CANADA'S BOWHEAD HUNT:

In the Whales' Best Interest?

A report on the federal and territorial governments' case for hunting bowhead whales; its importance to Canadian Inuit health and culture; and the argument that a properly managed hunt will lead to better conservation measures than would a moratorium on the hunt.

NOVEMBER 2002

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REPORT

Prepared for the

CANADIAN MARINE ENVIRONMENT PROTECTION SOCIETY

CREDITS

Researched and written by James Hrynyshyn and Annelise Sorg
Bowhead Cover Photo by Kerry Finley
Bowhead Photos by Ben Wheeler
Illustrations and Design by Dyanne Zitko

The views and information presented in this report are not necessarily those of the people who provided photographs, illustrations or information.

Fourth Sanctioned Bowhead Hunt in Nunavut

Igloolik, Nunavut, August 10,2002 –

Sixteen Inuit hunters from two hamlets on the southern shores of central Baffin Island successfully landed a 15-metre-long bowhead whale today. It was the fourth bowhead killed legally in Eastern Arctic waters since the Canadian government approved a limited Inuit harvest six years ago.

According to reports from the Igloolik and Hall Beach hunters and trappers organizations, three shots from an exploding "bomb gun" failed to kill the whale. A traditional bowhead harpoon, thrown by Igloolik hunter Jaypith Palluq, inflicted the final, fatal wound. After she was towed to shore, the meat and prized skin and blubber, known as maktaq, were distributed to Inuit throughout Nunavut.

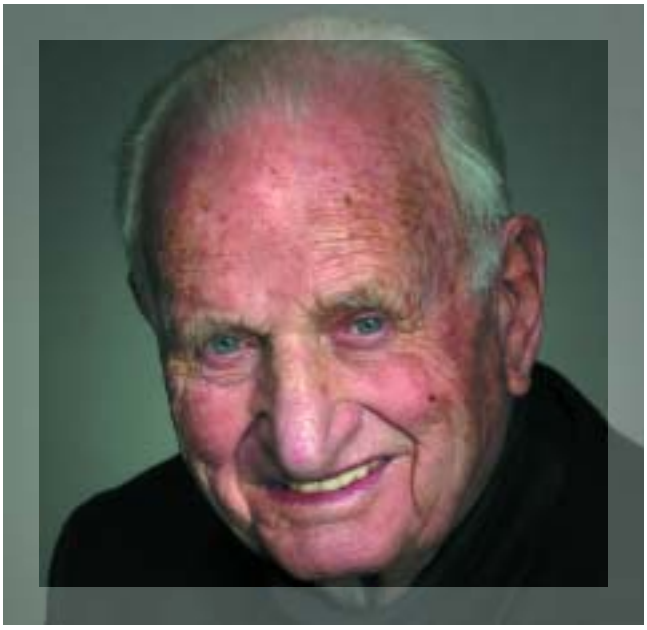
An adult female, the whale may have been nursing a calf. Scientists with Canada's Department of Fisheries and Oceans (DFO) suspect that all adult whales found summering in northern Foxe Basin are nursing females with calves.

The Inuit's right to hunt bowhead whales is included in the Nunavut Land Claims Agreement of 1993, "subject to the principles of conservation." The ability of the Hudson Bay-Foxe Basin population of bowheads to sustain even a limited hunt is the subject of scientific debate. But the Inuit hunters and the Nunavut Wildlife Management Board, which oversees all whale harvests in the territory, say the hunt poses no risk to the population.

The DFO issued a license for the hunt on the grounds that a recent Inuit traditional knowledge study concluded the bowhead population is healthy enough to allow one bowhead to be taken every two years. Independent researchers, however, counter that what little data are available do not warrant that conclusion and suggest the formula used to calculate the allowable harvest was not meant for such purposes.

Veteran bowhead researchers Randall Reeves and Kerry Finley say the officials and scientists responsible for managing the hunt also made questionable assumptions about the bowhead population and the hunt.

President's Message



Dr. Cortlandt Mackenzie, *President*
Canadian Marine Environment Protection Society

Canada is a whaling nation. Although the country withdrew from the International Whaling Commission (IWC) 20 years ago, it has long been among the most aggressive jurisdictions when it comes to promoting and defending the rights of its indigenous peoples to hunt whales. Hundreds of belugas and narwhals, some from precariously small populations, are killed each year, and even the highly endangered Eastern Arctic bowhead is subject to a regular, if limited, harvest.

In July 2001, the Canadian Marine Environment Protection Society (CMEPS) published **Canada's War on Whales: *Will the Bowhead survive?*** The report detailed the complaints and concerns of top Canadian researchers about what they believe is the Canadian government's mismanagement of whales and its refusal to be accountable to the international scientific community, specifically to the world's only recognized authority on whaling, the IWC.

Every year, the commission's scientific committee and most member countries agree with these Canadian researchers and they issue resolutions calling on the government of Canada to rejoin the IWC and to stop issuing whaling permits without international approval. Canada has ignored those pleas.

The report also contained recommendations made by the scientists for the creation of a Federal Oceans Protection Committee with an unambiguous mandate to protect Canada's marine ecosystems and wildlife. This committee would set policy based on advice from independent whale researchers, whale-watch tour operators, coastal communities, and non-government organizations.

To avoid manipulation and suppression of information, the advisory group's recommendations and data would be released to the government and the public simultaneously. We are confident the result would be the implementation of meaningful legislation that would help protect marine mammals on all three of Canada's coasts. Perhaps the establishment of the Igaliqtuuq whale sanctuary on the northeast shore of Baffin Island, long a dream of Inuit from the area, could finally be realized. The nearby community of Clyde River is frustrated by the failure of 20 years of negotiations between Nunavut Tunngavik Inc. and the Canadian government on a financial compensation package. We share their frustration.

Last year's report contained the views of the international and Canadian scientific community. This year we take a closer look at the views of the Inuit, their birthright corporation and the Nunavut government, which believe that bowhead hunters and their prey share a single destiny, that if Inuit don't hunt some of the animals, the communities will lose their will to conserve the species.

There is more at stake than just the fate of the bowhead – also hanging in the balance are several populations of small cetaceans, the health of the people who depend on those animals, and a culture that continues to face enormous political, social, and economic challenges. A way must be found to reconcile the conflict between the Inuit's deep-seated desire to keep alive the traditions that have defined them for more than a thousand years and the growing impatience of conservationists who fear that sound scientific principles have been lost in the debate.

Regardless of the politics involved, it is important to keep in mind that although neither side can agree on how many whales remain in these endangered populations or what to do about them, everyone is actually talking about doing the same thing: saving the whales. We hope that **Canada's Bowhead Hunt: *In the Whales' Best Interest?*** will help bring about a better understanding of the issues at stake and inspire the key players to set aside their differences and work together to ensure that the remaining whales have a future in Canada.

Executive Summary

Another bowhead whale from a highly endangered population was killed in Canada's Eastern Arctic waters on August 10, 2002. It is expected that the International Whaling Commission (IWC), at its next annual general meeting in Berlin in June 2003, will once again criticize Canada for acting against the best available scientific advice. Canada will once again be asked to re-join the commission if it plans to continue whaling. And once again, Canada will decline.

Part of the reason for Canada's intransigence can be found in the Final Report of Inuit Bowhead Knowledge Study, which states that *"A sustainable hunt for bowhead whales may comprise an essential element of a successful strategy for the conservation of the bowhead whale in Nunavut."*

May comprise? Is a hunt really what's best for highly endangered whales? The International Whaling Commission's scientific committee says absolutely not, but the hunter and trapper organizations that organize the hunts and the territorial government of Nunavut disagree.

Nunavut Tunngavik Inc. (NTI), the umbrella birthright corporation that represents more than 20,000 Inuit beneficiaries to the 1993 Nunavut land claim, argues that Inuit will only care enough to protect the remaining whale populations if they are allowed to pursue their traditional harvests.

Many Canadian scientists feel strongly that Canada should rejoin the IWC, the only world authority on whaling, and they warn that hunting even one bowhead is asking for trouble. At the same time, some beluga and narwhal stocks in Nunavut and northern Quebec are facing pressures from hunters who regularly exceed their quotas, leaving territorial and federal authorities scrambling to come up with an acceptable harvesting regime. But both the federal Department of Fisheries and Oceans, which licenses whale hunts, and NTI are opposed to rejoining and the resulting requirement for Canada to seek a quota in order to continue harvesting Eastern Arctic bowheads. Chances are the IWC would set a quota of zero.

The corporation and the Canadian government claim that the IWC has been infiltrated by "animal rights" activists who have replaced the commission's original mandate to govern whaling activities with an anti-whaling agenda. They insist the commission's resolutions should be ignored and its authority defied. Despite this lack of respect for the IWC's scientific committee, the Canadian government continues to send scientists and bureaucrats to observe the commission's meetings. Every year, Canada is the only non-member country at the meetings continuing to whale outside the authority of the IWC. Representatives from the Inuit Circumpolar Conference and Canada's World Council of Whalers also participate in these meetings, at which even Japan, a country that finds itself regularly marginalized by other members for its expanding whaling operations, urges Canada to rejoin the commission.

Back in Canada, researchers continue to support efforts to establish a bowhead whale sanctuary in Isabella Bay on the northeast coast of Baffin Island. The sanctuary, an important feeding and breeding ground for the bowheads of Baffin Bay, was proposed almost 20 years ago by a community with no interest in whaling there. Residents are growing tired of the politics and some fear the delay may have already jeopardized the recovery of the population. NTI has stalled negotiations by demanding financial compensation of more than a million dollars that the Canadian Wildlife Service has no mandate to supply.

Many believe Isabella Bay could support a whale-watching industry while protecting the hundred or so bowheads that visit each summer, following the example of the lagoons of Baja California, which support both gray whales and a lucrative eco-tourism industry. While Northern Canada's outfitters have catered mostly to European and American hunters and sport fishers, bird and whale watching, kayaking and rock climbing are becoming popular. Whale-watching may be an ideal addition.

But hunting continues to be a major source of food and income for Inuit. In addition to the subsistence hunts on which many communities rely, sport hunters pay handsomely for the right to shoot polar bears, walrus and other big game, taking only the head of their prey and leaving the rest for local use as human or dog food. Unfortunately, many of these "country foods" are contaminated with carcinogens and others toxins.

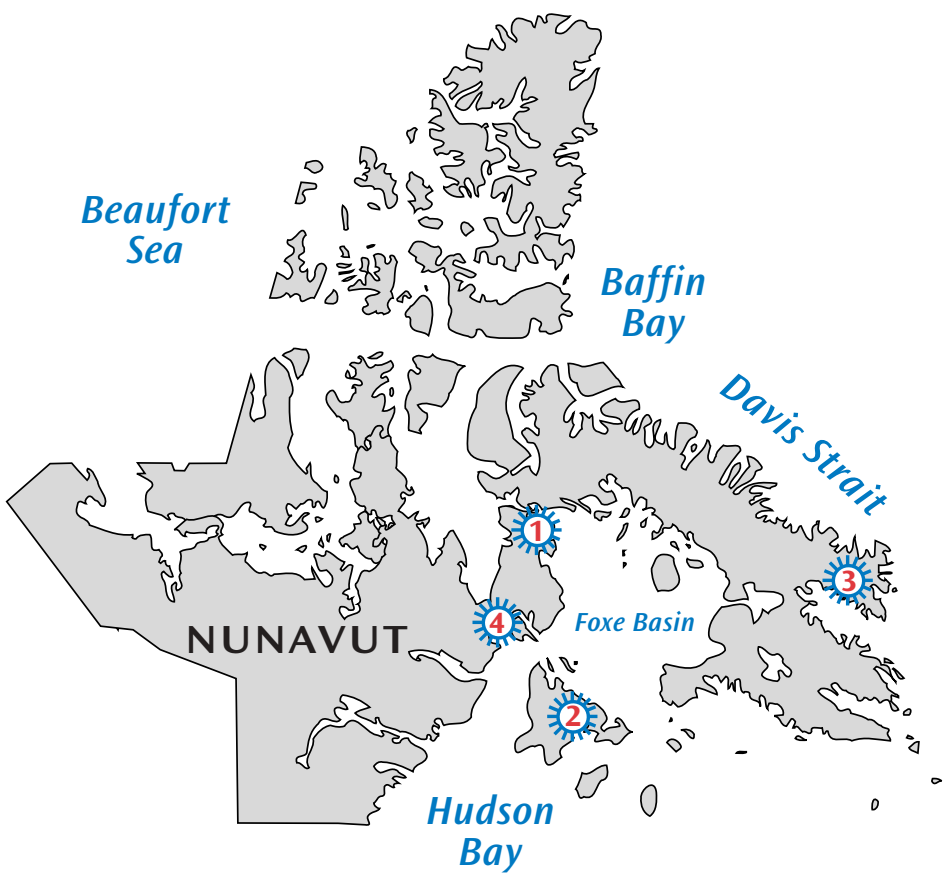
Nunavut's health agencies, like their circumpolar counterparts, are concerned about the high level of toxins being consumed in the territory, especially when children and pregnant and nursing mothers eat the fat of some species of marine mammals. Despite these concerns, Inuit are still encouraged to eat more country foods, including whales and seals, rather than rely on less-nutritious southern foods. Health services in Nunavut have even published a cooking book in English and Inuktitut (the language of Canada's Inuit) to help pregnant women learn how to prepare country foods.

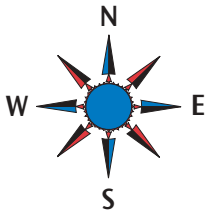
Diet is not a trivial problem in the North. Inuit have the highest cancer rates in Canada and health care is often available only in larger communities. Serious cases are flown south to Montreal, Ottawa, or Winnipeg for treatment at great cost to the health care system and inconvenience to the patient. Nunavummiut also suffer of many other appalling social and financial problems. Domestic violence and suicide top the Canadian scales. Nunavut has twice the national rate for homicides and an abysmal high school graduation rate. Substance abuse has reached epidemic proportions. Domestic violence is considered to be the number one problem in most communities.

There can be little doubt that the disintegration of Inuit culture is the root cause of these social ills. Attempts to address them without recognizing the role of respectful wildlife harvesting, which lies at the heart of Inuit culture, are doomed to failure. After all, in a hunter's society in which there is no agricultural or industrial base, the acquisition of hunting skills is a vital step toward maturation, as Inuit boys will eventually be expected to provide for their family and community. The alternatives offered to Inuit youth – leave the North or rely on government welfare – are not acceptable.

The Inuit fairly ask that southerners who do not understand what it is like to make a life in the Arctic mind their own business. After decades of hard work, the Inuit have their own territory and a land claims agreement. They should be congratulated for their efforts and encouraged to chart their own future. But when it comes to the possibility of yet another population of highly endangered bowheads going extinct, hunting the whales becomes everybody's business. World opinion will and cannot be silenced, but the opinions of the people of Nunavut should be respected as well. Working together is the only way to ensure the bowhead will survive.

1996 – 2002 BOWHEAD HUNTS IN NUNAVUT





1 *2002 HUNT Hall Beach & Igloolik*

2 *2000 HUNT Coral Harbour*

3 *1998 HUNT Pangnirtung*

4 *1996 HUNT Repulse Bay*

Introduction

In June 1999, a pair of Canadian economists, Robert C. Allen and Ian Keay, produced a discussion paper titled "The extinction of the Eastern Arctic bowhead."[1] The paper was not published widely and went unnoticed by the marine biologists familiar enough with the population ecology of the whale to recognize its Latin name, *Balaena mysticetus*. Neither did it attract the attention of the Inuit of Nunavut, who have recently resumed hunting the endangered species. Members of either community would have found the title somewhat surprising. After all, the Eastern Arctic bowhead is not extinct, at least not in the popular sense. Scientists agree that there are still two small, distinct stocks in the waters of Baffin and Hudson bays. No one knows how many remain, but official estimates[2] put the number whales in Nunavut water in the mere hundreds. Extinct? Not quite yet.

But considering the argument that Allen and Keay make in their paper, it's easy to see why they came to use the term as shorthand for "on the brink of extinction" or "functionally extinct." They are not alone in suspecting the last few hundred bowheads in the Eastern Arctic are members of a relict population, one for which the future holds little hope. If Allen and Keay are correct, today's whales represent a tiny fraction of the population that the first European whalers found in the 17th century. The scientific literature has it that the pre-whaling-era bowhead population in the North Atlantic was in the neighbourhood of 22,000 whales, including both the Davis Strait-Baffin Bay stock and those of the waters east of Greenland[3]. But after a thorough review of British, Dutch and American whaling records, Allen and Keay revised that estimate upwards by a factor of more than four. They concluded that at least 90,000 bowheads made up the North Atlantic populations, with better than 22,000 in Canada's Eastern Arctic waters alone. By comparison, the few hundred whales that survived two centuries of commercial whaling are indeed dangerously close to functional extinction. Two other populations, one off the Labrador coast and another in the St. Lawrence River, have already been hunted to extinction.

Yet, every two years since 1996, the federal government of Canada has given Inuit hunters in selected communities in the arctic territory of Nunavut the right to harvest a bowhead whale, from either the Davis Strait-Baffin Bay population or those that roam Hudson Bay and Foxe Basin. Each time the cabinet minister responsible for Canada's fisheries and oceans issues a license to hunt, the decision raises the hackles of the International Whaling Commission's (IWC) Scientific Committee and numerous whale researchers in Canada and abroad. The IWC adopts resolutions condemning the hunt and diplomatic (and some not-so-diplomatic) protests are filed. Canada's Department of Fisheries and Oceans scientists insist the hunt will not harm the bowhead population, and Inuit leaders defend their right to preserve a way of life, one that they say will only help save bowheads from extirpation.

This report explores the merits of the arguments for and against the current whaling regime in Nunavut. It will address the implications not only for the bowhead whales, but for the local human population as well. It asks the fundamental question of whether or not the occasional removal of one whale from a population of several hundred represents a significant risk to the population. In search of answers, it examines the history of small-cetacean whaling in the region, the health threat posed by industrial contaminants to both predator and prey, and the political, cultural and constitutional contexts in which federal, territorial and local authorities operate.

Conservation management is never a simple task. In the case of the Eastern Arctic bowhead, it has proven particularly problematic, vulnerable to the pressures of political interference from all sides and chronic government underfunding of vital research. Making matters worse is the unfortunate reality that the only consensus to emerge so far is that there is no consensus on what to do to save the remaining bowheads.

History of Canadian Bowhead Hunts

When the first hunters arrived in the Eastern Arctic from Asia some 4,000 years ago 4, the waters that would sustain them teemed with marine mammals. An abundance of seals and walrus, narwhals and belugas, and several species of baleen whales, the largest among them the bowhead, or Greenland right whale, made life possible.

It is doubtful that the relatively small population of Pre-Dorset people, and the Dorset, Thule and Inuit that followed them, had much of an impact on the marine ecosystems of Baffin and Hudson bays.[5] But the arrival of European explorers in the 16th and 17th century A.D. changed the Arctic irrevocably. It took only two hundred years for commercial whalers from Europe to push the bowhead whales of the North Atlantic to the brink of extinction. With the longest baleen and the thickest layer of blubber of all the whales, the slow-moving bowhead proved irresistible to those who supplied the growing market for corsets, buggy whips and oil. Only the bowhead's close cousin, the northern right whale (*Eubalaena glaciails*), suffered comparable declines at the hands of the whalers.[6] Tens of thousand of bowheads were slaughtered by the European whalers before the market for whale products collapsed in the 20th century. By then, most populations around the world had been reduced to remnant, or relict, sizes.[7] Of the five populations believed to have survived the whaling era, only the Bering-Beaufort-Chukchi bowheads of the Western Arctic recovered significantly. About 8,000 bowheads now summer off the northern shores of Alaska in the U.S.A. and Canada's Yukon and Northwest Territories (NWT). Although classified as endangered, about four dozen whales a year are hunted by Alaska's Inupiat Inuit.8 Twice since 1991, Inuvialuit from the NWT have landed a whale, drawing illegally from the Inupiat's IWC-set quota.

In Nunavut, however, the bowhead whales were much worse off. By the late 19th century, commercial whaling had decimated populations to the point where it was no longer financially viable to continue.[9] Between 1919 and 1981, only about two dozen bowheads were either landed or struck and lost in the Canadian Arctic.[10] In 1979, the Canadian government outlawed all bowhead hunts and withdrew from the IWC in 1982, claiming that it no longer had an interest in whaling. With the resumption of an Inuvialuit harvest in 1991, however, Inuit leaders from what later became the territory of Nunavut lobbied for their own sanctioned hunt.

At the time, almost nothing was known about the health of either of Nunavut's bowhead populations in Hudson Bay-Foxe Basin and Baffin Bay-Davis Strait. Even a study of Inuit traditional knowledge about the species - a study that would figure heavily in the government's justification for allowing the hunt - would not be complete until several years after the hunt resumed. Nevertheless, an annual allowable catch of one whale each year was written into the Nunavut Land Claims Agreement of 1993, which carved the new territory out of the Northwest Territories, and established de-facto self-government for the Inuit of the region. As an article of a land claim,[11] the right to hunt bowheads is now effectively enshrined in the Canadian Constitution. That right, however, is "subject to the principles of conservation" and each hunt requires the approval of Canada's federal minister of fisheries and oceans, something that Inuit leaders claim is a mere formality.

Since then, at least five bowheads have been landed by Inuit hunters in Nunavut. A young female was landed illegally in 1994 by hunters from Igloolik who claimed to be honouring a dying elder's last wishes. They later said they had come across a dying whale and felt duty-bound to kill it. Charges against the hunters were eventually dropped by federal prosecutors who argued first that the political context of the signed land claim made the case difficult to mount,[12] and later that legal costs were too high.[13]

The first modern hunt permitted by the Canadian government took place in 1996 in Repulse Bay with the landing of a mature male bowhead. The bowhead sank after being shot by hundreds of bullets and harpooned many times, resurfacing after three days. By then the animal's meat had begun to decompose and most of the whale was left to rot on the beach. Mature males were also taken by a Pangnirtung crew in 1998, and by hunters near Coral Harbour in 2000.[14] In the most recent hunt, which took place in August 2002, a joint team of hunters from Igloolik and Hall Beach landed a mature female.[15] The whale was shot three times with a bomb-exploding gun and then killed with a harpoon.

At least five bowheads have been landed by Inuit hunters in Nunavut. In each case, including the Inuvialuit hunts, objections from the IWC and independent scientists in Canada and elsewhere failed to deter the Canadian government from approving the hunts. The objections were both political and scientific in nature, with the IWC arguing that Canada was flouting international law by allowing bowhead hunts outside the authority of the commission, and the IWC Scientific Committee pointing out the dangers of allowing even a limited hunt on relict populations of unknown size. The Canadian government and the Nunavut Wildlife Management Board continue to ignore the world community's warnings.

Politics and Science

No other animals play such a dominant role in Inuit mythology and grip the imagination as does the bowhead. Once known as the "bullhead" whale to the Inuit inhabitants of the Arctic, the bowhead is many times larger than any other animal in the region. It is a creature of extremes, with the thickest blubber and the longest baleen of all the whales. As such it was an extraordinarily valuable animal for the hunter-gatherers who used its skeleton as building material, baleen for tools, meat for food and oil for heat and illumination. Just one mature whale offered enough for entire family groups for months.

It also took a community to harvest bowheads before motorized boats, satellite phones and guns. Harpooning, killing, towing and hauling a bowhead to shore required an enormous co-operative effort. Over the centuries, the process became a defining element of Inuit community existence, and the bowhead assumed a central role in the legends passed down by the elders.

> *… the giant bullhead whale was the Creator's favorite animal. However, the creator realized that the people needed this animal for survival, and decided to offer it to them provided they did not kill it for mere sport. The Creator created a special season - spring - in which the sea ice melted, leaving jagged cracks. The whales would swim amongst the ice cracks, making it easier for the Inuit to capture them. Although killing the whale was essential for survival, the Creator did not like to witness the hunt. Consequently, the thick mists of spring were created so the Creator could not see the killing of the great whale.*[16]

Eventually, the notion of the survival of the Inuit themselves became inextricably linked with that of the bowhead. The spiritual relationship of the people to their natural environment involves both dependence and responsibility. With such a world view, turning one's back on that relationship would be the Inuit equivalent of sacrilege. The belief is that only by preserving the ancient predator-prey connection can the future of both the bowhead and the people be assured. In other words, the only way to ensure the survival of the bowhead is to keep the hunting tradition alive.

> This concern is an extension of the traditional Inuit belief that failure to harvest an available resource demonstrates a lack of respect for that resource and can be expected to lead to a loss of hunting opportunity…. Inuit view a resumed an ongoing bowhead hunt as a means of restoring and enhancing concern and respect for, and intimate knowledge about, this species. Therefore, a sustainable hunt for bowhead whales may comprise an essential element of a successful strategy for the conservation of the bowhead whale in Nunavut.[17]

Contemporary western notions of wildlife conservation management can probably accommodate such a position - when prey populations are relatively healthy. Unfortunately, that is almost certainly not the case for the Eastern Arctic bowhead. Even the most optimistic estimates for both populations leave no room for regular hunts. The Canadian government's official estimate of the Hudson Bay-Foxe Basin stock was finally completed in the late 1990s. Aerial surveys conducted in 1994 and 1995 by Susan Cosens and her team at the Department of Fisheries and Oceans (DFO) produced an estimate of a minimum of 345 bowheads.

The 95 per cent confidence interval for the figure is relatively large, however. In Foxe Basin, it ranges between 270 and 331. For the rest of Hudson Bay, it's even larger: 17 to 133.[18] Cosens and her colleague, the late Stu Innes, wrote that those numbers represent a conservative estimate, and the real population may be significantly higher.[19] But Kerry Finley, an independent bowhead researcher now based in Sidney, B.C., counters that the surveys were hampered by methodological problems and the estimates produced an unwarranted level of certainty.[20]

As for the Baffin Bay-Davis Strait population, no reliable data are available. Some scientists suspect it may be similar in size to the Hudson Bay-Foxe Basin population, but much remains unknown. Finley, who spent 14 summers between 1980 and 1993 studying the bowhead feeding and breeding grounds in Isabella Bay on the northeast shore of Baffin Island, never counted more than 100 bowheads at a time there. In 2002, however, bowhead researcher Ben Wheeler, reported 145 whales. Is it a sign of a growing population, or just evidence of a shift in migration patterns?

The Nunavut Wildlife Management Board argues the former. And its insistence that more whales are to be found today than a generation ago is the sole basis for the official approval by DFO of a limited bowhead hunt. The department's 1999 status report on the Hudson Bay-Foxe Basin population concluded that the post-commercial whaling removal rate of one whale every three years "appears to be sustainable, given the conclusions of the Inuit Bowhead Traditional Knowledge Study that the stock has been increasing in size."[21]

That study was based primarily on interviews with 257 Inuit elders and hunters, and the consensus among Inuit observers throughout Nunavut is, at first glance, compelling. "When I first moved to Iqaluit [about 1960] there were hardly any bowhead whales around, but today they are increasing in numbers, because we see more bowhead whales more frequently," says one interviewee.[22] "There used to be lots of bowhead whales and I used to see lots of them back then. And from that time on we seem to be seeing much more bowhead whales as opposed to the time of my childhood," reports another.[23]

But even biologists who support the use of traditional knowledge as a useful element in the scientific process have found the study's conclusions difficult to justify in the absence of hard data. Finley, in a recent review of the science of bowhead conservation, notes that accepting traditional knowledge without question devalues that knowledge and serves little purpose. In the case of the bowheads, he offers five possible explanations for the anecdotal evidence for an increase the populations, none of which involves actual population increase: a change in human settlement patterns; an "experiential discontinuity" related to a generation gap; establishment of outpost camps; faster boats; and portable radios. Inuit may be seeing more whales, because they have more opportunities to see them and more opportunities to report what they've seen. He concludes that "given the low rate of increase in bowhead numbers, it would be difficult to detect a trend over a few decades that was independent of the increase in sighting opportunities."[24]

Finley and other scientists also take issue with the mathematical formula used to calculate the sustainable harvest rate, or "potential biological removal" rate. To calculate a PBR, the abundance estimate is multiplied by half the expected growth rate and a recovery, or safety, factor. The problem is reliable data for each element of the formula are not available. Randall Reeves of Okapi Wildlife Associates in Quebec and a veteran of many bowhead studies in Nunavut, says he welcomes the decision to use a scientific tool to determine if a quota could be set, but remains troubled. "I was tickled pink to see that they had applied it. This is like a foot in the door of a precautionary, reasonably scientific approach," he says. "The trick there is the safety factor and that's where the listing begins to matter in a very important way." In a commentary on the outcome of a 1999 meeting held in Iqaluit by territorial and government officials involved in bowhead management, Reeves and U.S. researcher Paul Wades, who developed PBR, say the algorithm was originally intended to calculate acceptable cetacean bycatch rates in commercial fisheries that operate under American laws, not to manage direct exploitation of small populations in Canadian waters.[25]

In the end, the absence of hard numbers remains the biggest obstacle. Even Cosens, who has been working hard for years to gather useful data on the bowhead, concedes that what we have now isn't much more than a "blank slate," one that makes the job "a bit frustrating." The federal government's conservation strategy for the Eastern Arctic bowhead, a plan developed co-operatively by DFO scientists and the Nunavut Wildlife Management Board, notes that the growth rates of the populations are unknown. Also unknown is the effect of climate change, and accompanying decrease in the size of the ice cap, and therefore the floe-edge habitat on which the bowhead depends. Other mysteries include the pressure from orca predation and many fundamental life history parameters. And yet, the federal strategy later observes that "since bowheads are continuing to increase in numbers, future subsistence harvests, if set at the right level, would be within safe sustainable levels."[26]

The Small Cetacean Example

The federal government's decision to give priority to traditional knowledge is not surprising, considering the political ramifications. But without more reliable, long-term data on both the bowhead populations and the hunting practices of the Inuit, it is impossible to judge the value of that traditional knowledge. There is a larger context that may be of use. Bowheads are not the only whales hunted in the Eastern Arctic, and, as it turns out, neither are they the only whales associated with controversial management practices.

In the late 1990s, DFO scientists became concerned that narwhal (*Monodon monoceros*) hunting in several Nunavut communities may not have been sustainable. Though none of the affected populations is considered at risk, the failure of hunters to abide by the quotas set by DFO set off alarm bells. Hunter and trapper organizations in Nunavut responded by suggesting that a more responsible and sustainable harvesting rate would result if the management regime was based on the local, traditional knowledge of the hunters themselves, rather than the estimates of chronically underfunded DFO surveys.[27]

The department agreed to a three-year pilot project involving local management of the hunts in Pond Inlet, Qikitarjuaq and Repulse Bay beginning in 1999. The first

two years saw no decrease in the number of narwhal whales killed in the three hamlets, with some hunters taking several times the old quotas. As a result, the minister of fisheries and oceans and the Nunavut Wildlife Management Board set "suggested harvest limits" and accepted two more hamlets, Arctic Bay and Kugaaruk, into the project in 2001. As the results show (*see Narwhal Hunts Chart*), the new, community-based management regimes largely failed to bring hunting rates down to levels that DFO scientists felt were sustainable.

There was some evidence that the new regime has potential. For example, Pond Inlet hunters in 2001 landed only 63 whales, wounding or losing 32 more, for a total of 95. Their suggested limit was 108. In most other communities, however, the reverse was true. Typical was Repulse Bay, which was given a target of 72 but recorded twice as many landed, wounded or lost narwhals.[28]

Biologists are even more worried about beluga (*Delphinapterus leucas*) hunting rates in northern Quebec (Nunavik). They have tried repeatedly to ensure Inuit hunters along the eastern Hudson and Ungava bays stick to their quotas, warning that repeated violations could bring about the extinction of these beluga whale populations within 15 years. Last year, for example, the quota for the region was 360 whales, and yet 395 were taken, out of a total of only 1,400 whales. For 2002, the quota was slashed to 210 belugas, with no more than 15 from each of the 14 affected communities. The federal government even offered $50,000 in compensation for the restrictions, but the wildlife management board and the hunter and trapper organizations warn that may not be enough to convince everyone to obey the new limits.[29]

Ben Kovic, chair of the Nunavut Wildlife Management Board, recognizes that numbers from the narwhal pilot project are not as encouraging as many had hoped and concedes that some hunters "got carried away." But he says the federal government has to accept its share of the blame. He compares the challenges facing Nunavut's narwhal hunters to being "tied like a dog for 70 years on a quota." Release that chain, and "you can't control it right off the bat." At least, he adds, the situation in Nunavut is far better than in Nunavik. The beluga hunting regime there, he says, is "a mess. They are about 20 years behind us in management. When they do try it, it reminds me of how we used to do it."

NARWHAL HUNTS CHART

Community	Old quota	Suggested Limit 2001	Landed	Wounded & Escaped	Killed & Lost	Total
Pond Inlet	**100**					
1999			130	14	6	150
2000			166	21	0	187
2001		108	63	5	27	95
Qikiqtarjuaq	**50**					
1999			81	30	5	116
2000			127	79	0	206
2001		81	89	8	9	106
Repulse Bay	**25**					
1999			156	68	30	274
2000			45	9	5	59
2001		72	100	38	21	159
Kugaaruk	**10**					
2001		19	41	18	6	65
Arctic Bay	**100**					
2001		101	134	20	4	158

PBR = Nmin 0.5RmaxFr
where Nmin is the minimum abundance estimate of the population
0.5Rmax is half the expected addition of adults to the population each year
and Fr is the recovery, or safety factor that represents a best guess for unknown biases or estimation problems

Source: Department of Fisheries and Oceans

Health Risks

As if the Inuit aren't facing enough problems reconciling their hunting needs with those of wildlife conservation, recent toxicology studies of marine mammals in Nunavut and elsewhere in the circumpolar region threaten to make the entire debate over the fate of Canada's last whaling culture moot. "Country foods" that allowed the Inuit to survive in one of the world's harshest environments may no longer be safe. It is among the most politically sensitive subjects in the North, and territorial government officials choose their words with great care when forced to make declarations on who should avoid which foods, and why.

Chief medical officers have found it difficult to tread the fine line between ensuring those whose diets contain a large proportion of whale, seal and other country foods are aware of the evidence of contamination but not scaring them into abandoning a nutritious diet in favor of southern imports, which tend to be dominated by junk food.[30] Visit any grocery store in Nunavut's hamlets and it's not hard to understand their dilemma. Soft drinks and potato chips occupy most of the shelf space, with little room left for fresh fruits and vegetables.

The results are beginning to turn up in Inuit health surveys: rising rates of obesity, diabetes and other conditions long associated with western diets high in refined sugars and carbohydrates, but until recently almost unknown among Inuit and other hunter-gatherers.[31] Even hinting at a danger associated with eating more-nutritious country food, then, is not an attractive policy option.

And yet, the data are not encouraging, with scores of reports in the scientific literature documenting troubling levels of contamination of what many had assumed was a pristine environment. Levels of suspected carcinogens or hormone disruptors, such as hexachlorocyclohexanes (HCHs), polychlorinated biphenyls (PCBs), heavy metals and many other polysyllabic toxins originating in the industrial south but finding their way north, are regularly higher than expected.[22] And some of those toxins are finding their way into the blood and body tissues of Nunavut's Inuit. One of the most ambitious surveys of the state of arctic contamination was carried out by the Arctic Council, an international body composed of eight circumpolar nations. The authors of the Arctic Monitoring and Assessment Programme's 2002 report:

> *"are even more certain than before that the current exposure of some arctic populations to the existing mixture of contaminants is inducing some subtle adverse effects. One of the main concerns is the damage contaminants can do to the developing brain, while a child is still in the womb. Epidemiological studies show that mercury levels in parts of the Arctic are high enough to cause subtle neurobehavioral effects. The people at increased risk live in areas with high intake of marine mammals, such as Inuit in Greenland and Canada."* [33]

Indeed, most top predators in the Arctic, notably including polar bears,[34] are contaminated to some degree, thanks to the ocean and air currents that bring southern toxins north, where they increase in concentration as they move up the food chain. There are already signs of a link "between increasing PCB, dioxin and furan levels in human milk and immune system deficiencies infants."[35] Bowheads, which occupy a lower position on the trophic scale, are not believed to harbour dangerous levels of organic compounds, but little research has been carried out on the whether or not consumption of bowhead meat or blubber poses any measurable risk. One complicating factor is the bowhead's extraordinarily long lifespan, which may exceed 200 years.[36] The effects of such long-term exposure to toxins, even from the lower trophic levels, are unknown.

The answer to the medical officers' dilemma until now has been a cautious warning to pregnant or nursing women and their young children to avoid the fatty part of country foods such as the prized maktaq, or blubber and skin, of belugas and narwhals. Inuit organizations have also been at the forefront of the international effort to ban the persistent organic pollutants (POPs) that have turned up in whales, seals, and even mother's milk in Nunavut. The Inuit Circumpolar Conference was one of the strongest voices pushing for the 2001 United Nations treaty on POPs, which is now in the process of being ratified. The treaty addresses 12 pollutants: the pesticides aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex and toxaphene; the industrial chemicals PCBs and hexachlorabenzine, which is also a pesticide; and the combustion byproducts dioxins and furans. Whether the treaty will actually lead to a reduction in the toxins now found in whales and seals remains to be seen. In the meantime, the delicate balancing act between a nutritious diet and a safe one will continue to play out in Nunavut.

A Future in Tourism

There are tentative signs that the pressure to maintain the hunt may be on the wane. For one, not all Inuit speak with one voice on the subject, and there is evidence that among educated young Inuit, support for the hunt is weak. According to one Inuk in Cambridge Bay, each bowhead killed gives the people of Nunavut the political equivalent of a black eye.[37] Other Inuit are troubled by the failure of hunt organizers to rely on traditional harvesting methods. The modern hunts use exploding harpoon guns, powerboats and an elaborate and costly distribution network for the meat and maktaq (although the guns soon may be replaced by more efficient technology from Norway, according to Tom Demcheson of the Qikiqtaaluk Wildlife Board, which co-ordinated the 2002 hunt). In 1996, Joani Kringayark of Repulse Bay told the *Nunatsiaq News* that "the majority of the funds being spent on this hunt could be spent more wisely elsewhere, on more long term needs, like putting more emphasis on education for our people and addressing the social issues." Kringayark, who supports a better-managed hunt, later called the 1996 event, which cost more than $150,000, involved multiple gun shots, harpoons and a slow death for the whale, and left tonnes of meat to rot, an "embarrassment."[38]

The Inuit of Clyde River, meanwhile, have long been more interested in protecting the whales' feeding and breeding grounds in Isabella Bay, on the northeast coast of Baffin Island. Negotiations between the federal government and Nunavut Tunngavik Inc. have dragged on for two decades, hung up, according to Environment Canada, on NTI's demand for more than a million dollars in compensation for the creation of the Igaliqtuuq wildlife sanctuary, but most of the groundwork has been completed. If the experience of the biologists who have spent many summers in the bay observing the bowheads in close quarters is any indication,[39] such a sanctuary may provide Clyde River with the opportunity to develop a lucrative whale-watching eco-tourism industry. Similar opportunities to replace a predatory-prey relationship with a more symbiotic one may exist in western Hudson Bay.

The advent of an economy built directly around preservation of the bowhead could eventually displace the political desire to hunt. Experience elsewhere shows that whales are worth more as photographic targets. Businesses Japan, Iceland and Norway, long considered the most enthusiastic of whaling nations, are reaping millions of dollars each year in whale-watching revenues.[40] It is conceivable that the ancient Inuit-bowhead relationship could survive the end of the hunt, reinvented under the mantle of eco-tourism. However, first the government agencies and birthright corporations in Nunavut would have to change their political position, which claims that the only way to conserve these highly endangered populations of bowheads is to hunt them.

THINGS TO DO IN NUNAVUT

Spot narwhals, walruses, seals on their migration routes in *Arctic Bay/Ikpiarjuk* and tour beautiful Sirmilik National Park.

Visit the McConnell River Migratory Bird Sanctuary in *Arviat*.

Go hiking and camping in *Baker Lake/Qamanit'uaq*.

See muskoxen, caribou, geese and peregrine falcons and visit beautiful Wilberforce Falls in *Bathurst Inlet/Kingoak*.

Watch migratory birds in nesting plumage, muskoxen and arctic flowers in *Cambridge Bay/Iqaluktuuttiaq*.

Cape Dorset/Kinngait is a famous center of Inuit art.

Take a self-guided walking tour down *Chesterfield Inlet/Igluligaarjuk* Historic Trail.

Watch narwhals, bowhead whales and polar bears in *Clyde River/Kangiqtugaapik*.

Visit walrus colonies on Coates Island off *Coral Harbour/Salliq*.

Find the Northwest Passage Territorial Historic Park in *Gjoa Haven/Uqsuqtuuq*.

Watch walrus, belugas, seals and polar bears in *Grise Fiord/Aujuittuq*.

Photograph ducks, geese, swans nesting and walrus and seals resting in *Hall Beach/Sanirajak*.

In Igloolik you can go watch bowhead whale mothers nurse their calves, plus walrus, seals, polar bears, caribou and abundant waterfowl.

Visit St. Jude's Anglican cathedral shaped like an igloo in *Iqaluit*, the capital of Nunavut.

Kimmirut carvers produce colourful soapstone pieces for sale.

The area around *Kugaaruk* has excellent kayaking and great scenery.

Hike or boat to Bloody Falls Historic Park in *Kugluktuk/Qurluqtuq*.

Experience the world famous Canada Day weekend Midnight Sun Marathon in *Nanisivik*.

Visit the art and weave shops in *Pangnirtung/Panniqtuuq*.

Go cross-country skiing and sea kayaking among seals and narwhals in *Pond Inlet/Mittimatalik*.

Superb hiking, iceberg and whale watching in the glacier-crowned fiord coast of Baffin in *Qikiqtarjuaq*.

Good hiking, bird watching and berry picking in *Rankin Inlet/Kangiqiniq*.

Repulse Bay/Naujaat is a very traditional community of artisans with a rich Thule heritage.

Resolute/Qausuittuq is the "jumping off place" for expeditions to the North Pole and to Quttinirtaaq (famous Ellesmere Island) National Park.

See traditional Inuit living and beautiful contemporary clothing in Sanikiluaq.

Taloyoak/Talurjuaq is located on Spence Bay on the Boothia Peninsula, the heart of the Northwest Passage.

Umingmaktok/Umingmaktuuq is on the migration route of the Bathurst caribou herd.

And don't miss the chips made of kelp in the traditional community of artists in *Whale Cove/Tikirarjuaq*.

Conclusion

Reconciling the Inuit's right to chart their own future with the ecological constraints of a severely depleted species will not be easy. The federal government's solution, entrenching the right to hunt bowheads in the Nunavut land claim while subjecting the practice to conservation concerns, may seem like a politically palatable compromise. But by doing so, the agreement's negotiators reversed the conservation biology process. Instead of placing the onus on the Inuit to produce evidence that the stocks can tolerate a hunt, it is those who fear for the bowhead's survival who must prove that the hunt will pose a threat. And in an era of perpetual underfunding of wildlife research, particularly in Canada's Arctic, [41] it seems unlikely the data needed to properly understand the population dynamics of the Eastern Arctic bowhead, at least enough to set quotas with any degree of confidence, will be available any time soon. In such a climate of uncertainty, the regular, indiscriminate taking of even one bowhead from the Eastern Arctic may very well be, as Reeves calls it, "a big deal."

Neither does recent experience with small cetacean harvests in the Arctic offer much hope that Inuit authorities will be able to better manage whale stocks than the Department of Fisheries and Oceans, whose record managing fish stocks on both East and West Coasts is far from laudable. The decision to set a de facto bowhead quota long before scientific or traditional knowledge studies were complete only undermines the effort to build trust between whaling proponents and more cautious biologists. This year's taking of a mature female from the Foxe Basin population also undermines Inuit claims of a sustainable hunt, as scientists suspect that most, if not all, of the bowheads that frequent the region come only as mother-calf pairs.

Further weakening the argument in favor of an increased whaling effort is the growing body of evidence that whale blubber may pose an unacceptable health risk to its consumers. Despite these uncertainties and the persistent lack of consensus among scientists and government wildlife managers, preliminary planning is now underway for the 2004 bowhead hunt in Nunavut.

NUNAVUT'S WHALE WATCHING TOUR OPERATORS

There are many fine hotels and other businesses that cater to tourists visiting Nunavut. Dozens of tour operators offer a wide variety of adventure travel experiences and arctic wildlife viewing. Following is a list of tour operators who also offer whale watching tours:

- *Adventure Canada*
- *Alivaktuk Outfitting*
- *Arctic Odysseys*
- *Atlantic Marine Wildlife Tours*
- *Canadian Arctic Holidays*
- *Coal Harbour Tourism Association*
- *Frontiers North*
- *Igloolik Outdoor Adventure and Equipment Rentals*
- *Levi Palituq Outfitting*
- *Polar Ice Expeditions Ltd.*
- *Polar Sea Adventures*
- *Qaqqaq Translations and Tours*
- *Quillikkut Guides and Outfitters*
- *Sila Lodge*
- *Tagak Outfitting Services*
- *Toonooik Sahoonik Outfitters*
- *Tunuuiq Travel and Adventure*
- *Ullivik Outfitting and Guiding*
- *Ukamaktit Touring and Guiding*

If you would like more information, please contact: Nunavut Tourism **www.nunatour.nt.ca**

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CANADIAN MARINE ENVIRONMENT PROTECTION SOCIETY

Box 461 - 1755 Robson Street, Vancouver, British Columbia, Canada V6G 3B7

Tel: (604) 736-9514 • Fax: (604) 264-0653

Email: cmeps@whaleprotection.org • Web: www.whaleprotection.org/cmeps

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