



# Social, Cultural and Economic Overview and Assessment Report For the Beaufort Sea Large Ocean Management Area



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# Beaufort Sea Social, Cultural and Economic Overview and Assessment Report

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SCE WG membership consists of Inuvialuit Regional Corporation (IRC); Inuvialuit Joint Secretariat (JS); Government of the Northwest Territories (GNWT); Yukon Government (YG); Indian and Northern Affairs Canada (INAC); Fisheries and Oceans Canada (DFO); Parks Canada (PC) and; Canadian Association of Petroleum Producers (CAPP).

All pictures in this document are sourced to the Department of Fisheries and Oceans Central and Arctic region Image Library, unless otherwise specified.

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## List of Acronyms

AIBWC	Alaska and Inuvialuit Beluga Whale Committee
APG	Aboriginal Pipeline Group
BP	British Petroleum
BSBMP	Beaufort Sea Beluga Management Plan
BSIMPI	Beaufort Sea Integrated Management Planning Initiative
BSStRPA	Beaufort Sea Strategic Regional Plan of Action
CAPP	Canadian Association of Petroleum Producers
CCG	The Canadian Coast Guard
CCP	Community Conservation Plans
CEAA	Canadian Environmental Assessment Agency
CEAM	Cumulative Effects and Assessment Monitoring
CWB	Community Well-Being
CWS	Canadian Wildlife Service
DEW	Distant Early Warning
DFO	Fisheries and Oceans Canada
DND	Department of National Defence
EC	Environment Canada
EIRB	Environmental Impact Review Board
EISC	Environmental Impact Screening Committee
ESF	Environmental Stewardship Framework
FJMC	Fisheries Joint Management Committee
GNWT	Government of the Northwest Territories
GSA	Gwich'in Settlement Area
HDI	Human Development Index
HTC	Hunters and Trappers Committee
ICRC	Inuvialuit Cultural Resource Centre
IFA	Inuvialuit Final Agreement
IGC	Inuvialuit Game Council
INAC	Indian and Northern Affairs Canada
IRC	Inuvialuit Regional Corporation
ISR	Inuvialuit Settlement Region
LOMA	Large Ocean Management Area
MGP	Mackenzie Gas Project
MVP	Mackenzie Valley Pipeline
MPA	Marine Protected Area
MVAPC	Mackenzie Valley Aboriginal Pipeline Corporation

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MVAPLP	Mackenzie Valley Aboriginal Pipeline Limited Partnership
MWA	Marine Wildlife Areas
MWA	Marine Wildlife Areas
NCP	Northern Contaminants Program
NEB	National Energy Board
NMCA	National Marine Conservation Area
NRCan	Natural Resources Canada
NTCL	Northern Transportation Company Limited
NWT	Northwest Territories
PAS	Protected Areas Strategy
PCA	Parks Canada Agency
RCMP	Royal Canadian Mounted Police
RWED	Department of Resources, Wildlife, and Economic Development
SLICA	Survey of Living Components in the Arctic
TN MPA	Tarion Niryutait Marine Protected Area
WMAC NS	Wildlife Management Advisory Council for the North Slope
WMAC NWT	Wildlife Management Advisory Council for the Northwest Territories
YG	Yukon Government



## **1. INTRODUCTION TO THE SOCIAL, CULTURAL AND ECONOMIC OVERVIEW AND ASSESSMENT REPORT**

People and businesses in coastal communities depend on coastal ecosystems and have long-standing social, cultural and economic connections to these ecosystems. Resource management decisions directly affect local people and businesses, and their effects, both positive and negative, may be profound. Changes in ecosystems can affect all elements of human well-being, including basic material needs, health, social relations, security, and freedom of choice and action. Loss of culturally valued ecosystems and landscapes can significantly impact cultural identity and social stability and lead to social disruption and cultural erosion.



Oceans day community feast in Ulukhaktok

Social, cultural and economic information can be used to identify the needs, interests, and expectations of the people that government serves. The information can also enhance our ability to anticipate and understand conflicting interests, and can reveal the values and potential interests,

which may influence decision-making. Our recognition of human dimensions in oceans management can help ensure a balance in decision-making and can help generate an effective management plan and system. If managers incorporate the importance of communities' sense of identity, way of life, cultural distinctiveness, and social network and kinship systems, into their planning, communities will in turn be better equipped to adapt to changes and pressures that arise. Additionally, under effective management regimes, communities will be more likely to play a leadership role in sustaining healthy ecosystems, cultures and economies.



Beach at Shingle Point

Accordingly, this document is meant to assist those engaged in developing integrated ocean management plans incorporate social, cultural and economic information into the Integrated Ocean Management planning exercise. Integrated Ocean Management planning is an outcomes-oriented process that promotes the management and use of marine areas and resources in a manner that addresses the multiple needs and expectations of society, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by the ocean. Assessing social,

cultural and economic characteristics and issues allows diverse interest groups to find common ground and set priorities based on core social, cultural, economic and environmental values.

A variety of existing information sources have been used in development of this Social, Cultural and Economic Overview and Assessment Report (SCEOAR). The Social Cultural Economic Working Group (SCE WG) was tasked with seeking, compiling and assessing information on key social, cultural,

## **1.1 Integrated Management in the Beaufort Sea Large Ocean Management Area**

Integrated management is a comprehensive way of planning and managing human activities to minimize conflict. Conflicting issues may include ecological, economic and socio-cultural factors. This type of management brings people together to resolve conflicts and manage human activities in ocean areas where multiple



**The community of Tuktoyaktuk**

and economic characteristics, issues and themes in the Beaufort Sea planning area, so that this information was readily available and could be used for planning and informed decision-making by multiple agencies and interest groups in the Beaufort Sea area. The Working Group produced the Beaufort Sea Large Oceans Management Area and Inuvialuit Settlement Region Social, Cultural and Economic Overview to provide an up-to-date reporting of data in relation to social, cultural and economic indicators. This SCEOAR will be updated and maintained in collaboration with key partners on the SCE WG as relevant new information is received.

interests are involved. Integrated management often focuses on conservation while making development and human activities possible. Governments, community members, stakeholders, regulators and other interested groups share diverse ideas, concepts and data; through collaboration and communication, one plan is developed. The plan balances economic development, sustainable use and responsible resource conservation based on what is best for Canada, the residents of the region, and the marine ecosystems upon which they depend.



Ocean going vessels in McKinley Bay

Future economic development in the Beaufort Sea region is expected to cause stress on the marine and coastal environment, especially due to the higher degree of sensitivity of the Arctic environment. A plan is needed to ensure all development proceeds in a sustainable manner that takes into consideration the values, interests and rights of the region's stakeholders. An integrated management plan will help to minimize user conflict in the Beaufort Sea, identify areas of joint interest and opportunities for collaboration. This will then maximize opportunities for economic and social well-being and promote long term ecological integrity.

The Beaufort Sea Large Oceans Management Area (LOMA) (Figure 1) is one of five priority

areas designated by the Government of Canada for Integrated Ocean Management planning. It is home to the largest stock of beluga whales in the world, a large summer population of bowhead whales and year-round populations of polar bears, ringed seals and bearded seals. The LOMA is located in the Western Arctic and covers approximately 1,750,000 square kilometres. This large area falls within the Inuvialuit Settlement Region and as such, all actions taking place within the LOMA must harmonize with the constitutionally protected Inuvialuit Final Agreement. The communities of Aklavik, Inuvik, Ulukhaktok, Paulatuk, Sachs Harbour and Tuktoyaktuk are direct users of the LOMA and residents use the area for fishing, hunting, harvesting and other subsistence, recreational and cultural activities. As well, the Beaufort Sea supports a number of other activities including ecological and cultural tourism, year-round transportation (snow mobiles, boats, and all-terrain vehicles), and resource industries including oil and gas exploration, and gravel and sand extraction. Marine shipping is important for the maintenance of these communities, as without sea lift operations, survival would be difficult for most communities.



Left: Polar Bear –J. Orr Right: Ringed seal





Figure 1 The Beaufort Sea Large Ocean Management Area (LOMA).

The Integrated Ocean Management Plan for the Beaufort Sea is being developed through six stages (Figure 2):

- 1. Defining and assessing a management area** – This is covered by the Ecosystem Overview and Assessment Report and the Social, Cultural and Economic Overview and Assessment Report.
- 2. Engaging affected interests** – This is achieved through community and stakeholder consultation and participation, as well as the development of a governance structure.
- 3. Developing a plan** – The development of a Draft Plan involves merging the overview and assessment reports and identifying sustainable development objectives, management strategies and indicators.
- 4. Receiving endorsement of the plan** – This requires support from governance bodies and local communities plus

approval by the Minister of Fisheries and Oceans Canada and Inuvialuit land claim institutions

5. **Implementing the plan** – Government and organizations will develop work plans to implement components of the plan within their jurisdictions. At this stage, action plans to identify key strategies and divisions of responsibility are developed.
6. **Monitoring and evaluating outcomes** – The plan will be adapted as new information becomes available and will be subject to audit.

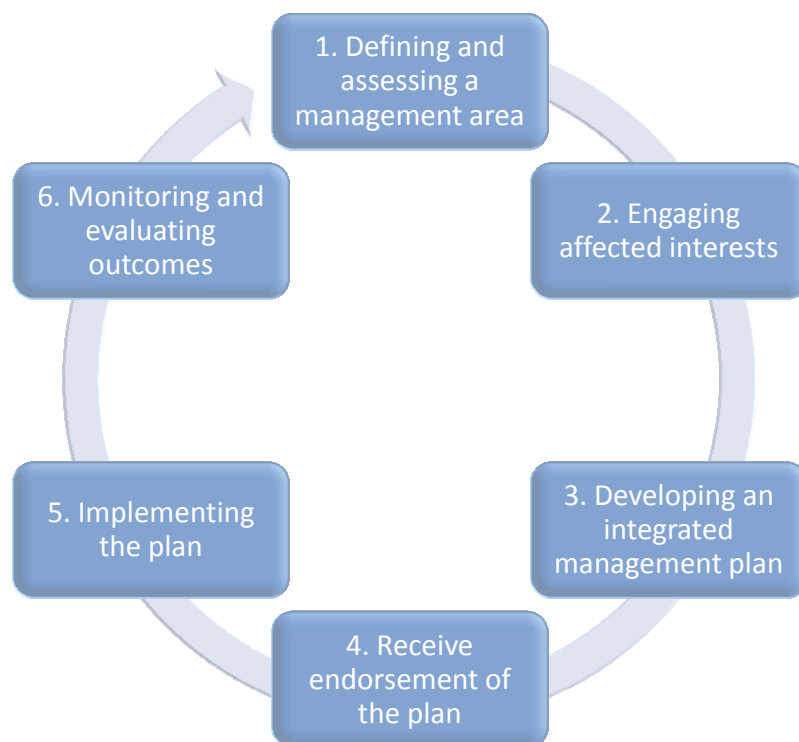
A number of documents will be developed as the planning process for integrated management in the Beaufort Sea progresses. These documents include:

- Ecosystem Overview and Assessment Report (completed)

- Social, Cultural and Economic Overview and Assessment Report (this document)
- Ecologically and Biologically Significant Areas (completed)
- Ecologically and Biologically Significant Species and Community Properties (completed)
- Framework to Incorporate Traditional Knowledge Into Integrated Ocean Management
- Sustainable Development Objectives
- The final document produced is titled the Beaufort Sea Integrated Management Plan.

### **The History of Integrated Management in the Beaufort Sea**

The Beaufort Sea Integrated Management Planning Initiative (BSIMPI) was the first process to initiate integrated ocean management in the Beaufort Sea. The goal



**Figure 2: The integrated management planning process used for the Beaufort Sea Integrated Oceans Management Plan.**

was to develop and implement oceans governance appropriate to the Inuvialuit Settlement Region and the Beaufort Sea, implement the National Integrated Management Framework in the Beaufort Sea, and develop and implement an integrated management planning process for ocean-related activities in the Beaufort Sea. Initiated by DFO in collaboration with key Inuvialuit interests (with industry input later in the process), BSIMPI started on a small scale by focusing on the establishment of the Arctic's first marine protected area.



**BSIMPI Members on ice floe**

While this work was being done, DFO engaged multiple stakeholders through the Beaufort Sea Partnership (BSP) to discuss implementing Integrated Ocean Management Planning in the Beaufort Sea LOMA under the *Oceans Act*. As the partnership grew larger, the Regional Coordination Committee (RCC) was formed to provide leadership on the initiative, and BSIMPI became responsible for community engagement regarding Integrated Ocean Management Planning on behalf of the RCC.

## **1.2 Governance**

Governance is about how government and other social organizations interact, how they

relate to citizens and stakeholders, and how decisions are made in an increasingly complex world. Who has influence, who decides, and how decision-makers are held accountable – all are implicated in the governance structures employed. Co-

management is a commonly employed governance process established under land claims agreements. Governance processes (also called “networks” and “partnerships”) and actions do not replace governments, but complement them.

Today's global environment demands creative institutional arrangements to allow governments, other organizations and individuals to agree upon and solve emerging problems, as well as to manage risk and deal with uncertainty. Formal institutional arrangements may often lack the scope, speed and informational capacity to keep up with the rapidly changing global agenda. Problems increasingly require coordinated responses by more than one sector, and cut across areas of bureaucratic or disciplinary expertise.

The effects of large scale factors, such as climate change and the long-range transport of contaminants to the Arctic, are felt in the coastal zone, but largely originate elsewhere. Hence another of the key issues in Arctic coastal management is bridging the



**Inuvialuit elder Billy Day**





Beaufort Sea Partnership meeting in Inuvik

gap between large-scale factors and the day-to-day realities of the local environment, and between the regional/international scale and the local scale.

The *Oceans Act* was drafted in order to modernize oceans management in Canada. Previously, the approach was fragmented, reactive, complex, and lacked transparency. The result was failing ocean health, growing ocean user conflicts, administrative, jurisdictional and regulatory complexities, lost or delayed investments, and an oceans industry sector that was weaker than it had the potential to be.

Canada's *Oceans Act* provides a framework for comprehensive oceans policy and management for Canada's three oceans. Its overall objective is to consolidate existing federal responsibilities and legislation related to the oceans into a single legislative framework that promotes an integrated approach to ocean management. The Integrated Ocean Management Plans (IOMP) seeks to address issues requiring interdepartmental policy, management and regulatory coordination in terms of Integrated Ocean Management (IOM). Integrated Ocean Management supports collaboration to improve efficiency and effectiveness of management and regulatory

processes; in the ocean use context, this planning involves a large number of Federal, Territorial and Provincial government departments and agencies, as well as Aboriginal and co-management organizations.

Under the *Oceans Act* came the development of a national oceans strategy to guide the management of Canada's estuarine, coastal and marine ecosystems. Canada's Oceans Strategy, provides the overall strategic framework for Canada's oceans-related programs and policies. It is based on the principles of sustainable development, Integrated Management and the precautionary approach. The central governance mechanism of the Strategy is applying these principles through the development and implementation of Integrated Ocean Management Plans (Fisheries and Oceans Canada, 2002).

Integrated management planning is at the heart of new, modern oceans governance and management—a comprehensive way of planning and managing human activities so that they do not conflict with one another, and so that all factors are considered for the conservation and sustainable use of marine resources and shared use of oceans spaces.

It is an open, collaborative and transparent process.



Traditional knowledge workshop in Tuktoyaktuk

In a rapidly changing environment, technological change has transformed the way in which information and knowledge are created, processed and disseminated. Technology often evolves faster than the social and regulatory environment. The information revolution has facilitated bottom-up organizing processes that businesses and NGOs have adopted. Flat horizontal structures have a distinct advantage over hierarchical ones in processing information, and making use of knowledge in innovative ways.

Hierarchical bureaucratic structures may lack information and knowledge from which to make timely and effective public-policy decisions, particularly with respect to complex technological changes. A growing number of issues require a perspective that spans generations. The complex nature of larger environmental problems also means that the objective, disinterested technical expert no longer has a central role. Now, participatory problem solving shares the risks and responsibilities of decision-making among users and managers. Public policy decisions, however global in their reach,

ultimately must be implemented on the ground. Local people and institutions must therefore be on board right from the start if they are to be expected to carry out goals and sustain them over the long term.

### Why is Oceans Management involved with social-cultural-economic issues?

Oceans are connected with many parts of life in the Beaufort Sea region, including economic, social and cultural values and activities. In the region, all are seen to be interconnected. Thus, for example, culture links to education, which is linked to health, which is linked to food security; ocean management takes into consideration all those links. Seen another way, prosperity requires development, development requires economic growth, and growth requires good governance.

Research shows that good governance is one of the most important factors in eradicating poverty and promoting development (CSDH, 2008). Good governance might be defined as a mode or model of governance that leads to the social and economic results sought by citizens. Factors that have been shown to determine social and economic success are: having the power to make decisions about one's future; exercising that power through effective institutions; and choosing the appropriate economic policies and projects. These factors are consistent with the goals of the Inuvialuit Final Agreement. For these reasons community input into the development of social, cultural and economic objectives is seen as a priority for the Beaufort Sea LOMA IOMP. The basic goals of the IFA are to:

## Beaufort Sea Social, Cultural and Economic Overview and Assessment Report

- Preserve Inuvialuit cultural identity and values within a changing northern society.
- Enable Inuvialuit to be equal and meaningful participants in the northern and national economy and society.
- Protect and preserve the Arctic wildlife, environment and biological productivity.

Groups that the RCC has established to assist in the development of an IOMP for the Beaufort Sea LOMA: Biophysical, Community Consultation (formerly known as BSIMPI), Geographic Information, Social Cultural Economic, and Traditional Knowledge. The last member of the governance structure is the planning secretariat. The goal of forming this governance structure is to achieve a healthy ecosystem, promote vibrant coastal

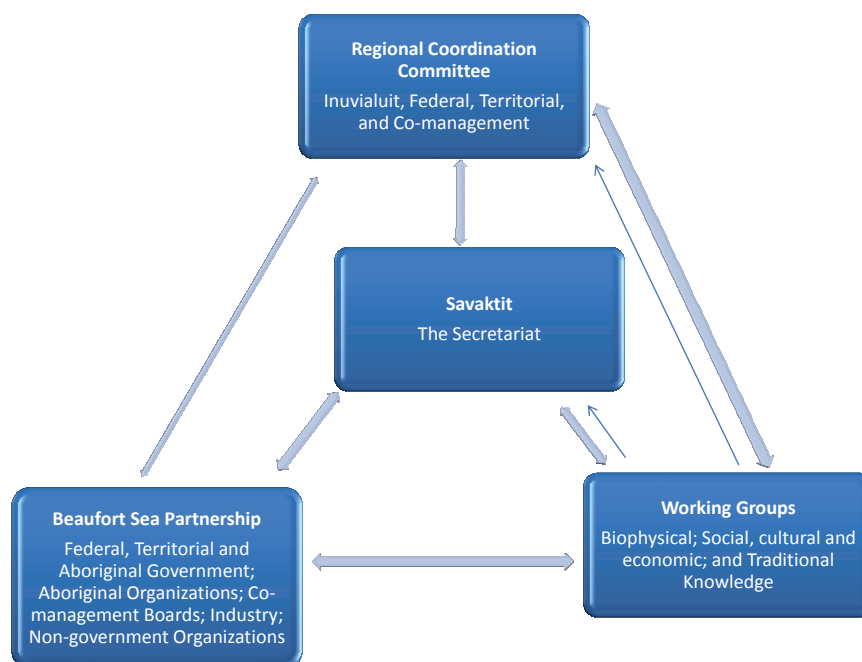


Figure 3: Governance Structure within the Beaufort Sea Loma

Through the governance process (Figure 3), regional committees and partnerships were formed and given the responsibility of directing complex issues for the Beaufort Sea LOMA. As mentioned, the Regional Coordination Committee (RCC) is the main governance body. The Beaufort Sea Partnership (BSP) promotes stakeholder involvement in the Integrated Ocean Management planning process. Within the governance structure there are five Working

communities and foster a strong economy in the region.

### 1.3 How this report was developed?

The Social, Cultural, Economic (SCE) overview, assessment, draft objectives and strategies were developed through a multi-step process, in collaboration with the Inuvialuit Regional Corporation, which was

undertaking related work on community objective setting. The specific steps taken to establish the SCE overview, assessment and draft objectives, indicators and strategies are outlined below:

### **1. Establishment of the Social, Cultural and Economic Working Group**

In October 2006, the RCC approved the establishment of a Social, Cultural and Economic Working Group (SCE WG) to help develop SCE baseline data, objectives, management strategies, and indicators that would inform the integrated ocean management plan for sustainable development of the Beaufort Sea LOMA. The working group is comprised of eight members, including: Fisheries and Oceans Canada (DFO), Inuvialuit Regional Corporation (IRC), Parks Canada Agency (PCA), Indian and Northern Affairs Canada (INAC), Government of the Northwest Territories (GNWT), Yukon Government (YG), and the Canadian Association of Petroleum Producers (CAPP) (represented through Chevron Canada, Imperial Oil and ConocoPhillips Canada), and the Community Consultation Working Group. The main products of the SCE WG include:

- Social, Cultural and Economic Overview and Assessment Report for the Beaufort Sea LOMA;
- SCE objectives,
- Management Strategies,
- Indicators for Integration into the LOMA Plan; and
- Monitoring and Evaluating the Effectiveness of Management Strategies.

The SCE WG recognizes other planning initiatives active in the Beaufort Sea Region such as BSIMPI, Beaufort Sea Strategic Regional Plan of Action (BSStRPA), and the Mackenzie Gas Project Regional Investment Plan (and related planning initiatives) and is dedicated to utilizing and advancing the work done to date.

The SCE WG committed to operating in a manner consistent with the following principles:

- Respect
- Equity
- Trust
- Collaboration
- Adaptive Management
- Precautionary Approach
- Inclusive of Macro Perspective
- Effectiveness (avoid duplication)
- Respect for and Consistency with the Inuvialuit Final Agreement
- Culturally Sensitive
- Participatory Process

The primary focus is on the direct users of the LOMA, which include but are not limited to the Inuvialuit, industry, and the communities of Aklavik, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk, and Ulukhaktok. Secondary consideration will be given to the indirect or induced effects on the northern region resulting from activities/conditions in the Beaufort Sea LOMA.

The SCE WG has the following roles and responsibilities:

- Provide guidance to the RCC for the development and implementation of social, cultural, and economic components of the IOM Plan;



Regional Coordination Committee meeting in Inuvik

- Develop baseline information on the social, cultural, and economic conditions of Inuvialuit Settlement Region (ISR) communities and northern regions;
- Identify social, cultural, and economic objectives of the communities of the ISR and other stakeholders;
- Identify management strategies to achieve objectives;
- Identify indicators and develop monitoring and evaluation protocols to measure success;
- Ensure that social, cultural, and economic components are incorporated into the IOM Plan;
- Consult internally within members' respective organizations;
- Consult with other interested parties and experts as required; and
- Ensure communication with BSIMPI, BSP, and RCC.

## **2. Developing SCE Overview, Assessment, Objectives, Strategies and Indicators**

In January 2007, the SCE WG held their first meeting to develop a Terms of Reference for operation of the group, discuss membership and review the National Guidance

document. The IRC, in collaboration with the communities of the ISR, was in the process of developing SCE objectives, specific projects, and indicators to meet the requirements of the proposed Mackenzie Gas Project (MGP) Impact Fund. In an effort to collaborate and reduce duplication, these ideas were incorporated into the Beaufort Sea LOMA SCE work, along with information from other initiatives such as the Beaufort Sea Strategic Regional Plan of Action (BSStRPA) and the Beaufort Delta Agenda.



Drum dancers and researchers at meeting in Tuktoyaktuk

The steps taken by IRC to establish Inuvialuit SCE objectives, projects, and indicators were as follows:

- a) Review of the MGP proponents' Environmental Impact Statement and Joint Review Panel hearings;



- b) Review of academic and government literature in development projects and social impact assessment;
- c) Collaboration and discussions with government in the development of social, cultural, and economic indicators;
- d) Planning surveys of front line workers and community residents in all ISR communities;
- e) Development of workshop tools, including introduction of the MGP Impact Fund, review of past community plans, planning survey results, statistical analysis presentation of each community;
- f) Introductory meetings/workshops in each community;
- g) Workshops in each community to develop draft community plans and identify priority measures to address impacts;
- h) Development of a draft plan;
- i) Meetings with the Gwich'in Tribal Council, federal agencies and bodies within the Government of the Northwest Territories.



Community consultation meeting

A preliminary literature review and summary report of existing statistical information in the region was prepared by Integrated

Environments Consulting in 2007 and revised by the SCE Working Group in June of 2008 to include up-to-date base-line social, cultural and economic data and accurate profiles of Inuvialuit Settlement Region communities.

At the same time, during February/March 2007, objective-setting workshops were held in each of the Inuvialuit Settlement Region communities (Aklavik, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk and Ulukhaktok). The purpose of the workshops was to explain what Integrated Ocean Management is and how it works, and to identify community social, cultural and economic objectives. The SCE objectives developed by IRC for the MGP IF were used as a starting point and workshop participants were asked to identify additional oceans-specific objectives. Objectives were developed in the following categories:

1. Social
2. Educating our Children
3. Health and Wellness
4. Safe Communities and Crime Prevention
5. Fostering Economic Growth
6. Culture, Language and Environment

Similar workshops were conducted in August 2007 with Gwich'in in Aklavik and Inuvik. Community objectives arising from these workshops were documented. Detailed outcomes of the community workshops can be found in the proceedings available at [www.beaufortseapartnership.ca](http://www.beaufortseapartnership.ca)

To ensure a truly community perspective, a wide variety of people were invited to participate, including: hunters and trappers, elders, youth, social services, Hamlets,



education authorities etc. At the closing of the workshops, participants recommended that future meetings/workshops involve both Inuvialuit and Gwich'in so that they can work together.

The workshops identified issues, concerns, specific program requests and desired futures. The Secretariat and SCE WG then used this information and work completed by IRC to develop draft SCE objectives. The working group also reviewed a particular outcome and then worked backwards to find strategies to accomplish the goal as a method in sustainable planning. The SCE objectives were vetted by stakeholders at the April 2007 BSP meeting, where stakeholders were asked to supplement the ISR community objectives with any that their organization may have. These additional objectives and comments were provided to the Secretariat and Working Group and incorporated into the draft SCE objectives and strategies.

In the fall and winter of 2007/08, work was done to supplement the draft statistical report with more contextual information on the region and analysis of trends and implications of the statistics, in order to help develop the SCE Assessment section and to make recommendations on the draft SCE objectives, management strategies and indicators.

The draft SCE objectives were incorporated into the preliminary draft of the IOMP known as the 'Strawman'. At the March 2008 BSP meeting, this draft plan was reviewed, with a focus on the objectives and strategies identified by the various working groups; the stakeholders were asked to

provide feedback on what they liked about the proposed strategies and objectives; whether there were gaps; what the inhibitors or barriers may be from the perspectives of their organizations; possible funding sources; possible risks, and; potential partners (lead and support) for the strategies.

In March 2008, reflecting the previous community input, the SCE objectives were taken back to all the communities for one final review. The purpose of this SCE overview and assessment report is to outline the baseline SCE conditions of the LOMA as well as identify areas of concern for consideration in the development of the IOMP for the Beaufort Sea LOMA. The Overview and Assessment Report supports the issues and concerns voiced by the communities and broader stakeholders. The report is meant to serve as a common reference that compiles the work of many SCE initiatives that have been carried out in the Beaufort Sea region. It is hoped that this report will be used by a variety of stakeholders to better inform decisions that will help the region move towards the development of management strategies to create sustainable communities.



*Inuvialuit boy and his dog*

## 2. HUMANS AND THE BEAUFORT SEA

The oceanic and freshwater ecosystems are key elements in the traditional lifestyle in the Beaufort Sea region. Travel and settlement patterns, resource uses and livelihoods, living conditions and environment are all influenced by the Beaufort Sea and the connected Mackenzie

### 2.1 Traditional and Historic Connections between Humans and the Beaufort Sea

#### Inuvialuit

The Inuvialuit are connected to the early Thule peoples who moved eastward about 1,000 years ago from north-western Alaska.



*The community of Sachs Harbour, NWT*

River ecosystems; all have helped to determine where and how people have lived, and continue to live, in the area.

The Beaufort Sea's environment and resources have shaped the lives and livelihoods of the original inhabitants of the region; they brought non-Aboriginal peoples in search of resources like whales, furs and oil. These resources continue to shape northerners' lives, and influence activities in the region and elsewhere on the globe. This section describes the prehistoric and historic human/ocean linkages, the variety of resource uses that occur in the region now, and the "external" influences that impinge upon the region.

The earliest well-attested Thule site in Canada, has been dated to about AD 1000. The site is found on southern Banks Island on the edge of the Beaufort Sea (Morrison, 2003). Inuvialuit culture is comprised of a number of distinct territorial groups. These groups took their names from the main village they occupied during summer marine mammal hunting and included: Qikiqtaryungmiut, Kuukpangmiut, Kitigaaryungmiut, Inuktuyuut, Nuvugarmiut, Avvarmiut, Igluyuaryungmiut (Morrison, 2003). This group seems to be relatively stable and has benefited from efficient fish-netting and beluga whale-hunting techniques which were likely adopted from early Inupiat in western Alaska (Morrison, 2003).

The Inupiat moved eastward from Alaskan coastal whaling communities in the early 20<sup>th</sup> century, when the Mackenzie Delta Inuit population had been decimated by disease and epidemics introduced largely by traders and commercial whalers. The Inuvialuit in the Mackenzie Delta region today are descendants of both the Inupiat and the Mackenzie Delta Inuit (Freeman *et al.*, 1992). The Gwich'in, Athapaskan peoples who live south and west of the Mackenzie Delta also

have a long history in the region. Relations between Gwich'in and Inuvialuit include both peaceful and violent episodes. Hare people, who lived to the south east of the Mackenzie Delta, seem to have had more peaceful relations with the Inuvialuit through active trading (Morrison, 1998).

Hunting and fishing provided almost all of the food and materials used by the Inuvialuit in the 1900s (Figure 4). Ringed seal, bearded

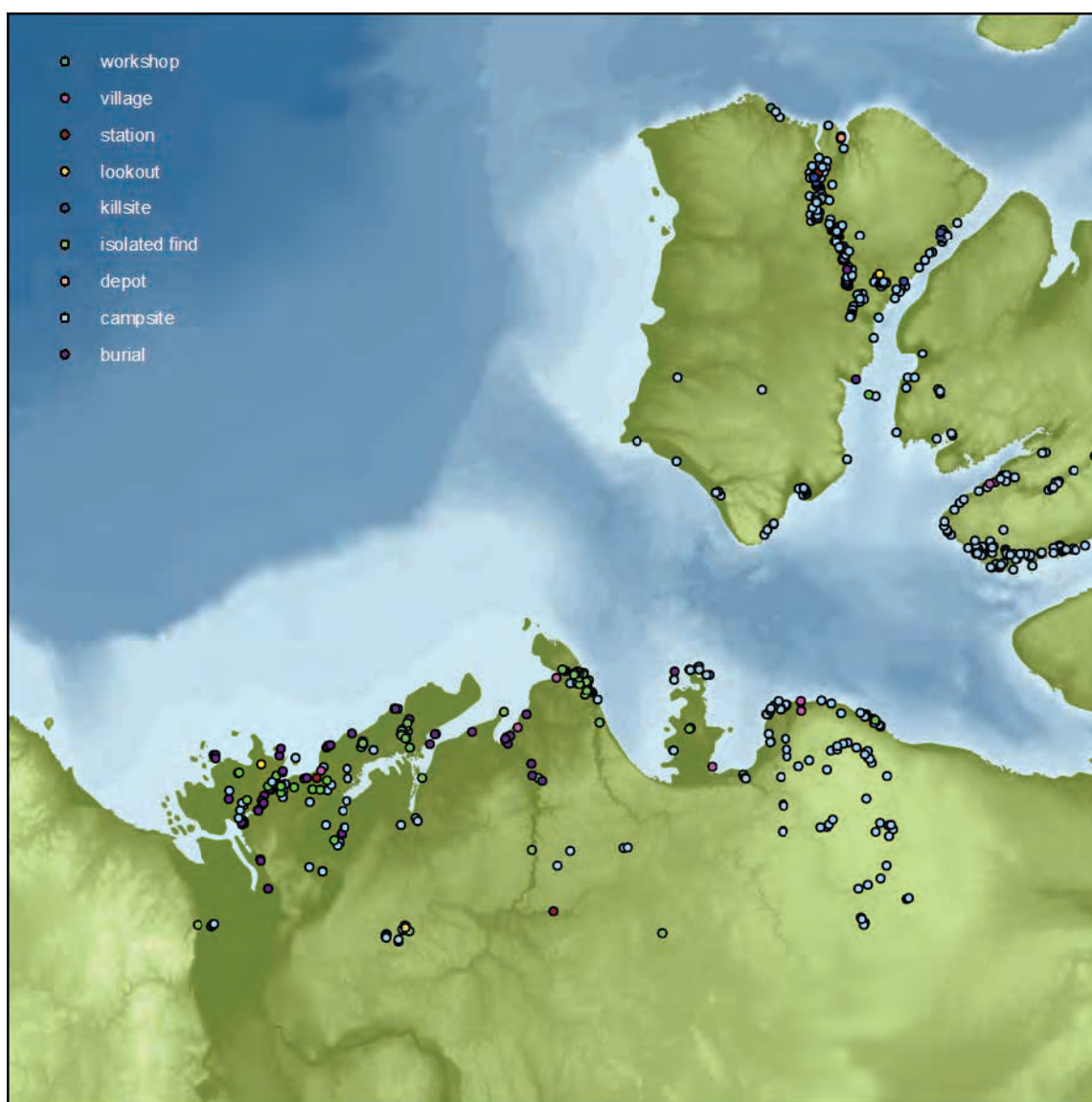


Figure 4: Areas of significance for the Inuvialuit

seal, bowhead and beluga whales, polar bears, arctic foxes, muskrats, caribou, musk ox and many species of fish and waterfowl have all contributed to the subsistence rather than the relative commercial prosperity of early inhabitants.

Beluga drives and group hunts involved many hunters and were well-organized and productive; the mouth of the Mackenzie River was an important site for this (Day, 2002).

Bowhead whale hunts also involved groups, hunting from the larger umiaks (a type of boat), primarily around coastal promontories such as Point Atkinson, Cape Bathurst, and along the Yukon coast (Morrison, 1998). The blubber, meat and muktuk were an important dietary component for the Inuvialuit and their dogs, though fish was probably the most important part of the diet. With the introduction of faster boats, whales could successfully be hunted in smaller hunting parties, but it is still the custom to share the harvest among family, friends, elders, and those unable to harvest, thus reinforcing kinship and community ties.

Prior to their population decline, in the early 1900s, it is believed that the Mackenzie Delta Inuit had the greatest dependency on beluga whales of any Aboriginal society in the Arctic. Even after the decline of the commercial whaling industry in the early twentieth century, Inuvialuit traditional whale hunting has continued for domestic purposes and several summer whaling camps have been maintained in the Mackenzie Delta (Harwood and Smith, 2002). Subsistence harvesting of beluga continues to be a significant economic and cultural part of the lives of the Inuvialuit today (Nuligak, 1966; McGhee, 1974, 1996; Freeman *et al.*, 1998; Day, 2002; Kavik-AXYS, 2002).

Fish and seals also provided important year-round food sources for the early Inuvialuit. Fish were caught with hooks or by nets during winter and summer. Seals were hunted by harpooning from the sea ice or kayaks, and netting. This was often done on a more individual basis. Muskrat and beaver were also often hunted from kayaks with a pronged spear and throwing board. Speared waterfowl, netted ptarmigan and bird eggs formed part of a supplementary diet.



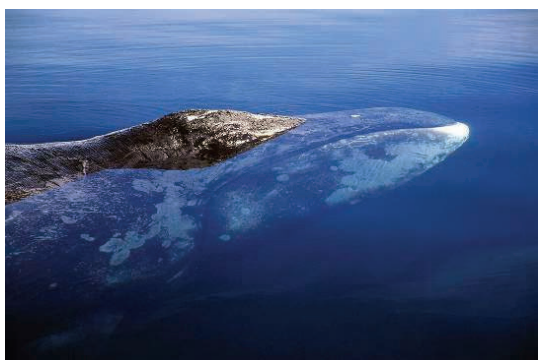
Beluga whale in the Beaufort Sea – L. Dueck



Spear fishing – E. Gyselman



Woodland and barren-ground caribou were the most important and intensely harvested land animals, providing meat for sustenance and hides for winter clothing. Caribou were hunted using spears or bow and arrow by inland group hunts. Moose, lynx, musk ox, bear, hare, wolf and fox were also taken. Plant foods, some with medicinal value, included edible roots, berries and leaves (Imperial Oil *et al.*, 2005).



Bowhead whale – L. Dueck

Both fishing and hunting continue to provide important food sources for Inuvialuit. In addition, traditional harvesting activities continue to provide cultural continuity and acts as an important basis for social and cultural strength in the communities.

### Commercial Whaling

In 1887 and 1889, news spread to the American whaling ships in Alaska that there were whales “as thick as bees” in the Mackenzie Delta area, and that there was a good harbour at Herschel Island. The whaling rush that resulted lasted only about two decades, but was incredibly lucrative. In 1892, the *Mary Hume* took back a cargo of baleen worth \$400,000 followed the next year by two half-million dollar cargoes, this was unheard of wealth at the time

(Morrison, 2003). Between 1891 and 1907, an estimated 1,345 bowhead whales were taken from the area.

The over-wintering settlement at Pauline Cove on Herschel Island of whalers, traders, Inupiat, Inuvialuit and Gwich'in grew to more than 1,000 people, and was notorious for its wild drinking and debauchery (Morrison, 1998). This created sovereignty concerns for the Canadian government, which had no agents within hundreds of miles (Morrison, 1998), and social disorder, which had been a spur for police/government intervention in the Klondike gold rush.



Peterhead boat in the Beaufort Sea

The region's Aboriginal peoples supplied services as caribou hunters, clothing seamstresses and crew members. Trade goods began to flood into the region – everything from flour to phonographs, cedar boats to repeating rifles. The Aboriginal peoples enjoyed great prosperity, but also suffered occasional violence and eventually, crippling disease. Within 40 years, some estimate that 80% of the Aboriginal population had died as a result of illnesses that came with the whalers and traders, leaving a population of about 200 in 1905. At this time, many Inupiat moved into the

area from Alaska. By the mid-twentieth century, at least 75% of the Inuit in the region were of Inupiat origin. Over time, these newcomers blended with the local peoples and gave rise to the modern Inuvialuit of the Beaufort Sea/Mackenzie Delta (Morrison, 1998).

### Fur Trade

Herschel Island remained a fur trading post, even after the decline of commercial whaling, and the Hudson's Bay Company opened a trading post there in 1915; one of more than a dozen of its posts along the coast between the Alaskan border and Cape Bathurst.



Old Hudson Bay Store near Cape Parry – R. Howell

For many Inuvialuit, the whaling economy transformed into the fur economy; as the baleen market disappeared, the fur trade increased, and the continued presence of 60 schooners at Herschel Island in 1921 indicates that prosperity remained high (Morrison and Kolausok, 2003: 113-114). Many ex-whalers also switched over to the fur trade, often trading from their schooners rather than from fixed posts, until this became illegal in the late 1920s (Usher, 1971: 101). Having become used to the trade goods offered by the whalers, the

Inuvialuit became more focused on trapping when the whaling economy declined, and some also became traders and entrepreneurs themselves (Morrison and Kolausok, 2003). This shift was encouraged by the fur market: between 1915 and 1919, white fox furs increased in value from \$2.50 to \$50; muskrat from 0.40 to \$1.50; marten from \$2.50 to \$55, mink from \$1 to \$20.



Animal pelts

As a result of the fur trade, between 1910 and 1945, about 50 posts were opened in the Mackenzie Delta and along the arctic coast. By the 1930s, the economic centre of the western Arctic had moved to Aklavik - though one of the richest fur areas in Canada, the Delta had never before been occupied year-round (Usher, 1971). By 1931, 411 people lived there - mostly Uummarmiut (Alaskan Inupiat descendents), as well as whites, Métis and a few Gwich'in. The Delta supported a huge population of muskrat and mink - hundreds of thousands of muskrats were taken - as many as 250,000 in one year - and Aklavik became a busy administrative, commercial and transportation centre. Trappers and their families and schooners congregated there after "ratting" and before dispersing to fishing camps. Inuvialuit trapped in the Delta and then travelled to the coast to fish



and hunt seals and belugas during the summer, in order to put up feed for their dog teams. Trappers came into the region from elsewhere too, and in 1949, registration of individual trap lines and annual trapping permits was introduced by the government to reduce conflicts, conserve game, and help local people deal with the influx of activity in the region (Morrison and Kolausok, 2003; Usher, 1971).



**Dog teams**

Other important centres of the fur trade in the Beaufort Sea area were the Coronation Gulf, Victoria Island and Banks Island. After Inuvialuit and some white trapper/traders moved eastward in the 1920s from Herschel Island to King William Island, the fur trade became much more competitive, based on the wealth to be gained from arctic fox pelts. After 1929, the population over-wintering at Sachs Harbour and Banks Island started to grow; the “Bankslanders” did well at trapping, travelling back and forth to Aklavik and Herschel Island to sell furs and buy supplies in the summer. Some, who ventured further, to Victoria Island, began the community of Ulukhaktok (Holman), where their relative wealth and access to consumer goods set them apart from the subsistence-based Copper Inuit.

The affluence created by the white fox fur trade attracted 40% of all Inuvialuit trappers in the western Arctic to trap on Banks Island for at least one season, and it funded the purchase of large schooners, such as Fred Carpenter’s and Jim Wolki’s 17m *North Star*, worth \$35,000 at the time (Morrison and Kolausok, 2003). Unfortunately, the fur trade is characterized by price fluctuations, as well as fur population fluctuations. The high prices for fox furs declined rapidly during the Depression, as the market for luxury goods dried up – prices for white fox dropped 80% between 1929 and 1935. They rebounded, only to collapse again in the late 1940s, rebounding in the late 1950s and early 1960s (Usher, 1971). Even in the 1970s, Banks Island enjoyed such good trapping and prices that it compared favourably with wage-work as a source of income (Armstrong *et al.*, 1978). Over time however, these price fluctuations, combined with fluctuating fur-bearer populations, wage work and town-life opportunities, and the impacts of anti-fur campaigns, forced many trappers, traders and posts out of the business.



**Traditional fur and skin clothing**

Interestingly, the establishment of trading posts and trapping activities were deeply affected by the creation of the Arctic Islands Game Preserve, which included all the Arctic islands as well as the mainland east of Bathurst Inlet, by 1926. Only Aboriginal people could trap in the preserve. As well, the Canadian government, fearing impacts on caribou migration, tried to restrict the expansion of permanent posts (Usher, 1971).



**Arctic Foxes**

Banks Island supports the largest fox population in the Canadian Arctic, and this allowed the Bankslanders to make a living at trapping – even long after it began to decline elsewhere in the North. Indeed, as part of Canada’s sovereignty efforts, the inhabitants of Banks Island were helped to return to the island in the 1950s, having spent the fur “bust” of the late 1940s marooned on the mainland by debt to traders. The small community of Sachs Harbour grew up around Fred Carpenter’s trading post, ending the era of outpost camps and schooner trips to the mainland to trade. Unlike larger towns such as Aklavik, Sachs Harbour was small enough that town life did not compete with trapping life on the land. In Aklavik and Tuktoyaktuk, on the other

hand, town life and wage work had undermined the trapping lifestyle so that by the late 1950s relatively few were living on the land and trapping for a living throughout the entire year (Morrison and Kolausok, 2003).

## **2.2 Current use of the Land and Sea**

### **Continued Traditions in Resource Use**

The resources of the land and sea have continued importance to the people of the region, often in a combination of subsistence harvesting and cash-oriented opportunities. In spite of predictions that Aboriginal peoples would leave behind land-based activities in favour of wage-work, it is apparent that many have chosen to pursue both. This combination of livelihoods is referred to as the “mixed economy” and is typical of northern households, where a variety of livelihood options may be pursued. For many decades, people have chosen to work part-time or seasonally, and then to spend time harvesting on the land. As work or school obligations/opportunities have grown, and new equipment has provided some efficiencies, the balance for many people has moved more towards longer work periods in the wage economy and shorter harvesting periods. Although very few people now live full-time or spend extended periods on the land, there continues to be ‘on the land’ activities and harvesting because of the cultural importance regardless of the subsistence or monetary value of harvesting.



Beach party at Tuktoyaktuk

Food from the land and sea, or time spent ‘on-the-land’, is important to the ‘domestic’ or ‘informal’ economy of many households. However, the value of food harvested can be relatively high, not to mention its nutritional value compared to store-bought options. The fluctuations in wildlife population levels and prices for harvested foods may influence the desirability of wage work, if such work is available. Another aspect to this balance is that many kinds of harvesting equipment, now considered essential, are increasingly expensive, thus requiring some form of cash income to make harvesting activities viable. Like the fur and subsistence economies, the formal economy of the Beaufort region has also suffered from ‘boom-and-bust’ cycles. The various formal and informal economic activities provide little insurance during economic changes.

Throughout these cycles, the traditional Inuvialuit connections with the environment have been maintained. Despite the massive social and cultural changes that have

affected the region, both now and in the past, the Inuvialuit continue to incorporate traditional values into current activities.

*“We thank the elders [for] telling us about the Inuvialuit lifestyle of long ago which in many ways continues today. This plan will help us preserve our lifestyle into the future.”*

(Alkavik Inuvialuit Community Conservation plan, 2000)



Drying fish – A Kristofferson



Maintaining this connection has not always been easy. Major disruptions have affected traditional economic, social and cultural life, such as disease-induced mortality or hospitalization, severe depletion of key wildlife populations, fluctuations in fur values, residential school programs, and government economic policy and relocation programs (Freeman *et al.*, 1992). Changes have continued to be induced through the 1970s and 1980s, in the form of improved schooling, wage employment and development pressures for oil and gas.

People of the Beaufort region have continued to use local wildlife as a key part of their livelihood. While there has been an overall shift in reliance from marine to terrestrial food sources, with caribou becoming the most important food species for Inuvialuit, Usher (2002) attributes this change largely to the diminished food requirements for dogs as a result of the replacement of dog teams by snowmobiles.



Arctic sled dogs

Caribou, which are hunted year round, are a highly valued food source and they have also been historically used as a source of clothing and tools (Community of Inuvik *et al.*, 2000, Community of Tuktoyaktuk *et al.*, 2000). A recent decline in the caribou population has

resulted in the Inuvialuit imposing severe harvesting restrictions as a conservation measure and the loss of this valued food source.



Beluga whale subsistence harvesting

Beluga is the second most important traditional food harvested by weight (Usher, 2002). It is estimated that during the 1990s an average of 111 beluga per year were harvested in the Beaufort Sea, down from an average of 132 in the 1970s (Eddy, 2001; Harwood *et al.*, 2002). During this time the human population in the area increased by 26%. This decline in harvested beluga has been considered a result of the recent trends towards a reduction in the consumption of traditional food, particularly beluga (Harwood *et al.*, 2002). Of those harvested during the 1990s, 92% were taken from the Mackenzie Delta (including 17% by Aklavik residents, 35% by Inuvik residents and 40% by residents of Tuktoyaktuk) (Eddy 2001; Harwood *et al.*, 2002). The harvest is limited to the number of whales required to cover subsistence needs, about one or two whales per family per year. It is customary for the hunter to share the harvest among family, friends and elders.



Ringed seal coming up for air

Ringed seal are harvested for their pelts, which are used for handicrafts and clothing and to some degree for human consumption and dog food (Eddy, 2001; Community of Aklavik *et al.*, 2000; Community of Tuktoyaktuk *et al.*, 2000). Bearded seals are also harvested for clothing and, to a lesser degree, for food (Community of Tuktoyaktuk *et al.*, 2000).



Whale bone and walrus ivory carving – K. J. Scott

Polar bears are harvested between December and May for fur and, occasionally, for food. Grizzly bears, arctic silver and cross fox, wolf and wolverine are also harvested for their fur. Lynx are valued for their fur and as a source of food (Community of Tuktoyaktuk *et al.*, 2000; Community of Aklavik *et al.*, 2000; Fabijan *et al.*, 1993).



Polar bear on the Beaufort - S. Newton

Geese and waterfowl are generally harvested from the beginning of May to the end of June, and again in September (Community of Aklavik *et al.*, 2000). Geese, especially lesser snow goose, but also Canada goose and white-fronted goose, are a very important food source in the spring and fall and down from these birds is traditionally used in pillows and blankets (Community of Tuktoyaktuk *et al.*, 2000).

There have been a number of attempts to develop commercial enterprises in the Beaufort region, based on traditional foods, including reindeer herding, commercial fishing, and commercial harvest of muskoxen on Banks Island. The Kuññek Resource Development Corporation (KRDC), an Inuvialuit-owned company, now owns and manages a reindeer herd in the ISR (Integrated Environments, 2007). A commercial musk ox harvest occurs outside Sachs Harbour, organized by the community and the Inuvialuit Regional Corporation. The harvest is sustainable, taking about 400 animals a year, or less than 0.05% of the population (Thomas, 2008). It produces meat that is consumed locally and in

restaurants in Inuvik and Yellowknife, and the most valuable commodity, *qiviut*, which is spun in Peru and knitted into high fashion clothing. In 2008, the hunt employed 23 people and paid about \$70,000 in wages and an increase in service industry income into the local economy.



Musk ox herd on Banks Island

### Importance of Traditional Food

Traditional foods are valued and consumed by the Inuvialuit for the important nutritional, social, cultural, economic and spiritual benefits they provide, which cannot be replaced by store-bought foods. For many Inuvialuit, traditional foods are preferred over store-bought foods. Many Inuvialuit continue subsistence harvesting as a way to enhance social relationships among families and communities and to promote the continuity of cultural values and traditions over time (Wein and Freeman, 1992; Usher, 2000, 2002). Usher (2002) found that, between the 1960s and 1990s, the geographic extent of harvesting remained the same where as the number of harvesters increased (though not by as much as total population). The volume of harvest, however, dropped from 2083 kg/year/hunter to about 707 kg/year/hunter, which was likely a reflection

of the lack of dog teams requiring feeding. The country food that resulted from harvesting provided about 115.2 kg/capita/year in the 1990s, and as such it remained an important household economic resource.

Traditional foods contain all the necessary vitamins and minerals for a healthy diet. In comparison with store-bought foods, that are commonly used as replacements, traditional meats are high in protein, iron, B-vitamins and other critical nutrients. Foods from marine mammals are high in omega-3 fatty acids, which are thought to help prevent heart disease. Some marine mammal parts are also known to contain contaminants; however, the benefits of a traditional food diet are understood to outweigh the risks associated with those contaminants (Gilman *et al.*, 1997; Kuhnlein *et al.*, 2000).



Preparing food from the land

The physical activity associated with hunting or fishing provides an additional health benefit associated with a lifestyle that involves traditional foods. Within the Inuvialuit communities, households are linked through sharing, exchange, and partnership. Traditional foods are central to these bonds, which serve to strengthen social and cultural ties and distribute



resources. Hunting or fishing for traditional food items are also important means for passing on cultural traditions, teaching children skills in survival, food preparation, and providing opportunities for learning patience and building confidence.



Harvesting Snow Geese

A diet based on traditional foods, including beluga, makes economic sense in Inuvialuit communities in the Mackenzie Delta - Beaufort Sea Region. The price of perishable food items in remote communities can be up to three times their price in southern cities. Usher (2002) estimates that by hunting or fishing, a typical household could provide several thousands of dollars worth of food that it would not have to purchase at a store. Traditional foods provide a healthy and often preferred diet at relatively low cost in the Mackenzie Delta – Beaufort Sea Region, and the harvesting, processing and

sharing of these foods contributes to cultural continuity.

### Cultural Identity and the Environment

Inuvialuit and Gwich'in cultural identity is deeply linked to the coastal environment.

*"I go for the enjoyment of it. It is important that I go because it provides food for the table. If I go I have achieved something by harvesting the animal I went for. It is the way I was brought up, my dad took me out and taught me about the land and how to live off the land. It is so deep it is spiritual. I count it as a blessing to go out."*

(Inuvialuit interviewee, quoted in Kavik-AXYS, 2002).

The Inuvialuit consider themselves a part of their environment and still find it gratifying to be close to the land and sea. Hunting sustains Inuvialuit values and identity in addition to the production, distribution and consumption of traditional foods. Thus providing a powerful means of maintaining a connection to the environment and to culture and identity (Kavik-AXYS, 2002)



Oceans Day beach party

Hunting has remained culturally important even for the Inuvialuit who base their family economy upon wage employment (Kavik-AXYS, 2002). A confirmed sense of identity and cultural distinctiveness is a benefit of traditional activities such as hunting. No matter how frequent, activities such as hunting, trapping and fishing all contribute to the maintenance of social, cultural, psychological and spiritual well-being (Freeman *et al.*, 1992). Specifically these aspects of well being can increase health and fitness, decrease stress and help them reconnect with the land.



Brother and sister at E. Whitefish Station

It is common for families take annual trips to whaling camps in order to spend time with family, and teach children and youth the history of the area and how to hunt and prepare country foods (Kavik-AXYS, 2002).

### Economic Values

The economic factors associated with harvesting include the value and volume of the harvest, the value of different products, operational costs such as equipment, depreciation and labour time. Non-economic but nonetheless important values

that should be considered include personal satisfaction, cultural reinforcement, social approval, and physical fitness benefits. For reasons ranging from technical ability to diverging opinions, limited attempts have been made to estimate economic value of the harvest (Berkes and Fast, 1996; Bussière *et al.*, 2002).



Children with beluga whale muktuk

While localized estimates have been made of the amount of beluga harvested (Harwood *et al.*, 2002), and the mean annual harvest of country food per hunter (Usher, 2002), the completeness of harvester surveys is often questioned. It is best to use such figures as guides to scale, rather than as precise measures. In the 1990s, harvests were approximately 707 kg per harvester per year, or 115kg/year/capita, with 45% from marine sources and 55% from terrestrial sources (Usher, 2002). Replacing this food with store-bought food, probably of lower nutritional value, would cost thousands of dollars per household.

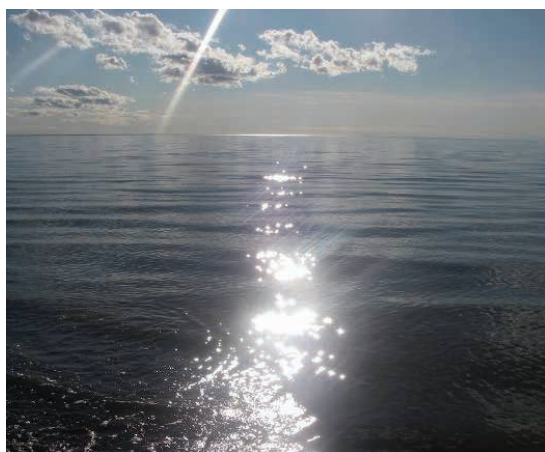
A harvest estimate has not been provided because of the numerous limitations associated estimating the economic value of harvesting. An estimate of the replacement value of the food and the costs of conducting the harvest would be possible, but would not capture the social and cultural



values and thus would significantly undervalue the harvest.

## **2.3 Other Land and Resource Uses in the Region**

Other land and resource use in the region are applicable to the broader context of the Beaufort Sea communities, and the IOMP. Current and potential future uses of this region that impinge upon the environment and peoples of the region include: oil and gas development and pipeline construction; shipping activities serving development activities and global transportation interests; mining; development of protected areas; research; Coast Guard and military/sovereignty activities; as well as larger global processes such as climate change and contaminants.



**Sunset on the Beaufort Sea**

### **Tourism**

Tourism is a significant export industry of the NWT and is continuing to grow. The most important tourism activities in the Beaufort Sea are wildlife observation, hiking, sports hunting and fishing, boating, experiencing

community cultural events, and visiting whaling, hunting and fishing camps. Tourism operators, working in the area include Arctic Nature Tours, Arctic Tour Company, Aklavik Tours, Beaufort Delta Tours, Kendall Island Whale Watching Tours, Ookpik Tours, and Uncommon Journeys among others. Tours typically run from May to September.

Annual visitor numbers in the Beaufort Delta region have grown from 600 (primarily big game hunters) in the late 1950s to approximately 7,000 (mainly tourists) today. These tourists are interested in a broad range of activities, especially learning about Inuvialuit culture and ecology (Dressler, 1999). While the bulk number of travellers remained in Inuvik, a 1994 exit survey showed that 26% of tourists went to Tuktoyaktuk to see the ocean and community-based Inuvialuit culture, while 14% took a flight-seeing trip over the Mackenzie Delta and an additional 14% participated in other culturally-based activities (GNWT, 1994).

Licensed Inuvialuit guides and outfitters lead most land and water-based tours within the ISR. Several operators offer guided ecotourism activities in the ISR, including chartered flights to Inuvik and Herschel Island. Arctic Nature Tours is based in Inuvik and offers tours throughout the ISR in collaboration with Aklavik Air. Several charter flights a day may go between Aklavik and Herschel Island Territorial Park. Currently, only a few operators conduct cultural immersion tours (e.g., tours of hunting camps) in the region; however, this activity is expected to increase (Fisheries Joint Management Committee, 2001). In addition, cruise ships have traveled to Ulukhaktok and

Herschel Island, and tourists travel and camp along the Dempster Highway with periodic air travel to coastal areas. Four commercial outfitters offer guided rafting trips on the Firth River in Ivvavik National Park on the Yukon North Slope and one outfitter offers guided canoeing trips on the Thomsen River in Aulavik National Park on Banks Island. Ivvavik National Park receives approximately 200 visitors in most years, while Aulavik and Tuktoyaktuk National Parks near Paulatuk generally receive less than 20 visitors each year.



**Mackenzie River Tour Boat- DFO STUBBS REPORT**

Approximately 150 tourists visit Herschel Island every year (Kavik-AXYS, 2002). Cruise ship tours, small boat tours (of the Mackenzie Estuary), kayaking and flight tours have been increasing in popularity in recent years. Three cruise ships currently utilize the offshore waters of the ISR, making four to six visits per year (Eddy, 2001). They include:

1. the Russian ship *Kapitan Khlebnikov*,
2. the German ship the *MS Hanseatic*,
3. and the US ship the *Frontier Spirit*.

At least one of the ships brings tourists to the mainland by helicopter zodiac boat (Fast *et al.*, 1998). Cruise ships do not enter the Mackenzie River or estuary areas due to insufficient water depth.

Plans are underway to route a portion of the Trans-Canada Trail between Inuvik and Tuktoyaktuk. The present route follows an existing winter road and traverses near the eastern shores of Kugmallit Bay. Once developed, the trail has the potential to attract adventure tourists. A plaque commemorating the trailhead has already been erected at Tuktoyaktuk. One tour operator leads a dogsled tour of up to three people (plus guides) along this route. Two dog sled tours are conducted in April: the first trip originates in Aklavik destined for Herschel Island; the later trip uses the same route to take a second group of tourists from Herschel Island to Aklavik. These trails are different than the Trans Canada Trail and involve winter camping.

There is some interest by operators in exploring opportunities for “appropriate” tourism focused on beluga whale watching. This could potentially be marketed to tourists interested in viewing marine mammals and birds, and observing cultural activities. Beluga hunters, however, have concerns about tourism, including disturbance to whales and/or hunters.

Sport hunting is one part of tourism, and plays an important role in the economy of the region. As an example, the average polar bear hunt costs sport hunters approximately \$20,000 and about \$10,000 of that remains in the local community. Each community is assigned a quota a tags. The hunting of denning bears or females with cubs is prohibited.

On May 14<sup>th</sup> 2008, the United States accepted the recommendation of the U.S. Fish and Wildlife Service Director to list the

polar bear as a threatened species under the U.S. *Endangered Species Act*. While aimed at protecting the polar bear, this decision also supports the continuation of handicraft production for interstate sale and export by Alaska natives as well as the subsistence harvest of polar bears. The decision will likely affect the American sport of polar bear hunting which brings in more that \$3 million a year to the Canadian Arctic.



Arctic research camp and float plane – A Kristofferson

### Economic Value

Economically, big game and trophy hunting are the largest single means of tourism in the north. However, economic analyses are not available and there are no data describing the level and locations of tourism use in the Mackenzie Delta Region. It is estimated that the whole of the Arctic region including Nunavut receives between 5,000 and 8,000 tourists per year (Kavik-AXYS, 2002). The largest tourism company in the ISR, Arctic Nature Tours, sells tour packages, which are in turn are contracted to independent guides. The company books approximately 2,500 tourists per year.

## Petroleum Exploration, Production and Transportation

### Past Development and the Current Situation

Intensive oil and gas exploration activity in the Beaufort Sea and Mackenzie Delta resulted in 53 discoveries of hydrocarbon resources in the region between 1970 and 1989, divided roughly equally between the Beaufort Sea and the Mackenzie Delta. The current estimate of the total discovered resources in the basin is 1.01 billion barrels of recoverable oil and 9.00 trillion cubic feet (tcf) of marketable natural gas (National Energy Board, 1998). Offshore exploration of the Beaufort Sea began in 1971, led by Esso Resources Canada. In 1976, Dome/Canmar gained approval for exploration in the deeper waters of the Beaufort Sea. The largest offshore oil field is Amauligak, discovered in 1984, with an estimated recoverable oil resource of 235 million barrels (Kavik-AXYS, 2002).



Oil and gas industry drilling platform

When market prices for oil collapsed in the mid-1980s, along with changes to federal subsidies (Petroleum Incentive Program or PIP grants) for frontier drilling, oil and gas activities in the Beaufort Sea also virtually ceased.

Current interest in Arctic petroleum exploration and development is focused both on the onshore and offshore.

prices, has led to an increase in oil and gas exploration activity since 2000. This activity has included a number of seismic programs and exploration wells by various operators. Between 1998 and 2007, lands under license in the region increased from 1,100 to 1,782 thousand hectares.

There has also been a significant resurgence of interest in offshore exploration (Figure 5)

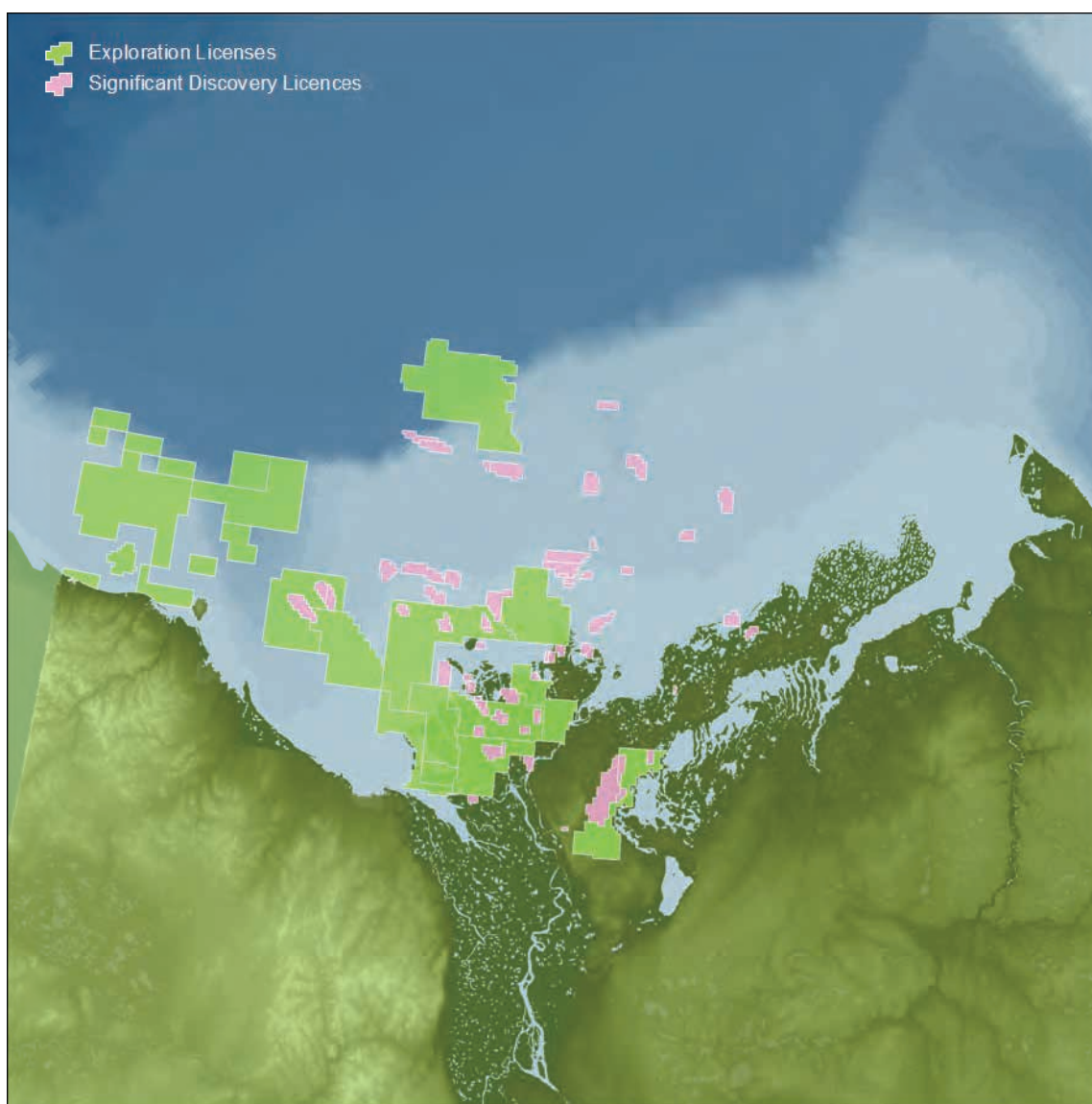


Figure 5: Oil and gas licenses in the Canadian Beaufort Sea (2008).

Evaluation of the proposal to construct the MGP, as well as increasing commodity

most notably seen in the 2007 award of a large offshore parcel to Imperial Oil



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Resources Ventures Limited and ExxonMobil Canada Properties resulting in a work commitment of \$585 million. This was followed in 2008 by additional offshore interest, led by BP, which made a winning bid of C\$1.196 billion for three parcels. In addition to its major bid, BP in partnership with ConocoPhillips and MGM Energy also landed two other Beaufort parcels totalling C\$16.2 million in work commitments and ConocoPhillips made a solo winning bid of C\$2.54 million. All four Beaufort parcels were primarily east of the Imperial-Exxon Mobil license.

This revival of interest in the Beaufort comes on the heels of four low-key years for the Beaufort-Mackenzie Delta region, largely because of uncertainty associated with the protracted regulatory process for the MGP. It is generally accepted that with the high price of oil and gas there will be a growing trend in the interest by major producers to explore over the next decade. If significant resources are found it may commence the development of production and transportation proposals.

### *Potential Future Oil and Gas Development*

There are a number of activity/development scenarios available for the Mackenzie Delta - Beaufort Sea Basin; all are hypothetical and based on numerous assumptions. Much of the ISR has been sparingly explored and could contain as yet undiscovered reserves of sufficient size to attract further exploration investment. Timing and location of such exploration is difficult to anticipate. Future development will be influenced by the success rate from exploration wells,

survey results, availability of drilling platforms, order of discovery and infrastructure development/sharing

*In general, the terms of the licences for these bids require a payment of a 25% deposit, and a requirement that the companies drill an exploration or delineation well within five years to earn a four-year extension on their license. If they discover enough hydrocarbons to allow sustained production they can qualify for a significant discovery license, which gives them indefinite tenure of the acreage.*

patterns, and increasing knowledge/techniques. In addition, regulatory reviews, commodity prices, and international competition will influence the pace of exploration and development in LOMA.



Oil and gas facilities on the Beaufort Sea

The BSStRPA Steering Committee compiled a view of future activity over a 25-year time frame, considering the geological potential of the Beaufort Sea, the past activity and the current expression of interest in the area, and a list of likely activities to occur. This scenario is largely based on one developed for the Mackenzie Gas Pipeline, and is briefly summarized below.



The Mackenzie Delta – Beaufort Sea Basin may be subdivided into five zones based on geological attributes. Each zone extends, to a certain degree, into the Beaufort Sea. The scenarios anticipate that the focus of offshore activity in the near term is likely to occur in the shallow water zone (water depth less than 20 m) in the vicinity of Richards Island. Exploration and development induced by the Mackenzie Valley Pipeline (MVP) will be directed at natural gas, with earlier development focusing on existing discoveries in the Issungnak-Amauligak area (offshore north/north east of Richards Island), and in the Netserk-Kadluk-Minuk axis (extending offshore from north-western Richards Island).

Many additional prospects remain to be found, which will require further surveys. The number of surveys is affected by the scarcity of seismic vessels for use in the Beaufort, and is also dependent on the size of exploration programs and the number of partners willing to collaborate on data collection. Exploratory drilling activity in the area is expected to increase in pace, and production drilling is approximately 10 - 15 years off.

In addition to natural gas, operators may make new oil discoveries that, combined with proven discoveries, justify the decision to move ahead with production and transportation proposals. The largest discovered oil resource is at Amauligak (associated with natural gas) but there is large potential for other oil discoveries in the offshore. In 2005, Devon Canada discovered oil resources at its Paktoa well in the 200 million barrel range. Exploration for new discoveries would be intended to expand the resource base within general areas through grouping of pools.

The economics of oil exploration in the short term may be favourable (depending on price) and encourage widespread exploration for oil throughout the continental margin. Because oil production does not always require the infrastructure development necessary for gas (i.e., expansion of a pipeline network into the offshore), this would not necessarily be induced by the MGP and the timeframe would not necessarily be linked to the MGP. Development of oil deposits in the offshore may be unlikely before 2016. Oil associated with gas in the major Amauligak field is, however, a likely candidate for oil production.

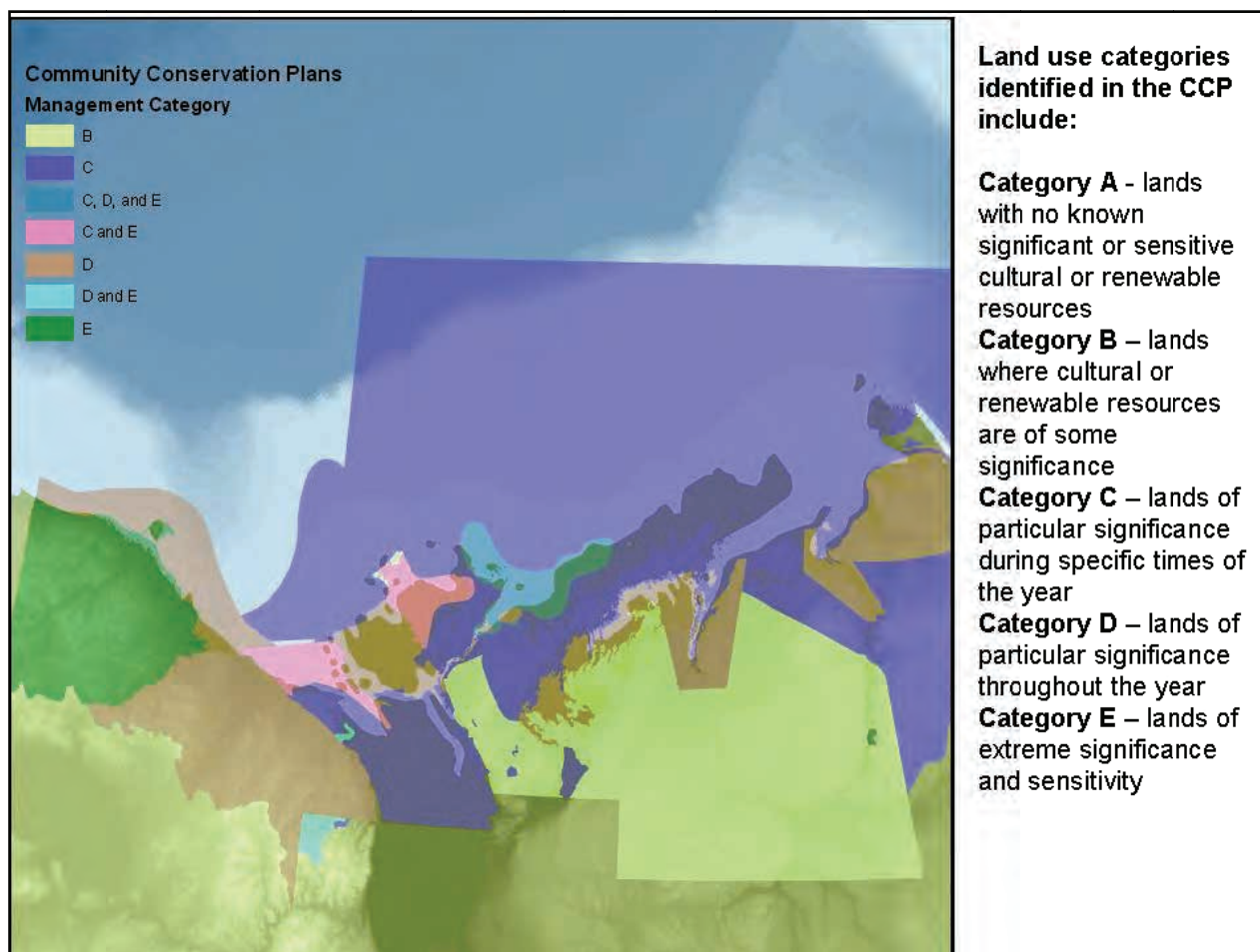


**Petroleum barge on the Beaufort Sea**

As the 2007-2008 Exploration Licences have indicated, there are also offshore areas which are sparsely explored where there remains potential for major oil and gas discoveries. These new areas of interest are further in deeper water than existing discoveries. The volumes will need to be significant in order for them to be economical. It is unlikely that any more distant discoveries would see development in the short term. This view will be affected by the results of a review of petroleum potential, undertaken in 2008, by the Geological Survey of Canada to feed into the INAC/Northern Oil and Gas Strategic Environmental Assessment exercise.

### **Management of Oil and Gas Activity**

Operators in the Beaufort/Delta are governed by a variety of legislation, including the Inuvialuit Final Agreement (IFA), the *National Energy Board Act*, the *Canadian Environmental Assessment Act*, the *Canada Oil and Gas Operations Act*, the *Territorial Lands Act*, the *Arctic Waters Pollution Prevention Act*, and others. In addition, because of declining numbers of caribou, oil and gas activity in the range of both the Cape Bathurst and the Bluenose-West caribou herds may be subject to restrictions when caribou migrate into the project area. Since the coast is grizzly bear



**Figure 6: Community Conservation Plans**

habitat, additional mitigative measures may be required at the planning stage.

With respect to environmental and community concerns, areas of particular importance to the Inuvialuit and for biological reasons have been identified. Each community has mapped such areas and included them in the Community Conservation Plans (CCP). A summary of these areas are shown in Figure 6.

Under the terms of the Canadian *Oil and Gas Operations Act* Northern Benefits Requirements and, along with the IFA, companies are expected to meet the IFA requirements for economic benefits; support and encourage the development of regional businesses; promote fairness in and access to employment opportunities; give first consideration to qualified individuals resident in the regional communities; identify potential employment and training opportunities; compensate individuals whose hunting, trapping and fishing are impacted; and overall, live within the terms of the Inuvialuit Final Agreement.

### Economic Value

Based on 1998 estimates of the total volume of oil and gas discoveries in the Mackenzie Delta and Beaufort Sea, the gross value of the oil in the ground is approximately \$26.0 billion to \$64.1 billion (assuming an average 2000 oil price of \$280/m<sup>3</sup>), and the gross value of natural gas is approximately \$20.5 billion to \$38.4 billion (assuming an average 2000 natural gas price of \$110/103m<sup>3</sup>). These gross value estimates are useful in that they indicate, to a certain extent, the potential economic impact of oil and gas

development. However, information is not available from which to reasonably estimate development costs, price changes for oil and natural gas, and production schedules for the region. This requires more sophisticated modelling, but would allow for a more meaningful description of the net values. In other words, these total gross value estimates indicate the size of the resources in the ground, but not the net benefits that would be associated with oil and gas development (Kavik-AXYS, 2002).

### Mackenzie Gas Pipeline

A gas pipeline is currently being proposed to connect the Beaufort Sea/Mackenzie Delta to Alberta. The first time the pipeline was proposed in the 1970s, Justice T.R. Berger (1977) recommended a 10-year moratorium on the construction to allow the Aboriginal peoples of the Mackenzie Valley and Beaufort Sea region to settle land claims and prepare for industrial development. A primary reason why the proponents did not pursue the project initially is because it did not remain economically viable.



Petroleum pipeline - HO/AFP/Getty Images

The project is again being proposed to join three natural gas production fields in the ISR to a gathering system that will tie to a gas processing facility near Inuvik. From there, Natural Gas Liquids (NGL) will be carried by

one pipeline to the existing oil line at Norman Wells and natural gas will be carried by another pipeline 1,220 km to Alberta's existing natural gas transmission infrastructure. Nearly six trillion cubic feet of gas have been discovered, and would be moved to markets in Canada and the U.S. (Mackenzie Gas Project, n.d.), and the pipeline would move about 1.2 billion cubic feet per day (Aboriginal Pipeline Group, n.d.).

Pipeline construction, if it proceeds, is expected to last four years and would entail clearing the right-of-way and building infrastructure such as temporary construction camps, storage facilities and roads in the first year. The following years would see building the pipeline links as described above, which will also require additional infrastructure such as barge landing sites, airstrips, roads, gravel pits and stockpiles, and compressor stations (Mackenzie Gas Project, n.d.). Completion of a pipeline is expected to greatly enhance gas and oil development activity in the region as discussed above.

### ***Aboriginal Involvement in the MGP***

The Aboriginal Pipeline Group (APG) was formed in 2000 to represent the interests of the Aboriginal peoples of the Northwest Territories in the proposed Mackenzie Gas Project (MGP) and to maximize their ownership and benefits in the proposed gas pipeline project. It has gained the right to own up to one-third of the MVP mainline. The APG's financial interest in the MVP is held by the Mackenzie Valley Aboriginal Pipeline Limited Partnership (MVAPLP), which is itself owned primarily by organizations under the Sahtu, Gwich'in and Inuvialuit. In addition, the Mackenzie Valley Aboriginal Pipeline Corporation (MVAPC) is the general partner of MVAPLP. In October 2001, the MVAPC entered into a Memorandum of Understanding with the four producing companies. The MVAPC, generally referred to as the Aboriginal Pipeline Group (APG), became a full participant in the Project in June 2003 following funding and participation agreements between the four producers, the APG and TransCanada Pipelines Limited.



**Beaufort Sea Port**



## Economic value

The five components of the overall pipeline project include the Mackenzie Valley Pipeline itself, the development of natural gas production facilities (Taglu, Parsons Lake and Niglintgak natural gas fields), a gathering pipeline system, a gas processing facility near Inuvik and a natural gas liquids pipeline from Inuvik to Norman Wells. Construction costs in 2007 were estimated at \$16.2B (Mackenzie Gas Project, n.d. (b)). These numbers are reflective of the costs associated with construction, and do not reflect the value of the resource extracted, or benefits created through jobs and local business opportunities.



Zinc and lead mine site (Little Cornwallis Island)

## Mining

The Inuvialuit Land Corporation and the federal government hold mineral rights in the ISR, which remain relatively unexplored in terms of mineral potential. Known deposits of iron, coal, copper, lead and zinc exist within the region, but have yet to be



developed (Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission 1991). Diamond exploration on the Parry Peninsula and Banks and Victoria Islands, and nickel exploration on Victoria Island are currently the principal focus, and all activity is only at the exploration stage.

In the IFA, provisions are made for the reservation of granular and sand resources for community needs (Department of Indian Affairs and Northern Development, 1984). Sand and gravel supplies within the southern Beaufort Sea and Mackenzie Delta region are generally in limited supply. Demands for sand and gravel include community requirements, maintenance and upgrading of transportation facilities, military activities and the oil and gas industry. Marine deposits of gravel are found northwest of Herschel Island and north of Cape Bathurst (Mackenzie Delta-Beaufort Sea Regional Land Use Planning Commission 1991).

## Transportation

There are several air charter companies, one marine transportation company and one road transportation company that provide transportation services in the ISR. Companies include: North Wright Airways, Aklak Air, Canadian Helicopters, E. Gruben's



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Transport, Highland Helicopters, Northern Transportation Company Ltd. These companies are based in Inuvik and provide basic supply or charter services for government, industry and locals, with a small amount of tourist charter services. Fixed-wing and helicopter companies charter

on Garry and Pullen islands are conducted via air charter (Kavik-AXYS, 2002).

In the last 15 years, shipping activity in the Mackenzie Delta and Beaufort Sea has been limited. Most of the shipping activity in the area is related to Northern Transportation

**Table 1: Tentative sailing dates for 2008 (NTCL)**

	June 1-5	June 16-30	July 1-15	July 16-31	Aug 1-15	Aug 16-31	Sept 1-15	Sept 16-30	Oct 1 - 15
Aklavik									
Inuvik and Mackenzie Delta									
Tuktoyaktuk									
Uluhaktok									
Paulatuk									
Sachs Harbour									

\* Purple refers to tentative sailing dates during that time

Source: NTCL, 2008 (available at: <http://ntcl.com/pdf/2008-Sailing-Schedule.pdf>)

to government, industry, local residents and tourists mostly during the summer and to oil and gas exploration companies in the winter. Canadian North and First Air airlines are privately owned companies which service the northern communities. They are the largest of about 30 companies that service the entire north. Due to the lack of road access to many of these communities, airlines play a vital role delivering food, medical supplies and other necessities. As such, these two airlines are critical for successful economic growth of the region. The destinations of the air charter companies vary from company to company and year to year depending on their clientele. Herschel and Kendall islands, however, seem to be reasonably frequent destinations. Servicing and maintenance of the communication towers at Tuktoyaktuk and Swimming Point and related activities

Company Ltd's (NTCL) supply and cargo shipping activities. NTCL operates a coastal community supply vessel on a regular schedule (Table 1), supplying communities, logistics and staging locations, and Distant Early Warning (DEW) sites east of Aklavik along the Arctic coast, across the Amundsen Gulf to Ulukhaktok and Sachs Harbour, and occasionally to sites along the Arctic coast to the west, including northern Alaska. Tuktoyaktuk Harbour is the location at which goods are transferred to ocean-going barges. Barge traffic consists of 10 river tugs that push/tow on average six linked barges, primarily transporting bulk petroleum products, dry cargo and supplies (Kavik-AXYS, 2002). The Canadian Coast Guard (CCG) conducts operations in the area, maintaining aids to navigation and serving as fixed or drifting marine research platforms. The CCG generally sends one icebreaker per

year from Victoria, British Columbia to the western basin of the Beaufort Sea.

A substantial amount of dredging activity has occurred in the Beaufort Sea since the early 1970s, primarily during the peak of drilling and exploration activity in the Beaufort Sea in 1982. Dredging activity in the Beaufort Sea before 1970 and in recent years has been mainly focused on aiding navigation, limited to harbours and some approaches (Kavik-AXYS, 2002). Within the Beaufort Sea beluga management plan (BSBMP), marine vessel traffic must follow a registered route. According to the guidelines “All shipping activities (including dredging) should be confined to designated routes and areas. Passage through or close to Zone 1a outside of designated routes, even if it is the shortest route, should be avoided from break-up to 15 August.” In addition, the guidelines specify that “No port development should be allowed within or on the shores of any Zone 1a waters” (Fisheries Joint Management Committee, 2001).

The Dempster Highway, officially opened in 1979, is an important transportation route for the Mackenzie Delta and Beaufort Sea. The highway runs from near Dawson City to Inuvik and during the winter months is extended another 194 km (121 miles) to Tuktoyaktuk. The highway is 733 km (456 miles) in length, and is paved only for the first few kilometres. This highway represents

an important connection to the south and is open all year except for a period in the spring in fall. When freeze up begins in the fall the ferries that cross the Peel and Mackenzie rivers must cease operations and all traffic is halted until the rivers freeze over to allow passage. In the spring the highway is again closed until the ferries can resume operation. A portion of the Dempster highway and barge routes are shown in Figure 7.

Transport Canada had Dalhousie University assess the shipping impacts and forecasted future shipping scenarios in the Canadian Arctic (Hodgson et al., 2008). The forecasted shipping scenarios include minimal changes to bulk dry carriage and liquid bulk carriages in the Beaufort Sea. Supply and re-supply may increase with increasing population, but is expected to be manageable. Although cruise shipping is highly unpredictable it is believed that some increase is likely. In addition it is expected that container bulk transit traffic will continue to be limited.

The shipping impacts identified were grouped into three categories:

1. impacts resulting from normal operations associated with the ships presence,
2. impacts resulting from normal operations but that persist after the ship has left
3. and impacts from incorrect or improper operation (including accidents).

Category one is mainly comprised of impacts associated with noise (ie. noise from the propeller, engine, or ice breaking). It also includes impacts such as a ship's wash, propeller action, and cooling water discharge all of which would likely have minimal impact on the environment. Impacts from category two include engine exhaust emissions and open channels

through ice. Category three contains the most potentially devastating impacts, including spills, the introduction of alien species, and use of anti-fouling paint. In addition discharges are included in this category and include oily water, sewage, garbage, grey water and ballast water discharges.

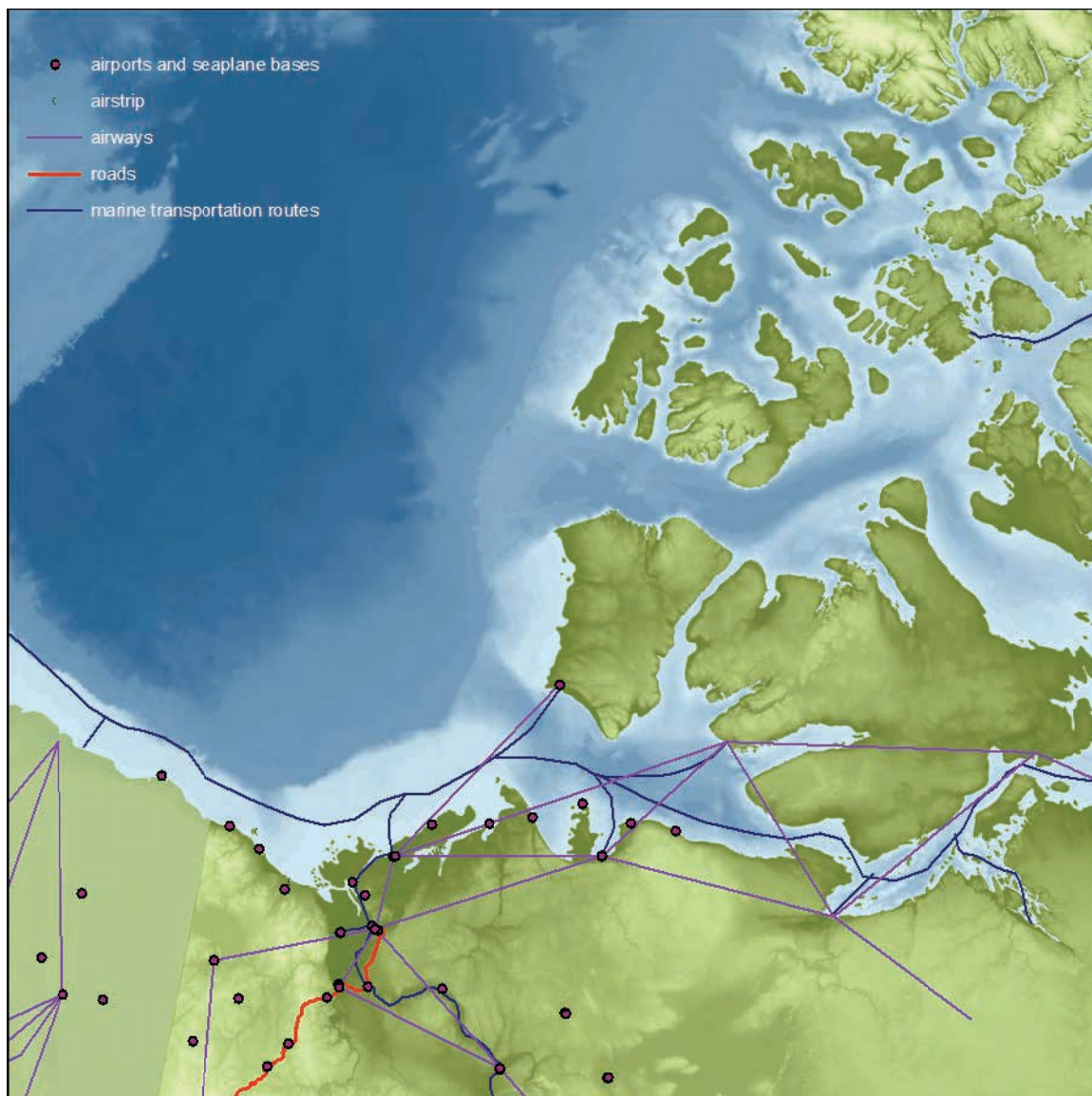


Figure 7: Transportation routes in the western Arctic.



The rangers (left) and a DEW Line site (right)

### **Military Activities**

The Canadian Department of National Defence (DND) has embedded a force of Rangers who provide a military presence in remote, isolated and coastal communities of Canada. Established in 1947, Canadian Rangers play an important role in protecting Canada's sovereignty by monitoring and reporting potential sovereignty related issues. The Rangers also aid in the long term analysis and documentation of the effects of climate change. Their ever-present status in the region affords them a perspective very few researchers and scientist are privy to.

Like a latter-day whaling rush, military activities were responsible for one of the boom-bust cycles in Inuvik. The Distant Early Warning (DEW) Line was constructed across Canada's Arctic in 1955 as part of the North American Air Defence System (Figure 8). In 1988 it was partially deactivated (Eddy, 2001). The DEW Line construction, as well as establishment of a major military base in Inuvik both provided jobs and intense economic activity for a couple of decades, until their closure imposed economic

hardship on Inuvik and the region. The northern component of DND, Canadian Forces Northern Areas, currently maintains a military base at a Forward Operating Line for aircraft support. Inuvik is periodically used for land-based military and flight training exercises although the only infrastructure remaining at the base is a hangar capable of housing six aircraft.

Along the coast of the Mackenzie Estuary are the remains of two DEW Line stations, at Shingle Point and Tuktoyaktuk. Clean-up and decommissioning of these sites is ongoing, with specific attention to limiting environmental contamination, particularly of PCBs. A military waste site is located near the Tuktoyaktuk station, with several other sites further inland. The DEW Line system (Figure 8) was replaced and modernized under an agreement signed by Canada and the United States in 1985. Within Canada, this system is operated by the Canadian military and is made up of automated long range radar sites, unmanned short range radar sites, and four manned logistical sites along the Northwest Passage route.





Figure 8: DEW Line sites in the western Canadian Arctic.

## Sovereignty

Sovereignty has been an issue in the Beaufort Sea LOMA since the time of the whalers; it also motivated the establishment of fur trade posts and settlements. Defence activities motivated the establishment of the military base at Inuvik, and the DEW Line stations in the region. Oil and gas development in the Beaufort Sea generated legal questions about the territorial borders and the NWT/Alaska border. Canada may

now be entering a new phase of northern defence/sovereignty with development of more powerful icebreakers which could have impacts on land and resource use in the Beaufort Sea LOMA by opening up access and transportation routes. In addition, offshore Arctic research programs have increased significantly in recent years attracting more attention to the Arctic which contributes to promoting sovereignty issues.



## Archaeological and Historical Values

There are numerous archaeological sites including burial sites, campsites, villages and whaling stations, around Shallow Bay and Kugmallit Bay. In addition, the Kittigazuit National Historic Site, located in the Mackenzie Delta 30 km southwest of Tuktoyaktuk, is recognized for the significance and abundance of archaeological resources which remain as evidence of a former Inuit settlement and whaling centre (Kavik-AXYS, 2002). Parry's Rock National Historic Site, located on south-eastern Melville Island on the north side of M'Clure Strait, commemorates Parry's 1819 winter harbouring site. The rock also bears a plaque unveiled by Captain Bernier, by which Canada took possession of the Arctic Archipelago in 1909.



Archaeological site marked with Bowhead bones – A. Blouw

## Parks and Protected Areas

### *Marine protected areas*

The *Federal Marine Protected Areas Strategy* involves Fisheries and Oceans Canada (DFO), Environment Canada (EC), and Parks Canada

Agency (PCA). These departments and agencies plan to establish integrated management planning and collaboration to identify, select, establish, manage and monitor MPAs more effectively, while at the same time increase awareness, understanding and participation of Canadians in the marine protected area network. In collaboration with Inuvialuit Land Claim institutions, efforts will be made to meet the wide array of conservation needs and Inuvialuit interests and rights from enhancement of fish populations, protection of migratory birds, endangered species and representative ecosystems, to providing opportunities for public education and enjoyment.

Consistent with the Inuvialuit Final Agreement, Canada's federal MPA network includes three core programs:

- DFO's Oceans Act Marine Protected Areas are established to protect and conserve important fish and marine mammal habitats, endangered marine species, unique features and areas of high biological productivity or biodiversity.
- EC's Marine Wildlife Areas are established to protect and conserve habitat for a variety of wildlife including migratory birds and endangered species.
- PCA's National Marine Conservation Areas are established to protect and conserve representative examples of Canada's natural and cultural marine heritage and provide opportunities for public education and enjoyment.

As well, Migratory Bird Sanctuaries (EC), National Wildlife Areas (EC) and National Parks (PCA) with a marine component, are

important contributions to the MPA network (Fisheries and Oceans Canada, 2005).

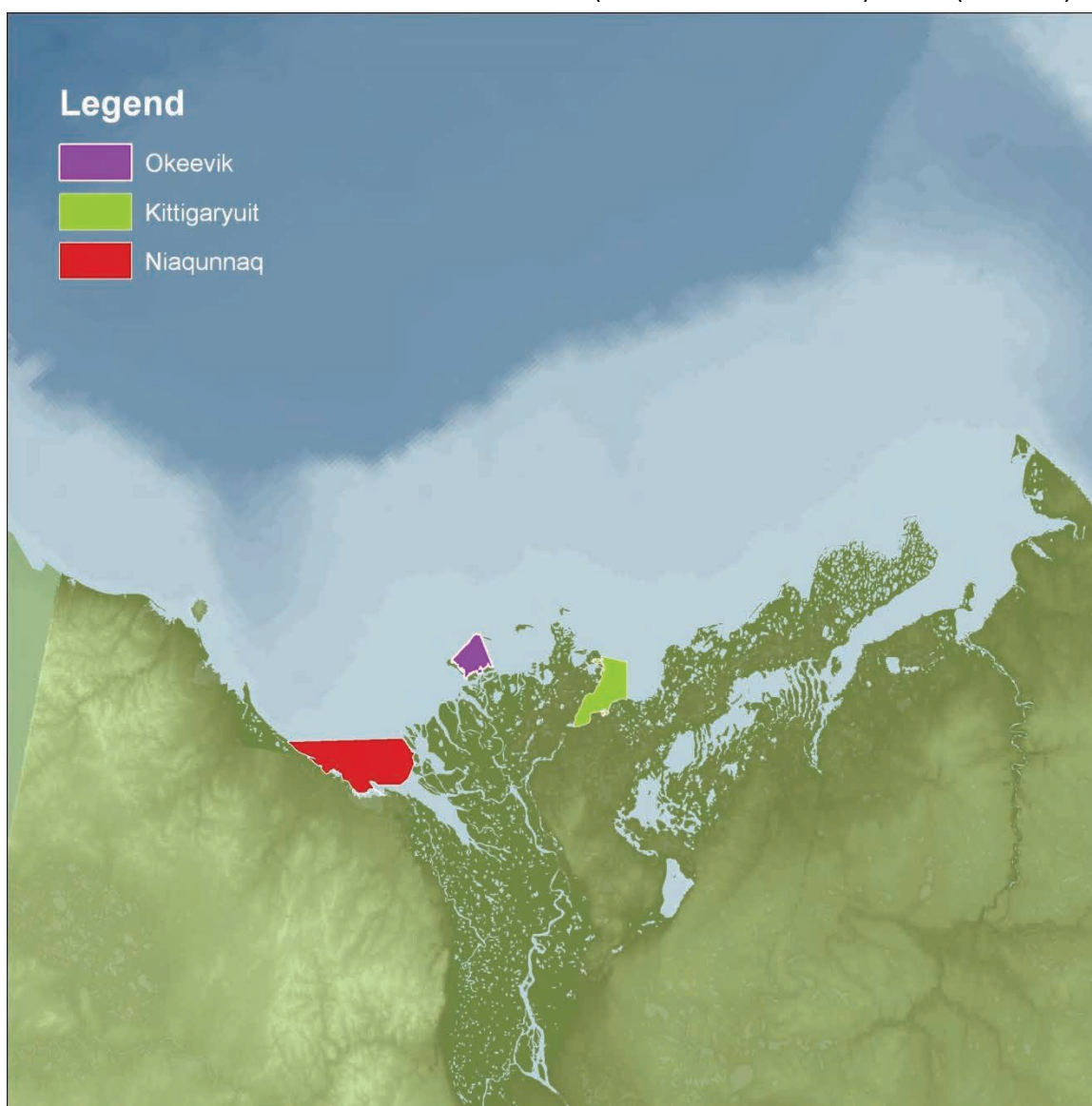
There are currently no national marine conservation areas in the Beaufort Sea, but four representative marine areas have been identified:

- Yukon Coast-Shallow Bay marine area Mackenzie Delta-Tuktoyaktuk;
- Peninsula marine area;
- Liverpool Bay-Franklin Bay marine area;

- and West Banks Island marine area.

The boundaries of Ivvavik National Park include coastal portions of marine habitats (lagoons, estuaries and open beaches) along the Yukon North Slope/Beaufort Sea coast.

Arising from work first detailed in a beluga management plan, a MPA (Figure 9) has been proposed under the *Oceans Act* to protect beluga aggregations near the Mackenzie Delta. The Tarium Niryutait (animals of the ocean) MPA (TN MPA) is



**Figure 9: The Tarium Niryutait Marine Protected Area.**

located in the Mackenzie River estuary, and consists of three separate but related areas: Niquunnaq (Shallow Bay), Kittigaryuit (Kugmallit Bay), and Okeevik. The primary conservation objective for the proposed TN MPA is to conserve and protect beluga whales, their habitat and supporting ecosystem, and to maintain a thriving population of beluga whales from which an optimal sustainable harvest of beluga by Inuvialuit can be supported.

### ***Migratory Bird Sanctuaries***

Kendall Island Bird Sanctuary:

Kendall Island Migratory Bird Sanctuary located on the outer margin of the Mackenzie Delta was established in 1961 to provide long-term protection to a colony of lesser snow geese, as well as the staging and breeding grounds of many migratory water bird and shorebird species. The Canadian Wildlife Service (CWS) manages this site, in cooperation with local communities and regional Aboriginal organizations, under the *Migratory Birds Convention Act*. As stipulated in the Inuvialuit Final Agreement, beneficiaries may access the sanctuary, and hunt and trap wildlife within it. Other types of land use in the Kendall Island Bird Sanctuary are subject to approval, require a sanctuary permit and are only permitted if they are of limited impact. There are air traffic activity restrictions in the Kendall Island Bird Sanctuary during June and July when birds are nesting. Activity restrictions could relate to any development activity that could cause disturbance to the birds or their habitat, e.g., seismic exploration or other oil and gas activities (Integrated Environments, 2007).

Other Bird Sanctuaries:

Additional sanctuaries (Figure 10) have been created at a number of locations including; Anderson River Delta, Liverpool Bay, Banks Island (Bird Sanctuaries #1 (Egg River) and #2 (Thomsen River)), Cape Parry (north of Paulatuk), Kendall Island, and the Mackenzie Delta (Environment Canada, 2007).

### ***National Parks and Sites***

There are three national parks that lie in the vicinity of the Beaufort Sea (Figure 11). Two are located in the Northwest Territories and include the Aulavik National Park and the Tukturnogait National Park. Inuvavik National Park is in the Yukon Territory.

#### ***Aulavik National Park – Northwest Territories***

Aulavik, meaning ‘place where people travel’ in Inuvialuktun, protects more than 12,000 square kilometres of Arctic lowlands on the north end of Banks Island, north of Sachs Harbour. The park encompasses a variety of landscapes from fertile river valleys to polar deserts, buttes and badlands, rolling hills, and bold seacoasts. At the heart of Aulavik National Park is the Thomsen River, which offers visitors a chance to paddle one of the continent’s most northerly navigable waterways. Established in 2001, the park is co-operatively managed through the provisions of an establishment agreement signed in 1992 and subject to the IFA. The park is bounded on the north by M’Clure Strait, which forms the westernmost end of the Northwest Passage connecting Baffin

Bay to the Beaufort Sea. The Thomsen River estuary and Castel Bay are within the national park boundaries (Parks Canada, 2006a).

#### **Tuktut Nogait National Park – Northwest Territories**

40 kilometres east of the community of Paulatuk is Tuktut Nogait ('young caribou') Park, featuring rolling tundra, wild rivers, precipitous canyons, and a variety of unique wildlife and vegetation. This park is home to

the Bluenose West caribou herd, wolves, grizzly bears, muskoxen, arctic char, and a high density of raptors. This national park is almost entirely landlocked, with no marine or shoreline component (Parks Canada, 2006b).

#### **Ivvavik National Park – Yukon (west of Aklavik)**

Ivvavik means 'a place for giving birth, a nursery', in Inuvialuktun. Established in 1984



**Figure 10: Migratorybird sanctuaries and key habitat sites in the Beaufort Sea area**





Pingo near Tuktoyaktuk

following a provision of the Inuvialuit Final Agreement, it is the first national park in Canada to be created as a result of an Aboriginal land claim agreement. The park protects a portion of the calving grounds of the Porcupine caribou herd and represents the Northern Yukon and Mackenzie Delta natural regions. Terrain ranges from mountains, foothills and river valleys, to the coastal plain and the Beaufort Sea. Lagoons, the estuaries of the Firth, Malcolm and Babbage Rivers and open beaches are included within the park's boundaries. The continental shelf and sub-sea Herschel Canyon are offshore features (Parks Canada, 2006c).

Parks Canada manages the Pingo Canadian Landmark, which is a 16 square km site protecting pingos and other permafrost

landforms representative of the Tuktoyaktuk Peninsula.

Kitigaaryuit National Historic Site was designated in order to commemorate the Inuvialuit whaling village that once existed at the site near Tuktoyaktuk. The site is not managed by Parks Canada.

#### Northwest Territories Park

Gwich'in Territorial Park Reserve overlooks Campbell Lake and features rare arctic plant communities, a significant migratory bird staging area, and an unusual example of a reversing delta in the spring. The park is 44 km south of Inuvik (Government of the Northwest Territories, 2006a).



Figure 11: National parks in the Beaufort Sea area.

#### Yukon Territorial Park

Herschel Island Territorial Park, known as "Qikiqtaruk" (meaning 'island'), is a small historic park located five km off the north coast of Yukon in the Beaufort Sea. The 116 square km island has a dry polar climate, and a unique combination of arctic plants, animals and sea life, including the largest colony of Black Guillemots in the western Arctic. Visitors can find evidence of prehistoric and current cultures; traders; missionaries; the North West Mounted

Police (who carried out their legendary dogsled patrols from here); and a whaling station dating back to the late 19<sup>th</sup> century. Both beluga and bowhead whales may be seen offshore in July and August. Several Inuvialuit families still use the area for traditional activities. The park is accessible from Inuvik, but since 2007, commercial operators have been required to get a park use permit for landing aircraft or boats (Yukon Government, 2007).

## **Inuvialuit Community Conservation Plans**

Community Conservation Plans (CCPs) have been developed for all communities within the ISR and represent the conservation priorities of Inuvialuit communities and wildlife management bodies (Figure 6). The CCPs offer guidelines for development to those interested in working in the region and reflect the views of hunters, trappers and fishermen from the communities. These plans are an important tool for the environmental screening and review process. The guidelines are designed to ensure conservation of renewable resources (Community of Aklavik *et al.*, 2000) and are currently in the process of being revised.

## **Scientific Research**

The Beaufort Sea/Mackenzie Delta region has been the subject of numerous geological, biological, oceanographic and archaeological studies in the past 30 years. A Scientific Research Reserve located on Garry Island has been dedicated to studying permafrost. The Canadian Wildlife Service (CWS) conducts research on migratory waterfowl both on and offshore in the Beaufort Sea. DFO conducts research throughout the Beaufort Sea on fisheries, marine mammals, oceanographic processes and other topics. Under Indian and Northern Affairs Canada, the Northern Contaminants Program conducts research in the western Arctic. The Earth Science Sector of the Federal Government's Department of Natural Resources conducts geological seafloor investigations of the Canadian

Beaufort Sea, which is aimed at protecting the renewable resources therein.

Archaeological studies have assessed the north shore of Richards Island in the vicinity of Kendall Island, and conducted inventory work at the Kittigazuit (Kitigaaryuit) National Historic Site and the surrounding area. More detailed studies on the impacts of coastal erosion at Kitigaaryuit were conducted by the Geological Survey of Canada in August 2001. Oral historical research, conducted by the Inuvialuit Cultural Resource Centre (ICRC), has documented the history of Kitigaaryuit and the experiences of those who once lived there.



**Travelling by snow machine in the Beaufort Delta**

The earliest known Inuvialuit beluga hunting site at Cache Point was surveyed between 1996 and 1999 as part of the Qilalugaq Archaeology Project, including mapping and excavation of four houses, including entrance tunnels, middens and kitchen structures. In 1998, the ICRC conducted an oral history and archaeology project at a former Royal Canadian Air Force and United States Air Force Loran navigation station, code named Yellow Beetle, or Kittigazuit. Parks Canada has conducted oral history and archaeological surveys in Aulavik, Tukturnogait and Ivavik National Parks as well as

the Pingo Canadian Landmark. Parks Canada has also conducted or contributed to research and monitoring within the national parks, and contributes to research and monitoring efforts on wildlife species that range both within and outside park boundaries.



**The Admunden research vessel – A. Blouw**

Some of the research institutions/organizations active in the area include: Aurora Research Institute, NWT and Yukon territorial governments, Canadian Wildlife Service, Canadian Polar Commission, DFO, NRCan, Parks Canada, Prince of Wales Northern Heritage Centre, and universities from around the world.

## **2.4 “Global-scale” Impacts and Influences on the Beaufort Sea LOMA**

In addition to locally and regionally induced impacts on the Beaufort Sea, global-scale processes and impacts, driven by activities far from the region itself, also influence the Beaufort Sea ecosystem. Climate change and contaminant transport are two issues that illustrate how the Beaufort Sea is linked to the global economy and environment, despite its apparent, geographical distance from the main sources contributing to these problems.

### **Climate change**

The Mackenzie Delta and Beaufort Sea have already experienced significant changes in temperature and precipitation, although there is considerable temporal and spatial variation in the patterns of change. According to the International Panel on Climate Change, global climate warming appears to be happening faster than predicted by most North American Climate Models using natural forcing (IPCC, 2007). Of the twelve years spanning 1995-2006, eleven are among the warmest recorded since 1850 (IPCC, 2007).



**Polar bear on the Beaufort Sea**



The 100 year (1906 to 2005) linear global temperature trend is 0.74°C [0.56°C to 0.92°C], this warming a rate almost double for the Arctic regions (IPCC, 2007). Regional impacts include changes to the environment (sea ice, permafrost, slope stability, coastal erosion, shrub/tundra distribution, forest fire occurrence) and human activities and infrastructure (sea ice travel, timing of freeze-up/break-up/snow-melt, structural stability, ice road and water transportation, and natural resource exploration). Some impact forecasts also suggest the possibility of higher incidences of insect-borne and other pathogenic diseases as the northern climate warms. The trend appears to be towards fewer days with extreme cold temperatures, more days with extreme high temperatures in winter, spring and summer, and an increase in heavy precipitation events and in freezing rain. Future temperature and to a lesser extent precipitation, are expected to show significant further changes during all seasons, but with the greatest changes occurring during winter and fall. A full understanding of the climate patterns in the region are limited by the lack of long-term climate stations or data (Bonsal *et al.*, 2007).

### **Erosion and Lancastrian Water Levels**

Rising water levels in the lower Mackenzie Delta lakes may be related to climate warming which has likely decreased the oceanic ice cover, increased the water volume and storm surge activity. Recent data show water levels have risen in 60% of the Delta's 45,000 freshwater lakes over the past 30 years. While a large number of the

low-lying lakes have experienced a water level rise of nearly 30 centimetres, some inland lakes are drying up (Lesack and Marsh, 2007). This water-level-rise could introduce damaging saltwater into the freshwater lakes, affecting fish and other wildlife (Lesack and Marsh, 2007).



Coastal Bank erosion - L. Harwood



Collapsed pingo - D. Downing (GNWT)

Erosion incidents in Tuktoyaktuk and Herschel Island are increasing. The so-called 'hundred year storms' have occurred several times in recent years, damaging community infrastructure (CBC.ca, 2008). This coastline is highly sensitive to erosion and hence to sea level rises resulting from climate warming. More than 10 m of erosion can occur in a single year in this region (NRCan, 2008). Tuktoyaktuk has experienced erosion problems almost since its establishment in 1934. Severe storms and very little ice in

1944, 1970, 1993 and 2000 resulted in major episodes of erosion (NRCan, 2008).

New species are also being noticed in the Beaufort Sea, such as several species of Pacific salmon (Stephenson, 2006), and community residents have noted changing distributions of marine mammals such as walrus (see section 3).

### **Contaminants**

The presence of contaminants in traditional/country foods such as fish and marine mammals became an issue of concern in the late 1980s, when it was discovered that people had relatively high contaminant levels in blood and breast milk. This caused a great deal of concern amongst Aboriginal northerners. In some cases, people stopped eating traditional foods, which raised concern about more serious health concerns related to poor dietary nutrition, such as obesity, diabetes and heart disease. Research has proven, however, that the benefits of consuming traditional/country foods outweigh the risks associated with contaminants. Most of this research has been conducted by the Northern Contaminants Program (NCP) of Indian and Northern Affairs Canada, which was specifically created in 1991 to address concerns related to contaminants in traditional country foods.

Further research and interpretation over the intervening years has shown that contaminants come from sources around the world by long-range transport and tend to concentrate in some species and some body parts of those species – for instance in the

fat of whales or organ meats of caribou. Marine mammals are particularly effective at accumulating contaminants because of their position higher up the food chain and because of the high proportion of fat on their bodies. Since the late 1980s, concentrations of most contaminants, and particularly persistent organic pollutants (POPs), have been decreasing in most marine mammals. At the same time, however, levels of other contaminants like mercury and some new chemicals appear to be increasing.



**Child eating country foods – L. Dueck**



**Woman preparing fish at Oceans Day**



Elders enjoying country food

Direct health impacts of contaminants on humans have mostly been subtle, and are only now being effectively identified and measured. People are most sensitive to contaminant related effects during fetal development and infancy. Women of child bearing age, infants, and young children are a focus of public health education related to nutrition and the consumption of traditional/country foods.

Traditional/country foods are high in important nutrients like Omega-3 and -6 fatty acids, protein, iron and selenium, which actually prevent and protect consumers from numerous health problems, including the potential effects of contaminants. The issue of contaminants is therefore very complex and caution should be exercised in any discussion of the issue, supported by

expert opinion, regional health authorities and frontline health care advisors.

The current policy concerning country foods is that in general these foods are nutritious. Some foods, however, should be consumed appropriately as they may pose a health risks under certain conditions. It is believed that the risks associated with country food are far surpassed by the benefits. Furthermore, traditional foods almost always provide better nutrition than store-bought foods, are more economical to obtain, and bring the added benefit of physical fitness and outdoor activity. More attention has been paid in recent years to adequately transmitting this message to Aboriginal people, and to dispelling concerns about country food consumption (Armstrong *et al.*, 2004; Indian Affairs and Northern Development, 2003). However, everyone has a right to expect a safe food source. More research and prevention of entry is needed for contaminants in the Beaufort Sea. A global initiative currently underway and started by the Stockholm Convention on Persistent Organic Pollutants is attempting to address these issues.



Kids fishing at Oceans Day



### 3. CURRENT COMMUNITY PROFILES AND COMMUNITY WELL-BEING INDEX

To analyze the baseline conditions within the Inuvialuit communities, INAC's Community Well-Being (CWB) Index was used. It is a further modification of the Human Development Index (HDI), which was developed by the United Nations Development Program, for application at the community level.

The Community Well-Being Index combines into a single score the following four components: income per capita by total population, education (grade nine attainment as a proxy for functional literacy and high school or greater educational attainment), housing (quantity and quality), and labour force (participation and employment). The major difference between the CWB Index and the HDI is the inclusion of the housing component as a measure of a community's infrastructure quality<sup>1</sup>. The CWB does not, however, capture aspects of life such as harvest participation and production, cultural strength, social cohesion networks and so on.

Figure 12 compares the CWB scores for the Inuvialuit communities from 1991 to 2001. With the exception of Sachs Harbour, which faces unique economic, fiscal, and structural challenges due to its small size, the

<sup>1</sup> Senécal, S. and E. O'Sullivan. (2006). "The Well-Being of Inuit Communities in Canada". Indian and Northern Affairs Canada, Strategic Research and Analysis Directorate.

remaining communities all show a slow positive trend towards increased community well-being as measured by the CWB Index.



On the land Inuvialuit activities



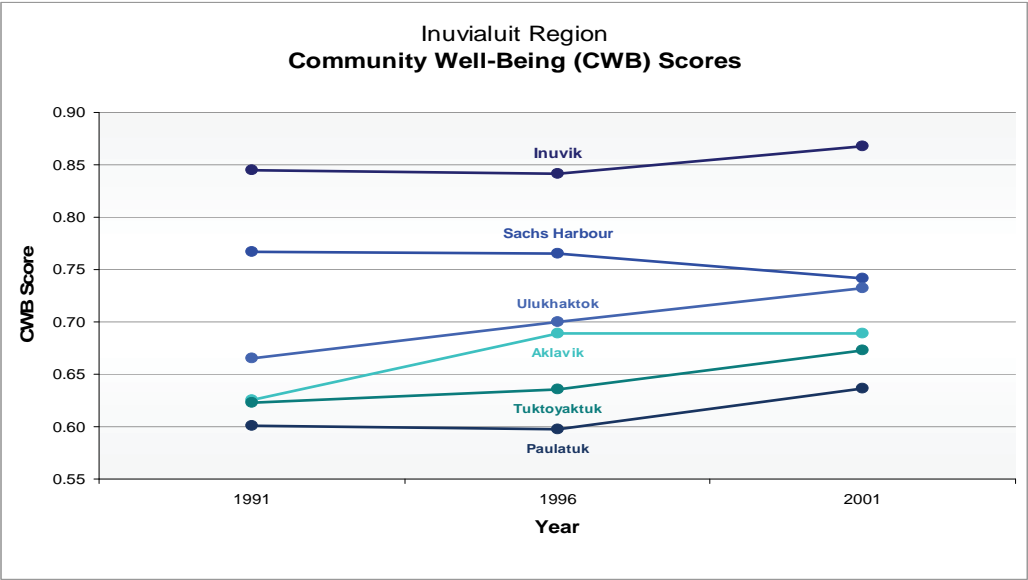


Figure 12 Inuvialuit Region Community Well-Being (CWB) scores. Source: Senécal and O’Sullivan, 2006



Fishing from an ice berg

### 3.1 Paulatuk



Aerial photograph of Paulatuk

The community of Paulatuk is located approximately 300 km east of Tuktoyaktuk on the shore of the Beaufort Sea. With 318 people, Paulatuk is the second smallest Inuvialuit community, but it has been growing over the past decade. The name Paulatuk means "place of coal" in Inuvialuktun in reference to the use of coal for heating by early settlers.

In the early 1900s, Paulatuk was established by the people that originated from the Mackenzie Delta and Alaska who moved to the area for the purposes of harvesting wildlife and trapping fur bearers. Initially, the residents of Paulatuk migrated to and

from Cape Perry (a DEW Line site), Letty Harbour, Stanton, and areas that included Tuktoyaktuk and other Delta communities. Some of the residents also moved to Paulatuk from the Coppermine (now Kugluktuk) area. The community was settled permanently in 1964 by several families from Tuktoyaktuk and the Mackenzie Delta. The following year, the first residential houses were built. Paulatuk was formally established as a Settlement around 1969/1970 and as a Hamlet in 1987. Today, Paulatuk's population is made up of approximately 90% Inuvialuit and 10% others.

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Inuvialuktun and English are spoken in Paulatuk although the use of Inuvialuktun is gradually declining. Only about 27% of the Aboriginal residents in Paulatuk over the age of 14 can speak Inuvialuktun.

As with other Inuvialuit communities, the connection to the land is profound and critical to the future well-being of the community. The local wildlife is in decline. The community has placed restrictions on the harvesting of Arctic char (under a

many northern communities, the unemployment rate for the local residents is very high. As food and other needed supplies in the community are very expensive, many people subsist mainly on the wildlife off the land.

Paulatuk's economy is based primarily on employment from government and retail operations. The Hamlet of Paulatuk, Paulatuk Housing Association, and the Paulatuk Community Corporation are the



**Paulatuk Community Center**

community based management plan) and caribou. Other wildlife species such as musk ox, geese, and other fish are still plentiful. Harvesting activities, in addition to being an important food source, provide a means of passing on valuable traditional skills and knowledge to the youth.

The community is a central location for all hunting and fishing activities. Seasonally, people from the community hunt and fish in all directions from the community. As with

main employers and provide essential services to the community residents. A retail store and some small businesses provide the balance of employment. Parks Canada has a permanent office and interpretive centre and employs full-time, part-time and seasonal staff. Sports hunting and some sales of local crafts also provide seasonal sources of income for several outfitters.

There has been some mineral exploration by Darnley Bay Resources Limited with positive results for precious metals and diamonds, but as yet no commercial mining has been proposed. In the past, many of the residents would seek work with the oil and gas industry in the Beaufort-Delta region; this trend continues today with people from Paulatuk migrating to other locations to seek employment opportunities.

The essential services available in Paulatuk include a school, nursing station, power plant, an RCMP detachment, and fuel depot. Eye care services are provided in the community on an annual basis while a dental team visits quarterly. Local college courses have been available in the community in the past few years. There is a fairly new corporate centre, partially funded by Parks Canada following the establishment of Tuktut Nogait National Park, that has a hotel, offices for the Paulatuk Community Corporation, Self-Government, Brighter Futures, Hunters and Trappers, and Aboriginal Healing Foundation Offices, a Northern Store and the Parks Canada Office

and Tuktut Nogait National Park Interpretive Centre.

Tuktut Nogait National Park was negotiated and established in the 1998. People in Paulatuk were instrumental in the negotiation process to establish the park, which is located east of Paulatuk along the Nunavut boundary. The park is co-operatively managed by representatives of government and Inuvialuit and Sahtu organizations, including a minimum of two members who are Paulatuk residents.

Transportation services to and from Paulatuk are mainly by air, with three scheduled flight services per week out of Inuvik. NTCL provides annual barging services to the community, bringing in all needed dry goods, building materials, and the majority of food supplies to the community.

Recreational services and infrastructure include a community gymnasium that is open daily after school and in the evenings. The gym hosts activities for all ages,



Setting Sun



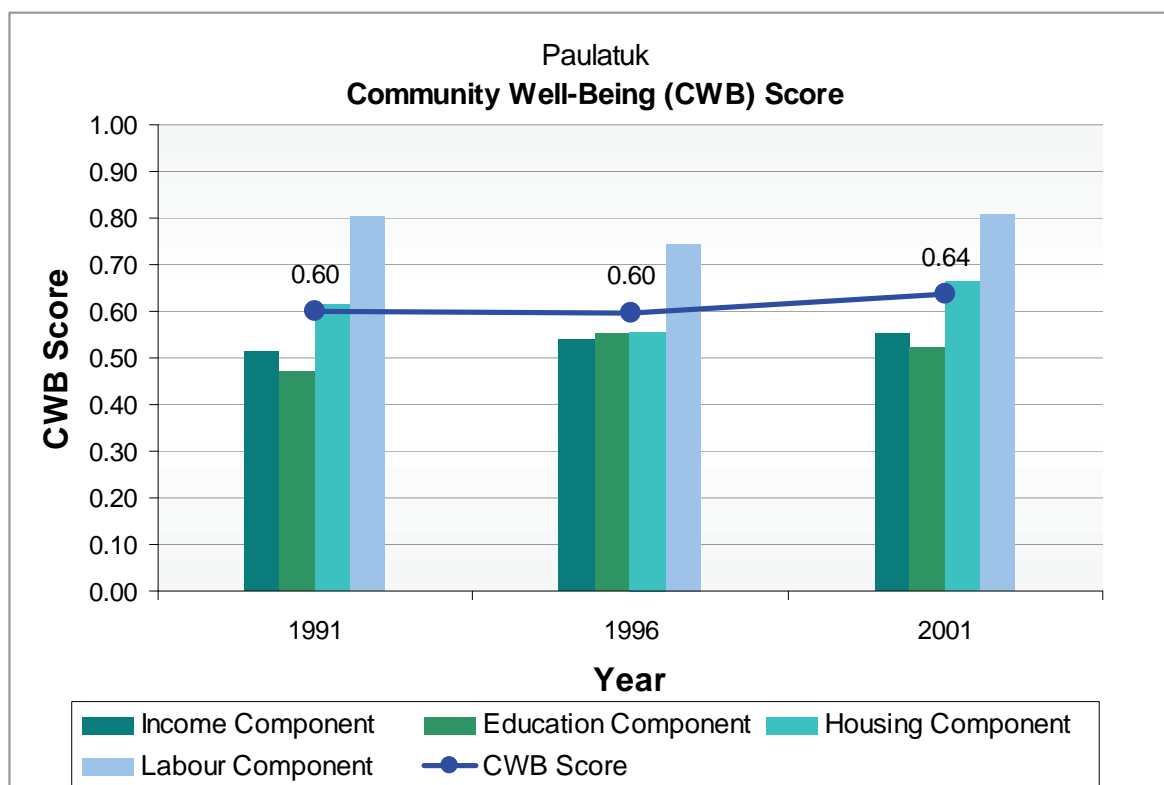


Figure 13 Paulatuk Community Well-Being (CWB) score. Source: Senécal and O'Sullivan, 2006

including traditional activities such as northern games, drum dancing, and old-time fiddle dances. A community arena hosts winter sports activities. An annual jamboree is held in the community during the middle of August. The jamboree includes traditional activities and attracts people from the other communities. Paulatuk youths were instrumental in reintroducing drum dancing back to the community and the Youth Drum Dancing Group has travelled to Germany as well as regionally.

Paulatuk's Community Well-Being and component scores (Figure 13) reflect the community's small size. While the income component score has gradually increased, the remaining components fluctuated over

the 10 year time period. While Paulatuk has the lowest overall CWB score in the region, it is important to note again that this measure does not capture traditional lifestyles well. Paulatuk is a community in which a significant number of households consume mostly or only harvested meat and fish, which suggests that traditional Inuvialuit culture and knowledge remain strong. The increase in Paulatuk's CWB score between 1996 and 2001 suggests positive future development, given sound economic and social policies that protect the ability of community residents to continue their traditional harvesting practices as well.

## 3.2 Ulukhaktok



Aerial photograph of Ulukhaktok

The community of Ulukhaktok is located on the western shore of Victoria Island; Ulukhaktomiut traditionally inhabited the area of Prince Albert Sound and Minto Inlet. Ulukhaktok is the large bluff which means “the place where rocks for ulus are found.” With approximately 400 people, the community has grown slowly over the years and this trend is expected to continue for the foreseeable future. This slow growth has caused some pressure in the community

which is reflected by the fact that there is a waiting list for public housing.

Ulukhaktok, originally named Holman, was a major harvesting location with many family groups occupying the area near the present location. Ulukhaktok was established in 1939. In December 2005, the community voted to reinstate the traditional name of Ulukhaktok which came into effect April 01, 2006.



Ulukhaktok in the winter

As with other Inuvialuit communities, the connection to the land is a critical part of life. The wildlife, musk ox, caribou, seal, Arctic char and geese form an important part of the diet. Harvesting activities provide an important means for passing on valuable traditional skills and knowledge to the youth.

There are two drum dance groups in Ulukhaktok, the Western and Central style Drummers, both of which are very popular with the youth. Sewing and traditional skill teaching is offered to the youth every week and is taught by the elders.

There are many dialects of Inuinnaqtun-Kangiryuanmiut, Puibliqmuit, and Ualiningmuit spoken in Ulukhaktok. With most of Ulukhaktok being Inuvialuit, only a handful of non-Inuvialuit people reside in the community.

The economy is based primarily on employment from government and retail operations. The Hamlet, the Northern Store, and the Holman Eskimo Co-operative are the main employers with both the Northern and the Co-op retail store providing general retail and groceries. Arts and crafts also play an important role in this community, and the art and fine crafts industry is becoming more

readily accessible through new forms of marketing, most recently through the internet. Venues such as eBay provide a means for locals in this remote community to compete on the global market (GNWT, 2005).

Ulukhaktok has been recognized as a producer of quality arts and crafts including Holman prints. Sports hunting and tourism provide seasonal employment for outfitters. In addition, there has been preliminary mineral exploration on the land over the past several years. This has brought modest employment which could expand in coming years. Ulukhaktok also has the most northerly golf course in the Americas, and hosts the annual Billy Joss Celebrity Golf Tournament.



Ulukhaktok airport

There are many essential services in Ulukhaktok: educational facilities consist of a daycare and preschool, a kindergarten to grade 12 school, and an adult education centre. There is a Health Centre with two nursing staff and a monthly visit from a doctor, and quarterly visits from a dental team. Recreational facilities include a gymnasium, an arena with a hockey rink, curling area and a weight room, a community hall, and a radio station used by the whole community. The Hamlet of Ulukhaktok provides water and sewage services, oversees the housing program, income support, motor vehicles, recreational activities and other contracts.

Community re-supply consists of a sea-lift that arrives every August with supplies including fuel and gas and any other large items (vehicles, furniture). There are

regularly scheduled flights to and from Inuvik and Yellowknife.

Ulukhaktok has shown the strongest positive increase in CWB scores (Figure 14) of any Inuvialuit community over the measured time period, and fares particularly well on labour and housing component scores.

While the education component score is lower, it too shows positive improvement over time. Ulukhaktok also appears strong in measures of the vitality of traditional culture, with the highest proportion of Inuvialuktun speakers, and almost half of its households consuming mostly or only harvested meat and fish. The community's remoteness will remain a significant factor in its wage-economy participation, and consequently its income component score.

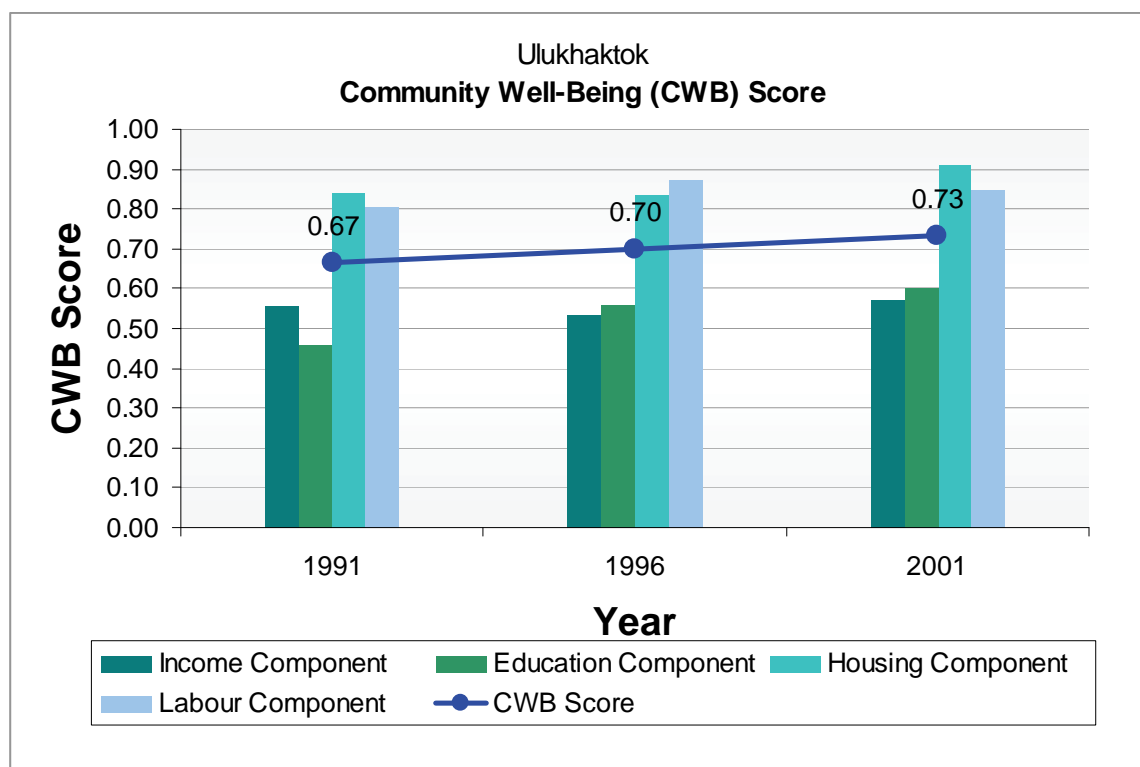


Figure 14 Ulukhaktok Community Well-Being (CWB) score. Source: Senécal and O'Sullivan, 2006



### 3.3 Sachs Harbour



Aerial photograph of Sachs Harbour

The community of Sachs Harbour is located on the south-western shore of Banks Island. It is the most northerly and smallest community in the Inuvialuit region, 523 km northeast of Inuvik. The Inuvialuit name for Sachs Harbour is “Ikahuk” meaning “where you go across to.” The community was named after the ship Mary Sachs, which was a part of the Canadian Arctic Expedition and was ship-wrecked nearby in 1913. Sachs

Harbour was established in 1929 when three Inuit families settled on Banks Island to trap. In 1953 the RCMP set up a detachment in Sachs Harbour. The most recent census counted 119 people in Sachs Harbour, 97% of whom were Inuvialuit.



Beach at Sachs Harbour

Traditional activities in the community of Sachs Harbour include spring hunting for geese, seal hunting in the summer, fishing in the fall, and sewing crafts. The community maintains a very strong connection to the land and is proud of the fact that the world's largest concentration of musk ox has sustained them for hundreds of years. The annual harvest of musk ox has provided an important source of income for harvesters

from the community and throughout the ISR. Harvesting activities also provide a critical means of passing on valuable traditional skills and knowledge to young people. As well as the largest commercial harvest of musk ox, Banks Island is also home to the largest goose colony in North America.

Currently, the major sources of employment

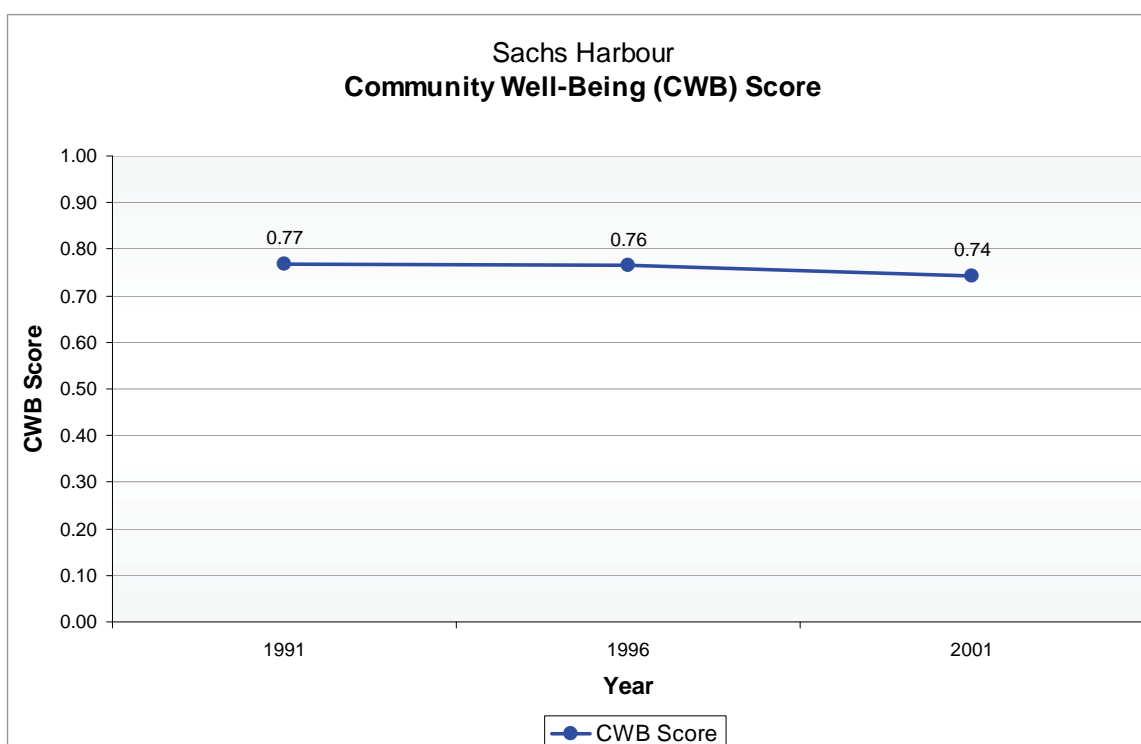


Figure 15 Sachs Harbour Community Well-Being (CWB) score. Source: Senécal and O'Sullivan, 2006

are the Hamlet of Sachs Harbour, the Sachs Harbour Community Corporation and the Ikahuk Co-op store. Local businesses include outfitting, and local contracting. Sports hunting, trapping and tourism provide seasonal employment, but residents believe there is not enough permanent employment in Sachs Harbour. Aulavik National Park on the north end of the island was established in 2001 and is co-operatively managed by an advisory committee including Sachs Harbour residents. Parks Canada maintains a permanent office in the hamlet, and employs a small number of staff in both year-round and seasonal positions.

Some major services and facilities in Sachs are the nursing station, school, arena, local store and NWT Housing Corporation. The Hamlet of Sachs Harbour handles the water and sewer services. The NWT Power

Corporation delivers power to the community.

The only way to get to Sachs Harbour is by airplane. There are two weekly flights to Sachs Harbour by air. There is no local transportation such as taxis.

Due to its small size, it is not possible to publish individual component scores for Sachs Harbour (Figure 15). The community's population has been steadily declining, so great care must be taken when interpreting quantitative measures of well-being, as decreases may be the result of demographic changes. While Sachs Harbour's CWB score does show a slight decrease over time, it remains the Inuvialuit community with the highest score after Inuvik, and also one in which traditional harvesting continues to be widely practiced.



Polar bear on ice at Sachs Harbour beach – S. Newton



## 3.4 Aklavik



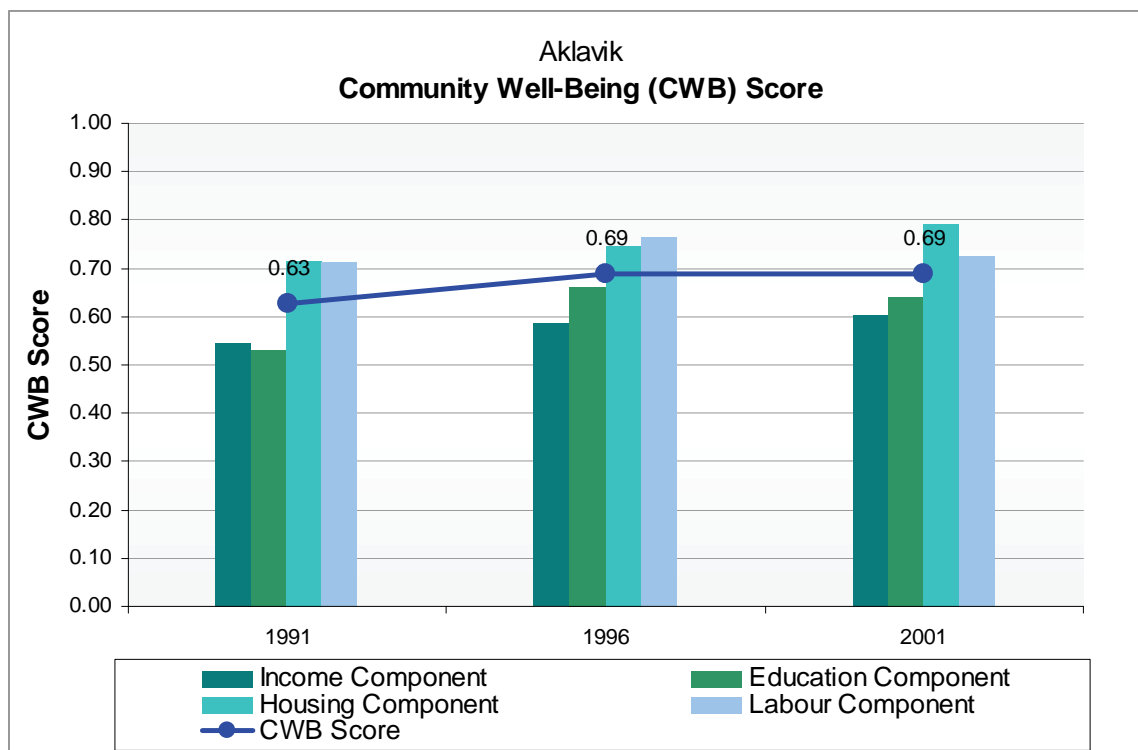
Aerial photograph of Aklavik

Aklavik is located within the Mackenzie Delta region, about 60 km west of Inuvik. The town was founded as a trading post almost 100 years ago. Because of its central location within the Mackenzie Delta, it grew to become the centre of government and commerce for the Western Arctic until the construction of Inuvik in 1958. The name, of

Inuvialuit origin, means "place of the barren land grizzly bears."

In 2000, Aklavik reported a population of 748 people. Statistics Canada, however, reports a lower population today, closer to 630 people. More than 90% of the town's population is of Aboriginal descent, about





**Figure 16 Aklavik Community Well-Being (CWB) score.** Source: Senécal and O'Sullivan, 2006

62% being Inuvialuit, 24% Gwich'in, and a smaller population of Métis.

Traditional activities continue in Aklavik, but they have ceased to contribute significantly to the local economy since the fall of fur prices and the rising costs associated with harvesting in the last 25 years. Some people still hunt and trap, but not as many as before. The wage economy in Aklavik is limited, and business opportunities are few, although recent oil and gas exploration projects have contributed somewhat to the local economy. The major sources of employment are with the Hamlet of Aklavik, the Joe Greenland Senior Citizens Centre, Northern Stores, Aklavik Community Corporation and Band Office, Moose Kerr School, Health and Social Services, the Health Centre and the local contractors. The

local businesses in Aklavik are Okevik Shop, General Store and K and D contracting.



**Aklavik school**

Major services in Aklavik are: Moose Kerr School, Health Centre, Recreation Centre, Hamlet of Aklavik, water and sewage contractors and the Power Corporation. Aklak Air and North-Wright Airlines provide year-round air service. There is a bus service



Community of Aklavik

to Inuvik that operates in the winter on the ice road.

Every year after the ice forms, Aklavik holds the Hannah Stewart Memorial Loche Derby, where people compete to find the smallest, heaviest and longest loche (burbot), and winners are awarded a plaque and cash. There is also the Mad Trappers Rendezvous every year on Easter weekend. Culture is very strong in the community; the Aklavik Delta Drummers and Dancers keep the arts of singing, drumming and dancing alive and all ages participate. There are sewing and language classes, and a sing-along group that

sings gospel songs in English and Inuvialuktun. Aklavik also has a visitors' centre, and the Mad Trapper of Rat River, Albert Johnson, is buried in Aklavik.

Aklavik is also a community whose population has been decreasing over time, which affects many measures of well-being. However, between 1991 and 2001, all of Aklavik's component scores (Figure 16) show an increase. It should also be noted that Aklavik's CWB scores represent the community's population as whole, including Inuvialuit, Gwich'in, Métis and non-Aboriginal residents.



Aerial view of Aklavik

### 3.5 Tuktoyaktuk



Aerial photograph of Tuktoyaktuk

Tuktoyaktuk or *tuktuuyaqtuq* is an Inuvialuit name meaning 'it looks like a caribou' which refers to rocks that can be seen at low tide, which look like a caribou. Since ancestral times, Inuvialuit have camped, hunted and fished on the Tuktoyaktuk peninsula. Today, the community of Tuktoyaktuk consists of just over 1,000 people, the vast majority of which are Inuvialuit. The population has remained stable over the years, with only a 0.5% growth rate between 1996 and 2004.

The Hamlet of Tuktoyaktuk is located east of the Mackenzie River on the Arctic Ocean and is home to the world famous pingos. Pingos are earth covered mounds with substantial

ice cores, which are distributed throughout the Mackenzie Delta. The Pingo Canadian Landmark is an area protecting eight pingos and is just a few km west of the community. This landmark includes Canada's highest (and the world's second-highest) pingo, at 49 m (160 feet). The area is managed by Parks Canada.

Residents of Tuktoyaktuk seek to embrace the future and respect the past. Participation in traditional activities is still strong, and there is a strong connection to the land. In 2003, almost 60% of people participated in hunting and fishing, 8% participated in trapping, and just slightly less



Pingo in Tuktoyaktuk

than half of the households consumed country food on a regular basis.

There is a health centre in Tuktoyaktuk as well as a school (from K-12) and a RCMP detachment. Electricity is supplied by diesel generator. Water and sewage services are supplied by delivery truck. Travel to and from Tuktoyaktuk is available on daily flights with Aklak Air and an ice road from Inuvik during the winter. There are two lodges/outfitters, two accommodations and two restaurants in town. There is a woman's shelter and about five police officers. There are two grocers and full postal, telephone,

and cable television. There are also port facilities and oil and gas camps.

Tuktoyaktuk's CWB score (Figure 17) shows gradual improvement, despite a decrease in its income component score over the same period. This trend bodes well for Tuktoyaktuk's ability to take advantage of the emergence of new economic opportunities in the region. Tuktoyaktuk residents clearly value traditional culture and practices, with the second highest proportion of households consuming mostly or only harvested meat or fish among the Inuvialuit communities.

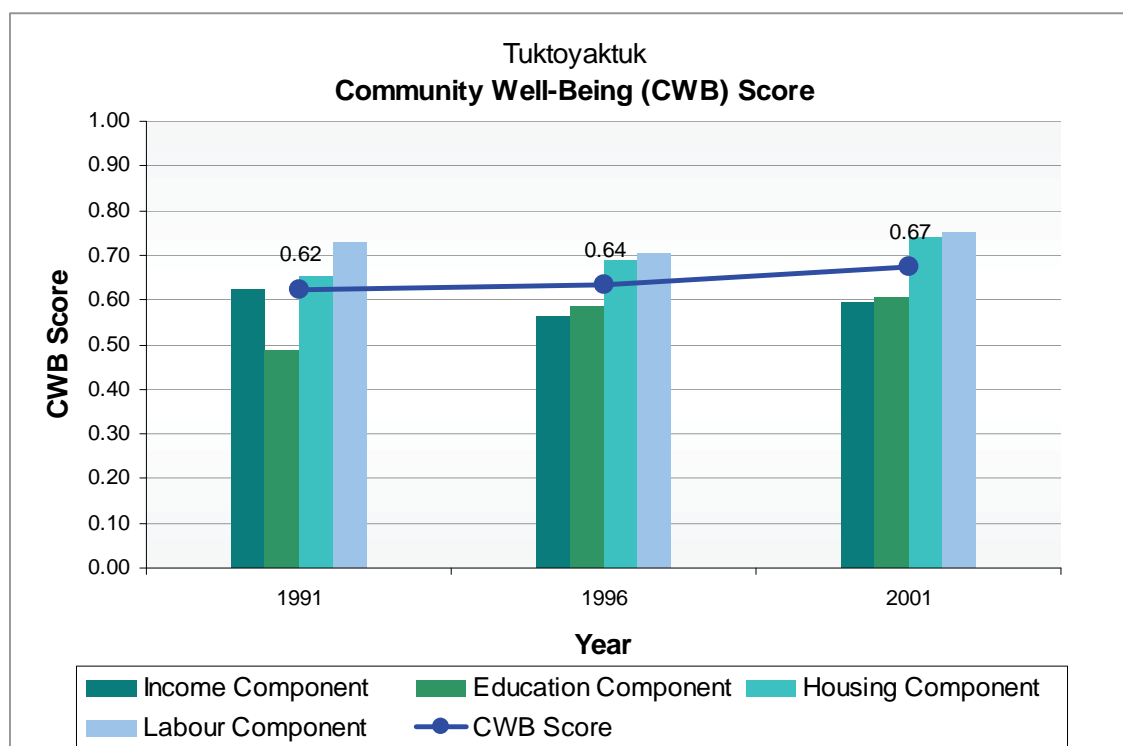


Figure 17 Tuktoyaktuk Community Well-Being (CWB) score. Source: Senécal and O'Sullivan, 2006



## 3.6 Inuvik



Aerial photograph of Inuvik

Inuvik is the regional centre for the Beaufort Delta and a major transportation hub. Inuvik has a population of about 3,500 people making it the largest community in the Beaufort Delta region and the largest Canadian community north of the Arctic Circle.

Originally called East Three, Inuvik was established in 1958 by the Canadian government as an administrative centre. Most of the original residents were from

Aklavik (60 km west of Inuvik), having moved because Aklavik is prone to spring flooding and at the time it was believed that it would sink into the delta. East Three became New Aklavik and finally Inuvik, an Inuvialuit name meaning “Place of Man”.

Inuvik is located on the East Channel of the Mackenzie River Delta, 97 km south of the Beaufort Sea and is located on a flat wooded plateau near the northern-most reaches of the tree line. Most homes and buildings in

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Inuvik (and other ISR communities) sit above-ground on pilings to protect the permafrost – a thick layer of permanently frozen ground, about 15 centimetres under the soil.

Participation in hunting, fishing and consumption of traditional foods is lower in Inuvik than in other communities in the region. The statistics reflect, in part, the larger number of non-Aboriginal residents in Inuvik, but also the greater availability of commercial and industrial employment, and of store-bought foods.



**Inuvik igloo church – Doug Barber (CFL)**

The Inuvialuit and Gwich'in traditional knowledge, culture and languages are taught to children but English is the commonly spoken language. Inuvialuktun and Gwich'in are spoken amongst the elders and some young people can understand the languages, with assistance. Inuvialuktun programming with CBC Western Arctic, Inuvialuit Communications Society television programming, Tusaayaksat, and Inuvialuit Cultural Resource Centre is attempting to keep the language alive. Inuvialuit and Gwich'in cultural activities are also provided in the schools through language classes and cultural programming such as on-the-land programs for traditional activities e.g.

fishing, trapping and hunting, Inuvialuit drum dancing lessons, Arctic sports, and traditional sewing classes.

Each spring Inuvik welcomes the surrounding communities as it hosts the annual Muskrat Jamboree; 2007 was its 50<sup>th</sup> anniversary. The Muskrat Jamboree is a carnival with traditional games, dog team and snowmobile races, and a variety of traditional food.



**Inuvik's utilidor system**

The Great Northern Arts Festival is held annually in mid-July. For 10 days, more than 100 artist and performers from across Canada's North unite in celebration of northern art and culture, resulting in the largest festival of its kind in Canada.

The economy is based on Government administration, oil and gas exploration, and to some extent, construction. Inuvik is home to the offices of Government of Northwest Territories, Government of Canada, Inuvialuit Regional Corporation and Gwich'in Tribal Council. Businesses in Inuvik include airlines, apartments, auto rentals, banking, bed and breakfasts, campgrounds, communications, hotels and motels, legal services, post office, shipping, taxi service, transportation, and travel agencies. The

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employment rate for Inuvik in 2004 was 74.9%.

The Dempster Highway officially opened in 1979 linking Inuvik with southern Canada through the Yukon. It is the only gravel highway connecting Inuvik to the outside world. The highway opens to motor vehicle traffic in the fall/winter once the river crossings are frozen enough to support traffic, and then in the spring/summer when the river crossings are clear of ice, ferries can take vehicles across the rivers. This usually occurs June 10 to October 14 for the open-water season, and December 15 to April 30 for the ice-bridge season.

and many other activities. Ingamo is actually a misspelling of the word “Indemo”, a word coined from the Indian-Eskimo Association – a group responsible for initiating the idea of a hall.

Inuvik’s new hospital opened April 2003, and has 26 beds with nine full-time doctors and several general duty nurses on staff. Services offered by the Inuvik Regional Hospital are two family clinics, emergency room, long-term care facility, rehabilitation services, public health, social services, specialist services include tele-health, psychiatry, dermatology, pediatrics, ear, nose and throat, surgery, obstetrics and



**Midnight Sun Recreation Complex in Inuvik**

The Ingamo Hall Friendship centre is where residents dance, feast and celebrate special occasions and funerals. It was established in 1965, first in an old Hudson Bay warehouse and now in a log structure which was built in 1976-77 with logs that came from the Fort Simpson area and floated down the Mackenzie River. The hall is also used for Friendship Centre programming, workshops, meetings, Inuvialuit drum dancing lessons

gynaecology, orthodontics and internal medicine on a varying rotational basis. The design and décor of the hospital reflects Inuvik, with colors from its environment and a layout that allows patients to feel at home and view the Delta vista. The hospital plays an important role in serving the outlying ISR communities.

The Midnight Recreation Complex has an Olympic size hockey rink, curling rink,



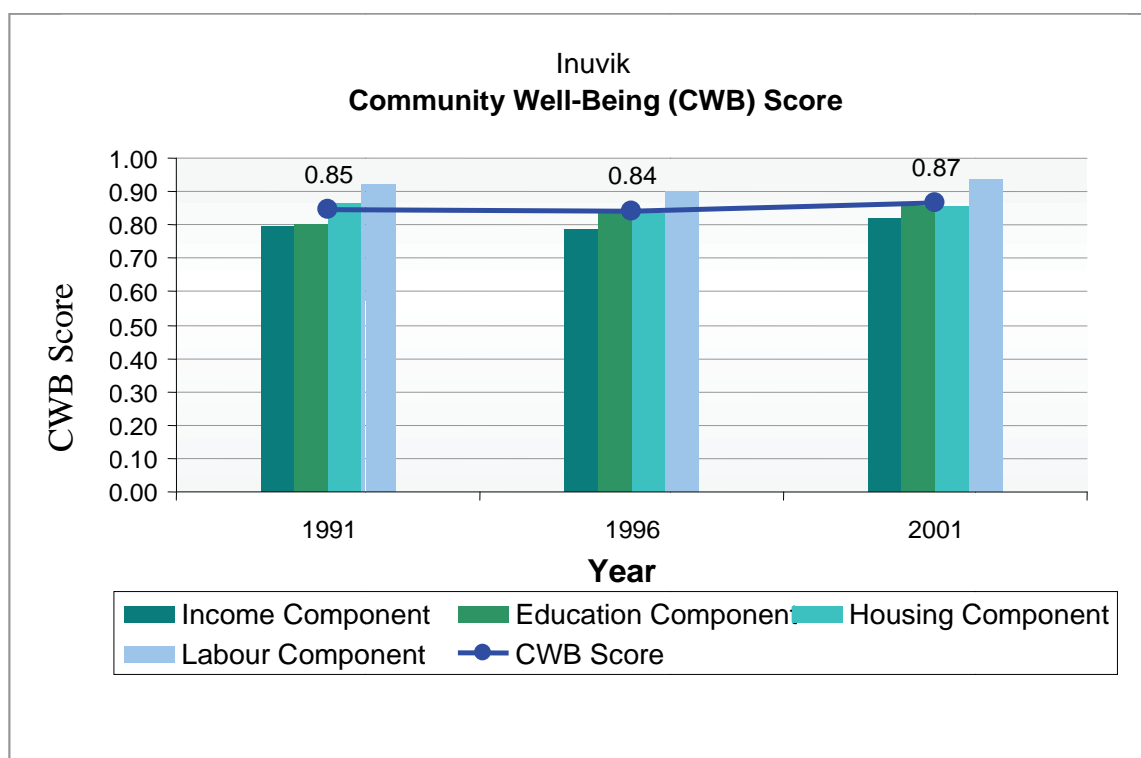


Figure 18 Inuvik Community Well-Being (CWB) score. Source: Senécal and O'Sullivan, 2006

convention facilities, conference centre, family swimming pool and family centre; it also hosts the annual Great Northern Arts Festival which attracts people from all over the world. In addition, there is an annual petroleum show; an exhibition for the oil and gas industry.



Smartie-box houses in Inuvik

Since its establishment, Inuvik has had an elementary and high school and since the

late 1980s a campus of Aurora College. A “super school” is in the planning stages where both elementary and high schools will be situated. The Aurora Campus is also a new facility with a new student housing complex beside it. There is a community greenhouse in Inuvik, housed in a renovated hockey arena.

Inuvik homes and businesses receive water and sewage services through the utilidor system, which is unique in that it runs above ground due to the permafrost. The source of power/electricity is the NWT Power Corporation, which generates electricity from diesel and from natural gas from the nearby Ikhil gas field. Residents and businesses also receive natural gas from the Ikhil gas field to heat their homes and businesses.





**Inuvik airport – A. Kristofferson**

Inuvik's population experiences the highest CWB scores among the Inuvialuit communities (Figure 18). However, like Aklavik, Inuvik's scores represent the community's population as a whole. There do not appear to be strong fluctuations in Inuvik's component scores relative to other Inuvialuit communities, suggesting that the community's role as a regional

to be aware that the CWB Index only measures the average for a community, and that within Inuvik's large population there exist significant disparities in well-being among residents. As a larger community, Inuvik can experience challenges not found in elsewhere in the region.



**Inuvik greenhouse – Canadian Geographic**

administrative centre for government and the surrounding communities helps to stabilize the quality of life for its residents. Being a compound measure, it is important

## **4. SOCIAL/CULTURAL/ ECONOMIC ASSESSMENT: CONSIDERATIONS FOR INTEGRATED MANAGEMENT OF BEAUFORT SEA LOMA**

This section provides an assessment of the current social, cultural and economic conditions in the Beaufort Sea LOMA; these must be part of considerations for sustainable development and integrated ocean management in the region. The section is divided into several themes, which cut across social, cultural and economic conditions. Culture and environment, as suggested above, are unique and important in this region, linking and defining people and the environment. The continuing

deeply affected by all of these themes, which in turn influence their outcomes.

### **4.1 Culture and Environment**

Culture and environment are closely intertwined for the people of the Beaufort Sea region. The ocean and freshwater systems, as well as the land have always provided most of the Aboriginal diet. In turn, traditional activities “on the land” are a foundation for social ties and cultural practices. Community residents are vocal in their support of continued activities on the land, as a way of protecting and promoting culture, not to mention a variety of other benefits to individuals, communities and the region, including physical health, psychological well-being, social cohesion,



Left : Muktuk drying; Right: Fishing

“traditional” economy as well as the wage economy are key to peoples’ well-being. Contributing to the economy and well-being are education and training, as well as capacity and infrastructure support to the communities and to development. Finally, and perhaps most importantly, the health and well-being of the region’s residents are

economic production, and ecological monitoring.

Despite decades of exposure to other foods, and predictions of the waning of the hunting and fishing way of life, Inuvialuit still consume a large quantity of foods “from the land.” That said, it is clear that in the past

decade or so, food choices and patterns have changed considerably. The new equipment that is available, such as faster snowmobiles and boats, make harvesting more efficient, but also more expensive, so that one needs a cash income to support harvesting activities. On the other hand, buying store-bought food is also very expensive. In the smaller, more remote communities of the ISR, food costs are generally 188-222% of the cost of food in Edmonton (GNWT, 2007a). Local foods provide a high quality, nutritious and spiritually fulfilling alternative.

shows that in the region overall, more than 40% percent of people 15 years and older hunted or fished during the year, and about 10% trapped during the year. As well, 30% percent of households reported that most or all (75% or more) of the meat and fish they consumed is harvested in the NWT (this may mean that they have bought commercially harvested country food, received a share of someone else's harvest, or harvested it themselves). In comparison to the NWT in general, people in the Beaufort/Delta communities eat more country food, although in Inuvik the rate is similar to the NWT rate.

Figure 19 shows participation in traditional harvesting and consumption in the region; it

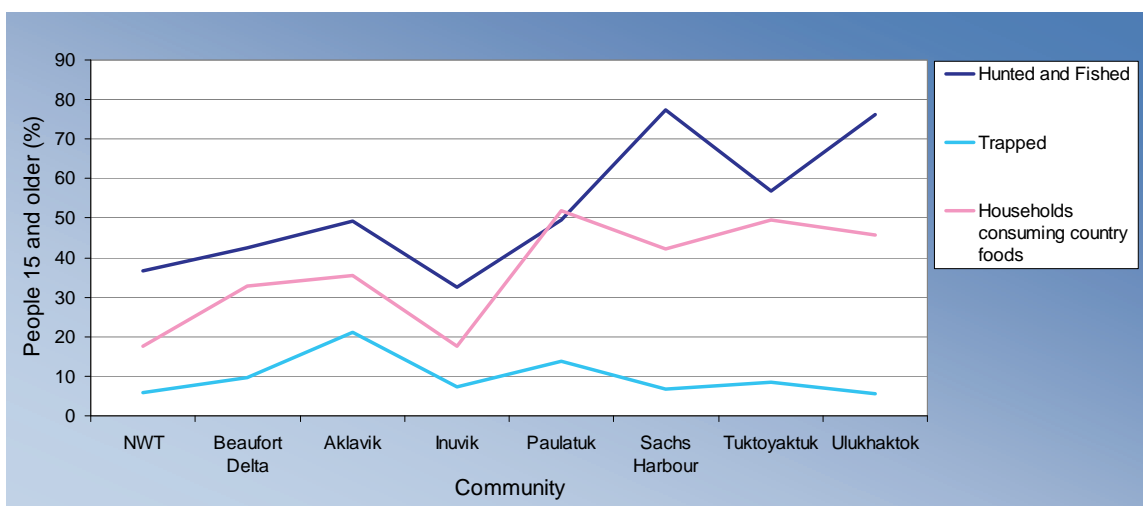


Figure 19: Hunting, fishing, trapping and country food consumption. Source: GNWT, 2007a, Community Indicators, Summary of NWT, Community Statistics  
<http://www.stats.gov.nt.ca/Profile/2007%20Summary%20of%20Comm%20Stats.pdf>, p. 11.

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**Table 2: Top ten species harvested by ISR communities (by weight and production). Source: Integrated Environments, 2007: 44**

Rank	Participation	Percent of Harvesters Harvesting	Production	(kg)	Percent of Top Ten by Weight
1	Caribou	62.9	Caribou	110730	38.4
2	Snow Goose	35.4	Beluga	43215	15.0
3	Lake Trout	31.3	Broad Whitefish	38254	13.3
4	White-fronted Goose	26.0	Musk ox	22563	7.8
5	Arctic Char	24.2	Arctic Char	17553	6.1
6	Broad Whitefish	18.9	Ringed Seal	14105	4.9
7	Canada Goose	18.2	Inconnu	13602	4.7
8	Beluga	15.9	Lake Whitefish	10161	3.5
9	Ringed Seal	14.8	Snow Goose	9981	3.5
10	Eider Duck (1)	14.6	Cisco (2)	7897	2.7

The degree of involvement in “country food” harvesting and consumption varies between communities in the region. Sachs Harbour and Ulukhaktok appear most heavily involved in harvesting and country food consumption, with about 80% taking their food from the land; Tuktoyaktuk, Paulatuk and Aklavik residents also eat “most of their meat and fish from the land,” in 50-60% of cases. People in Inuvik have greater proximity to wage work, stores, restaurants and southern foods, as well as a much larger proportion of non-Aboriginal residents; here more than 30% still report eating most of

their meat and fish from the land in (GNWT, 2007a).

In Sachs Harbour, musk ox make up a significant component of the harvest, both for domestic and commercial purposes, and in Paulatuk, Tuktoyaktuk and Ulukhaktok caribou are important, but marine mammals, wildfowl and fish are also important. Table 2 shows the volume of harvest in the top 10 species used; caribou is the most plentifully harvested meat, followed by beluga. Aquatic species make up 53.7% of the volume harvested (fish, marine mammals, waterfowl).





Muskox in Ulukhaktok

Other influences on the traditional harvest of country food include the growing human population and increased efficiency of equipment. There is some concern that these will depress local wildlife populations. Although Paulatuk reports a decline in local wildlife and caribou populations, it remains unclear as to the causes of these declines. These influences are balanced by an intensive wildlife monitoring and management regime that involves the communities, Aboriginal, regional, territorial and federal governments and agencies (see section 6 on governance organizations and processes). Cultural values and an associated sense of stewardship have driven much of the regional political activity regarding conservation and development.

There is an on-going debate about young peoples' declining skills, interest, training and participation in harvesting, as well as the consequent reduction in consumption of country foods. This may be balanced, however, by increasing interest/participation as young people mature and become responsible for their own families (Condon

*et al.*, 1995), or by different approaches to time, where harvesting activities become one of many "non-work" activities that people pursue (Stern, 2000). Among young people, hunting, fishing and sharing of food are still a large part of the cultural connection to the land (Stern, 2000).

*"Social, economic, and political changes throughout the Canadian Arctic have made it impossible for young adults to pursue the same mixed economic strategies as previous generations. A general decrease in subsistence hunting involvement is characteristic of the younger generation. Nevertheless, some young householders have made a conscious effort to remain active in subsistence hunting and fishing to provide for themselves and related households. Some have even increased subsistence hunting involvement as their own parents age and become increasingly infirm. Other householders are less active in hunting and fishing, but continue to view land-based harvesting as central to a sense of Inuit identity."*

*(Condon et al., 1995).*

Land-based traditional activities can be expensive, however, involving potentially costly snowmobiles, boats, motors, gas, and camping equipment. Some people, particularly the younger generation, may find the costs prohibitive, and have reduced their time on the land as a consequence. Their interests may also lie with town activities. On the other hand, many people can conduct their harvesting activities but spend less time away from town and family, thanks to faster snowmobiles and boats. Fewer families are living all winter out on trap lines, as they might have done a decade ago. Changing opportunities are leading to

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changing patterns of lifestyle and recreation, and use of the environment (Stern, 2000).

Sharing of food (Table 3) is a culturally-important activity, and its practice can be a proxy measure of the importance of cultural and social connections to the environment amongst the people of the region. This is clearly, broadly practiced, both in Inuvik and other Inuvialuit communities (Statistics Canada, 2001).

**Table 3 Percentage of Aboriginal households that shared harvested food**

Disposition of Country Foods	Total	Inuvik	Other Inuvialuit communities
% who shared with or gave to others outside the household	92%	95%	92%
Total households in sample	730	190	530

Source: (Statistics Canada, 2001)

Use of language provides another proxy for cultural continuity. The SLiCA survey (Poppel et al., 2007) results in Table 4 show that Inuvialuit fall far behind other circumpolar Inuit in terms of language use and comprehension. Reading and writing of Inuvialuktun is similarly low in relation to other Aboriginal groups. This clearly indicates that Inuvialuit culture and language is at risk and will need concerted effort and support to maintain.

**Table 4 Percentage of people with ability to understand and speak indigenous language**

	Inuvialuit	Nunavut	Circumpolar
High	30	86	58
Low-medium	70	14	42
Estimated total	1220	5000	88486

Source: SLiCA survey (Poppel et al., 2007): Table 96,97.



**Inuvialuit Elder with 'sunburst' parka**

Given the changing socio-economic context of the Beaufort Delta, it is understandable that the way in which people are bound to their environment may also be changing. The continued preservation and practice of culture will require continued access to and use of the Beaufort region's lands and waters. In addition to direct use for survival and lifestyle, cultural connections to the land may at least in part be promoted and reinforced through such means as educational programs, camps for children and youth, TV and radio programming, and political activities. On the land programs for youth and students, often involving elders, are often cited as positive ways to promote

culture and environment. The Inuvialuit Regional Corporation, Hunters' and Trappers' Committees and occasionally schools contribute funds to such programs. In smaller communities, the whole school may go out to a camp. However, lack of financial resources and the increasing complexity and expectations of regulations regarding equipment and training are now making the provision of such occasions more difficult.



**Inuvialuit drum dancers in Tuktoyaktuk**

For cultural and educational reasons, it is important for Inuvialuit and Gwich'in peoples to spend time on the land. Furthermore, people "on the land" means people observing and monitoring conditions, changes, and issues or problems with the land and wildlife. Being on the land may provide important opportunities for passing on of traditional knowledge, language and other cultural values, as well as increasing the capacity to co-manage resources, including science and research instruction using traditional camps. The stewardship that Inuvialuit and Gwich'in feel towards their lands calls for continued presence on, and monitoring of, their condition.



**Inuvialuit seal tagging**

The IOMP will need to build in this cultural identification with the land, access to and use of the land and its resources, and continued practice of stewardship, monitoring and conservation. The objectives and strategies developed under the IOMP should reflect these values and needs, as the Community Objectives have done (see section 5, Issues raised by the Beaufort Sea communities).

## **4.2 Traditional and Modern Economy**

Stemming from the connection with culture and environment, the traditional land-based economy has persisted and provides important components of household livelihood in the Beaufort Sea LOMA. However, resource development and other economic activities in the region have had a clear influence both on harvesting and on community life and culture, such as providing wage opportunities (Table 5), impacts on the landscape and environmental quality, changing pressures to earn a steady income, and enhancing the role of, and need for, cash in the local community.

Changing from a subsistence economy to a wage-oriented one may seem prudent when

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jobs are available, but employment downturns can leave people without incomes and perhaps without the equipment, skills, interest or other means to

altered the subsistence economy and has affected community cohesion and lifestyles. A deterioration in social cohesion can be caused by a decline in subsistence activities.

**Table 5 Overview of marine-related economic impacts circa 2000-NWT**

	<b>GDP</b>	<b>Labour Income</b> ...\$ millions....	<b>Employment</b> PYs
<b><u>DIRECT IMPACTS</u></b>			
Traditional Economy	2.6	2.6	100
<b>Private Sector</b>			
1. Commercial Fisheries	0	0	0
2. Offshore Oil and Gas	50	20	440
3. Marine Shipping	3	2	30
4. Marine-Related Arts and Crafts	1.6	1.2	30
5. Marine-Related Tourism	1	0.6	10
6. Other	2	1.5	30
Subtotal	57.6	25.3	540
<b>Public Sector</b>			
1. Federal Government	25	25	375
2. Territorial Government	5	5	85
3. Other	5	5	125
Subtotal	35	35	585
<b>All</b>	<b>95.2</b>	<b>62.9</b>	<b>1,225</b>
<b><u>TOTAL IMPACTS</u></b>			
Direct	95.2	62.9	1,225
Indirect and Induced	44.4	29.1	610
<b>Total</b>	<b>139.6</b>	<b>92</b>	<b>1,835</b>

Note: 1. The direct impact estimates refer to a variety of years from the late 1990s to 2001.

2. Total impacts include direct, indirect (supplier related) and induced (consumer spending) impacts.

3. Fisheries includes both harvesting and processing operations.

4. PYs are person-years employment.

Source: Estimates by GSGislason and Associates Ltd., 2003

go back on the land to harvest food. Thus, involvement with the wage economy has

The activities common to a subsistence economy foster social bonds and lifestyles



that a wage economy does not. Furthermore, involvement in industrial development work has not always meant happier times for northern residents: experiences with previous oil and gas projects have shown the possibility for social dislocation, family upheaval, substance abuse, violence, and other forms of loss. Thus, involvement in either subsistence or industrial work must involve a balancing of lifestyles to establish sustainable communities.

The Beaufort Delta region's economy has been characterized by boom-and-bust cycles and as a result, the regions residents' economic options have cycled as well. Whaling and the fur trade provided early lessons in the instability of this kind of development. More recently, the first oil boom in the 1970s and early 1980s introduced regional residents to the potential for high-paying jobs and other entrepreneurial opportunities, if they could access them. When the price of oil dropped and hydrocarbon development ceased, regional residents were left with few other economic opportunities. Residents turned by necessity to tourism, arts and crafts, cultural events, sport hunting and fishing, and government services.



**Ornate Inuvialuit beadwork**

During this time the local economy noticeably included the traditional or mixed economy of wildlife harvesting and fishing, along with some wage employment (Carley, 1984). Even then, there was debate about the relative importance of subsistence versus wage work, young peoples' interest, relative importance of industrial wages versus satisfaction of cultural values, economic cycles and the "insurance" value of alternative livelihoods.

Now, as a second oil and gas boom appears to be on the horizon, there are fewer active harvesters in all the communities, except Ulukhaktok and Sachs Harbour which have seen some variability (Figure 20). However, the actual numbers of active harvesters may be debated because of the nature and history of harvest surveys. A number of factors may also influence this participation rate, including the large number of young people trying to enter the wage-sector

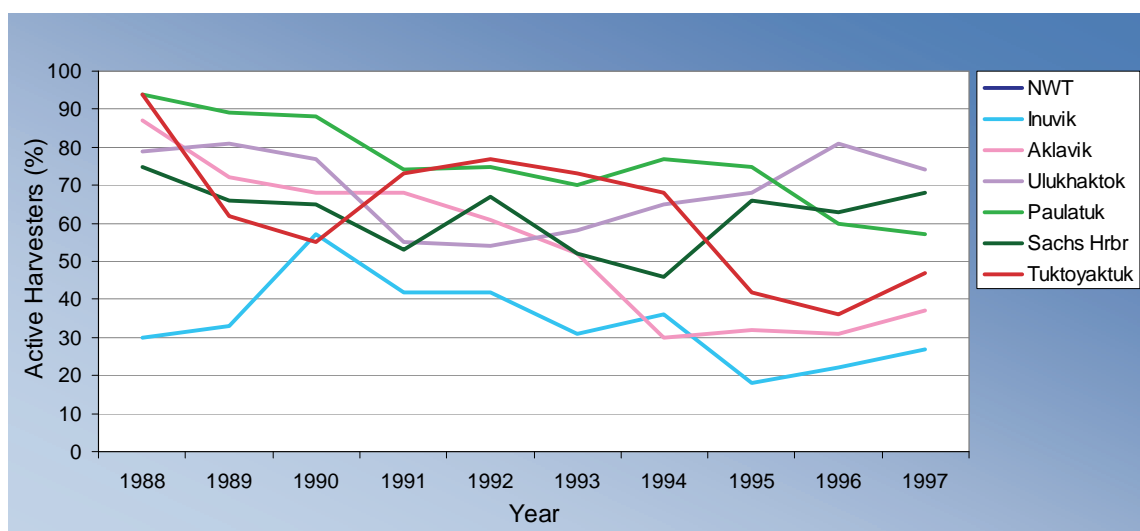


Figure 20 Percent of active harvesters by community in the ISR. Source: MGP (2005), IRC (2003), Joint Secretariat (2003) cited in: Integrated environments (2007), p. 45.

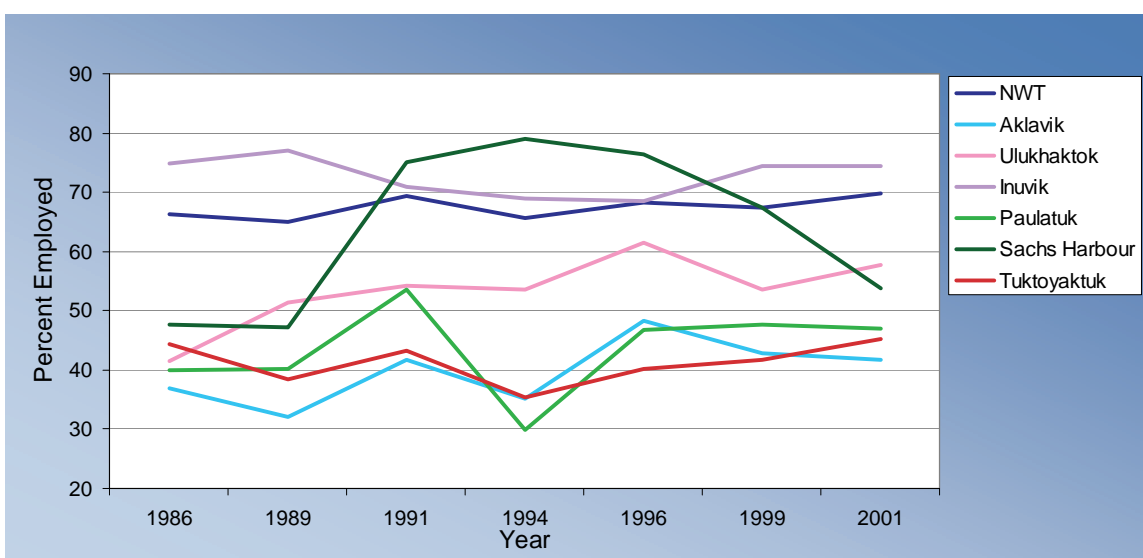


Figure 21 Employment rates, 1989-2001. Source: Statistics Canada (except NWT and community data for 1989, 1994 and 1999 - NWT Labour Force Survey) IN: GNWT, 2007a, (Bureau of Statistics) Social Indicator Tables.

rather than harvesting, more wage-work opportunities, better opportunities for part-time harvesting because of better transportation, the high capital expense of harvesting, and others. However, these activities continue to be important and practiced by a large segment of the population, despite changes in the involvement with wage employment (Figure 21).

On the other hand, the degree of regional residents' involvement in the wage sector does not appear to have increased significantly, despite education and training programs, and an apparent increase in economic activities in the region. There may be many reasons for this, including a lack of education or skills required for available jobs, unwillingness to move away from one's community for work, avoidance of boom-and-bust situations, a preference for

traditional livelihoods, and for some, social problems or welfare dependency.

Labour force participation, which measures both those in jobs and those actively looking for work, has also remained relatively steady from 1986 to 2004 in the NWT and the Beaufort Delta, and in Inuvik (Figure 22). The smaller communities, however, show much more variability, implying both the difficulty in finding and keeping work in these economies (it must be noted that because of their small size, relatively small changes in local work opportunities may have a significant impact in these communities). In Sachs Harbour, Aklavik, Tuktoyaktuk and Inuvik, despite fluctuations during this period, labour force participation is currently at similar levels to 1986. In Ulukhaktok it has risen from 54% to nearly 68%; in Paulatuk it has been up and down between 43 and 70% over the period, and is now around 61%.

Labour force participation may be affected by local peoples' perceptions about the actual availability of work – if there is none available, they may not “look for employment” and will not be defined as part of the labour force. People may not wish to, or be able to, leave their communities for work elsewhere and thus depend upon opportunities opening up in their home community. Graduation of a large group of high school students who then seek work would rapidly increase the labour force participation rate (and probably the “unemployed”). In Inuvik, overall labour force and employment rates are skewed towards higher participation. In smaller communities especially, labour force participation is complicated by unexpected issues like housing: taking a job for two weeks or a month may force one's rent to jump (30% of gross earnings is taken off to pay for housing); for some, this is a disincentive to working.

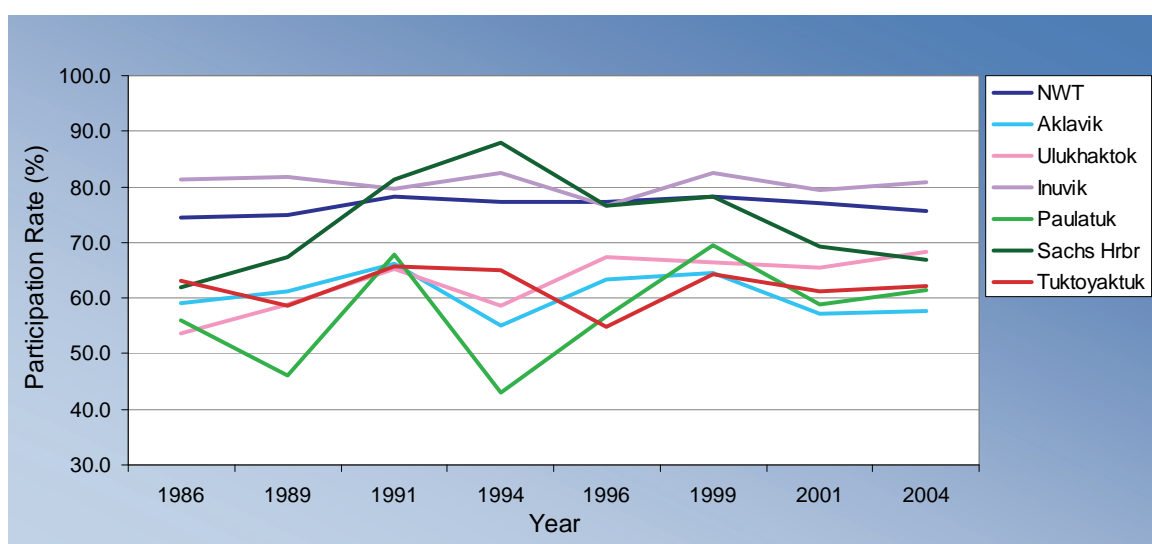
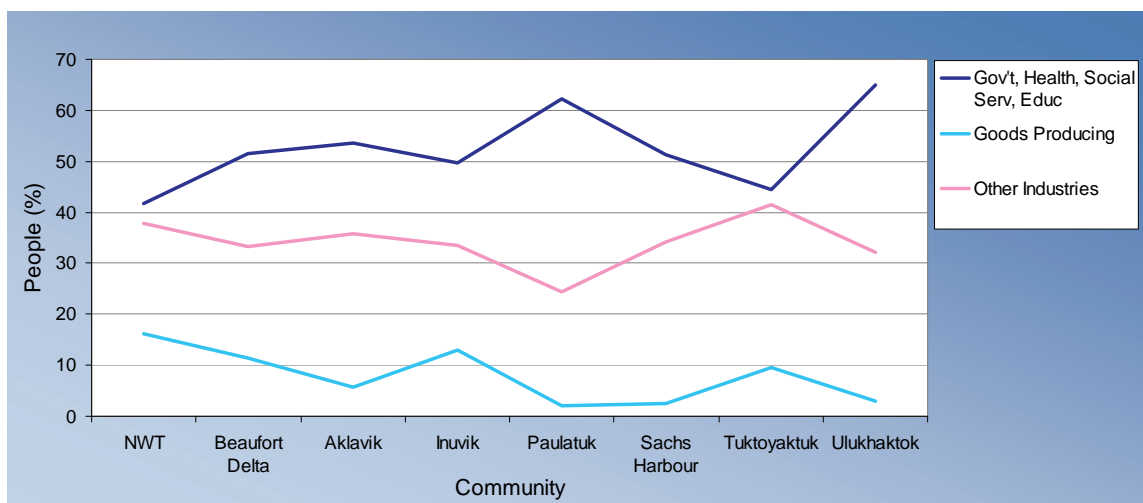


Figure 22 Labour force participation rate, 1986-2004. Source: GNWT, 2007a, Community Indicators, Summary of NWT Community Statistics, <http://www.stats.gov.nt.ca/Profile/2007%20Summary%20of%20Comm%20Stats.pdf>, p. 12.



**Figure 23 Employment sectors.** Source: GNWT, 2007a, Community Indicators, Summary of NWT Community Statistics, <http://www.stats.gov.nt.ca/Profile/2007%20Summary%20of%20Comm%20Stats.pdf>, p. 13

Some other socioeconomic figures suggest that the economic activity in the region is not having broad impact on communities. The number of tax filers earning more than \$50,000 per year, for example, in the period from 2001 to 2005, has increased only by a small amount in Inuvik, Ulukhaktok and Aklavik, but in Paulatuk and Tuktoyaktuk, it has actually decreased. At the same time, the proportion of households in “core need” has generally risen between 1996 and 2004, especially in the smaller communities (GNWT, 2007a).

Fundamentally, with households in core need ranging from about 20% to 45% of the population, it is clear that economic prosperity is not including the whole population (Table 6). To put this table in

*Core need is defined as follows:*

*If a household has any one housing problem (suitability, adequacy, or affordability) or a combination of housing problems, and the total household income is below the Community Core Need Income Threshold, the household is considered to be in core need. The core need income threshold is an income limit for each community that represents the amount of income a household must have to be able to afford the cost of owning and operating a home or renting in the private market without government assistance (Government of the Northwest Territories, 2007b).*

**Table 6 Households in "core need" (%)** Source: GNWT, 2007.

	NWT	Aklavik	Inuvik	Paulatuk	Sachs Harbour	Tuktoyaktuk	Ulukhaktok
<b>1996</b>	19.7	23.9	13.4	38.1	25	43.3	24.4
<b>2000</b>	20.3	32.7	11	43.9	34	32.2	16
<b>2004</b>	16.3	32.3	13.1	34.6	35.6	31.9	26.4



context with the rest of NWT, Inuvik which is a regional center with a private housing market has a core need approximately twice the amount of the average in the NWT.

The Beaufort LOMA regional economy is heavily dominated by government, along with health care, social services and education (Figure 23); these services constitute 52% of the region's economy, and anywhere between 44% and 65% of the communities' economies. Goods production, which includes the oil and gas sector, is a small portion of the employment activity, occurring mostly in Inuvik and Tuktoyaktuk. In most of the communities, retail provides the bulk of employment after government; arts and crafts, tourism and guide/outfitting are the focus of some local businesses.

Though much attention is given to the hydrocarbon industry, because of its size and impacts on the regional economy and society, past experience with boom and bust suggests that the region needs to diversify its economy. This will broaden and stabilize economic growth, offer opportunities to those who do not fit into the industrial sector, or who cannot leave their home communities. People from each community already travel to work in the oil and gas industry, or to take up other employment in Inuvik, Whitehorse, Yellowknife or other communities. This is more likely to occur for people from Aklavik and Paulatuk, and less

likely from Ulukhaktok and Sachs Harbour because of the distance. Indeed, this "brain drain" from the communities is an impact of concern in discussions about oil and gas or pipeline development, and may also occur as part of the rural-to-urban migration being noticed in the rest of Canada. Keeping the next generation at home in the small communities will be key to sustaining the community.

Another perspective on the situation of the Beaufort Sea LOMA is provided through the Survey of Living Conditions in the Circumpolar Arctic (Poppel *et al.*, 2007). It conducted an extensive survey of Inuit populations around the circumpolar North; in Canada, this was integrated into the Aboriginal Peoples' Survey (Statistics Canada, 2001). Table 7 provides the results from the Inuvialuit region for some indicators, in comparison with Nunavut, and also with the circumpolar North in total. Interestingly, it shows that Inuvialuit are relatively content with many aspects of their life in the region, such as resource development activities, the amount of fish and game available locally, and job opportunities. At the same time, the SLICA data show that 60% of the population has a household income above \$23,000. If household income is adjusted for purchasing power, slightly more than half of Inuvialuit households earn more than 60% of Canada's median income, and half earn less than 60%.

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**Table 7 Regional comparisons of satisfaction levels by selected Indicators (%)**

	<b>Satisfaction Level</b>	<b>Inuvialuit</b>	<b>Nunavut</b>	<b>Circumpolar</b>
<i>Satisfaction with combination of production activities (SLICA table 453)</i>	Very satisfied	55	39	36
	Somewhat satisfied	35	47	48
	Not satisfied	11	13	16
	Estimated total sample	1410	3080	64495
<i>Satisfaction with amount of fish and game available locally (SLICA table 53)</i>	Very satisfied	63	62	26
	Somewhat satisfied	30	29	40
	Not satisfied	7	9	34
	Estimated total sample	1800	3750	74546
<i>Total household income adjusted for Purchasing Power, expressed as &gt;/&lt; 60% of median income in country (SLICA table 447)</i>	60% of median income	46	49	46
	Above 60% median	54	51	54
	Estimated total sample	1940	4890	82196
<i>Total household income adjusted for purchasing power (SLICA table 445)</i>	5000-12000	22	15	18
	12001-23000	17	18	16
	23001-37000	20	22	22
	37001-70000	21	31	25
	Above 70000	20	14	18
	Estimated total sample	1960	4990	82756
<i>Satisfaction with job (SLICA table 458)</i>	Very satisfied	55	39	36
	Somewhat satisfied	35	47	48
	Not satisfied	11	13	16
	Estimated total sample	1670	3440	82074
<i>Satisfaction with job opportunities (SLICA table 458)</i>	Very satisfied	26	10	6
	Somewhat satisfied	36	42	25
	Not satisfied	38	48	69
	Estimated total sample	1670	3440	82074
	Estimated total sample	1940	4890	82196
	Not satisfied	38	48	69
	Estimated total sample	1670	3440	82074

Source: SLICA, 2007: Table 458,447,445,53 and 453

### 4.3 Education and Training

Education and training are key deciding factors in regional residents' participation in the formal economy of the Beaufort Sea LOMA. Justice Berger called for a 10-year moratorium on the first pipeline proposal in the 1970s in order to provide education and training to facilitate community readiness for the project development. Now, in 2008 an education gap still exists in terms of the readiness of regional residents to take jobs in the oil and gas and related sectors.

Figure 24 shows that high school and post-secondary graduation rates have not increased significantly between 1991 and 2004. It should be noted during this early 1990s high school was offered in all communities, resulting in a higher proportion of students staying in school in their home community. All communities except Sachs Harbour offer kindergarten through grade 12. Interestingly, Sachs Harbour's high school graduation rates were very high in 1994 – almost equivalent to

Inuvik, whereas they have fallen in more recent years but are still equivalent to Ulukhaktok and Aklavik, despite Sachs Harbour students having to go away for high school. Graduation rates and education achievement levels are highest in Inuvik, as is also shown in Figure 24.

In 1994, just over 50% in Inuvik had some post-secondary education, and in 2001 this had risen to nearly 60%. In the ISR overall, the rate had risen from about 25% to 32%. Community representatives attribute lower graduation rates to the number of teachers and scope of education available in smaller communities, the student-teacher ratio, approaches to education and relevance of the curriculum to regional students, as well as poor attendance and lack of parental support. Early childhood and school age interventions, as well as mentoring, internships and apprenticeships for early school-leavers have been suggested as a means to help to improve people's engagement in the regional economy (IRC, 2007).

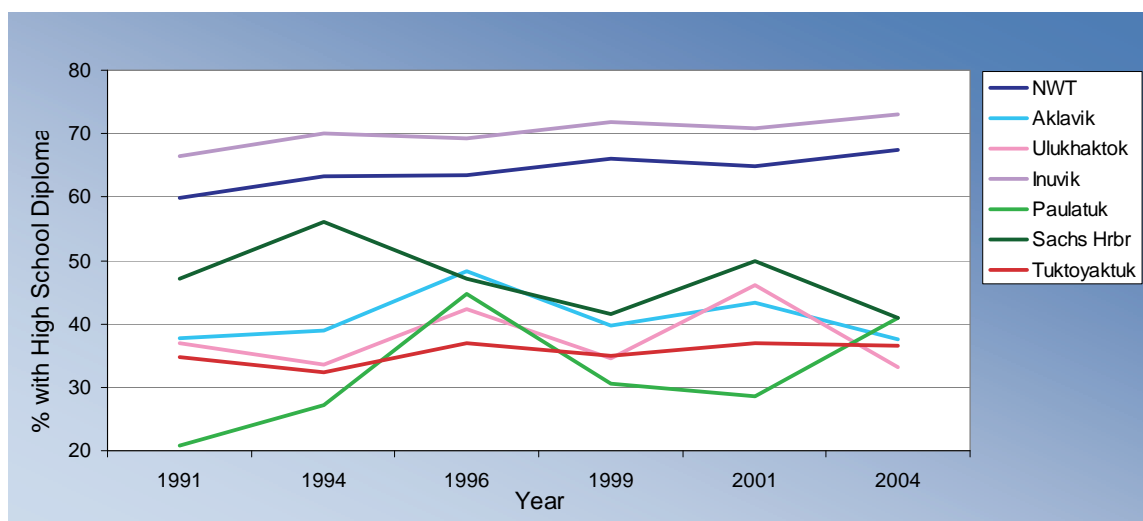


Figure 24 Percent of residents with high school diploma or post-secondary education. Source: Integrated Environments, 2007; 41

The impacts of education are evident in employment rates in the region: only 34.3% of those with less than a high school diploma were employed in 2004, while those with a high school diploma or post secondary education enjoyed 79.8% employment (GNWT, 2007). As well as academic schooling, technical and trades training will be critical to the region's residents in order to get work on the proposed MVP, with related industrial development, or with other business and government activities in the region.



**Inuvialuit youth working in a lab**

Unfortunately, high school graduates sometimes find that they need to take up-grading in order to qualify for college. After that, they must travel away from their

smaller home communities for higher education - this may also lead to "brain drain" when those students are then enticed to take jobs in larger centres. Getting an education takes a high degree of commitment and persistence on the part of the student, and resilience in dealing with "foreign" situations and demands, not to mention a great deal of encouragement and support from friends and family.

SLICA survey results regarding satisfaction with the quality of education in the community show that Inuvik and other Inuvialuit communities rate their education system similarly: most are somewhat satisfied, about a quarter are very satisfied, and a third are not satisfied or are neither satisfied/unsatisfied (Table 8).

## 4.4 Capacity and Infrastructure

This section deals with the capacity of people and their communities (the latter represented by infrastructure) to achieve sustainable growth and development in the region. Peoples' capacity can be reflected in educational levels (section 4.3 above), and also in their level of engagement and empowerment; it also connects to health and wellness (section 4.5 below). The

**Table 8 Satisfaction with education in community.**

	Inuvik	Other Inuvialuit	Iqaluit	Other Nunavut	Circumpolar average
Very satisfied	22	25	13	27	16
Somewhat satisfied	44	44	52	48	49
Not satisfied/ neither	34	31	35	26	35
	100%	100%	100%	100%	100%
	590	2670	1300	9070	72160

Source: Poppel *et al.*, 2007: table 581



*Beaufort Delta Agenda* (2007) states that while progress has been made by IRC, GNWT and the Government of Canada to improve the skills of Beaufort Sea residents, there is still little capacity to assume the responsibilities to meet the objectives of the Agenda itself, to manage social change, implement land claims, prepare for self-government, take advantage of economic opportunities, or fill the jobs required by governments at all levels. Poor parenting skills and life skills among young people, low rates of educational achievement, high rates of violence, substance abuse, gambling and family breakdown all weaken the ability of the region's society to deal with change (IRC, 2007: 12). Some of these issues are dealt with in the section on Health and Wellness, others will be dealt with here – all affect both the wellness and capacity of people themselves and their communities.

Settlement of the Inuvialuit and Gwich'in land claims, and establishment of a variety of management boards was expected to give a greater sense of purpose and empowerment to beneficiaries. This "Control of Destiny" is one domain of six<sup>2</sup>, defined in the *Arctic Human Development Report* (Larsen *et al.*, 2004) as important to describing arctic conditions. The Beaufort Sea LOMA provides a living example of people and their representative organizations, actively seeking "control of destiny" through land claims, land and resource management boards, as well as economic development and investment,

social development and educational arms (see section 6, Governance).

Other data shows that Inuvialuit possess a healthy degree of civic engagement, especially in the smaller Inuvialuit communities, as illustrated by voter and civic participation (see Table 9) (Poppel *et al.*, 2007). These levels of voter participation are very good – certainly higher than is typical in the rest of Canada. This may reflect the issues or people involved in the elections, but these rates speak to Beaufort Delta residents feeling more empowered in the electoral process. Other measures of "social capital" or the degree to which people are engaged in their communities, can be shown through participation in local events and meetings; about 30-40% of Inuvialuit participate, with Inuvialuit in smaller communities somewhat more engaged than those living in Inuvik.

Infrastructure reflects the capacity of communities to function, develop and serve their residents' needs. Infrastructure can be a key limiter to economic development, and is also critical to community health and wellness.

All communities have access to water and air based transportation. All have docks or barge landings, except Sachs Harbour. The communities vary in the ability to land large aircraft due to the quality of the runways and support services – all except Inuvik have gravel runways.

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<sup>2</sup> The six domains are: Ties with Nature, Cultural Continuity, Control of Destiny, Health, Material Success, and Education.

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Table 9 Control of Destiny

Control of destiny %				
Participation in elections	Inuit in Canada	Inuvialuit	Inuvik	Other Inuvialuit communities
Territorial	75	72	67	73
Municipal	75	76	57	79
regional corporation	69	58	56	59
estimated total sample	17730	3860	560	3300
Participation in civic activities				
Worked at community event	40	41	31	43
attended local community meeting	37	29	26	30
volunteered for local organization/group	39	34	32	34
estimated total sample	20400	4340	620	3720

Source: (Poppel et al., 2007). Tables 176, 177, 178 part 2; 185, 186, 187 part 2.

All communities have access to high quality fresh water, except Aklavik which is challenged by seasonal variations of the Peel Channel. Only Inuvik has a full scale water treatment plant and a piped water and sewage system. Most communities have bagged and pump-out options for disposal of liquid waste, which receives lagoon treatment only. Solid waste disposal is by landfill or incineration.



Aerial view of Tuktoyaktuk infrastructure

All communities have electrical power, with adequate spare capacity. All use fuel oil for heating, with the exception of Inuvik which has access to a natural gas supply.



Airport facility

Mail is delivered five times a week in Inuvik, Aklavik and Tuktoyaktuk; only two or three times a week in the other communities. Only Inuvik and Tuktoyaktuk have access to the cellular phone network, while the other communities with phone lines have dial-up internet access and some have private wireless networks. The disparity between



Canadian North airplane landing in Tuktoyaktuk

Inuvik and the smaller communities is an indicator of opportunities and access (see Table 10). Lack of exposure to computers may indicate lack of training or educational access to such technologies, while access to ATMs or debit cards may indicate the difficulties of banking in smaller communities – a problem for businesses and individual finances. On the positive side, Inuvik is clearly ahead of the circumpolar average.

**Table 10 Access indicators %**

	Inuvik	Other Inuvialuit	Circumpolar average
Computer	67	38	51
An ATM	82	30	48
Cell phone	50	7	43
Debit card	76	31	36
Estimated total	680	4140	85087

Source: Poppel *et al.*, 2007, table 482

More than 20% of houses in Aklavik, Tuktoyaktuk, and Paulatuk require major repairs (in Inuvik, 18% and in the NWT, 16%). Housing condition is assessed in terms of adequacy which refers to the physical condition of the dwelling or whether the basic facilities provide a safe and healthy

environment. The quality of housing in the region appears to be the most critical problem to regional residents; only 49% of respondents were satisfied with their housing (see Table 11).

Recreation facilities in the region generally reflect the size of the communities. Inuvik has an all-year pool, arena and curling rink, outdoor track, mini-golf, school gyms, parks and playgrounds, tennis courts, softball fields, ski trails, beach area and a library. The other communities tend to have a community hall, gymnasium and an arena. All communities have access to basic health and social services, with the regional hospital and regional public health and social services offices being located in Inuvik. Inuvik also provides services for the handicapped, seniors' independent living, child welfare, homeless shelter and a women's shelter. Availability of health services is rated well in Inuvialuit satisfaction with the quality of current living conditions (Table 11).

All communities have RCMP officers. Each community has a volunteer fire department, with Inuvik and Ulukhaktok also having career fire-fighters.

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**Table 11 Satisfaction with quality of current conditions.**

Very or somewhat satisfied with current conditions	Total %	Men	Women
Job opportunities	70	75	71
Most recent job	69	59	79
Quality of education	58	53	65
Availability of health services	76	78	76
Quality of housing	49	56	44
Rent or house payments	60	50	68
Recreational facilities	64	63	68
Freshness of food in local stores	58	59	59
Availability of country food	76	75	79
Work of police force	66	66	65
Personal life	85	81	88

Source: (Statistics Canada, 2001)

### 4.5 Health and Wellness

The Beaufort Delta Agenda (2007) comments that social disruptions of the past are still affecting the well-being of Inuvialuit, and now, resource development impacts are adding to the strain on society and culture in the region. Solutions lie, it suggests, with government programs and services, but also with the region and communities taking ownership of their own well-being, working

towards finding solutions suited to their needs and circumstances. Healthy lifestyles are an important start, as a basis for preventative health care, especially since the current health care system is under strain from rising costs and difficulties hiring professionals.

The majority of Inuvialuit considered their health to be “excellent” or “very good”, during the SLICA survey (Poppel *et al.*, 2007),

**Table 12 Self-Perception of Personal Health (%)**

	Inuvialuit	Nunavut	Circumpolar North
Excellent	29	21	18
Very good	30	27	39
Good	29	39	26
Fair or poor	12	13	17
Estimated total	1980	5020	87962

Source: Poppel *et al.*, 2007, table 269



**Arctic winter games competition**



which placed them ahead of people in Nunavut, and similar to the average around the circumpolar North (Table 12). Eighty-three percent reported no diagnosed or treated health conditions, 11% reported one condition, 4% reported two conditions and only 2% reported three or more. At the same time, 19% reported physical or mental health problems that hampered their daily activities and 27% reported problems that caused them difficulty with hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing similar activities. As well, 75% reported that they smoke, with 32% smoking a pack or more of cigarettes a day (Poppel *et al.*, 2007).

Added to health issues, IRC identifies “social wellness” issues such as family breakdown, substance abuse, gambling, and “cultural wellness” issues like loss of language and cultural cohesion (the latter two are discussed above, in section 4.1). Lifestyle changes in the last 50 years have led to the loss of traditional values, increasing levels of abuse and violence, as well as health problems like diabetes and cancer (IRC, 2007).

Social change and uncertainty, not to mention development and new income can lead to alcohol and drug abuse, and may intensify existing social problems. Large communities, with years of wage employment experience (which may include Inuvik) are expected to be affected more by outside influences such as drug trafficking, than by employment and income factors (GNWT, 2000). Smaller communities may be more affected by changes imposed by employment and income factors.

Inuvialuit perceived alcohol and drug abuse to be the leading social problems in their communities (Poppel *et al.*, 2007) during the 2001 survey. These were followed by unemployment and family violence (Table 13).

**Table 13 Perception of social problems in northern communities.**

	Inuvialuit	Nunavut	Circumpolar North
Unemployment	77	84	88
Alcohol abuse	88	79	84
Suicide	56	77	73
Drug Abuse	83	80	72
Family violence	71	73	68
Sexual abuse	63	58	61
Estimated total	1750	3520	81768

Source: Poppel *et al.*, 2007, table 371

Alcohol use varies widely: 37% of Inuvialuit respondents in the SLICA survey said they had not had a drink in the year before the survey. Twenty-three percent said they had five or more drinks weekly, and 39% drink five or more drinks (a proxy measure for “binge-drinking”) three times a month or less. The RCMP report that a majority of calls for service are alcohol-related, and there is a recognized correlation between substance abuse and social problems such as family violence, sexual assault, mental

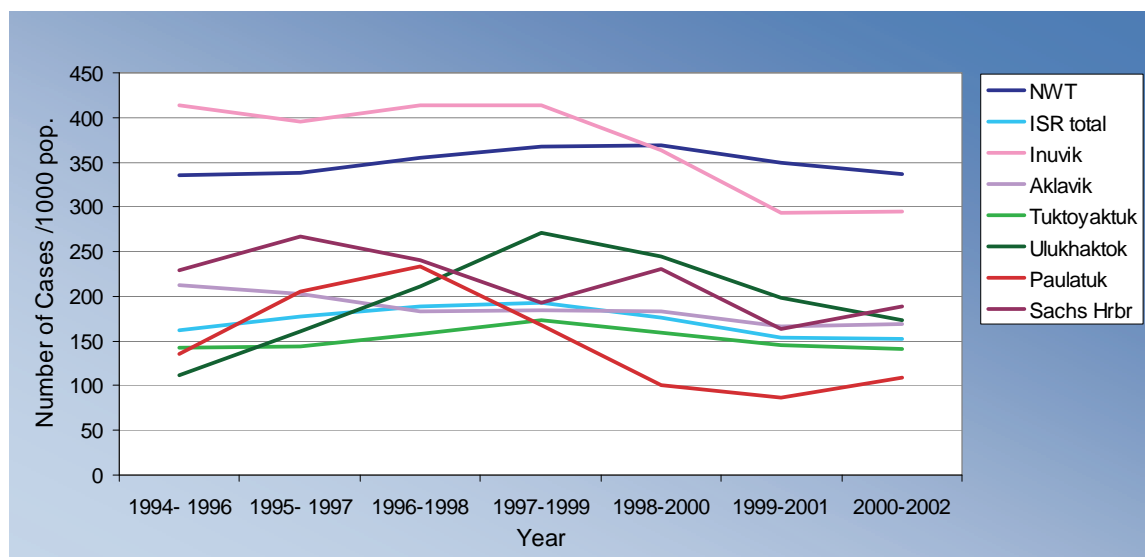


Figure 25 Cases of mental disorder treated by physicians (3 yr. avg. rate/ 1000 pop.) Source: GNWT Bureau of Statistics, n.d., Social Indicator Community Level Data, <http://www.stats.gov.nt.ca/Social/home.html>

health and unemployment. (Imperial Oil et al., 2005). Alcohol abuse also has serious consequences for the future of both individuals and communities, when it causes Fetal Alcohol Syndrome or Fetal Alcohol Effect in babies.

never/sometimes) (Poppel *et al.*, 2007). Nevertheless, Inuvik shows higher rates of mental illness being treated by physicians than the NWT in general (Figure 25); the smaller communities have much lower rates than Inuvik. It should be noted however that these rates may be affected by variations on

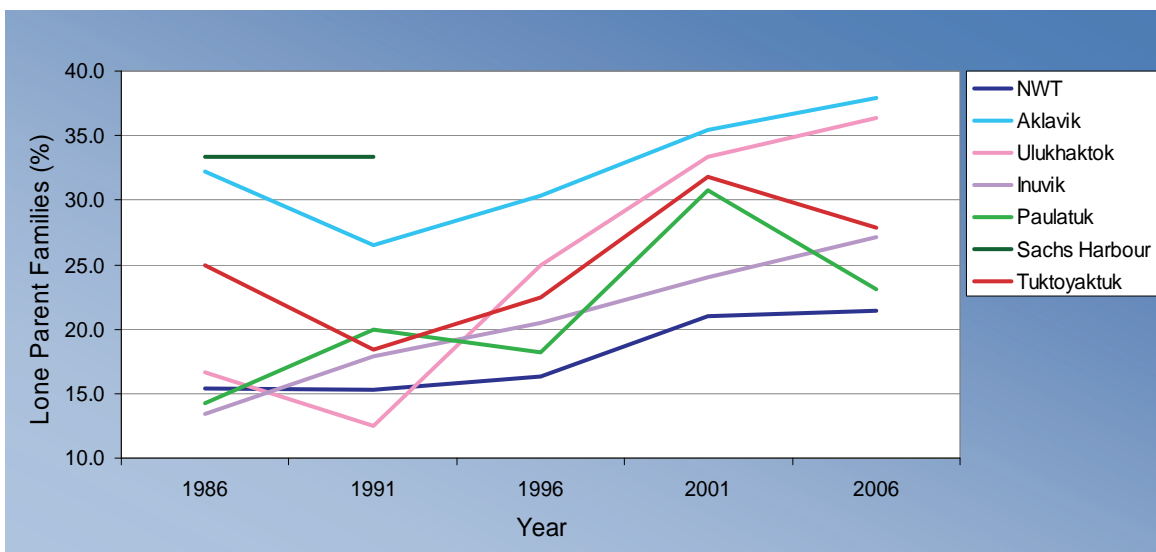
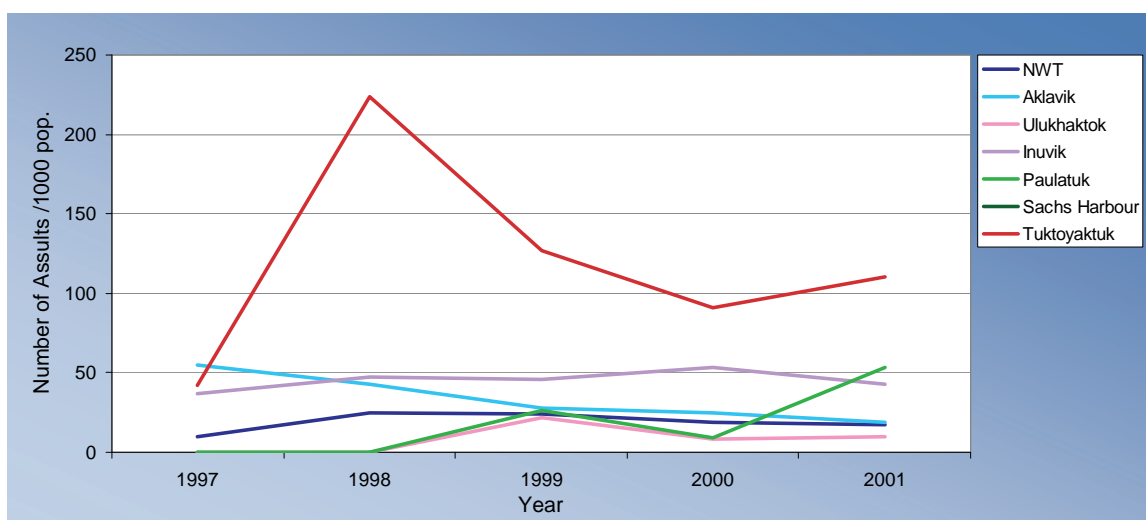


Figure 26 Percent of single parent families. Source: Census, IN: GNWT Bureau of Statistics, n.d., Social Indicator Community Level Data,

In terms of two depression-related questions, Inuvialuit respondents in SLICA most often reported i) feeling calm and peaceful, or ii) being happy (83% fairly, very often or always calm/happy; vs. 6% never, and 10% sometimes; 93% happy, 6%

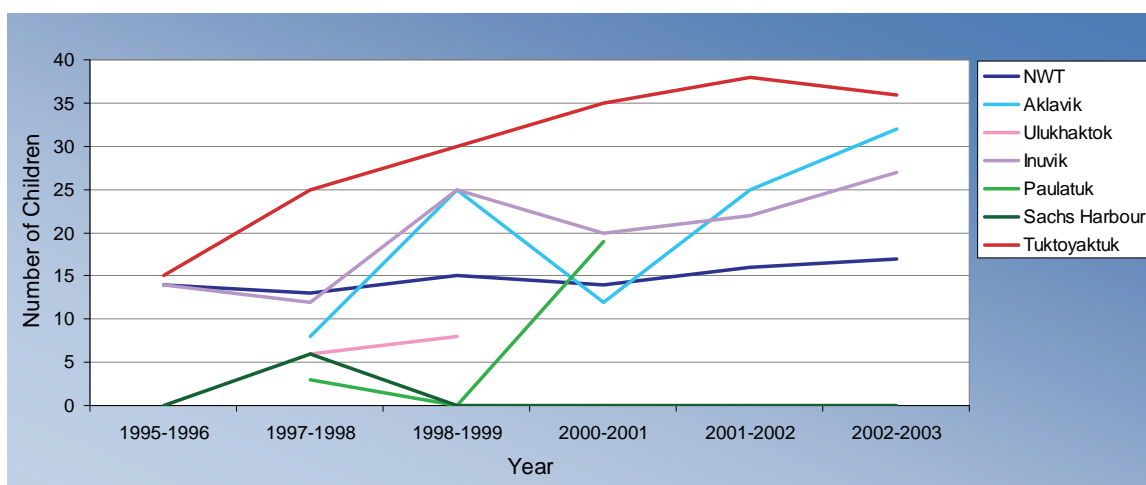
availability to service; residents of smaller communities may not be accessing services due to their lack of availability in their home town and as a result, are not captured in these numbers.



**Figure 27 Spousal assaults in the Beaufort LOMA communities** Source: Imperial Oil *et al.*, 2005. Note: Sachs Harbour and Ulukhaktok recently received RCMP detachments

Family breakdown is a potential result of social destabilization, and is reflected in a number of ways, including the proportion of families headed by single parents, the spousal assault rate, and the number of

Rates of spousal assault (Figure 27) are often thought to correlate with unemployment, alcohol consumption and social breakdown, but rates may also be affected by police presence, social pressures and availability of shelters or other resources. The rate in



**Figure 28 Children taken into care.** Source: Imperial Oil *et al.*, 2005.

children taken into care (Figures 26, 27 and 28). The number of single parent households varies, but generally seems to have increased between 1986 and 2006.

Tuktoyaktuk is much higher than in other communities, but the rates in most communities seem to be trending downwards.

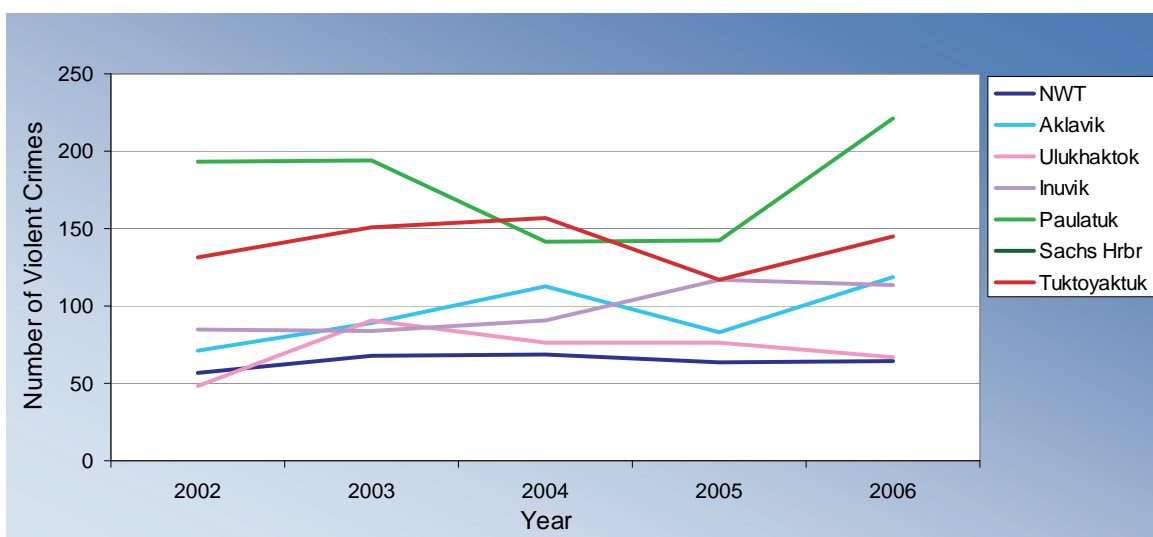


Figure 29 Violent crime by RCMP detachment. Source: Statistics Canada, IN: GNWT Bureau of Statistics, n.d., Social Indicator Community Level Data, <http://www.stats.gov.nt.ca/Social/home.html> (note: no data series for Sachs Harbour; rates may reflect incidents from surrounding communities)

The number of children taken into care (Figure 28) is also an indicator of family breakdown, though it may be influenced, again, by unemployment, alcohol and other factors, not to mention the impacts in a small community of the personalities and regime governing child protection. Higher reporting rates, more active enforcement practices, or alternative approaches may all affect the reported rates of children being

taken into care (GNWT, 2000). That said, the rates seem to be trending upwards, especially so in Inuvik, Aklavik and Tuktoyaktuk.

Violent crime rates, especially those related to spousal assault, are considerably higher in the Inuvialuit communities than in Canada or the NWT in general (Figure 29). These may be related to social stresses, employment

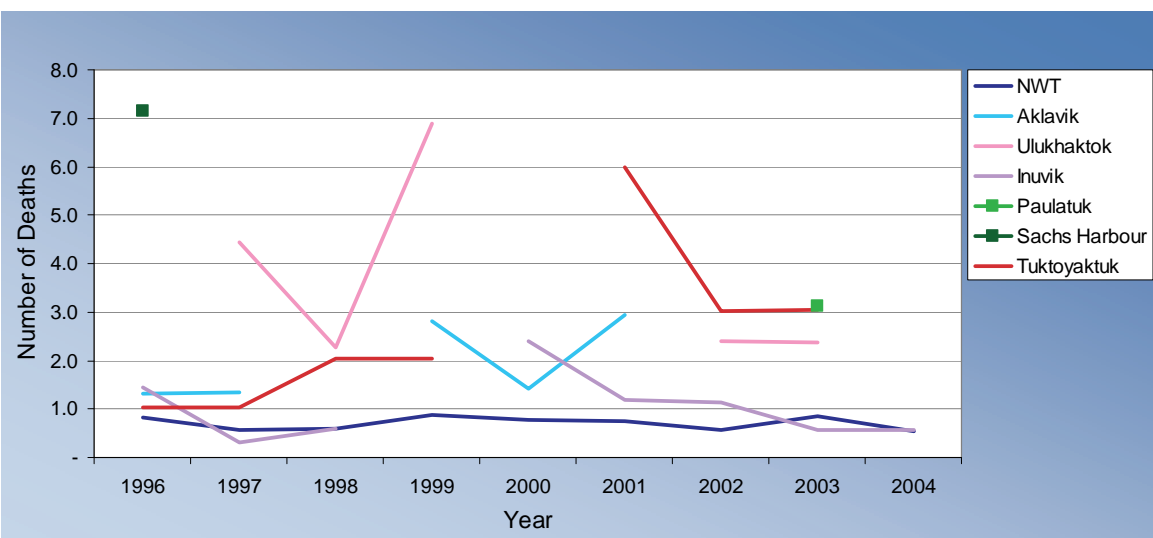


Figure 30 Death rates from accidents, suicides and homicides. Source: GNWT Bureau of Statistics, n.d., Social Indicator Community Level Data, <http://www.stats.gov.nt.ca/Social/home.html> (note: no data series for Paulatuk and Sachs Harbour)

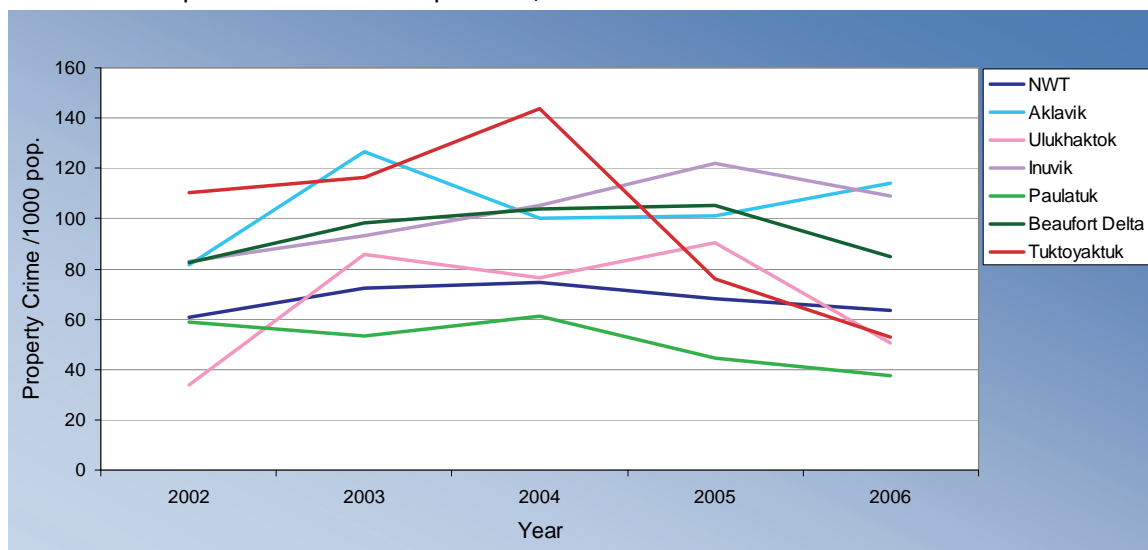


stresses, alcohol or drug abuse or mental health problems. Rates in Paulatuk and Ulukhaktok have climbed noticeably in the last 10 years, while in the other communities, the rates have been variable, but generally stable.

Death rates (Figure 30) in the Beaufort Sea LOMA communities are perhaps three times higher than the Canadian average, although similar to those in the smaller NWT communities in general. These rates reflect violence and suicide in the communities, a profound problem, but also the higher incidence of accidents because of the inherently more dangerous pursuits of many people on the land. The community statistics can be misleading, because of the small size of the communities, and because one accident killing three people in a boat, for example, radically skews the statistics for that small community. However, these statistics are an indicator of social issues that may need to be addressed. Suicide can be linked to social upheaval, as well as to mental health problems such as depression,

and social issues such as spousal separation or unemployment. Alcohol abuse and dependency may also be risk factors. Accidental injuries are preventable events, and often result from carelessness (e.g. unsafe firearm storage) or recklessness (e.g. driving too fast). Alcohol consumption is also involved in many injuries (GNWT, 2000).

Finally, it is possible that industrial employment and other forms of economic development will divide communities into the “haves” and “have-nots”; some will gain high-paying jobs while others cannot. It is possible that this could lead to an increase in property crime. Parental absence because of employment or neglect may also decrease parental authority in the home, leading to an increase in juvenile offences (GNWT, 2000). Property crime rates in the Beaufort Sea LOMA, in recent years, have been variable (Figure 31).



**Figure 29 Property crime in the Beaufort Sea LOMA.** GNWT Bureau of Statistics, n.d., Social Indicator Community Level Data, <http://www.stats.gov.nt.ca/Social/home.html>

## 5. ISSUES RAISED BY BEAUFORT SEA/DELTA COMMUNITIES

This section summarizes issues and objectives raised during community consultations on the Beaufort Sea Integrated Ocean Management Plan. For a full and complete listing of issues and objectives, please see the reports on the Community Workshops. This section and the community input are organized according to the five themes of Education and Training, Capacity and Infrastructure, Health and Wellness, Culture and Environment, and Economy.

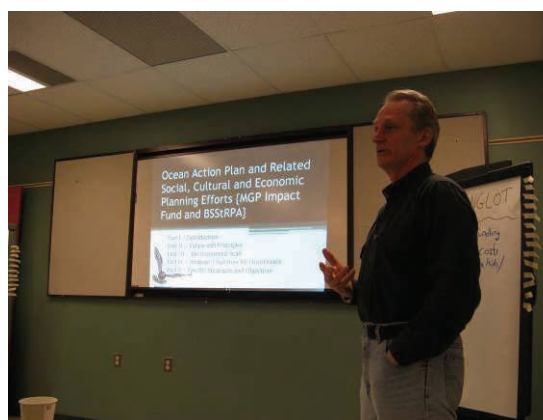


**Aklavik community consultation**

The nature of integrated oceans planning calls for inclusion of a wide array of interests as they connect to oceans health, use and management so that all factors are considered in the conservation and sustainable use of marine resources and spaces. It is clear that the objectives and issues raised in the community meetings fall within the jurisdictions of many federal, territorial and settlement organization departments. Although DFO is responsible for facilitating the IOM process, there are many needs, opportunities and challenges

that go beyond DFO's role that are better addressed through other government departments and agencies who have a mandated interest in the Beaufort Sea Region's social, cultural, and economic well-being. The process of Integrated Oceans Planning calls for the input of those other departments in the management and planning of a natural system, using an ecosystem approach. The plans and responses of all departments to these issues and objectives will be built into the Beaufort Sea IOMP as they are developed. Regulatory authorities remain responsible and accountable for implementing management policies and measures within their established mandates and jurisdiction. However, government departments are expected to support implementation of the plan through their respective legislative, funding and regulatory jurisdictions. If policy or regulatory adjustments are required to achieve these goals and objectives, authority for making such adjustments rests with the responsible department or agency.

### 5.1 Education and training objectives



**Oceans management presentation**

Communities said they wanted more access for their young people to advanced programs, especially in math and science, to workplace and internship training, and to research participation. Students need counselling and career/life awareness, more on-the-land and cultural/language programs, as well as help to achieve greater educational success. More teachers are needed, as well as more up-to-date equipment, library books and curricula. More parental involvement and support are also needed to encourage students. More financial support and other support services are needed for students who move south.

In the workplace, literacy and on-the-job training would help, as would equipment rotating between communities for training purposes. Greater community involvement in research is desired as well as exchanges of traditional and scientific knowledge. Communities would like to see the use of local environmental/wildlife monitors. Community-oriented science courses or information would be welcome as would be courses on life skills and money-management, how to adapt to climate change, or how to develop marketable products.

## **5.2 Health and Wellness**

According to the communities, the region needs to promote public health especially regarding addictions (including smoking), nutrition, asthma, diabetes and cancer as well as how to better handle the economic boom-and-bust conditions. On-the-land programs may help in a number of ways

(health, obesity, elders, youth), including traditional medicine and increased access to/use of country foods. More information is needed about the safety/contamination of country foods versus store foods. Local people should take a greater role in addictions and family treatment and counselling, policing, safe houses for children and trauma responses to suicide, health provision (including medical training), mental health services.



**Oceans Day celebration**

Facilities are needed for youth and elder activities. Youth leadership programs and inclusion on local boards would encourage youth to take greater responsibility for their futures. Environmentally, there is a need for more garbage reduction, including the use of plastic bags, as well as reducing the harvest of caribou to sustainable levels.

## **5.3 Capacity and Infrastructure**

Improved employment rates, community infrastructure and Inuvialuit governance are desired by community members. Better local training and encouragement of local role models would help develop labour capacity and governance skills. Communities need

## ***Beaufort Sea Social, Cultural and Economic Overview and Assessment Report***

programs on leadership development, administrative and management training, professional training for teachers and healthcare professionals (i.e., nurses, social workers, mental health workers), and mentoring or on-the-job shadowing with boards like FJMC. Community members also need trades-related training (i.e., plumbing, welding, electrical, small engine repair).

Funding is needed to support education, especially locally-based opportunities that are linked to employment opportunities. Programs are needed to retain trained people – many are lost to higher paying industry jobs in other locations. Communities need information about available jobs and training opportunities. Money and project management training, and more local control/regional control and cohesion would help advance projects when government is unable to fund them.



**Sachs Harbour Consultation**

Services like internet and cellular phone service need improvement. Local oil spill response-training and equipment are widely desired and should be available. Improving energy efficiency in housing and providing public transit for elders and students around the communities is also desired. Housing policy and income support policies need to

be updated – it takes a lot of money to get off income support; current rental policy/rates are felt to discourage employment.



**Social, cultural and economic workshop in Inuvik**

### **5.4 Culture and Environment**

The communities believe that young people need to learn traditional skills, and that it is important for community members to use country foods. Traditional knowledge should be collected, used in cross-cultural training, in school programs, and/or charged out to users such as researchers. Jamborees, games and festivals are favoured ways to promote culture, as are on-the-land camps (summer and winter) for youth, families, and elders. Community displays promoting the culture, history and language could show artifacts and teach about local conditions.

Communities voiced environmental concerns about changing species distributions, the appearance of new species, climate change effects, cumulative effects of upstream activities/changes, loss of pack ice in some areas, new patterns of open water and currents, erosion of



permafrost, cleanup of old industrial sites, dumps, garbage and contaminants.

## 5.5 Economy (traditional and modern)

Communities emphasized the need for initiatives to support or develop:

- the traditional economy, including a fur auction and incentives for hunters, and commercial fish sales through the local co-op;
- tourism, including help with licenses, marketing, land use permitting, investments, and training related to supporting eco-tourism, southern tourist, and birdwatcher activities; compiling an inventory of services; funding for boat repairs and related small business start-ups; reduced costs for insurance and licensing;
- local business support, i.e., fish and shrimp processing, musk-ox processing, berry picking for jams/jellies, herbal medicines, bottled water; also including business training and a small business incentives program;
- marketing (possibly web-based) of crafts, carvings, local products, traditional items like tools; and developing more opportunities for women.



Community initiatives in the Inuvialuit Settlement Region (Bottom: Inuvialuit woman wearing snow goggles)

## **6. GOVERNANCE ORGANIZATIONS AND PROCESSES IN THE BEAUFORT SEA LOMA**

The Beaufort Sea region is the focus of intense development activity, and also of intensive planning and management, through a variety of processes. Key processes are summarized below.

### **6.1 Inuvialuit Final Agreement**

In 1984, the Inuvialuit and the Canadian government signed the Inuvialuit Final Agreement (IFA), which granted the Inuvialuit surface title to 72,000 km<sup>2</sup> of land, and surface and subsurface title to an additional 18,000 km<sup>2</sup>. The work of Integrated Ocean Management planning must take place within the regulatory context of the IFA and its associated conditions and responsibilities.

The IFA has three basic goals (IRC, 2007):

- (a) to preserve Inuvialuit cultural identity and values within a changing northern society;
- (b) to enable Inuvialuit to be equal and meaningful participants in the northern and national economy and society; and
- (c) to protect and preserve arctic wildlife, environment and biological productivity.

The IFA granted the Inuvialuit responsibility for the management and investment of financial compensation and benefits, as well as land ownership/use in the ISR, carried out through agencies such as the IRC, six

Community Corporations, Inuvialuit Land Corporation, Inuvialuit Investment Corporation, Inuvialuit Development Corporation and Inuvialuit Petroleum Corporation.

The IFA established a co-management system involving a number of Inuvialuit and Inuvialuit-government councils and committees such as Hunters and Trappers Committees (HTCs), Inuvialuit Game Council, Fisheries Joint Management Committee (FJMC), Wildlife Management Advisory Council (NWT), Wildlife Management Advisory Council (North Slope), Environmental Impact Screening Committee, and Environmental Impact Review Board. These co-management bodies make recommendations to the regulatory system, the land owners and managers of the land, water, environment and wildlife.

In addition, the Inuvialuit Land Administration, Community Corporations and Inuvialuit Regional Corporation, federal government departments and agencies, and NWT and Yukon territorial governments, all share responsibility for management of the natural resources, land and marine-based activities within the ISR. Local communities along with Elders and Youth Committees also have a substantial say in what types of activities, including traditional harvesting, industrial activities, and recreational activities that can occur within their traditional harvesting areas (particularly within privately owned lands as per Section 7(1)a and 7(1)b of the IFA).

Social concerns, such as housing, health, education, and the maintenance of

traditional practices and perspectives within the ISR are addressed by the Inuvialuit Cultural Resource Centre and Community Development Division of the Inuvialuit Regional Corporation.

## **6.2 Gwich'in Comprehensive Land Claim Agreement (Gwich'in Land Claim)**

The Gwich'in Land Claim was settled in 1992. The Gwich'in Settlement Area (GSA) borders the south-western ISR. The GSA encompasses part of the Mackenzie Delta but does not extend to the Beaufort Sea coast. Gwich'in lands are primarily related to the Beaufort Sea LOMA through the movement of water (primarily the Mackenzie River) through the GSA before emptying into the Beaufort Sea, the location of anadromous fish spawning grounds in the GSA, and the migration patterns of anadromous fish species harvested in the GSA and the ISR. Activities in the GSA therefore have the potential to impact the Beaufort Sea LOMA and vice versa.

There are approximately 2,400 participants in the Gwich'in Land Claim, with 60% of the people living in the four communities of the Gwich'in Settlement Area. Aklavik is a mixed community of Gwich'in and Inuvialuit, while Inuvik has a mixed population of Gwich'in, Inuvialuit and non-Aboriginals; these communities are included in the Beaufort Sea LOMA. The two predominantly Gwich'in communities are Fort McPherson and Tsiigehtchic, which are not included in the Beaufort Sea LOMA.

In their settlement area, Gwich'in have extensive and detailed wildlife harvesting rights; guaranteed participation in decision-making structures for the management of wildlife and the regulation of land, water and the environment; and rights of first refusal to a variety of commercial wildlife activities. They will receive a share of annual resource royalties for development in the Mackenzie Valley (Gwich'in Land Use Planning Board, 2003).

## **6.3 The Gwich'in Land Use Plan**

The Gwich'in Land Use Plan (GLUP) was developed under the Mackenzie Valley Resource Management Act and covers all lands within the Gwich'in Settlement Area that are outside of municipal boundaries (just under 57,000 km<sup>2</sup>). The plans were developed by the Planning Board through consultations with Gwich'in communities, organizations, Territorial and Federal government departments, industry groups and environmental non-government organizations. It is based on both traditional and scientific knowledge about the region.

Through the GLUP, land use zones were established in the Settlement area which describes what is allowed or not allowed in specific areas. Outstanding environmental issues were also acknowledged and recommendations were made through the identification of responsible authorities. After plan approval (August 2003), all licenses, permits or other authorizations relating to the use of land, water or the deposit of waste in the Settlement Area must conform to the Land Use Plan.

## **6.4 Beaufort Sea Integrated Management Planning Initiative (BSIMPI)**

The Beaufort Sea Integrated Management Planning Initiative (BSIMPI) began in 1999 as a collaborative process between the Inuvialuit, government and industry to undertake integrated management planning for marine and coastal areas in the ISR. The principles of BSIMPI are:

1. Recognition of rights under the IFA;
2. Respect for the views of all parties;
3. Commitment to building consensus;
4. Use of local, traditional and scientific knowledge; and
5. Adoption of transparent, timely and coordinated procedures.

BSIMPI started by working with marine protected areas and proposed the Tarium Nirjutait marine protected areas. While this work was concluding the Beaufort Sea Partnership was formed to bring a wider spectrum of stakeholders together to discuss and develop the Beaufort Sea Integrated Ocean Management Plan. As the planning process evolved, BSIMPI was assigned responsibility for community engagement with respect to Integrated Ocean Management Planning in the Beaufort Sea LOMA.

## **6.5 Beluga Management Plan /Marine Protected Area**

The world's largest summering stock of beluga whales congregate in the Beaufort Sea. The Beaufort Sea Beluga Management Plan (BSBMP) aims to ensure the responsible and effective long-term management of

these beluga populations, their habitat and traditional harvesting by the Inuvialuit, as well as providing a biophysical and archaeological research focus. Its goals include maintaining a thriving population of beluga in the Beaufort Sea and providing for optimum sustainable harvest of beluga by Inuvialuit.

The BSBMP was developed by the FJMC, in cooperation with the six Hunters and Trappers Committees and DFO. It considers the diversity of parties with interests in the management of beluga specifically, or the Beaufort Sea in general. It addresses management issues related to their activities and related concerns including: subsistence hunting practices and traditional values closely related to the beluga harvest; oil, gas and mining-related activities; vessel traffic; ice-breaking; port development; possible future commercial fisheries development; contaminant levels in marine waters and mammals; the tourism industry; regulators; trans-boundary issues and climate change. Completed in 1991, the BSBMP has since been revised in light of increased hydrocarbon activity in the region, (Fisheries Joint Management Committee, 2001).

The plan designates areas according to traditional values, whale and habitat sensitivity. The proposed Tarium Nirjutait Marine Protected Area is currently managed under these guidelines. As part of the Marine Protected Area candidacy process specified in the National Framework for Establishing and Managing Marine Protected Areas, the BSIMPI Working Group initiated assessments of the ecological, social, cultural and economic environment of the proposed



MPA, as well as of the technical merits of the proposal (Kavik-AXYS, 2003).

The FJMC plans to amend the BSBMP to reflect the proposed Tarium Niryutait MPA regulations, and to provide more clarity to industry and regulators on what specific activities may be considered, since the MPA regulations were developed through an extensive five-year consultation process with the Inuvialuit, regulators, industry and key stakeholders.

### **6.6 Beaufort Sea Strategic Regional Plan of Action (BSStRPA)**

The BSStRPA plan was developed to ensure that governments, industry, the Inuvialuit and other northerners are prepared for the benefits and impacts of increased oil and gas activity in the Beaufort Sea. The process used a community-based approach to recommend specific priority actions to prepare for oil and gas exploration and development. In conjunction with existing environmental assessment and regulatory processes, the plan seeks to ensure sustainable development by achieving a balance between biophysical, social, cultural and economic objectives in the context of oil and gas development (BSStRPA, 2008). It covers much of the Beaufort Sea and adjacent coastal transition zone within the ISR. The goal is to undertake a more comprehensive or strategic assessment of development rather than a project-by-project review. The partners' vision is laid out as: "to ensure that oil and gas activities in the Beaufort Sea provide for ecological integrity, sustainable economies, healthy

communities and full participation by Inuvialuit and Northerners".

### **6.7 The Mackenzie Gas Project Impact Fund**

The Government of Canada has established a 10-year, \$500M Social Impact Fund to assist in responding to the social impacts created by the MGP. Under this program, the IRC has submitted a "Regional Investment Plan," which describes baseline socio-economic conditions in the six Inuvialuit communities; anticipated impacts from pipeline development; existing mitigation commitments by INAC, GNWT and IRC; Inuvialuit priorities, goals, and indicators under three themes with a goal to developing effective, mitigation projects. The document recognizes the importance of planning for development in order to avoid or mitigate negative impacts and enhance beneficial ones, and provides a comprehensive set of management strategies that should be implemented in the event of large scale oil and gas development in the Beaufort Sea. However, the fund for the Mackenzie Gas Project will not be released unless the project is approved.

### **6.8 Beaufort Delta Agenda**

This document sets out a plan of action for programs and services in the Beaufort Delta, calling for collaboration between the IRC, territorial and federal governments, organizational change, focused and accountable decision-making, and resources for implementation. It focuses on five themes: Culture, Language and Heritage; Educating our Children; Health and

Wellness; Fostering Economic Growth; Safe Communities and Crime Prevention. It is intended to be consistent with and supportive of the IFA, and advance the Beaufort-Delta Political Accord, as well as devolution and resource revenue sharing (Beaufort Delta Agenda II, 2007). The first Agenda has been approved; however, follow-up on action items is still required.

### **6.9 Northerners Working Together: Vision, Goals and Priorities of the 16th Legislative Assembly of the Northwest Territories**

The new Legislative Assembly has expressed a set of goals and priorities that will provide an encompassing regime for the next four years (2009 – 2013) and is currently developing an overall strategy for implementation. Goals include: a strong and independent North built on partnerships, an environment that will sustain present and future generations, healthy, educated people, a diversified economy that provides all communities and regions with opportunities and choices, sustainable, vibrant, safe communities, and effective and efficient government.

Furthermore, each GNWT department has a strategic and business plan. GNWT programs and services are a major consideration for the implementation of social, cultural and economic objectives, and the departments. It will be important to involve and integrate those departments in defining the scope and strategies of this Integrated Oceans Plan for the Beaufort Sea.

### **6.10 Protected Areas Strategy**

The NWT Protected Area Strategy (PAS) was established in 1999 as a planning framework to guide the work of identifying and establishing legislated protected areas in the NWT (GNWT, n.d.). It was developed by regional Aboriginal organizations, the Federal and Territorial governments, environmental non-governmental organizations, and industry representatives. The PAS is community-driven, and seeks a balance where communities are able to benefit from both conservation and development opportunities. It is intended to help NWT communities obtain long term protection of both special and ecologically representative areas.

The PAS planning process includes a number of stakeholder organizations with interests in the Beaufort Sea LOMA, including the Government of Canada, the Government of the NWT, the Inuvialuit Game Council, the Gwich'in Tribal Council, the Canadian Association of Petroleum Producers, the NWT and Nunavut Chamber of Mines, the World Wildlife Fund, and the Canadian Parks and Wilderness Society. The Mackenzie Valley Five-Year Action Plan describes a five year planning process (2005-2010) designed to help communities in the Mackenzie Valley work through the PAS process to protect lands in advance of pipeline development. Objectives of the Action Plan are:

- enhance protected areas planning;
- build capacity among communities, government, and other partners;

- ensure candidate area information requirements are met for advancing sites;
- increase communications among partners.

Under the PAS, protected areas may be established under a number of available legislative options:

- National Wildlife Areas, National Marine Wildlife Areas, and Migratory Bird Sanctuaries may be established under Canadian Wildlife Service legislation;
- National Marine Conservation Areas, National Parks and Park Reserves, and National Historic Sites may be established under Parks Canada Agency legislation;
- Wilderness Conservation Areas, Cultural Conservation Areas, Heritage Parks, and Natural Environment Parks may be established under GNWT Industry, Tourism, and Investment legislation; and
- Marine Protected Areas may be established under Fisheries and Oceans Canada legislation.

There are currently no sites being advanced through the PAS process in the Beaufort Sea LOMA.

### **6.11 “Cross-border” Conservation Agreements**

The management of important species such as polar bears and beluga whales, which span political boundaries, prompted development of management plans that also cross borders. To ensure conservation of the southern Beaufort Sea population of polar bears, the Inuvialuit Game Council and the North Slope Borough negotiated and signed a user-to-user agreement, *The Polar Bear Management Agreement for the Southern*

*Beaufort Sea*, in 1988. This has been found to function well; both the total harvest and the proportion of females in the harvest have been contained within sustainable limits (Brower *et al.*, 2002). In 2006, an agreement to manage the northern Beaufort Sea-Viscount Melville Sound polar bear population was signed between the Inuvialuit Game Council and the Kitkmeot Hunters’ and Trappers’ Association in Nunavut (Joint Secretariat, 2006). With the recent decision of the United States to designate polar bears as an endangered species there may be further restrictions on harvesting.

To conserve and manage beluga whales, the Alaska and Inuvialuit Beluga Whale Committee (AIBWC) was also formed in 1988. It develops and implements harvest monitoring programs each year, and also supports, funds and participates in research. The beluga whale management plan in the western Canadian Arctic has now been complemented by an Alaskan beluga whale management plan, and discussions have been initiated on a joint Inupiat-Inuvialuit plan for management of the shared Beaufort Sea beluga whale stock (Adams *et al.*, 1993).

### **6.12 Community Conservation Plans**

The Community Conservation Plans (CCPs) are plans for the conservation and management of renewable resources and lands within the Inuvialuit Settlement Region. They are community-based planning documents, originally prepared in 1993 and updated at five year intervals. The Hunters and Trappers Committees, Community

Corporations and Elders Committees were responsible for developing the plans, and they consulted Inuvialuit and non-Inuvialuit organizations during the planning process. The documents are not legally binding, but are simply intended to provide guidance to all those with an interest in activities within the ISR.

The plans contain a brief description of the current conservation and resource management system in the ISR and describe the strategy to address five broad goals as they apply to each community's lands, resources and interests:

1. Identify important wildlife habitat, seasonal harvesting areas and cultural sites and make recommendations for their management.
2. 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. Identify educational initiatives for the Inuvialuit of the communities and others interested in the area which will promote conservation, understanding and appreciation.
4. 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. Enhance the local economy by adopting a cooperative and consistent approach to community decision making and renewable resource management.

Several key community values are laid out, including:

- (a) Conservation is first priority;
- (b) Integrate management of activities and resources;
- (c) Maximize community benefit;
- (d) Protect priority community activities;
- (e) Cooperatively manage resources shared with other users;
- (f) Maintain a healthy environment;
- (g) Be consistent with the principles of other Inuvialuit plans, and other conservation plans or agreements endorsed by the community's representatives.

### **6.13 NWT Environmental Stewardship Framework**

The NWT Environmental Stewardship Framework (ESF), formerly known as the NWT Cumulative Effects and Assessment Monitoring (CEAM) Strategy and Framework, is a collaborative effort to improve environmental management and stewardship in Canada's Northwest Territories.

The vision of the NWT Environmental Stewardship Framework is to make recommendations to decision-makers to facilitate:

- The protection of ecological integrity,
- The building of sustainable communities, including social and cultural dimensions; and
- Responsible economic development within a sound environmental management framework.

In this context, the term 'environment' includes social, cultural and economic aspects in addition to natural and



biophysical aspects (NWT ESF Steering Committee 2007). The NWT Environmental Stewardship Framework consists of ten components that capture the key functions necessary for environmental stewardship.

## 7. IMPLEMENTATION CONSIDERATIONS

The Beaufort Sea Integrated Ocean Management Plan will need to provide an intergovernmental mechanism to promote, support and implement policy, planning and management coordination based on existing mandates, jurisdictions, spending authorities and responsibilities, and consistent with federal and territorial policies and regulatory frameworks.

Endorsement and approval of the plan by a government decision-making authority will demonstrate a commitment to implementation of the plan through a collaborative approach, in accordance with departmental mandates, priorities and capacities for ocean management. Ongoing participation by government authorities in the Integrated Ocean Management process should be provided through the Regional Coordination Committee and the Beaufort Sea Partnership.

The complex nature and multiple entry points of existing programs and services make it difficult to determine their value and effectiveness and raise significant questions with respect to program transparency and accountability. Collaborative working relationships, systems, and strategies will provide incentive and motivation to work

together outside of current organizational mandates and responsibilities. Some factors required to ensure success of cooperative and collaborative initiatives are:

- Cooperative leadership (to provide on-going direction to officials);
- Strong networks and a collegial policy community (to ensure full communications and clear objectives);
- Established roles and responsibilities (who is involved – who will do what – who will take the lead);
- Appropriate level of coordination (defined framework document management and coordinated structure and systems);
- Agreement on objectives (what will be accomplished over what time-frame);
- Agreement on performance expectations for the initiative (specific results and a set of performance expectations for common initiatives);
- Agreement on how stakeholders will contribute (articulated strategies and performance expectations for stakeholders that are commensurate with the resources available and with political/jurisdictional reality);
- Maintain momentum by building on human resource capacity, building on successes, creating continuous learning opportunities.

### Government and Land Claim Organizations

Federal, Territorial, Aboriginal, and municipal governments may use both internal and external mechanisms to formalize, reflect and carry out their

commitment to the plan. Participating departments can incorporate the elements of the plan and its relevant provisions in their departmental policy, program and planning documents, including:

- Strategic and/or business plans;
- Work, i.e., operational and resource plans;
- Sustainable development strategies;
- Coordinated and efficient regulatory processes;
- Strategic and regional environmental assessments;
- Annual reports on plans and priorities
- Annual financial planning documents on budgets, including commitments on staff and associated resources to the planning process and relevant management strategies and actions.

Governments and Land Claim Organizations may choose to formalize their commitment to the plan through external mechanisms, including:

- Letters of support or intent;
- Existing or new memoranda of understanding or agreement.

Federal government departments will use regional and national-level mechanisms in accordance with other organizational and line reporting structures.

- Activity applications, proposals, and environmental assessments;
- Industry standards, guidelines or codes of conduct/best practice;
- Letters of support or intent;
- Terms of reference, mission and mandate documents;

Government sectors will also have opportunities to implement the plan through consultations and other engagement mechanisms with government departments and land claim organizations on policy, regulatory and management matters affecting their activities.

## Stakeholders

Endorsement and implementation of the plan by other stakeholders including ocean sectors can occur through reference in appropriate organizational documents, including:

- Strategic and/or business plans or work plans;
- Performance reports;

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## **9. APPENDIX**

Governing and Advisory Bodies (extracted from Kavik-AXYS, 2002; re: Marine Protected Area but applicable to Beaufort Sea LOMA)

### **Overview**

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The ISR, in which the proposed MPA is found, is governed by layers of political jurisdiction. The IFA established structures and processes by which the government and the Inuvialuit co-manage renewable resources. These ensure that the Inuvialuit are involved in the decision-making processes for decisions that affect Inuvialuit interests in the ISR. The mandates and responsibilities of the following federal, territorial, joint management, and Inuvialuit governing, advisory and regulatory bodies are described with respect to their role or interest in the establishment of a MPA in the Beaufort Sea or other activities in the Zone 1a and surrounding areas. DFO and the FJMC share the primary responsibilities for establishing and managing a Beaufort Sea MPA.

### **Organizations with Lead Responsibility for Beaufort Sea MPA**

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#### **Fisheries and Oceans Canada**

DFO is mandated to protect and conserve marine and freshwater resources and habitat, establish fishery management plans, develop conservation and protection policies and implement programs to provide for the sustainable use of Canada's marine resources. With the passage of the *Oceans Act* in 1997, Canada became one of the first countries in the world to make a legislative commitment to a comprehensive approach for the protection and development of oceans and coastal waters. To reinforce this approach, the *Oceans Act* calls for wide application of the precautionary approach to the conservation, management and

exploitation of marine resources. It also recognizes the significant opportunities offered by the oceans and their resources for economic diversification and the generation of wealth for the benefit of all Canadians, particularly those in coastal communities. To achieve these commitments, the *Act* calls on the Minister of Fisheries and Oceans to lead and facilitate the development of plans for integrated management.

Also under the *Oceans Act*, DFO is responsible for identifying potential marine protected areas (including: unique habitats; endangered or threatened marine species and their habitats; commercial and non-commercial fishery resources including marine mammals; and marine areas of high biodiversity or biological productivity), presenting management plans for marine protected areas to the federal cabinet, drafting federal legislation or regulations, if required, to implement the protected area, and taking a coordinating and overseeing role for established marine protected areas in Canada. In addition to DFO, Parks Canada and Environment Canada (Canadian Wildlife Service) also share mandated responsibilities to create protected areas in the marine environment. DFO leads in the development and implementation of a national system of marine protected areas, which incorporates the different programs of the three departments (Fisheries and Oceans Canada, 1999a). The process for establishing protected areas in the marine environment, as specified under the National Framework for Establishing and Managing Marine Protected Areas (Fisheries and Oceans Canada, 1999b), allows for flexible approaches in each DFO Region. In the ISR, where the management of living resources is carried out in the context of co-management, DFO must collaborate with co-management bodies, in particular the FJMC, on processes for nominating, establishing and managing a MPA. Management of the Beaufort stock of beluga has been carried out under several federal acts



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and regulations, including the *Fisheries Act*, which is the responsibility of DFO. Within this act are Marine Mammal Regulations, which state the licensing requirements for hunting marine mammals, including beluga, and regulate activities associated with their harvesting. DFO participated in the development of the BSBMP, which sets out a plan for the management and sustainable harvest of beluga in the Beaufort Sea. DFO is also involved in the management of Beaufort Sea beluga through its representation on the FJMC.

### **The Canadian Coast Guard**

The Canadian Coast Guard is under the jurisdiction of DFO and is responsible for safe harbours, waters and waterways, and maintaining an extensive system of navigational aids and marine communication. They manage and regulate marine transportation and have a fleet that provides icebreaking, aids to navigation, rescue, safety and environmental response services, and provides some research logistics support to various agencies and organizations. Also under the jurisdiction of DFO, Canadian Hydrographic Services produces reliable navigational charts.

### **Fisheries Joint Management Committee**

The FJMC was established to assist DFO and the Inuvialuit in administering the rights and obligations relating to fisheries under the IFA and to assist DFO in carrying out its responsibility for the management of fisheries and marine mammals in the ISR. The FJMC also advises the Inuvialuit and DFO on all fishery management and related issues within the ISR. This would include advice regarding the establishment of a MPA in Zone 1a areas. Among other areas, the FJMC is responsible for allocating subsistence quotas for fish and marine mammals, determining harvest levels, and preventing conflict with Inuvialuit activities. The goal of the FJMC is to ensure that the

renewable marine, anadromous and freshwater resources of the ISR are managed and conserved for the wise use and benefit of present and future generations. The FJMC works closely with government agencies, particularly DFO, renewable resource user groups, and resource councils and committees established under the IFA, as well as with other land claim groups on a variety of activities and programs (Fisheries Joint Management Committee, 2002; <http://www.fjmc.ca/>).

### **Federal Government**

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Several federal government departments or agencies hold legislated responsibilities for regulating or managing resources or human activities in the Mackenzie Delta – Beaufort Sea Region. Those that would play key roles or maintain key interests relating to the establishment of a MPA in the study area are: DFO, Environment Canada, Parks Canada, Indian and Northern Affairs Canada (INAC), Department of National Defence (DND), Transport Canada, Natural Resources Canada (NRCan), National Energy Board (NEB) and Canadian Environmental Assessment Agency (CEAA).

### **Fisheries and Oceans Canada**

See above.

### **Environment Canada**

Environment Canada's mandate is to preserve and enhance the quality of the natural environment; conserve Canada's renewable resources and biological diversity; conserve and protect Canada's water resources; carry out meteorology; prepare for and prevent environmental emergencies; monitor and report on the state of the environment to support sound environmental decision-making; and coordinate environmental policies and programs for the federal government.

Within the department the Meteorological Service of Canada provides weather warnings, forecasts and information on atmospheric, hydrological, sea-state and ice conditions and conducts research to improve the understanding of the atmosphere and of the impact of human activities on the atmosphere.

Another part of Environment Canada, the Canadian Wildlife Service, is responsible for the conservation and management of migratory birds, including seabirds and shorebirds that complete one or more of their annual life cycle stages along Canada's coasts or further off shore. The *Migratory Birds Convention Act* and *Canada Wildlife Act* provide the Minister with the authority to establish migratory bird sanctuaries and national wildlife areas to protect habitat of national and international importance. The *Species at Risk Act* (SARA) is jointly administered by three federal Ministries (Department of Fisheries and Oceans, Environment, and the Parks Canada Agency). The Minister of Fisheries and Oceans is responsible for aquatic species at risk, while Environment Canada is the federal lead for coastal migratory bird species at risk.

In the Inuvialuit Settlement Region, the Canadian Wildlife Service also participates in the co management process through membership in the NWT Wildlife Management Advisory Council.

Canada has an international responsibility for the conservation and management of polar bears under the 1973 Agreement on the Conservation of Polar Bears. Environment Canada is the federal lead in ensuring that Canada's obligations are met, including conducting a national research program, protecting ecosystems of which polar bears are a part, and consulting with other parties on the management of migrating polar bear populations. Under the Species At Risk Act, Environment Canada is also the federal lead for

the conservation and recovery of polar bears in the ice covered waters of the Canadian Arctic.

Environment Canada administers The *Canadian Environmental Protection Act*, 1999 (CEPA 1999), which aims to protect the environment by preventing and managing risks posed by toxic and other harmful substances. CEPA 1999 also prohibits the disposal of wastes and other matter at sea, unless the disposal is done under a permit issued by the Minister. Under a Memorandum of Understanding with the Department of Fisheries and Oceans, Environment Canada also administers the sections of the *Fisheries Act* that regulate the introduction of any substances into marine environments that would make the water harmful to fish or fish habitat.

#### **Parks Canada**

Parks Canada, an agency under the jurisdiction of Heritage Canada, is mandated to protect and present nationally significant examples of Canada's natural and cultural heritage and foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations. Parks Canada identifies and establishes National Marine Conservation Areas (NMCA), National Historic Sites and National Parks (Parks Canada 2002; [http://parkscanada.pch.gc.ca/parks/main\\_e.htm](http://parkscanada.pch.gc.ca/parks/main_e.htm)).

The *Canada National Marine Conservation Areas Act*, passed in 2002, calls for a national system of marine areas to represent the full range of Canada's marine ecosystems found within the Atlantic, Arctic and Pacific oceans, and the Great Lakes. As of yet, there are no NMCAs in the Arctic. NMCAs are managed for sustainable use and may contain smaller zones of high protection. They are protected from such activities as ocean dumping, undersea mining, and oil and gas exploration and development, however, traditional fishing activities would be permitted within the overall context of

conservation. MPAs designated under other federal programs may be considered as part of the NMCA plan if conservation objectives are similar.

The National Historic Site component of Parks Canada is responsible for Canada's program of historical commemoration, which recognizes nationally significant places, persons and events. National Parks are a countrywide system of representative natural areas of Canadian significance. They are protected for public understanding, appreciation and enjoyment, while being maintained in an unimpaired state for future generations (Parks Canada 2002; [http://parksCanada.pch.gc.ca/parks/main\\_e.htm](http://parksCanada.pch.gc.ca/parks/main_e.htm)).

#### **Indian and Northern Affairs Canada**

Indian and Northern Affairs Canada (INAC) has primary, but not exclusive, responsibility for meeting the federal government's constitutional, treaty, political and legal responsibilities to First Nations, Inuit and Northerners. This broad mandate falls under two programs: Indian and Inuit Affairs, and Northern Affairs. Through these programs, INAC supports Aboriginal peoples in the ISR in developing healthy, sustainable communities, and in achieving their economic, political, cultural and social aspirations. This includes overseeing the implementation of the IFA and promoting economic development. Under the Northern Affairs Program, INAC is responsible for managing natural resources, protecting and rehabilitating the northern environment and fostering leadership in sustainable development. Increasingly, INAC's role has become one of facilitating change and bringing together the partners and interests needed to facilitate the evolution of strong northern governments, economies, communities and peoples (Indian and Northern Affairs Canada 2002; [http://www.aincinac.gc.ca/ai/mand\\_e.html](http://www.aincinac.gc.ca/ai/mand_e.html)). In the ISR, INAC works in partnership with Aboriginal groups and non-

Aboriginal northerners, with other federal and territorial departments and agencies, co-management bodies, industry and other stakeholders. In terms of resources management, INAC no longer has sole responsibility for permitting resource development and use. INAC works with the resource and environmental management boards that have resulted from the IFA, and which are charged with reviewing and recommending to the Minister of INAC the permitting of proposed resource use in various regions of the North. INAC continues to administer issuance of surface and subsurface rights in Arctic offshore lands.

#### **Department of National Defence**

The Department of National Defence (DND) has the mandate to formulate and manage all aspects of defence policy, defend Canada and Canadian interests and values while contributing to international peace and security. The mandate to defend Canada is achieved through monitoring and controlling activity within Canada's national territory, airspace and maritime areas of jurisdiction, assisting other government departments in achieving various national goals, maintaining a national search and rescue capability, and assisting in national emergencies. The mandate to defend North America is achieved through protecting the Canadian approaches to the continent in partnership with the United States, particularly through the North American Aerospace Defence Agreement, maintaining the ability to operate effectively at sea, on land, and in the air with the military forces of the United States in defending the northern half the Western Hemisphere (Department of National Defence 2002; <http://www.forces.gc.ca/eng/index.html>). Within the ISR, DND has remote north warning systems, a forward operating location in Inuvik for F18 aircraft, and a local Ranger program.

### **Transport Canada**

Transport Canada helps to ensure reliable, safe and sustainable transportation systems to connect communities and trading partners, and to protect the physical environment. This includes marine, road, ice road and air transportation systems. For marine transportation specifically, Transport Canada is responsible for ship safety, the protection of life, property and the marine environment. It develops and administers the Arctic marine regulatory regime, carrying out the application and enforcement of regulatory programs and initiatives of ship inspection and certification, and ship source pollution prevention (Transport Canada 2002; <http://www.tc.gc.ca/>).

Barges that deliver goods to Tuktoyaktuk, Holman, Sachs Harbour and Paulatuk during the ice-free period make use of a transportation corridor that transects Zone 1a areas of the proposed MPA. Similarly, winter ice roads pass through these zones. Transport Canada works in partnership with other federal, provincial, territorial and municipal departments and organizations, the Transportation Safety Board, the Canadian Transportation Agency, NAV CANADA, other private organizations, stakeholders, and members of the transportation industry. Natural Resources Canada Natural Resources Canada (NRCan) deals with natural resource issues related to the sustainable development and use of natural resources, energy, minerals and metals, forests and earth sciences. They conduct leading edge science and technology research and maintain a national knowledge infrastructure (economic, environmental and scientific information) on Canada's land and resources. NRCan ensures that federal policies and regulations on issues such as the environment, trade, the economy, Canadian land and science and technology enhance the natural resources sector's contribution to the economy.

Internationally, NRCan helps Canada meet its commitments related to natural resources, and keeps access open to global markets for Canadian products, services and technology. Acts administered by NRCan of particular relevance to the proposed MPA include the *Arctic Waters Pollution Prevention Act*, *Canada Oil and Gas Operations Act*, and *Canada Petroleum Resources Act* (Natural Resources Canada 2002; <http://www.nrcanrncan>).

### **National Energy Board**

The NEB mandate is to promote safety, environmental protection and economic efficiency in the Canadian public interest while respecting individuals' rights within the regulation of pipelines, energy development and trade. They regulate the construction and operation of interprovincial, inter-territorial and international pipelines, the tolls and tariffs of interprovincial and international pipelines, the construction and the operation of international power lines, the exports of oil and electricity, the exports and imports of natural gas, and the exploration and development of oil and gas resources in non-accord frontier areas. The NEB grants permits for many of the activities involved in oil and gas exploration and development, including the drilling of wells and seismic activities in the Inuvialuit Settlement Region (National Energy Board 2002; [http://www.neb.gc.ca/index\\_e.htm](http://www.neb.gc.ca/index_e.htm)).

### **Territorial Governments**

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The territorial governments of NWT and Yukon have various responsibilities for the well-being of people and the management of resources on land and offshore. Several government departments within each territory have regulatory responsibilities or legislative and program mandates that apply to activities that presently or may potentially occur in offshore areas and on lands adjacent to the proposed



protected area, and would therefore have an interest in its establishment and management.

#### **NWT Territorial Government**

- The Government of the Northwest Territories (GNWT) recognizes that sustainable development of resources is essential to the long-term economic, cultural and social well being of northern residents. The Department of Resources, Wildlife and Economic Development (RWED) is mandated to promote economic self-sufficiency and growth through the sustainable development of natural resources and the creation of economic opportunities in the NWT, on behalf of the territorial government. Of the core RWED functions, those relating to environmental protection, minerals, oil and gas, parks and tourism, and wildlife management are the most relevant to the proposed MPA.
- *Environmental Protection* – Programs are aimed at protecting and enhancing the environmental quality in the north. Working closely with federal, Aboriginal and municipal agencies, the Environmental Protection Division works to control the discharge of contaminants and reduce their impacts on the natural environment. These impacts can transcend into marine environments through the transport of contaminants via rivers and streams.
- *Minerals, Oil and Gas* – This division develops and implements strategies to encourage and attract non-renewable resource development in the NWT, and advises on the geological potential, industrial activity and potential opportunities associated with mineral, oil and gas exploration on land and offshore.
- *Parks and Tourism* – The Parks and Tourism Division provides for the development, operation, and maintenance of public tourism facilities such as parks, visitor centres, interpretive displays, and promotional signs. It also has responsibility for licensing tourism

guides and outfitters, and providing information and advice to enhance tourism products in the NWT.

- *Wildlife Management* – The principal mandate of this division is to protect wildlife species through research, conservation programs, and partnerships with harvesters, stakeholders, residents and other governments. Some of their activities, such as research, occur within the Zone 1a areas. This division works closely with co-management boards and advisory bodies such as WMAC (NWT) (see Section 2.2.5).

#### **Government of Yukon**

Three Yukon government departments oversee land uses occurring in the Yukon North Slope and particularly in the areas south of the Shallow Bay Zone 1a area.

- *Environment* – The Yukon Department of Environment is responsible for managing and protecting Yukon's natural environment in a sustainable, comprehensive and integrated manner. Their programs and services include fish and wildlife management and conservation, territorial parks and protected areas, habitat and environmental protection, hunter and environmental education, the regulation of hunting, fishing, trapping, and the delivery of wildlife viewing programs.
- *Tourism* – In partnership with the private sector, interest groups, Aboriginal governments and other government departments, the Yukon Tourism Department aims to stimulate and sustain economic growth and employment opportunities by promoting development and growth of the tourism sector. Their responsibilities also include licensing and providing information to guides and outfitters.
- *Energy, Mines and Resources* – The department's responsibilities are to responsibly manage Yukon's natural resources and ensure sustainable resource and land use and to promote investment in the responsible

development of Yukon's natural resources. The department, on behalf of the Yukon government, is proceeding to enter into negotiations with the federal government that will lead to the development of a shared offshore oil and gas management regime. In the interim, while the shared offshore regime is being developed, the department, through its membership on an offshore committee, will review and make recommendations on all offshore oil and gas matters subject to federal ministerial decisions. On November 19, 1998 the Canada-Yukon Oil and Gas Accord Implementation Act (Bill C-8) was passed which transferred the management and administration of the Yukon's onshore oil and gas resources from the federal government to the Yukon government. The management and regulation of the development and conservation of oil and gas is now governed by this territorial legislation. The Yukon Oil and Gas Act was developed jointly with Yukon First Nations, pursuant to a January 1997 Memorandum of Agreement to develop a common regime. To allow Yukon to exercise its new responsibilities, new legislative powers will be included in the Yukon Act, namely in relation to oil and gas exploration, development, conservation, management, pipelines, funds, and export. New provisions will be added to the Yukon Act to allow the federal government to continue to exercise its other responsibilities and will allow the Governor in Council to take back the administration and control of oil and gas in any lands in the Yukon in order to settle Aboriginal land claims.

#### **Joint Management Committees**

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Under the IFA, a number of organizations were established to bring together Inuvialuit, federal and territorial interests as advisory bodies under a co-management regime.

#### **Fisheries Joint Management Committee**

See above

#### **Wildlife Management Advisory Councils (NWT and North Slope)**

WMAC (NWT) and WMAC (North Slope) were established by the IFA to advise appropriate ministers and Inuvialuit agencies on all matters of wildlife policy, and the management, regulation and administration of wildlife, habitat and harvesting in the ISR. These councils also advise on related issues of park planning and management or any measures required to protect habitat that is critical for wildlife or harvesting. In consultation with the Inuvialuit Game Council and RWED, the councils set quotas for Inuvialuit harvesting governed by preferential harvesting rights to Inuvialuit based on sustainable harvest levels and exclusive harvesting rights on Inuvialuit private lands. The councils provide advice to the Yukon Land Use Planning Commission, Environment Canada, the EISC and EIRB and other appropriate groups (WMAC (NWT) 2001, WMAC (North Slope) 2002; [www.wmacns.ca/wmac/](http://www.wmacns.ca/wmac/)).

#### **Environmental Impact Screening Committee and Environmental Impact Review Board**

Environmental assessment in the ISR is the mandate of the Environmental Impact Screening Committee (EISC) and the Environmental Impact Review Board (EIRB). The EISC has the legal obligation to screen all proposed onshore and offshore developments inside the ISR that may negatively impact the environment and/or Inuvialuit wildlife harvesting. This includes scientific research and camps and fuel caches requiring land use permits; commercial tourism proposals; granting of water rights in association with exploration or development activity; water withdrawals; industrial waste disposal; hydrocarbon, mineral and aggregate exploration and extraction; commercial harvesting of plant resources; commercial transportation developments (air, land, water); and scheduled

military activities (Environmental Impact Screening Committee 2002). Similar responsibility exists for developments occurring outside the ISR. The IFA mandates that "no licence or approval shall be issued that would have the effect of permitting any proposed development to proceed unless the provisions of [the Environmental Impact Screening and Review Process] have been complied with" [IFA Subsection 11(31)].

It is the basic premise of the EISC that all proposed developments for the ISR, both onshore and offshore, are likely to have some negative effect on the environment and so are potentially subject to screening. However, it follows that not all developments are likely to have a significant negative impact. If the development is deemed to have the potential for a significant negative environmental impact then the EISC can refer it to the EIRB or an equivalent government body for further review. The EIRB project review is carried out in public such that anyone with an interest in the project may make a presentation to the review panel. The EIRB determines if a development should proceed and under what conditions. Mitigative and remedial measures can be suggested along with an estimate of the potential liability based on a worst case scenario. Regulators, developers and operators are compelled by the Settlement Act and the IFA to comply with provisions of the EISC and, if necessary, the EIRB processes prior to commencement of any onshore or offshore development (Environmental Impact Screening Committee 2002). Allowable developments within a MPA would still be subject to the IFA screening and review process.

### **Inuvialuit Organizations**

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The IFA created two parallel series of structures, one related to renewable resource management, the other related to revenue-generating subsidiary corporations and businesses. The former includes the six Hunters

and Trappers Committees (HTCs) that make up the IGC. The latter includes the six Community Corporations that make up the Inuvialuit Regional Corporation (IRC).

### **Inuvialuit Game Council**

The IGC is mandated under the IFA to represent the collective Inuvialuit interest in wildlife and environmental matters, and in all matters related to renewable resource management in the ISR. It is one of the major Inuvialuit organizations established to implement the IFA, and works in parallel with the IRC. The IGC appoints Inuvialuit representatives and provides advice to all wildlife and environmental co-management committees established under the IFA and to any other Canadian bodies affecting renewable resources within the ISR. It is responsible to uphold and administer Inuvialuit harvesting rights acquired under the IFA, including those relating to marine mammals. The IGC represents Inuvialuit interests on issues concerning the Inuvialuit at community, territorial, national and international levels, and provides ongoing input into various territorial and national acts and regulations, including proposed MPAs in the ISR. In addition to its responsibilities under the IFA, the IGC acts as the regional representative of Inuvialuit hunters, trappers and fishermen (Inuvialuit Game Council 2002).

### **Hunters and Trappers Committees**

Each of the ISR communities (Aklavik, Inuvik, Tuktoyaktuk, Paulatuk, Holman, Sachs Harbour) has an HTC. HTC membership is drawn from Inuvialuit community residents. The HTCs advise the IGC on local renewable resource interests, allocate local harvest quotas, write bylaws concerning Inuvialuit rights to harvest, appoint members to the IGC, and provide harvest information and other assistance to the co-management bodies. The

HTCs also encourage and promote Inuvialuit involvement in conservation, research and

management of wildlife resources in the ISR. The HTC's are also responsible for the sub-allocation of community shares of subsistence and other quotas among individuals, particularly elders, in the ISR communities and participate in the regulation of the subsistence harvest and the collection of harvest information (Inuvialuit Game Council 2002).

#### **Inuvialuit Regional Corporation and Community Corporations**

The IRC was established to receive the lands and financial compensation under the IFA and is directly controlled by the Inuvialuit population. Its mandate is to continually improve the economic, social and cultural well-being of the Inuvialuit through implementation of the IFA and by all other available means. IRC subsidiaries include the Inuvialuit Development Corporation, Inuvialuit Investment Corporation, Inuvialuit Land Corporation and Inuvialuit Petroleum Corporation. Each Inuvialuit community has a community corporation, which controls the abovementioned corporations in protecting the financial compensation for the benefit of future Inuvialuit (Inuvialuit Regional Corporation, 2002; <http://www.irc.inuvialuit.com>).

The Inuvialuit Community Economic Development Organization (CEDO)(see-doe) is based in Inuvik at the Inuvialuit Corporate Centre. Its role is four fold. CEDO provides advisory management to Inuvialuit community owned ventures. On selected opportunities, CEDO is a potential equity partner for Inuvialuit community based joint ventures. CEDO facilitates study into the feasibility and viability of large-scale projects for Inuvialuit. CEDO provides advisory, administrative and advocacy assistance to Inuvialuit businesses, organizations and individuals in their endeavours, including but not limited to management advice and assistance, identifying funding sources and regulatory compliance.

#### **Inuvialuit Land Administration**

Inuvialuit Land Administration, a division of IRC, is responsible for administering and managing access to the lands received under the IFA. They review and approve applications to access and use Inuvialuit private lands; monitor land use operations to ensure protection of the land and environment; and ensure Inuvialuit receive business, employment and training benefits in the context of development projects. Under the IFA, the Inuvialuit were granted surface and sub-surface title to 13,000 square kilometres of land, including 1,800 square kilometres around each of the communities of Aklavik, Inuvik and Tuktoyaktuk (Figure 3). These are described as Inuvialuit 7(1)(a) lands. In addition, the Inuvialuit were granted surface title to 77,700 square kilometres of land selected throughout the ISR. These are described as 7(1)(b) lands. Any land use activity on Inuvialuit land requires an application to the Inuvialuit Land Administration (Inuvialuit Land Administration; <http://www.irc.inuvialuit.com/corporate.ila.description.asp>).

#### **Elders and Youth Committees**

Elders and youth committees are established under the community corporations to provide the elders and youth with a forum to provide input.

#### **Community Economic Development Organization**

The Community Economic Development Organization promotes and provides a broad range of support service to enhance Inuvialuit economic development and assist communities in the development of a stable economic base. It assists Inuvialuit community businesses, organizations and individuals in their endeavours by providing business development, human resource and financial services, as well as advisory, administrative and advocacy assistance in such matters as management, identifying funding sources and regulatory



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compliance (Inuvialuit Community Economic  
Development Organization;

[http://www.irc.inuvialuit.com/beneficiaries.ced  
o.asp](http://www.irc.inuvialuit.com/beneficiaries.ced<br/>o.asp)).