Roberts Bay to Roberts Lake. Ninespine stickleback was second in abundance (23%) and was the most widely distributed species and encountered in each of the 14 streams sampled. Lake trout was third in abundance (13% of the total catch) and second in distribution (encountered in 10 of 14 streams). Juveniles and adults were present in the catch, suggesting that the larger streams provide both rearing and feeding habitat.

Baseline metal concentrations in fish tissue (dorsal muscle, liver, and kidney) were analyzed from lake trout, lake whitefish, and cisco in Doris, Tail, Ogama, Patch, Windy, and Pelvic lakes between 1995 and 1998 and from Arctic char in Roberts Outflow and lake trout in Roberts Lake during 2002. In general, low levels of metal concentrations were documented, with the exception of arsenic and mercury. The highest mean concentration of arsenic (1.95 µg/g dry weight) was recorded in a lake trout liver from Windy Lake. Similarly, the highest mean mercury concentration (3.31 µg/g dry weight) was recorded in a lake trout liver from Patch Lake. Metals concentrations in fish tissues from Pelvic Lake (as selected as a control basin for long term monitoring) were similar or intermediate to corresponding levels from other study lakes. A small proportion of lake trout muscle tissue samples (8 of 113) from the study area lakes exceeded the Health Canada food consumption guideline of 0.5 µg/g wet weight (roughly equivalent to 2.5 µg/g dry weight) for mercury (6 fish from Patch Lake, 1 from Doris Lake, and 1 from Roberts Lake); the maximum concentration was 0.68 µg/g wet weight. Consistent with bioaccumulation up the food chain, older and larger lake trout had greater concentrations of mercury in their tissues and these fish were most likely to have muscle mercury concentrations above the Health Canada guideline. All lake whitefish and Arctic char muscle tissues contained mercury levels that were below Health Canada guidelines; the maximum concentrations were 0.22 µg/g and 0.036 µg/g wet weight, respectively.

3.10 Habitat

The southern shoreline around the mouth of Glenn and Little Roberts outflows was classified as good to excellent habitat for fish and marine benthic invertebrates due to the presence of fine substrates. These areas were deemed as particularly important habitat for anadromous fish. Coastal surveys for birds and bird colonies were flown in August 2000. No colonies were found in Roberts Bay. Numerous flocks of waterfowl, mostly moulting eider and Canada geese were observed in the coastal waters north and west of the Project area.

The shoreline or littoral zones of Doris, Tail, Roberts and Little Roberts lakes were assessed for habitat characterization by aerial and ground surveys. Doris and Roberts lakes had the highest diversity and highest quality of littoral substrate types, based on the presence of sand, cobble, and boulder substrates that provide fair to high quality habitats (spawning, rearing, and feeding) for lake trout, Arctic char, and coregonid species. The littoral zone of Tail Lake was rated as poor to fair habitat for lake trout because of the predominance of bedrock substrates. Little Roberts Lake has the least diverse littoral habitat with silt and sand dominating the substrate; the entire shoreline was rated as fair quality fish habitat because these fine substrates provide some feeding habitat. Despite the rating of only fair, Little Roberts Lake had the highest diversity of fish species (n=7) of the lakes sampled in the Doris North study area. Fish utilize Little Roberts Lake as a migratory corridor from the ocean to Roberts Lake and it is likely fish do not over winter in Little Roberts Lake due to the shallow water depths (mean depth of 2.0 m and max depth of 4.1 m).

None of the fish species in the Project area is designated as endangered or threatened by COSEWIC (2003).

The shoreline or littoral zones of Doris, Tail, and Little Roberts lakes were assessed for habitat characterization by aerial survey. Doris Lake had the highest diversity of littoral substrate types based on the presence of sand, cobble, and boulder substrates that provide fair to high quality habitats (spawning, rearing, and feeding) for lake trout and coregonid species. Doris Lake has the most suitable shoreline habitat among the three surveyed lakes. The littoral zone of Tail Lake was rated as poor to fair habitat for lake trout and coregonids because of the predominance of bedrock substrates. Little Roberts Lake has the least diverse littoral habitat with silt and sand dominating the substrate; the entire shoreline was rated as fair quality fish habitat because these fine substrates provide feeding habitat. Despite the rating "fair", Little Roberts Lake had the highest diversity of fish species of the lakes sampled in the Doris North study area, likely due to the passage for diadromous species from Roberts Bay.

Stream habitat assessments were conducted at 17 stream sites. Streams that interconnect lakes or flow into Roberts Bay appeared to support the highest diversity of fish habitat for rearing, adult feeding, spawning, and migration. The associated lakes likely provide over-wintering habitat, which is lacking in streams due to shallow depths. Most of the small inflow tributaries that did not feature a lake or pond upstream were found to be either ephemeral, run-off from melt waters, or provided only marginal rearing and feeding habitat near their mouths. Most lake outflows had a wide diversity of in-stream habitats with riffles and runs dominating, with lesser quantities of rapids in half the outflows. Migration habitat was rated as good to excellent in Little Roberts and Roberts outflows. The outflow from Tail Lake provided marginal fish habitat, with virtually no migration corridor to Doris Lake. The outflows from Roberts and Little Roberts lakes also provided adult feeding, rearing, and spawning habitats to populations of Arctic char that likely over-winter in Roberts Lake. Although Doris Outflow was diverse in fish habitat and species, a 4.5 m waterfall approximately 400 m downstream of the lake prevents upstream migration isolating the fish populations in Doris Lake from diadromous migrants in Roberts Bay.

3.11 Birds

Bird studies in the Project area since 1994 included aerial surveys for waterfowl and ptarmigan, walking transects for passerines, and habitat specific surveys for raptors with annual follow-up inspections of all known raptor nest sites. The study area did not present a concentration of breeding migratory birds nor was it used for staging or resting by species that breed further north and no "key" habitat has been identified in the Project area as defined by CWS. Study results indicate that raptors (peregrine falcon, gyrfalcon, golden eagle, rough-legged hawk) are relatively abundant in the Project area; 101 nest sites were recorded in the survey area from 1994 to 2003. Fifty percent of these nests are concentrated in 400 km^2 around Windy, Doris and Patch Lakes, presumably in response to the abundance of cliffs, dikes, and outcrops that constitute preferred nesting sites. Shrub environments were found to be important nesting habitats for passerine species breeding in the Project area. New birds species in the region are further evidence for climate change as observed by Inuit elders.

The Project area supports a full complement of tundra bird species; both migratory and protected by the Migratory Birds Conventions Act (Canada), and species protected by the Nunavut Wildlife Act. Bird species observed during the course of work and study in the Hope

Bay belt and reported by Rescan (1996; 1997), and Calef and Hubert (2000a) are summarized in Table 3.2 (Nunavut) and 3.3 (Canada).

Table 3-2: Birds Protected by the Nunavut Wildlife Act Known to Occupy and Breed in the Hope Bay Belt

Species	Distribution	Conservation status*	Economic status
Golden eagle *Aquila chrysaetos*	Terrestrial; summer Resident	Sensitive	
Gyrfalcon *Falco rusticolus*	Terrestrial; summer Resident & migratory	Secure	
Peregrine falcon *Falco peregrinus tundrius*	Terrestrial; summer Resident & migratory	May be at risk	
Rough-legged hawk *Buteo lagopus*	Terrestrial; summer Resident & migratory	Secure	
Willow ptarmigan *Lagopus lagopus*	Terrestrial; summer Resident & migratory	Secure	Recreational & subsistence use
Rock ptarmigan *Lagopus mutus*	Terrestrial; summer Resident & migratory	Sensitive	Recreational & subsistence use
Raven *Corvus corax*	Terrestrial year round Resident	Secure	
Snowy owl *Nyctea scandiaca*	Terrestrial; summer Resident & migratory	Secure	
Short-eared owl *Asio flameus*	Terrestrial; summer Resident & migratory	Sensitive	

* The conservation status of birds Nunavut as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

Definitions for the conservation status used by the Government of Nunavut (2000) are provided below.

- "May be at risk means" that the species may be at risk of extinction or extirpation, and are therefore a candidate for detailed risk assessment.
- "Secure" means that the species is not at risk or sensitive.
- "Sensitive" means that the species is not at risk of extinction or extirpation but may require special attention or protection to prevent them from becoming at risk.
- "Undetermined" means that there is insufficient information, knowledge, or data available to reliably evaluate the general status of the species.

Table 3-3: Birds Species Protected by the Migratory Birds Conventions Act (Canada) Reported to Occupy the Hope Bay Belt

Species	Distribution	Conservation status*	Economic status
Red-throated loon *Gavia stellata*	Summer resident	Secure	
Arctic loon *Gavia arctica*	Summer resident	Secure	
Yellow-billed loon *Gavia adamsii (Gray)*	Summer resident	Secure	
Tundra swan *Cygnus columbianus*	Summer resident	Secure	
White-fronted goose *Anser albifrons*	Summer resident	Secure	Recreational & subsistence use
Canada goose *Branta canadensis*	Summer resident	Secure	Recreational & subsistence use
Northern Pintail *Anas acuta*	Summer resident	Secure	Recreational & subsistence use
Greater Scaup *Aythya marila*	Summer resident	Undetermined	Recreational & subsistence use
Oldsquaw *Clangula hyemalis*	Summer resident	Secure	Recreational & subsistence use
Common eider *Somateria mollissima*	Summer resident; Primarily marine	Sensitive	Recreational & subsistence use
King eider *Somateria spectabilis*	Summer resident; Primarily marine	Sensitive	Recreational & subsistence use
Red-breasted merganser *Mergus serrator*	Summer resident	Secure	
Sandhill crane *Grus canadensis*	Summer resident	Secure	
Lesser golden plover *Pluvialus dominica*	Summer resident	Secure	
Semipalmated plover *Charadrius semipalmatus*	Summer resident	Undetermined	
Semipalmated sandpiper *Calidris pusilla*	Summer resident	Sensitive	
Long-tailed jaeger *Stercorarius longicaudus*	Summer resident	Secure	

* The conservation status of birds Nunavut as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

The bird populations in the area are similar to other tundra habitats with the exception of raptors. The abundance of cliff habitat provided by the sills and dikes in the Hope Bay Belt provides nesting habitat for cliff nesting raptors. Therefore, unlike much of the tundra, the Hope Bay belt is home to numerous raptors. Only one known nest site (occupied by peregrines in 2000; vacant in 2001) is known to occur within 2 km of the Doris Project mine and mill site. A review of raptor nest site occupancy and production of young was developed for all the data collected by the Project since 1996 and others in prior surveys and submitted in the November 2003 FEIS.

Bird surveys in 1996 in the general area of the Doris Project reported an adult breeding bird density of 1.99 birds/ha (range .48 - 3.08 for 8 sample transects) with 11 species represented. Waterfowl surveys were also completed which showed 7 species breeding on the north end of the Hope Bay belt. Non-breeding Canada geese were the most abundant followed by white-fronted geese and northern pintail ducks. Canada geese, white-fronted geese and pintails all breed in the Project area. Habitats in which any of these species concentrated for either nesting or migration were not reported for any area in the Hope Bay belt (Rescan, 1998).

3.12 Mammals – Terrestrial

The environmental studies conducted by MHBL and its predecessor, BHP has included systematic wildlife surveys for large mammals in the Doris Project area annually since 1996. The distribution and economic status of mammals in the Project area are summarized in Table 3.4.

Table 3-4: Land Mammals Observed in the Project Area – 1996 - 2001

Species	Habitat and Distribution	Conservation Status*	Economic Status
Masked Shrew *Sorex Cinereus*	Insectivore active all year in dry habitats	Not assessed	
Arctic hare *Lepus arcticus*	Prefers habitats with cover	Secure	Recreational and subsistence use
Arctic ground squirrel *Spermophilus parryii*	Active in dry terrain; hibernates for winter	Secure	Occasional subsistence use
Tundra red back vole *Clethrionomys rutilus*	Active all year in dry habitats	Undetermined	
Brown lemming *Lemmus sibiricus*	Active all year in dry habitats	Secure	
Greenland collared lemming *Dicrostonyx torquatus*	Active all year in dry habitats		
Tundra vole *Mircrotus oeconomus*	Active all year in dry habitats	Not assessed	
Wolf *Canis lupus*	Known dens in Hope Bay Belt	Sensitive	Recreational, subsistence and economic value
Arctic Fox *Alopex lagopus*	Dens not confirmed but in Project area in winter	Secure	Economic value

Species	Habitat and Distribution	Conservation Status*	Economic Status
Red Fox *Vulpes vulpes*	Known dens in Hope Bay Belt	Secure	Economic value
Grizzly Bear *Ursus horribilis*	Active throughout Project area; inactive in winter	Sensitive	Recreational and economic value
Short-tailed weasel *Mustela erminea*	Active all year	Secure	
Wolverine *Gulo luscus*	Expected throughout Project area	Sensitive	Recreational, subsistence and economic value
Barren-ground caribou *Rangifer tarandus*	Migratory: Project area includes winter range for Victoria Island herd	Secure	Recreational, subsistence and economic value
Muskox *Ovibos moschatos*	Active all year throughout Project area	Secure	Recreational, subsistence and economic value

* The conservation status as ranked in "Nunavut Wild Species Report, 2000" (Government of Nunavut, unpublished).

No habitat that is critical to any aspect of the local mammal populations annual life history has been observed in the Project area.

3.12.1 Insectivores

Only one species of insectivore, the masked shrew, is known to be active in the Project area. It was captured in small mammal trapping samples in 1996. This small mammal is active all year long and occupies dry habitats where it feeds almost exclusively on insects, their eggs, and larvae.

3.12.2 Rodents

Five species of rodent are known to occupy the Project area. Tundra red-backed voles, tundra voles, and two species of lemming, plus the Arctic ground squirrel are found throughout the Project area in well drained habitats suitable for these herbivores. Only the ground squirrel hibernates. The voles and lemmings are active all year long and display a cyclic population growth and decline pattern that repeats every 3 - 5 years. The effect of this cycle can be observed in raptor nesting /fledging success, especially that of the rough-legged hawk, an aerial predator of small mammals, particularly rodents. Fox production and survival of young is also affected by the breeding cycle of small rodents.

3.12.3 Lagomorphs

The Arctic hare is a ubiquitous tundra herbivore that occupies habitats that offer both forage and cover. Both are plentiful in the Project area and Arctic hare and their sign can be observed in numerous locations throughout the area in all seasons.

3.12.4 Carnivores

Carnivores in the Project area range from the small short-tailed weasel to the large grizzly bear including foxes, wolves, and wolverine. Dens of both fox and wolf are known for the Hope Bay belt; one fox den is approximately 4 km southwest of the Doris Project site. Grizzly bear studies in the Project area included telemetry collars on three males and three females in 1997 and 1998. The movement data for grizzly in the Hope Bay belt were consistent with that for grizzly bear generally, that males have a greater annual range than females.

3.12.5 Ungulates

The Project area is occupied by both caribou and muskox. Aerial surveys since 1996 have examined the distribution of both caribou and muskox in the study area at all seasons of the year. A survey area of 26 east /west transects have been flown every year since 1996. This survey pattern covers the core of the Hope Bay belt, an area of approximately 675 km^2. The area of the Doris project is covered by transects 15 - 26; transect 15 is 17 km south and transect 26 is 25 km north of the Doris Project site.

3.12.6 Muskox

Muskox have been observed on every aerial survey and are widely distributed throughout the Hope Bay belt. Table 3.5 shows a summary of the number of groups of muskox observed on aerial surveys since these began in May1996.

Table 3-5: Groups of Muskox Observed During Aerial Surveys over the Doris North Project Area: 1996 - 2001

Season/Year	1996	1997	1998	1999	2000	2001
Winter January – April	n.d	3 (1)	4 (1)	1 (1)	n.d.	n.d.
Spring May – June	2 (2)	3 (2)	5 (2)	2 (1)	5 (3)	3 (2)
Summer July – August	8 (3)	8 (3)	6 (2)	3 (1)	2 (1)	n.d.
Fall September – October	0 (1)	0 (1)	0 (1)	n.d	n.d.	n.d.
Winter November-December	1 (1)	1 (1)	0 (1)	n.d.	n.d.	n.d.
1) Number in ( ) indicates the number of surveys combined for the observations recorded. 2) n.d. means "no data" as no surveys were completed in the season indicated.						

3.12.7 Caribou

The Hope Bay belt is within the range of three different caribou herds- the Bathurst herd shared between Nunavut and the NWT, the Queen Maud Gulf herd that ranges on the mainland predominantly within the Kitikmeot region of Nunavut, and the Victoria Island herd which spends the calving period and the summer on Victoria Island and migrates to the mainland for the

winter. It is not possible to conclusively distinguish animals from the individual herds during aerial surveys and so herd affinity of animals observed on surveys is not known.

Observations of caribou for all aerial surveys over the Doris Project (transect 15 - 26) area are summarized in Table 3.6. The seasons of the year are those assigned to the annual cycle of caribou by the Beverly and Qamanirjuaq Caribou Management Board (1999).

Table 3-6: Groups of Caribou Observed During Aerial Surveys over the Doris Project Area: 1996 - 2001

Season/Year	1996	1997	1998	1999	2000	2001
Late Winter	n.d	9 (1)	6 (1)	15 (1)	n.d.	n.d.
Spring Migration	n.d.	n.d.	n.d.	n.d.	10 (1)	19 (1)
Calving	24 (2)	37 (2)	70 (2)	54 (1)	44 (2)	9 (1)
Calf Sites	1	2	3	0	0	0
Post-Calving	51 (3)	1 (2)	1 (1)	1 (1)	0 (1)	n.d.
Late Summer	n.d.	4 (2)	6 (1)	n.d.	n.d.	n.d.
Rut	0 (1)	n.d.	0 (1)	n.d.	n.d.	n.d.
Early Winter	7 (1)	6 (1)	38 (1)	n.d.	n.d.	n.d.

1) Number in ( ) indicates the number of surveys combined for the observations recorded.
2) A transect survey was not done because observations taken during raptor surveys showed no caribou in the study area.
3) n.d. means "no data" as no surveys were completed in the season indicated.

It is noteworthy that of the numerous observations of groups of caribou in the Project area in the Table above, during the calving period, very few groups with calves were observed and none in the last three years (1999 - 2001 incl.). Additional observations add significant detail to the summary in Table 3.6. The high number of caribou in the Project area in the 1996 post-calving period probably belonged to the Queen Maude Gulf herd as the Bathurst herd calving ground that year was west of Bathurst Inlet with the highest density of calving observed 100 km west-southwest of the mouth of the Burnside River. In 1996 the Queen Maude Gulf herd calved across the Queen Maude Bird Sanctuary and could have easily moved north and west, a portion of which may then have been observed on the Hope Bay Belt in mid July. The high number of caribou in the early winter of 1998 coincided with a very late freeze-up of Dease Strait delaying the arrival of the Victoria Island herd on the mainland that year with migration still underway on the December 3 survey date. Return migration to Victoria Island begins in late April and continues through early June with cows leading and bulls returning later. Movements of cows monitored by satellite telemetry in May 2000 showed migration north across the sea ice in the May 1 - 14 period.

3.13 Marine Wildlife

3.13.1 Marine Birds

A reconnaissance of the shorelines of Warrender Bay, Parry Bay, and Melville Sound for marine bird colonies was completed in August 2000. Only five colonies of herring gulls were found. Numerous concentrations of waterfowl including broods were observed, especially near the

shores of Warrender Bay and Parry Bay. The most numerous species were eider, Canada geese, and mergansers. There were no concentrations of any bird species observed in Roberts Bay during this survey.

3.13.2 Marine Mammals

A survey for marine mammals over the offshore ice between the Project area and Kent Peninsula west to the marine route through Bathurst Inlet was conducted in June 1996. Only ringed seals were observed. The density of seal observed on the surveys ranged from 0.6 - 0.71 seals / km^2. These density values fall between lower densities for the species observed along the Yukon north coast and Beaufort Sea, and higher densities observed in the Western Amundsen Gulf near western Victoria Island. Other large marine mammals including polar bear are not common in the marine approaches to the Project area. A walrus was observed during an aerial survey in October 1998 and a single bearded seal was observed during the coastal survey for bird colonies in August 2000. No marine mammals were observed in Roberts Bay during the August 2000 survey and no seals were observed in Roberts Bay during the June 1996 survey for marine mammals.

4.0 SOCIAL AND ECONOMIC ENVIRONMENT

Robert Hornal & Associates completed a survey of existing socio-economic conditions for MHBL in the Kitikmeot Region and Yellowknife in 2003. Additional work was completed by AMEC in the Fall of 2004.

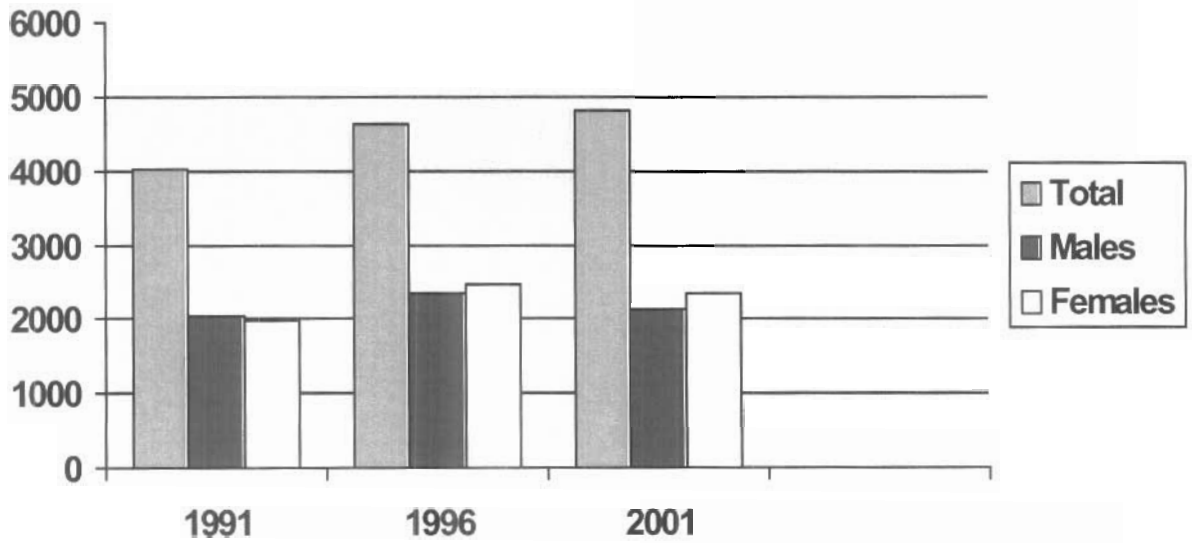
4.1 Kitikmeot Region

The Kitikmeot Region is the western part of Nunavut and the central part of the Canadian Arctic. The Region has seven communities and all are included in this study. Cambridge Bay is the largest and is the regional centre and transportation hub. Kugluktuk, the second largest community, is situated 450 km southwest of Cambridge Bay. The two smallest communities, Bathurst Inlet and Umingmaktok are south of Cambridge Bay and are the nearest communities to the proposed project. Gjoa Haven, Taloyoak and Kugaaruk are located in the eastern part of the Region.

4.1.1 Demographic Profile

The population of the Kitikmeot Region was 4,816 in 2001, a 4% increase from 4,643 residents in 1996. The population is young with 38% 14 years of age or younger. The demographic profile of the region is presented graphically in Figure 4.1.

Figure 4-1: Population of Region



The median age of the population in the Region is 22 years for both males and females. Ninety percent of the residents are of aboriginal descent. In 2001 there were slightly more males than females living in the Region (2,475 males and 2,345 females).

4.1.2 Economy

The Kitikmeot economy is comprised of three key elements: the wage economy, government transfer payments, and subsistence harvesting. Many residents combine cash from wage employment and government transfer payments with subsistence harvesting (also known as traditional activities).

The wage economy is comprised of three main sectors: government jobs (federal, territorial, municipal and other public organizations), the service sector including tourism, and the mineral exploration and mining sector. In 2001, 30% of the regional workforce was employed in other services including government, 22% in health and education (indirectly government), 15% in business, finance and real estate, 12% wholesale and retail, 11% resource based, and 10% manufacturing and construction. Government is the largest employer in Nunavut, but that is expected to change over the next five years as population growth out paces job vacancies in the public service. Most job growth will be in the private sector, especially in construction.

Since 1996 Kitikmeot residents have been working to develop and expand the service sector in the Region and to diversify their economy. The Kitikmeot Corporation is based in Cambridge Bay and 100% Inuit owned as the business development arm of the Kitikmeot Inuit Association. It is involved with a variety of service companies including Kitikmeot Geosciences, Kitikmeot Caterers, PolarNet, Nuna Logistics, Top of the World 2000, Toromont Arctic Caterpiller, Diamonds International (Canada), Kitnuna Corporation, and Larga Ltd.

Mineral exploration activity in the Region has increased during the past few years. Natural Resources Canada reported that in 2002, $75.9 million or 13.2% of Canada's total exploration dollars were spent in Nunavut. In 2003, it is estimated that $82.4 million will be spent on mineral exploration in the Territory.

Of the $61.3 million spent on 36 different projects in 2001, fifty per cent of the projects were located in the Kitikmeot Region. In 2003, MHBL spent approximately $17.5 million on the Hope Bay belt. To September 15, 2003 the company had employed 22 residents of Cambridge Bay, 10 residents of Gjoa Haven, nine residents of Taloyoak, five residents of Kugluktuk and four former residents of Bathurst Inlet for a total of 3,192 days on the project. In 2002 29% MHBL expenditures went to firms owned by Inuit, qualified Inuit Registry firms and Inuit employees.

In August 2003, Kinross Gold Corporation, the owner of the Lupin Mine, placed the mine into care and maintenance, affecting approximately 235 workers and 70 contract employees. Twenty-four of the mine employees lived in the West Kitikmeot, 14 from Kugluktuk and 10 from Cambridge Bay.

There are four main tourism lodges in the Kitikmeot Region, High Arctic Lodge on Victoria Island, Bathurst Inlet Lodge at Bathurst Inlet, Plummers Arctic Lodge on the Tree River and Elu Inlet Lodge south of Cambridge Bay. The lodges provide employment and training for Regional residents, and purchase local goods and services. Sport hunting and guiding are key components of the tourist sector. In 2001 the communities of Bathurst Inlet, Umingmaktok and Cambridge Bay sold 83 sports hunts to non-resident hunters. The value of each hunt is estimated at $30,000.

4.1.3 Income

In 2001, 2,230 Kitikmeot residents reported earnings, 54% were male and 46% were female. The average income was $24,449 with males earning 32% more than females. The number of persons in the Region working full-time in 2001 was 835 and their average income was $46,627 with males earning 20% more than females.

4.1.4 Government Transfer Payments

The transfer payments from governments come from either subsidies or income support. Subsidies include cash assistance to hunters and trappers or guaranteed prices for furs caught. In 2001 government transfer payments represented 15.1% of residents' income. The Region had 7,169 cases (person months) of income support in the 1999 calendar year an increase of 9% from the fiscal year 1998-99. The average value of each case decreased 13% during that period.

4.1.5 Subsistence Harvesting

Subsistence harvesting includes hunting, fishing, trapping and gathering. It also includes the transformation of harvested products into useful articles such as clothing or arts and crafts. Subsistence activities are community based, provide income in kind from the land and are anchored in the cultural practice of sharing. Subsistence harvesting contributes greatly to the improvement of the economic life of the communities by reducing the financial burden of households, not only for food and clothing, but also for services. Strong subsistence sectors also reduce the need for other social support programs and enhance the transfer of traditional knowledge. In effect, the use of traditional knowledge acts to conserve traditional skills, conserve biodiversity in the environment, and sustains economic security. At the Inuit Qaujimajatuqangit Workshop in 2003 elders from Umingmaktok, Bathurst Inlet, Kugluktuk and Cambridge Bay stated that the majority of their food comes from the land. They spoke about how they feel much healthier when they eat country food compared to when they eat store-bought food. They emphasized the importance of caribou to their diet and culture. They noted that if someone was not able to hunt then a family member usually shared their harvest with them. Fifty-nine per cent of Inuit households rely on harvested resources and the consumption of country foods is greatest among low-income households. Although harvesting is a part-time activity for most people, production per hunter is high with the average hunter in the Region taking 1,000 to 1,500 kilograms of meat and fish each year. The replacement value of this food is estimated at between $10,000 and $15,000 per hunter per year. Most local households hunt, fish, trap, gather and consume the food from this harvest. Country food replaces expensive store-bought food and compared to imported foods, country food provides a better source of nutrients. Both traditional knowledge and scientific data point to the important connection between individual – and community – health and well-being and access to reliable sources of country food. Subsistence harvesting activities are at the heart of Inuit culture and sustain Inuit society in its traditional way of life.

All three elements, wage employment, government transfer payments, and subsistence harvesting play an important role and contribute to the Regional economy at different levels and at different times depending on factors such as seasonal harvesting activities and the availability of wage employment. The mix of casual and seasonal employment is a defining characteristic of the economy of West Kitikmeot communities.

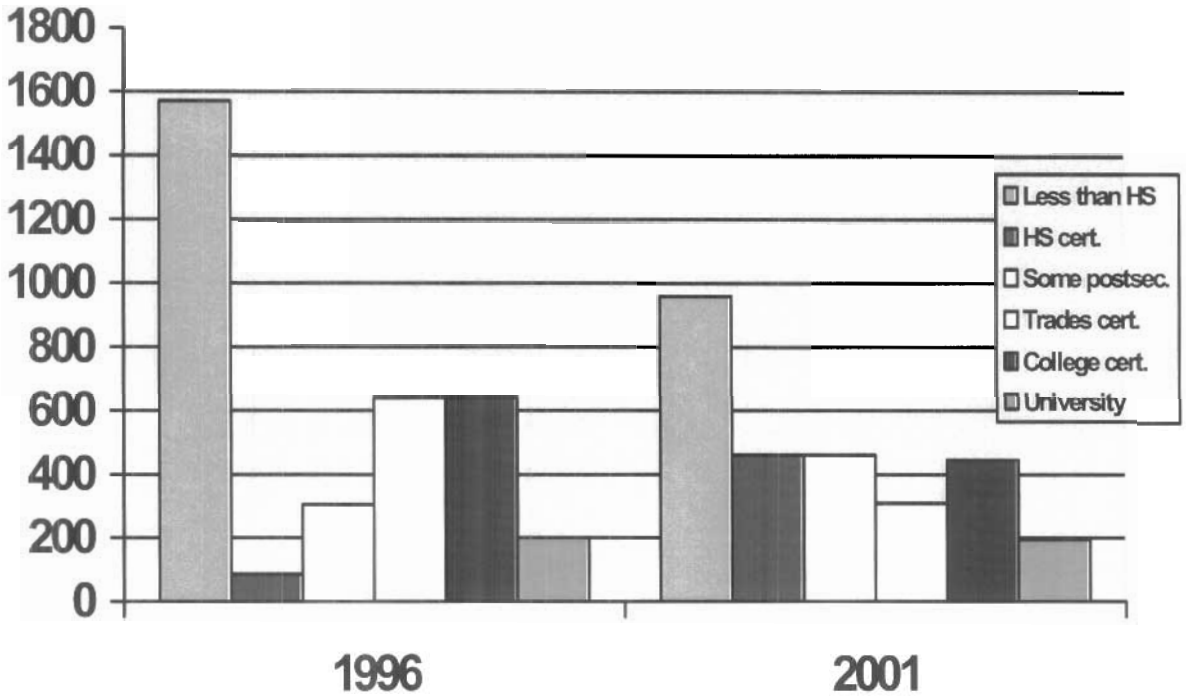
4.1.6 Employment

In 2001, the total experienced labour force of persons 15 years and over in the Kitikmeot Region was 1,874. Fifty-five per cent were male and 46% were female. The participation rate was 65.4%, the employment rate was 52.4% and the unemployment rate was 19.9%. Past surveys indicate that Inuit were less likely to be in the labour force than non-Inuit. This changed in the 1990's as the desire for wage employment increased with more people actively looking for work and an increase in the number of self-employed persons. The increase in the number of local co-management groups and Institutions of Public Government established in the Nunavut Land Claims Agreement also provided new opportunities for local wage employment. Kitikmeot residents have been working for Miramar Hope Bay Ltd. Since 2000 they have worked 9,501 days and earned $1,818,103. Women have worked 1,584 days and earned $299,750 and men have worked 7,917 days and earned $1,518,353. In 2003, Kitikmeot women earned an average wage of $189 per day and men an average of $191 per day. The Ekati Diamond Mine and the Diavik Diamond Mine give hiring preference to aboriginal Northerners; both companies provide air transportation to and from the mine sites from Kugluktuk and Cambridge Bay.

4.1.7 Education

In 2001, 40% of the Region's residents between the ages of 20 and 64 had less than a high school certificate, 19% had a high school certificate and/or some postsecondary education, 13% had a trades certificate or a diploma, 19% had a college certificate or diploma and 8% had a university certificate, diploma or degree. The 1996 Canada Census measured the highest level of schooling from age 15 and older. In 1996, 56% of the residents 15 years or older had less than high school, 3%, had a high school diploma, 11% had some postsecondary training, 23% had a trade or other certificate and 7% had some university. The educational breakdown of the population of the region is summarized graphically in Figure 4.2.

Figure 4-2: Education of Residents



Nine schools offer kindergarten to grade 12 in the Kitikmeot Region and all of the hamlets now have schools that offer up to grade 12. In September 2002 the Region had 1,452 students enrolled in the nine schools with a capacity for 2,058 students. In 2003, 14 students graduated from high school in the Region, 15 in 2002, and 10 in 2001

4.1.8 Training

Nunavut Arctic College (NAC) serves the Kitikmeot Region from the Kitikmeot Campus in Cambridge Bay. It offers high school upgrading, university and special courses, and programs through its learning centres in the communities. The Nunavut Teacher Education Program (NTEP) has increased the number of qualified Inuit public school teachers throughout Nunavut from zero in 1971 to over 200 in 2001. In December, 2002 Nunavut Arctic College began plans for Nunavut students to access the University of the Arctic (UArctic) programs. The UArctic is a network of 46 colleges, universities and organizations working together to promote learning in the circumpolar world. Courses are accessed via the Internet. The Kitikmeot Employment and Training Partners (KETP) is a partnership of territorial and federal government departments and agencies, Designated Inuit Organizations, private sector companies and youth formed to coordinate and promote employment, training, education, community and economic development opportunities in the Kitikmeot. The organization has 37 partners and has delivered ten training courses and graduated 97 students between December 1999 to December 2002. The graduates included 65 heavy-equipment operators, 16 diamond driller assistants and ten cooks. The courses ran from three to six weeks and were held in different locations in the

Region. KETP provides aftercare support to all the graduates by assisting with finding employment and keeping their names and telephone numbers in a database. As of August 2003, of the 97 KETP graduates, 71 were working, 2 were at school, and 24 were not working.

4.1.9 Social Issues

The Conference Board of Canada reported in 2001 that the serious shortage of housing throughout Nunavut has been identified as being linked to health and social problems and economic issues. Crowded housing conditions and design imperfections have contributed to health problems such as respiratory difficulties and the spread of communicable diseases. The shortage has also affected the economy by making it difficult to recruit employees. Often a job without available housing is a job unfilled. In May 2003, 226 families in the Kitikmeot Region were on the Nunavut Housing Corporation waiting list for housing.

Nunavut has the highest rate of violent crime in Canada and the third largest overall crime rate in the country. It is also the only jurisdiction in Canada where the rate of violent crime exceeds the rate of property crime. The deputy minister of justice attributes 90% of the violent crime to alcohol abuse.

5.0 PUBLIC HEALTH

5.1 Community Health and Wellness

The Department of Health and Social Services operates Community Health and Social Service Centres in the larger communities staffed with nursing and social services personnel. There are no medical services in Bathurst Inlet or Umingmaktok. Emergency or non-emergency care, which cannot be managed locally, is referred to larger centres such as Stanton Regional Hospital in Yellowknife or Edmonton for services that are not available in Yellowknife.

5.2 Health Issues and Concerns

Much like the rest of Canada, the Kitikmeot is faced with a shortage of nurses and social workers. The mental health of Kitikmeot residents impacts on the number of illnesses, accidents, and attempted and completed suicides. Suicide is one of the most pressing health and social issues in the Kitikmeot Region and in Nunavut. Nunavut's suicide rate is nine-times higher than the national average. Ninety-seven per cent of all suicides in Nunavut are Inuit. A 1998 study found that a robust family life, ties to community and a close connection with the land together provide the necessary conditions for lasting emotional health.

The Ministry of Health and Social Services launched the Tukisiniaqtut project on April 1, 2003 to investigate why so many people are committing suicide. Alcohol and drug addiction are serious problems in Nunavut and in the Kitikmeot and the government has responded with providing mental health nurses and drug and alcohol counsellor positions in most communities. At the Inuit Qaujimajatuqangit Workshop in September 2003, elder's said that drug and alcohol abuse was the most serious social problem in all communities in the Region. They stressed that this problem leads to other problems such as family violence, elder abuse, abuse of children (money spent on drugs and alcohol is not available for food and clothing), and sometimes jail which means being away from family which often resulted in other problems.