

Domestic Whaling in the Mackenzie Estuary, Northwest Territories

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NORTHWEST TERRITORIES

by

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ABSTRACT

Hunt, W.J. 1979. Domestic Whaling in the Mackenzie Estuary, Northwest Territories. Can. Fish. Mar. Serv. Tech. Rep. 769: iv + 14 p.

The domestic Beluga hunt in the Mackenzie estuary was surveyed during the period 1973 to 1975. The number of whales harvested totaled 165, 113-118 and 127-139 for each respective year. In addition it is estimated that a number equal to two-thirds of those landed are killed but not retrieved by hunters. This is mainly due to the present hunting practises being used. Suggested improvements in hunting techniques are listed in the text and a description of the traditional and modern hunt is provided.

Key words: Beluga; catch statistics; exploitation, human food, resource management.

RESUME

Hunt, W.J. 1979. Domestic Whaling in the Mackenzie Estuary, Northwest Territories. Can. Fish. Mar. Serv. Tech. Rep. 769: iv + 14 p.

La chasse familiale au Béluga, dans la région de l'estuaire Mackenzie, a fait l'objet d'une étude de 1973 à 1975. Pour chaque année, le nombre d'animaux capturés a été respectivement 165, de 113 à 118, et de 127 à 139. En outre, on évalue que les chasseurs tuent, mais ne retrouvent pas, un nombre égal à 66% des animaux capturés. Cette situation est due principalement aux techniques actuelles de chasse. Dans son rapport, l'auteur propose des moyens de les perfectionner et décrit la façon traditionnelle et moderne de pratiquer cette chasse.

Mots-clés: Béluga; données sur les prises; exploitation; alimentation humaine; aménagement des ressources.

INTRODUCTION

The Beluga, *Delphinapterus leucas*, called kinulua or kilalugak by the Inuit*, is a large dolphin which migrates into the Mackenzie Delta Area each summer from the Beaufort Sea (Fig. 1). One of its most distinctive characteristics is its white color (Fig. 2), although this cannot be fully appreciated in the turbid waters of the Mackenzie Bay.

There are various theories concerning the route of the migrating Beluga but no set pattern has yet been established. However, these whales unfailingly return to the Mackenzie estuary every summer. A resumé of the general biology and habits of this species is given by Sergeant (1962 and 1973), Sergeant and Brodie (1969), and Brodie "The Growth of the Whale".

While the Beluga are in the Mackenzie estuary, they are hunted extensively for domestic use, by the indigenous inhabitants of the Mackenzie Delta Area. The hunters are mostly Inuit although some Indians (less than 10 in recent years) also hunt whales.

Prior to 1973, there was little documentation of domestic whaling in this area, except for the harvest figures given by Bissett (1967) for the period of 1959 to 1966. In 1973, the author began to keep a record of the domestic whale harvest in the coastal vicinity of the West Whitefish Station, Yukon Territory, and East Whitefish Station, Northwest Territories (Fig. 1).

The purpose of this report is to provide an account of the domestic Beluga hunt in the Delta Area and to describe the hunting techniques employed. The extent of the domestic harvest during the period 1973 to 1975 is also documented.

Two main areas of study were involved in collecting data for this report. They were:

- (a) The East Whitefish Station Area, including the waters of Kugmallit Bay (Fig. 1).
- (b) The West Whitefish Station Area, including the waters of northern Shallow Bay where most of the hunting takes place, and adjacent water west of the bay; Fraker (pers. comm.) refers to the northern Shallow Bay area as Niakunak Bay. Also the waters extending from Shallow Bay to the northern tip of Richards Island (Fig. 1).

In the east area, there are six land-based camps and in the west area, there are four land-based camps for whaling operations. These are indicated in Fig. 1 and listed in the Appendix.

* The name Eskimo has commonly been applied to the indigenous people of the Canadian Arctic. However, Inuit, their name for themselves, should properly be applied and will be the name used throughout this report.

DESCRIPTION OF THE AREA

THE MACKENZIE RIVER

The main stem of the Mackenzie River system is approximately 1071 miles/1724 kilometers in length from its beginning at the outflow of Great Slave Lake to its confluence with the Beaufort Sea (Fig. 1). The water of the river is clear when it flows out of Great Slave Lake because suspended sediments are low in concentration. However, as the river flows northward it receives large amounts of sediment from its own eroding banks and from its many tributaries, especially the Liard River. The change in the colour of the water is most evident at the junction of the turbid water of the Liard River with the relatively clear water of the Mackenzie.

THE MACKENZIE DELTA

The Mackenzie Delta (Fig. 1) comprises an area of approximately 4700 sq. miles/12173 sq. kilometers (Mackay 1963). The southern tip is located at Point Separation where the Mackenzie River divides into a maze of channels. These sub-divide the delta into numerous islands which contain a profusion of lakes (Fig. 3). The long axis of the delta is orientated south to north and is approximately 130 miles/209 kilometers in length (Mackay 1963). The delta area is bordered on the east by the East Channel and the Caribou Hills (Fig. 3), on the west by the Richardson Mountains and the coastal plain, and on the north by the Beaufort Sea.

The channels of the delta vary greatly in depth, from passages 30 meters deep which are navigable by large barges, to others only a few centimeters deep and unnavigable even by canoe. The water carries a very high silt load. In contrast, the lakes in many instances, are crystal clear and generally shallow. Both the channels and lakes provide a variety of habitats and the delta has an abundant and diverse fauna ranging from small invertebrates and fish (including the northern pike, various species of whitefish, cisco, suckers, lake trout and Arctic char) to the Beluga which calf in the warm waters. A resumé of the freshwater fish species found in the delta is given by McPhail and Lindsey (1970).

Vegetation varies from that typical of the tundra, in the northern portion of the delta, to a boreal forest flora in the south. Along the shores of the channels there is a distinctive shoreline, giving way to water oats, common horsetail and willow as the banks slope gently upward. Above the high water mark, alder thickets occur and behind these are found balsam poplar stands followed by spruce. A resumé of the flora is given by Gill (1971).

DESCRIPTION OF THE HUNT

THE DOMESTIC WHALING SEASON

The dates of the hunt vary from year to year depending on when the first Beluga arrive in Mackenzie Bay. The hunting season generally lasts

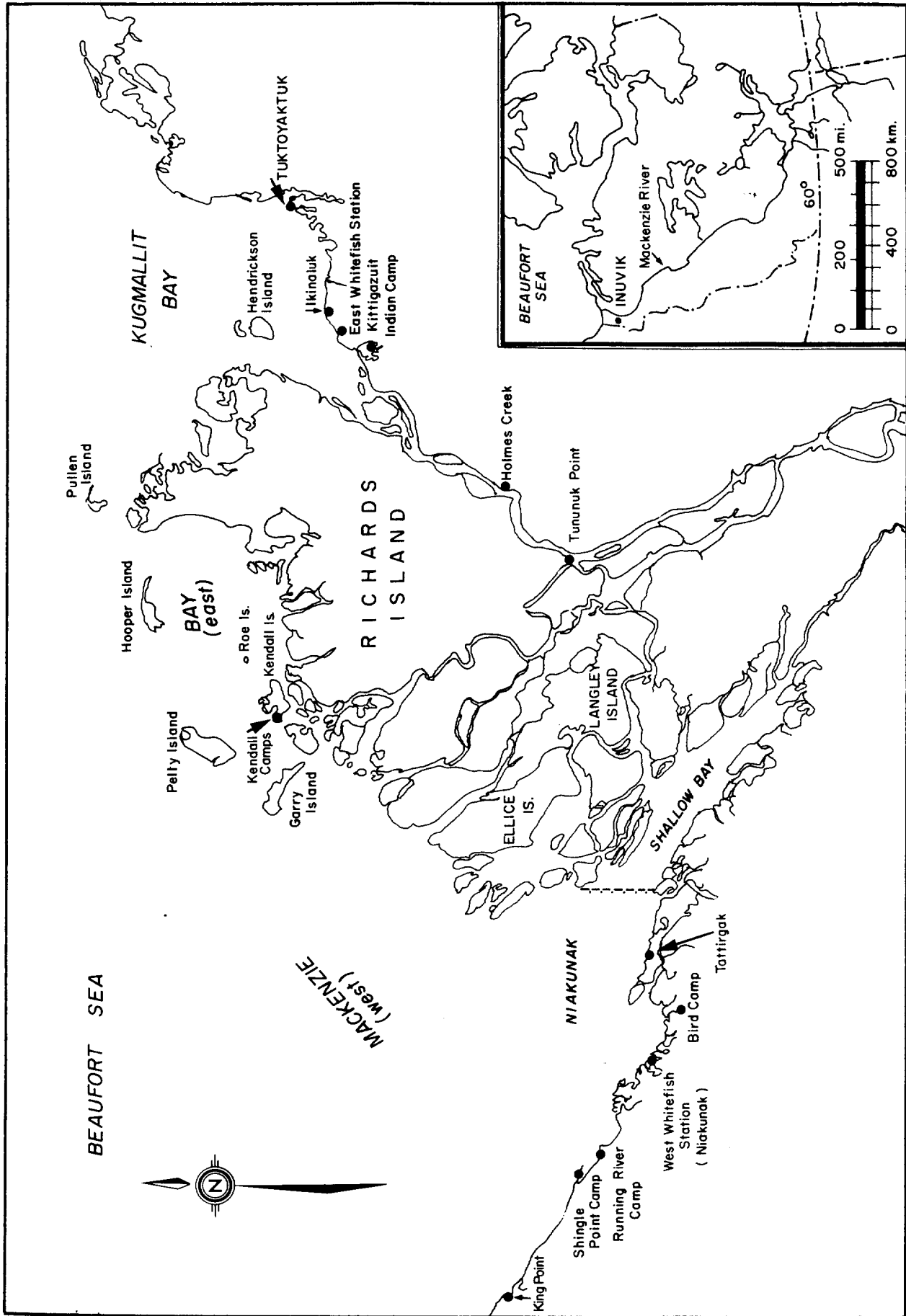


Fig. 1. Map of Mackenzie Delta Area indicating the domestic whaling camps, 1974.

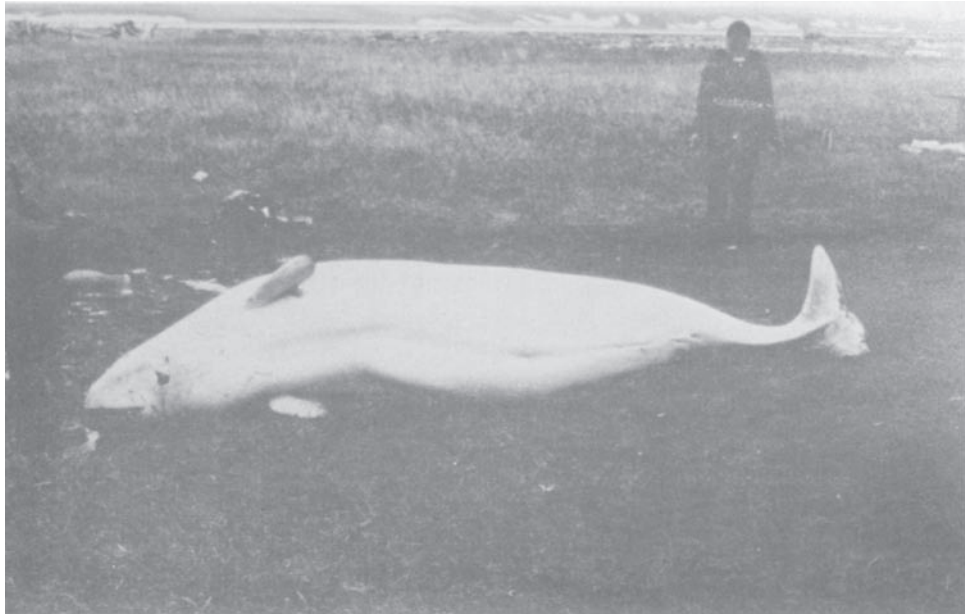


Fig. 2. Photograph of an adult Beluga, Mackenzie Delta Area.



Fig. 3. Aerial photograph of the Mackenzie Delta with the Caribou Hills in foreground.

from the latter part of June to about August 1st, although in 1974 Beluga were taken as late as August 13th.

THE CAMPSITES

There are two main areas of whaling activity: the East Whitefish Station Area involving the waters of Kugmallit Bay; and the West Whitefish Station Area involving the northern part of Shallow Bay and adjacent waters to the west (Fig. 1).

The modern campsites used for the hunt are locations which have traditionally been used during the summer whale hunting season.

They are usually located near the coast where there are winds. Ikinaluk, East Whitefish, Running River and Shingle Point Campsites are all located on gravel bars and the tents are pitched less than 10 m from the shore. These sites are clean (because of gravel) and the wind offers protection from insects. Only Bird and Indian camps (originally used by Indians from Fort Macpherson) are located inland and most are situated above high water. An exception is West Whitefish Station which will flood during a storm. All are quickly accessible to the sea by boat (Figs. 4 and 5).

During 1973 to 1975 there were about six camps in the East Whitefish Station Area. These were used mainly by Inuit from Inuvik and Tuktoyaktuk with a few people from Aklavik and some seasonal residents of the Delta. In the West Whitefish Station Area during 1973 to 1975 there were four camps which were used by the people from Aklavik during the whaling season. The areas used during 1973 to 1975 are shown in Fig. 1 and listed in the Appendix.

Scattered about the campsites are drying stages or racks, and fire pits which are used during preparation of the meat and muktuk (Fig. 6). In the summer when the campsites are occupied, a heavy, peculiar odor of processing muktuk pervades the air. The campsites are located in the vicinity of vast quantities of driftwood, which serve as a supply of firewood. Fresh drinking water is easily obtained by boat from inland lakes and streams.

The population of a domestic whale camp may vary from 10 to 60 people with each family unit occupying a tent or other temporary shelter. The daily routine is affected by the movements of the Beluga and the members of the camp work as a cooperative group with all benefiting from the Beluga kill and local fish catch.

TRADITIONAL HUNTING TECHNIQUE

Traditional harpoons and tools were mainly used for Beluga hunting in the Mackenzie Delta in the early 1900's. The hunting method used seemed to be more efficient as there was a lower loss of animals due to sinking, in comparison to the loss factor (estimated to be 2/3 of the whales landed) associated with the modern hunting technique. "Sinking" is a hunting jargon term. A hunter who loses a wounded whale says that he "sunk him". Thus sinking refers to the loss of

a whale which dies too quickly and sinks below the surface of the turbid water.

A successful hunt depended on the cooperative participation of all the hunters involved. The method required many hunters to fan out behind the Beluga and to subtly herd them into shallow water by paddling their kayaks slowly toward them while imitating the sound made by the whales when sounding. The word "sounding" means a sudden dive to the bottom by the whale. This noise was achieved by blowing into the closed fist and then opening the fingers. The Beluga would usually move toward the beach without alarm. When the Beluga were close to the shore the hunters would suddenly create a disturbance by slapping the water with their paddles causing the Beluga to drive themselves ashore in their panic to flee the scene of commotion. The hunters would then go in for the kill with their harpoons. In order to tow the captured animals back to camp where the butchering took place, the hunters left the carcasses intact and inflated the internal body cavities by inserting an airpipe into the body cavity and blowing in enough air to obtain the needed buoyancy. Many Beluga could be towed behind the kayaks in this way (C. Allen, Inuvik, N.W.T. pers. comm.; Metayer 1966).

MODERN HUNTING TECHNIQUE

The preliminaries of a typical modern Beluga hunt are not much different from the traditional hunt. These usually consist of many hours of waiting and watching. During this time, various activities are engaged in, including eating, drinking tea, telling stories, playing games and repairing equipment.

For example, on Hendrickson Island (Fig. 1), the hunters wait on the beach until the Beluga get well into the Bay. A constant watch is kept from a lookout constructed of driftwood in the shape of a teepee. When the time is deemed opportune, as many as four boats begin the chase.

In each boat, there is usually a person to maneuver the boat and another to shoot and harpoon the whale. Figure 7 shows a typical harpoon head used in the modern hunt.

In contrast to the traditional cooperative hunt, each boat acts as an independent unit, and instead of kayaks, 18 foot canoes or similar size aluminum boats are usually employed. These are propelled by outboard motors ranging from 20 h.p. to 50 h.p. Often a young boy accompanies the two hunters to learn the hunting technique.

The general procedure is for a boat to single out a Beluga from a pod (group of whales) and try to keep it in shallow water to prevent its escape. A constant pursuit is kept up by the hunters and the Beluga is repeatedly shot in order to slow it down so that it can be approached closely and harpooned. As a result of the bullet wounds, oil from the blubber and blood flow from the animal, leaving an oil slick for the hunters to follow. The chase may last 45 minutes, with the hunter firing many rounds, until the wounded Beluga slows up enough to be harpooned. Attached to the harpoon head is a 10 gallon drum which marks where the floundering whale is located. On a calm day



Fig. 4. Aerial photograph of a domestic whaling camp (Indian camp) near East Whitefish Station (Fig. 1).



Fig. 5. Photograph of a domestic whaling camp, West Whitefish Station (Fig. 1).



Fig. 6. Photograph showing muktuk and meat drying, West Whitefish Station (Fig. 1).

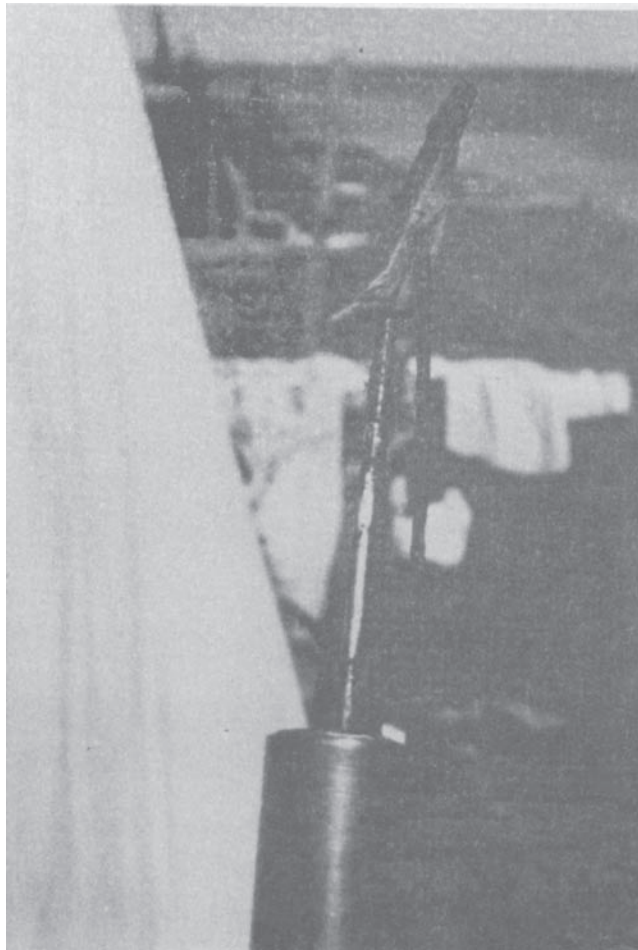


Fig. 7. Photograph of a modern harpoon.

it is sometimes possible for the hunter to harpoon the whale without first shooting it.

The dead Beluga is secured to the side of the boat and towed back to the camp or to the nearest butchering location (Fig. 8). The author estimates from interviews with the local whalers that with the present hunting technique only 60% of the total Beluga killed are retrieved. This is because of the following reasons:

1. The concentration of Beluga at times is great. Therefore, there is confusion when trying to follow the whale which was initially wounded.
2. The excitement of the hunt causes hunters to shoot indiscriminately, wounding more than one animal.
3. The obvious abundance of Beluga tends to lessen the desire to obtain those initially shot if they are difficult to find.
4. The sudden occurrence of storms necessitates cutting loose dead Beluga in tow in order to prevent swamping. (In the traditional method, the whales were towed from the beach along the shoreline. In the modern technique the Beluga are chased and sometimes secured far from shore.)
5. Some mortally wounded Beluga dive and die on the sea bottom.
6. The natural instinct of the wounded Beluga causes it to head for deep water in order to avoid capture. If the whale reaches deep water it can easily escape and perhaps subsequently die depending on the severity of its wounds.
7. The disorientation of the young whales separated from the mother during the chase causes stress and perhaps juvenile mortality.
8. The inexperience of hunters who are anxious to make a kill but are negligent about retrieving the whale.
9. The use of unsuitable bullets and rifle calibres.

IMPROVEMENTS IN HUNTING TECHNIQUE

People concerned about the excessive loss factor in the modern hunt have made several suggestions to decrease it, including the use of nets and harpoon guns and the introduction of a quota to control the total numbers taken. However, the hunters do not like the idea of using nets because selective hunting is eliminated and the number of hunters who can participate will probably be decreased.

Another suggestion is that the whale be harpooned and a buoy attached before it is shot, thus lessening the likelihood of losing the whale. This suggestion is met with mixed feelings by the hunters. Some say the technique would pose no problems, while others say it cannot be done.

The significance of the loss factor is sometimes lessened on the basis that the whale population appears to be remaining stable. However, this does not alter the fact that a large number of Beluga are probably being wasted and, in the author's opinion, if the technique can be practically improved, there is no justification for such waste. For instance, using the 1974 harvest figures (Table 1), it can be estimated that approximately 80 Belugas were lost in addition to those harvested.

Perhaps the most positive progress toward lessening such waste can be achieved through the encouragement of conservation practices and by a constant effort directed toward motivating the hunters to retrieve wounded whales. The following is a list of conservation practices the author has attempted to promote, in the hopes that the hunters will follow them during the hunt.

1. Instead of abandoning the search for a wounded Beluga and hunting another, a more intensive search for the whale initially wounded is recommended. Marker buoys with weighted lines are useful for marking the spots where whales initially went down. Attempts to retrieve dead whales from the ocean bottom with grappling hooks have proven successful at the West Whitefish Station.
2. Avoid harassment of Beluga with calves.
3. Utilizing the muktuk off the head rather than discarding it. At some camps the people will not eat the muktuk off the head because of a parasite in the middle ear (see Results).
4. Instead of bringing in more Beluga than can be immediately and efficiently processed, it is recommended that the number of whales brought in at any one time, should be proportional to the number of people able to efficiently prepare the carcasses.

POST KILL HANDLING

The traditional procedure involved in butchering is followed in both the East and West Whitefish Station Areas. The muktuk is cut off the animal as indicated in Fig. 9. The flippers and fluke are cut off, together with the meat along the rib cage and backbone. The Beluga stomach is sometimes removed without puncturing, and turned inside out. This is inflated, dried, and used as a storage container for berries and dried fish or meat.

Sergeant and Brodie (1969) estimate that a Beluga's total body weight comprises 43.4% blubber and flippers, and 15.9% meat. Therefore, a 1500 pound Beluga would yield 651 pounds of blubber and muktuk, and 239 pounds of meat.

PREPARATION OF MUKTUK AND MEAT

The outer 4 to 5 inches of the whale is called muktuk (Fig. 10) and consists of about



Fig. 8. Photograph showing a dead Beluga being secured to a boat.



Fig. 9. Photograph showing women flensing a Beluga at West Whitefish Station (Fig. 1).



Fig. 10. Photograph showing fresh muktuk.

$\frac{1}{2}$ inch of epidermal layer and $3\frac{1}{2}$ to 4 inches of blubber. The bottom 2 inches of the blubber is cut off and placed in a barrel where it is allowed to liquefy. This will later serve as a storage medium for the muktuk or dried fish and meat. The remainder of the strip is cut in a herring-bone fashion and hung on the staves to cure (Fig. 6).

The recipe for the preparation of muktuk is as follows:

After curing for about 2 days, the muktuk is boiled until it feels tender when poked with a fork. At this point, the muktuk can be eaten directly after trimming off the excess blubber, or it can be placed on the drying racks for another 2 days, after which it is placed in the liquefied blubber for winter storage.

Freshly prepared muktuk has a rather rubbery texture with a taste very difficult to describe other than to say that, when cooled, it tastes similar to pork hocks.

The meat found under the muktuk is almost black, with a very coarse grain. This is cut off the animal in large chunks and sliced into thin strips which are placed on racks to dry. The dried Beluga meat is kept until needed during the long winter. It has the consistency of beef jerky and a rather strong but not unpalatable taste.

GOVERNMENT INVOLVEMENT IN THE BELUGA HUNT

Canada has ceased all commercial whaling since December, 1972. However, in the Northwest Territories, the Federal Government has decided to allow the intersettlement trade of Beluga products by the Inuit. Such products can be sold or exchanged for fish or other traditional foods. The government felt that this policy would encourage the Inuit to become more self-supporting and that the Beluga products would provide a ready source of protein and lipids natural to their diets. It was also felt that the pressure from such domestic harvest would not threaten the stability of the present population of the Beluga.

In accordance with this intersettlement trade agreement, the Government of the Northwest Territories initiated a program in 1973 to offer aid to some families and widows by providing transportation and food during the whale hunt.

To date, the intersettlement trade of Beluga products has been limited because usually the harvest is sufficient only to provide an annual supply for the residents of the camps involved.

THE DOMESTIC HARVEST SURVEY

OBJECTIVES

Since 1973, the author has monitored the whale hunt in the Mackenzie Delta Area in order

to provide an accurate record of the number of Beluga harvested, to locate where the harvest took place and to estimate the numbers killed and lost during the hunt. A second objective was to build up a knowledge of the techniques used in the modern hunt in order to make recommendations if required. Also, aerial surveys were made to determine the location of whales on specific dates and in addition, some limited biological samples were taken at the whaling camps to provide information on parasitic infection, feeding behavior, and flesh quality in terms of heavy metals.

MATERIALS AND METHODS

The information and data on the harvest were collected at the various whaling camps through interviews and observations made by the author and Fisheries Patrolmen, during July and August of 1973, 1974 and 1975.

A twenty-two foot cabin cruiser was used to travel between camps and also to accompany the hunters. The air patrols were made by Cessna 185 and 337, and Electra.

In addition to field collection of information, a sample of liver, meat and muktuk was taken from four whales at Kidluit Bay and sent to the Inspection Branch of the Fisheries and Marine Service in Winnipeg for heavy metal analysis. Also, the middle ear and stomach of two whales were examined for internal parasites and the body was examined for external parasites. Stomach contents were also noted.

RESULTS

The domestic Beluga harvest from 1959 to 1966 and 1970 to 1975 is summarized in Table 1. The figures for 1970, 1971 and 1972 are estimates based on interviews with the whalers. The figures for 1973 to 1975 were determined by field surveys. The Appendix gives a break-down of the catch by individual camps.

In 1972, 2,000 Beluga were counted in the Mackenzie estuary Area (Slaney 1975). Summer aerial surveys by F.F. Slaney in 1973 and 1974 gave population estimates of 3,500 to 4,000 in the same area for each year. The low numbers in 1972 could have been due to ice conditions. In 1975 the population estimate was 4,000 (M. Fraker, pers. comm.).

New born calves were noticed during an air patrol over Kugmallit Bay in early July, 1973. It is believed that female Beluga prefer the warmer, calmer inshore waters for calving (Sergeant 1973).

All the Beluga examined by the author at Kidluit Bay and West Whitefish Station in July, 1974 had a nematode in the middle ear, probably *Stenurus arctomarinus* (Kleinenberg et al. 1969). Also, in some whales examined, there was another nematode, possibly *Anisakis kukenthali* (Kleinenberg et al. 1969).

The middle ear parasites have caused a

Table 1. Summary of the beluga domestic harvest in the Mackenzie Delta Area, 1959 to 1966, 1970 to 1975
 (Figures for individual whaling camps are given in the Appendix for 1973 to 1975.)

Location	Number Killed and Retrieved												
	1959*	1961*	1962*	1963*	1964*	1965*	1966*	1970	1971	1972	1973	1974	1975
West Whitefish Station Area	7	20	1			6	9	30	30	33	20	35	26
Kendall Island	17	52	33	94		21	14	Included in East Whitefish Station Total					
East Whitefish Station Area	30	16	11		15	8	12	49	35	58	53	56-63	
Tuktoyaktuk		30		33	30	35	56	75	3	45	87	25-30	45-50
TOTAL	54	118	45	127	45	70	92	105	82	123	165	113-118	127-139

* Figures from Bissett (1967).

utilization problem. In the East Whitefish Station Area, the muktuk from the head is occasionally not used because of the presence of the parasite. However, in the West Whitefish Station Area, the presence of the parasite is known but the head is still used. Externally the bodies of most whales were free of parasites. Several isopods were observed in an old scar on one Beluga. However, these may have crawled onto the carcass after death and were not external parasites.

It appears that Beluga seldom actively feed while in the warm estuarine waters of the Delta. The four stomachs examined by the author had a small amount of unidentified bolus material which included a few squid beaks. The hunters interviewed also stated that the stomachs of the whales they kill are usually empty. This would be an accurate observation because the stomachs are taken and used as containers, as noted above in the Section on Post Kill Handling.

The results of the heavy metal analysis of Beluga flesh are given in Table 2.

INDUSTRIAL ACTIVITY

During the past few years there has been much activity associated with oil exploration in the near-shore area off the Mackenzie Delta (Fig. 11). Some of this activity occurs in the path of the migrating Beluga.

In an attempt to lessen interference with the Beluga, seismic vessels have been required

to schedule activities to avoid migrating Beluga. This is ensured by having Fisheries and Marine Service personnel on board as frequently as possible during Seismic operations. These personnel also conduct aerial surveys in an attempt to keep all activity away from the migration route.

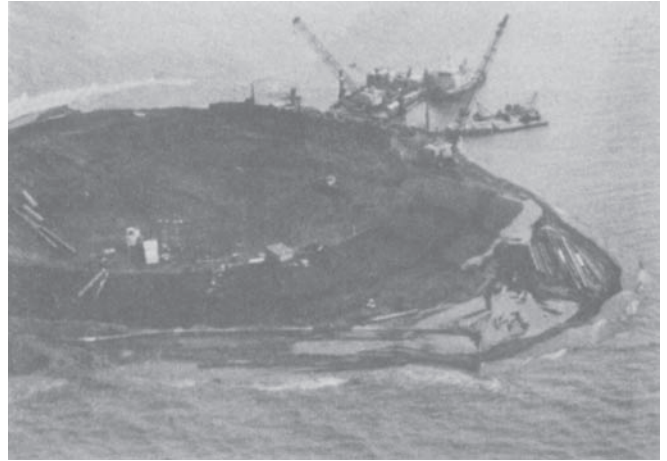


Fig. 11. Photograph showing construction of first off-shore artificial island in the Beaufort Sea, Immerk Island, August 25, 1973.

Table 2. Results of heavy metal analysis from the flesh of four female Beluga (all results in parts per million).

Specimen	Tissue	Mercury	Cadmium	Copper	Zinc	Lead	Chromium
1	Liver	22.64	2.74	5.82	26.55	< 0.10	< 0.05
	Meat	1.53	0.06	0.83	21.31	< 0.10	0.14
	Muktuk	0.18	0.03	0.38	17.05	0.18	< 0.05
2	Liver	7.41	2.14	9.88	27.05	< 0.10	< 0.05
	Meat	1.01	0.04	1.04	19.94	< 0.10	< 0.05
	Muktuk	0.13	0.03	0.62	27.87	5.98	< 0.05
3	Liver	11.44	1.59	6.64	24.31	< 0.10	< 0.05
	Meat	0.53	0.11	0.80	25.68	< 0.10	< 0.05
	Muktuk	0.10	0.04	0.49	16.94	0.18	0.12
4	Liver	11.81	1.47	4.86	18.58	< 0.10	< 0.05
	Meat	0.57	0.03	1.01	28.14	< 0.10	< 0.05
	Muktuk	0.14	0.01	0.34	24.59	0.10	< 0.05

Many questions remain unanswered regarding the long term development of the Mackenzie Delta. What will the effect of many artificial islands be on the migration routes of Beluga? What effects will these islands have on river and ocean currents in the Delta? How will these changes affect the local fish populations? Does increased activity involving seismic vessels, hovercraft, supply vessels, low flying aircraft, construction, and dredging operations cause added stress to the Beluga during the calving time and how will this effect reproduction? What effect will the dumping of drilling wastes and the accidental spills of fuels associated with the oil and gas activity have on the biota? Since this report has been prepared many of these questions have been discussed in subsequent publications, in particular Fraker (1976, 1977) and Fraker et al. (1977).

RECOMMENDATIONS

Since 1972 the areas frequented by Beluga in the Mackenzie estuary have been the scene of increased industrial off-shore activity. Domestic whaling activity appears to have remained the same or increased slightly over the past four years. However, the combined effect of both the industrial and domestic whaling activity in this area may effect the Beluga in terms of its distribution, abundance and behaviour; and its environment. Therefore the author makes the following recommendations:

1. I hesitate to suggest further study of the effects of disturbance on whales because of the disturbance caused by certain forms of observation themselves. However, to determine the effects of the activities pointed out above the reaction of Beluga in an acoustic sense could be recorded and compared to previous studies. Appropriate measures would be necessary at that time to eliminate disturbing water borne activities especially in calving areas which may disturb whales.
2. The Inuit domestic whale hunt should be organized to shorten the hunting period and in turn cut down on the harassment of the whales. Part of this would be to educate the hunters to practice more conservative and conscientious hunting techniques as mentioned on page 7.

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Appendix 1. Summary of the beluga harvest, Mackenzie Delta Area, 1973-1975.

CAMP	Whales Killed and Retrieved			Number of Hunters		
	1973	1974	1975	1973	1974	1975
A. WEST WHITEFISH STATION AREA						
Bird Camp	8			5		16
West Whitefish Station	9	35 ¹	26 ¹	10	18 ²	5
Shingle Point	3			2		0
Gull Island (Escape Reef)	-			-		1
Tattirgak	-			-		2
TOTAL	20	35	26	17	18	24
B. EAST WHITEFISH STATION						
Tuktoyaktuk	87	25-30	45-50	18	14	28
Indian Camp	34	34		11	10	10
Kittigazuit	7	3		4	2	2
East Whitefish Station	9	14	56-63 ³	4	9	5
Holmes Creek	1	0		2	0	0
Kendell Island	7	2		2	2	1
Ikinaluk	-	-		-	2	2
TOTAL	145	78-83	101-113	41	39	48
C. TOTAL - MACKENZIE DELTA AREA						
	165	113-118	127-139	58	57	72

¹ This figure includes the total Beluga harvest of all the camps in the West Whitefish Station Area.

² This figure includes the total number of hunters in the West Whitefish Station Area.

³ This figure includes the total Beluga harvest of all the camps in the East Whitefish Station Area except Tuktoyaktuk.

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