JERICHO PROJECT

LAND USE IN THE WEST KITIKMEOT REGION OF NUNAVUT

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EXECUTIVE SUMMARY

The Jericho kimberlite and proposed mine lies just within the southern boundary of the area of influence of the communities of Bathurst Inlet, Umingmaktok, and Kugluktuk. Hunters and fishers from these communities occasionally travel by snowmobile or airplane to this region for caribou (winter, early spring) or fish (summer). Bathurst Inlet residents make extensive use of Kathawachaga Lake some 25 km northeast for fishing and hunting (outpost camp). The communities harvest caribou and muskox throughout the year and trap wolverine and hunt wolves in season. Some fish are caught through the ice of Contwoyto Lake in the winter. Dene from the North Slave Region have traditionally used Contwoyto Lake and the Burnside River as a travel route, both in winter and summer, to hunt for caribou and fox.

Traditional Economy

Inuit from the West Kitikmeot are known to have hunted and trapped in the area between Bathurst Inlet and Contwoyto Lake during the years of the fur trade. Contwoyto Lake provided a winter camp area, with some Inuit returning to the coast for the spring seal hunt and others hunting throughout the summer on the barrenlands. There are currently a small number of Inuit families that live, hunt, and trap on Contwoyto Lake. The land is important to people of the West Kitikmeot communities because of its essential role in supporting one leg of the economy: hunting, fishing, and trapping. Harvesting has been reported largely in relative close proximity to communities (within 50 km) and exceptionally at distances greater than 150 km. No harvesting was recorded for the Contwoyto Lake area, where the Jericho Diamond Mine will be located. A number of animals play a vital role in food provision and cash from fur sales. The average hunter in the Arctic takes 1,000 to 1,500 kg of meat and fish each year (approximately 300 kg per person) worth an estimated $10,000 to $15,000. For all of Nunavut, the value of country food is estimated to be $30 to $50 million, based on extrapolation from a 1984 study by Government of Northwest Territories.

Non-Resident Hunting

Non-resident hunters take an estimated 1,000 caribou annually. Guide camps are located throughout Nunavut.

Tourism

Tourism, while growing, to date has played a minor role in the economy of the West Kitikmeot and Nunavut as a whole. High airfares and poorly developed infrastructure combine to slow growth (Harper 1999). A 1999 estimate for Nunavut's tourism industry suggested $30 million and 18,000 pleasure *and business* travellers (emphasis added) annually contributed to the economy of Nunavut as a whole.

Other Industrial Activities in the Region

Mining constitutes the only industrial activity in the West Kitikmeot region outside the immediate influence of communities. One major mine is located in the area (Echo Bay's Lupin Mine) and there are several mineral deposits that have undergone extensive exploration work. Several mineral deposits have been developed to the advanced exploration stage. Two are currently active: Miramar/Hope Bay Mining's Hope Bay Belt and Kinross/Wheaton River's George Lake, both of which are gold properties. Active diamond exploration is being carried out. No other mining project in the West Kitikmeot is in the permitting and approval stage. Future use of the land in the West Kitikmeot will be dictated both by community desires to maintain traditional subsistence use patterns and the wealth-producing potential, tied to resource development and the need for sustainable economic development in Nunavut. Mining is likely to play a significant role in this land use. The key to sustainable use will be to minimize the impacts from mining on natural resources to the extent possible. Mining has a small footprint and with modern methods of management can be made sustainable within a regional context. Further, diamond mining and processing produces no persistent poisonous contaminants. Primarily, sediment from mining and processing requires control and containment.

Parks

There are no parks, ecological reserves, International Biological Program, or other conservation sites in the region occupied by the Jericho Project. As can be seen from Figure 1.2, the closest park is Bloody Falls at Kugluktuk.

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LAND USE

1.1 INTRODUCTION

The section is based on information in the latest draft of the West Kitikmeot Regional Land Use Plan (NPC 2000). The Regional Land Use Plan is not a prescriptive document. There are no regional designations for each region of the Kitikmeot and there are no guidelines presented for what types of development should occur where. Once in place, the West Kitikmeot Regional Land Use Plan will serve as the first level of review for development proposals; at present this review does not take place.

In place of zoning, the draft plan sets out principles to guide land use. These principles are:

- *The primary purpose of land use planning in the Nunavut Settlement Area shall be to protect and promote the existing and future well-being of those persons ordinarily resident and communities of the Nunavut Settlement Area taking into account the interests of all Canadians; special attention shall be devoted to protecting and promoting the existing and future well-being of Inuit and Inuit Owned Lands;*
- *The purpose of a land use plan shall be [in addition to those stated above]… to protect, and where necessary, to restore the environmental integrity of the Nunavut Settlement Area;*
- *In the development of a regional land use plan, the NPC shall give great weight to the views and wishes of municipalities in the areas for which planning is being conducted;*
- *Land use plans shall take into account Inuit goals and objectives for Inuit Owned Lands.*

Some general guidelines are also discussed by the draft. These include parks and sanctuaries (none in the region of Jericho), caribou and eskers. The issue for caribou is that development, particularly mineral exploration, should not negatively impact caribou, especially the Bathurst caribou herd. Communities want development, but not at the expense of the caribou, which provide a necessary food source. Government and other stakeholders are reviewing a management plan for the Bathurst herd. Regulations for caribou protection may also be developed by the Nunavut Wildlife Management Board, such as no exploration activities on the calving grounds when cows are giving birth, etc.

Eskers provide preferred habitat for a number of animals including: carnivores, for dens and sources of prey; rodents, for burrows; caribou and muskox, for travel routes; and raptors, for sources of prey. Eskers were preferred sites for pre-contact human hunting camps and therefore may contain archaeological resources. Eskers also provide essential fill materials for surfacing roads and pads required for construction of infrastructure to support mineral and oil extraction. The draft Regional Land Use Plan recognizes the need for additional research on the dynamics of esker ecosystems and their archaeological importance. Once government studies have been completed, a management plan for eskers may be developed. In the interim, there are no region-wide guidelines for esker exploitation or protection; development proponents must conduct their own impact assessments for eskers proximate to their sites.

1.2 AFFECTED COMMUNITIES

The Nunavut Planning Commission has prepared maps showing the area of influence for all West Kitikmeot communities (Nunavut Planning Commission 1996). These maps indicate that the Jericho kimberlite and proposed mine lies just within the southern boundary of the area of influence of the communities of Bathurst Inlet, Umingmaktok, and Kugluktuk. Hunters and fishers from these communities occasionally travel by snowmobile or airplane to this region for caribou (winter, early spring) or fish (summer).

Bathurst Inlet residents make extensive use of Kathawachaga Lake some 25 km northeast for fishing and hunting (outpost camp). The communities harvest caribou and muskox throughout the year and trap wolverine and hunt wolves in season. Some fish are caught through the ice of Contwoyto Lake in the winter (Nunavut Planning Commission Transition Team 1996). The Jericho site is remote from the three communities and has not been visited since the first camp was established in 1993. Bathurst Inlet Lodge has an outpost camp across Contwoyto Lake from the Lupin Mine and uses this camp as a base for outfitting in the fall of the year. The camp consists of structures originally erected by Hecla Mining for mineral exploration purposes.

Dene from the North Slave Region have traditionally used Contwoyto Lake and the Burnside River as a travel route, both in winter and summer, to hunt for caribou and fox (BHP Diamet, 1995).

1.3 THE TRADITIONAL ECONOMY

Inuit from the West Kitikmeot are known to have hunted and trapped in the area between Bathurst Inlet and Contwoyto Lake during the years of the fur trade. Contwoyto Lake provided a winter camp area, with some Inuit returning to the coast for the spring seal hunt and others hunting throughout the summer on the barrenlands (NTKP cited in EBA 2001). There are currently a small number of Inuit families that live, hunt, and trap on Contwoyto Lake.

The land is important to people of the West Kitikmeot communities because of its essential role in supporting one leg of the economy: hunting, fishing, and trapping. Pursuant to permission to use the 1983 - 1989 Kitikmeot harvest studies granted by KHTA, Kugluktuk, this section summaries information contained in the database relevant to traditional economic activities in the West Kitikmeot region. An updated harvest study has been completed, but is not available at this time (based on information received from NWMB). As updated information on harvesting becomes available it will be reviewed by Tahera with respect to its potential to affect the IIBA for the Project.

The principal objective of the harvest study was to obtain wildlife harvest information to assist in an assessment of community wildlife harvest requirements (subsistence hunting). Information was gathered through interviews and adjusted for the total number of known hunters in communities. Generalized information is provided by the study database only on where caribou harvesting took place in the years 1983 through 1989. Not surprisingly, harvesting was reported largely in relative close proximity to communities (within 50 km) and exceptionally at distances

greater than 150 km. No harvesting was recorded for the Contwoyto Lake area where the Jericho Diamond Mine will be located. In reviewing the numbers it should be kept in mind that different populations of animals were being harvested, e.g., the people in Kugluktuk hunt mostly the Bluenose caribou herd (SD, pers. comm. 2000) and the Perry herd forms at least part of the harvest in Cambridge Bay. People from Gjoa Haven would harvest caribou from either the Bathurst or Beverly herd. While Gjoa Haven is east of the West Kitikmeot, it is included here because of significant interest in the Jericho Diamond Project, exhibited by the community over a number of years.

The study provides no information on country food consumption patterns of West Kitikmeot communities. Table 1.1 provides a summary of harvesting activities from communities that will be affected by the Jericho Diamond Mine. Only those species found, or expected to be found, in the Jericho Project region are included.

The quantities of furbearers listed are probably a low estimate since barter, trade, and gift giving are not included; also not included are unrecorded sales to members of a family group or others. The database also included estimates of probable harvest, but these are not discussed here because they are educated guesses and not based on actual data. The reader desiring additional information should contact KHTA in Kugluktuk.

From the table it is evident that a number of animals play a vital role in food provision and cash from fur sales. These are summarized in Table 1.2. The average hunter in the Arctic takes 1,000 to 1,500 kg of meat and fish each year (approximately 300 kg per person) worth an estimated $10,000 to $15,000 (NPC 2000). For all of Nunavut, the value of country food is estimated to be $30 to $50 million (Depuis 1999), based on extrapolation from a 1984 study by Government of Northwest Territories. This figure assumes all edible portions of the harvest are consumed. Annual cash value of the fur harvest is not available. Additional cash is obtained from the sale of meat and fish. Barter will also play an important role in the exchange of goods and services and there are no estimates of the value of barter.

1.4 NON-RESIDENT HUNTING

Non-resident hunters take an estimated 1,000 caribou annually (WKSS 2001). Guide camps are located throughout Nunavut but only two are known to be located in the West Kitikmeot and both are on Contwoyto Lake, as shown on Figure 1.1

1.5 TOURISM

Tourism, while growing, to date has played a minor role in the economy of the West Kitikmeot and Nunavut as a whole. High airfares and poorly developed infrastructure combine to slow growth (Harper 1999). A 1999 estimate for Nunavut's tourism industry suggested $30 million and 18,000 pleasure *and business* travellers (emphasis added) annually added to the economy of Nunavut as a whole (Depuis 1999). No breakdown by area, or between the pleasure and business traveller, was given. Obviously, high transportation costs are much less of a barrier to the business traveller than the tourist. A Government of the Northwest Territories survey (quoted in NPC 2000)

indicated the number of visitors to the eastern Arctic, i.e. Nunavut, increased from 4,700 in 1989 to 5,052 in 1994. An estimated two-thirds of the additional visitors went to Baffin Island. If this proportion remained constant, approximately 6,000 pleasure and business travellers came to the West Kitikmeot in 1999.

Using 1989 as a base, tourism increased by 7% in five years. An additional 10% in the following five years (to 1999) would put the total number of pleasure travellers to all of the eastern Arctic in 1999 at only 5,600, or one third of the 18,000 estimate, of which one third of that number would have been expected to visit the West Kitikmeot, if the pattern of the first five years of the decade held. This is a relatively small number of people which would have a correspondingly small impact on the West Kitikmeot economy, especially since most of the cost of a short visit to Nunavut is getting there, i.e., most of the economic benefit would be to airlines based elsewhere than Nunavut. While tourism, especially ecotourism, requires unspoiled wilderness, if there is no economical way for tourists to get to the unspoiled wilderness, the resource will remain largely untapped. Infrastructure improvements that will positively affect tourism and lower airfares are unlikely to become realities in the near future, because the cost of implementation cannot be justified by the increased revenues that may accrue. The most promising road proposal currently being considered, the Bathurst Inlet to Izok Lake all weather road, would provide only industrial access and does not connect any existing communities in the West Kitikmeot. By design it would avoid any areas of high scenic value.

1.6 OTHER INDUSTRIAL ACTIVITIES IN THE REGION

Mining constitutes the only industrial activity in the West Kitikmeot region outside the immediate influence of communities. One major mine is located in the area (Echo Bay's Lupin Mine) and there are several mineral deposits that have undergone extensive exploration work. Several mineral deposits have been developed to the advanced exploration stage; two are currently active: Miramar/Hope Bay Mining's Hope Bay Belt and Kinross/Wheaton River's George Lake, both gold properties. Active diamond exploration is being carried out. No other mining project in the West Kitikmeot is in the permitting and approval stage. Figure 1.1 provides mine and advanced mineral project locations. Map G provides a picture of mineral activities.

Future use of the land in the West Kitikmeot will be dictated both by community desires to maintain traditional subsistence use patterns and the wealth-producing potential, tied to resource development and the need for sustainable economic development in Nunavut. Mining is likely to play a significant role in this land use. The key to sustainable use will be to minimize the impacts from mining on natural resources to the extent possible. Mining has a small footprint and with modern methods of management can be made sustainable within a regional context. Further, diamond mining and processing produces no persistent poisonous contaminants (i.e. xenobiotics). Primarily, sediment from mining and processing requires control and containment.

1.7 PARKS, ECOLOGICAL RESERVES

There are no parks, ecological reserves, International Biological Program, or other conservation sites in the region occupied by the Jericho Project. Figure 1.2 (courtesy Nunavut Parks web site) shows parks and conservation areas in Nunavut. As can be seen from Figure 1.2, the closest park is Bloody Falls at Kugluktuk.

REFERENCES

BHP Diamet. 1995. NWT Diamonds Project Environmental Impact Statement

Department Sustainable Development. 2000. Kugluktuk office, personal communication.

Depuis, C. 1999. Nunavut Handbook 1999. www.arctictravel.com.

EBA. 2001. Tibbitt to Contwoyto Winter Road, Environmental Setting Report. Prepared for the Tibbittt to Contwoyto Winter Road Joint Venture by EBA Engineering Consultants Ltd.,Yellowknife.

Harper, K. 1999. Hunting and High Finance. http://www.nunavut.com/nunavut99 .

Kitikmeot Hunters and Trappers Association. 1990. Nunavut Harvest Study 1983 – 1989.

Nunavut Planning Commission. 2000. Draft Land Use Plan for the West Kitikmeot Region

Nunavut Planning Commission Transition Team. 1996. Final Report on Resource Management Planning in the West Kitikmeot.

Department of Sustainable Development (SD). 2000. Personal Communication.

West Kitikmeot Slave Society (WKSS). 2001. Updated State of Knowledge Report of the West Kitikmeot and Slave Geological Province. Final Report, May 30th, 2001.

TABLES

TABLE 1.1
ANNUAL HARVEST DATA FOR COMMUNITIES POTENTIALLY AFFECTED BY THE JERICHO PROJECT

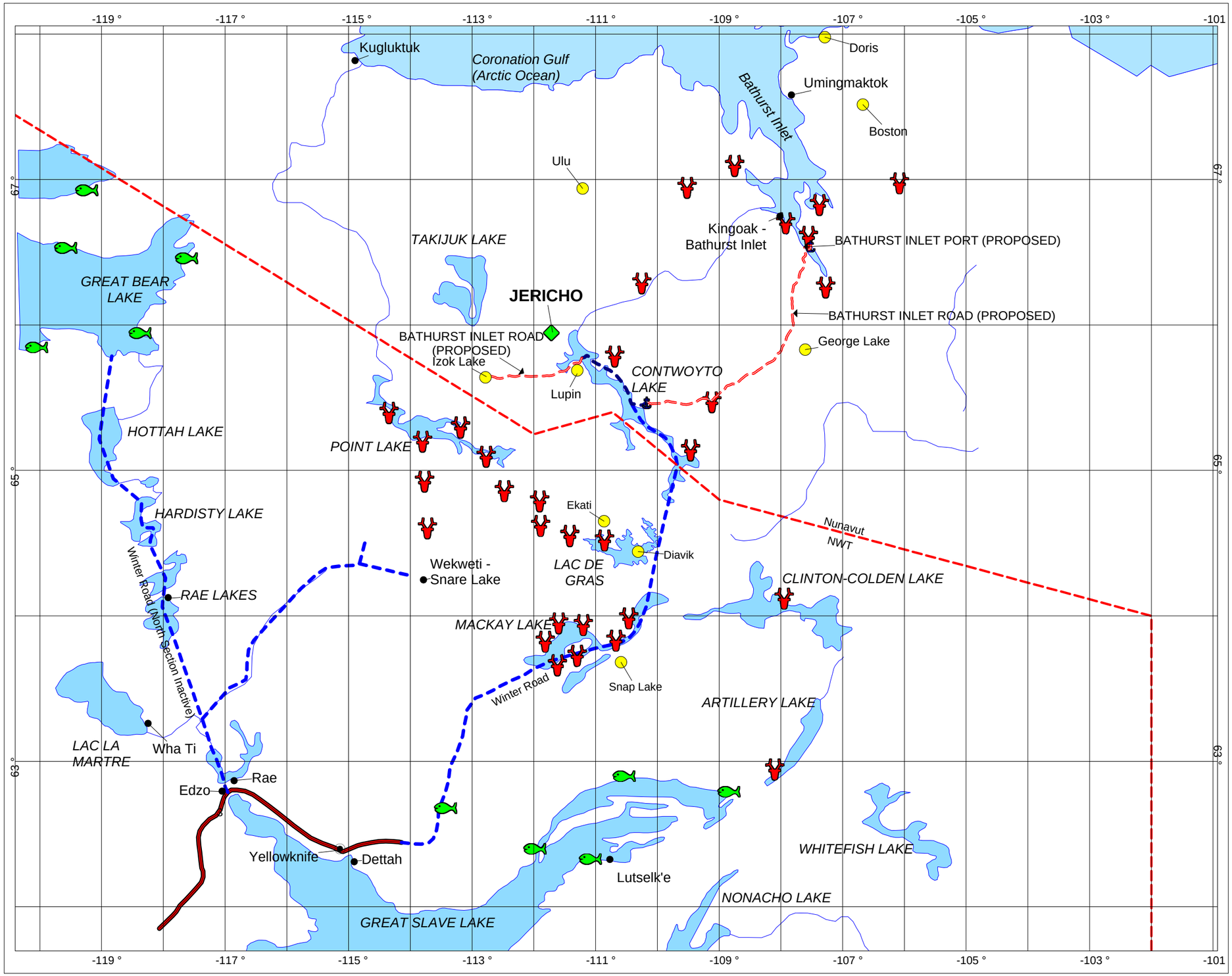
	Cambridge Bay							Kugluktuk							Bathurst Inlet/ Umingmaktok			Gjoa Haven						
Species	**83/84**	**84/85**	**85/86**	**86/87**	**87/88**	**88/89**	**Avg**	**83/84**	**84/85**	**85/86**	**86/87**	**87/88**	**88/89**	**Avg**	**87/88**	**88/89**	**Avg**	**83/84**	**84/85**	**85/86**	**86/87**	**87/88**	**88/89**	**Avg**
B.G. Caribou - bull	582	674	745	487	490	443	570	453	483	410	203	275	242	344	206	352	279	722	581	602	439	204	165	452
B.G. Caribou-yngbull			42	353	295	295	246			46	275	468	418	302	126	113	120			39	237	285	115	169
B.G. Caribou - cow	469	331	514	450	217	253	372	656	633	619	579	720	756	661	147	32	90	397	165	223	251	362	207	268
B.G. Caribou - Yrlg.			66	154			110			23	88			56						29	46			38
B.G. Caribou - calf	253	182	194	45	73	76	137	211	171	215	88	70	175	155	84	7	46	131	205	417	45	210	168	196
B.G. Caribou-M-Yrlng				27	168	112	102			0	55	141	173	92	19	14	17				26	89	156	90
B.G. Caribou-F-Yrlng				16	246	176	146			0	44	199	294	134	16	20	18				11	82	331	141
Goose - unspecified	587	344	464	156			388	605	776	585	12			495				227	199	201	9			159
Canada Goose				183	49	99	110			0	942	459	1125	632	53	37	45				104	206	243	184
Snow Goose - Lesser				6			6			0	65	20	50	34							294	161	190	215
White-front Goose										0	528	174	41	186	0	40	20						67	67
Goose - eggs				139	0	80	73			0	164	0	86	63	19	12	16					171	398	285
Ducks - unspecified	825	739	449	160			543	424	1175	563	174	0	15	392				185	65	117	14			95
Duck - pintail										0	23	19	14	14									1	1
Duck- Oldsquaw				1						0	94	161	1	64							1	12	7	7
Duck - Mallard												2	5	4										
Sandhill Crane										0	11	2	2	4									3	3
Ptarmigan	856	214	120	1045	392	624	542	591	436	319	970	718	486	587	6	17	12	103	147	178	6	34	100	95
Common Loon					5	0	3			0	37	52	0	22								7	13	10
Yellow-billed loon					10	0	5			0	7	9	0	4								0	3	2
Arctic Loon	1	0	0	3	14	0	3			0	7	38	0	11	0	4	2					0	1	1
Red Throated Loon										0	13	23	3	10										
Loon - eggs												0	4	2								3	0	2
Gull - eggs										0	27	0	24	13	79	117	98					6	150	78
Duck - oldsquaw, eggs				11																				
Ptarmigan eggs																						2	5	
Lake Trout	2432	2397	3000	3302	4280	668	2680	1421	792	1169	1190	1548	628	1125	460	273	367	1212	761	1247	2281	2839	2323	1777
Arctic Grayling		154						355	107			20	0	121										
Char - Landlocked-st			10				10															0	55	28
Char - Landlocked-lk					266		266					6	0	3								0	80	40
Grizzly Bear								0	2	2	2	3	1	2	1	0	1							
Hare	42	5	14	34	11	10	19	54	7	20	31	27	13	25	12	17	15	4	6	0	65	0	1	13
Arctic Gr. Squirrel	0	5					3	2	76	4	25	14	31	25	0	34	17							
Wolf	9	5	84	48	52	19	36	48	45	130	43	89	91	74	83	70	77	15	1	24	25	27	25	20
Wolverine	1	4	0	10	1	5	4	41	34	37	65	44	70	49	31	19	25					1	0	1
Fox - Blue								0	9	1	3	1	0	2	1	0	1							
Fox - white	725	703	14	575	1379	26	570	334	1641	608	272	1510	58	737	924	6	465	466	625	219	138	514	2	327
Fox - red	0	1	0	11	6	0	3	58	211	140	212	313	96	172	60	15	38	0	1	5	0			2
Fox - cross	1	3	41	11	2	0	10	10	132	69	110	150	43	86	15	8	12	2	4	0	12			5
Fox - silver						.		1	9	1	1	1	2		0	1	1							
Fox - white/blue			0	2			1	0	1					0.5										

Source: Nunavut Area Harvest Studies 1983-1989, Kitikmeot Hunters and Trappers Assoc. Used with permission.
Census period is from July one year through June the following year.
Based on reported records.
Species include those that do, or could, occur at the Jericho site and contiguous region

TABLE 1.2 AVERAGE ANNUAL HARVEST PER COMMUNITY (1983-1989)	
As Food Sources	
caribou	1340
muskox (not listed in the database)	
geese	620
ducks	280
ptarmigan	310
lake trout	1490
land-locked Arctic char[1]	90
As Sources of Cash	
wolf	50
wolverine	20
fox (all)	60

[1] Sea-run char are the most important source of fish food exceeding lake trout by at least a factor of two but do not occur in the Jericho area.

FIGURES



LEGEND

- Town
- City
- Jericho Kimberlite
- Mineral Deposit
- All Weather Road or Hwy
- Winter Road
- Fishing Lodge
- Hunting Camp

Bathurst Port & Road Facilities

- Proposed Port (Contwoyto & Bathurst Inlet)
- Proposed Road (Ice Road & Barge)
- Proposed Road (All Weather)

N W E S

Tahera Corporation

FIG 1.1

COMMUNITIES, MINES AND HUNTING AND FISHING CAMPS ON THE RANGE OF THE BATHURST CARIBOU HERD

Date:19/12/2002

Author: MJ

Office: VAN

Scale: 1:3000000

Projection: Longitude / Latitude (NAD 27 for Canada)

25 0 25 50
kilometres

FIGURE 1.2 PARKS AND CONSERVATION AREAS IN NUNAVUT

Courtesy Nunavut Parks Web Site