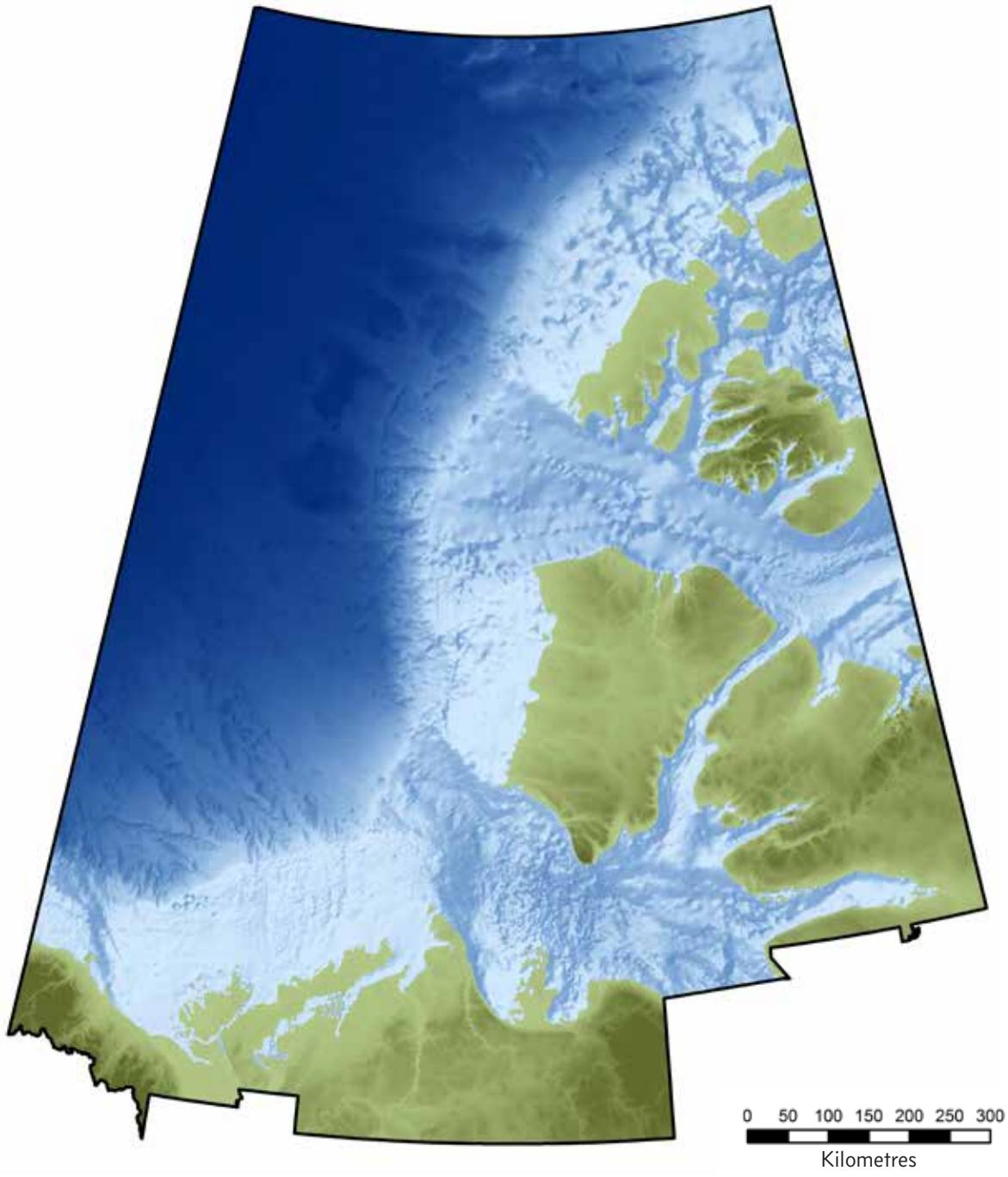
BEAUFORT SEA BELUGA MANAGEMENT PLAN

Amended Fourth Printing 2013



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LETTER FROM THE CHAIR

It gives me great pleasure to present this fourth amended version of the Beaufort Sea Beluga Management Plan.

With roots which among the Inuvialuit date back generations, all modern versions of the Plan have incorporated new information as it came onto the table, including harvest information from beluga monitoring programs, new scientific data gleaned from projects initiated through the co-management process, and knowledge gained through the Inuvialuit-Inupiat Beluga Whale Commission pertaining to the eastern Beaufort Sea stock on its wintering grounds. Looking back, I think it's fair to say that together whale hunters and scientists have completely revised the book on the eastern Beaufort Sea beluga stock.

This current version of the Plan contains some important changes from the previous one. The most comprehensive change is the incorporating of the Tarium Niryutait Marine Protected Areas and associated regulations. The TNMPAs are a significant milestone because it affords legislative protection to the original hunter-identified 1A Zones of the initial plan. We have also included an updated science section, modernized maps of the Canadian Beaufort Sea describing Zones 2 and 3, summaries of traditional harvest data for the past decade, and graphics that are representative of the hunt and its history.

On behalf of the Fisheries Joint Management Committee (FJMC), I would like to thank Bob Bell and Hank Rogers for all of their hard work updating the Beaufort Sea Beluga Management Plan. Bob and Hank met with community members and Hunters and Trappers Committies (HTCs) in Inuvik, Tuktoyaktuk and Aklavik and have done their best to ensure this document accurately represents the interests of Inuvialuit beluga whale harvesters.

As chair of the FJMC, I am proud to say that this document is firmly based on the foundation of traditional knowledge. The Plan has been a remarkable success and credit should go equally to the HTCs, whale hunters, and to the members of the scientific community.

Sincerely,

D.V. Gillman,
FJMC Chair, 2009 – Present

DEDICATION (written by Robert Bell)

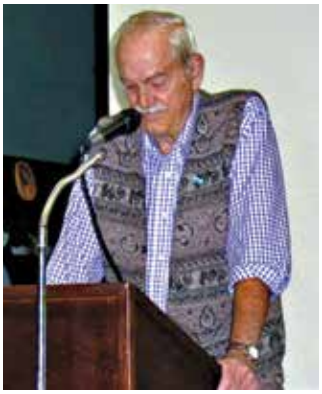
This fourth printing of the Beaufort Sea Beluga Management Plan is dedicated to four of its strongest advocates who guided its development from a home-grown approach to manage their interactions with beluga into a sophisticated wildlife management document. Perhaps their greatest achievement was to use their collective powers of logic and persuasion to convince others, both inside the Inuvialuit Settlement Region (ISR) and elsewhere to join in the experiment, to see what could be achieved.

Nelson Green (1948 – 1999)

Nelson was one of the chief negotiators of the Inuvialuit Final Agreement (IFA) and signed the document on behalf of his home community of Paulatuk. As an original member of the FJMC, as well as several other IFA-based organizations, Nelson was instrumental in setting the early direction for the implementation of the agreement. Nelson froze to death on the land following a cabin fire that burned all his winter gear and left him exposed to the elements as he snowmobiled back to Paulatuk on January 10, 1999.

Alex Charles Aviugana (1945 – 1994)

Alex was a founding member of the FJMC. While he held many positions with Inuvialuit organizations (including directorships with the Inuvialuit Regional Corporation, the Inuvialuit Game Council, the Inuvialuit Development Corporation, the Inuvialuit Land Administration, the Inuvik Community Corporation and the Inuvik Hunters and Trappers Committee), Alex always found time for the business of the FJMC. His life experience as a fisherman and a hunter of beluga whales enabled him to bring to our meeting table an understanding of the resource that few could match. Aside from being a mentor and a good friend to me, he also made the best pickled muktuk I have ever tasted.



Don Dowler (1926 – 2005)

Another founding member of the FJMC, Don was a fishery officer's fishery officer. He travelled the land, knew the regulations inside out, was a stern enforcer, but had a wonderful sense of knowing when the law was stupid. His ongoing battle with Nelson Green of Paulatuk to get a fishing licence, an argument that he lost to the hilarity of all (including himself) endeared him to all of us. The fact that a lake in the Paulatuk area has been named in his honour is evidence of that fact.

Billy Day (1930 – 2008)

In many ways Billy is the true father of this plan and its predecessors. In the face of a major drive towards imposed harvest quotas, he persuaded us all to take a step back, to look at traditional knowledge and science and use those twin gifts to chart a course for a plan that could be developed in the ISR for the ISR.

PREFACE

When I first became involved with harvesting of Beluga whales I was very young. There was an old man that owned a schooner called the Okeevik and he seen me standing on the beach at Kendall Island and asked me if I wanted to go hunting. I told him okay.

This is what he told me. "If your Elders saying ALL ABOARD, grab your belonging and run to the pump and start pumping you will always go hunting if you are the first on to the pump."

Then years went by and our family always made our way to the whaling camp. But then we started having better boats and motors, and the need for more whales was less because we then did not have the dog teams to have to hunt more whales. A big part of dog team diet was blubber, and whale meat, with fish.

And today's way of hunting whales has changed. Now a'days families come down for 2 weeks to 1 month, not like a long time ago, 3 months or more.

Hank Rogers, Inuvik

Inukutuluk and Minnie, grandparents of Annie C. Gordon of Aklavik, probably taken on the deck of the Okeevik.

FOREWORD

This plan, like its predecessors, the successive versions of the Beaufort Sea Beluga Management Plan, has been created by a partnership that has lasted, with ups and downs, for nearly 40 years.

One partner has been comprised of all of the Inuvialuit whale hunters, especially those living in the camps of the Mackenzie River Delta and the nearshore Beaufort Sea communities of Aklavik, Inuvik and Tuktoyaktuk. The other partner consisted of a group of biologists, fisheries officers and managers of the Department of Fisheries and Oceans who worked out of their offices in Inuvik, Yellowknife and at the Freshwater Institute in Winnipeg.

The Inuvialuit Final Agreement, signed in 1984, sets out the terms of a settlement between the Committee for Original People's Entitlement representing the Inuvialuit, and the Government of Canada, representing all citizens of Canada, amongst them the Inuvialuit.

As prescribed by Section 14 (61) of the Inuvialuit Final Agreement, the Minister of Fisheries and Oceans established the Fisheries Joint Management Committee in 1986. The Committee was established to assist Canada and the Inuvialuit in administering the rights and obligations relating to fisheries within the Inuvialuit Settlement Region as described in the Final Agreement, to assist the Minister of Fisheries and Oceans in carrying out his responsibilities for the management of fisheries, and to advise the Minister on all matters relating to fisheries affecting the Inuvialuit and the Inuvialuit Settlement Region.

To this end the FJMC, in cooperation with the Hunters and Trappers Committees of Aklavik, Ulukhaktok, Inuvik, Paulatuk, Sachs Harbour and Tuktoyaktuk, and the Department of Fisheries and Oceans, undertook the development of a management plan for Beaufort Sea beluga. This document represents the most recent version of that effort.

The first Beluga Management Plan was completed in 1991. Obviously, there have been many changes since that time. They include a second wave of hydrocarbon-related activities, the generation of paradigm-shifting scientific information on the stock, the enactment of the *Oceans Act* in 1997 (with its possibilities of Marine Protected Areas), the alarming signals of a changing climate including reduced ice cover, more severe storms, increased shore erosion, and potentially new predator-prey relationships.

While that litany of concerns cannot all be dealt with in a management plan, they can be highlighted for all those concerned with the long-term welfare of the belugas of the eastern Beaufort Sea.

CONTENT

LIST OF TABLES, MAPS, AND IMAGES

ACRONYMS

BSBMP	Beaufort Sea Beluga Management Plan
DFO	Department of Fisheries and Oceans
FJMC	Fisheries Joint Management Committee
HTC	Hunters and Trappers Committee
IFA	Inuvialuit Final Agreement
IGC	Inuvialuit Game Council
IRC	Inuvialuit Regional Corporation
ISR	Inuvialuit Settlement Region
TNMPA	Tarium Niryutait Marine Protected Area

I. INTRODUCTION

Over the past two decades, the Beaufort Sea Beluga Management Plan (BSBMP) has been a symbol of the power and success of the cooperative wildlife management regime established by the Inuvialuit Final Agreement (IFA) in 1984. The BSBMP embodies the collective conscious of the Inuvialuit; it forges conservation and management requirements that guarantee Inuvialuit will hunt beluga in perpetuity.

Government and industry have supported the implementation of the BSBMP by working with the Inuvialuit to create beluga management zones, the Tarium Niryutait Marine Protected Areas (TNMPA), voluntarily excluding important beluga habitat from oil and gas rights issuance, and working with beluga hunters and co-management bodies to better understand the eastern Beaufort beluga stock. This fourth amended edition looks to the future and positions the Inuvialuit to confront a new wave of challenges critical to the enduring health of Canadian Beaufort Sea beluga.

Historically, a key driver for considering beluga management in an environment of industrial development was a reaction to the regional oil and gas activities of the 1970s and early 1980s. Justice Thomas Burger iterated this public sentiment in his 1977 report on the Mackenzie Valley Pipeline Inquiry. He wrote, "I recommend that a whale sanctuary be established in west Mackenzie Bay covering the principal calving areas…the whale sanctuary will be an area in which oil and gas exploration will be forbidden at any time of year."[1] At its core, the BSBMP continues to ensure hydrocarbon exploration and development is in step with community views on sustainable beluga management.

The beluga whales that comprise the eastern Beaufort Sea stock over-winter in the Bering Sea. Although the exact population is unknown, the eastern Beaufort Sea stock is believed to be one of the largest in the world (a detailed discussion on stock status is provided in section IV). Each spring beluga migrate along the Alaskan North Slope through lead networks in the Chukchi and Beaufort Seas.[2] They reach the Canadian Beaufort Sea by late May or early June and wait for the landfast ice to break up for the season. During the summer (mid-June until mid-August) a large portion of the eastern Beaufort Sea stock aggregates in the estuaries of the Mackenzie River: Shallow Bay, east and west Mackenzie Bay, and Kugmallit Bay.[3] Simultaneously, discrete age and sex cohorts are present throughout the Canadian Beaufort Sea.[4]

While belugas are concentrated in the Mackenzie River estuaries the Inuvialuit communities of Aklavik, Inuvik, and Tuktoyaktuk travel to traditional coastal hunting camps and harvest them sustainably. Residents of Paulatuk primarily hunt beluga along the Cape Perry Peninsula and Brown's Harbour. Opportunistic subsistence harvests also occur in the vicinity of Ulukhaktok and on rare occasion in Sachs Harbour. Beluga

harvests in the outer communities largely depend on favourable ice conditions and seasonal variations in beluga habitat use.

Generations of Inuvialuit and their ancestors have traditionally managed and sustainably utilized beluga whales that summer in the Canadian Beaufort Sea. Beluga whales have been, and remain, the most revered socio-cultural species to the Inuvialuit and constitute a cornerstone of the Inuvialuit subsistence diet.

Beluga management in the Canadian Beaufort Sea has been delivered through a variety of mechanisms. A series of federal acts and regulations are present within Canada's legal and legislative system, which taken together, form a comprehensive framework for ensuring the long-term health of the eastern Beaufort Sea beluga population.

Table 1: Relevant Legislation and Regulations for Canadian Beaufort Sea Beluga Management

Inuvialuit Final Agreement	Provides the Inuvialuit with certain wildlife harvesting and management rights.
Fisheries Act	Provides for the management and protection of Canada's fisheries resources.
Oceans Act	Provides for integrated oceans management, the creation of large oceans management areas, and the establishment of marine protected areas.
Environmental Protection Act	Provides for pollution prevention, the protection of the environment and human health in order to contribute to sustainable development.
Arctic Waters Pollution Prevention Act	Provides for the prevention of pollution in Canadian Arctic waters.
Canadian Oil and Gas Operations Act	Provides for governance of exploration, production, processing and transportation of oil and gas in marine areas controlled by the federal government.
Species At Risk Act	Provides for the prevention of wildlife species in Canada from disappearing and for the recovery of wildlife species that are threatened by human activity.
Marine Mammal Regulations	Provides for the prohibition of disturbance of marine mammals and recognizes Inuvialuit rights pursuant to the Inuvialuit Final Agreement. Regulations are enabled through the *Fisheries Act*.
Tarium Niryutait Marine Protected Areas Regulations	Provides for the protection of one of the world's largest seasonal populations of beluga whales. Regulations are enabled through the *Oceans Act*.

The signing of the IFA founded new co-management boards responsible for the management of the natural resources within the Inuvialuit Settlement Region (ISR). The Fisheries Joint Management Committee (FJMC) was established in 1986 to advise the Minister of Fisheries and Oceans on decision making and management of fish and marine mammals, their habitats, and usages within the ISR. The advent of the IFA and FJMC set the stage for a new era of beluga management. Existing and future legislation, regulation, policy, and management direction needed to reflect the provisions of the IFA and to account for the co-management responsibilities of the Inuvialuit.

Resource users and managers realized that new management programs and approaches were required to operationalize this novel co-management decision-making process. At the time, all parties shared two general goals pertaining to beluga in the ISR: (1) to maintain a thriving population of beluga whales in the Canadian Beaufort Sea, and (2) to provide for optimum sustainable harvest of beluga by Inuvialuit.

To help meet these shared goals the first iteration of the Beaufort Sea Beluga Management Plan (BSBMP) was published by the FJMC in 1991. The creation and implementation of the BSBMP required cooperation and participation from the ISR Hunters and Trappers Committees (HTCs), Inuvialuit beluga hunters, the Inuvialuit Game Council (IGC), and the Department of Fisheries and Oceans (DFO). The BSBMP was amended in 1993, 2001 and again in 2013.

The rationale for this series of amendments to the BSBMP reflects the reciprocity between the plan's overall zonal beluga management system and three distinct categories of drivers pertinent to regional beluga management and health. The first was the growing recognition that a suite of marine stressors (such as oil and gas) were emerging over time that could have implications for the condition of the Canadian Beaufort Sea ecosystem and its beluga stock. The second began in 1997 with the passage of Canada's *Oceans Act*, which enabled the establishment of the Beaufort Sea Large Ocean Management Area (LOMA) and began a discussion around integrated oceans management and marine protected area designation. In August 2010, the TNMPA was officially established in the Mackenzie Delta and became Canada's first Arctic marine protected area.

Finally, the BSBMP needed to transparently articulate the status of the eastern Beaufort Sea stock and existing co-management regimes to Canada's growing list of international obligations, international management bodies, and outside political organizations. It is critical to recognize that any one of these drivers support specific aspects of the BSBMP, but none share the overall goals, scope, or sphere of influence of this plan.

The BSBMP constitutes an umbrella management framework that was designed for the entire Canadian Beaufort Sea and its beluga stock. This management framework divides the Canadian Beaufort Sea into five management zones. Explicit guidelines were crafted for each of the five management zones. They assist regulators, managers, and decision

makers in their consideration of legislation, regulation, policy or management initiatives, international agreements, environmental assessments, and industrial uses that are compatible with the goals of the BSBMP.

The FJMC has understood from the outset that for the BSBMP to meet its original goals, accomplish its long-term objectives, and remain useful to the people of the ISR, the plan would need to evolve in step with the real-world circumstances facing the successful management of belugas in the Canadian Beaufort Sea. Consequently, the FJMC made a promise to the key stakeholders to regularly review and update the BSBMP. This fourth amended addition of the BSBMP reflects the FJMC's continued commitment to honouring its original promise to the Inuvialuit beluga hunters, HTCs, IGC, DFO and communities of the ISR.

II. GOALS AND DESIRED OUTCOMES

A central theme of the IFA is its emphasis on the protection and preservation of Arctic wildlife, the environment, and its biological productivity. Equally important is the idea that sustainable wildlife management should facilitate optimal subsistence harvests for present and future generations of Inuvialuit. To date, the BSBMP has achieved both through the principles of conservation and co-management.

Shortly after the signing of the IFA, the Inuvialuit Renewable Resource Conservation and Management Plan was developed by the Wildlife Management Advisory Committee (NWT) and the FJMC in 1988. The Plan outlined the long-term strategy for the conservation and management of fish and wildlife within the ISR. The aim of the document was to imbue considerations paramount to successful community subsistence activities into a broader resource management context. Ultimately, the Inuvialuit Renewable Resource Conservation and Management Plan led to the advent of Community Conservation Plans for each of the six ISR communities. The Community Conservation Plans, first drafted in 1993, presented each community's vision for conservation and sustainable resource management.

The 2013 amended edition of the BSBMP is consistent with the themes, goals, and intent of both the Inuvialuit Renewable Resource Conservation and Management Plan and the Community Conservation Plans.

The BSBMP's purpose is to ensure responsible and effective, long-term management of the beluga resource by the FJMC, Inuvialuit, and DFO. The original goals of the BSBMP were: (1) to maintain a thriving population of beluga in the Beaufort Sea; and (2) to provide for optimum sustainable harvest of beluga by the Inuvialuit.

Each of these goals corresponds to principles of the IFA. A contemporary assessment of Inuvialuit, governmental, and industrial priorities coupled with a changing climate created the need to add a third goal: (3) to create economic opportunities for the Inuvialuit through non-disruptive activities. Each goal is expanded upon below.

The Specific Goals of this Plan are:

1. To maintain a thriving population of beluga in the Beaufort Sea.

In a present day context, ensuring a healthy and abundant population of beluga whales in the Beaufort Sea wants continued effort in the following areas: (1) empowering the Inuvialuit to co-manage and monitor the eastern Beaufort Sea beluga stock; (2) maintaining and strengthening linkages between implementation of the BSBMP and the management and monitoring of the Tarium Niryutait Marine Protected Areas; and (3) feeding community-based beluga management requirements and recommendations into the Inuvialuit environmental impact screening and review processes as well as any applicable federal assessments.

2. To provide for optimum sustainable harvest of beluga by the Inuvialuit.

In a present day context, guaranteeing an optimal sustainable harvest of beluga by the Inuvialuit requires: (1) collection of harvest data by Inuvialuit; (2) opportunities for scientific analysis and assessment of the overall health of the eastern Beaufort Sea beluga stock; (3) support for on the land programs that teach Inuvialuit youth traditional harvest practices; and (4) communicating the sustainability of the subsistence hunt to the broader public when and where appropriate.

3. To create economic opportunities for the Inuvialuit through non-disruptive activities.

In a present day context, generating economic opportunities for the Inuvialuit through non-disruptive activities involves consideration of: (1) non-disruptive tourism within the Tarium Niryutait Marine Protected Areas, (2) working with the scientific community, (3) opportunities related to traditional film or art, and (4) sustainable development.

Desired Outcomes

Previous iterations of the BSBMP provided objective statements within each section of the plan. These objective statements have been recast as desired outcomes of the BSBMP. They are grouped according to theme in the following.

1. Sustainable Harvest

- To provide for a level of harvest that generates the greatest net benefit to the Inuvialuit while ensuring the long-term sustainability of beluga in the Canadian Beaufort Sea.
- To ensure an efficient harvest and low loss rates.

2. Conservation and protection

- To protect beluga, beluga habitat and beluga harvesting.
- To provide guidelines and information to assist government, the Environment Impact Screening and Review Process and the Inuvialuit Lands Administration in the evaluation of development proposals which may affect beluga, beluga habitat or beluga harvesting.
- To provide guidelines to assist industry in preparing development proposals.

3. Tourism and Beluga Hunting Objectives

- To facilitate opportunities associated with belugas while minimizing the impacts of such activities on beluga populations and beluga harvesting.

4. By-laws and Regulations

- To protect the Beaufort Sea beluga resource and the harvest of that resource.
- To formulate, amend and implement guidelines, bylaws and regulations necessary to protect the beluga, beluga habitat and beluga harvesting.

5. Management and Monitoring

- To provide the necessary biological information for the conservation, management protection and optimal utilization of Beaufort Sea beluga.
- To provide new biological information about the Beaufort Sea beluga required for the implementation of this management plan.

6. Education and Public Awareness

- To initiate school and hunter education.

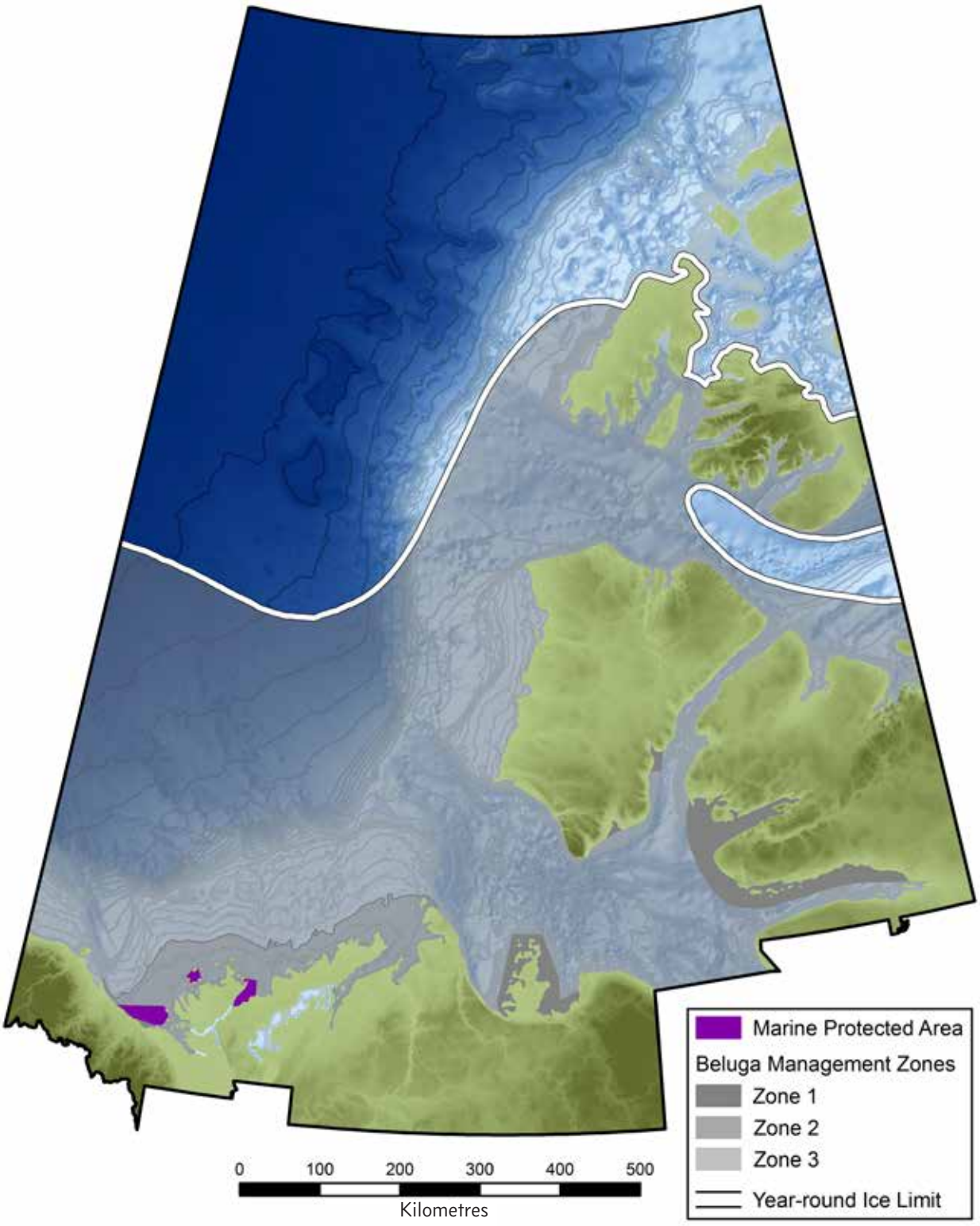
III. GEOGRAPHIC SCOPE

A series of five maps were created for this fourth amended printing. This series depicts the ISR and all existing beluga management zones, including the recently designated Tarium Niryutait Marine Protected Areas. These maps are intended to serve as a reference for beluga hunters, co-management boards, environmental assessment processes and industry. Each map illustrates the Canadian Beaufort Sea with a different projection and scope.

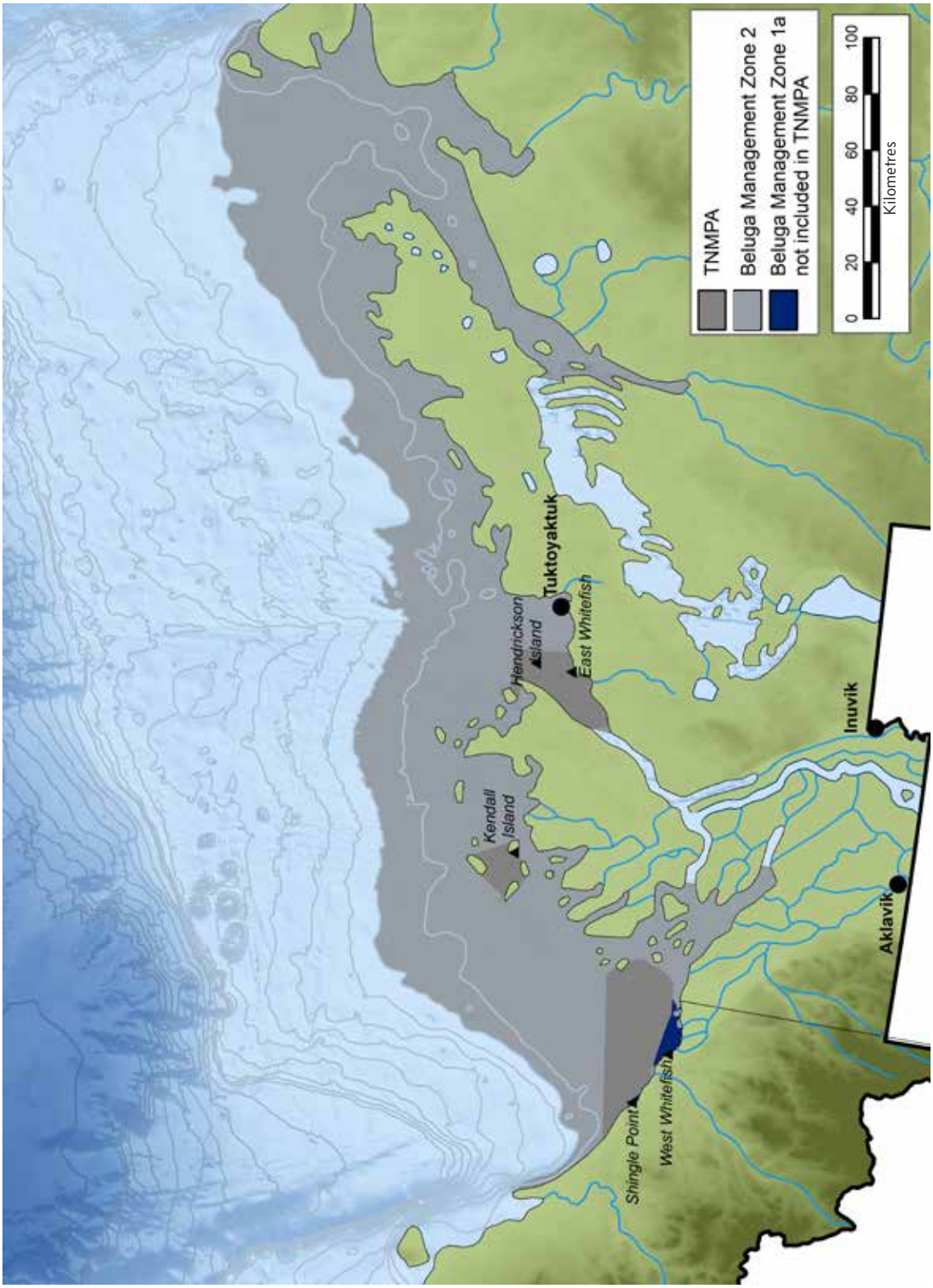
The map series is comprised of the following representations:

1. The Beluga Management Zones of the Inuvialuit Settlement Region
2. The Delta Beluga Management Zones and Tarium Niryutait Marine Protected Area
3. The Delta Beluga Management Zones and Remaining Zone 1A
4. The Eastern Beaufort Sea Beluga Management Zones
5. The Inuvialuit Settlement Region

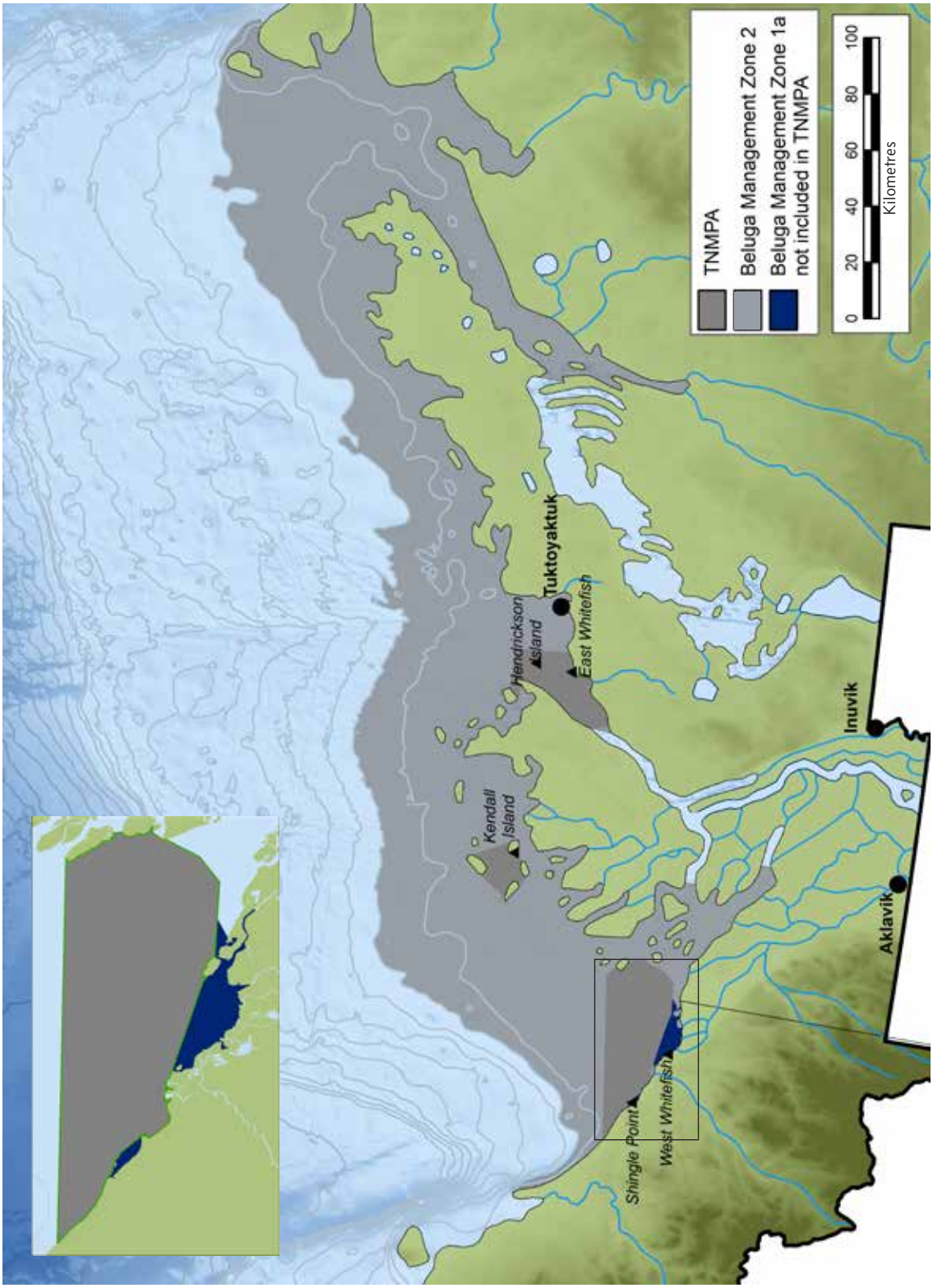
Map 1: The Beluga Management Zones of the Inuvialuit Settlement Region



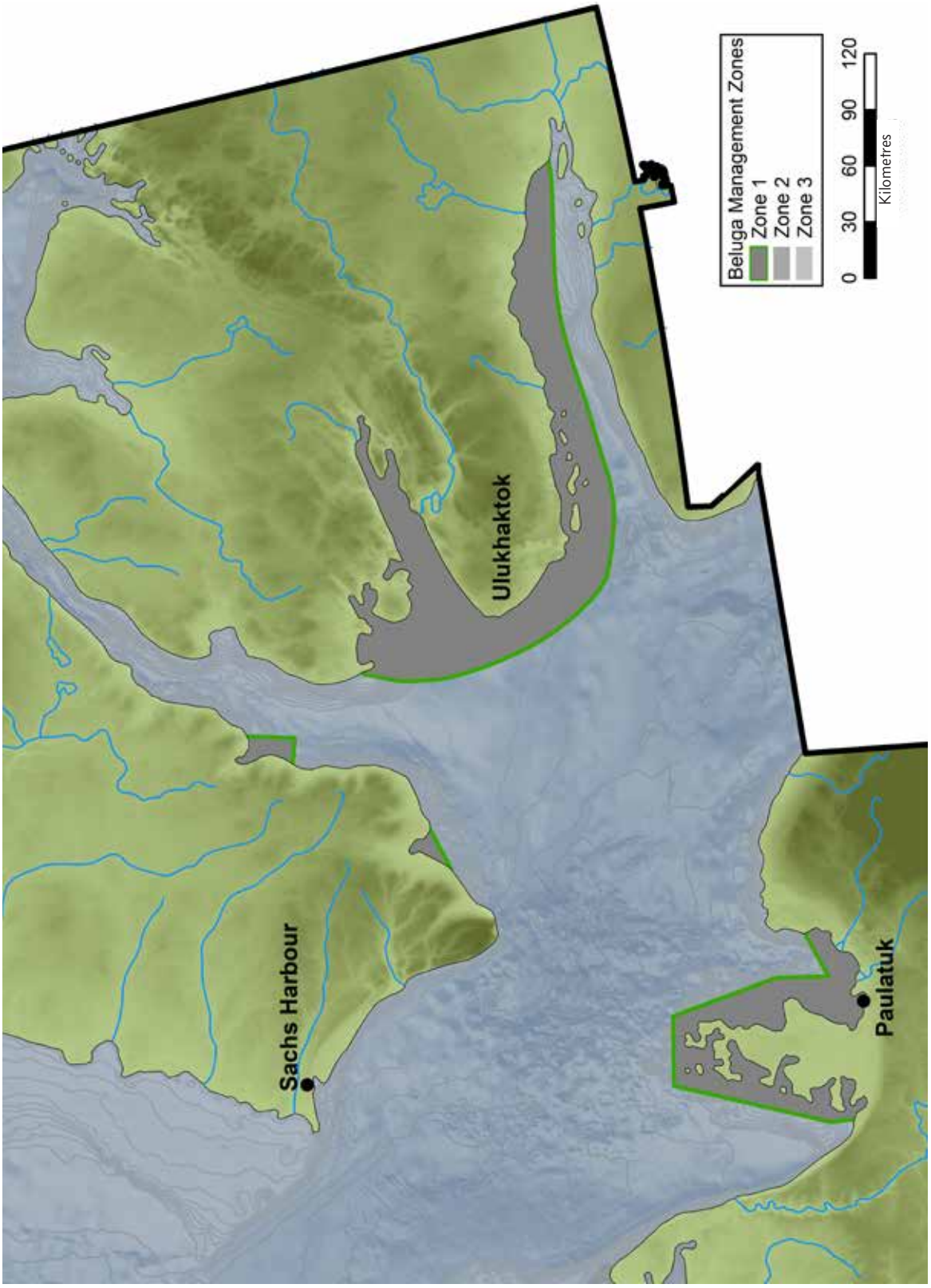
Map 2: The Delta Beluga Management Zones and Tarium Niryutait Marine Protected Area



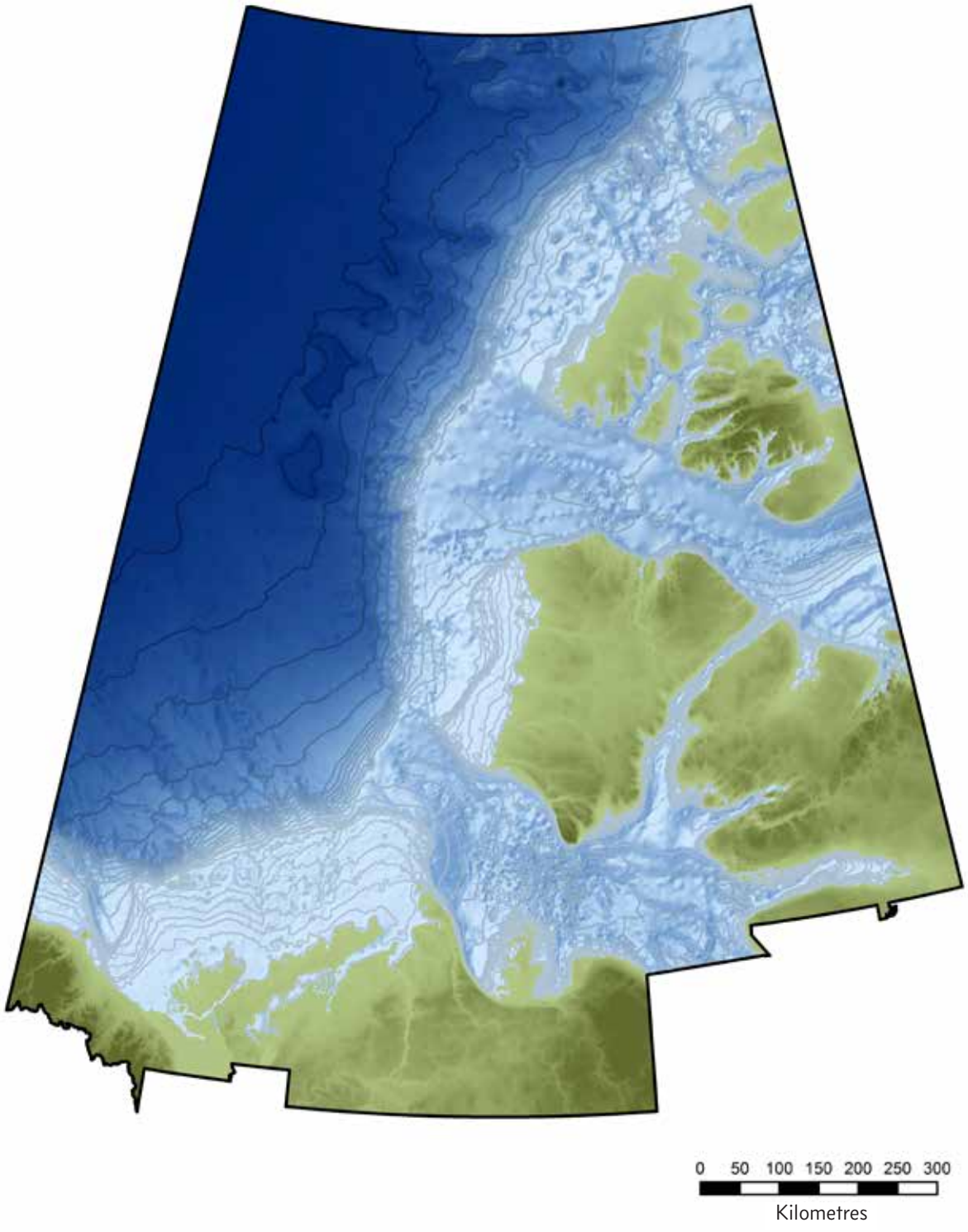
Map 3: The Delta Beluga Management Zones and Remaining Zone 1A



Map 4: The Eastern Beaufort Sea Beluga Management Zones



Map 5: The Inuvialuit Settlement Region



IV. SCIENTIFIC STATUS

Beluga whales (*Delphinapterus leucas*) of the Beaufort Sea stock arrive in the southeast Beaufort Sea in late May and June.[5] During July, the belugas mainly aggregate in the warm, shallow waters of the Mackenzie River estuary, although 1993–1997 satellite tracking of beluga revealed that the beluga also move regularly between the estuary and offshore during the month of July.[6]

The size of the Beaufort Sea stock belugas has been approximated at 39,258;[7] although, the actual stock size is likely much larger. This estimate was derived by applying a correction from an aerial survey conducted in late July 1992,[8] which could not account for beluga presence and abundance in distant areas of the offshore Beaufort and beyond that we now know are frequented regularly by beluga. This stock of belugas is the second largest in Canada, and was last assessed as stable or increasing.[9]

From late July through August, the beluga's distribution shifts mostly offshore, but the extent of their range beyond the estuary is only now becoming understood.[10] Beaufort belugas use the offshore Beaufort Sea extensively during August and early September, and also travel to even more distant summer range including Amundsen Gulf and Viscount Melville Sound.[11] Their return fall migration to Bering Sea wintering areas begins in August and continues into September, and occurs far offshore, seaward of the continental shelf.[12]

The distribution and relative abundance of surfaced belugas in the offshore Beaufort Sea was examined in late August in 1982, 1984–1985 and in 2007–2009. Belugas were seen throughout the offshore area in both survey series, particularly numerous in the continental shelf offshore of the Tuktoyaktuk Peninsula, and within 30 km seaward of the Mackenzie River estuary. They were also present in most other offshore habitats that could be surveyed. The number of surfaced belugas counted was about four times lower in the 1980s compared with the 2000s.[13]

Population growth alone is not sufficient to explain the increase in relative abundance between decades given what is known about beluga reproductive rates.[14] The most plausible explanation for the apparent increase in the number of belugas in the offshore in August is that the offshore habitats became more attractive to belugas in the 2000s, compared with the 1980s. This might be because of a reduction in the intensity or extent of industrial activity in the 2000s, or because of changes to the marine ecosystem that enhanced prey in the 2000s, or both.

Mackenzie Delta and Paulatuk hunters select males and older animals,[15] a practice that has the benefit of conserving reproductive females. The majority of whales (>99%) taken in the harvest are mature (99% >10 growth layer group), and male (2.8:1).[16] There have been no significant or sustained trends toward a change in the timing of the mainly July harvest since 1980, except for Kugmallit Bay where the last whale to be landed has been taken later and later in the season in recent years. The most plausible explanation for the hunting season lasting longer and longer into August, is that winds are increasing in intensity and frequency as the climate is changing, making the requisite calm hunting days fewer and farther between.[17]

V. SUSTAINABLE HARVESTS

Inuvialuit from Aklavik, Inuvik, and Tuktoyaktuk harvest beluga whales from the Mackenzie River estuaries each summer. The sustainable harvest comes largely from whale concentrations areas in Kugmallit Bay, near Kendal Island, Shallow Bay, and along the Yukon coast between Tent Island and King Point. Traditionally whale hunting does not occur offshore. The deeper water makes it easy for beluga to escape by diving and more difficult for hunters to recover struck whales.

Hunters make every effort to reduce incidents of struck and lost whales. This precaution is another factor in avoiding hunting in deep water. Residents of Paulatuk are now conducting a successful annual hunt. Harvest rates vary considerably depending on weather conditions and yearly ice dynamics. However, in some years Paulatuk has extremely successful hunts. For example, in 2005, 30 whales were landed. Residents of Ulukhaktok and Sachs Harbour opportunistically harvest beluga. Table 2 presents total struck, lost, and landed beluga data from 2000–2012.

Table 2: Total Beluga Harvest Data from 2000 – 2012

YEAR	STRUCK	LOST	LANDED
2000	91	7	84
2001	96	1	95
2002	89	3	86
2003	125	10	115
2004	142	10	132
2005	108	2	106
2006	126	4	122
2007	85	2	83
2008	79	6	73
2009	102	6	96
2010	94	3	90
2011	72	2	70
2012	102	4	98
TOTAL	**1307**	**57**	**1250**

The harvest of beluga in the estuaries has always been self regulated and limited to the number required for subsistence purposes. In fact, poor hunting conditions can cause the total number of landed whales to fluctuate greatly. Table 2 underscores the level of unpredictability that weather conditions can have on the success of the hunt. Table 3 breaks down the harvest data from 2000–2012 by hunting location. Over the past decade the majority of whales were landed at Hendrickson Island, East White Fish, and Kendall Island. Of note is the waning number of whales taken at West White Fish and Shingle Point, while the numbers from Paulatuk have risen significantly.

Table 3: Total Beluga Harvest Data by Hunting Location from 2000 – 2012

Shingle Point	31
West White Fish	38
Kendall Island	279
East White Fish	196
Hendrickson Island	489
Tuktoyaktuk Harbour	30
Paulatuk	177
Ulukhaktok	5
Sachs Harbour	2
Other Reported Landings	3
TOTAL	**1250**

This phenomenon can likely be attributed three factors: (1) to the effects of a changing climate; (2) local knowledge has indicated that western hunting locations are experiencing an increase in weather events that make hunting more challenging; and (3) increasing fuel costs associated with travelling. Conversely, earlier ice break up in the east has created conditions that favour beluga hunting.

From 1984–1996 an average of 124 beluga were landed annually. At one time struck and lost rates were estimated at as high as 18%.[18] That figure dropped to 9.8% between 1992–1996. The adoption of conservation-minded community beluga hunting bylaws are credited in helping reduce struck and lost rates. Table 4 illustrates that between 2000–2012 the average number of beluga harvested has dropped to 100 whales per year. For the same time period, struck and lost rates have been further reduced to 5%. This is a very low rate and reflects diligence and commitment of the Inuvialuit to best hunting practices.

Table 4: Harvest Data 2000 – 2012

Average Yearly Struck	100
Average Yearly Lost	4
Average Yearly Landed	96
Range	72–142

Even though the harvest has increased over time in Paulatuk, overall, the trend points to declining total harvest numbers. There are three reasons for this: (1) generally, climate change has negatively impacted the beluga hunt – especially along the Yukon North Slope; (2) there has been a reduction in harvest effort; and (3) increased fuel costs can make travelling prohibitively expensive. Regardless, 100 beluga landed annually is well below the rate of population increase of 2–3.85%.[19]

International Cooperation

It was pretty obvious from the outset that whatever beluga harvest occurred in Canadian waters would have to be considered in conjunction with that which occurred off the Alaskan coast in American waters. The Inupiat communities along the Alaskan North Slope and the Bering Strait also harvest beluga from the eastern Beaufort Sea stock. Traditional hunts occur as the whales migrate to and from their overwintering range in the Bering Sea. The Inupiat do not harvest the same number of whales as the Inuvialuit. Between 1987–2006 approximately 41 beluga whales were harvested annually from the Eastern Beaufort stock.[20]

Inuvialuit were invited in the late 1980s to observe the meetings of the Alaska Beluga Whale Commission (ABWC) and to begin sharing information related to research and harvest statistics. However, it soon became obvious that ABWC was concerned with several stocks other than that whose summer range was the Eastern Beaufort Sea and that a more focused forum was required. Both parties, using the experience gained from the user-based Inuvialuit-Inupiat Polar Bear Commission, established a parallel Inuvialuit-Inupiat Beluga Whale Commission, again user-based, that brought together those who harvest the eastern Beaufort stock from both countries. The Commission's objectives are to share information on annual takes, to compare research results from both countries and to plan joint research projects.

VI. MANAGEMENT ZONES AND PRACTICES

The BSBMP divides the Beaufort Sea into five discrete management zones. Each zone links the significance of the habitat to beluga with the intensity of management measures required. Guidelines are crafted for each of the zones. They inform government, industry and environmental assessment processes that could directly or indirectly bear on the health of the western Arctic beluga stock.

The FJMC is mandated to advise the Minister of Fisheries and Oceans on all matters related to the management and harvest of marine resources inside the ISR. Yet, it has no formal ability to regulate the activities of industry and its subsequent environmental effects on marine resources generally, or beluga and beluga habitat specifically. The tools available to the FJMC are advisory in nature. The primary method relied upon by the FJMC is to provide clear, defensible advice to Inuvialuit environmental assessment regimes such as the Environmental Impact Screening Committee, the Environmental Impact Review Board, or federal processes established by the Canadian *Environmental Assessment Act*. The overarching rationale for establishing beluga management zones was to highlight spatially significant areas that require customized management and development approaches.

Since the publication of the third amended edition of the BSBMP the Tarium Niryutait Marine Protected Area (TNMPA) was designated on August 26, 2010. The advent of the TNMPA effectively created a fifth beluga management zone. The guidelines for each zone are intended to provide specific guidance to Inuvialuit cooperative management bodies and government agencies for their use in the evaluation of development proposals that may affect the well-being of the beluga resource, the harvesting of that resource, or beluga habitat.

Guidelines for Development Activities

Beluga summering in Canadian waters migrate through areas where oil and gas exploration activities have been underway for almost fifty years – including recent industry interest and activity in exploiting the shelf break and deeper waters of the United States Chuchki, Beaufort, and Canadian Beaufort seas. They are subject to additional disturbances resulting from upstream hydroelectric developments, mining (gravel removal), deepwater port development, increased destination shipping, and other linear development projects. Taken together, these actions could affect water regimes, water quality and food availability. Such activities could affect beluga either directly (e.g., underwater noise, oil spills) or indirectly (e.g., changes in salinity or integrity of ice, timing of break-up). However, the severity, likelihood and biological implications of these effects are, for the most part, unknown.

At this time, commercial fisheries do not exist in the Canadian Beaufort Sea. The FJMC, DFO, IGC and IRC are currently preparing an Integrated Fisheries Management Framework for the anadromous and marine fish stocks of the ISR. The initiative is a response to all six HTCs who expressed concern regarding the potential adverse effects of commercial fishing on subsistence whaling and harvesting. Development of any commercial fishery, either marine or estuarine, should take into account the food requirements of the beluga. It must be emphasized that the present base of scientific knowledge related to species interaction and beluga feeding ecology in the Beaufort Sea is not sufficient for proper assessment of the effects of medium or large-scale commercial fisheries.

There are several acts and regulations that apply to industrial activities in the Canadian Beaufort Sea. These are administered by various governmental agencies. In addition, the Environmental Screening and Review Process was established under the IFA to ensure that the interests of the Inuvialuit are considered in the review of development proposals for Crown Lands within the Inuvialuit Settlement Region. Similarly, the Inuvialuit Lands Administration reviews all proposals for development on Inuvialuit private (7(1)(a and b) lands.

Beluga Management Zones: The Tarium Niryutiat Marine Protected Area (formerly Zone 1As)

The TNMPA is Canada's first arctic marine protected area and consists of three individual areas called Niaqunnaq, Okeevik and Kittigaryuit. Prior to the designation of the TNMPA, these three areas were beluga management Zone 1As. They cover approximately 1,800 square kilometres of the Mackenzie River Delta and Estuary in the Beaufort Sea and encompass some of the only known summer concentration areas for the eastern Beaufort Sea beluga stock. These waters are characterized as shallow (less than 2 m in depth), warm, brackish and highly turbid. These areas comprise the focal point of the Inuvialuit traditional harvest from Inuvik, Tuktoyaktuk and Aklavik.

During the summer, portions of the eastern Beaufort Sea beluga stock concentrate in these areas. Science and traditional knowledge hypothesize that beluga move among and between these concentration areas – also using the offshore. It is not well understood why belugas use the estuaries in such vast numbers. Possible explanations include some combination of the following: calving, calf rearing, moulting and socializing.

The rationale for creating the TNMPA was two-fold. First, it was a response to renewed interest in offshore hydrocarbon exploration and development in the vicinity of critical beluga habitat. Second, there was concern that the potential risks and pressures associated with offshore hydrocarbon activities required an enforceable regulatory instrument. The BSBMP relies on voluntary compliance to management guidelines.

The process that culminated in the completion of the TNMPA was not simple or quick. After nearly ten years of consultations and planning, consensus was reached to put forward the three BSBMP Zone 1As as federal Marine Protected Areas under the *Oceans Act*. Designation of these three areas as federal MPAs provided the statutory means to ensure sustainable management of the beluga stocks and their habitat. It also provided a legislative framework to protect and preserve harvesting traditions central to Inuvialuit culture.

The TNMPA regulations can be reviewed and referenced in Appendix 1. The TNMPA management and monitoring plans can be accessed here.

Beluga Management Zones 1A and 1B

Zone 1A – Traditional Harvesting/Concentration Areas

Of the original Zone 1As, two small areas were not included in the TNMPA. These areas include the backwater of Shingle Point and Shoalwater Bay. These small areas fall within the jurisdiction of the Yukon territorial government. In the future it is conceivable that they could be added to the TNMPA. In the meantime, they remain beluga Zone 1As and will be managed accordingly.

Zone 1B – Occasional or Potential Harvesting Areas

This zone includes areas where beluga are harvested by residents of Paulatuk, occasionally by residents of Ulukhaktok (formerly Holman), and where residents of Sachs Harbour have shown interest in hunting beluga. At present there are no systematic data on beluga distribution or abundance in these locations.

Guidelines for Zones 1A and 1B

1. In the review of any development proposal, Zone 1 is to be considered a Protected Area according to the guidelines described in the Inuvialuit Renewable Resource Conservation and Management Plan. The oil and gas industry should not be permitted to explore for resources within or on the shores of any Zone 1 waters, nor produce hydrocarbons or construct/operate any type of facility.
2. No mining activities (e.g., gravel removal) should be permitted within or on the shores of any Zone 1A waters.
3. Development activities such as hydro-electric or mining projects, even if located outside of Zone 1, should be evaluated for their potential deleterious effects on water quality and quantity, or on the salinity and integrity of ice in Zone 1 waters.

4. 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's the shortest route, should be avoided from break-up to August 15th.

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

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

7. Recognizing the prohibitions identified above, it is recommended that parties proposing any development, government agencies evaluating such proposals, and other parties interested in development within or adjacent to Zone 1, seek the advice of the HTCs and FJMC. To ensure the protection of the beluga resource and harvest, HTCs and the FJMC should be consulted regarding any licences, permits or operating procedures approved for activities within or adjacent to Zone 1 waters.

Beluga Management Zones 2 and 3

Description of Zones 2 and 3

Zone 2 includes the Mackenzie shelf waters shallower than 20 metres that are not already included in Zone 1. It extends from Baillie Islands (Cape Bathurst) in the east to Kay Point on the Yukon coast to the west. This Zone encompasses a major travel corridor used by Beaufort beluga to move into, out of, and amongst the various bays of the Mackenzie Estuary.

Zone 3 includes the remaining geographic range of beluga in the Canadian Beaufort Sea and Amundsen Gulf (waters deeper than 20 metres). Beluga are known to occur as far seaward as the permanent pack ice (the northern boundary), and as far east as Victoria Island (the eastern boundary). The Alaska–Yukon border forms the western boundary of Zone 3.

Each spring, beluga migrate from wintering areas in the Bering Sea to summering areas in the Beaufort Sea. Depending on a number of factors including time of year and ice conditions, the migration occurs along the edge of the land fast ice (Zone 2), far offshore through leads in the pack ice (Zone 3), or both. After the migration, from about late June to late July or early August, a large proportion of the stock concentrates in the Mackenzie Estuary (the TNMPA and Zone 1A). However, at the same time, a large portion of the stock is widely distributed throughout both Zones 2 and 3. There is evidence to suggest calving may occur in these waters.

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

Guidelines for Zone 2 and 3

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

Beluga Management Zone 4

Description of Zone 4

Zone 4 encompasses the range of the Canadian Beaufort Sea beluga population outside of Canadian waters, and includes the Alaskan Beaufort Sea, Chukchi Sea and Bering Sea. The entire beluga population is expected to occur within this zone during winter and during migrations. There is a growing body of knowledge of the distribution and ecology of wintering belugas. The Inuvialuit–Inupiat Beluga Whale Commission provides an excellent forum for information exchange between Canadian and American managers and users.

Guidelines for Zone 4

Since cooperation is essential for responsible management of beluga, an international user-based agreement was developed to ensure that beluga are managed and protected throughout their range. The Inuvialuit-Inupiat Beluga Whale Commission was established in 1994. For additional information on the Commission please refer to Section V.

As well, there should be an exchange of information between Canada and Alaska on industrial activities proposed or underway which could affect the well-being of beluga.

VII. BY-LAWS AND REGULATIONS

The ongoing implementation of this BSBMP requires a continuing commitment and coordinated effort by the Inuvialuit and the Government of Canada to be prepared to make changes to existing Legislation or formulate new laws as required. Parties to this BSBMP must recognize and be prepared to deal directly with any real or potential threat which may adversely affect beluga, beluga habitat or the beluga hunt.

Beluga Regulations

The Marine Mammal Protection Regulations under the *Fisheries Act* are general in application and have been amended to recognize beneficiaries and their harvesting rights under the IFA. The *Oceans Act* contains provisions to establish Marine Protected Areas such as the TNMPA. The *Oceans Act* provided formal recognition and protection for the majority of Beluga Management Zones 1A with the designation of the TNMPA in 2010. Currently, a process to create another MPA covering part of the Zone 1B near Paulatuk is well underway.

Hunters and Trappers Committee Hunting By-Laws and Guidelines

The HTCs within the ISR have developed community specific by-laws that ensure efficient and safe hunting practices. These by-laws provide support to applicable elements of the Marine Mammal Regulations, and can be enforceable under these regulations. They represent best practices for each community's hunting activities.

Beluga Hunting By-laws are accompanied by HTC Community Hunting Guidelines that reinforce the standards set by the by-laws. Taken together they guarantee that beluga hunting is conducted sustainably and responsibly. The HTC by-laws and guidelines are an essential component of the BSBMP and may be modified from time to time. For reference, the Inuvialuit Hunters and Trappers Committees Beluga Hunting By-laws and Guidelines have been printed and are provided inside the back cover of this plan.

The HTC by-laws and guidelines have minimized struck/lost incidents, reduced wastage, and resulted in safer hunting conditions.

Enforcement

The Department of Fisheries and Oceans is responsible for the enforcement of the *Fisheries Act*, the *Oceans Act* and the Marine Mammal Protection Regulations. The Hunters and Trappers Committees by-laws can be enforced by Fishery Officers under corresponding regulation.

Photo Credit; F. Pokiak

VIII. EDUCATION AND PUBLIC AWARENESS

Previous iterations of the BSBMP used this section to described specific educational support tools such as classroom instruction, practical training and teaching aids. Part of the revision process for the fourth amended printing of the BSBMP was to assess the successes and shortcomings of this historical approach towards supporting the management activities of the BSBMP through education and public outreach.

The evaluation process indicated that the BSBMP remains an innovative and effective educational tool. However, the focus of this section has been reshaped to represent the suite of educational conservation values central to a hunter-based management plan while devolving explicit programs to the TNMPA.

The BSBMP is useful in a variety of educational contexts within the ISR. First, the BSBMP plays a critical role in documenting and transferring traditional hunting techniques and muktuk preparation to Inuvialuit youth and future generations of hunters. An educational video documenting a traditional beluga hunt was created for use in schools and public awareness. The video is housed in the Joint Secretariat's library in Inuvik, Northwest Territories.

Secondly, the BSBMP broadly educates all of the communities of the ISR about their own hunter-based beluga management actions and requirements. This function empowers the different wildlife management and co-management structures created pursuant to the IFA to understand the collective Inuvialuit interest in beluga management. The management direction, guidelines and requirements established by the BSBMP teach Inuvialuit structures, government departments and industry how to work sustainably around the beluga resource.

Lastly, the BSBMP illustrates in a broader Canadian context how traditional knowledge can be used to develop hunter-based management plans. It also positions the Inuvialuit to promote regional beluga monitoring and sampling practices in neighboring Inuit jurisdictions. Building knowledge and capacity through teaching and traditional knowledge exchange is one of the most important educational functions of the BSBMP.

Image 1: Muktuk Preparation

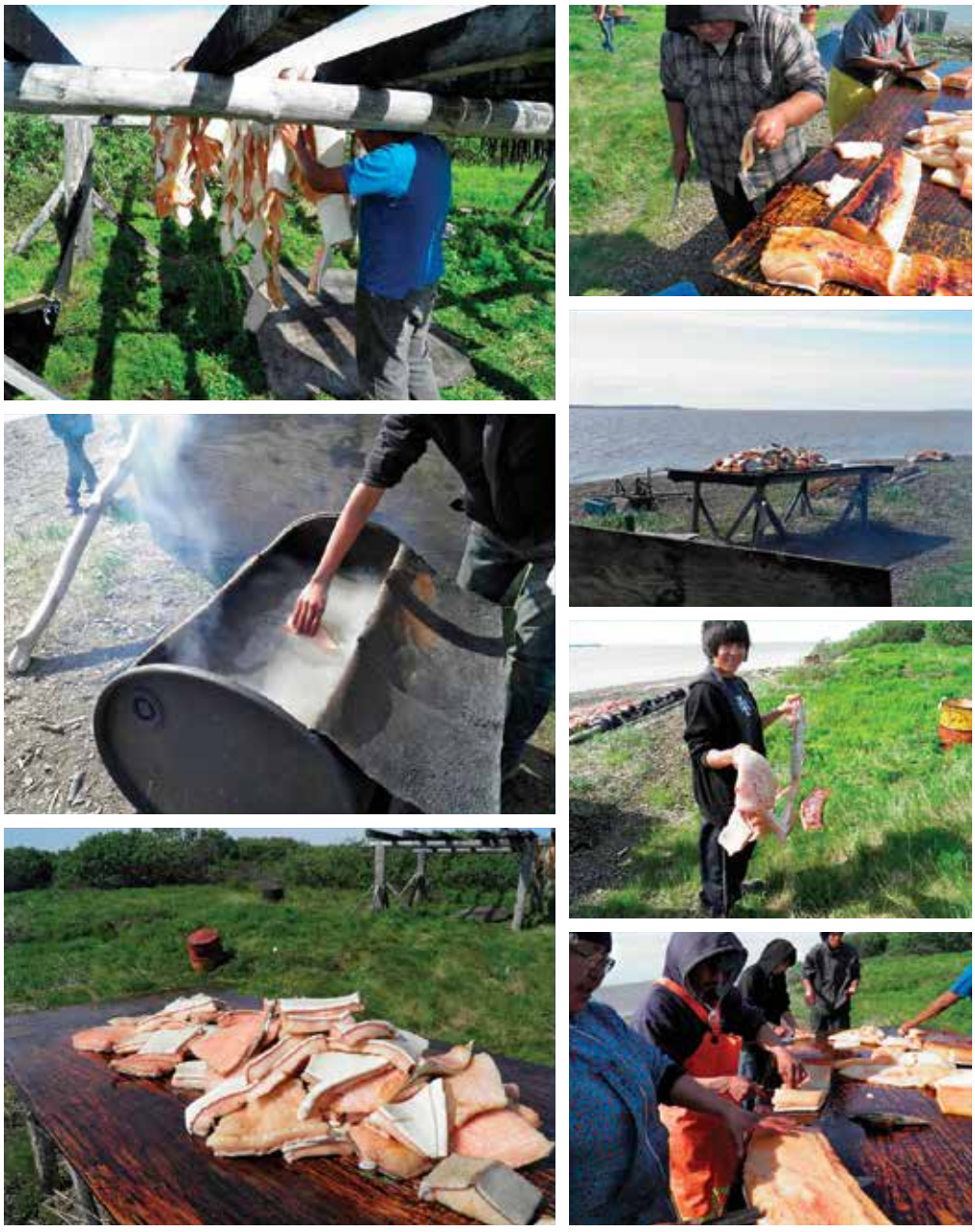


Photo Credit; J. Malone, FJMC

Image 2: Beluga Monitoring on Kendall Island

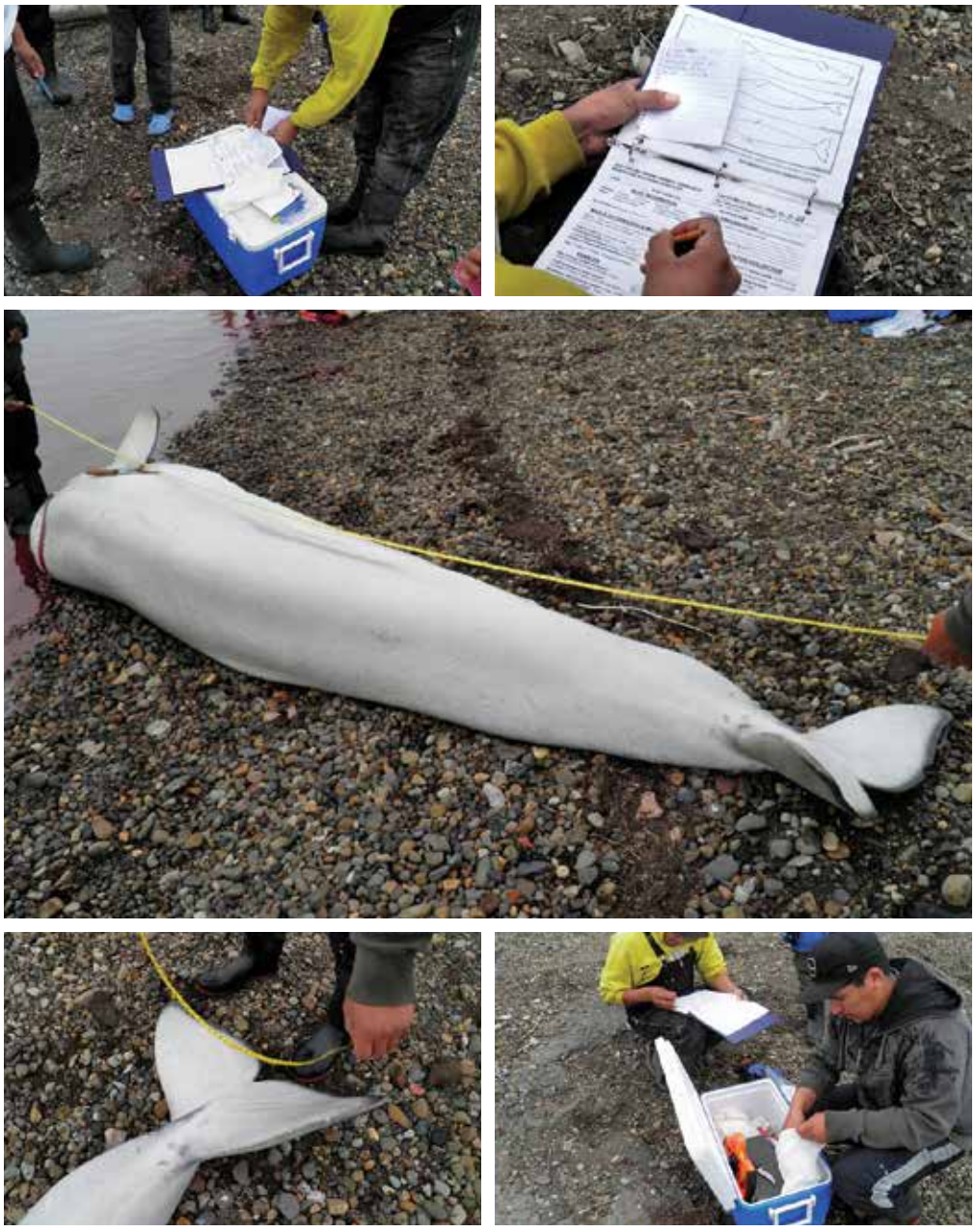


Photo Credit; J. Malone, FJMC

IX. TOURISM AND BELUGA HUNTING

The designation of the Tarium Niryutait Marine Protected Area (TNMPA) in 2010 is expected to stimulate interest in viewing beluga, visiting traditional hunting camps and observing the Inuvialuit hunt.

Eco-tourism has the potential to bring important economic benefits to the Inuvialuit. However, it is critical that eco-tourism operations follow comprehensive guidelines to ensure these activities do not interfere with subsistence hunting and traditional cultural practice. To date, no such guidelines have been agreed upon by the HTCs, FJMC, IGC, DFO and the Inuvialuit Regional Corporation.

An incomplete draft of tourism guidelines was developed at a workshop sponsored by the FJMC (which preceded the designation of the TNMPA). These draft guidelines have been transcribed in Appendix 2. This historical thinking should help guide and inform any future process to establish formal beluga tourism guidelines.

ACKNOWLEDGEMENTS

The Beaufort Sea Beluga Technical Working Group was established by DFO in 1985, and submitted its draft of the Beaufort Sea Beluga Management Strategy to the FJMC in June 1987. Members of the Group were J.T. Strong (DFO, Chair), A. Aviugana (Inuvik), R. Barnes (DFO), E. Birchard (Esso), B. Day (Inuvik), F. Elanik (Aklavik), N. Green (Paulatuk), B. Mimiksana (Tuktoyaktuk), B. Smiley (DFO), and G. Yaremchuk (DFO).

In 1988–89, a community representative from the Tuktoyaktuk (R. Pokiak), Aklavik (T. Elanik), and Inuvik (R. Binder) HTCs, assisted by their resource persons (F. Wolki, D. Malegana and A. Kasook, respectively) participated in four workshops coordinated by L. Harwood, FJMC Resource Biologist, to prepare a second draft of the management plan. They then presented the information from the draft plan to their resource users.

The FJMC would also like to acknowledge the contribution of a former Committee member, Michelle Roberge, who played a lead role in reviewing and editing the initial drafts of the Plan.

This fourth edition of the Plan is dedicated to four former members of the FJMC noted at the outset, who demonstrated exemplary dedication to the beluga resource, to the folks who depend on the resource, and to Canadians who want to see a healthy stock of belugas in the Canadian Beaufort Sea.

Many people have contributed to this update of the BSBMP. Lois Harwood has provided material for the updated science section. Hank Rogers has been a stalwart member of the drafting and community consultation team. The folks at the Freshwater Institute in Winnipeg have provided enormous support in the mapping and GIS task. Louie Porta has provided excellent advice throughout the process, and of course Vic Gillman has had a welcome hand on the tiller. Robert Bell led this BSBMP update on behalf of the FJMC and did an excellent job of incorporating feedback from community members wherever possible into this fourth edition.

APPENDIX 1: TARIUM NIRYUTAIT MARINE PROTECTED AREA REGULATIONS

SOR/2010-190

OCEANS ACT

Registration 2010-08-25

Tarium Niryutait Marine Protected Areas Regulations

P.C. 2010-1081 2010-08-25

Her Excellency the Governor General in Council, on the recommendation of the Minister of Fisheries and Oceans, pursuant to subsection 35(3) of the *Oceans Act*

Footnote

[a], hereby makes the annexed *Tarium Niryutait Marine Protected Areas Regulations*.

Return to footnote [a]S.C. 1996, c. 31

Interpretation

1. The following definitions apply in these Regulations.

"Agreement"
"Agreement" means the Inuvialuit Final Agreement as approved, given effect and declared valid by the *Western Arctic (Inuvialuit) Claims Settlement Act*. (Convention)

"Areas"
"Areas" means the Tarium Niryutait Marine Protected Areas. (zones)

"waters"
"waters" includes the seabed and subsoil below the waters to a depth of five metres. (eaux)

Designations

2. The Areas consist of

(a) the Niaqunnaq Marine Protected Area designated under section 3;

(b) the Okeevik Marine Protected Area designated under section 4; and

(c) the Kittigaryuit Marine Protected Area designated under section 5.

Niaqunnaq Marine Protected Area

3. The area of the sea in Mackenzie Bay consisting of the waters within the boundaries described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 2, which plans are deposited in the Canada Lands Surveys Records, is designated as the Niaqunnaq Marine Protected Area.

Okeevik Marine Protected Area

4. (1) The area of the sea in the Mackenzie River Estuary consisting of the waters within the boundaries described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 3, which plans are deposited in the Canada Lands Surveys Records, is designated as the Okeevik Marine Protected Area.

(2) The Okeevik Marine Protected Area is comprised of Special Management Zones 1 and 2 and the Primary Protection Zone as described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 3, which plans are deposited in the Canada Lands Surveys Records.

Kittigaryuit Marine Protected Area

5. The area of the sea in the Mackenzie River Estuary consisting of the waters within the boundaries described in plan number FB36305, certified on February 19, 2009 and depicted in plan number CLSR 91991, Sheet 4, which plans are deposited in the Canada Lands Surveys Records, is designated as the Kittigaryuit Marine Protected Area.

Prohibited Activities

6. No person shall

(a) disturb, damage or destroy in the Areas, or remove from them, any living marine organism or any part of its habitat; or

(b) carry out any activity in the Areas — including depositing, discharging or dumping any substance, or causing any substance to be deposited, discharged or dumped — that is likely to result in the disturbance, damage, destruction or removal of a living marine organism or any part of its habitat.

Exceptions

7. The following activities may be carried out in the Areas:

(a) fishing in accordance with the Agreement;

(b) dredging

(i) that has been recommended in accordance with the Agreement and authorized by a competent government authority,

(ii) that is carried out in accordance with the *Navigable Waters Protection Act* and the *Fisheries Act* and their regulations, and

(iii) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(c) fishing in accordance with the *Fisheries Act* and its regulations;

(d) a scientific activity that is carried out in accordance with the *Fisheries Act* and its regulations or

(i) that has been recommended in accordance with the Agreement and authorized by a competent government authority, and

(ii) that is carried out for the purpose of managing the Areas or for monitoring the effectiveness of conservation measures implemented in the Areas;

(e) a geophysical operation, as defined in section 2 of the *Canada Oil and Gas Geophysical Operations Regulations*,

(i) that has been recommended in accordance with the Agreement and authorized by a competent government authority,

(ii) that is carried out on, through or under the ice cover of the Areas,

(iii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act, Fisheries Act* and *Canadian Environmental Protection Act, 1999* and their regulations, and

(iv) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(f) exploratory drilling for oil or gas in the Special Management Zones of the Okeevik Marine Protected Area

(i) that has been recommended in accordance with the Agreement and authorized by a competent government authority,

(ii) that is carried out on, through or under the ice cover of the Areas,

(iii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act*, *Fisheries Act* and *Canadian Environmental Protection Act, 1999* and their regulations, and

(iv) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(g) oil or gas production in the Special Management Zones of the Okeevik Marine Protected Area,

(i) that has been recommended in accordance with the Agreement and authorized by a competent government authority,

(ii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act, Fisheries Act* and *Canadian Environmental Protection Act*, *1999* and their regulations, and

(iii) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(h) the construction or decommissioning of an oil or gas pipeline

(i) that has been recommended in accordance with the Agreement and authorized by a competent government authority,

(ii) that is carried out on, through or under the ice cover of the Areas,

(iii) that is carried out in accordance with the N*avigable Waters Protection Act, Species at Risk Act, Fisheries Act* and *Canadian Environmental Protection Act, 1999* and their regulations, and

(iv) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(i) the maintenance of an oil or gas pipeline,

(i) that has been recommended in accordance with the Agreement and authorized by a competent government authority,

(ii) that is carried out in accordance with the *Navigable Waters Protection Act, Species at Risk Act*, *Fisheries Act* and *Canadian Environmental Protection Act*, 1999 and their regulations, and

(iii) that does not result in and is not likely to result in the disturbance, damage, destruction or removal of a marine mammal;

(j) any movement or other activity of a ship, submarine or aircraft if the movement or other activity is carried out for the purpose of

(i) public safety, law enforcement or national security or for the exercise of Canadian sovereignty and the ship, submarine or aircraft is owned or operated by or on behalf of Her Majesty in right of Canada or by a foreign military force acting in cooperation with, or under the command or control of, the Canadian Forces, or

(ii) an emergency response under the direction, command or control of the Canadian Coast Guard; and

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

APPENDIX 2: RELATED PROGRAMS

At present there are three directed efforts aimed at advancing the state of scientific, traditional, and local knowledge pertaining to the eastern Beaufort Sea stock. An overview of each program is outlined below. Please note, that as needed and as opportunities arise, additional programs may be added to ascertain other data critical to the sound management of beluga in the region.

The Fish and Marine Mammal Community Monitoring Program (formerly the Beluga Monitoring Program)

In conjunction with the local communities, the Department of Fisheries and Oceans designed the Beluga Monitoring Program in the mid-1980s prior to the signing of the Inuvialuit Final Agreement. Since many Inuvialuit rely on beluga whales for subsistence, the program's prime goal was to assess the health of the beluga whales and the impact of the annual harvest of whales by the Inuvialuit.

The administration of the program was transferred to the Fisheries Joint Management Committee in 1987. Data, especially morphometric measurements are collected from beluga whales that are harvested annually by the Inuvialuit. Targeted sampling programs to determine population age structure, condition, reproductive health, disease load and contaminant levels are also periodically conducted on harvested beluga.

In 2010, the program underwent a redesign with the aim of integrating a community-based approach to monitoring a broader sampling of fish and marine mammals in the Inuvialuit Settlement Region. As part of the redesign, the program was renamed the Fish and Marine Mammal Community Monitoring Program. Opportunistic monitoring and sampling of harvested beluga whales in Sachs Harbour and Ulukhaktok have been included in the redesigned program.

Before the beluga program commences in mid-June of each year, the Hunters and Trappers Committees (HTCs) in Aklavik, Inuvik, Tuktoyaktuk and Paulatuk select one or two monitors. The monitors are hired, trained and positioned to collect the required information. Near the end of the program, the monitors and each HTC submit a final report that summarizes the monitoring season, hunt statistics and improvements that will need to be made for the following year.

TNMPA Monitoring Program

The conservation objective of the TNMPA is: to conserve and protect beluga whales and other marine species, their habitats and their supporting ecosystem.

The TNMPA monitoring plan supports this conservation objective, the goals and objectives of the BSBMP, and the principles and spirit of the IFA, including: co-management; community-based approaches to monitoring; and the integration of western science and traditional knowledge sources of information.

Ecological indicators for beluga, fish and other parts of the ecosystem will be monitored. Collaborations between scientists and local hunters and trappers have resulted in successful community-based monitoring (CBM) programs, and there will continue to be close collaborations between the TNMPA monitoring program and ISR-wide CBM programs in support of the BSBMP.

Socio-economic indicators will be monitored to track the success of achieving a desired balance between conservation of the ecosystem and economic development in the ISR, while governance indicators will assess performance and adequacy of existing institutional structures to manage the TNMPA.

The Inuvialuit Settlement Region Community-Based Monitoring Program (ISR-CBMP)

The ISR-CBMP will have at its core a set of community-driven variables to be tracked over time, across the region, allowing community members and scientists to identify long-term spatial and temporal trends. The data will also be related to monitoring efforts conducted on a broader scale, so that local changes and trends can be placed into a wider context of environmental and ecological observations. Local interests will shape the parameters of the monitoring effort, so that Inuvialuit communities maintain ownership and derive direct benefit.

This program will aim to improve community capacity while increasing the efficiency and effectiveness of data collections in support of community and agency needs. It is also intended to increase the attention being focused on current and changing environmental conditions, related impacts throughout the ISR, improving the state of knowledge with an emphasis on traditional ecological knowledge, and acquiring continuous long-term data sets where possible.

The ISR-CBMP is currently being developing and is in its pilot period from 2013–2015.

APPENDIX 3: DRAFT TOURISM GUIDELINES

1. Beluga Management Plan Zones 1(A)

In recognition of the priority of the ongoing subsistence beluga harvest, there shall be no water-based tourism or related activities permitted in Zone 1(A) as set forth in the "Beaufort Sea Beluga Management Plan." (See map in Appendix 1)

2. Guiding and Outfitting Priority

Section 14 (42) of the Inuvialuit Final Agreement states: "The Inuvialuit shall have the first priority in the Western Arctic Region for guiding, outfitting, or other commercial activity relating to wildlife as authorized by governments from time to time."

3. Tourism and Harvest Activities

Pursuant to the terms and conditions of these Guidelines, subsistence hunting will take priority over any tourism activities.

4. Designated Areas

The HTCs will designate areas that may be used for the purpose of whale watching/tourism within the ISR. The HTCs retain the right to limit the number of such designated areas, the number of operators, and/or the number of tourists brought into such areas by tour operators. In the event of a dispute over use of any given designated area, preference will be given to operators with Beneficiary Status.

5. HTC and Camp Permission

Each Tour Operator must have a written Agreement with appropriate HTC(s) prior to utilizing any area for tourism purposes of their operation.

Further, each operator must establish an Agreement with the related Camp Owner(s), regarding terms of length of stay, timing, and compensation for tour group visits, prior to entering any camp area.

The above noted Agreements are to be attached to the Operator's License (as issued by Economic Development and Tourism, GNWT), and as such constitute a condition of said License.

6. Tour Length

The duration of any tour group stay within any given camp will be at the discretion of the Camp Owner(s).

The duration of any tour group stay outside of a regular whaling camp will be at the discretion of the appropriate HTC(s).

In the event of an emergency, or as a result of bad weather, a tour group may stay longer than stated in its original Agreement. All such incidences are to be reported to the relevant HTC upon trip culmination.

7. Tourism, Filming and Photographers

No one is to take any photographs or films of whale harvesting and/or related activities without the explicit written permission of the relevant HTC(s), Camp Owner and Hunter(s) involved in the hunt. The written permission form must be signed by all those named above. The permission form must be carried at all times during the tour, and must be produced for inspection at the request of any representative of those named above.

8. Media Involvement

Media involvement in any activity relating to beluga whales must:

(a) Be subject to screening by relevant HTC(s), and;

(b) Only proceed with the explicit written consent of the relevant Camp Owner(s) and Hunter(s).

Such written consent is to be carried at all times, and must be produced for inspection at the request of any representative of those named above. The ILA is currently the first step in this approval process, with the HTCs, Camps Owner(s), and Hunter(s) retaining the final decision. If any footage is desired by outside media, that organization should first contact the Inuvialuit Communications Society (ICS).

9. Whale and Marine Mammal Harassment

Pursuant to the federal *Fisheries Act*, tour operators must ensure that their clients do not harass whales or other marine mammals. Harassment is defined as pursuing, chasing after, troubling, worrying, or in any other way disturbing whales and/or marine mammals.

10. Aircraft Restrictions

All aircraft are advised to maintain a minimum altitude of:

(a) 2500 feet (762 m) over any area designated as Zone 1A and Zone 1B in the "Beaufort Sea Beluga Management Plan," and,

(b) 2000 feet (610 m) over any area designated as Zone 2 in the "Beaufort Sea Beluga Management Plan."

Exception: Subject to the terms and conditions of Item #4 (above), the HTC(s) and Camp(s) may designate specific landing and takeoff areas. Such designated areas will be incorporated into the individual HTC/Operator Agreement.

11. Garbage Removal

All tour operators must remove any garbage generated by their tourism operation, and dispose of it in a proper manner in their base community. Burial and/or burning on site is not an option.

This clause shall be incorporated into, and become a condition of all GNWT Economic Development and Tourism Operator's Licenses.

12. Artifact Removal

Pursuant to current *Heritage Act*, Department of Indian Affairs and Northern Development (DIAND) Land Use and NWT Archeological Site Regulations, no one may disturb or remove artifacts of any nature. These items are to be left as found.

13. Monitoring Process

These guidelines and the process of compliance will be monitored by the HTC(s) through Camp and Hunter Reports. These guidelines will be revisited and adjusted as necessary every two years following their implementation, or as deemed necessary by the HTCs in consultation with the FJMC.

14. License Suspension and Revocation

The HTCs shall retain the right to recommend to GNWT Economic Development and Tourism (licensing Agency) that an Operator's License be suspended or revoked if any of the terms and conditions of these Guidelines are not met.

15. Communication Network

Following HTC and IGC endorsement of these Guidelines, they will be published and distributed to all airlines, tourism associates, HTCs, major media networks, and relevant federal and territorial governments.

ENDNOTES

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[3] Supra Note 1.

[4] Fraker, M. A.1979. *Spring migration of bowhead (Balaena mysticetus) and white whales (Delphinapterus leucas) in the Beaufort Sea*. Fisheries and Marine Service Technical Report 859. Winnipeg: Dept. of Fisheries and Environment. 36 p

[5] Richard, P. R., unpublished. Data.

[6] Hill, P.S., and Demaster, D.P. 1999. *Alaska marine mammal stock assessments 1999*. U.S. Department of Commerce, NOAA-TM-NMFS-AFSC-110. 166 p. Available from the National Marine Mammal Laboratory, Alaska Fisheries Science Center, 7600 Sand Point Way NE, Seattle, Washington 98115, U.S.A.

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[8] Department of Fisheries and Oceans Canada. 2000. *Eastern Beaufort Sea beluga. DFO Science Stock Status Report E5-38 (2000).* Available at www.dfompo.gc.ca/csas.

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[10] Supra Note 9.

[11] Supra Note 9.

[12] Strong, T. 1989. *Reported harvests of narwhal, beluga and walrus in the Northwest Territories, 1948–1987*. Canadian Data Report of Fisheries and Aquatic Sciences 734. Winnipeg: Western Region, DFO. 14 p; Weaver, P.A. 1991. The 1987 beluga *(Delphinapterus leucas)* harvest in the Mackenzie River Estuary, NWT.

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[14] J.T. Strong. 1990. *The domestic beluga (Delphinapterus leucas) fishery in the Mackenzie River Estuary, Northwest Territories, 1981–1986*. Canadian Data Report of Fisheries and Aquatic Sciences 800. Winnipeg: Western Region, DFO. 52 p.

[15] Kingsley, M.C.S. 1996. *Population index estimate for the belugas of the St. Lawrence in 1995*. Canadian Technical Report of Fisheries and Aquatic Sciences 2117. Winnipeg: Western Region, DFO. 38 p.

[16] Kathryn Front and Robert Suydam. 2010. *Subsistence harvest of beluga or white whales (Delpinapterus leucas) in northern and western Alaska, 1987–2006*. J. Cetacean Res. Manage. 11(3): 293–299.

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[18] J.T. Strong. 1990. *The domestic beluga (Delphinapterus leucas) fishery in the Mackenzie River Estuary, Northwest Territories, 1981–1986*. Canadian Data Report of Fisheries and Aquatic Sciences 800. Winnipeg: Western Region, DFO. 52 p.

[19] Kingsley, M.C.S. 1996. *Population index estimate for the belugas of the St. Lawrence in 1995*. Canadian Technical Report of Fisheries and Aquatic Sciences 2117. Winnipeg: Western Region, DFO. 38 p.

[20] Kathryn Front and Robert Suydam. 2010. *Subsistence harvest of beluga or white whales (delpinapterus leucas) in northern and western Alaska, 1987–2006*. J. Cetacean Res. Manage. 11(3): 293–299.


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