. 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 Inuvialuit Settlement Region (Maps 1 and 2).

**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.

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.

Birds are present during part of the year - breeding season in May-August, and until September 1. Wetland habitat is sensitive year-round.

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

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

Denning habitat for barrenground 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 Lands of Territorial, National, and International Conservation Interest**
Bluenose Caribou Herd Winter Range (Site No. 701E)
Fish Lakes and Rivers (Site No. 704C)
Husky Lakes (Site No. 705E)
Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site No. 710CD)
Beluga Management Zone 2 (Site No. 712C)

**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.

**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 NO. 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 Inuvialuit Settlement Region (Maps 1 and 2).

**Description**
The site includes the rivers and lakes along the shoreline west of Tuktoyaktuk, inland to their headwaters, including Parsons and Yaya Lakes, also including Baby Island, Richard Island and Gary 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 Lands of Territorial, National, and International Conservation Interest**
Bluenose Caribou Herd Winter Range (Site No. 701E)
Kugaluk River and Estuary (Site No. 703D)
Husky Lakes (Site No. 705E)
Kendall Island Bird Sanctuary (Site No. 706D)
Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site No. 710CD)
Beluga Management Zone 1A (Site No. 711E)
Beluga Management Zone 2 (Site No. 712C)
Kugmallit Bay (Site No. 714CDE)
Gary and Pelly Islands (Site No. 717B)

**Overlapping Nonrenewable Resource Interests and Activities**
Operation and maintenance of Ikhil Natural Gas Pipeline.

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.

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

**Overlapping Military, Transportation, and Tourism Interests and Activities**
A North Warning System radar site borders this site.

Proposed year-round road from Inuvik to Tuktoyaktuk.
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.

**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 (Nalrugiav) and Kendall Island (subsistence whaling camp) from July 1 through August 31.

## SITE NO. 705E HUSKY LAKES

**Identified By**
Aklavik, Inuvik and Tuktoyaktuk Community Working Groups and DFO

**Management Category**
D

**Ownership**
Private 7(1)(b) lands within the Inuvialuit Settlement Region (Maps 1& 2).

**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 approximately 25 recreational, educational and trapping cabins located throughout the area.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Bluenose Caribou Winter Herd Range (Site No. 701E)
Kugaluk River and Estuary (Site No. 703D)
Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site No. 710CD)
Beluga Management Zone 2 (Site No. 712C)

**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 at Husky Lakes.

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Sports fishing by Tuktoyaktuk and Inuvik residents and tourists.

An automated North Warning System radar site borders this site.

Canoe route to Inuvik from Anderson River.

A proposed all-weather road between Tuktoyaktuk and Inuvik.

**Community Working Group Concerns**

That sports 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.

That a proposed all-weather road between Tuktoyaktuk and Inuvik may threaten the habitat.

**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 which 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 sports fishing licenses through Tuktoyaktuk HTC.

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.

## SITE NO. 706D KENDALL ISLAND BIRD SANCTUARY

**Identified By**

Canadian Wildlife Service

**Management Category**

D

Bird Sanctuary is legislatively protected under *Migratory Birds Convention Act, 1994*.

**Ownership**

Crown lands within Inuvialuit Settlement Region.

**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.

**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. 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..

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Beluga Management Zone 1A (Site No. 711E)
Beluga Management Zone 2 (Site No. 712C)
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715CE)
Central Mackenzie Estuary (Site No. 718D)

**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.

**Community Working Group Concerns**
This is a critical habitat for snow geese in spring; grizzly bears may have an impact on snow geese eggs.

**Community Working Group Recommendations**
Hire a monitor in spring to verify impact of grizzly bears on the local snow goose population.

## SITE NO. 707D ANDERSON RIVER MIGRATORY BIRD SANCTUARY

**Identified By**
Canadian Wildlife Service

**Management Category**
D

**Ownership**
Private 7(1)(b) lands within the Inuvialuit Settlement Region.

**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 Lands of Territorial, National, and International Conservation Interest**
Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site No. 710CD)
Beluga Management Zone 2 (Site No. 712C)

**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.

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Canoe route
**Community Working Group Concerns**
This is a critical habitat for snow geese in spring; grizzly bears may have an impact on snow geese eggs.

**Community Working Group Recommendations**
Hire a monitor in spring to verify impact of grizzly bears in the local snow goose population.

## SITE NO. 708B CROSSLEY LAKES

**Identified By**
Inuvik, Aklavik and Tuktoyaktuk Working Groups, and RWED

**Management Category**
B

**Ownership**
Private 7(1)(b) lands and Crown lands within the Inuvialuit Settlement Region (Maps 1 and 2).

**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.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Bluenose Caribou Herd Winter Range (Site No. 701E)

**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.

## SITE NO. 709E FORT ANDERSON

**Identified By**
Inuvik, Aklavik and Tuktoyaktuk Working Groups, and RWED

**Management Category**
E

**Ownership**
Crown lands within the Inuvialuit Settlement Region.

**Description**
Located east of Crossly Lakes, on the shore of the Anderson River.

**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 Lands of Territorial, National, and International Conservation Interest**
Bluenose Caribou Herd Winter Range (Site No. 701E)

**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.

## SITE NO. 710CD COASTAL ZONES OF THE TUKTOYAKTUK PENINSULA, LIVERPOOL BAY, WOOD BAY, 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 Inuvialuit Settlement Region (Maps 1 and 2)

**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**
Tuk Peninsula: migrating fish. Feeding and rearing areas in bays and lagoons.
McKinley Bay: may be a spawning area for Pacific herring.
Liverpool Bay: possible spawning habitat for Pacific herring.
Wood Bay/Baillie Islands: Important feeding, nursery, overwintering areas for both anadromous and marine species.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Bluenose Caribou Herd Winter Range (Site No. 701E)
Kugaluk River Estuary (Site No. 703D)
Husky Lakes (Site No. 705E)
Anderson River Bird Sanctuary (Site No. 707D)
Beluga Management Zone 2 (Site No. 712C)

**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.

## SITE NO. 711E BELUGA MANAGEMENT PLAN ZONE 1A

**Identified By**
Fisheries Joint Management Committee

**Land Management Category**
E

**Ownership**
Crown lands within the Inuvialuit Settlement Region.

**Description**
The zone includes about 1800 $km^2$ (695 $mi^2$) 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.

**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. Beluga in these areas are harvested by Inuvialuit from Inuvik, Tuktoyaktuk and Aklavik.

Guidelines for 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 hydro-electric 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 7 September.

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 Lands of Territorial, National, and International Conservation Interest**
Beluga Management Zone 2 (Site No. 712C)
Kugmallit Bay (Site No. 714CDE)
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715C)

Mackenzie Bay and Shallow Bay (Site No. 716CE)
Garry and Pelly Islands (Site No. 717B)
Central Mackenzie Estuary (Site No. 718D)
Inner Mackenzie Delta (Site No. 719C)
Eastern North Slope and East of Babbage River (Site No. 725D)
Kitigaaryuit (Site No. 729E)

**Overlapping Nonrenewable Resource Interests and Activities**
Potential oil and gas development.

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Water traffic: barges, local harvesters

Potential growth in eco-tourism in the area.

**Community Working Group Concerns and Recommendations**
See above Guidelines.

## SITE NO. 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 Inuvialuit Settlement Region (Maps 1 and 2)

**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 are widely distributed throughout the off-shore 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 begin 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 Lands of Territorial, National, and International Conservation Interest**
Anderson River Bird Sanctuary (Site No. 707D)
Coastal Zones of Tuktoyaktuk Peninsula, Liverpool Bay, Wood Bay, Baillie Islands (Site No. 710CD)
Beluga Management Zone 1A (Site No. 711E)
Beluga Management Zone 2 (Site No. 712C)
Kugmallit Bay (Site No. 714CDE)
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715C)
Mackenzie Bay and Shallow Bay (Site No. 716CE)

**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.

**Community Working Group Concerns and Recommendations**
See above Guidelines.

## SITE NO. 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 Inuvialuit Settlement Region.

**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 Lands of Territorial, National, and International Conservation Interest**
Beluga Management Zone 1A (Site No. 711E, see also Section 6.4 Beluga).
Beluga Management Zone 2 (Site No. 712C)
Central Mackenzie Estuary (Site No. 718D)
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.

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.

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Canoe, kayak and boat trips to Tuktoyaktuk from Inuvik.

**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. RWED, along with the HTCs, should regulate whale watching tours as stated in the Beluga Management Plan, through application of the Beluga Protection Regulations and the Hunters and Trappers Committee Bylaws.

3. DIAND should ensure no oil and gas seismic or production activities is allowed in the Zone 1a of Kugmallit Bay year-round, as outlined in the Beluga Management Plan (FJMC 1998).

4. FJMC and DIAND 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 DIAND 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 DIAND should ensure seals, their habitat and food sources are protected from July to September during fish runs/migrations.

7. FJMC and DIAND 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 NO. 715C MACKENZIE RIVER DELTA KEY MIGRATORY BIRD HABITAT

**Identified By**
Inuvik and Aklavik Working Groups and Canadian Wildlife Service

**Management Category**
C

**Ownership**
Private 7(1)(a) lands and Crown lands and waters within the Inuvialuit Settlement Region (Maps 1 and 2).

**Description**
Total area is 2,889 $km^2$ (1115 $mi^2$) The habitat zone includes Shallow Bay, Olivier and Ellice Islands, 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 June 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 (June to September).

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Kendall Island Bird Sanctuary (Site No. 706D)
Beluga Management Zone 1A (Site No. 711E)
Beluga Management Zone 2 (Site No. 712C)
Mackenzie Bay and Shallow Bay (Site No. 716CE)
Garry and Pelly Islands (Site No. 717B)
Central Mackenzie Estuary (Site No. 718D)
Inner Mackenzie Delta (Site No. 719C)
Fish Hole/Cache Creek And Big Fish River (Site No. 720DE)

**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.

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**
Some tourism activity at Kendall Island whaling camps.

Canoe and kayak tourism.

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 and DIAND 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 NO. 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 within the Inuvialuit Settlement Region; and within the Yukon Territory.

**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. Feeding and nursery area for young fish. Concentration area for major part of beluga population - late June to early August.

Important traditional fishing area.

**Overlapping Lands of Territorial, National, and International Conservation Interest**

Beluga Management Zone 1A (Site No. 711E).
Ivvavik National Park (Site No 727E).

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.

Canadian Nature Federation identifies Beaufort Coast from Herschel Island to Bathurst Peninsula as important for protection because of important caribou habitat, waterfowl staging area and sensitivity of highly patterned ground, underlain by permafrost. Identifies Cape Herschel because it is a notable historic site.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Beluga Management Zone 1A (Site No. 711E)
Beluga Management Zone 2 (Site No. 712C)
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715C)
Central Mackenzie Estuary (Site No. 718D)
Inner Mackenzie Delta (Site No. 719C)
Eastern North Slope and Babbage River (Site No. 725D)

**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.

**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 whaling 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. RWED, along with HTCs, should regulate whale watching tours through the application of the Beluga Protection Regulations and the Hunters and Trappers Committee Bylaws (FJMC, 1998).

3. DIAND 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 NO. 717B GARRY AND PELLY ISLANDS

**Identified By**
Inuvik, Aklavik and Tuktoyaktuk Working Groups and RWED

**Management Category**
B

**Ownership**
Crown lands within Inuvialuit Settlement Region. (See Maps 1 and 2)

**Importance of the Site to the Community of Inuvik**
Important geomorphology features, vegetation, and waterfowl nesting.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Beluga Management Zone 1A (Site No. 711E)
Beluga Management Zone 2 (Site No. 712C)
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715C)

**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.

## SITE NO. 718D CENTRAL MACKENZIE ESTUARY

**Identified By**
Department of Fisheries and Oceans

**Management Category**
D

**Ownership**
Private 7(1)(a) lands and Crown lands within Inuvialuit Settlement Region.

**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.

Overwintering and nursery areas for a variety of fish.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Kendall Island Bird Sanctuary (Site No. 706D)
Beluga Management Zone 1A (Site No. 711E)
Beluga Management Zone 2 (Site No. 712C)
Kugmallit Bay (Site No. 714CDE)
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715C)
Inner Mackenzie Delta (Site No. 719C)

**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.

## SITE NO. 719C INNER MACKENZIE DELTA

**Identified By**
Inuvik and Aklavik Working Groups and DFO

**Management Category**
C

**Ownership**
Private 7(1)(a) lands, Crown lands and Gwich'in private lands (Parcel A) within the Inuvialuit Settlement Region.

**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 being the ISR boundary line.

**Importance of the Site to the Community of Inuvik**
Important habitat for fish, waterfowl, moose and furbearers.

Important area to the people of Aklavik for trapping and hunting muskrats during the spring and setting fish nets at all times of the year.

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 Aklavik 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 and smelt.

Migration routes for anadromous arctic charr and coregonids.

Spawning areas - overwintering.

Lakes are feeding areas, or suspected spawning, nursery, overwintering areas for coregonids and fish.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Beluga Management Zone 1A (Site 711E)
Beluga Management Zone 2 (Site 712C)
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715C)
Mackenzie Bay and Shallow Bay (Site No. 716CE)
Central Mackenzie Estuary (Site No. 718D)
Fish Hole/Cache Creek And Big Fish River (Site No. 720DE)
First Creek Watershed (Site No. 723C)

**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.

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

Inuvik is concerned 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. DIAND 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 NO. 720DE FISH HOLE/CACHE CREEK 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 and Gwich'in private lands (Parcel A) within the Inuvialuit Settlement Region and the Gwich'in Settlement Area.

**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 charr.

Anadromous and non-anadromous charr. Cache Creek has overwintering and spawning habitat. Fishery was closed in 1987.

Canoe Lake is an important caribou harvesting area from the last week of September to December.

Important habitat for caribou and furbearing animals.

Unglaciated and rich in plant species.

**Overlapping Lands of Territorial, National and International Conservation Interest**
Mackenzie River Delta Key Migratory Bird Habitat (Site No. 715C)
Inner Mackenzie Delta (Site No. 719C)
First Creek Watershed (Site No. 723C)
Eastern North Slope and Babbage River (Site No. 725D)

**Community Working Group Concerns**
Aklavik is concerned that the number of charr may never return to a sustainable harvesting level. The HTC closed the stock off from fishing in 1987. A 1998 charr study suggests continued low abundance.

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

**Community Working Group Recommendations**
1. The FJMC should prepare a species management plan for charr in Fish Hole/Cache Creek.

2. More effort should be made at understanding why fish stocks have declined, and restoring fish populations and habitat.

3. Potential for habitat enhancement should be examined by FJMC.

## SITE NO. 725D EASTERN NORTH SLOPE, EAST OF BABBAGE RIVER

**Identified By**
Aklavik and Inuvik Community Working Groups

**Management Category**
D

**Ownership**
Private 7(1)(a) lands, Crown lands and Gwich'in private lands (Parcel A) within the Inuvialuit Settlement Region, straddling the Yukon and NWT border.

**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 site has been withdrawn from any potential industrial development.

The site is important habitat for Porcupine caribou. 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.

Important habitat for thinhorn 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.
Geese use the area for fall staging, and swans use the area for summer moulting and nesting.

The southeast portion of the area is important for:
Year-round range of the Dall Sheep, including their lambing and rutting areas. Important nesting habitat for peregrine and gyrfalcons. Important charr spawning, overwintering, and spring habitat at Fish Creek.

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

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Fish Hole/Cache Creek And Big Fish River (Site No. 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 air strip and gravel pads remain.

Previous 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.

Kayak tourism.

**Community Working Group Concerns**
That 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 may , if implemented, negatively affect habitat, especially that related to caribou and waterfowl.

**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.

## SITE NO. 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 Inuvialuit Settlement Region.

**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 Arctic charr from North Slope and Mackenzie rivers.

Major migration route for cisco from Mackenzie River to Alaska.

Important habitat for bowhead whales from June to September.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Beluga Management Zone 2 (Site 712C)
Herschel Island Territorial Park (Site No. 730E)

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Occasional cruise ship traffic and daily air traffic to Herschel Island Territorial Park during the summer. Raft trips on Firth River. Kayak tourism along the coast.

## SITE NO. 727E IVVAVIK NATIONAL PARK

**Identified By**
Canadian Parks Service

**Management Category**
E

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

**Ownership**
Crown lands within the Inuvialuit Settlement Region.

**Description**
Yukon North Slope west of Babbage River to Alaskan border.

**Importance of the Site to the Community of Inuvik**
Unglaciated areas resulting in exceptional geomorphology.

Exceptional permafrost phenomena.

Diverse vegetation.

Highly productive wildlife habitat.

Migrating route of Porcupine caribou herd.

Important fish habitat.

Highly significant archaeological and historic sites.

Tourism values.

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Raft trips on Firth River. Canoe and kayak tourism. Hikers.

**Community Recommendation**
The community supports the Ivvavik National Park Management Plan.

## SITE NO. 728E PINGO CANADIAN LANDMARK

**Identified By**
Canadian Parks Service 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 Inuvialuit Settlement Region (Maps 1 and 2). 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 $km^2$ (6.3 $mi^2$).

**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.

**Overlapping Military, Transportation, and Tourism Interests and Activities**
An automated North Warning System is operating in Tuktoyaktuk.

## SITE NO. 729E KITIGAARYUIT

**Identified By**
Parks Canada

**Management Category**
D

**Ownership**
Private Lands within the Inuvialuit Settlement Region.

**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 west 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.

## SITE NO. 730E HERSCHEL ISLAND TERRITORIAL PARK

**Identified By**
Yukon Territorial Government

**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 Inuvialuit Settlement Region; 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.

One of few known nesting sites in the western Arctic for black guillemot.

**Overlapping Lands of Territorial, National, and International Conservation Interest**
Yukon North Slope Coastal Zone (Site No. 726E)

**Overlapping Military, Transportation, and Tourism Interests and Activities**
Day and overnight visitors. Hikers. Occasional cruise ship.

**Community Recommendation**
The community supports the development 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 DIAND 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, DIAND 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 DIAND, are responsible for attaching conditions to land use permits. RWED issues wildlife research permits and 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. DIAND and ILA work together wherever possible to develop a consistent set of general land use procedures.

2. 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).

3. 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.

4. 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).

5. 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.

6. Consultation - The Community should be consulted on all land use activities in the Inuvik Planning Area.

7. 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, DIAND) shall investigate immediately and take appropriate action which, with HTC support, may include revoking permits.

8. 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).

9. 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;

    (b) 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;

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

(d) 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.

(e) Through its HTC, advise the EISC or ILA of community concerns about development projects in the Inuvik Planning area;

(f) 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.

(g) 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 video tape or tapes on the local ecosystem, the people, conservation practices and the Inuvialuit Final Agreement.

(b) Organize training for local Inuvialuit in environmental inspection and monitoring as well as proper harvesting techniques.

(c) Prepare summaries (written summaries and as translated audio tapes) of the Inuvik Inuvialuit Community Conservation Plan suitable for school use and for elders.

(d) Prepare home education package (for delivery by parents) to convey cultural language and conservation.

(e) Develop and implement a Community Information Program to present and explain the Inuvik Inuvialuit Community Conservation Plan.

(f) Promote the use of environmentally friendly products and proper handling of hazardous wastes.

(g) Encourage researchers visiting the area to make presentations to the Community, and to convey the results of their studies.

(h) Continue to record and convey traditional knowledge of the land, culture, wildlife and conservation.

(i) Continue to promote the use of the local language among the young and others with an interest.

(j) The Community should actively assist with the undertaking of the above initiatives.

# 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:

**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.

**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, the Minister of Fisheries and Oceans and the NWT and YTG Minister of Renewable Resources 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.

**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) Harvests will be monitored monthly by the Inuvialuit Harvest Study 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 RWED 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) DIAND and ILA, in conjunction with the HTC, should establish a Travel Restricted Area to protect heritage resources when necessary.

(i) RWED should inform tourist operators of concerns regarding protection of heritage resources when issuing 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), IGC, DFO, CWS and RWED. 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 RWED 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, RWED 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**

Parks Canada

**Biology**
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 produced per year. Kits mature at 2 years of age or older. Were abundant in Delta in 1960-61 but have declined since. Locals believe that beaver have been important in maintaining the health of the Delta and influence the distribution of fish and other animals.

**Important Habitat**
Streams and lakes of Mackenzie Delta, need plenty of food and building material readily available. Shore and bottom areas should be muddy and easy for burrowing, channelling and damming.

**Management Plans/Agreements**
Draft Co-management Plan for the Fur Industry (2000).

**Recent Research**
Young, D.A., Kerr, D.S. and M.A. Weber. 1984. Beaver and muskrat investigations: fall 1983. Environmental Management Associates.

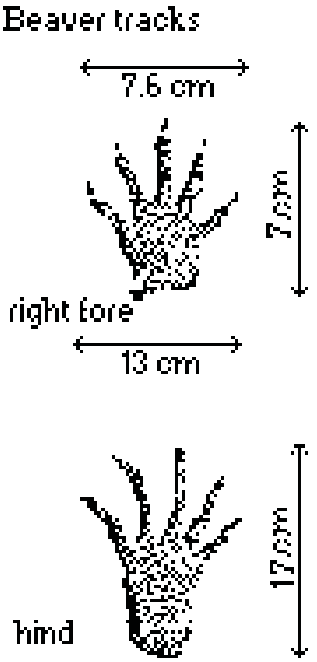
Study done by CWS (Vern Hawley) in late 50's, early 60's.

**Research Priority**
Moderate - Community interested in movement and census information considered moderate priority.

**Population Status**
Population in the Delta is increasing annually.

**Population Goal**
Community would like to see more beaver, particularly a resident self-sustaining population.

**Conservation Measures**
- Do not hunt until population increases.
- Harvest on a sustainable basis.
- Identify and protect important habitats from disruptive land uses.
- Support HTC bylaw (proposed) on designated trapping areas.



## **BLACK BEAR** (*Ursus americanus*) / **IGGARLIK**


Robert McCaw

**Biology**
Black bears den from October to May. Black bear numbers or densities are unknown in the ISR. Occur in forested areas. Breeding peaks in June and July. 2-3 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. Most northern black bear population in Canada occurs in ISR. May live to 20 years of age though average maximum age about 10. Average weights for females 40-70 kg (88-154 lb), males 60-140 kg (132-308 lb). Feed on wide variety of plants and animals, primarily herbivorous.

**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 general hunting and trapping regulations.

**Recent Research**
Barichello, N. 1998. Status report on the American black bear, *Ursus americanus*, in Canada. COSEWIC.

Clarkson, P. 1987. Collect baseline information on brown bear movements and numbers to assist in future management decisions. RWED.

**Research Priority**
Low.

**Population Status**
Fairly common.

**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*) / **TUKTU**

Pagniq (bull), Kulavak (cow), Naggaq (calf)

Joel Williams

### 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 at 2 to 4 years of age. 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, breed October. Bluenose-West and Cape Bathurst herds generally winter within 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.

Draft Scoping Report for the Preparation of a Harvest Management Strategy in the Canadian Range of the Porcupine Caribou Herd, 2004

Protocol Agreement Respecting the Development of a Harvest Management Strategy in the Canadian Range of the Porcupine Caribou Herd, 2007

Draft North Yukon Land Use Plan.

**Cape Bathurst, Bluenose-West and Tuktoyaktuk Peninsula**

Bluenose Caribou Herds Management Cooperation Agreement (2000). Signed by the WMAC (NWT), GRRB, SRRB and Tuktut Nogait National Park Management Board.

DRAFT Co-management Plan for the Cape Bathurst, Bluenose-West and Bluenose-East Caribou Herds: Northwest Territories and Nunavut, 1999/2000 to 2003/2004 recommended by WMAC (NWT)

GNWT Environment and Natural Resources. 2006. Caribou Forever – Our Heritage, Our Responsibility: A Barren-ground Caribou Management Strategy for the Northwest Territories 2006-2010.

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.

**Recent Research**

*Porcupine Caribou*

Numerous ongoing studies being conducted in Canada and U.S. (contact Porcupine Caribou Management Board).

Russell, D.E. and P. McNeil. 2005. Summer Ecology of the Porcupine Caribou Herd. Porucpine Cariobu Management Board 2nd ed. 16 pp.

Russell, D., A. Martell and W. Nixon. 1993. Range ecology of the Porcupine caribou herd in Canada. Rangifer, Special Issue No. 8, 168 pp.

Urquhart, D. 1983. The status and life history of the Porcupine caribou herd. Yukon Department of Renewable Resources, Whitehorse.

*Cape Bathurst, Bluenose-West and Tuktoyaktuk Peninsula Caribou*

Numerous ongoing studies being conducted (contact Wildlife Management Advisory Committee (NWT) or Environment and Natural Resources).

Nagy J.A. 2009. Population Estimates for the Cape Bathurst and Bluenose West Barren-ground Caribou Herds using Post-calving photography. Department of Environment and Natural Resources, Government of the Northwest Territories, Inuvik, NT, Canada Man. Rept. 193

Nagy J.A., and D. Johnson. 2006. Estimates of the Number of Barren-ground Caribou in the Cape Bathurst and Bluenose-West Herds and Reindeer/Caribou on the Upper Tuktoyaktuk Peninsula Derived Using Post Calving Photography, July 2006. Department of Environment and Natural Resources, Government of the Northwest Territories, Inuvik, NT, Canada Man. Rept. 171

Nagy, J.A., W.H. Wright, T.M. Slack, and A.M. Veitch. 2005. Seasonal Ranges of the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds. Department of Environment and Natural Resources, Government of the Northwest Territories, Inuvik, NT, Canada Man. Rept. 167

Paterson, B.R., B.T. Olsen and D.O. Joly. 2004. Populations estimate for he Bluenose-East caribou herd using post-calving photography. Arctic 57:47-58.

**Research Priority**
See:
Porcupine Caribou Herd Management Plan
DRAFT Porcupine Caribou Herd Harvest Management Plan

See:
New Management Plan being developed.
DRAFT Co-management Plan for the Cape Bathurst, Bluenose-West and Bluenose-East Caribou Herds: Northwest Territories and Nunavut, 1999/2000 to 2003/2004 recommended by WMAC (NWT)

**Population Status**

Porcupine:
approximately 178,000 (1989)
approximately 160,000 (1992)
approximately 152,000 (1994)
approximately 129,000 (1998)
approximately 123,000 (2001)
approximately 100,000 (2007; model estimate)

Census attempted every ear since 2003 with no success due to various reasons. The next census is planned for summer 2010. Radio collars (conventional and satellite) continue to be monitored to provide calf birth rate, calf survival rate, and adult female survival rates.

| | Estimate | Range | Year |
|---|---|---|---|
| Tuktoyaktuk Pen. | 3,070 | | (2006) |
| | 2,750 | 2,480—3,010 | (2009) |
| Cape Bathurst | 12,520 | 9,010 – 16,020 | (1987) |
| | 19,280 | 13,880— 24,680 | (1992) |
| | 11090 | 9,330 — 12,850 | (2000) |
| | 2,430 | 2,190 — 2,690 | (2005) |
| | 1,820 | 1,670 — 1,971 | (2006) |
| | 1,890 | 1,580 — 2,200 | (2009) |
| Bluenose-West | 88,370 | 81,470 — 95,270 | (1986) |
| | 106,890 | 102,230 — 111,540 | (1987) |
| | 112,360 | 86,790 — 137,930 | (1992) |
| | 76,376 | 62,030 — 90,720 | (2000) |
| | 20,800 | 18,760 — 22,840 | (2005) |
| | 18,050 | 17,520 —18,580 | (2006) |
| | 17,900 | 16,590— 19,210 | (2009) |
| Bluenose-East | 84,000 — 126,000 | | (2000; Patterson et al. 2004) |
| | 62,000 — 70,000 | | (2006; NWT) |
| | No estimate | | (2009; NWT) |

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

**Population Goal**

Porcupine:

To keep the herd above 125,000 caribou, allowing for enough caribou to meet local demands — see Draft Harvest Management Strategy

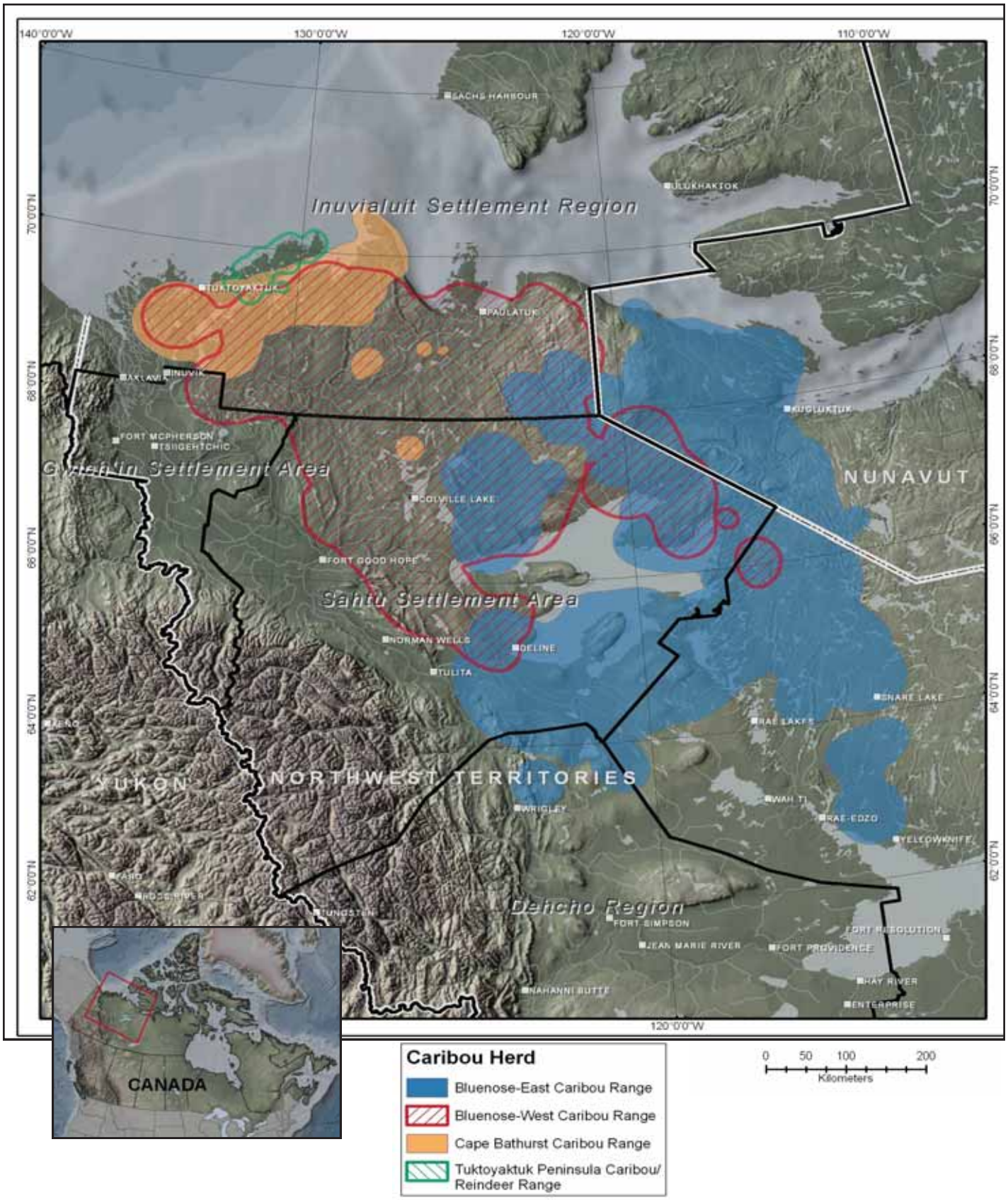
Cape Bathurst, Bluenose-West and Tuktoyaktuk Peninsula

Unspecified. Maintain enough to satisfy local demand (including potential commercial harvest of Bluenose herds) and provide maximum sustained yield.

**Conservation Measures**

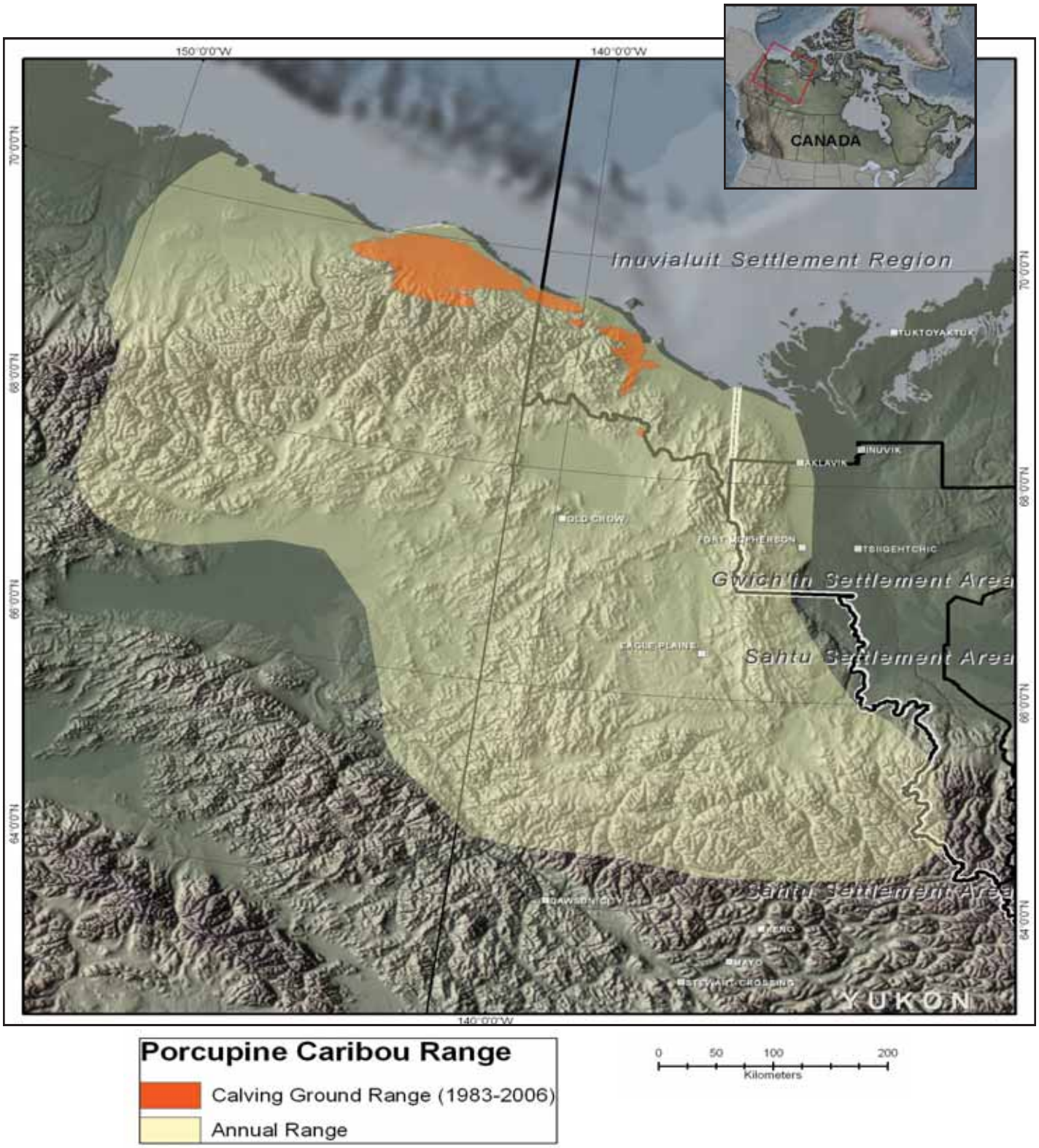
- Support Porcupine Caribou Management Board and Management Plan.
- Support development of Porcupine Caribou Harvest Management Plan
- Identify and protect important habitats from disruptive land uses.
- Avoid shooting mature bulls during the rut.
- Do not harvest more than is needed.
- Convey and promote 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.
- Harvest on sustainable basis, and in manner consistent with recommendations of the management plans and HTC bylaws.

Support the Barren-ground Caribou Management Strategy




RWED

**Map 9. Current Ranges of the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds**




**Map 10. Entire Range and Calving Grounds of the Porcupine Caribou Herd**

# FOXES

**RED FOX** (*Vulpes vulpes*) / **AUKPILAQTAQ**
**ARCTIC FOX** (*Alopex lagopus*) / **TIGIGANNIAQ**


W. Lynch / Parks Canada

**Biology**
Arctic Fox
Breed in March, denning April, pups active in May; may stay near den until October. May have from 8 to 20 young. Appears to be four year population cycle (likely coincident with cycle in lemmings), have been abundant past five years. Feed on lemmings and birds. May move great distances (e.g. Alaska to Banks Island).

Red Fox
Breed February to April, 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 widespread above treeline, often near coastal areas. Red Fox widespread below treeline.

**Management Plans/Agreements**
Draft Co-management Plan for the Fur Industry (2000).

**Recent Research**
None in ISR

**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*) / AKLAQ

**Biology**


Parks Canada

Grizzly bears in the ISR den from October to May. Breed 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 2000km$^2$, whereas males average approximately 7000km$^2$, much larger than those reported in other North American populations. Average weight for adult females is 125 kg (276 lb), for adult males, 250 kg (551 lb). May live to 25 years.

**Traditional Use**

Furbearer.

**Important Habitat**

Mackenzie and 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 HTCs and were approved by the WMACs and IGC.

Quotas established for entire ISR in 1993-94. Interim quota adjustments were made by WMAC (NWT) and WMAC (NS) based on local knowledge. Work is underway to get new scientific estimates.

**Recent Research**

Yukon North Slope:
Population Estimate derived from DNA mark-recapture study
Habitat use studies involving collared grizzly bears
Population growth estimates using data collected from collared animals and captures
Aklavik Local and Traditional Knowledge about Grizzly Bears of the Yukon North Slope Dec 2008 WMAC (NS) and AHTC

NWT
Local and Traditional Knowledge Project with Aklavik, Inuvik, Paulatuk and Tuktoyaktuk HTC members (1999-2000). ENR and HTC.
Various projects are on-going in the NWT in collaboration with University of Alberta students including habitat use to develop Habitat suitability maps for mitigation during development, den habitat modelling and diet analysis
Work is underway to develop a new population estimate for grizzly bears east of the Delta using DNA mark--recapture techniques

Edwards, M.A., A.E. Derocher, and J.A. Nagy. 2006. Barren-Ground Grizzly Bears of the Western Arctic: Potential Influence of Oil and Gas Development and Climate Change. New Northern Lights: Graduate Research on Circumpolar Studies from the University of Alberta , No. 66

McLoughlin, P.D., M.K. Taylor, H.D. Cluff, R.J. Gau, R. Mulders, R.L. Case, and F. Messier. 2003. Population Viability of Barren-Ground Grizzly Bears in Nunavut and the Northwest Territories. ARCTIC 56: 185-190.

McLoughlin, P.D., M.K. Taylor, H.D. Cluff, R.J. Gau, R. Mulders, R.L. Case, S. Boutin, and F. Messier. 2003. Demography of barren-ground grizzly bears. Canadian Journal of Zoology 81: 294–301.

Mowat, G. and Heard, D.C. 2006. Major components of grizzly bear diet across North America. Canadian Journal of Zoology 84: 473–489

**Research Priority**

Research on grizzly bear population in Delta is viewed as high priority. Information will be used to set sustainable harvest quota. Currently, 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 fat cabins for DNA provides additional information on bears visiting cabins.

**Population Status**

In most areas hunters are reporting more grizzly bears. Population estimates when the quotas were established were:

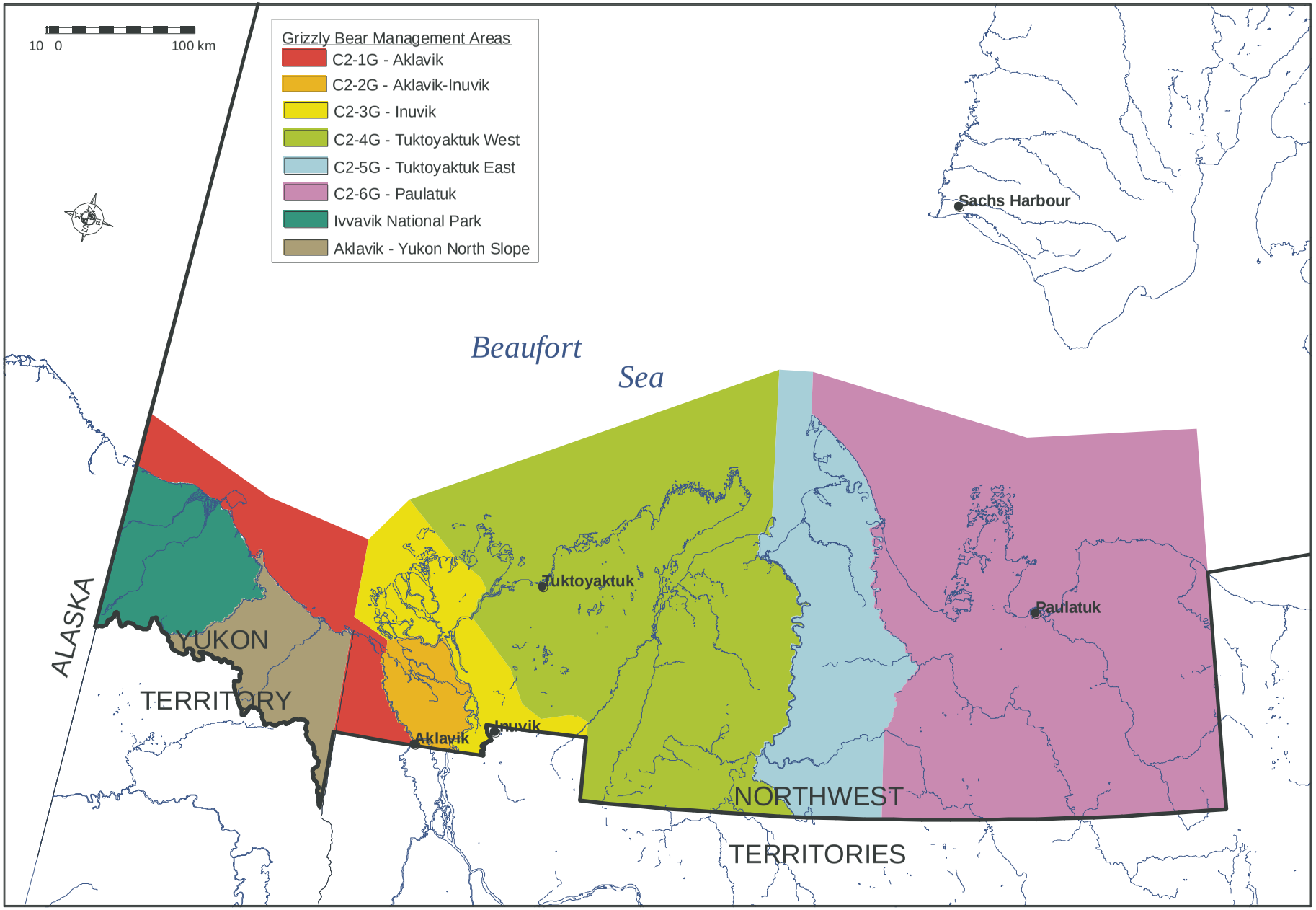
Estimated number of bears (greater than 2 years) in the Ivvavik National Park Management Area: 150
Estimated number of bears (greater than 2 years) in the Yukon North Slope Management Area: 155
Estimated number of bears (greater than 2 years) in the Aklavik Management Area: 35
Estimated number of bears (greater than 2 years) in the Aklavik-Inuvik Management Area: 11
Estimated number of bears (greater than 2 years) in the Inuvik Management Area: 29
Estimated number of bears (greater than 2 years) in the Tuktoyaktuk-West Management Area: 214
Estimated number of bears (greater than 2 years) in the Tuktoyaktuk-East Management Area: 140
Estimated number of bears (greater than 2 years) in the Paulatuk Grizzly Bear Management Area: 244

**Population Goal**

Stable population that can sustain an annual harvest of approximately 3% of bears older than 2. Research will be used to better determine appropriate harvest rate. (remove better??)

**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.
- Hunt only in March, April and May.
- Harvest on a sustainable basis and in a manner consistent with Management Plan and HTC bylaws.
- Camp assessment and Electric fence program initiated to reduce interactions




**Map 11. Grizzly Bear Management Areas**

## **LYNX** (*Lynx canadensis*) / **NIUTUYIQ**


RWED

**Biology**
Breed in March to May. 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 observation 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**
Draft Co-management Plan for the Fur Industry (2000).

**Recent Research**
Ongoing pelt measurements.
Ongoing snowshoe hare abundance surveys across NWT.

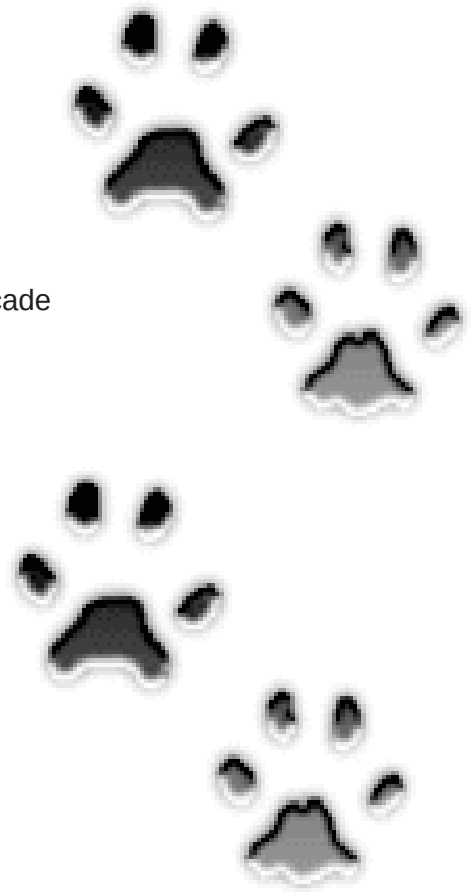
Carriere, S. 2007. Small mammal survey and hare transect survey in the Northwest Territories – summary report 2006. GNWT, ENR, Yellowknife, NT.

**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 centre.

**Population Goal**
Unspecified.

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



# MARTEN (*Martes americana*) / QAVVIATCHIAQ

## Biology

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 lb), females to 1.2 kg (2.6 lb). Mature at about 15 months of age but may not breed until 2 years old. May live to 13 years in wild. Breed in mid-summer, young born mid-March to late April. Females produce one litter or 3-5 young per year. Den in tree hollows high off ground or under rocks, squirrel middens, logs, tree roots or in snow dens. Generally active within a range of a 1-20 $km^2$ (0.4 - 7.8 $mi^2$). Males use larger area than females. Feed on small mammals (e.g. lemmings, hares), birds, insects and fruits.

Robert McCaw

## Traditional Use

Furbearer.

## Important Habitat

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

## Management Plans/Agreements

Draft Co-management Plan for the Fur Industry (2000).

## Recent Research

Nagy, J. and K. Hickling (In progress). Carcass collection study in Delta (GNWT, 1991-1992). Ongoing carcass collection out of Tsiigehtchic.

## 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*) / **ITIGIAQPAK**


Parks Canada

### Biology
May occur at densities of 1 to 8 animals per $km^2$ (per 0.4 $mi^2$) Usually solitary. Mate February to April, birth late April to early May, 2-10 young. Young leave den in 7-8 weeks. Females mature in approximately 12 months, males in approximately 18 months. Can dive to depths of at least 5-6 m (16 - 20 ft.) and swim underwater for up to 30 m (98 ft.). Usually active at night, early morning and evening, some day time activity. Feed on small mammals, fish, small birds, insects. May travel to at least 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
Draft Co-management Plan for the Fur Industry (2000).

### Recent Research
Poole, K.G. and B.T. Elkin. 1992. Environmental contaminants, population structure, and biological condition of harvested mink in the western Northwest Territories. RWED.

Poole, K.G. and B.T. Elkin. 1997. Identification of Levels of Reproductive Effects of Organochlorine and Heavy Metal Contaminants in Mink, synopsis of research conducted under the 1995-1997 Northern Contaminants Program. Edited by J. Jensen and L.A. Walker. Environmental Studies - Canada. Dept. of Indian Affairs and Northern Development, no.74, p.245-248.

### 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 (suggest pulling traps by approximately January 20)
- Identify and protect important habitats from disruptive land uses.
- Support HTC bylaw (proposed) on designated trapping areas.

# MOOSE (*Alces alces*) / TUTTUVAK


Parks Canada

**Biology**
Calving in May or early June, typically single calf, mature females may have two calves. Males mature by about 2 1/2 years, cows by 2 to 4 years of age. Breeding 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 and Yukon North Slope, use of Northern Delta seems to be increasing again.

**Management Plans/Agreements**
None at present.

**Recent Research**
Lambert, C. 2006. Moose aerial survey in the Gwich'in Settlement Area, March 2006. Gwich'in Renewable Resource Board Report 06-01.

Marshal, J.P. and J.A. Nagy. 1999. Moose browse and snow characteristics in the Inuvik-Tsiigehtchic region, Northwest Territories. Gwich'in Renewable Resource Board. Report 99-09.

**Research Priority**
Implement periodic population and productivity surveys. Survey planned in GSA spring 2010.

**Population Status**
Moose were abundant in the northern Delta area around 1948 but are believed to have declined since. Appear to continue to be in decline in adjacent areas in the GSA.

| | | |
|---|---|---|
| **Arctic Red River** | **5.5/100 km$^2$** | **(1999)** |
| | **none surveyed** | **(2006)** |
| **Northern Richardson Mtns** | **4.8/100 km$^2$** | **(2000)** |
| | **3.5/100 km$^2$** | **(2006)** |
| **Fort McPherson – Peel River** | **3-13/100 km$^2$** | **(1980)** |
| | **0.84/100 km$^2$** | **(2006)** |
| **Inuvik-Tsiigehtchic** | **0.09/100 km$^2$** | **(1996)** |
| | **6/100 km$^2$** | **(1998)** |
| | **1.62/100 km$^2$** | **(2006)** |

**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.

## **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 produce single calf. Approximately 3 weeks before calf can keep up with herd. Breeding throughout August and early September. Females generally sexually mature at 3 years of age, males at 5. May calve annually and can live to at least 24 years of age. Wolves are the main predator. Winter along valleys, drainages, hilltops. In summer range includes river valleys and lake shores where there is growth of grasses, sedges, crowberry, blueberry and willow.

### 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.
None east of the Delta

### Recent Research
Population estimate monitoring.
DNA samples submitted to look at the genetic differences between muskox east and west of the Delta and in the Arctic Islands.
Ongoing disease and parasite monitoring of captures and hunter harvested samples.

### 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:

| | | |
|---|---|---|
| Mainland (ISR, TNNP) | not available | (2009) |
| | 1215 (689 – 1741) | (2002) |
| West of the Delta | approximately 190 (YNS); 110 (NWT west of Mackenzie River) | (2004) |
| | approximately 116 (1998) | |
| | approximately 121 (1996) | |
| | approximately 146 (1995) | |

Population appears to be expanding eastward, recent 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.

### 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).

## **MUSKRAT** (*Ondatra zibethicus*) / **KIVGALUK**


Guy Fontaine

**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.

**Management Plans/Agreements**
Draft Co-management Plan for the Fur Industry (2000).

**Recent Research**
Young, D.A., Kerr, D.S. and M.A. Weber. 1984. Beaver and muskrat investigations: fall, 1983. Environmental Management Associates.

Study done by CWS (Vern Hawley) in late 50's and early 60's.

**Research Priority**
There is local interest in knowing about the health of muskrats.

**Population Status**
Abundant.

**Population Goal**
Adequate numbers at present.

**Conservation Measures**
- Hunt only in specific seasons (March 1 - June 15).
- Identify and protect important habitats from disruptive land uses.
- Support HTC bylaw (proposed) on designated trapping areas.

## POLAR BEAR (*Ursus maritimus*) / NANUQ


RWED

**Biology**
Females den from November to late March, early April; breeding late April early May. Average litter size is between 1 and 2 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.

**Traditional Use**
Furbearer, occasionally used for clothing.

**Important Habitat**
Denning areas along North Slope of Yukon, Herschel Island, Kay Point, shear zone offshore from coast.

**Management Plans/Agreements**
Inuvialuit-Inupiat Polar Bear Management Agreement in the Southern Beaufort Sea (1988 and 2000)
Polar Bear Management Agreement between the Inuvialuit and the Inuit of the western Kitikmeot region (2006)
Management Agreement for Polar Bears in Southern Beaufort Population, Aklavik HTC, Inuvik HTC, Paulatuk HTC, Tuktoyaktuk HTC (1991)
Hunters and Trappers Bylaw written into Regulations under the NWT Wildlife Act.
Draft GNWT– GN Agreement for the management of the shared NB and WM polar bear populations .
All these need to be undated once the boundary between the NB and SB populations is determined.

**Recent Research**
*Mark-recapture studies to provide updated population estimates for the SB and NB sea polar bear populations and information on survival rates and number of cub being born.*

Hunter, C.M., H. Caswell, M.C. Runge, E.V. Regehr, S.C. Amstrup, and I. Stirling. 2007. Polar Bears in the Southern Beaufort Sea II: Demography and Population Growth in Relation to Sea Ice Conditions. USGS Alaska Science Center, Anchorage, Administrative Report.
Regehr, E.V., S.C. Amstrup, and I. Stirling. 2006. Polar bear population status in the southern Beaufort Sea: U.S. Geological Survey Open-File Report 2006-1337
Regehr, E.V., C.M. Hunter, H. Caswell, S.C. Amstrup, and I. Stirling. 2007. Polar Bears in the Southern Beaufort Sea I: Survival and Breeding in Relation to Sea Ice Conditions, 2001-2006. USGS Alaska Science Center, Anchorage, Administrative Report.
Rode, K.D., S.C. Amstrup, and E.V. Regehr. 2007. Polar Bears in the Southern Beaufort Sea III: Stature, Mass, and Cub Recruitment in Relationship to Time and Sea Ice Extent Between 1982 and 2006. USGS Alaska Science Center, Anchorage, Administrative Report.
Stirling, I., T.L. McDonald, E.S. Richardson, and E.V. Regehr. 2007. Polar Bear Population Status in the Northern Beaufort Sea. USGS Alaska Science Center, Anchorage, Administrative Report.
Taylor, M.K., J. Laake, H.D. Cluff, M. Ramsay, and F. Messier. 2002. Managing the risk of harvest for the Viscount Melville Sound polar bear population. Ursus 13:185-202.

*Collaring of polar bears to look at movements and habitat use*

Amstrup, S. C., G. Durner, I. Stirling, N.J. Lunn, and F. Messier. 2000. Movements and distribution of polar bears in the Beaufort Sea. Canadian Journal of Zoology 78:948-966.
Ferguson, S.H., M.K. Taylor, E.W. Born, A. Rosing-Asvid and F. Messier. 2001. Activity and movement patterns of polar bears inhabiting consolidated versus active pack ice. ARCTIC 54:49-54.
Ferguson, S.H., M.K. Taylor, and F. Messier. 2000a. Influence of sea ice dynamics on habitat selection by polar bears. Ecology 81:761-772.

Ferguson, S.H., M.K. Taylor, A. Rosing-Asvid, E.W. Born, and F. Messier. 2000b. Relationships between denning of polar bears and conditions of sea ice. Journal Mammalogy 81:1118-1127.
Mauritzen, M., A.E. Derocher and Ø. Wiig. 2001. Space-use strategies of female polar bears in a dynamic sea ice habitat. Canadian Journal of Zoology. 79:1704-1713.

*Predictions and modelling to look at the future*
Derocher A.E., N.J. Lunn, and I. Stirling. 2004. Polar bears in a warming climate. Integrative and Comparative Biology 44:163-176.
Durner, G. M., D.C. Douglas, R.M. Nielson, S.C. Amstrup, T.L. and McDonald. 2007. Predicting the future distribution of polar bears in the polar basin from resource selection functions applied to 21st century general circulation model projections of sea ice. USGS Alaska Science Center, Anchorage, Administrative Report.
Stirling, I. and C.L. Parkinson. 2006. Possible effects of climate warming on selected populations of polar bears (*Ursus maritimus*) in the Canadian Arctic. ARCTIC 59:261-275.

*Management*
Brower, C.D., A. Carpenter, M.L. Branigan, W. Calvert, T. Evans, A.S. Fischbach, J.A. Nagy, S. Schliebe, I. Stirling. 2002. The polar bear management agreement for the Southern Beaufort Sea: An evaluation of the first ten years of a unique conservation agreement. Arctic 55:362-372.

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

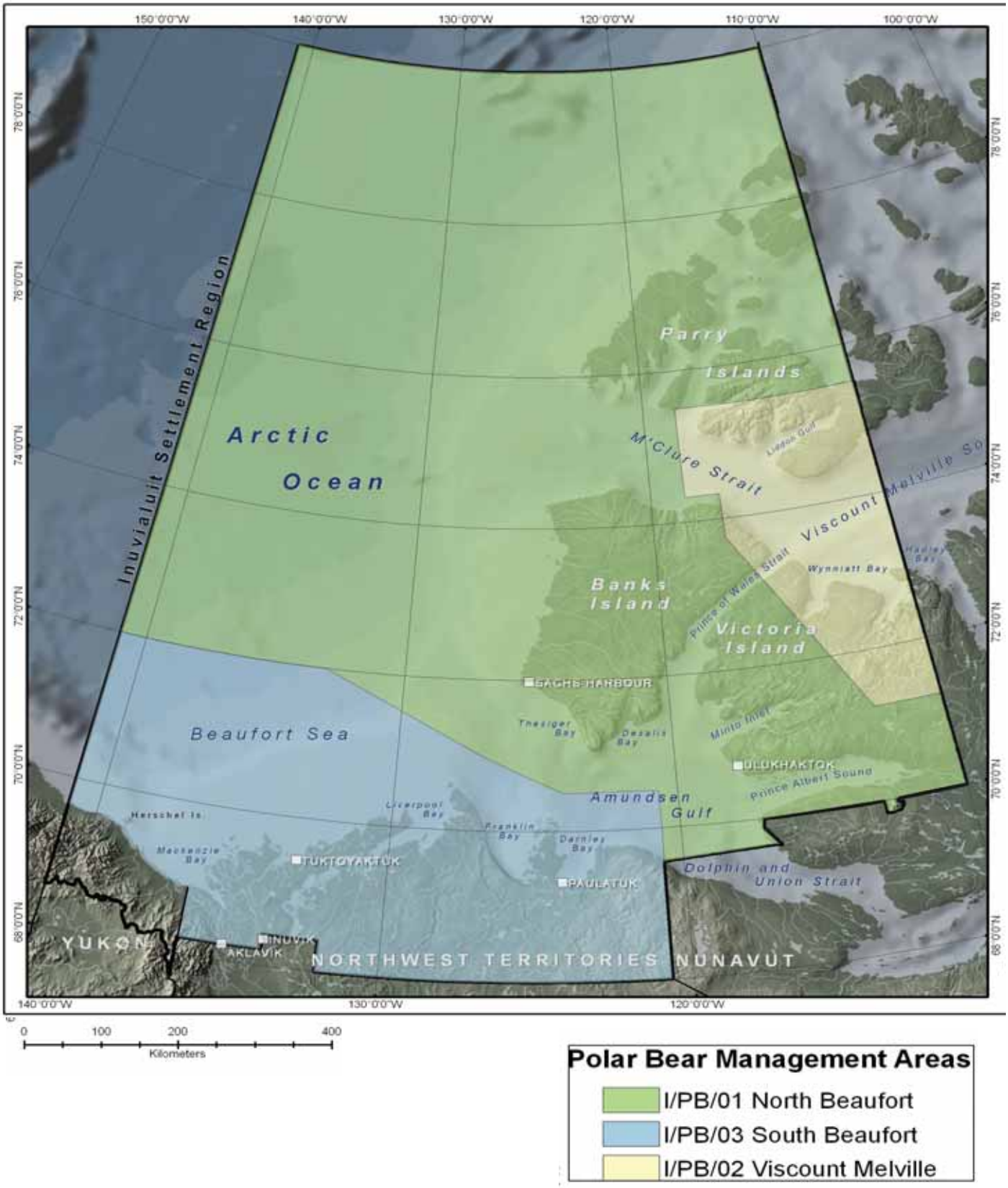
**Population Status**

| | | |
|---|---|---|
| Southern Beaufort: | 1526 (1211 – 1841) | (2006) |
| (Likely declining) | 1800 | (1998) |
| Northern Beaufort: | 1200 | (2008) |
| (Stable) | 980 (825 – 1135) | (2006) |
| | 867 (726 – 1008) | (1987) |
| | 745 (499 – 991) | (1975) |
| Viscount Melville Sound | 230 | (1996) |
| (Likely increasing after decline) | | |

**Population Goal**
Unspecified. Maintain at level which can produce the maximum sustained yield.

**Conservation Measures**
- Follow regulations agreed to in the Management Agreement for Polar Bears in Southern Beaufort Sea Population (1991).
- 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 Management Agreement after making a kill.

Identify and protect important habitats from disruptive land uses.




**Map 12. Polar Bear Management Areas**

# SNOWSHOE HARE or RABBIT (*Lepus americanus*) / UKALLIQ

**Biology**
Breed in May. Young born in June and July. Up to 8 in a litter. Very important in food chain for other animals (e.g. lynx, fox, owls, eagles).

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

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

**Management Plans/Agreements**
None.

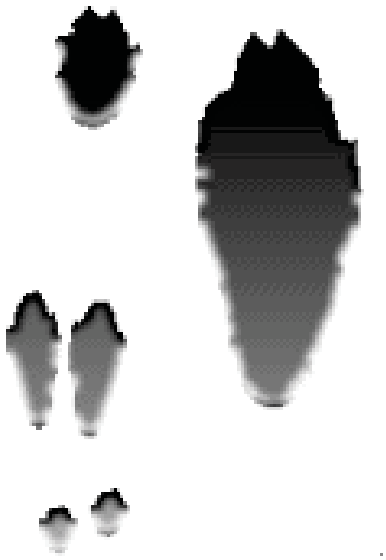
**Recent Research**
Long term snowshoe hare monitoring program (annual pellet count) being undertaken by GNWT.

**Research Priority**
High interest in population biology and role in ecosystem.

**Population Status**
Unknown.

**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**


RWED

**Biology**
Wolves occupy dens from May to late July. From 2 to 9 pups have been observed at dens. 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 has been 12 years old, however the average age of adult wolves is about 3.

**Traditional Use**
Furbearer, help maintain balance of nature.

**Important Habitat**
Treeline-tundra transition area. Bluenose caribou wintering range.

**Management Plans/Agreements**
No management plans specifically for wolves, managed under trapping regulations which set season and sport hunting regulations.

**Recent Research**
Western Arctic Wolf Research Program, 1987-1993 research on wolves associated with Bluenose Herd.

Population survey of North Slope wolves and satellite tracking to determine extent of seasonal movements, 1993-1995. WMAC (NS).

Clarkson, P.L. 1987. Collect baseline information on wolf movements and distribution, and study the relationship that wolves have with the Bluenose caribou. RWED.

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Clarkson, P.L. and I. Liepins. 1992. Inuvialuit wildlife studies: western arctic wolf research project progress report April 1989 - January 1991. 32 pp.

Hayes et al. 1991. Yukon North Slope Wolf Studies 1987-1991. Yukon Territorial Government.

Van Zyll de Jong, C.G. and L.N. Carbyn. 1998. Status report on the gray wolf, *Canis lupus*, in Canada. COSEWIC.

**Research Priority**
Investigate wolf movements, predation, pup production and survival, denning areas, and mortality.

**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 $km^2$ (386 $mi^2$).

**Population Goal**
Maintain a healthy population that can sustain an annual harvest by hunters and trappers.

**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.
- 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.

# WOLVERINE (*Gulo gulo*) / QAVVIK


Parks Canada

**Biology**
Breed in March to May, 1-2 young (may have up to 5), young appear in June to July. Young are nursed 8-10 weeks, leave mother in fall. Sexually mature at 2-3 years of age. In North may be active for 3-4 hour intervals between rests. May travel up to 45 km (28 mi) per day. Caves, rock crevices, fallen logs, holes in snow and burrows used for shelter. Home-range sizes in the central Arctic vary between 126 $km^2$ (females) and 404 $km^2$ (males). Dispersal distances by females average 133 km (range 69 - 225 km), and males 231 km (range 73 - 326 km). Feed on dead animals, eggs, small and large mammals (lemmings, caribou , sheep). Most large mammals 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.

**Management Plans/Agreements**
Draft Co-management Plan for the Fur Industry (2000).

**Recent Research**
Carcass collection study of sex, age , diet, and reproductive stats of harvested animals.

DNA mark– recapture work is being done in other areas; may be applicable to ISR.

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

**Population Status**
Relatively few in Delta.

**Population Goal**
Unspecified.

**Conservation Measures**
- Identify and protect important habitats from disruptive land uses.
- Do not disturb dens.
- Do not hunt in summer.
- Do not poison.
- Support HTC bylaw (proposed) on designated trapping areas.
- .

# 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 feed mainly on squid and fish. They themselves are preyed upon by polar bears, killer whales and humans, and to a limited extent walruses.

They are a very vocal species, having earned the name of "the sea canary". They make sounds which are used for echolocation, that is to help them find their way and their food, as well as sounds to communicate, which are those which 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.

**Management Plans/Agreements**

Inuvialuit Inupiat Beaufort Sea Beluga Whale Agreement (2000)
Beaufort Sea Beluga Management Plan (1998).
HTC Beluga Bylaws

**Recent Research**

Beluga Monitoring Program:

- standardized in 1977 in Mackenzie Delta,
- Paulatuk added in 1989,
- FJMC took over program in 1987,
- Continues to present day,
- Samples and enumerates the catch,
- Conducted by the HTC representatives and coordinated by the FJMC,
- Constitutes the largest and longest database of beluga harvest monitoring in the Arctic.

Aerial Surveys:

- 1970s and 1980s by oil and gas industry contractors

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.

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
- Females and calves tended to swim counter-clockwise circuits in Amundsen Gulf.

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.

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 T.G. Smith. 2000. Whales of the Beaufort Sea: an overview and outlook. DFO.

Martin, A.W. and T.G. Smith. 1999. Strategy and capability of wild belugas, Delphinapterus leucas, during deep benthic diving. Cdn Jrnl of Zoology 77: 1783-1793.

Richard, P.R., Martin, A.R. and J.R. Orr. 2000. 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 Envt 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.

**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**
- Index of 1992 stock size 19,629 (95% Confidence Interval: 15,134 - 24,125) (Harwood et al. 1996)
- growth rate 2.5%
- stock is stable or increasing
- present 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.

# INUVIK HUNTERS & TRAPPERS COMMITTEE
# BELUGA HUNTING BYLAWS

1. Each boat will have the following equipment:
   a) A rifle of not 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.

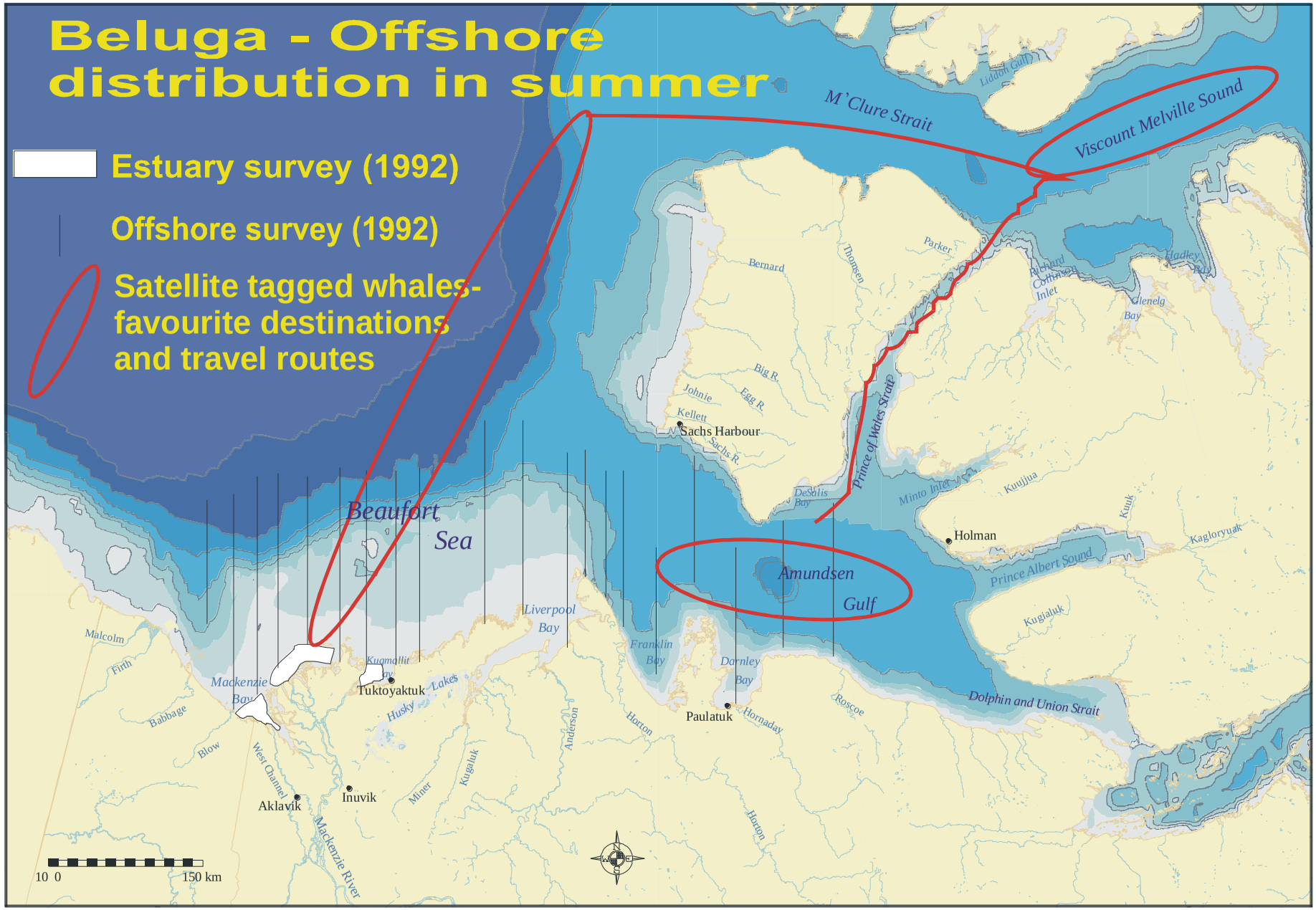
3. Each boat must carry at least one experienced hunter.
   A hunting leader shall be appointed at each camp, and approved by the Inuvik Hunters and Trappers Committee (IHTC). Hunting leaders will be appointed at the Annual General Meeting of the IHTC. The hunting leader will advise and make any necessary 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.

4. Each boat must be equipped with artificial life preservers for all passengers.

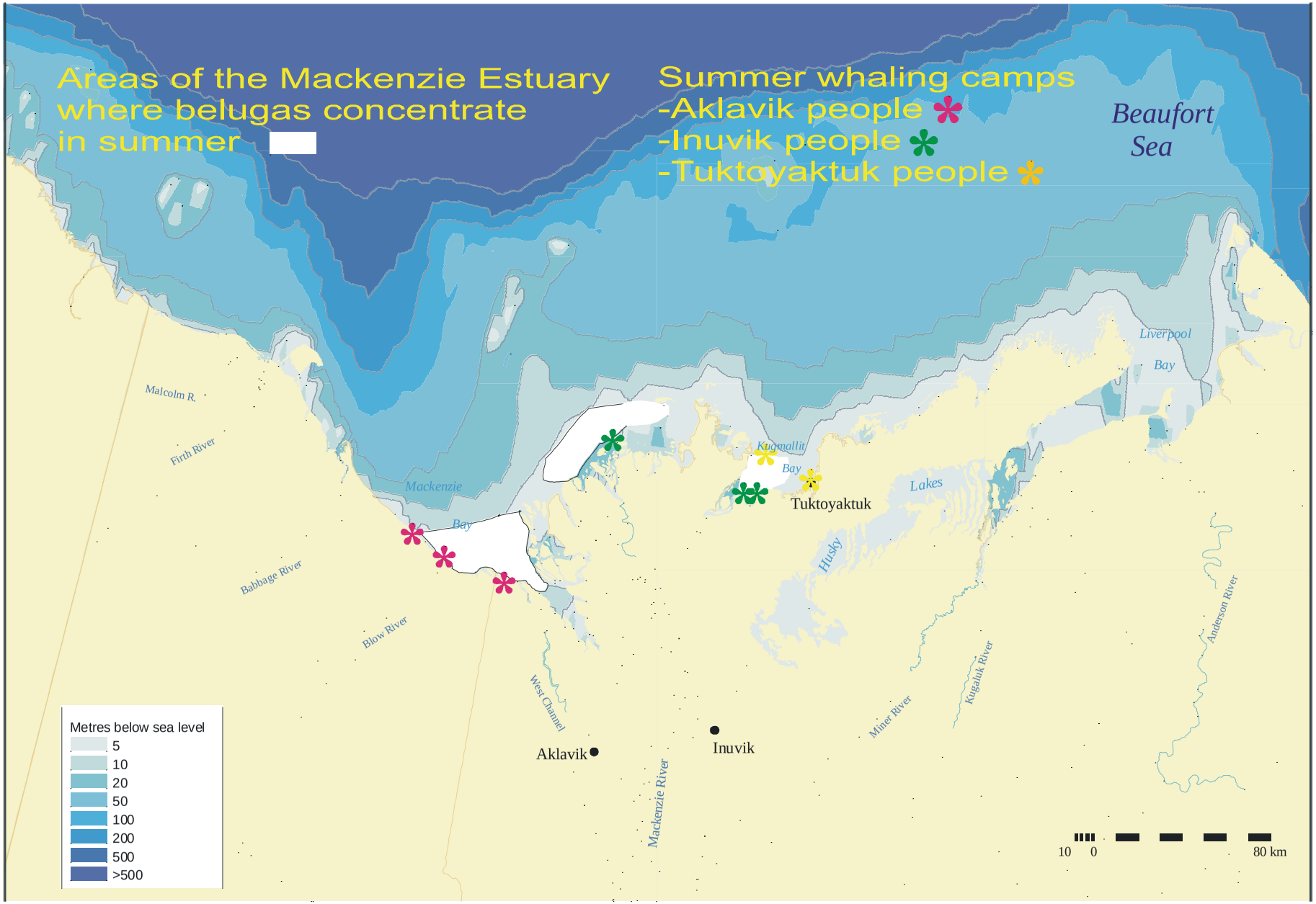
5. Hunters should follow the directions of the appointed hunting leader in each camp.

6. All carcasses must be towed out to deep water or burned after processing.

7. These rules may from time to time be changed by the IHTC.



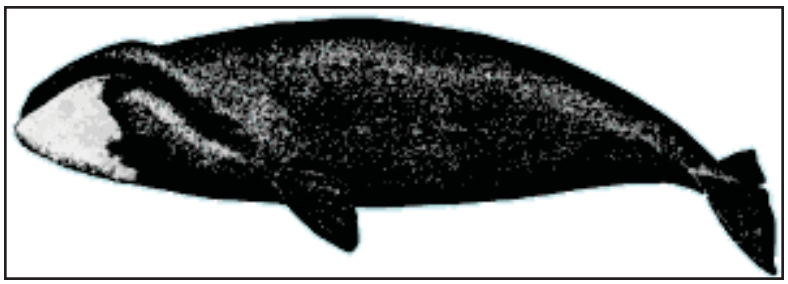

Map 13. Beluga - Offshore Distribution in Summer




**Map 14. Summer Beluga Habitat and Tradition Whaling Camps**

# **BOWHEAD WHALE** (*Balaena mysticetus*) / **AQVIQ** (or) **ARVIA**

**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 the beluga, choosing areas where zooplankton is concentrated. They usually travel singly or in small groups. They make vocalizations which are a lower frequency than beluga.

The Western Arctic population of bowhead whales is one of three remaining in Canada, and constitutes more than 90% of the world's remaining bowhead whales.

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, West Whitefish Station.

**Management Plans/Agreements**

Bowhead Whale Management Strategy: DFO, FJMC, Aklavik HTC (Draft 1991).

**Recent Research**

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, the community harvest monitor takes the measurements and samples, with a biologist from DFO.

FJMC Mitochondrial DNA - Stock identity study, 1992 - ongoing.
U.S. Minerals Management Branch - Acoustical playback study scheduled for 1993.
U.S. Minerals Management Branch - Satellite tagging research 1992 - ongoing.

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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.

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 propogation 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 Envt 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.

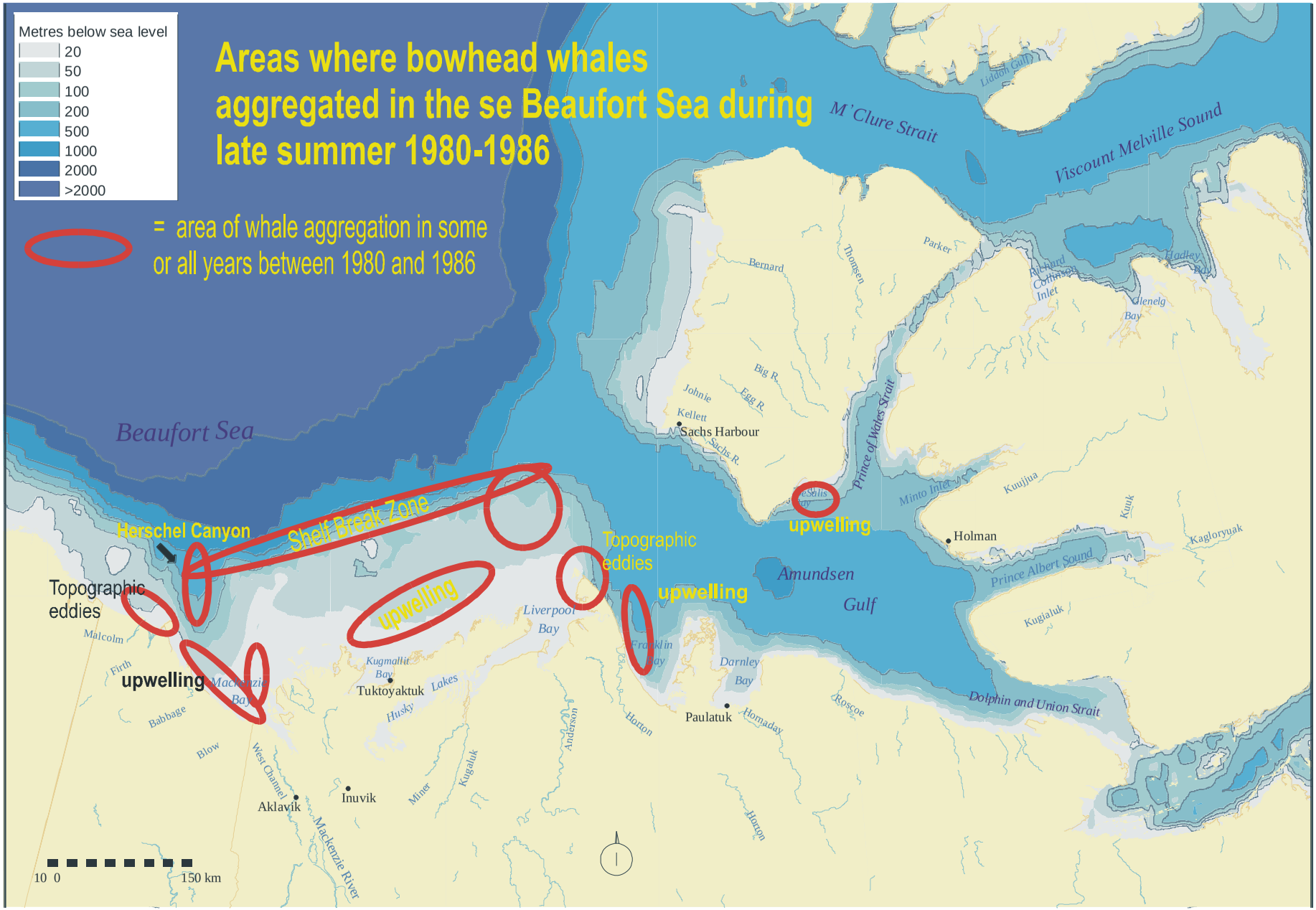
Zeh, J.E. 1995. Population size and rate of increase, 1978-1993, of bowhead whales, *Balaena mysticetus*. International Whaling Commission.

**Research Priority**
High: Community interested in knowing more about species biology.

**Population Status**
Approximately 8,200 and increasing at a rate of 3% annually.

**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 15. Summer Bowhead Whale Habitat**

# SEALS

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

FJMC / DFO

**Biology**

Ringed seals and bearded seals are important components of the marine ecosystem and serve as the primary prey source for 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.

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 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 important food species are arctic cod, saffron cod, shrimps and other crustaceans.

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 Holman, as well as 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 Holman. Present day harvests are 20-30% of what they were years ago.

Bearded Seals

The bearded seal is the largest true seal 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 foreflippers 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 bear a single pup, 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 lasting from 12 to 18 days, pups increase their weight almost three times, to around 86 kg (190 lb).

Bearded seals eat a wide variety of invertebrates and some fishes found in and on the rich bottom of the shallow Bering and Chukchi seas. The main food items are crabs, shrimp, clams and snails.

**Traditional Use**

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

**Important Habitat**
Shingle Point, Herschel Island, King Point, North Slope Coast.

**Management Plans/Agreements**
None

**Recent Research**
Ringed Seal:
Sachs Harbour: seal monitoring programs (reproduction and condition) were conducted from 1987-1989 and in 1992.

Paulatuk: seal monitoring program was conducted from 1993-1994. May be a site of future satellite tagging project with ringed seals (e.g. 2001).

Holman: have been monitoring reproduction and condition of seals each year from 1992-1999, and in Minto Inlet for five years in that time period. Satellite tagging program for ringed seals started in Holman in 1999, with plans to continue in 2000.

Bearded Seal:
None at the present time. Vocalizations were studied in the 1970s near Ramsay Island, near Holman.

**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.

**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.

## 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.

Alaska Vole (*Microtus abbreviatus*)
Arctic Fox (*Alopex lagopus*)/Tigiganniq
Arctic Hare (*Lepus arcticus*)
Bearded Seal (*Erignathus barbatus*)/Ugruk
Beaver (*Castor canadensis*)/Kigiaq
Beluga Whale (*Delphinapterus leucas*)/Qilalugraq
Black Bear (*Ursus americanus*)/Iggarlik
Bowhead Whale (*Balaena mysticetus*)/Aqvic or Arvia
Brown Lemming (*Lemmus sibiricus*)
Caribou (*Rangifer tarandus)*/Tuttu
Coyote (*Canis latrans*)
Dall's Sheep (*Ovis dalli*)
Greenland Collard Lemming (*Dicrostonyx torquatus*)
Grizzly Bear (*Ursus arctos horribilis*)/Aklaq
Hoary Marmot (*Marmota caligata*)
Least Weasel (*Mustela nivalis*)
Long-tailed Weasel (*Mustela frenata*)
Lynx (*Lynx lynx*)/Niutuyiq
Marten (*Martes americana*)/Qavviatchiaq
Meadow Vole (*Microtus pennsylvanicos*)
Mink (*Mustela vison*)/Itigiaqpak
Moose (*Alces alces*)/Tuttuvak
Muskox (*Ovibos moschatus*)
Muskrat (*Ondatra zibethicus*)/Kivgaluk
Northern Flying Squirrel (*Glaucomys sabrinus*)
Polar Bear (*Ursus maritimus*)/Nanuq
Porcupine (*Erethizon dorsatum*)
Red Fox (*Vulpes vulpes*)/Aukpilaqtaq
Ringed Seal (*Phoca hispida*)/Natchiq
River Otter (*Lontra canadensis*)
Snowshoe Hare (*Lepus americanus*)/Ukalliq
Tundra Redback Vole (*Clethrionomys rutilus*)
Tundra Vole (*Microtus oeconomus*)
Wolf (*Canis lupus*)/Amaruq
Wolverine (*Gulo gulo*)/Qavvik
Yellow-cheeked Vole (*Microtus xanthognathus*)

# DUCKS / QAUGAIT

**King Eider** (*Somateria spectabilis*) / **Quingalivik**
**Common Eider** (*Somateria mollissima*) / **Quingalik**
**Mallards** (*Anas platyrhynchos*) / **Kurugakpak**
**Scoters (Black Duck)** (*Melanitta spp.*) / **Taakruaq**
**Wigeon (Baldpate Duck** (*Anas americana)* / **Ugiuhiuq**
**Old Squaw** (*Clangula hyemalis*) / **Ahaliq**
**Pintail** (*Anas acuta*) / **Kurugak**


Parks Canada

## 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

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 (1,641 ft.) or more from water but usually within 100 m (328 ft.). Clutch size may range from 1-18 eggs though average is about 9. Incubate an average of 28 days. Prefer aquatic and shoreline plants as food, though will eat some invertebrates. Along with pintails, one of the last ducks to leave in fall.

Pintail

Largest number of breeding pintails in the Canadian Arctic occurs in the Mackenzie Delta, large numbers also occur at Anderson River Delta. Winter in Texas, Mississippi Delta, Mexico, California. 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. Eat 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.

Oldsquaw

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 11 eggs, average about 7. Incubate eggs for about 26 days. 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 5-17 eggs, average about 9 eggs. Incubate for about 28 days. Begin fall migration early September.

Eider (King and Common)
Winter in northern waters generally not far from breeding areas. Rarely as far south as B.C. and Washington. Leave wintering areas in late April, arrive on breeding grounds early June. Most nests close to sea, often on small islands also near tundra ponds distant from coast. Common eider and king eider will occasionally nest together. 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 26-28 days, king eider about 23-24 days. Common eider have been observed diving to about 6 m depth to feed while 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 some aquatic plants. Begin fall migration as early as July (e.g. male king eider) and runs through to late fall (immature birds).

**Traditional Use**
Subsistence food in spring and fall.

**Important Habitat**
King Eider: s.w. Banks Island, Tuktoyaktuk Peninsula, Cape Bathurst
Common Eider: s. Banks Island, n.w. Victoria Island
Oldsquaw: Banks Island, Victoria Island (distribution in the ISR is not well-documented)
Surf Scoter: shallow bays along Arctic coast, Mackenzie Delta; large numbers in open sea in October
White-fronted Scoter: Distribution in the ISR is not well understood
Lesser and Greater Scaup: Mackenzie Delta, coastal areas
Wigeon: Mackenzie Delta and Old Crow Flats
Northern Pintail: tundra areas

**Management Plans/Agreements**
North American Waterfowl Management Plan (1986) (NAWMP).
*Migratory Birds Convention Act, 1994.*

**Recent Research**
Standardized annual breeding pair survey conducted jointly by CWS and US Fish and Wildlife.

Migration and harvest of King Eiders, CWS

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

<u>King Eider</u>
- 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).

<u>Common Eider</u>
- 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: | 371,000 (1996) |
| | 802,000 (1976) |
| Pacific Common Eider: | 73,000 (1996) |
| | 153,000 (1976) |
| Oldsquaw: | 406,751 (1993-1998 average) (Western Canadian Arctic and Alaska) |
| Scoters: | 873,500 (1993-98 average) (North America) |
| Lesser Scaup: | 4.2 million (1993-97 average) (North America) |
| Continental Goal: | 6.2 million |
| Wigeon: | 2.8 million (North America) |
| Continental Goal: | 3.0 million |
| Northern Pintail: | 2.9 million (North America) |
| Continental Goal: | 5.6 million |

Population Trends:
Scoters: decreasing
Scaups: decreasing
Pintails: decreasing
Mallards: decreasing
Wigeon : fluctuating but stable
Oldsquaw: decreasing
King Eider: decreasing
Common Eider: decreasing

**Population Goal**

Maintain thriving population for subsistence harvest.

NAWMP (1986) has a combined goal of 60 million ducks for 29 species of duck in North America. See above continental goals, based on NAWMP (1986).

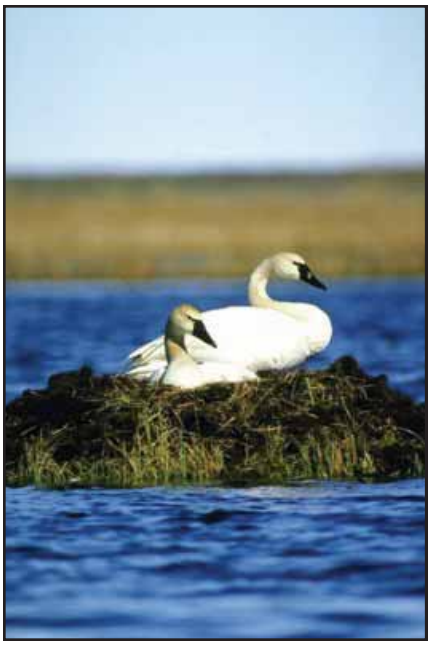
**Conservation Measures**

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

RWED

# GEESE AND TUNDRA SWAN

**Canada Goose** (*Branta canadensis*) **/ Uluagullik**
**Snow Goose** (*Chen caerulescens)* / **Kanguq**
**White-fronted Goose** (*Anser albifrons frontalis*) / **Nirliq**
**Brant** (*Branta bernicla* ) / **Niglignaq**
**Tundra swan** (*Cygnus columbianus*) / **Qugruk**


W. Lynch / Parks Canada

## Biology

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

Canada Geese - Local birds part of "Shortgrass Prairie" population, winter central U.S. to Colorado and Texas. Arrive in May. Wide varieties of nest sites. Average clutch size about 4-5 eggs. Incubate eggs about 26 days. Feed on grasses, sedges, berries, seeds, cereal grains. Leave early September.

Snow Geese - 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.

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 - 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 - 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 |
| Canada 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, 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 (1986) (NAWMP).

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

**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**

| | |
|---|---|
| Tundra Swan - E. Pop'n | 84,000 (1993-98) (North America) |
| Continental Goal | 80,000 |
| | |
| Tundra Swan - W. Pop'n | 81,000 (1993-98) (North America) |
| Continental Goal | 60,000 |
| | |
| White-fronted Goose | 70,000 (1989-93) (ISR) |
| | 797,000 (1992-98 average) (North America) |
| Continental Goal | 320,000 |
| | |
| Lesser Snow Goose | 486,000 (1995) (ISR) |
| | 169,600 (1976) (ISR) |

| | |
|---|---|
| Western Arctic Goal | 200,000 breeding population |
| Canada Goose | 500,000 (North America) |
| Continental Goal | 150,000 |
| Brant | 137,400 (1993 winter average) (North America) |
| Continental Goal | 185,000 |

Population Trends:

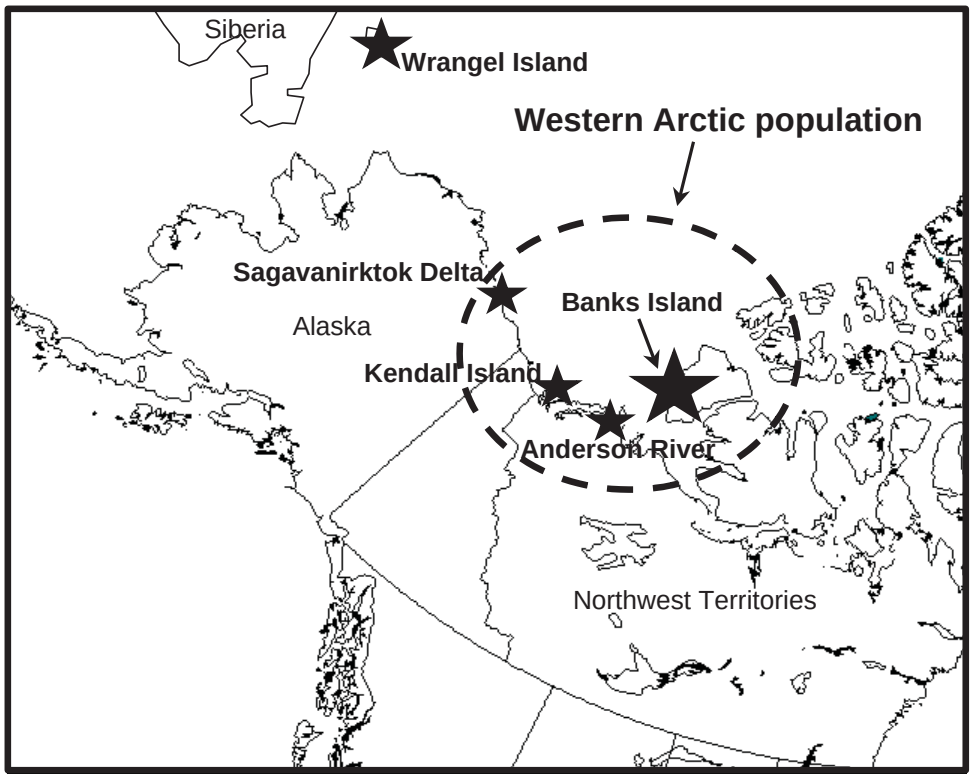
| | |
|---|---|
| Canada Geese | Increasing |
| Lesser Snow Geese | Increasing |
| White-Fronted Geese | Stable |
| Brant | Stable |
| Swans | Increasing |

**Population Goal**

See continental goals above, based on the North American Waterfowl Management Plan, 1986 (NAWMP).

**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).




**Map 16. Locations of Lesser Snow Goose colonies in the Western Arctic and Wrangel Island**

# LOONS

**Common Loon** (*Gavia immer*) / **TUTLIK**
**Yellow-billed or King Loon** (*Gavia adamsii*) / **Qaqauq**
**Pacific Loon** (*Gavia pacifica*) / **Maliri**
**Red-throated Loon** (*Gavia stellata*) / **Suglia**


RWED

## 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. Different loons will use same habitats.

## Important Habitat
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.

## Research Priority
High: Community interested in more information on biology.

## Population Status
Local indigenous observation suggests that Yellow-billed loons used to be abundant 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.)* / QAIQ

**Rock Ptarmigan** (*Lagopus mutus)*
**Willow Ptarmigan** (*Lagopus lagopus*)

RWED

**Biology**
Breed in early May, lay eggs in June. Willow ptarmigan lay 5-10 eggs, rock ptarmigan lay 6-15 eggs.

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

**Important Habitat**
Willow ptarmigan use willow sorb, 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.

**Recent Research**
Study of contaminant levels in willow ptarmigan from Anderson River Delta and Kittigazuit Bay area conducted in 1989. GNWT Department of Renewable Resources, Yellowknife. Report in progress. Numerous YTG surveys in northern Yukon for past twenty years.

**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*) / TATIGAQ


Parks Canada

**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**


Parks Canada

**Biology**
Bald Eagle
More common in Delta than outlying areas. Usually nest in trees, begin nesting in April-May, incubate eggs approximately 34-35 days, young leave nest (fledge) by 70-80 days. Primarily feed on fish, often dead or dying fish. Fall migration in September.

Golden Eagle
Much more common in Richardson Mountains than Bald Eagles. Use both cliff and tree nests, 1-2 young per year. Begin nesting in April-May, incubate approximately 35-45 days, young leave nest (fledge) after 65-75 days. Primarily feed on rabbits, hares, ground squirrels, will occasionally prey on young of larger mammals. 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.

**Recent Research**
Richardson Mountains Raptor Surveys, 1987-1989. GNWT Department of Renewable Resources and WMAC (NWT).

Monitoring Raptors and the Canadian Peregrine Falcon Survey (CWS / Parks Canada, 2000)

Kirk, D.A. 1996. Status report on the golden eagle, *Aquila chrysaetos. COSEWIC.*

Lang, A. 1984. Status report on the bald eagle, *Haliaeetus leucocephalus*, in Canada. COSEWIC.

**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. 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**


RWED

**Biology**
Peregrine Falcon: May nest in cliffs. Lay 2-4 eggs. Feed on small to medium sized birds.

Gyrfalcon: Nest in cliffs and occasionally trees, lay 3-4 eggs. Feed on ground squirrels, ptarmigan, and occasionally hare. Populations cycle with prey availability.

Rough-legged Hawk: Nest on cliffs. Lay 2-5 eggs. Feed on lemmings, ground squirrels.

**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.

**Recent Research**
Richardson Mountains Raptor Surveys, 1987-1989. GNWT Department of Renewable Resources and WMAC (NWT). Report in progress.

Monitoring Raptors and the Canadian Peregrine Falcon Survey (CWS / Parks Canada, 2000)

Numerous YTG surveys and work on reintroduction of peregrines over past 30 years.

Poole, K. and R. Bromley, 1985. Aspects of the ecology of the gyrfalcon in the Central Arctic, Northwest Territories. GNWT, Department of Renewable Resources File Report No. 52.

**Research Priority**
Moderate - Interest in ecological relationships, role in food chain.

**Population Status**
Local indigenous observation suggests there appears to be fewer gyrfalcon in vicinity of Herschel Island than in past. Gyrfalcon were abundant apparently in the early 1940's. Appear reasonably stable in the Richardson Mountains. Evidence of long term occupation.

**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

T.W. Hall / Parks Canada

**Biology**
Most migrate to region in spring, however, a few may overwinter. Arrive in April, nesting mid to late May. Prefer to nest on elevated ground. Off nest in late August. Lay 5-7 eggs, some reports of 12, incubation 32 to 33 days. May feed on lemmings, birds, fishes. Variable numbers year to year. Appear to have ecological association with brant. Usually low numbers.

**Traditional Use**
Have been used as food in past.

**Important Habitat**
Coastal Areas.

**Management Plans/Agreements**
None

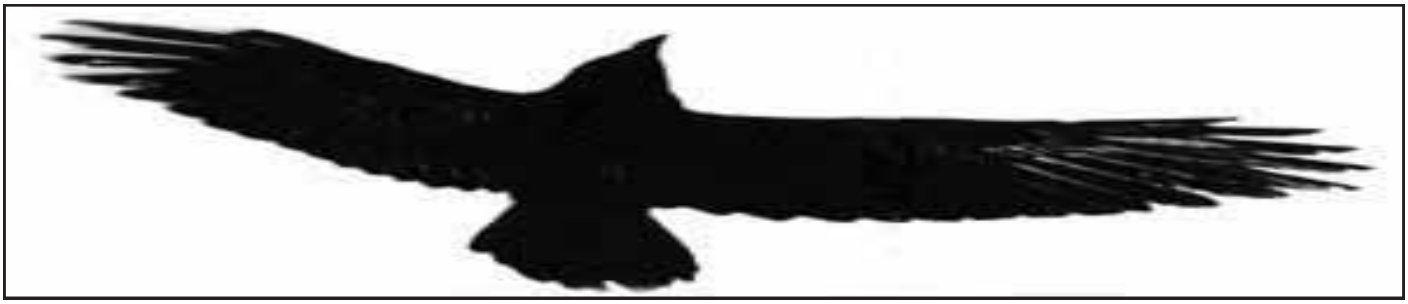
**Recent Research**
Kirk, D.A. 1995. Status report on the snowy owl, *Nyctea scandiaca*, in Canada. COSEWIC.

**Research Priority**
Low.

**Population Status**
Appear to be decreasing, though some sense they were abundant in 1991. Population appear 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 / **Nigilgnaq** | - 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 / **Tutlik** | - 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 Junio | - 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 / **Quingalivik** | - Aleutians and northern west coast of North America. |
| Lapland Longspur | - Southern Canada to southern U.S. |

## Bird Species List (cont'd)

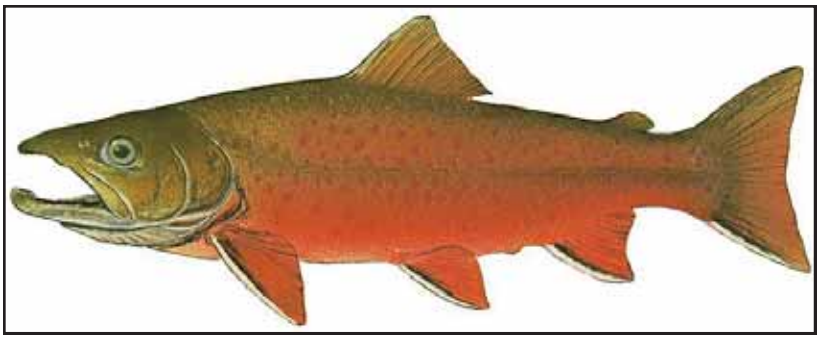
| | | |
|---|---|---|
| Least Sandpiper | - | Southern U.S. to Brazil. |
| Lesser Golden Plover | - | Mainly east of Rockies, southern South America. |
| Lesser Yellowlegs | - | Southern U.S. to Argentina. |
| Long-billed Dowitcher | - | West coast U.S. to Guatemala. |
| Long-tailed Jaeger | - | Migrant 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 / **Irugaq** | - | 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 / **Suglia** | - | Along coast to northern Mexico and Florida. |
| Red-winged Blackbird | - | Northern U.S. south. |
| Redpoll | - | N.W.T., Yukon, Alaska, central Canada |
| Rock Ptarmigan / **Qariq** | - | 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. |

## Bird Species List (cont'd)

| | | |
|---|---|---|
| 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 CHARR (*Salvelinus alpinus*) / QALUKPIK

**Biology**



Spawn in August or early September, males mate with several females. In some locations, only 5-10 per cent of the population spawns annually. Females spawn every second or third year, eggs sensitive to warm temperatures. Depending on location, females may mature at different sizes. Young migrate to see after 5-7 years, usually before or at break-up. Most charr return to home stream to overwinter. Maximum size reached in about 20 years; slow growing, slow maturing. Nothing known of historical trends, studies show that populations appear to be stable and less productive than other areas in the ISR. Considerate debate regarding occurrence of arctic charr and Dolly Varden charr along Yukon North Slope. Current research suggests arctic charr are primarily only found in lakes while anadromous charr are primarily Dolly Varden.

**Traditional Use**

A food source.

**Important Habitat**

Fish Hole, Rat River, Big Fish River, Fish Creek, Babbage River, Peel River, Shingle Point. Charr occasionally travel the Mackenzie near Inuvik and are caught.

**Management Plans/Agreements**

Rat River Charr Fishing Plan - March 1999
West Side Charr Fishing/Management Plan to cover stocks utilized by Aklavik will begin in 2000.

**Recent Research**

Reist, J.D., Johnson, J.D and T.J. Carmichael, 1992. Variation and specific identity of charr from northwestern Arctic Canada. Special Proceedings of the American Fisheries Society Conference on "Fish Ecology of Arctic North America". Fairbanks.

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

**Research Priority**

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

**Population Status**

Declining at Fish Hole. Babbage River population appears to be stable. Firth River population appears to be stable.

**Population Goal**

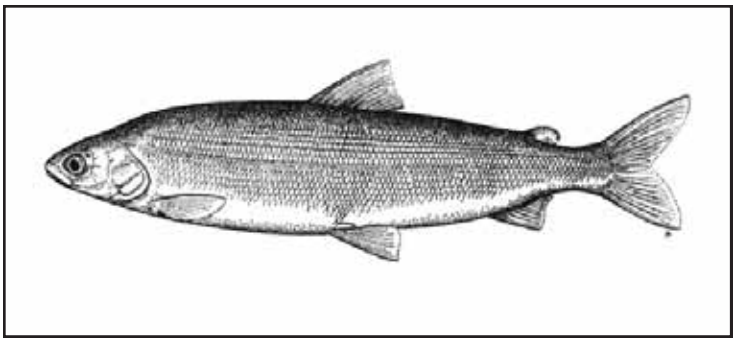
Unspecified. Maintain adequate numbers to sustain (current/ increased) harvest. Would generally like more.

**Conservation Measures**

- Ensure harvest is sustainable.
- Do not take more than needed.
- Identify and protect important habitats from disruptive land uses.

# ARCTIC CISCO (*Coregonus autumnalis*)

**Biology**



The Arctic cisco is the most saline-tolerant of the anadromous coregonids 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), 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**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

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

Dillinger et all. 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.

**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.

# ARCTIC GRAYLING (*Thymallus arcticus*) / HULUKPAUGAQ

## Biology


E.R. Keeley

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

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

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

## Research Priority

Unspecified.

## Population Status

Locally common in certain streams.

## Population Goal

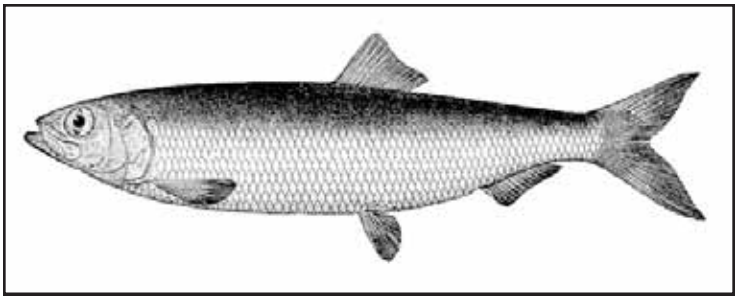
Adequate supply at present.

## Conservation Measures

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

# BLUE or PACIFIC HERRING (*Clupea pallasi)* / 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, charr, 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**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

FJMC North Slope Stock Identity Study (Charr 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**

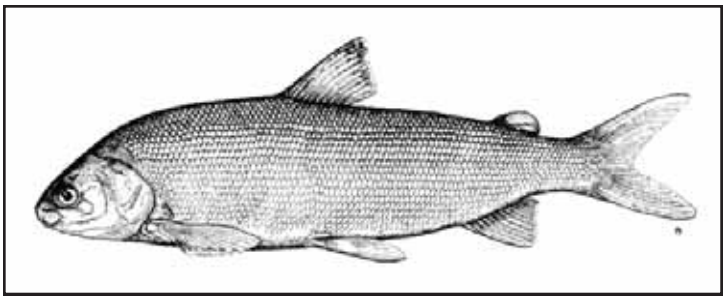
Adequate supply at present.

**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*) / ANAAKIQ

**Biology**



Distributed in fresh and brackish waters of arctic drainages of northwestern North America and northern Eurasia, south to approximately the 60th parallel. Spawn mainly over gravel areas in rivers in October or November. Downstream migration of post-spawning fish may occur gradually over the winter. May mature at approximately seven years of age. More frequently encountered in rivers than lakes, although distinct anadromous and non-migratory lake dwelling stocks are known from the Mackenzie River basin. Often found in coastal areas of the Beaufort Sea. Feed on aquatic insects, small molluscs and crustaceans. 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**

Broad whitefish will be the second species for an Integrated Fisheries Management Plan for this area. Discussions will begin in 2001.

**Recent Research**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

DFO/FJMC traditional knowledge study being conducted on broad whitefish beginning 1992. Data being collected in conjunction with Mackenzie River Test Fishery (1989-1994).

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.

**Research Priority**

Unspecified.

**Population Status**

Locally abundant.

**Population Goal**

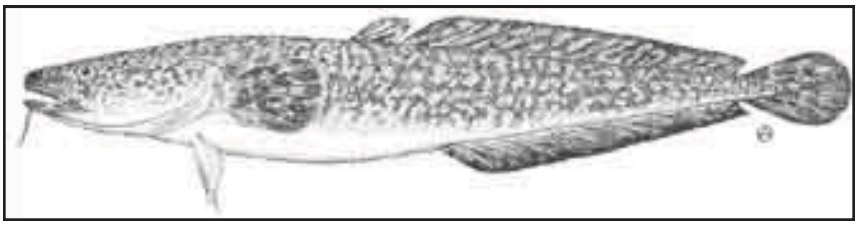
Maintain abundant population to support subsistence harvest.

**Conservation Measures**

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

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

**Biology**



One of few Canadian fish that spawns in mid-winter (January-March) under the ice. Spawning usually in 3 m (10 ft.) or less of water over sand or gravel in shallow bays or on gravel shoals. Most spawn in lakes though some use rivers. Males arrive to spawn 3 or 4 days before females. Spawn at night. Move into tributary rivers during late winter early spring. Move to deep water in summer. Females generally larger than males. Maximum size known for Canada is about 1 m (3.3 ft.) long and 8.4 kg (18.5 lb). Elsewhere may reach 34 kg (75 lb). Maximum age about 15 years. Feed mostly on aquatic insect as young, adults primarily eat other fish.

**Important Habitat**

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

**Management Plans/Agreements**

None.

**Recent Research**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

Arctic Borderlands Ecological Co-op Loche Liver Study, 1999.

Lockhart, L. Study of loche Livers from Mackenzie River Near Norman Wells. DIAND Environmental Studies No. 61.

**Research Priority**

Unspecified.

**Population Status**

Appear locally common and stable.

**Population Goal**

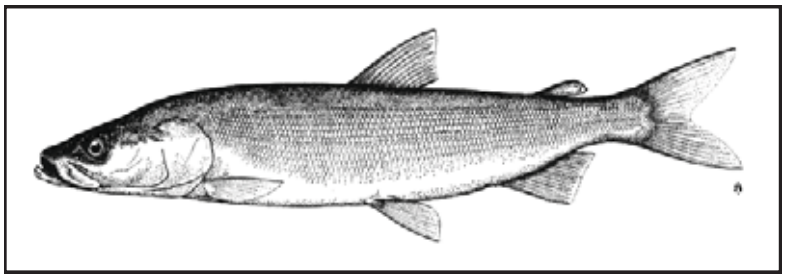
Maintain abundant population to support subsistence harvest.

**Conservation Measures**

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

# **CONEY** or **INCONNU** (*Stenodus leucichthys*) / **HIGAQ**

**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**

The Integrated Fisheries Management Plan was signed by FJMC and the communities of Tuktoyaktuk, Inuvik and Aklavik for inconnu. The Plan will also be signed off by the Gwich’in communities of Aklavik, Inuvik, Tsiigehtchic and Fort McPherson as well as Sahtu representatives from Fort Good Hope. It identifies the work plan for next five years. It is the first of several IFMPs planned for the area.

**Recent Research**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

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.

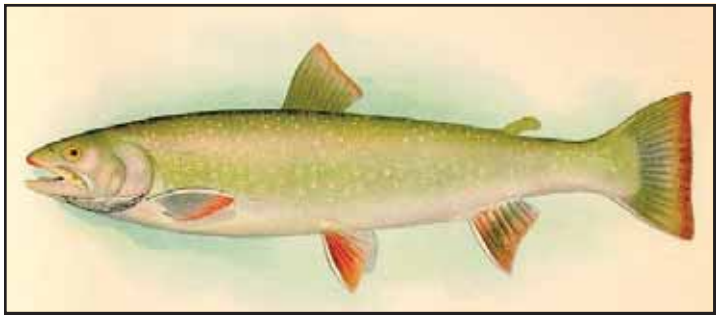
**Population Goal**
Maintain abundant population to sustain subsistence harvest.

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

# DOLLY VARDEN CHARR (*Salvelinus malma*) / QALUKPIK

**Biology**

Dolly Varden belong to a group of fish called charr. 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 charr 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 charr occur to the east of the Mackenzie (Hornaday River, Holman rivers).



Dolly Varden spawn in groundwater-fed mountain streams, usually during the fall from mid-August to November. The female, depending on her size, may deposit from 600 to 6,000 eggs (2,500 to 10,000 in the northern form) 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 June.

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 13 cm (5 in) long and are called smolt. This migration usually occurs in May or June, although significant but smaller numbers have been recorded migrating to sea in September and October.

After their first seaward migration, Dolly Varden usually spend the rest of their lives wintering in and migrating to and from fresh water. Southern form Dolly Varden overwinter in lakes, while most northern Dolly Varden overwinter in rivers.

At maturity, Dolly Varden return to spawn in the stream from which they originated. The fish possesses the ability to find their “home” stream without randomly searching, as was the case in their original search for a wintering area. At this age they may be 30.5-41 cm (12-16 in.) long and may weigh from 20-45 g (0.5-1 lb.). Northern Dolly Varden reach maturity at age 5 to 9 after having spent three or four summers at sea, and may be 41-61 cm (16-24 in.) long. Mortality after spawning varies depending on the sex and age of the fish. Males suffer a much higher mortality rate after spawning, partly due to fighting and the subsequent damage inflicted on each other. It is doubtful that much more than 50 percent of the Dolly Varden live to spawn a second time. A small number may live to spawn more than twice. Few southern Dolly Varden appear to live longer than 8 years. Northern Dolly Varden may live as long as 16 years, but individuals over age 10 are uncommon. Maximum size for southern Dolly Varden is between 38-56 cm (15-22 in.) and up to 1.8 kg (4 lb.); however, occasional 4.1-5.4 kg (9-12 lb) fish are reported, especially in northern populations.

**Traditional Use**

Very important food source.

**Important Habitat**

Fish Hole, Rat River, Big Fish River, Fish Creek, Babbage River, Peel River, Shingle Point. Charr occasionally travel the Mackenzie near Inuvik and are caught.

**Management Plans/Agreements**
Rat River Charr Fishing Plan - March 1999
West Side Charr Fishing/Management Plan to cover stocks utilized by Aklavik will begin in 2000.

**Recent Research**
DFO / GRRB Rat River Charr Study.

Weir assessments for Dolly Varden charr 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. This is a long-term program that may include Tuktoyaktuk in the future.

DFO/Aklavik HTC mark-recapture study at the fish holes on Big Fish River in 1998.

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

Reist, J.D. 1989. Genetic structure of allopatric populations and sympatric life history types of charr, *Salvelinus alpinus/malma*, in the western Arctic, Canada. DFO.

Reist, J.D., Johnson, J.D and T.J. Carmichael, 1992. Variation and specific identity of charr from northwestern Arctic Canada. Special Proceedings of the American Fisheries Society Conference on "Fish Ecology of Arctic North America". Fairbanks.

**Research Priority**
High: The community is very interested in knowing more about the biology and movement of Arctic Charr. There is also great concern over change in charr abundance and water quality in the Fish Hole.

**Population Status**
Declining at Fish Hole. Babbage River population appears to be stable. Firth River population appears to be stable.

**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.
- Limit Rat River charr harvest.

## RAT RIVER FISHING PLAN - MARCH 1999

### Goals of the Rat River Fishing Plan - March 1999

1. To maintain a healthy stock of charr in the Rat River system.
2. To maintain and manage the Rat River Dolly Varden charr fishery for the continued use and enjoyment by the residents of Aklavik and Fort McPherson.
3. To encourage cooperation among all users to ensure sound management of the Rat River charr stock.

### Recommended Safe Harvest Level

A) Given the most recent 1998 estimate of stock size (14,919), and DFO's suggested safe removal rate of 10-15%, the safe harvest level for this stock may be on the order of 1500 to 2000 charr per year. This level needs to be refined, however the safe removal rate is based on a study of slower-growing Arctic charr in the central Arctic. Rat River charr are smaller and grow more quickly than their counterparts to the east. The lack of major changes in stock size estimates during the period from 1989-1998 provide some evidence that the stock may be able to withstand removals beyond the 10-15% suggested for the eastern form of Arctic charr.

B) Until more information or indicators are available, the signatories of this Plan agree to an interim harvest guideline of 2000 charr per year for this fishery.

   To achieve this level of harvest the signatories of this Plan recommend that all persons fishing for Rat River charr cut back their own harvest in the amount of 50% from their 1998 level. People should take only what they need for their own subsistence purposes.

C) Community fishermen feel that the amount of charr that is consumed by bears, otters or other wildlife may have contributed to the decline in the stock. The amount of charr eaten by predators could be estimated.

### Recommended Fishing Gear and Methods

RRCs and HTCs are encouraged to set stricter guidelines (by-laws) outlining the following:

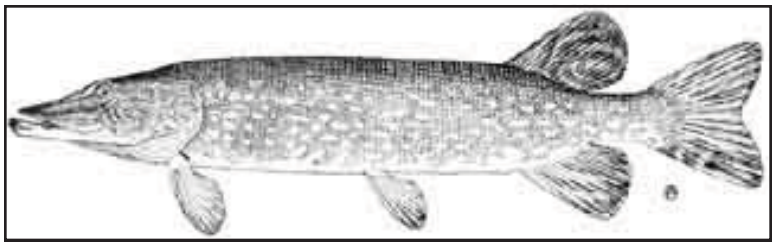
A) Use 10 cm (4 in.) or 11 cm (4.5 in.) mesh nets.
B) Nets should be no more than 30 meshes deep.
C) There should be no more than three (3) nets set per household.
D) Net check intervals should be twice per day during the entire fishing season (weather permitting) to prevent fish wastage.
E) Fishermen remaining at the fishery throughout the season should be given priority in the selection of fishing sites.
F) All charr nets should be marked with identification tags provided by the RRCs and HTC.

### Life of the Plan

This fourth version of the Plan will be in effect for one year, after which time it will be reviewed again in 2000, prior to the fishing season. The interval for reviewing the Plan after 2000 will be decided in 2000.

# JACKFISH or NORTHERN PIKE (*Esox lucius*) / SIULIK

**Biology**



Although widely distributed throughout Canada, they do not occur in the Maritime provinces and are absent in BC except in northern drainages. 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. 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.

**Management Plans/Agreements**

None.

**Recent Research**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

U.D.C. Test Fishery, 1988-93. Data being collected as part of the Mackenzie River Test Fishery (1989-1994).

**Research Priority**

Unspecified.

**Population Status**

Abundant.

**Population Goal**

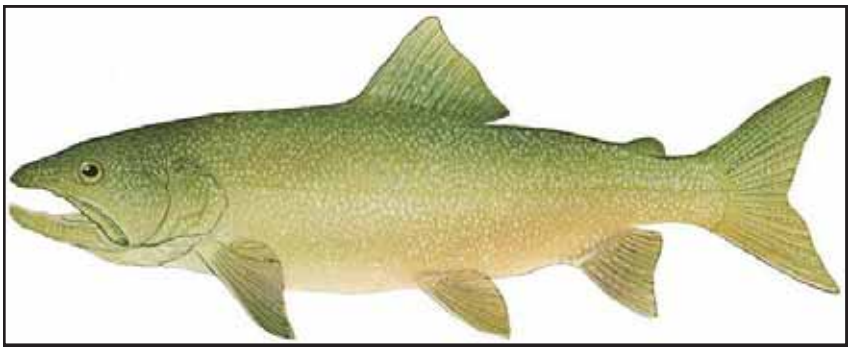
Maintain adequate populations to sustain subsistence harvest.

**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*) / IQALUAKPAK

**Biology**



Lake trout are most common in large, deep lakes, but are occasionally captured in large rivers or brackish (salty) water. Lake trout are slow growing, fall spawning fish (early-September) that, unlike salmon and other charr, do not build redds for their eggs. Spawning rarely occurs in rivers, but typically occurs over the shoals of lakes or along the shore of windswept islands. Spawning takes place over clean, rocky lake bottoms, most often at night. Eggs hatch early in the following spring. Lake trout are long-lived and the largest of the local charrs and may reach weights of over 20 kg (44 lb). Sexual maturity is reached at different ages in different areas, but in many populations, spawning may not take place until fish reach 13-16 years. Spawning by individual fish likely occurs only every second or third year. In most areas, lake trout feed on cisco, smelt, sticklebacks and sculpins, but in some lakes they may feed mainly on plankton and crustaceans. Lake trout are distinguished from other charr and salmon by their deeply forked tail and light-coloured spots. Lake trout are very sensitive to ecological disturbances.

**Important Habitat**

King Point Lakes
Husky Lakes

**Management Plans/Agreement**

HTC Bylaw requires minimum 11 cm (4.5 in.) mesh size on nets.

**Recent Research**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

**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**

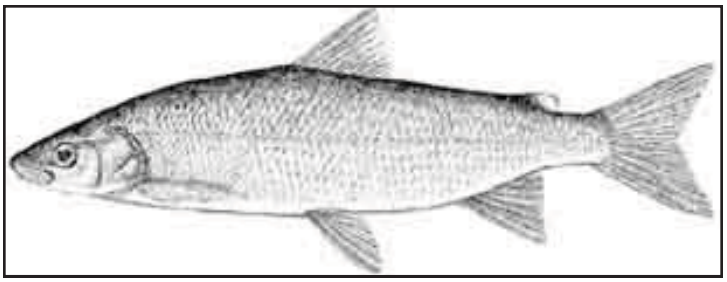
Unspecified. Maintain adequate population to support current harvest.

**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.

# LAKE WHITEFISH / CROOKED BACKS (*Coregonus cluepeaformis*) / PIKUKTUQ

**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 area 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 can often by distinguished by differences in colour and physical characters. Feed on aquatic insects, molluscs, amphipods and a variety of small fish and fish eggs. 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, streams of Tuktoyaktuk Peninsula, spawning throughout Mackenzie system.

**Management Plans/Agreements**

None.

**Recent Research**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

**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**

Index netting program begun 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. This is a long-term program that may include Tuktoyaktuk in the future.

FJMC North Slope Stock Identity Study (Charr 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.

FJMC / DFO

## 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 charr, 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.

### Marine Species

Arctic Cod (*Boreogadus saida*)
Blue Herring (*Clupea pallasi*) / Qaluhaq
Capelin (*Mallotus villosus*)
Chum Salmon (*Oncorhynchus keta*)[1]
Fourhorn Sculpin, Deepwater Sculpin or Devil Fish (*Myoxocephalus quadricornis*) / Kanayuq
Greenland Cod (*Gadus ogac*)
Pink Salmon (*Onchorhynchus gorbuscha*)[1]
Saffron Cod (*(Elegiums navaga*)
Sand Lance (*Amodytes sp.*)
Starry Flounder (*Platichthys stellatus*)
Tom Cod (*Microgadus proximus*) / Ulugaq

### Freshwater

Arctic Charr (*Salvelinus alpinus*) / Qalukpik[1] (land locked)
Arctic Cisco (*Coregonus autumnalis*)
Arctic Grayling (*Thymallus arcticus*) / Hulukpaugaq
Broad Whitefish (*Coregonus nasus*) / Anaqkiq
Burbot or Loche (*Lota lota*) / Tittaaliq
Dolly Varden (*Salvelinus malma*) / Qalukpik
Finescale Dace (*Phoxinus neogaeus*)
Flathead Chub (*Platygobio gracilis*)
Inconnu or Coney (*Stenodus leucichthys*) / Higaq
Lake Chub (*Couesius plumbeus*)
Lake Trout (*Salvelinus namaycush*) /
Lake Whitefish (*Coregonus clupeaformis*) / Pikuktuq or Qalupiaq
Least Cisco or Big-eyed Herring (*Coregonus sardinella*) / Qaluhaq[1]
Longnose Dace (*Rhinichthys cataractae*)
Longnose Sucker (*Catostomus catostomus*)
Nine-spine Stickleback (*Pungitius pungitius)*
Northern Pike (*Esox lucius*) / Siulik
Pond Smelt (*Hypomesus olidus*)
Rainbow Smelt (*Osmerus mordax*)
Round Whitefish (*Prosopium cylindraceum*)
Slimy Sculpin (*Cottus cognatus*)
Spoonhead Sculpin (*Cottus ricei*)
Trout Perch (*Percopsis omiscomaycus*)
Walleye (*Stizostedion vitreum*)
White Sucker (*Catostomus commersoni*)

1. These fish spend part of their life in salt water and part in fresh water. This life style is called "anadromous".

# INSECTS / QUPILGUT

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 (**kiktugait**) 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 (**niulgia**) 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:
- unglaciated areas where dolomite or limestone is common;
- west side of the Richardson Mountains in "White Mountains" area;
- south facing slopes dominated by pasture sage (*Artemesia 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.

W. Lynch / Parks Canada

# 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 an 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.

### PLANT SPECIES LIST

*Achillea sibirica*
*A. borealis*
*Aconitum delphinifolium* subsp. *delphinifolium*
*Agoseris glauca*
*Agropyron boreale* subsp. *alaskanum*
*A. b.* subsp. *boreale*
*A. b.* subsp. *hyperarcticum*
*A. macrourum*
*Agrostis borealis*
*A. scabra*
*Allium schoenoprasum* var. *sibiricum*
*Alnus crispa* subsp. *crispa*
*A. incana* subsp. *tenuifolia*
*Alopecurus alpinus* subsp. *alpinus*
*Amerorchis rotundifolia*
*Andromeda polifolia*
*Androsace chamaejasme* subsp. *lehmanniana*
*A. septenrionalis*
*Anemone drummondii*
*A. multifida*
*A. narcissiflora* subsp. *interior*
*A. parviflora*
*A. richardsonii*
*Antennaria friesiana* subsp. *compacta*
*A. f.* subsp. f*riesiana*
*A. isolepis*
*A. monocephala* subsp. *philonipha*
*Aquilegia brevistyla*
*Arabis hirsuta* subsp. *pycrocarpa*
*A. drummondii*
*A. divaricarpa*
*Arctagrostis latifolia* var. *latifolia*
*A. l.* var. *arundinacea*
*Arctophila fulva*
*Arctostaphylos alpina* (Black bearberry, **Paungat** - food)(*)
*A. rubra*
*A. uva-ursi* var. *uva-ursi*
*Arenaria capillaris*
*A. humifusa*
*Armeria maritima* subsp. *arctica*
*Arnica alpina* subsp. *angustifolia*
*A. a.* subsp. *attenuata*
*A. a.* subsp. *tomentosa*
*A. frigida*
*A. lessingii* subsp. *lessingii*
*Artemisia arctica* subsp. *arctica*
*A. a.* subsp. *comata*
*A. borealis*
*A. frigida*
*A. furcata*
*A. tilesii* subsp. *elatior*
*A. tilesii* subsp. *tilesii* (Wormwood - medicine)*

## Plant Species List (cont'd)

*Aster sibiricus*
*Astragalus aboriginum*
*A. alpinus* subsp. *arcticus*
*A. alpinus* subsp. *alpinus*
*A. bodinii*
*A. eucosmus* subsp. *eucosumus*
*A. eucosmus* subsp. *Sealei*
*A. umbellatus*
*Atriplex gmelini*
*Beckannia 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. *langsdorfii*
*C. deschampsioides*
*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. microglochin*
*C. misandra*
*C. nardina*
*C. obtusata*
*C. petricosa*
*C. podocarpa*
*C. ramenskii*+
*C. rariflora* (var. *androgyra considerd 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. z*schackei*
*C. capitatum*
*Chrysanthemum arcticum* subsp. *polare*
*C. bipinnatum* subsp. *huronense*
*C. integrifolium*
*Chrysosplenium tetrandrum*
*Cicuta mackenzieana*
*Cnidium cnidiifolium*
*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*

## Plant Species List (cont'd)

*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*
*M. apetalum* subsp. *articum*
*M. taimyrense*
*M. taylorae*
*Menyanthes trifoliata*
*Mertensia maritima* subsp. *maritima*

## Plant Species List (cont'd)

*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. perfoliatus*
*P. praelongus*
*P. subsibiricus*
*P. vaginatus*
*P. zosterifolius* 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*

## Plant Species List (cont'd)

*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. myrtillifolia*
*S. niphoclada*
*S. phlebophylla*
*S. phylicifolia*
*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*
*S. foliolosa* var. *foliolosa*
*S. hieracifolia*
*S. hirculus* (Bog saxifrage - food)(*)
*S. nivalis*
*S. oppositifolia* subsp. *oppositifolia*
*S. punctata* subsp. *Nelsoniana* (Cordate-leaved Saxifragi–food)*
*S. reflexa*
*S. rivularis* var. *flexuosa*
*S. rivularis* var. *rivularis*
*S. tricuspidata*
*Sedum rosea* subsp. *integrifolium*
*Selaginella sibirica*
*Senecio atropurpureus* subsp. *frigidus*
*S. a.* subsp. *tomentosus*
*S. congestus*
*S. hyperborealis*
*S. lugens*
*S. pauperculus*
*S. resedifolius*
*S. yukonensis*
*Shepherdia canadensis*
*Sibbaldia procumbens*
*Silene acaulis* subsp. *acaulis*
*S. a.* subsp. *subacaulescens*
*Silene repens*
*Smelowskia calycina*
*Solidago multiradiata*
*Sparganium hyperboreum*
*S. multipedunculatum*
*Spiraea beauverdiana*
*Stellaria calycantha* subsp. *interior*
*S. calycantha* var. *isophylla*
*S. crassifolia*
*S. edwardsii*
*S. humifusa*
*S. laeta*
*S. longipes*
*S. media*
*S. monantha*
*Taraxacum alaskanum*
*T. ceratophorum*
*T. lacerum* (Dandelion - food)*
*T. phymatocarpum*
*Thellungiella salsuginea*
*Thlaspi arcticum*
*Tofieldia coccinea*
*T. pusilla*
*Trichophorum caespitosum*
*Triglochin maritimum*
*T. palustris*
*Tripleurospermum phaeocephalum*
*Trisetum spicatum* subsp. *molle*
*T. s.* subps. *spicatum*
*Utricularia intermedia*
*U. vulgaris* subsp. *macrorhiza*
*Vaccinium uligonosum* subsp. *alpinum* (Blueberry, **Asivit** - food, fuel)*
*V. u.* subsp. *microphyllum* (Blueberry, **Asivit** - food, fuel)*
*V. vitis-idaea* subsp. *minus* (Lingonberry, Cranberry, **Kimingnat**-food)*
*Valeriana capitata* (Valerian - medicine)*
*Viola epipsila* subsp. *repens*
*Wilhelmsia physodes*
*Woodsia alpina*+
*W. glabella*
*Zygadenus elegans*

+ 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.

## HARVEST SEASONS IN THE INUVIK PLANNING AREA

| Inuvik | Jan 1-15 | Jan 15-31 | Feb 1-15 | Feb 15-28 | Mar 1-15 | Mar 5-31 | Apr 1-15 | Apr 15-30 | May 1-15 | May 15-31 | Jun 1-15 | Jun 15-30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | furbearers | furbearers | furbearers | furbearers | furbearers | furbearers | furbearers | furbearers | furbearers | | | |
| | | | | | | muskrat | muskrat | muskrat | muskrat | muskrat | muskrat | |
| | | | | | | | | | | | | fish |
| | caribou | caribou | caribou | caribou | caribou | caribou | caribou | caribou | caribou | caribou | caribou | caribou |
| ptarmigan all year, | | | moose | moose | moose | moose | | | | | | |
| note rabbits | | | | | | | | | birds | birds | birds | birds |

| Inuvik | Jul 1-15 | Jul 15-31 | Aug 1-15 | Aug 15-31 | Sep 1-15 | Sep 15-30 | Oct 1-15 | Oct 15-31 | Nov 1-15 | Nov 15-30 | Dec 1-15 | Dec 15-31 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | beluga | beluga | beluga | beluga | | | | | furbearers | furbearers | furbearers | furbearers |
| | | | | | | | | | | | | |
| | fish | fish | fish | fish | fish | fish | fish | fish | fish | fish | | |
| | caribou | caribou | caribou | caribou | caribou | caribou | | | caribou | caribou | caribou | caribou |
| | | | moose | moose | | | | | | | | |
| | | | | | birds | birds | | | | | | |

## 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, from time to time in force, 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 well being.

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.

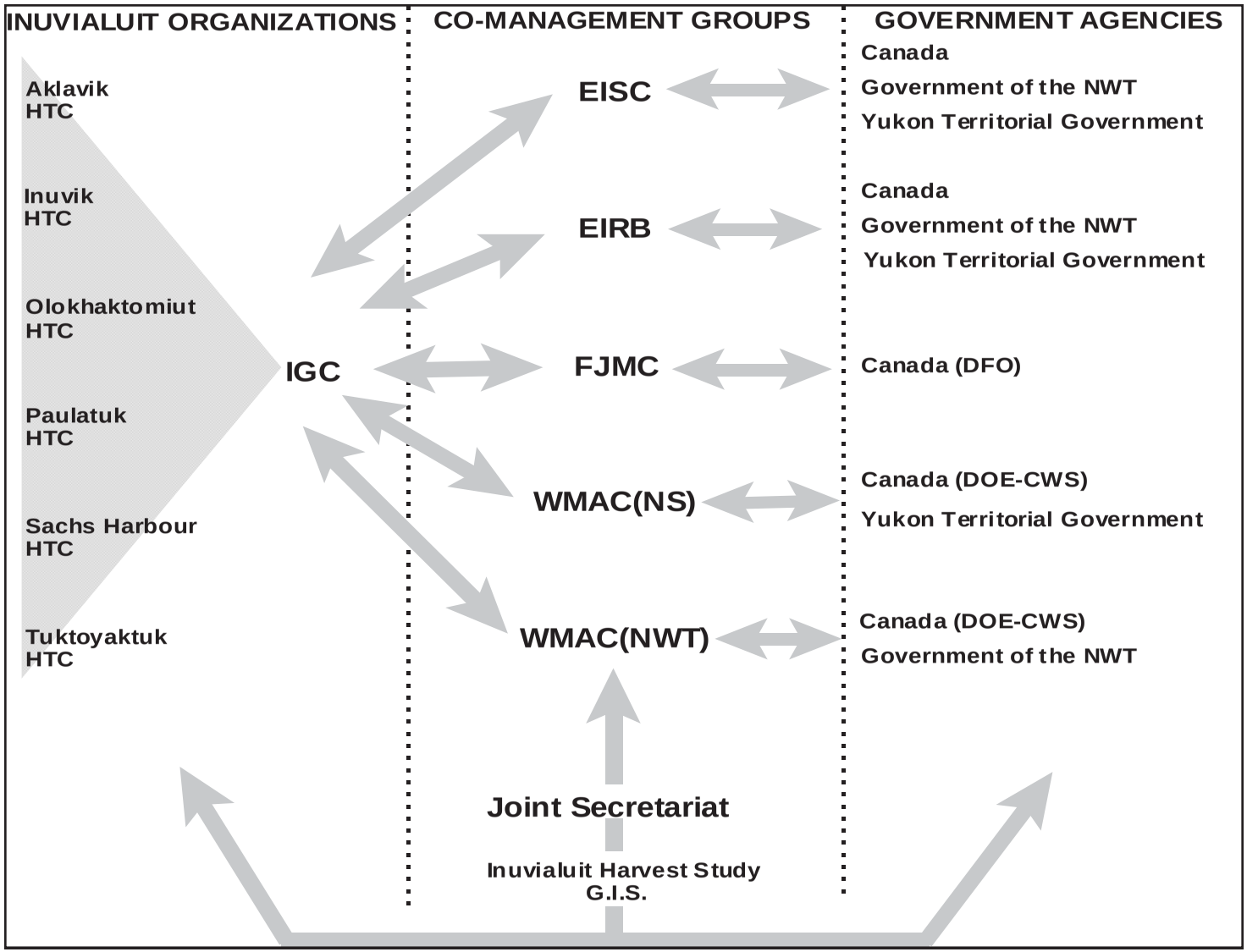
3 **Enhanced inter-jurisdictional Cooperation.** Ensure integrated and coordinated management of North Slope wildlife and habitat through inter-jurisdictional and international cooperation.

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

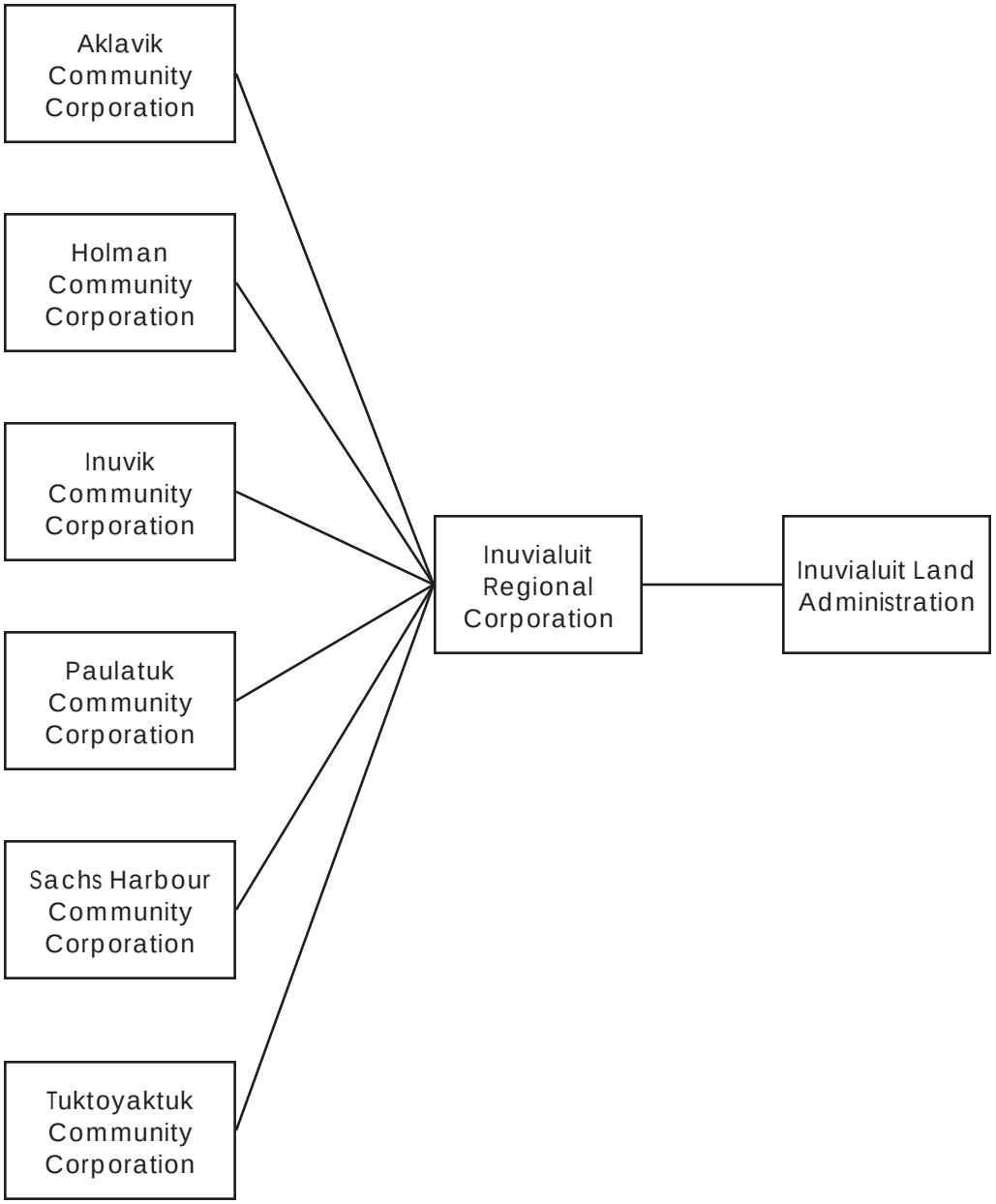



* Arrows represent the flow of information between organizations

Copies of the plan are available from the Wildlife Management Advisory Council (NWT), P.O. Box 2120, Inuvik, NWT, X0E 0T0. Phone (867) 777-2828.

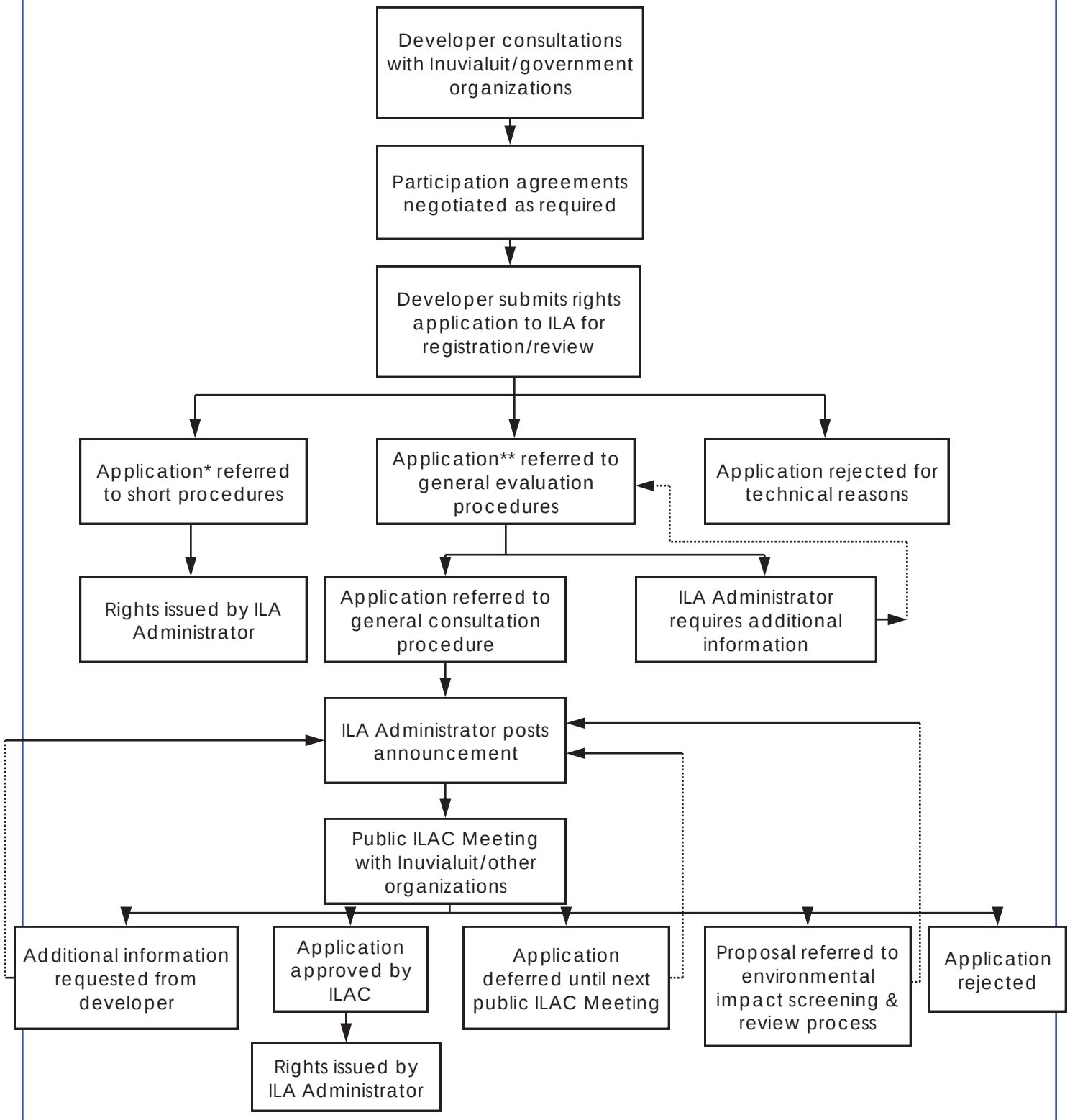
## APPENDIX E

## ORGANIZATION CHART FOR PRIVATE LAND MANAGEMENT UNDER THE INUVIALUIT FINAL AGREEMENT



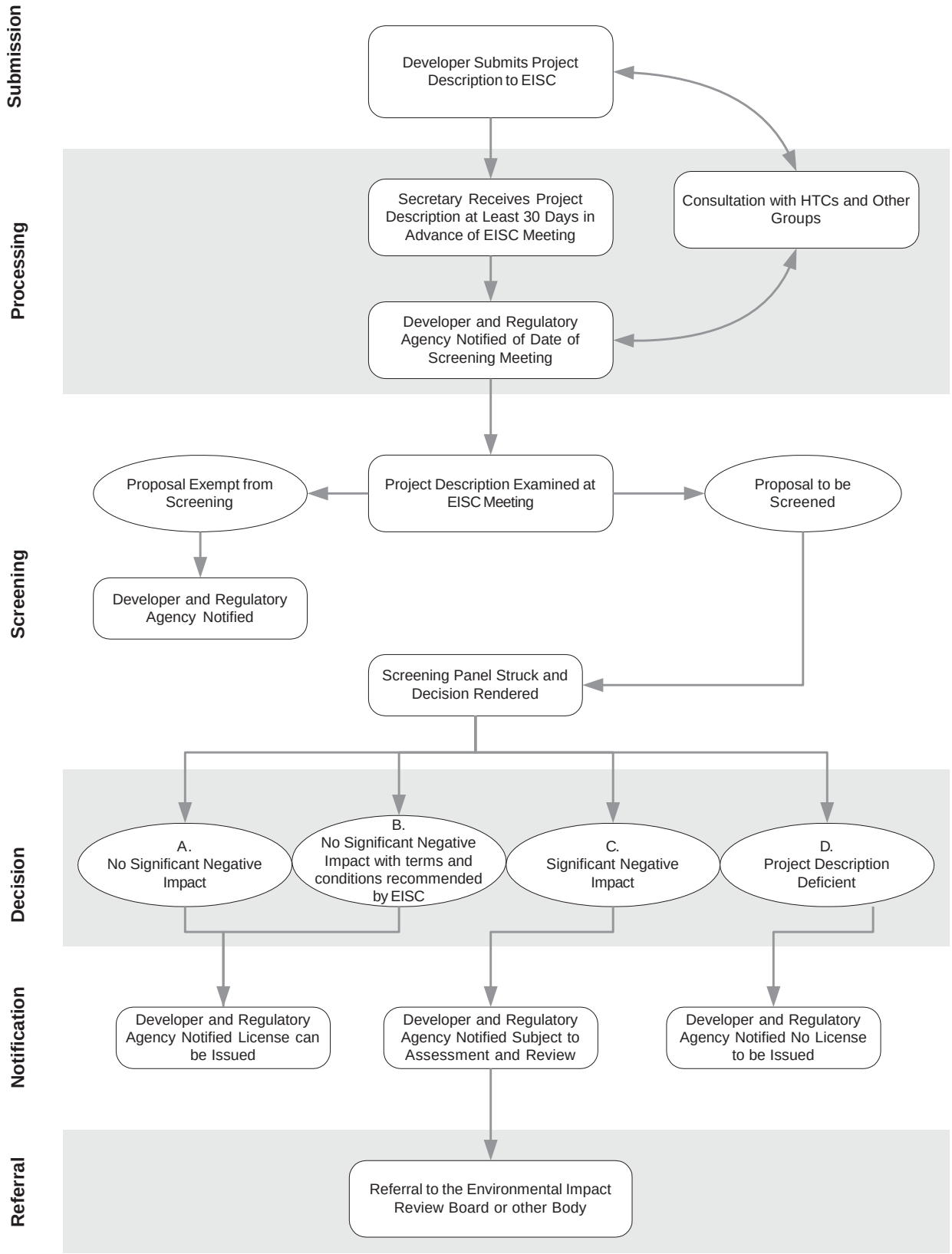
## APPENDIX F

## INUVIALUIT LAND ADMINISTRATION APPLICATION REVIEW PROCESS



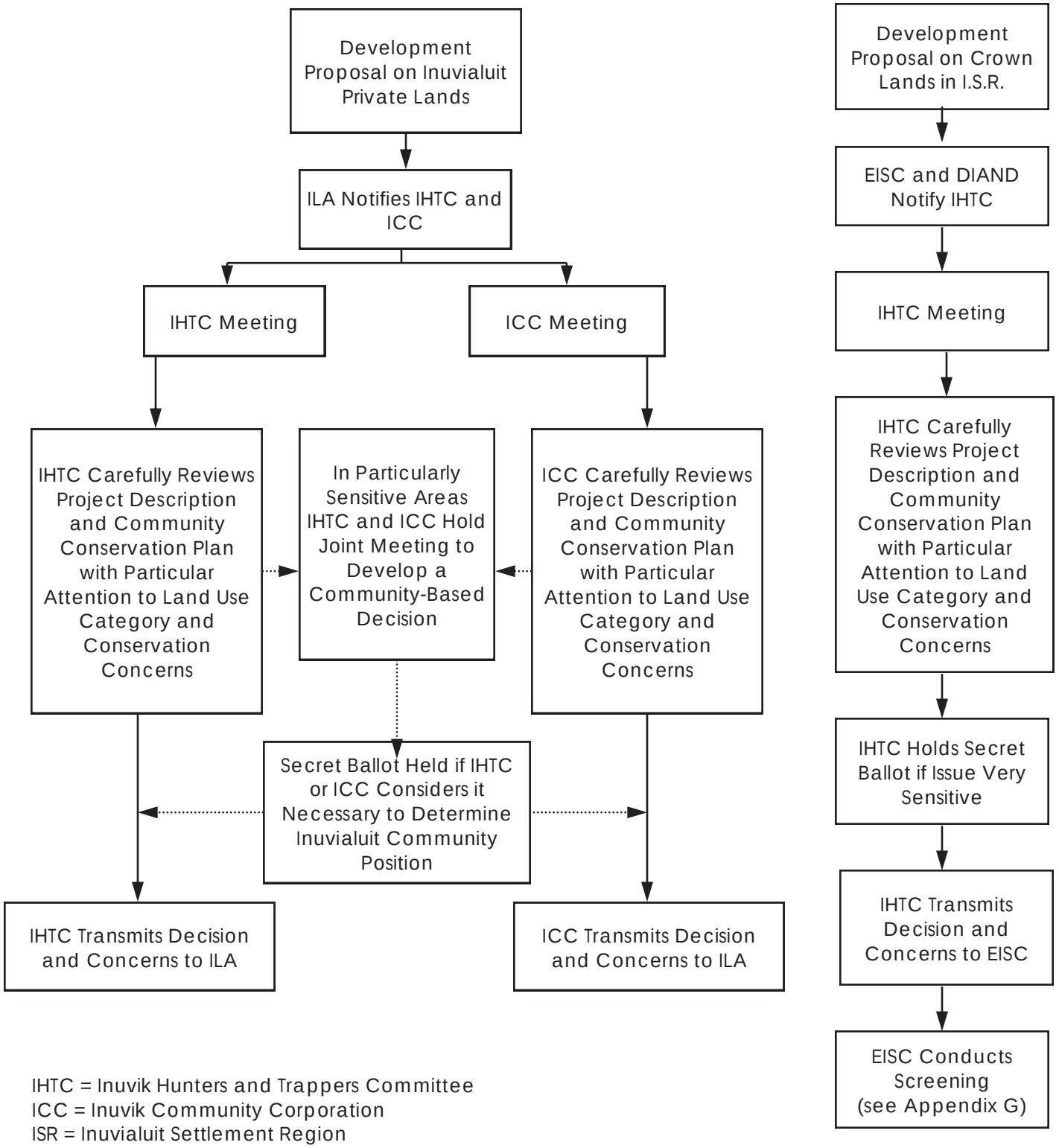
## APPENDIX G

# 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.) or 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.