

CANADA'S BELUGA WHALES:

Hunted, Poisoned, Unprotected



A report on the biology and population status of beluga whales in the Canadian Arctic where whales are threatened by overkilling, global warming and toxic contaminants, while remaining in limbo thanks to the politics of subsistence hunting.



SPECIAL REPORT

Beluga Whales in Captivity

PULL-OUT SECTION

DECEMBER 2006

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

Introduction

Of all the whales, the most recognizable is the beluga. In captivity, at least. But the species didn't come by its distinctive colour for the benefit of the modern aquarium visitor. Its bright white skin also makes it exceedingly difficult to distinguish against a backdrop of the whitecaps and ice floes that dominate its natural surroundings. Camouflage is just one of a suite of adaptations the beluga has evolved to survive in one of the most inhospitable environments on the planet. By no stretch of the imagination are the beluga and beluga conservation black-and-white subjects. Public perceptions are laced with inaccurate generalizations and simplifications. The politics of government management can be bewildering. As with so much in wildlife biology, context is everything. This report is an attempt to sort through those misconceptions and set the record straight on one of the icons of the Canadian Arctic.

The first source of confusion surrounding the beluga is its name. The taxonomy is far from straightforward and is sometimes misleading. As a marine mammal that shares an ancestor with all the other whales, dolphins and porpoises, it falls into the order Cetacea. It was assigned to the family

Monodontidae, not, as the word implies, because it has a single tooth, but because its closest living relative on the evolutionary tree is the tusk bearing narwhal.¹ All belugas are members of the species *Delphinapterus leucas*, from the Latin for “white whale without wings,”² another imprecise description. Several other whales make do without lengthy limbs, and the missing appendage in question would be a dorsal fin. In addition, only adult belugas are white. Their young are grey or even reddish-brown until the age of two years, references to “a little white whale on the go” in Raffi’s popular children’s song “Baby Beluga” notwithstanding.³ Herman Melville’s decision to subtitle his classic novel Moby-Dick “The White Whale” also presents a source of confusion, as Captain Ahab’s quest was a singular sperm whale afflicted with albinism.

Finally, the word “beluga” is often used to describe a species of sturgeon, *Huso huso*, a fish prized for its eggs – roe popularly known as beluga caviar. The fish and the whale have little in common, however, beyond an aquatic habitat and, in some cases, a high risk of extinction.⁴

A Dozen Belugas



The Numbers

Getting the terminology right may be challenging, but teasing apart the myriad myths and facts surrounding beluga conservation is even more so. A typical mention of belugas in news reports and press releases almost inevitably includes the adjective “endangered” or “threatened”⁵ even though the latest estimates by the IUCN – World Conservation Union put the global population as high as 150,000 and officially lists the species as “vulnerable.”⁶ Canada’s beluga population may represent more than half the total, but even something as simple as a national estimate is anything but easy to determine. The website of the federal Department of Fisheries and Oceans (DFO), which is responsible for the conservation and management of all marine mammals in Canada, puts the total at between 72,000 and 144,000⁷, although those figures are not representative of the latest science from the DFO’s own scientists. Current estimates suggest a total of no more than 115,000.

The wide range is not a result of conflicting surveys – although disagreement even within a team of biologists is common – but of the assumption that total counts of belugas seen at the surface (the lower number) can be doubled to account for animals beneath the sea surface when the count was taken (the higher number). The Vancouver Aquarium, which has one of the oldest captive beluga displays, offers a much lower figure, pegging the world total at only 50,000 to 70,000 but offering no national summary.⁸ Whatever the actual total, and despite the imprecision of most population surveys, government surveys imply the Canadian beluga is in no danger of disappearing any time soon. However, only three of seven identified distinct populations (see Canadian Beluga Population box) number in the tens of thousands. That leaves four populations in trouble, including one – Ungava Bay in Northern Quebec – where numbers are so low that some biologists are pessimistic about the chance for recovery. In the Ungava Bay case, it may be the first population of belugas to be extirpated since the introduction of the current wildlife management regime in 1996.

The official status of each population is no simple matter, thanks to the two-step nature of the listing process since the advent of the Species At Risk Act (SARA) in 2003. First comes a scientific assessment by members of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The table below provides the latest COSEWIC estimates and recommended status, as provided in a series of assessments in 2004 and 2005.

Before a species receives an official conservation status, however, the scientific recommendations must be approved by the federal minister of the environment, currently Rona

CANADIAN BELUGA POPULATIONS

(PRIOR COSEWIC STATUS)

ENDANGERED

Ungava Bay	0 – 50
Eastern Hudson Bay	3,100

THREATENED

St. Lawrence Estuary	1,100
Cumberland Sound	2,000

SPECIAL CONCERN

High Arctic	21,000
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NOT AT RISK

Western Hudson Bay	23,000 – 48,000
Beaufort Sea	28,000 – 40,000

Sources: DFO, Canadian Science Advisory Secretariat Research

Ambrose. To the surprise of many marine biologists and conservationists, in June 2006, she proposed that none of Canada’s Arctic belugas be listed under SARA, not even the smallest populations in Ungava and Eastern Hudson Bay. In effect, she overrode the advice of the government’s own scientists. Only the St. Lawrence belugas are to receive a listing of “threatened.” A final decision on the listing was announced in September.⁹ Officially, the reasoning behind the recommendation is that Inuit land claims groups object to any listing under SARA, at least until the Nunavut Wildlife Management Board participates in the review process. “We haven’t had the time for them to be engaged,” says DFO’s regional manager for species at risk, Ray Ratynski. “There are requirements of the land claims that we’ve had trouble coming to terms with.”¹⁰ Curiously, although discussions with Inuit authorities in Nunavut and Northern Quebec are continuing, no mention is made of the Inuit agencies in Northern Quebec, despite the fact that the smallest populations are found there. In the meantime, all beluga hunting quotas continue to be set by whale population and then local authorities are allowed to allocate those quotas by community as they see fit. Unfortunately, after many requests made to the DFO and the Nunavut Wildlife Management Board for information regarding numbers of beluga whales killed since 1996, no information was forthcoming.

Whatever the politics of the day determine, the ecology of the situation is clear. If the new list of species at risk does not include the most endangered whales in the country, the justification for restrictive management measures will be difficult to sustain. And the belugas could find themselves at the centre of a major political debate over the value of a Species at Risk Act that fails to live up to its most basic objectives.

The Human Factor

Controversy over Canada's belugas is not new thanks to a lengthy history involving scientists, the public and those for whom belugas are an integral part of their daily lives. The marine biologists charged with determining the size of Canada's beluga populations, and producing conservation management recommendations for them, know their research subjects from field surveys, tagging studies, laboratory examinations, and necropsies. In addition to revealing the nature of their own biology, beluga research done in the wild has shed light on underwater acoustics, foraging and social behavior, and marine contaminants.

Because they are small enough to keep in modest tanks, belugas were among the first captive whales to be studied by science.¹¹ Belugas are also relatively easy for humans to capture, although the process is stressful and potentially lethal for the whales. Canadian television news filmed and reported a capture in which juvenile whales were targeted and chased into shallow waters using high-speed boats. The newscast showed a man jumping on a beluga's back and riding the animal rodeo-style. The whale was then wrestled into submission before hauling the beluga aboard a boat using a sling. Captured whales remain inside shallow holding tanks until trucks and then airplanes take them to the aquariums that placed the purchasing orders.

Most members of the public's first-hand experience comes through seeing these whales performing tricks in aquariums, where belugas are a favorite exhibit. The Vancouver Aquarium currently holds four belugas, including three taken from the Western Hudson Bay population near Churchill, Man., and one born at the aquarium. Four adult belugas and two beluga calves have died at the aquarium, including Tuvaq, who was born three years ago and died in 2005.¹²



The other dolphinarium in Canada that exhibits beluga whales is Marineland in Niagara Falls, Ontario, where currently there are 26 belugas on display that were captured in Russia (see *Special Report on Captivity 2006*).

For several thousand residents of the Arctic, however, belugas are neither a scientific curiosity nor a source of amusement. In Canada, the Inuit of the Northwest Territories, Nunavut, and Nunavik (Northern Quebec) have been hunting belugas since their ancestors migrated to the Arctic some 1,000 years ago.¹³ Belugas, in fact, make a significant contribution to the diet of Inuit in many of the more isolated communities in the Canadian Arctic, where the cost of flying in food from the South is prohibitive. According to a 1996 study, for example, the typical Baffin Island Inuk obtained between 29 and 51 per cent of his or her food energy from "country foods," as beluga and other wild animal meals are known in the North.¹⁴ This is partly a result of tradition but also due to the cost of flying in packaged food from the South. However, although the meat and blubber of the beluga are nutritious, Arctic human populations and world health authorities are concerned about the levels of contaminants in those same foods.

Biology Boggle

Because of that dependence on belugas and other marine mammals, the Inuit's fate and that of the beluga are intimately linked. In theory, this should produce an alliance of like-minded wildlife conservation biologists, government wildlife managers and consumers. Should a population of belugas fall below the point where it can sustain a regular hunt, both the whale and the Inuit whaling communities will suffer. But answers to population status questions are not easy to come by. Government and

independent biologists who study belugas will often reach different conclusions, including what is traditionally believed by the Inuit who live with the belugas. Unfortunately, while the government tries to accommodate conflicting views and manage populations accordingly, the road to recovery of whales at risk grows longer.

It is difficult enough to manage populations within political boundaries but transboundary wildlife management, such as when belugas migrate between countries like Canada and Greenland, is even more challenging. Independent researchers believe that a significant majority of the High Arctic beluga populations travel back and forth through the

“North Water,” a stretch of open water between Canada’s Ellesmere Island and northwest Greenland.¹⁵ This population of belugas has been the subject of much concern because studies indicate it is being overhunted in Greenland and the overwintering population has declined substantially. The kill from this population is small in Canada, largely restricted to two small communities – but Greenland’s failure to set sustainable quotas could pose a serious challenge for those trying to minimize the impact of Greenland and Canadian hunting rates on these wild beluga populations.

The belief that the High Arctic population summers in the Central High Arctic and migrates to West Greenland to overwinter in Disko Bay was recently challenged by a team of Canadian government and Danish researchers who published a study that argued that the overwintering share is closer to just 15 percent.¹⁶ As a result, the Greenland hunt “doesn’t affect the bulk of the population,” according to DFO’s Pierre Richard, a member of the study team.¹⁷

The team’s conclusions are based on satellite tagging studies. However, Kerry Finley, a veteran biologist who studied the High Arctic belugas in the 1970s and 1980s, is skeptical of DFO’s conclusion, and he is not alone. Finley is joined by experts like Dr. Randall Reeves and Dr. William Koski, who also questions the DFO’s claim to such a low percentage of shared belugas.

“Although satellite tagging can be a powerful tool in whale

research,” says Finley, “I believe that the remote biologist can overextend their interpretations when they have limited hands-on experience of actual field conditions. In this case, the main question is whether it is possible that the bulk of the Canadian belugas remain in the North Water. Based on personal experience and surveys by other biologists, including DFO, I’d say it is unlikely.”

Finley offers several reasons to back his skepticism. First, most of the satellite tags stopped transmitting in October and none were operating after November. For this reason alone, explains Finley, it is not possible to conclude that the bulk of the population remained in the North Water. Finley’s own studies in Hudson Strait showed that belugas were highly mobile right up to early December. Belugas are able to penetrate through dense ice and there is no indication that ice conditions impede their movements right up to mid-winter. However, by February when ice reaches its maximum extent, the North Water is limited to narrow leads. Finley, who conducted the first aerial surveys of this potential overwintering habitat, concluded that no more than a few hundred belugas overwinter there. This conclusion was later reiterated by DFO’s Pierre Richard, who surveyed the North Water a few years later. But now Richard claims that between 13,870 and 20,570 belugas must overwinter there. “I have seen the North Water in February,” says Finley, “and 13,000 belugas are not hiding there.”

CONSERVATION CONCERNS

By the Whale and Dolphin Conservation Society



The status of the whole beluga species is cause for concern; with the Scientific Committee of the International Whaling Commission concluding in 1999 that only four out of 29 beluga populations are ‘stable’. Belugas are threatened across their Arctic range by oil and gas development, over-hunting, over-fishing, vessel traffic, industrial development and pollution. Russia sets capture and hunting permits for well over a thousand belugas annually, despite the profound lack of information on the status of the species in its waters. In 1999, the Deputy Chairman of the Government of the Russian Federation acknowledged that the beluga quota was based on unreliable population estimates and prohibited capture and export of belugas that year. However, no studies were undertaken to investigate the size and status of the population and a sustainable level of removals, and the Russian Federation reinstated the high quotas the following year.

In 1998, the Resolution on Directed Takes of White Whales (Res. 1998-9) was adopted by the IWC. This expressed concern that directed takes might not be sustainable and encouraged all beluga range states to ensure that catch levels are properly monitored and to provide relevant scientific data. In 2001, the IWC passed a Resolution on Small Cetaceans (IWC53/47), which notes: “the depleted or unknown status of many beluga stock” and “supports the recommendations of the Scientific Committee in 1999 that beluga range states continue studies to resolve the structure of beluga stocks, conduct contaminant analysis and health assessments and provide relevant scientific data to the Scientific Committee”.

Data are not readily available on the number and source of live belugas captured in Russian waters but the World Conservation Monitoring Centre records the export of 160 belugas

between 1990 and 2004, all captured from the wild. One hundred and forty one of these exports were from the Russian Federation. 2002 and 2003 were the years with the highest exports from Russia, with 37 recorded for 2002 and 36 for 2003. Any international trade in these animals, including by Canada, will further increase the demand for belugas by the captivity industry, with a resultant impact on wild populations targeted by live capture operations.

EDITOR’S NOTE: Marineland in Niagara Falls has imported 26 beluga whales from Russia. See *Special Report on Captivity 2006*.

PHOTO: <http://www.whales.org.au/gallery/index.html>





THE RANGE OF THE BELUGA WHALE IN CANADA

Belugas are found in arctic and subarctic waters along the northern coasts of Canada, Alaska, Russia, Norway and Greenland. It is roughly estimated that between 72,000 and 144,000 belugas live in Canadian waters. These animals are distributed in the western Arctic (Beaufort Sea), high Arctic (Lancaster Sound, Baffin Bay), eastern Arctic (Cumberland Sound and southeast Baffin, Hudson Bay, James Bay and Ungava Bay) and in the St. Lawrence Estuary.

The various populations of belugas are distinguished on the basis of their summer distribution and, for some populations, by measurable differences in genetic and chemical analyses. Within Hudson Bay, for example, some summer populations are genetically distinct from others even though all of these populations occupy Hudson Strait in winter. The St. Lawrence population is considered now to be isolated from other beluga populations even though there was likely some exchange with other populations in the past when the distribution of the species was much wider.

In summer, belugas gather in specific estuaries, where a river meets the ocean, and their adjacent waters for several weeks. In the western Arctic, for example, belugas can range 800 kilometres from the Mackenzie Estuary during the summer while, in Hudson Bay, belugas seldom range more than 100 or 200 kilometres from the estuaries of the Churchill and Nastapoka Rivers.

The beluga's winter distribution is not as well understood. They are dependent on areas of shifting ice where open water provides access to air. Some areas of open water, called polynyas, recur in the same locations year after year. Occasionally, belugas may become entrapped when these features freeze, which can result in the death of some whales.

Source: Fisheries and Oceans Canada

ESTIMATES OF NUMBERS IN AREAS WITHIN RANGE OF BELUGAS IN CANADA

AREA	POPULATION ESTIMATES*
1. Beaufort Sea	20,000 – 40,000
2. High Arctic	20,000 – 40,000
3. Cumberland Sound	1,000 – 2,000
4. Northern Hudson Bay	1,000 – 2,000
5. Western Hudson Bay	24,000 – 48,000
6. Southern Hudson Bay	2,000 – 4,000
7. James Bay	3,000 – 6,000
8. Eastern Hudson Bay	1,000 – 2,000
9. Ungava Bay	20 – 40
10. St. Lawrence Estuary	460 – 920

*The first number is the estimate based on animals seen at the surface, the second assumes that there are in fact twice as many because of those missed by surveys while they are diving. This assumption is based on recent time-depth recordings.

Source: DFO Website: <http://www.dfo-mpo.gc.ca>

BELUGA WHALE

(Delphinapterus Leucas)

Interesting Facts: The common name “beluga” means “the white one” in Russian. In reality, only adults are white; calves are born brown or dark grey and gradually pale to become totally white between six and eight years of age. Belugas have a very thick skin that is at least 10 times thicker than that of dolphins and 100 times thicker than that of terrestrial mammals. Unlike most whales, belugas have no dorsal fin, just a small ridge up to 50 centimetres long at the midpoint of the back. Their flippers are short and broad, providing precise control over orientation. Belugas have a unique head, with its flexible neck and malleable, bulbous “melon” that sits in front of the skull. A means of focusing clicks, whistles, squeaks and twitters, the melon is responsible for one of the largest vocal repertoires of any marine mammal.¹ With each distinct sound, the fat-filled melon can ripple and bulge. Like dolphins, beluga brains sleep one hemisphere at a time, ensuring at least half their minds are alert to possible threats.² Belugas spend a significant amount of time under water and can dive down to depths of 400 to 800 metres. The deepest dive recorded from a male beluga was in excess of 1,000 metres!

Males Max Size:	3.65-4.25 m
Males Max Weight:	450-1,000 kg
Females Max Size:	3.05-3.65 m
Females Max Weight:	250-700 kg
Newborn Calves Max Size:	1.5 m
Newborn Calves Birth Weight:	50-80 kg
Life Span:	35-45 years

Prey: Fish such as capelin, arctic cod and herring, and invertebrates such as shrimp, squid and marine worms.

Sources:

¹ Martin, A.R. and T. G. Smith. 1999. Strategy and capability of wild belugas, *Delphinapterus leucas*, during deep, benthic diving. *Canadian Journal of Zoology* 77: 1783-1793.

² Hrynshyn, James. 2002. Whales full of surprises. *News/North*. Jan. 7, 2002.

DFO Website: http://www.dfo-mpo.gc.ca/zone/underwater_sous-marin/beluga/beluga_e.htm



PHOTO: Eva Hejda

BELUGA HUNTING IN CANADA

Beginning in the middle of the eighteenth century, commercial whaling for belugas continued over a period of 200 years for certain populations in the eastern Arctic and over a period of 93 years for the St. Lawrence population. In the Arctic, belugas were generally caught for commercial purposes in entanglement nets or drive fisheries in shallow waters. In the St. Lawrence, they were caught in weirs in the shallow areas and by means of rifles and harpoons in the deeper areas. Canada discontinued commercial whaling in 1972, and hunting for belugas in the St. Lawrence, for whatever purposes, was prohibited in 1979.

The total cumulative numbers of belugas caught for commercial purposes, uncorrected for sunk animals, were about:

- 11,000 in the High Arctic (1868-1898);
- 7,000 off south-eastern Baffin Island (1868-1939);
- 9,000 in western Hudson Bay (1949-1970);
- 9,900 in eastern Hudson Bay (1752-1916);
- 1,200 in Hudson Strait (1909-1940);
- 1,800 in Ungava Bay (1731-1938); and
- 14,500 in the St. Lawrence Estuary (1868-1960).

Commercial whaling of belugas was practiced by various enterprises on different populations and not all of them ceased because of depleted stocks. Some ceased because it was not commercially viable. Commercial whaling of the High Arctic population of belugas was practiced by Scottish whalers as a subsidiary of the bowhead whale hunt, and operations ceased when the latter industry was no longer viable due to the few bowhead left in the area. The Cumberland Sound Hudson Bay Company beluga hunt and the Great Whale Hudson Bay Company hunt did cease because of over-exploitation. The Ungava Hudson Bay Company hunt probably ceased because there was not much demand for “porpoise” hides, beluga skin used in soft shoe laces and other household items. The Ungava operation also produced and sold whale oil taken from the belugas’ blubber.

Modern beluga subsistence hunts are often cooperative efforts involving several hunters and vessels and are conducted using harpoons and rifles. The boats used in the past were mainly kayaks. These have been replaced by motorized freighter canoes and larger fishing vessels up to 15 metres in length.

Between 1988 and 1996, the total number of belugas caught in the Canadian Arctic for subsistence purposes varied between 400 and 700 per year.

EDITOR’S NOTE: *CMEPS has tried repeatedly to obtain from the DFO information on the number of belugas taken in subsistence whaling operations since 1996. Both the DFO and the Nunavut Wildlife Management Board have dismissed our requests for this specific information.*

Sources: K. J. Finley Ecological Research and DFO Website: <http://www.dfo-mpo.gc.ca>



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Beluga Whales In Captivity

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Belugas kept at holding facility in Vladivostock, Russia – June 2006.

HISTORY OF CAPTURES

“In Canada, live belugas were taken from the St. Lawrence up to the beginning of the 1960s and from the Churchill estuary since 1967. The total known number of belugas that were live-captured between 1967 and 1992 was 68.” -- DFO

There have been no live captures to supply the aquarium industry since 1992 when public concern forced the Department of Fisheries and Oceans (DFO) to enact the ban on capture and export. The Canadian public became concerned after a news story was aired on TV showing the brutal capture of 4 belugas in Hudson Bay. Those captured whales were shipped to the Shedd Aquarium in Chicago where upon their arrival, two of the belugas were injected with a de-worming solution commonly used for cattle. The whales died within 16 minutes of being injected.

Although live captures are no longer allowed in Canada, the Vancouver Aquarium in British Columbia still keeps, breeds and exports wild Canadian belugas. Marineland in Ontario imports beluga whales from Russia.

No government regulations are set in place to manage captive cetaceans in Canada. The Canadian Association of Zoological Parks and Aquariums produces guidelines for dolphinariums, but the association consists of businesses and individuals who already benefit from the commercial trade in whales.

THE INTERNATIONAL TRADE IN LIVE BELUGAS

Since Canada banned beluga captures in 1992, Russia has become the world's largest supplier of live belugas to the aquarium industry. Beluga captures occur today in the Amur river delta in Far East Russia. One company capturing belugas in this region has holding facilities for captured belugas at Maliy on the Black Sea and belugas may be transported there in a cargo plane equipped with two special containers built with soft rubber walls and floor. In Maliy Utrish, captured belugas are placed in tanks 5 meters deep and 15 meters in diameter. This holding facility supplies belugas to three dolphinariums in Russia (Moscow, St. Petersburg, and Sochi – a fourth one is under construction in Kislovodsk) and to dolphinariums around the world, including Canada, where Marineland has already imported 26 Russian belugas. Canada has also exported belugas in recent years. The Vancouver Aquarium has exported belugas to Sea World Corporation's aquariums in the USA, belugas caught just before the Canadian ban on capture came into effect. Currently there are 30 belugas on display in Canada's two dolphinariums. 28 belugas are kept in 8 US dolphinariums, where according to the US Marine Mammal Inventory Report, 42 captive belugas have already died. No one knows precisely how many belugas are kept in another dozen or so facilities around the world. Captured belugas can cost up to \$100,000 in the global market.

The Humane Society of the United States and the World Society for the Protection of Animals report that, “Belugas have also recently been imported (primarily from Russia) by China, Thailand, Egypt, Taiwan, Bahrain, and Turkey. Most of these countries do not have facilities capable of keeping this Arctic species at an appropriate temperature. As with Cuba and its bottlenose dolphins, Russia sees its belugas as a resource for generating hard currency – the sustainability of its capture program and the welfare of the animals are distant considerations at best.”

CANADA'S DOLPHINARIUMS THAT CLOSED *{ Or Never Opened Their Doors }*

From the time Wonderland in Maple, Ontario, opened its doors in 1981 and closed them in 1993, this amusement park displayed dolphins. Public concern ended Wonderland's dolphin shows. That same year, Sealand in Victoria, British Columbia, closed its doors after young orca trainer Keltie Byrnes drowned during a whale show. She had slipped into the sea-pen and every time she tried to get out, the orcas would pull her back into the water while a horrified audience watched.

In 2004, the West Edmonton Mall in Alberta, stopped the indoor dolphin shows and shipped the last surviving dolphin "Howard" to a sanctuary in Florida where he died a year later.

Other zoos and aquariums in Canada have tried in the last few decades to build whale and dolphin displays but stopped after encountering negative public reaction. For three years, the Montreal Biodome tried unsuccessfully to get people to accept the idea of building tanks to keep belugas, but those plans were finally abandoned.

The Granby Zoo, also in Quebec, proposed building a dolphinarium, but also backed off when the public reacted negatively to the plan.

Now the Calgary Zoo has announced plans to display belugas and polar bears. Calgary Alderman Craig Burrows had an online poll on the proposal and he wrote "After posting the survey I received hundreds of e-mail responses. Over 96% of respondents indicated that they were not in favour of the proposed zoo expansion if it included polar bears or whales."



Beluga petting pool at Marineland.

NOT EVERYONE LOVES MARINELAND

A small group of concerned citizens and residents of southern Ontario, regularly stand outside Marineland in Niagara Falls and peacefully hand out information on the cruelty of keeping whales in captivity. In 2003, Marineland sued the group [Niagara Action for Animals](#) for \$250,000, claiming libel, economic loss and damage to Marineland's reputation. After two years of stalling, Marineland finally dropped the lawsuit after being pressured by the courts. Meanwhile, [NAfa](#) continues to educate the public while standing outside this amusement park, which currently holds 26 beluga whales from Russia, 8 bottlenose dolphins (7 from the Black Sea; one born at Marineland) and 3 orcas, 2 captured in Iceland and 1 surviving female born in captivity.

The [HSUS](#) and [WSPA](#) report that, "Since May 1999, Marineland has imported... a total of 30 wild-caught animals in just five years. As with other live captures, appropriate scientific surveys to assess the impact of the removals were not conducted. Marineland is still importing live-caught cetaceans, at a time when the practice of keeping cetaceans in captivity in Canada is controversial. In a recent poll approximately two-thirds of those surveyed did not support the captivity of whales and dolphins and thought that the use of captive whales and dolphins for commercial purposes should be stopped. In addition, more than half of those interviewed said they would support laws that prohibit the importation of live whales into Canada."

In Nova Scotia, the SouthWest Shore Development Authority recently asked for government funding to build an aquarium

with beluga displays in Yarmouth. Opposition to such plans should be strong.

VANCOUVER AQUARIUM: BUSINESS AS USUAL

For the past 40 years, the Vancouver Aquarium has tried unsuccessfully to breed cetaceans. Only one beluga whale “Qila” remains alive today at 10 years old. Five other cetaceans, three orcas and two belugas born at the aquarium either died within minutes or within three years. The last cetacean born at the aquarium was in June 2006. He was a full-term stillborn Pacific white-sided dolphin, whose mother “Hana” had been imported from Japan to Vancouver on October 16, 2005, without her Japanese and Canadian owners noticing that she was five months pregnant at the time of the move.

The same thing happened to “Kavna”, a female beluga who was captured pregnant in Hudson Bay in the late 1970s. One day the Vancouver Aquarium staff realized that Kavna was in labour, and much to their surprise she gave birth to a calf “Tuaq”, who died of malnutrition and a bacterial infection four months later.

Beluga “Bella” died in 1976 after spending 8 years in captivity.

In 1980, Beluga “Lugosi” died from severe tissue trauma and a leak in his lung, surviving less than 13 years in captivity. Beluga “Sanaq” was captured in 1976 and died from shock following an antibiotic injection in 1985. Beluga “Churchill” died of a massive bacterial infection in 1989 after spending 4 years in captivity. Beluga “Tuaq” was born to mother “Aurora” on July 20, 2002, and died unexpectedly at three years old on July 17, 2005. The aquarium vet claimed that he didn’t know why.

No dolphinarium has ever been able to keep narwhal whales alive in captivity, and the Vancouver Aquarium killed 7 narwhals trying. A baby narwhal whale was captured in 1968 and shot due to severe rope cuts from the capture. Six narwhals were captured in 1970 and died within four months of bacterial infections and starvation. 26 cetaceans have died under the Vancouver Aquarium’s supervision, including 9 orcas, 7 narwhals, 6 belugas, and 4 Pacific white-sided dolphins. This high mortality rate is one of the reasons why the issue of keeping whales in captivity is so controversial in Vancouver, where it receives significant and sustained media attention. This should come as no surprise since Vancouver residents are notorious for having a soft spot for the plight of captive wildlife. In 1992, the City of Vancouver enacted a law that prohibits wild animal acts in circuses. In 1993, a majority of Vancouverites voted in a civic referendum in favour of closing the Stanley Park Zoo, right next door to the Vancouver Aquarium.

In 1996, the Vancouver Park Board conducted an extensive public consultation process that concluded that the majority of Vancouverites wanted to see a phase out of whale and dolphin exhibits in Stanley Park. The Park Board was about to bring a municipal bylaw into effect that would have stopped the Vancouver Aquarium from importing any more captive cetaceans and forced the gradual phase out of whale exhibits. However, at the eleventh hour, the aquarium threatened to sue the City of Vancouver if they went ahead with the ban. The Park Board then added four clauses to the original bylaw, which the aquarium now uses as loopholes to continue doing business as usual... but for one very important exception: the aquarium decided to close the orca whale tanks in Vancouver and stop keeping orcas.

In 2001, after four decades of keeping orcas in captivity in Stanley Park, it had become such a public relations nightmare for the aquarium, that the facility voluntarily shipped “Bjossa”, the last captive orca in Vancouver, to SeaWorld Corporation in San Diego. She died there four months later, alone in a reserve tank hidden from public view. However, although the Vancouver Aquarium has pledged never to display orca whales again, that compassion has not been extended to the other two cetacean species still performing for audiences in Stanley Park. Recently the aquarium announced plans to import 4 more belugas and 4 dolphins, despite surveys showing that 68.3% of Greater Vancouver residents oppose such plans. For more info on the poll, please visit <http://www.zoocheck.com/programs/marine/vancouver/poll.shtml>



Beluga mother ‘Aurora’ with calf ‘Qila’, the only surviving captive-born cetacean at the Vancouver Aquarium.

CANADA’S CAPTIVE-WHALE ADVOCATES

For more information on cetaceans and other wildlife displayed in Marineland, please contact

**NIAGARA ACTION
FOR ANIMALS**

www.niagaraactionforanimals.ca

and

ZOOCHECK CANADA

www.zoocheck.com

For more information on whales in captivity in Stanley Park, the Vancouver Park Board cetacean bylaw and the Vancouver Aquarium’s whales and dolphins, please contact

NO WHALES IN CAPTIVITY

www.nowhalesincaptivity.org

and

LIFEFORCE FOUNDATION

www.lifeforce.org



NO MORE BELUGAS IN NEW YORK AND MEXICO CITY

In 1996, two belugas captured in Russia were sold to an amusement park in Mexico City. For 9 years “Niko” and “Gasper” were displayed under a rollercoaster, surviving the vibration and noise, and the pollution of Mexico City. The park owners finally realized that these belugas could not survive much longer without veterinary care. In October 2005, the whales were shipped in poor health to the Georgia Aquarium in Atlanta, USA. A year later, Gasper is unlikely to survive. The Georgia Aquarium is already looking to buy another male beluga for their breeding program, even though it had received from the New York Aquarium their two remaining belugas only a month before Niko and Gasper had arrived from Mexico City. Public concerns closed cetacean displays in New York in September 2005.

Right after Niko and Gasper left Mexico City, Mexico enacted a law that prohibits exports and imports of marine mammals. However, there remains approximately 240 dolphins in 20 dolphinariums and 3 travelling circuses. For more information, contact Conservacion de Mamiferos Marinos de Mexico.comarino@yahoo.com or visit [Cetacean Society International's](http://www.csiwhalesalive.org) website at www.csiwhalesalive.org

For more information on whaling and whale captivity around the world, please contact

**WHALE AND DOLPHIN
CONSERVATION SOCIETY**
www.wdcs.org



Captured calves and juvenile belugas, Vladivostock, Russia – June 2006.

THE CASE AGAINST MARINE MAMMALS IN CAPTIVITY

By Humane Society of the United States www.hsus.org
and the World Society for the Protection of Animals www.wspa.ca
2006 3rd Edition

Excerpts: In the debate over marine mammals in captivity, the public display industry maintains that marine mammal exhibits serve a valuable conservation function, people learn important information from seeing live animals, and captive marine mammals live a good life. However, animal protection groups and a growing number of scientists counter that the lives of captive marine mammals are impoverished, people do not receive an accurate picture of a species from captive representatives, and the trade in live marine mammals negatively impacts populations and habitats. The more we learn of marine mammals, the more evidence there is that this latter view is correct.

... The public display industry has for many years asserted that the display of marine mammals serves a necessary educational purpose and that the animals' welfare need not necessarily be compromised to achieve this. Mostly, this assertion has gone unchallenged. But as news gets out about traumatic captures, barren concrete tanks, high mortality rates, and aberrant – even dangerous – animal behaviour, people are changing the way they “see” animals in captivity.

Truth behind the advertising: Viewing captive animals gives the public a false picture of the animals' natural life. Worst yet, it desensitizes people to captivity's inherent cruelties – for virtually all captive marine mammals, the world is a tiny enclosure, and life is devoid of naturalness.

... Fierce debate continues over the issue of mortality rates and longevity, especially of whales and dolphins, in captivity versus in the wild. The most conclusive data are for orcas; their annual mortality rates are significantly higher in captivity than in the wild.

... But while humans can subdivide the captive experience and even conclude that one aspect is more or less damaging to the animals than another, the totality of the captive experience for marine mammals is so contrary to their natural experience that it should be rejected outright.

The HSUS and WSPA believe it is wrong to bring marine mammals into captivity for the purpose of public display.

Belugas In Trouble

Inuit have worked alongside biologists in the Beaufort Sea, Hudson Bay and the High Arctic, helping guide the research process with their intuition, experience and the “traditional knowledge” of their elders. Unfortunately, a knowledge base consisting largely of anecdotal observations can just as easily come to conclusions at odds with those of the scientists, whose own data are often limited by insufficient funding for complete population surveys. Conflicts between government managers, whose decisions are largely informed by scientific advice, and communities that rely on beluga hunts are inevitable. Ongoing debates include the status of the same Cumberland Sound belugas, which one day could be upgraded from the “threatened” category to the more serious “endangered” under SARA. Local whalers insist the move would be unwarranted, and the latest COSEWIC assessment, in 2004, suggested that the current quotas, about 40 a year, “appear to be sustainable.”¹⁶ The territorial hunting authority, the Nunavut Wildlife Management Board, has consistently opposed strict conservation designations as unwarranted. But with only 2,000 belugas in the population, the line between sustainable and unsustainable isn’t all that wide.

More troubling are the belugas found in the waters south of Baffin Island. The history of attempts to manage Inuit hunts in Nunavik are marked by violations of quotas, declining numbers and ever-harsher restrictions imposed by Ottawa. The most dire situation is in Ungava Bay. The 2004 COSEWIC Assessment was blunt:

All signs indicate that the population residing in Ungava Bay is very low and may be extirpated. However, it is difficult to definitely conclude that they have been extirpated because beluga from other populations may visit Ungava Bay. Hunting caused the population decline and continues in Ungava Bay, posing a threat to any remaining beluga.¹⁷

If any of the belugas that once summered in Ungava Bay remain, they probably number fewer than 50. At that level, restoration of a healthy population is nearly impossible, and will require a complete prohibition on hunting for any chance of success. The problem is that although hunters in Hudson Strait are allowed to take belugas belonging to healthier populations, such as those belonging to Western Hudson Bay, it is impossible to tell which group any particular whale belongs to. At best, the result is a small, but disastrous loss of a few whales each year from a critically endangered population. At worst, Ungava Bay has already lost all its native whales, and those taken are actually members of yet another population at risk.

The story is only slightly less worrisome for the Eastern Hudson



Bay beluga. Once some 6,000 to 7,000 could be found along the western Quebec coastline, but the latest COSEWIC assessment showed a rapid decline in the final years of the 20th century. The population was uplisted to “endangered” from “threatened” in 2004. As with Ungava, the culprit was aggressive hunting. Genetic sampling between 1997 and 2002 showed that more than 35 percent of the belugas taken by Nunavik hunters in the region belonged to the EHB population. Even after the federal government put the EHB beluga off-limits to all whalers, the proportion of EHB beluga in the total catch only fell to 23 percent.¹⁸ The 2004 assessment was blunt: “Mathematical models predict that it will likely disappear under present hunting levels in less than 10 to 15 years.”¹⁹

That prediction is not new. More than four years ago, one of the authors of the report that used genetic tests to identify the origin of hunted belugas, Mike Hammill, gave the same warning to members of Nunavik’s Anguvigak hunters and trappers association at an annual general meeting in Kuujuaaraapik. Hunters had taken 140 belugas from the EHB population, 30 more than the maximum allowed and seven times what Hammill said would be sustainable. The overhunting wasn’t restricted to Eastern Hudson Bay, though. That same year, Nunavik hunters had negotiated an increase to their total beluga quota, from 290 in 2001 to 370 – this despite the fact that at least 395 were reported killed in 2001, and Hammill said he suspected the real number was even higher. According to a report in the region’s weekly *Nunatsiaq News*, hunters insisted boating noise was simply driving whales away from shore.²⁰

The response from the government was to close the entire EHB region for the summer season. It will be several years before we know if the measure was taken quickly enough, but events of the last few years have not been encouraging. In 2005, for example, the quota for Hudson Strait (the only legal place to seek them in Northern Quebec since the introduction of a moratorium on the EHB hunt) was 135. But by early November, that limit had already been topped, with at least 149 reported taken, including five from Ungava Bay and one from EHB. Ottawa’s answer this time was an immediate closure of the Hudson Strait hunt for the remainder of the season. Retaliatory action against communities that exceed their quotas is not expected. When hunters from

°Salluit, a hamlet on the extreme northern end of Quebec took 22 belugas in one day, seven above their entire quota, Ottawa declined to do more than “take note.”²³

A new three-year beluga management plan for the region was unveiled this June, In it, the Department of Fisheries and Oceans sternly warned that it was “absolutely forbidden” to hunt in EHB and Ungava, and promised future quota cuts if the overhunting continued. But the 2006 – 2008 Beluga Management Plan for Nunavik, developed in collaboration with Nunavik communities, the Nunavut Wildlife Management Board and Inuit land-claims groups, set the same quota for Hudson Strait as the previous year: 135.²⁴ Again, the pressure is on hunting communities to abide by the regulations, and find something to replace the food that the beluga represent.

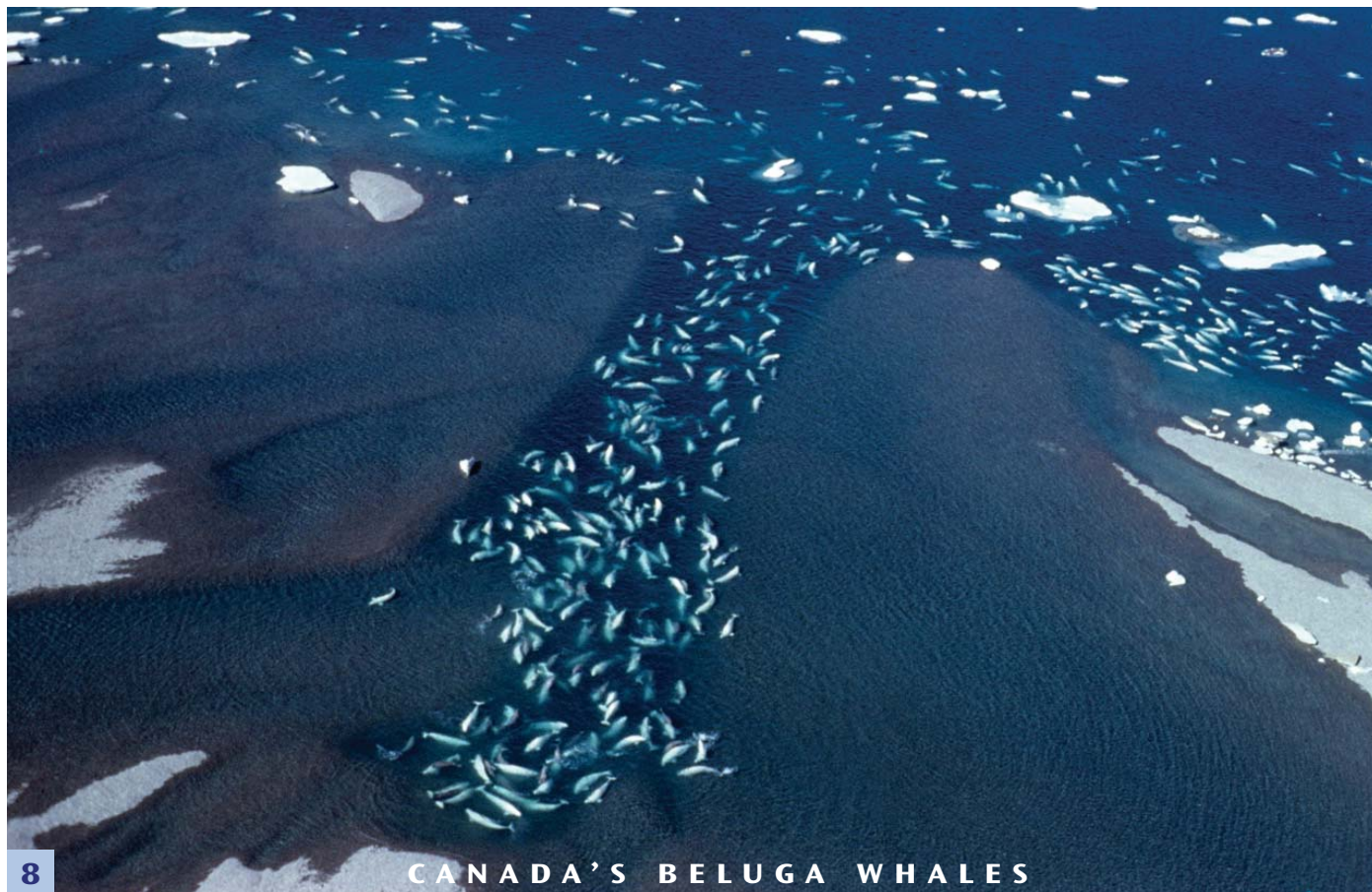
The wide variety in size and conservation status, as well as the accompanying politics, is similar around the circumpolar region. In arctic waters controlled by the United States, for example, some populations, such as those that summer in the Eastern Bering Sea, are considered relatively healthy at between 8,000 and 10,000.²⁵ The Cook Inlet beluga in southern Alaska, by contrast, have been the subject of intense study by scientists as the population there dwindled from 1,300 through the 1980s and '90s to fewer than 400. Yet the U.S. government chose in 2000 to officially describe them as “depleted” instead of the “endangered” status that would trigger a series of conservation measures under the

Endangered Species Act.²⁶ Government agents explained then that because overkilling was to blame, all that was required was tighter control of hunting. But the numbers continued to fall. As of February 2006, only 278 could be found, and the National Marine Fisheries Service launched another review of the status of the Cook Inlet beluga.²⁷

Russia faces comparable management challenges for its beluga, with populations ranging in size from a few hundred or a thousand (Svalbard) to 20,000 (Sea of Okhotsk).²⁸ Greenland has the questionable good fortune to have only one discrete population of note to manage in the waters off the west coast of the island, having extirpated the other populations. Unfortunately, that single population has recently fallen dramatically and is the subject of international concern.²⁹

Greenlandic Inuit continue to hunt for belugas at rates higher than many scientists believe are sustainable,³⁰ and no reliable estimate of how many are left has been available for several years. An attempt to survey the population in 2004 was called off due to poor weather conditions, and another attempt was scheduled for the summer of 2006.³¹ Reports suggest there may be no more than 2,000 in West Greenland waters³² and at current rates of harvest, the probability of extinction within 20 years is 90 percent, according to the University of Washington biologist Carlos Alvarez-Flores and Mads Peter Heide-Jørgensen of the Greenland Institute of Natural Resources.³³

Belugas gathering in Cunningham Estuary



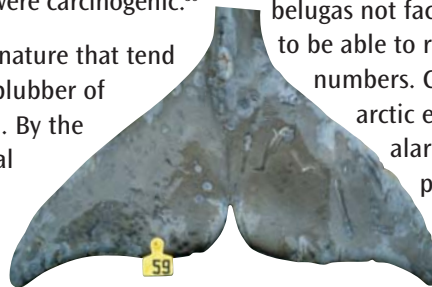
Further Down The Line

While no one with experience developing beluga hunting regulations would argue it's an easy job, overkilling is at least a local problem in Canada. Global threats, by comparison, pose a much greater theoretical challenge. Among the most challenging are contaminants that find their way into the arctic food chain. Worrisome concentrations of heavy metals and "persistent organic pollutants" associated with cancer and organ failure have been found in the tissues of most species at higher trophic levels throughout the Arctic. Belugas and those who eat beluga, are no exception.

Most of what we know about the effects of pollution on belugas comes from studies of the St. Lawrence population. Living in one of the most industrialized parts of the country, it was inevitable that the belugas there would be affected. Most Canadians who follow environmental affairs have heard that a beluga carcass in the St. Lawrence is considered toxic waste. Technically, that was never true. But by the 1980s, beluga numbers had fallen to a few hundred and some biologists were on the verge of writing them off as beyond hope.³⁴ Until a few years ago, the St. Lawrence beluga metabolism had the dubious distinction of being the most polluted on the planet. (That honour has since been transferred to the mammal-eating members of the species *Orcinus orca*, or killer whale.³⁵) While the St. Lawrence population is by no means out of the proverbial woods, recent toxicology studies and body counts are beginning to tell a more optimistic story, one that suggests arctic populations do not have to suffer the same fate.

The litany of chemical contaminants that find their way from industrial point sources around the globe to Canadian ecosystems is lengthy and full of polysyllabic terms best left in the laboratory. One of the more familiar acronyms, however, also happens to be one of the more useful examples. PCBs, or polychlorinated biphenyls, have been associated with cancer in a wide variety of test subjects. Once used as coolants and lubricators in transformers and other electrical gear, they were banned in 1977 after it became clear they were carcinogenic.³⁶

PCBs are synthetic chemicals not found in nature that tend to bio-accumulate in fatty tissues like the blubber of whales, as they are passed up a food chain. By the time they were removed from the industrial manufacturing process, the St. Lawrence belugas had built up damaging



concentrations of PCBs, as well as multiple other toxins. But the good news is those concentrations appear to have peaked some time between 1965 and 1977. Since then, levels have been falling, in line with measurements of general environmental contamination in the region.³⁷ The population is showing signs of recovery, enough to warrant a downlisting from "endangered" to "threatened" in 2004.³⁸

The same cycle is likely to recur with other chemicals, including those that have turned up in the Arctic. A dramatic example that has just come to light is the story of the furniture stain repellent perfluorooctane sulphonate, or PFOS. It was used for decades with little evidence of a threat to humans, but recently uncovered links to bladder cancer and liver failure finally convinced the main manufacturer, the American corporation 3M, to cease production in 2000. Since then, PFOS levels in ringed seals have fallen fast and there is every reason to believe belugas should be enjoying the same benefits.³⁹

Not every toxin, suspected and verified, is on its way out, of course. In addition to PCBs, and PFOS, the list of suspects includes dioxin, mercury, cadmium and other heavy metals, all of which have been found in arctic belugas, though not to the same degree as the contamination in the St. Lawrence. But even at a tenth of southern levels, some compounds could prove dangerous. Members of a chemical family known as PHAHs, for polycyclic aromatic hydrocarbons, trouble some researchers. Produced by the incomplete burning of fossil fuels and other garbage, PHAHs have been associated with reproductive and immune system failure.⁴⁰ A recent study by a team of American and Canadian biologists and veterinarians, raised alarm bells about the apparent effect of PHAHs on belugas. "Because beluga have a systemic response to PHAH contaminants at low doses, toxic effects may be expected in Arctic populations," they wrote. And until society abandons the combustion of coal and oil, PHAH contamination is not likely to decline.⁴¹

The long-term effects of persistent organic pollutants on beluga populations is uncertain. On the one hand, there is widespread agreement among toxicologists and growing recognition in society at large of the dangers they pose in sufficiently high concentrations. On the other, most belugas not facing extreme pressure from hunters appear to be able to reproduce successfully and maintain healthy numbers. Closer monitoring of contaminant levels in arctic ecosystems is certainly a wise investment; alarmism may be premature, but probably politically necessary.

A Change In The Weather

No review of wildlife biology would be complete without a look at the implications of climate change. As almost every report on global climate change points out, the warming effects on the atmosphere and oceans brought on by the burning of fossil fuels are the most dramatic in the higher latitudes.⁴² What little debate exists among climatologists on the subject is largely restricted to the magnitude and speed of future warming. Beyond reasonable doubt is the fact that levels of heat-trapping gases such as carbon dioxide and methane are their highest in several hundred thousand years.⁴³ Less certain is the historical context of the current warming, which is about 0.6 C above pre-industrial norms. A 2006 review by the U.S. National Academy of Science of the famous “hockey stick” graph – a visual representation of long-term stability in global average temperatures followed by a sharp increase in the last 150 years – concluded that the basic premise supports “the conclusion that current warming is occurring in response to human activities.”⁴⁴

Much has been made of the consequences of that warming for polar bears, which have become something of poster children for climate change. Polar bears rely on ice cover to ensure ready access to seals, and a warming Arctic will bring longer ice-free seasons on the polar seas.⁴⁵ Making a similar link in the case of belugas is not so simple. There is little in the scientific literature on the possible effects of climate change on the species. For the DFO’s Pierre Richard, it is just as easy to argue that some populations may benefit as suffer. He points out that belugas are highly adaptable in terms of the environmental conditions in which they can thrive – from the extreme North Waters of the High Arctic to the relatively warm St. Lawrence River – and appear to eat just about anything. They are likely able to colonize new habitats as old ones become less attractive. However, he cautions, it is possible that a decline in the availability of their more valuable, high-energy prey like arctic cod, and a replacement in their diet by lower-energy capelin could introduce problems.⁴⁶ Just such a shift in prey, possibly due to fish stocks being depleted by commercial fisheries, may be partly responsible for falling reproductive rates among Steller sea lions of western Alaska.⁴⁷ Marine biologists have yet to carry out the research needed to support such a claim for belugas, however. As Richard notes, “We’re not at a state where we understand the feeding ecology of beluga very well.”

There is, however, some research suggesting a possible problem for a few populations of belugas as the Earth continues to adjust to the new heat-distribution patterns that come with climate change. In the High Arctic near

Somerset Island, the North Water of Baffin Bay, the northern reaches of coastal western Greenland and Cumberland Sound on Baffin Island, these new patterns could actually bring colder water temperatures, and reduced open-water seasons. According to a 2004 paper by Heide-Jørgensen and Kristin Laidre of the Greenland Institute for Natural Resources, this could mean trouble for both the narwhals and belugas that frequent those four areas:

What may be more important is the increasing sea ice coverage in combination with environmental variability, which leads to an increased frequency of periodic complete freeze-over.... Narwhals and belugas are not capable of breaking breathing holes in the ice and are occasionally found trapped in large numbers.⁴⁸

Although belugas may be adaptable, the combination of reduced open water and increased hunting may prove too much, warn Heide-Jørgensen and Laidre: “Harvest management of top predators must account for the additional risk introduced by reduction in carrying capacity caused by increased sea ice coverage, which may naturally adjust populations downward in response to environmental change.”

THE NARWHAL EXPEDITION

The Canadian Marine Environment Protection Society has contributed funds and expertise to help advance the goals of the Ice Unicorn Project, a scientific study on narwhal whales in Canada conducted by Marianne Marcoux and Marie Auger-Méthé of Dr. Hal Whitehead's Biology Lab in Dalhousie University, Nova Scotia.

For more information, please visit
The Narwhal Expedition website:

<http://whitelab.biology.dal.ca/mm/project.html>



Narwhal decapitated for tusk



Conclusion

It is difficult to extract broad generalizations about the state of Canada's belugas from recent research and events. Several populations show no sign of trouble, and are maintaining healthy reproductive rates in the Beaufort Sea and Western Hudson Bay. Even the long-beleaguered St. Lawrence belugas may be on the road to recovery, now that we have learned that we can't dump every unwanted chemical compound into the marine environment. Still very much at risk, however, are the white whales of Eastern Hudson Bay and Nunavik, where overhunting has put at least two populations on the critical list, ecologically, if not yet officially. Government incentives of both the carrot and the stick variety have failed to reduce annual takes to legally permitted levels, and some of those

quotas may still be too high to be considered sustainable in the long term.

Most, but not all, of Canada's belugas are not at risk of extinction. Some, but not all, of the toxins that nearly wiped them out in the St. Lawrence are disappearing from the environments. Few, if any of the beluga hunts appear to be managed and the status of those that are at risk remains in limbo thanks to the politics of subsistence hunting. The biology supports a fair degree of optimism for the beluga's future, with very real caveats. The question for Canadians interested in the species' welfare is, is that good enough?



Belugas in the ice pack



References

- 1 Hrynshyn, J. 2004. *Canada's Narwhal Whale: A Species on the Edge*. Canadian Marine Environment Protection Society. 15 pp.
- 2 Anonymous. 2006. Beluga names. The University of Vermont. <http://www.uvm.edu/whale/BelugaNames.html>. Accessed online May 13, 2006.
- 3 Raffi. 1996. Baby Beluga. Rounder Records.
- 4 IUCN World Conservation Union Red List of Endangered Species. 2006. <http://www.iucnredlist.org>. Accessed online June 21, 2006.
- 5 Shriver, J. 2006. Alaska wilds lie conveniently along 'interstate.' *USA Today*, June 11, 2006.
- 6 Sciara, Giuseppe (compilers). 2003. *Dolphins, Whales and Porpoises: 2002–2010 Conservation Action Plan for the World's Cetaceans*. IUCN/SSC. Cetacean Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK. ix +139pp.
- 7 Department of Fisheries and Oceans. 2002. Underworld – The Beluga. http://www.dfompo.gc.ca/zone/underwater_sous-marin/beluga/beluga_e.htm. Accessed online June 26, 2006.
- 8 Vancouver Aquarium 2006. Aquafacts – Beluga. <http://www.vanaqua.org/education/aquafacts/belugas.html>. Accessed online June 26, 2006.
- 9 Governor-in Council. 2006. Order Giving Notice of Decisions not to add Certain Species to the List of Endangered Species. *Canada Gazette* Vol. 140, No.18.
- 10 Ratynski, Ray. 2006. Personal communication.
- 11 Reeves, Randall, and David St. Aubin. 2001. Belugas and Narwhals: application of new technology to whale science in the Arctic. *Arctic* 54 (3): iii.
- 12 Vancouver Aquarium. 2006. A Message About the Aquarium's Belugas. http://www.vanaqua.org/ask_us/belugas.html. Accessed online June 26, 2006.
- 13 McGhee, R. 1990. *Canadian Arctic Prehistory*. Canadian Museum of Civilization: Hull.
- 14 Kuhnlein, Harriet V, Rule Soueida and Olivier Receveur. 1996. Dietary Nutrient Profiles of Canadian Baffin Island Inuit differ by Food Source, Season, and Age. *Journal of the American Dietetic Association*. 96(2): 155-162,
- 15 Finley, Kerry and William Koski, personal communication.
- 16 Heide-Jorgensen, M.P., P. Richard, R. Dietz, K.L. Laidre, J. Orr and H.C. Schmidt. 2003. An estimate of the fraction of belugas (*Delphinapterus leucas*) in the Canadian high Arctic that winter in West Greenland. *Polar Biology* 26: 318-326.
- 17 Richard, Pierre, 2006. Personal communication.
- 18 Committee on the Status of Endangered Wildlife in Canada. 2004. COSEWIC Assessment – Beluga Whale. http://www.sararegistry.gc.ca/status/showASCII_e.cfm?ocid=902. Accessed online June 26, 2006.
- 19 COSEWIC 2004.
- 20 Hammil, Mike O., Véronique Lesage and Jean-François Gosselin. 2005. Abundance of Eastern Hudson Bay belugas. Research Document 2005/010. Canadian Science Advisory Secretariat. Fisheries and Oceans Canada.
- 21 COSEWIC 2004
- 22 George, Jane. 2002. Reduce beluga hunt or else, biologist says. *Nunatsiaq News*. March 1, 2002.
- 23 CBC News. 2005. Overhunt means less beluga for others: DFO. June 5, 2005.
- 24 George, Jane. 2006. Beluga hunters face cuts if quotas exceeded. *Nunatsiaq News*. June 6, 2002.
- 25 Angliss, R. P., and R. B. Outlaw. 2005. BELUGA WHALE (*Delphinapterus leucas*): Eastern Bering Sea Stock. Alaska Marine Mammal Stock Assessments. National Oceanic and Atmospheric Administration.
- 26 Government of the United States. 2006. Endangered and Threatened Wildlife and Plants: Announcement of Initiation of a Status Review of the Cook Inlet Beluga Whale under the Endangered Species Act (ESA). Federal Register Vol. 71, No. 57.
- 27 Pemberton, Mary. 2006. Scientists Study Decline of Beluga Whales. Associated Press. Feb. 28, 2006
- 28 Bjoerge A, Brownell Jr RL, Perrin WF, Donovan GP (Eds; 1991): *Delphinapterus leucas*. In: *Significant direct and incidental catches of small cetaceans. A report by the Scientific committee of the International Whaling Commission pp. 12 - 24*.
- 29 IUCN 2006.
- 30 Alvarez-Flores, Carlos M. and Mads Peter Heide-Jørgensen. 2004. A risk assessment of the sustainability of the harvest of beluga (*Delphinapterus leucas* (Pallas 177)) in West Greenland. *ICES Journal of Marine Science*, 61: 274e286.
- 31 North Atlantic Marine Mammal Commission. 2005. *Report of the 13th Meeting of the Scientific Committee*. Reine, Norway, 25-27 October 2005.
- 32 Convention on Migratory Species. 2006. Whales and Dolphins. http://www.cms.int/reports/small_cetaceans/data/D_leucas/d_leucas.htm. Accessed online June 26, 2006.
- 33 Alvarez-Flores and Heide-Jørgensen 2004.
- 34 Wagemann, R., and D.C.G. Muir. 1984. Concentrations of heavy metals and organochlorines in marine mammals of the northern waters: overview and evaluation. *Canadian Technical Report of Fisheries and Aquatic Sciences* 1279.
- 35 Marine Mammal Centre. 2000. <http://www.marinemammalcenter.org/pdfs/library/Orca.pdf>. Accessed online June 27, 2006.
- 36 Agency for Toxic Substances and Disease Registry. 2006. United States Department of Health and Human Services. <http://www.atsdr.cdc.gov/tfacts17.html>. Accessed June 27, 2006.
- 37 Hickie, Brendan E., Michael C.S. Kingsley, Peter V. Hodson, Derek C.G. Muir, Pierre Béland, and Donald Mackay. 2000. A modelling-based perspective on the past, present, and future polychlorinated biphenylcontamination of the St. Lawrence beluga whale (*Delphinapterus leucas*) population. *Canadian Journal of Fisheries and Aquatic Sciences* 57(Suppl. 1): 101–112.
- 38 COSEWIC 2004.
- 39 CBC News. 2006. Cancer-causing chemical's levels dropping in seals. May 24, 2006.
- 40 Agency for Toxic Substances and Disease Registry. 2006. United States Department of Health and Human Services. <http://www.atsdr.cdc.gov/tfacts69.html>. Accessed June 27, 2006.
- 41 Wilson, Joanna Y., Suzy R. Cooke, Michael J. Moore, Daniel Martineau, 3 Igor Mikaelian, Donald A. Metner, W. Lyle Lockhart, and John J. Stegeman. 2005. Systemic Effects of Arctic Pollutants in Beluga Whales Indicated by CYP1A1Expression. *Environmental Health Perspectives*. 113(11): 1594-9
- 42 ACIA (Arctic Climate Impact Assessment). 2004. *Impacts of a Warming Arctic: Arctic Climate Impact Assessment*. Cambridge University Press, Cambridge, UK.
- 43 Petit, J.R. *et al.* 1999. Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. *Nature* 399, 429 – 436.
- 44 Committee on Surface Temperature Reconstructions for the Last 2,000 Years. 2006. *Surface Temperature Reconstructions for the Last 2,000 Years*. National Academy of Sciences. Available at <http://www.nap.edu/catalog/11676.html>.
- 45 Hrynshyn, J. 2005. *The Plight of Canada's Polar Bear*. Canadian Marine Environment Protection Society. 15 pp.
- 46 Richard 2006. Personal communication.
- 47 Trites, Andrew W., Volker B. Deeke, Edward J. Gregr, John K.B. Ford and Peter Olesiuk. 2006. *Killer whales, whaling and sequential megafaunal collapse in the North Pacific: a comparative analysis of the dynamics of marine mammals in Alaska and British Columbia following commercial whaling*. Working Paper No. 2006-14. University of British Columbia Fisheries Centre: Vancouver.
- 48 Mads Peter Heide-Jørgensen, Kristin L. Laidre. 2004. Declining Extent of Open-water Refugia for Top Predators in Baffin Bay and Adjacent Waters. *Ambio: A Journal of the Human Environment* (33) 8: pp. 487-494.

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