Chapter 3
Regional Analysis of the West Kitikmeot

My father-in-law, when he first heard that welfare was to be introduced in the North, shuddered at this solution, [saying that] it will not create a long-term economic solution that is acceptable to Inuit, but it will create a great dependency, where no one will ever get out.

- Charlie Evalik [10]

Location

The West Kitikmeot land use planning region is the westernmost planning region in Nunavut. It is bounded on the west by the Inuvialuit and Sahtu Settlement Areas and southwest by the Tlicho Settlement Area and south by the Akaitcho area of the Northwest Territories, on the north and northeast by the North Baffin land use planning region, on the east by the Akunniq land use planning region, and on the southeast by the Keewatin land use planning region. The total area of the West Kitikmeot planning region is approximately 350,000 square kilometres. Inuit hold fee simple title to nearly 66,400 square kilometres of land in this region and have both surface and subsurface title to just over 9,600 square kilometres of land. In order to increase ownership in subsurface lands within this mineral-rich region, Inuit of Baffin Island transferred some of their subsurface land quota to the West Kitikmeot region during negotiation of the NLCA.

The communities in this West Kitikmeot region are Kugluktuk, Cambridge Bay, Omingmaktok and Bathurst Inlet. Cambridge Bay and Kugluktuk are Hamlets under the *Government of Nunavut Cities, Towns and Villages Act*, while Omingmaktok and Bathurst Inlet are outpost camps as defined in the NLCA.

The region's boundaries have been established to accommodate all IOL selected by these four communities. No Inuit lands selected by communities outside of this planning region fall within its boundaries. A full metes and bounds description of the planning region is presented in Appendix 3.

Inuit Historical Occupation and Land Use

The West Kitikmeot is home to the Copper Inuit, a people with a strong sense of self-determination and an enduring respect for the skills taught by their ancestors. Until about 1,000 years ago, Inuit of this region were an inland people, a fact captured in Inuinnaqtun, the language of the region. The Inuinnaqtun word "Kitikmeot" means "people from the middle" or central Arctic. The people of the West Kitikmeot are referred to as Killiniqmiut. For centuries, the Killiniqmiut traveled over vast stretches of tundra, following inland caribou herds, moving to the coast to hunt seals and other sea mammals, or fishing from the region's countless lakes and rivers.

Kila Arnauyuk and Jennie Kanneyuk,
Copper Inuit women, wearing caribou-skin clothing.

The traditional hunting activities of the Killiniqmiut were determined by the availability of game, and by the seasons. From December to May, their main activity was hunting seals through breathing holes in the sea ice. Polar bears were also an important source of food at this time of year, as they too came onto the ice in search of seals. During late May, the Killiniqmiut moved onto the land to hunt the caribou that were beginning their annual migration to the north. People also fished through the ice of inland lakes in the spring.

From May to November, the main sources of food were caribou, fish, wildfowl and small game. The best caribou hunting was in early August, by which time the animals have put on considerable body weight after a summer of grazing. The important arctic char run took place in the early fall as well, with large groups of Inuit gathering to harvest the fish.

Fish and game are plentiful around **Cambridge Bay** (known as Ikaluktutiak, which means "Great Fishing Place" in Inuinnaqtun). The hamlet is located on the south coast of Victoria Island, at a site that has always been a gathering place for Inuit from Bathurst Inlet, Perry River, Chantrey Inlet and Back River.

Aerial view of Cambridge Bay.

These people originally came from inland locations around the Contwoyto Lake and Thelon River Basins. This migration took place during the 1780s, during what people call "the first starvation period". Another migration occurred in the late 1800s. Prior to this, the inland people traveled to the coast to hunt and fish.

The area was a favourite for trade among Inuit groups because of its natural abundance of wildlife. Archaeological artifacts and implements found in this area, and in north-eastern Victoria Island, point to Inuit use and occupation dating back thousands of years.
Kugluktuk ("Where the water falls") is located on the mainland on the west shore of Coronation Gulf. It has had a long history of use because of the

occupation of the area by two great Inuit cultural waves (Denbigh, 3000 BC to 500 BC and Thule/Inuit, commencing in AD 800). Many of the present day Inuit of Kugluktuk came from the inland areas around Contwoyto Lake and Bluenose Lake. Another group came from the Bernard Harbour area to the north, and are original descendants of Alaskan Inuit.

The Kugluktuk area has always been populated because of its proximity to caribou crossing points from Victoria Island. It is good harvesting area for seal, barren ground grizzly, and moose that make their way north up the Coppermine River valley. Whitefish, char, trout and grayling are abundant in the area's waters. The availability of wood along parts of the Coppermine River valley influenced Inuit technology, and provided a source of heat that was not available elsewhere in the West Kitikmeot. Copper was also collected here and used to make tools.

The people of **Bathurst Inlet** (known in Inuinnaqtun as Kingaun, which means "Nose Mountain") are referred to as Kingaunmiut. Their name is related to a rock outcrop located near the community that resembles a human nose. The community is located on the mainland near the southern end of Bathurst Inlet. Kingaunmiut harvested seals on the sea ice, fished at the river mouths in spring and fall, and traveled inland in the summer to hunt caribou.

Elsewhere in Nunavut, when Inuit were abandoning their camps for European style settlements, the people of Bathurst Inlet chose to remain on the land. Residents of Bathurst Inlet continue to follow a traditional, independent way of life, only recently taking jobs in the wage economy to help support their traditional lifestyle.

Omingmaktok ("The Place of Muskox") is located on the mainland further north on the eastern shore of Bathurst Inlet. The residents who live in the community are closely related to the Kingaunmiut. The community began as an outpost camp set up by Oyakyoak, Kudlak, Koaha, Avadluk, and Okhina.

Omingmaktok provides a safe harbour and is close to good trapping on Kent Peninsula and around Elu Inlet. People here still strongly identify themselves as independent harvesters; most days are busily spent hunting for food and gathering pelts for trade.

Areas of Influence

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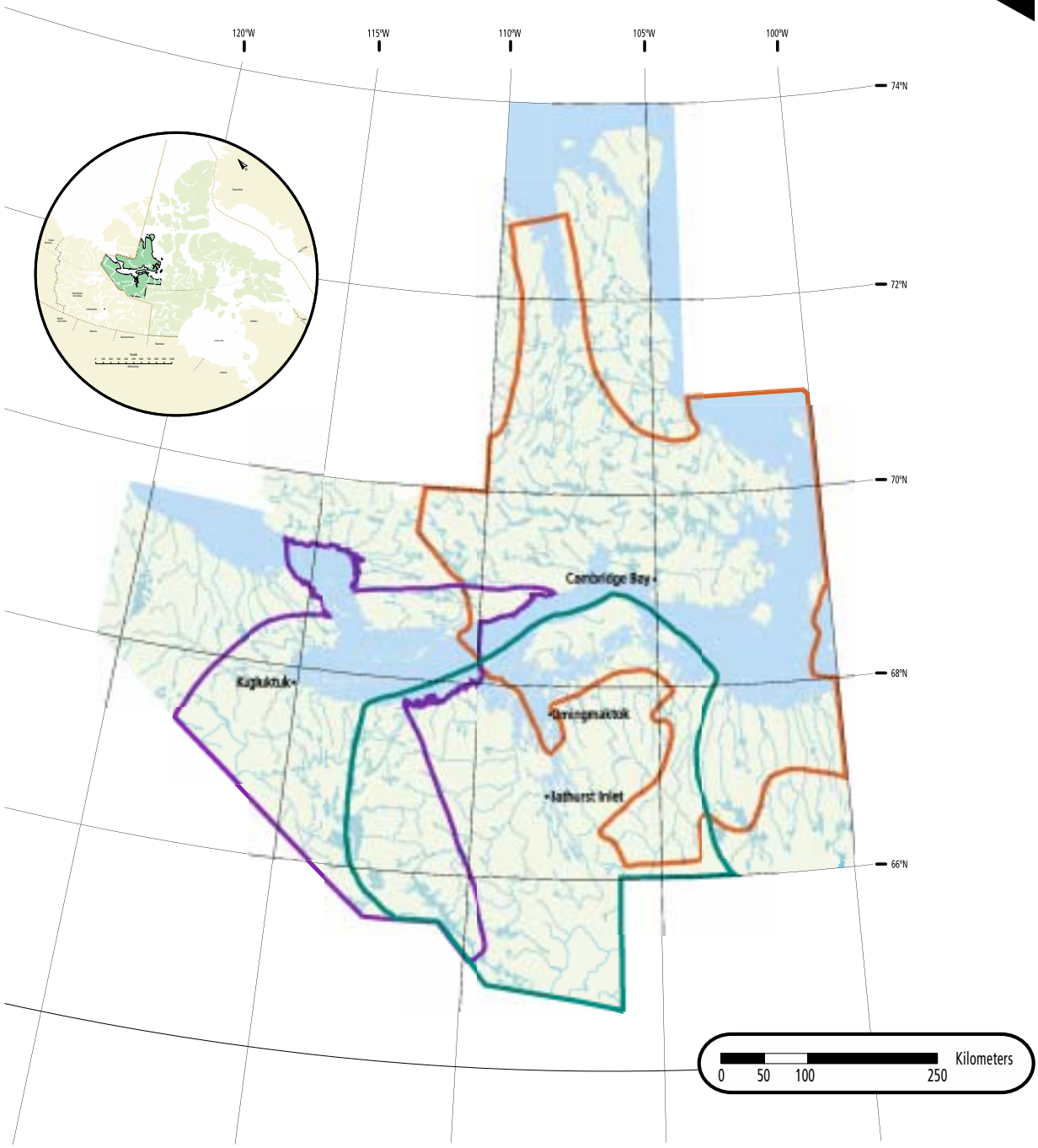

Cambridge Bay

Kugluktuk

Bathurst Inlet and Omingmaktok

Europeans have periodically explored parts of the West Kitikmeot since the late 1700s. It is only within the last 60 years, however, that outside ideas and institutions have significantly impacted the lives of Inuit in this region. Before contact with Europeans, there was some trade among Inuit groups, but, overall, people did not travel as far as during the later fur trading years, when trappers ranged over great distances.

Fur trading companies, the RCMP and church missions all had an enormous impact on Inuit life throughout the region. Larger permanent communities only began to take shape, however, with the construction of the LORAN Navigational Beacon at Cambridge Bay in 1947, and the Distant Early Warning (DEW) radar site in 1955.

These major developments hastened the rate at which Inuit had to adapt their traditional way of life in order to participate in the wage economy. An example of this was when young Inuit men trained themselves in construction and heavy equipment operations in order to work for the Department of Transport and at the numerous DEW Line sites along the Kitikmeot coast. As a result, by the mid-1960s, the pattern of traditional camp life was declining as families began to move permanently into the communities.

The establishment of health services and schools also played a role in drawing people in from the land to live year round in the communities.

Another significant change at this time was the introduction of snow machines, which allowed hunters to live in one place yet access several different hunting grounds. This increased mobility made living in the communities and maintaining traditional land-based economies possible.

Despite these enormous changes, Inuit of the West Kitikmeot maintain a close tie to their traditions, culture and land based activities. The continuing importance of the land in Inuit culture cannot be stressed enough. Although Inuit have made many adaptations, they have not abandoned their connection to the land, which gave birth to, and sustains, their culture.

The majority of the people in the region continue to use Inuinnaqtun at home, at school, and on the job, which is an important aspect of maintaining and promoting culture.

Natural Environment

The West Kitikmeot planning region contains two broad terrestrial ecozones. The ecoregion classification system from *A National Ecological Framework for Canada* has been applied to the West Kitikmeot planning region (Map 3).The Southern Arctic ecozone lies on the mainland and in coastal areas, while the Northern Arctic ecozone extends over Victoria Island.

The Southern Arctic ecozone is a tundra landscape of shrub lands, hills and plains, wet sedge meadows, and clear, cold lakes. The terrain is undulating and dotted by thousands of lakes and ponds, interspersed with Canadian Shield rock outcrops. Permafrost occurs throughout this ecozone, along with freeze/thaw cycles that cause polygonous and hummocky ground features.

Typical landscape of the Southern Arctic Ecozone.

The tree line extends up into this region directly south of Kugluktuk, in the form of small scattered clumps of stunted spruce trees. Low shrubs of willow, birch, Labrador tea, and mountain cranberry can be found over the rest of this ecozone. Close to a million caribou migrate through here, and the ecozone also serves as habitat for ducks, loons, geese, swans, arctic char, arctic fox, musk ox, grizzly bears, and polar bears (along the northern coastline). Marine mammals like seal thrive in coastal waters and offshore.

The Northern Arctic ecozone on Victoria Island is made up of low rolling plains, covered by frost patterned soils, broken limestone, and sandstone. The island's south and east coasts have wide, flat coastal plains and beach stand lines that reach inland. Plant communities are sparse and stunted, and are limited mainly to sedges, mosses and lichens, and some Arctic willow and moss campion.

Table 1: Ecoregion Classification
AMUNDSEN GULF LOWLANDS (16). This ecoregion extends over the southern part of Victoria Island, with the landscape sloping gently toward the southwest. Areas of drumlin ridges can be found, with soils of Turbic Cryosols and deep continuous permafrost.
SHALER MOUNTAINS (17). A small part of this mountainous ecoregion extends into the northwest corner of the planning region. There are steeply sloping glacial deposits, with exposed bedrock and a 40-60% vegetation cover.
VICTORIA ISLAND LOWLANDS (18). This ecoregion covers the largest area of Victoria Island and is made up of undulating lowlands sloping gently to the south and southwest. There are extensive drumlin ridges, with continuous permafrost, ice wedge polygons, and Turbic Cryosol soils.
CORONATION HILLS (36). This ecoregion covers the western portion of the planning region, south of Dolphin and Union Strait. It is comprised of large, rounded, low hills and lowlands formed by undulating to ridged glacial tills, fluvioglacial, and marine deposits.
BLUENOSE LAKE PLAIN (37). This ecoregion occurs in the Horton and Hornaday River plains. It contains shrub tundra vegetation forms that provide a nearly continuous cover, consisting of dwarf birch, willow and northern Labrador tea. The landscape reaches elevations of 365–610 m. Turbic Cryosols developed on rolling glacial moraine are the dominant soils, and are underlain by continuous permafrost with medium to high ice content in the form of ice wedges.
BATHURST HILLS (38). This ecoregion extends by Bathurst Inlet and along the coastline of Coronation Gulf, and includes offshore islands. The landscape has higher elevations, which are moderated by open water during late summer and early fall.
QUEEN MAUD GULF LOWLAND (39). This coastal lowlands ecoregion takes in the area south of Queen Maud Gulf. It ranges from massive Archean rocks sloping from 300 metres above sea level in the south to undulating plains near the coast. The coastal areas are mantled by postglacial silts and clays, and exposed bedrock, Cryosol soils, and marine deposits are common. Permafrost is continuous and deep with low ice content.
TAKIJUQ LAKE UPLAND (41). This ecoregion covers the south central portion of the planning region. Most of the area is made up of broad, sloping uplands, plateaus, and lowlands, along with the rugged ridges of the Bathurst Hills that rise to 610 metres above sea level. Turbic and Static Cryosol soils are common in the uplands, while Organic Cryosols are more dominant in the lowlands.
GARRY LAKE LOWLAND (42). This ecoregion is located in the southwest corner of the planning region. It forms a broad, level to gently sloping plain that climbs about 300 metres above sea level. Cryosol soils extend throughout, and permafrost is continuous, with low ice content.
COPPERMINE RIVER UPLAND (68). This ecoregion extends from the McTavish Arm of Great Bear Lake to Howard Lake. It is part of the tundra and boreal forest transition, where the limits of tree growth are reached. The vegetation consists of open, very stunted stands of black spruce and tamarack, with lesser numbers of white spruce and a ground cover of dwarf birch, willow, ericaceous shrubs, cottongrass, lichen, and moss. It consists mainly of massive Archean rocks that form broad, sloping uplands, plateaus, and lowlands. Bare rock outcrops are common, and Dystric Brunisols with some Turbic, Static, and Organic Cryosols are the dominant soils in the ecoregion.

Ecoregions

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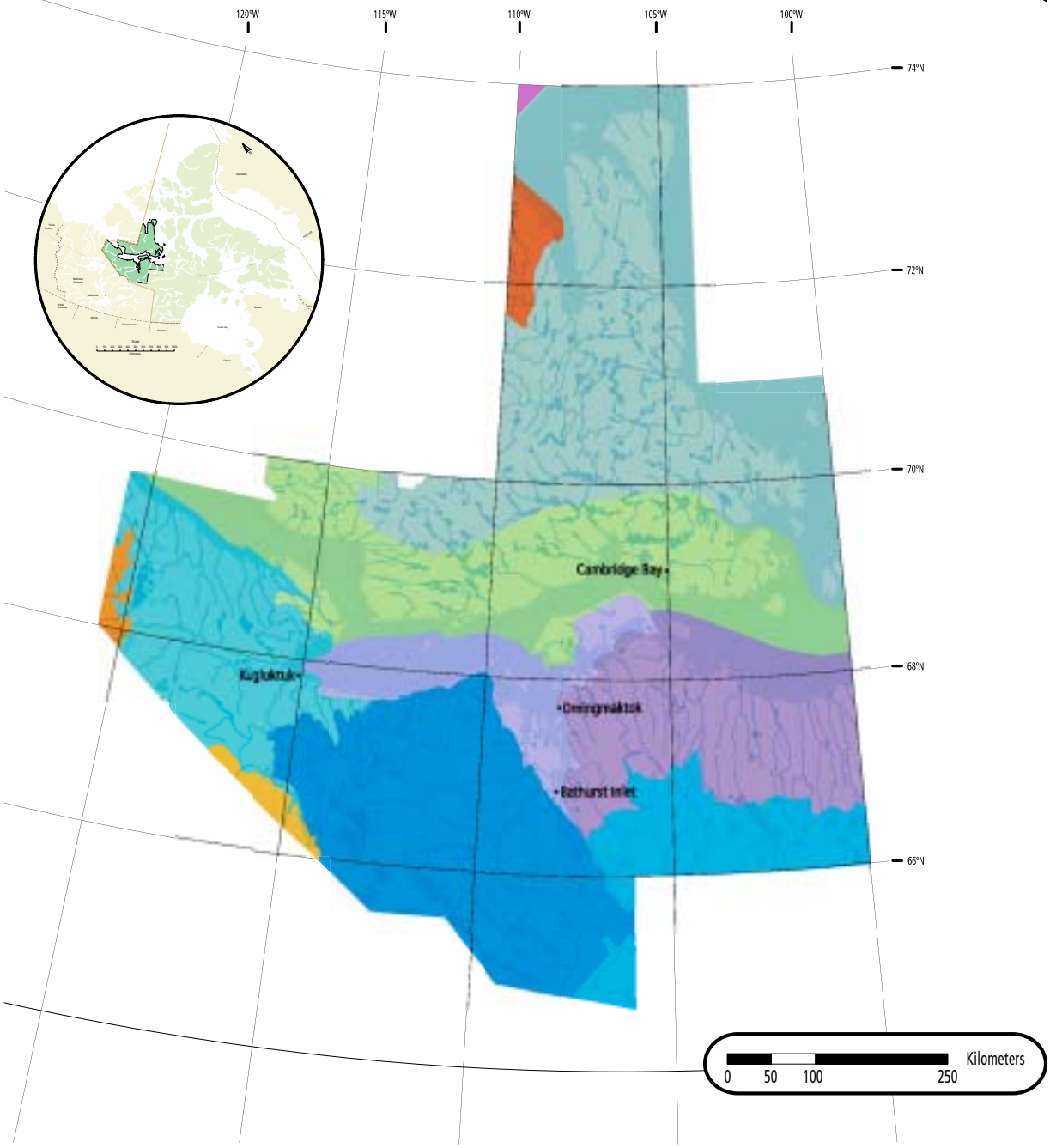

- Amundsen Gulf Lowlands
- Coppermine River Upland
- Bathurst Hills
- Bluenose Lake Plain
- Coronation Hills
- Parry Islands Plateau
- Victoria Island Lowlands
- Takijuaq Lake Uplands
- Queen Maud Gulf Lowlands
- Shaler Mountains
- Garry Lake Lowlands

Vegetation Zones

The most significant vegetation cover in the planning region is found in the southwest, where the tree line extends into the Coppermine River valley.

To the east and north of the tree line, there is extensive shrub and herb vegetation, and lichen tundra. Around the tree line, scattered and open stands of stunted black spruce occur, along with some patches of tamarack, white birch and balsam poplar in the transition zone.

Tree cover is common in low, sheltered areas, particularly in river valleys and on south-facing slopes. To the north, and in the coastal areas, vegetation consists of desert-like shrubs on the hills, and open shrub land with sedge tundra on the lower slopes, with lichen cover higher up.

On Victoria Island, there is sparse cover of purple saxifrage, avens and arctic willow along the plains and crests of higher sites. A discontinuous to continuous cover of herb-moss and sedge-moss occurs in the more poorly drained surface depressions and lowland sites. Some marshy areas are found in coastal lowlands.

A carpet of Arctic Heather, traditionally used by Inuit as a tinder source and for making tea.

Vegetation Zones

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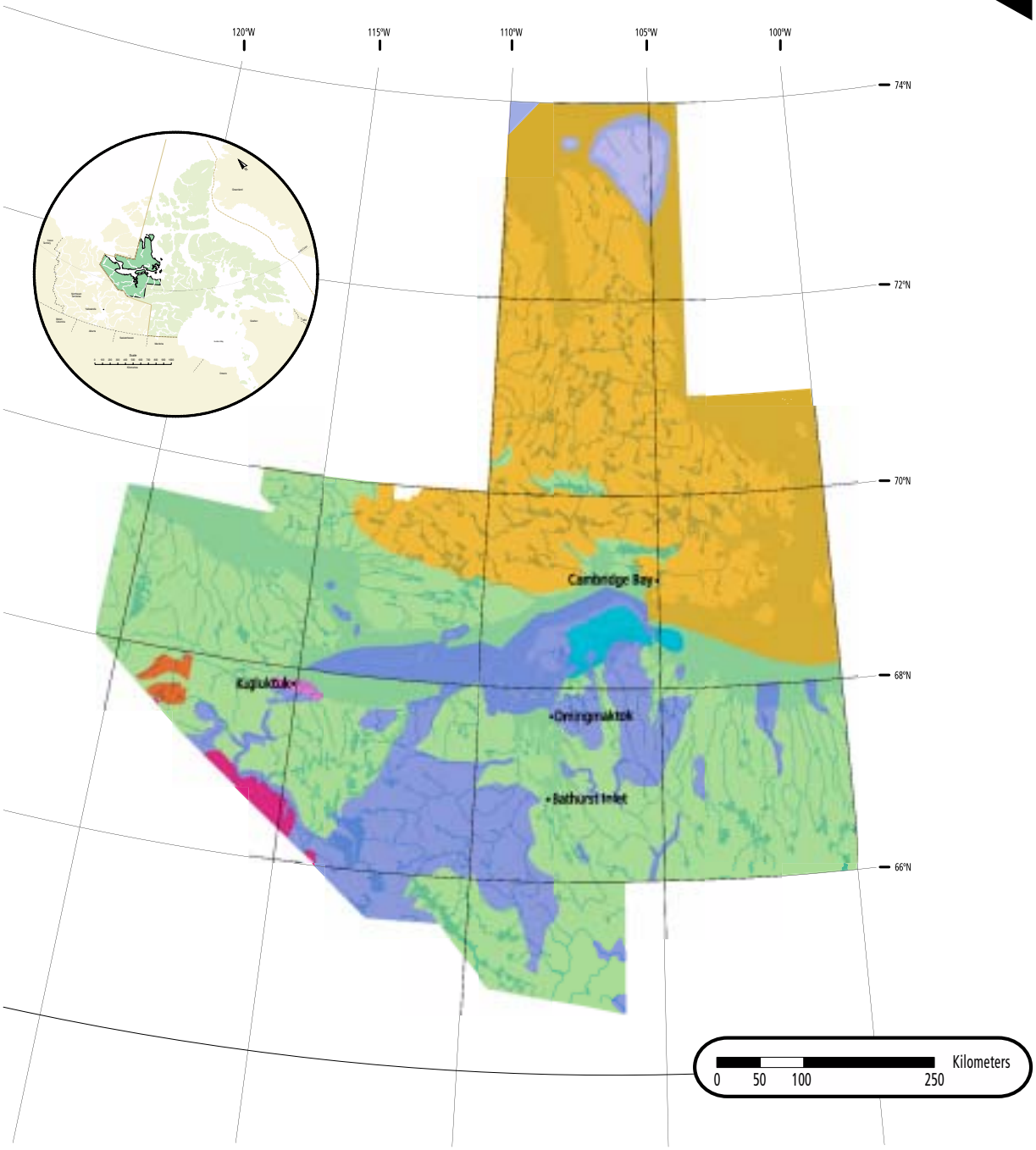


- Primarily Unvegetated Surface
- Tundra, Medium Shrub
- Tundra, Low Shrub
- Tundra, High Shrub
- Tundra, Broken Herb-Low Shrub
- Mixed Forest
- Coniferous Forest
- Bog

Hydrology

Water is one of Nunavut's greatest and most abundant resources, and it must be carefully managed for future generations as "… all of mankind's activities are dependent upon good healthy water supplies from healthy watersheds." [11]

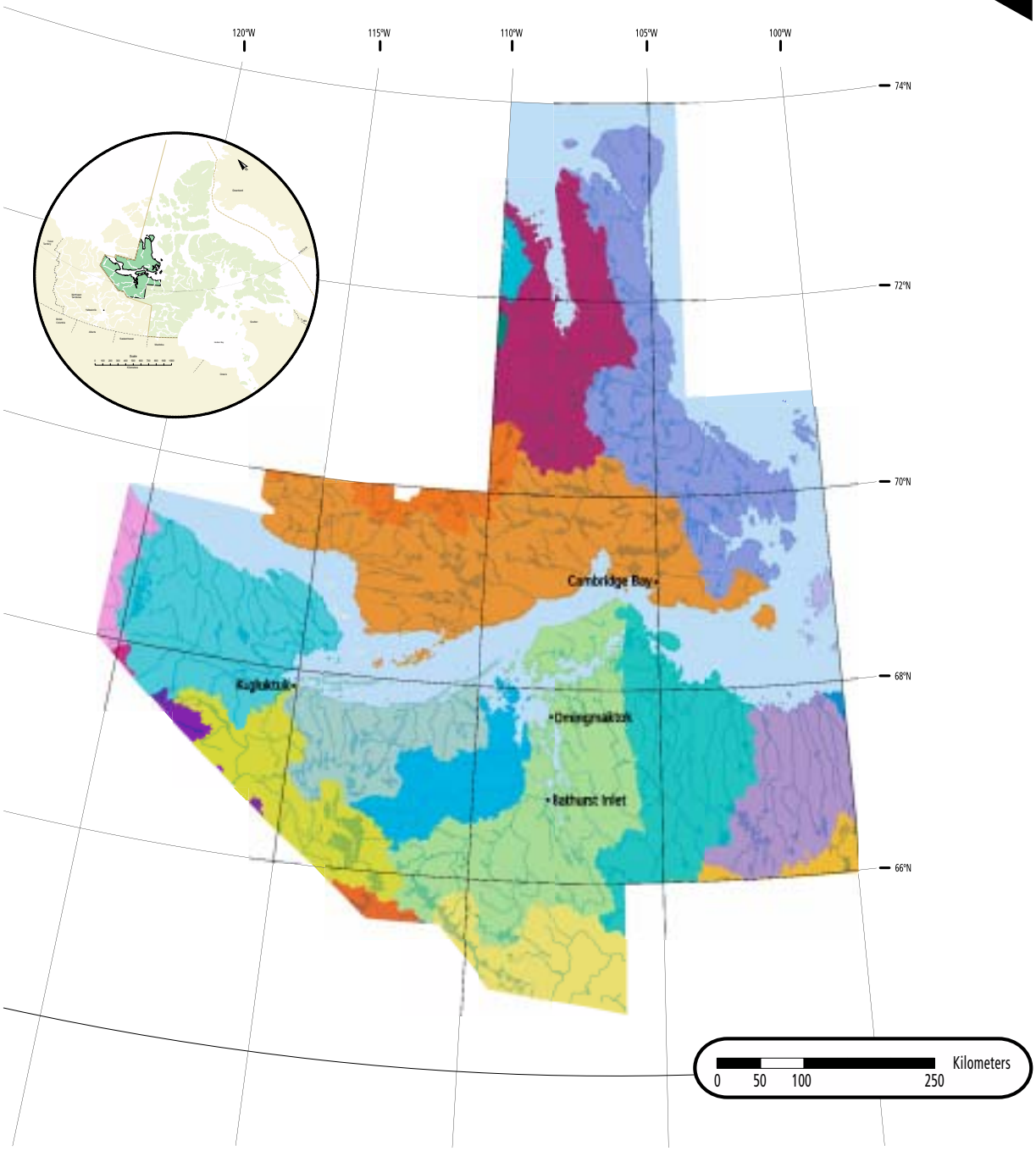
As illustrated on Map 5, the mainland of the West Kitikmeot planning region is dissected by the major drainage basins of the Rae, Coppermine, Tree, Hood, Burnside, Mara, Back, and Ellice Rivers. The land is dotted by thousands of lakes, connected by streams or by one of the major rivers. A number of rivers drain the coastal area of the Queen Maud Gulf Bird Sanctuary north into Queen Maud Gulf. Large inland water bodies include Bluenose, Kikerk, Takijuq and Contwoyto Lakes on the mainland, and Zeta, Tahoe, Ferguson, Kitiga and Washburn Lakes on Victoria Island.

Inuit have special rights to water under Article 20 of the NLCA. The KIA is the DIO holding an "exclusive right to the use of water on, in or flowing through Inuit Owned Lands. The DIO shall have the right to have water flow through Inuit Owned Lands substantially unaffected in quality and quantity and flow." [12]

The NWB is the IPG responsible for water management in the NSA. The NWB takes its direction from NLCA Articles 13 and 20**,** in addition to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act" (NWNSRT).* It carries out its responsibilities primarily through the administration of water licences. The NWB cannot approve a licence for any project or activity that may substantially affect the quality or quantity of water flowing through IOL, unless the land user has entered into a compensation agreement with the DIO. Additional details on compensation agreements are set out in subsection 20.3.3 of the NLCA.

Water is important to the culture of Inuit, to wildlife, fish, plants and the residents of the West Kitikmeot and Nunavut as a whole. The NWB and other regulators involved in the management and protection of water must take a broad view of potential adverse impacts on water quality. "Humans have intruded on ecological cycles to such a degree that we cannot understand any cycle without taking human inputs into consideration." [13] The water cycle is no exception. The intrusion of human activity into water cycles ranges from diverting the flow of rivers, to draining wetlands and lakes, to

First Order Watersheds



- Bathurst Inlet-Burnside
- Bathurst Inlet-Hood
- Central Back
- Central Coppermine-Point Lake
- Coronation Gulf-Tree
- Eastern Victoria Island
- Great Bear Lake-Northeastern
- Great Bear Lake-Northwestern
- Hornaday
- King William Island
- Lower Coppermine-Mouth
- Northwestern Victoria Island
- Queen Maud Gulf-Ellice
- Queen Maud Gulf-Kaleet
- Queen Maud Gulf Simpson
- Rae
- Southern Victoria Island
- Upper Back
- Victoria Island-Hadley Bay
- Victoria Island-Minto Island
- Victoria Island-Prince Albert Sound

straightening streams, "and polluting rivers to changing the atmosphere by pouring toxic substances from industrial processes into it [water]." [14] As a result, it is widely recognized that "lakes and rivers or watersheds are now usually managed as whole ecosystems." [15] The NWB, NIRB, authorizing agencies and all land users should consider the far-reaching potentially negative effects of land use activities on water quality, quantity and flow.

Geology and Geomorphology

The West Kitikmeot region forms part of the Precambrian Shield, also referred to as the Canadian Shield or Laurentian Plateau, and contains sections of four geologic provinces. The Slave Geological Province is underlain by granite and related gneisses, as well as by sedimentary and volcanic rocks; these are all Archean (more than 2.5 billion years old). To its east is the Churchill Province, also characterized by metamorphosed Archean rocks. The Bear Province lies north and east of Great Bear Lake and contains mainly volcanic and sedimentary rocks ranging in age from about two billion years. The region's northern and north-western parts contain the Arctic Province, consisting of relatively flat, unmetamorphosed sedimentary rocks ranging from 65 to 510 million years in age.

The West Kitikmeot bears the mark of glaciation. Much of what is now tundra was covered by ice as recently as 9,000 years ago. Lake Coppermine formed as glaciers melted. Today, the lake's drainage routes to the Arctic Ocean are responsible for most of the region's river valleys. Several geomorphic zones converge in the West Kitikmeot, including the Interior Plains, the Arctic Lowlands, and the Kazan region.

The Kazan contains the Bathurst Hills, which extend south from Bathurst Inlet. Elevations in this region reach more than 300 metres above se level in places. To the northeast, the Bear-Slave Uplands are typical of treeless regions found elsewhere in the Shield. Rolling hills rarely rise above 60 to 70 metres, and the land is dotted by thousands of small lakes, winding rivers and muskeg. Despite its name, the main part of the Coronation Hills region is low-lying. As the region extends eastward into the Coronation Gulf, the terrain rises to a couple of hundred metres above sea level, with the highest elevations (about 600 metres) found in the Coppermine Hills.

Geological Provinces

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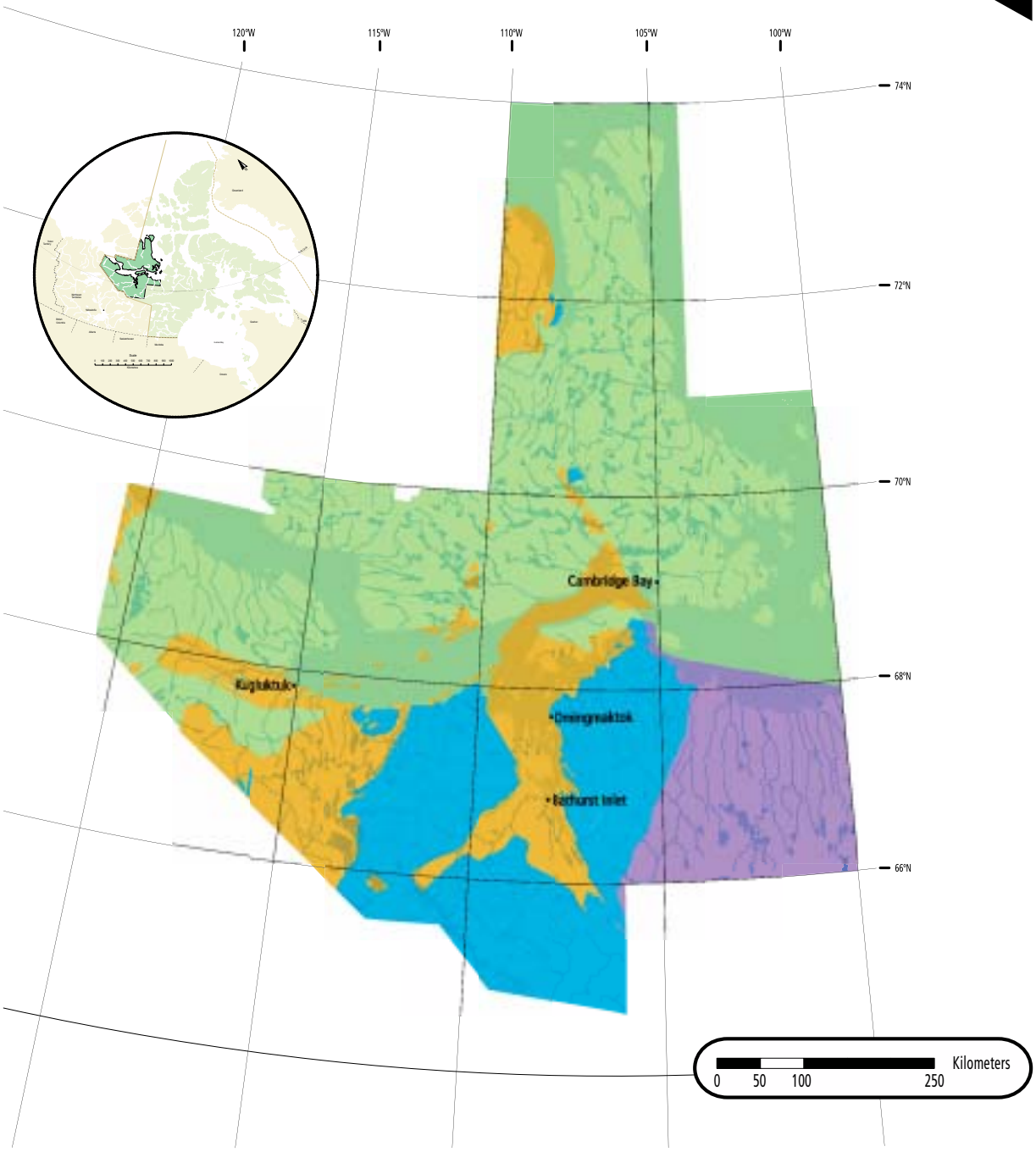


- Arctic Platform
- Bear Province
- Churchill Province
- Slave Province

The Climate Today

The West Kitikmeot planning region is a sub-arctic desert with limited rainfall. Prevailing winds are from the northwest and are strongest in the fall and winter.

TABLE 2: MEAN CLIMATE DATA BY COMMUNITY

Community	First Frost	Last Frost	Frost-free Season	January Min Temp	July Max Temp	Annual Precipitation
Cambridge Bay	Aug 20	June 25	55 days	-37° C	12° C	136 mm
Kugluktuk	Aug 20	June 25	55 days	-33° C	13° C	202 mm
Bathurst Inlet	Aug 20	June 30	50 days	-35° C	13° C	108 mm

Most precipitation falls as rain during the summer, with an average of about 25 mm in Cambridge Bay. An average of less than 10 cm of snow per month falls during the winter throughout the West Kitikmeot.

New ice typically appears in the fall (late September in northern Victoria Island to late October along the mainland coast and in the south of the region). Seasonal freezing usually starts around mid-September on Victoria Island and about a week later in the coastal and mainland areas. Seasonal melting generally begins around mid-June on Victoria Island and approximately a week earlier on the mainland.

According to local knowledge, ice averages between one and two metres in thickness throughout the Queen Maud Gulf, Dease Strait, Coronation Gulf, and Dolphin and Union Strait, as well as in inland water bodies to the south. Ice thickness varies depending on mean temperatures and the amount of snow cover in any given year. Deep snow insulates the ice, causing it to be thinner. Lakes and other inland bodies of water thaw earlier than ocean ice, which is an important consideration for overland transportation. As well, the freeze/thaw cycle of lakes affects the migration routes of large mammals and the arrival/departure of migratory birds.

TABLE 3: MEAN DAILY TEMPERATURES (° C)

Community	Jan	March	May	July	Sept	Nov
Lady Franklin Pt.	-29	-27	-7	7	1	-20
Kugluktuk	-29	-26	-6	9	2	-20
Cambridge Bay	-33	-31	-10	8	-1	-24
Contwoyto Lake	-31	-27	-5	10	2	-20

The freezing of coastal waters has a significant effect on the region's climate. The water temperature, its depth and salinity, and the movement of the tides all impact on the place and time of ice formation. Ice forms first along the coast, then spread towards the open ocean. By mid-December, ice covers most of the Coronation and Queen Maud Gulfs. During the spring thaw the action of tides and the location of rivers will affect the rate at which the ice melts. Sea ice generally separates from the mainland first.

Climate Change

"Nunavut government research based on in-depth interviews with dozens of elders reveals the rules of survival in the North are shifting. Snow can't always be relied on for igloo-building. Caribou skin and fur clothing freezes in unaccustomed humidity. Thin ice keeps hunters away from their traditional prey as new game species spread up from the south. Even the prevailing winds relied on for navigation have shifted." [16]

In March 2001, Nunavut Tunngavik Inc. (NTI) hosted an Elders' Conference on Climate Change in order to collect Inuit Qaujimajatuqangit and the Elders' knowledge of climate change. Elders from across Nunavut met in Cambridge Bay with members of NTI, Nunavut's three Regional Inuit Associations, the Nunavut Planning Commission, the Nunavut Impact Review Board and the federal and territorial governments, to recount their experiences with short- and long-term weather and seasonal patterns in Nunavut, and how these are affecting the lifestyle of Inuit.

Even the Canadian military is concerned by what global warming could mean for the Arctic. The Canadian Forces Northern Area (CFNA), headquartered in Yellowknife, provides defence services to Canada's North. In its December 2000 Arctic Capabilities Study, the CFNA said that it envisages a scenario where Canada's claim to sovereignty is whittled away by foreign commercial activity. The trend of global warming may, in the not too distant future, make trans-navigation of the Northwest Passage economically viable. "With the rapid depletion of natural resources in other countries and oceans, foreign commercial firms may attempt to exploit the minerals, fresh water, and fish stocks of the Arctic," the study notes. More ships increase the chance of more pollution, and the risk of oil spills.

Considering all the changes on the horizon, community-based land use planning is more important than ever to guide and direct ecologically sustainable development and to protect Nunavut's social, cultural, ecological and economic values.

The Memorandum of Understanding for Cooperation on Addressing Climate Change (Nunavut) recognizes that Climate change represents a global ecological and socio-economic issue. The Governments of Canada and Nunavut "recognize that given the global nature of climate change, an unprecedented diversity of policies and measures will have to be implemented by all orders of governments"[17]

Nunavut adopted a Climate Change Strategy for Nunavut in July 2003. The MOU contains Strategic Objectives and a General Framework for Cooperation which acknowledges that the Parties agree to:

a) Pursue cooperation on addressing climate change within the context of sustainable development;
b) Identify and follow through, as appropriate, on priority areas of cooperation to build partnerships to achieve cost-effective emission reductions;
c) Ensure consistency among their respective actions and initiatives to avoid duplication and to maximize synergies;
d) Coordinate the efforts of all their departments and other agencies involved in addressing climate change; and
e) Pursue cooperation through new initiatives, as well as building on existing initiatives.

To meet the above strategic objectives, the Parties agree to further coordinate their efforts on policies and measures, and provide resources on a case-by-case basis, where appropriate, to:

- "Reduce or prevent greenhouse gas emissions through measures such as; energy management, conservation, energy efficiency, and alternative and renewable energy development;
- Promote the development, demonstration and deployment of technologies addressing climate change;
- Capitalize on opportunities for cost-effective economic development and job creation related to climate change;
- Establish effective monitoring, reporting and review mechanisms for emissions reductions;
- Increase public awareness and education; and
- Improve knowledge of the impact of climate change and develop measures to adapt to it."

Inuit and Nunavummiut recognize that rapid climate change in the Arctic is resulting from impacts from both developing and developed regions outside of Nunavut. They further recognize that change and cooperation at home is required if the rate of change is to be slowed.

The NPC encourages the federal and Territorial governments to implement the Memorandum of Understanding for Cooperation on Addressing Climate Change (Nunavut).

Social and Economic Factors

A regional analysis of social and economic factors is required to model, at a broad scale, the main forces that will shape the future of the region.

Unfortunately, data beyond total population is no longer available for the outpost camps of Omingmaktok and Bathurst Inlet. (The 2001 Census population fell below the level where analysis is performed by Statistics Canada).

According to Statistics Canada, only ten of the 2,531 residents of the West Kitikmeot live in Omingmaktok and Bathurst Inlet. A brief description of the population distribution of the two outpost camps is provided below, although the focus of this section will be on the Hamlets of Kugluktuk and Cambridge Bay where the majority of the region's population resides.

Population Distribution and Projections

As noted above, the 2001 population estimate for the West Kitikmeot is 2,531 residents. Between 1996 and 2001, the number of residents declined by approximately 100 persons.[18] This statistic is deceiving, however, as 285 people moved into the region during the same five-year census period (i.e. 385 people moved out of the region and 285 people moved into the region, for a net loss of 100 people). The immigration was mainly characterized by people moving into the communities of Cambridge Bay and Kugluktuk from other provinces and territories. Many people appear to have relocated to take up employment opportunities with the GN.

The population of Bathurst Inlet is in flux. Between 1996 and 2001 there was a decrease from 18 to five people.[19] Families are leaving the community to find wage employment and to send their children to school. Most of these former residents return to the community during the summer months.

The population of Omingmaktok has also declined dramatically in recent years. Between 1996 and 2001 the population dropped from 51 to five people.[20] Although families did leave the community during the last census period, people are moving back into the area. Local residents have stated that several families have returned to Omingmaktok since the 2001 census was completed.

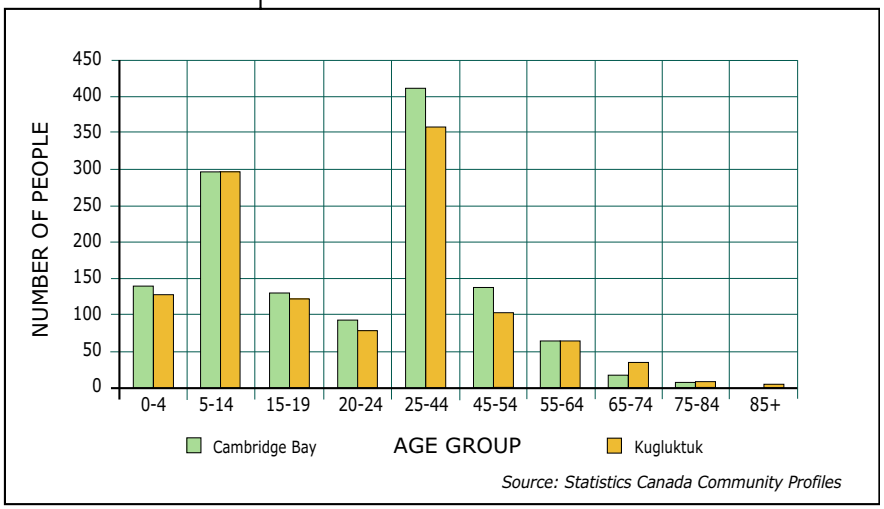
The population of Cambridge Bay is remaining steady. Between 1996 and 2001 there was a decrease from 1,351 to 1,309 people.[21] This reduction of approximately three percent is attributed in part to the relocation of residents as part of GN's decentralization policy. Nevertheless, as the government centre for the Kitikmeot region, Cambridge Bay will likely maintain a constant population base in the coming years. Employment opportunities in both the public and private sectors, primary and post-secondary schools, and the availability of local services will all support this population stability.

The population of Kugluktuk increased slightly between 1996 and 2001 from 1,201 to 1,212 people.[22] This 0.9% increase in population is partly the result of increasing opportunities within the resource and public sectors. In particular, the decentralization of GN staff to the community has added to the overall population in recent years.

The majority of both Inuit and non-Inuit residents in Cambridge Bay and Kugluktuk are between the ages of 25 and 44; the next largest age group is five to 14 years of age, suggesting that the majority of the communities'

populations are young working families. This is consistent with a social trend in northern Canada away from single transient workers. Population projections suggest that non-Inuit residents are staying in the communities to raise families. This trend, which is common throughout Nunavut, will certainly have an effect on employment rates within the West Kitikmeot in coming years.

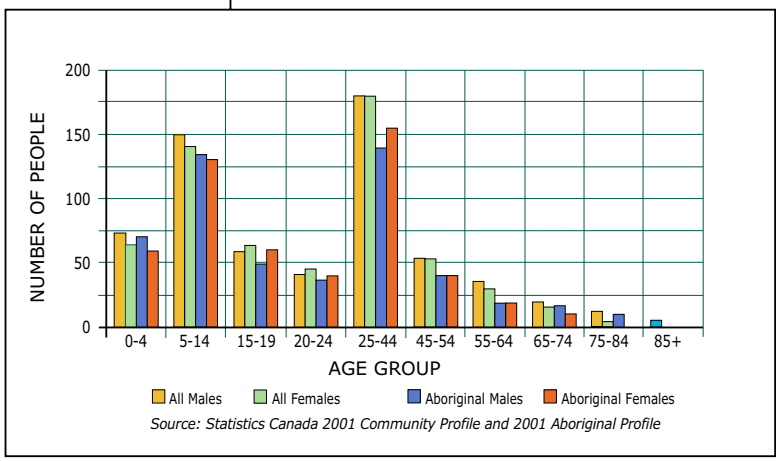
GRAPH 1: 2001 POPULATION BY AGE



The Nunavut Bureau of Statistics (NBS) lists the 2001 population of Cambridge Bay as 1,309 people. The Bureau predicts that the population will reach 1,752 by 2010 (an increase of more than 25 percent). The population of Kugluktuk is predicted to rise from 1,212 people to 1,720 in the same period (an increase of nearly 30 percent). This trend is projected to continue through the year 2020, as the populations of Cambridge Bay and Kugluktuk are expected to reach 2,137 and 2,076 respectively (an increase of 38 percent for Cambridge Bay and 42 percent for Kugluktuk). These increases will put pressure on residents and community services, as the provision of adequate housing, education and health services come under increasing strain.

Census results from 2001 show that the population of Nunavut is "… by far the youngest in Canada." [23] Nunavut's median age as of May 15, 2001 was about 22 years. The national median age is approximately 37 years. Median ages in Cambridge Bay and Kugluktuk are approximately 25 and 24 respectively, slightly higher than for the Territory as a whole.

GRAPH 2: 2001 POPULATION BY AGE AND SEX FOR KUGLUKTUK



It is anticipated that "… the population of school children aged five to 12 is expected to decline 22 percent [within Nunavut] by 2011." [24]

The working-age population is expected to increase over the same ten-year period, with the number of people between the ages of 45 and 64 increasing by 68 percent. Consideration must also be given to the 15-19 year-old age group over the next ten years, as this group enters a labour market that is already characterized by high unemployment rates.

The population of Nunavut is "by far the youngest in Canada."

The current low rate of economic development within the region, coupled with a projection of significant population increases (especially within the working-age groups) and current unemployment rates point to a single unavoidable conclusion: future employment opportunities will remain limited unless immediate, proactive consideration is given to the promotion of meaningful long-term sustainable economic development.

Education

The criteria used by Statistics Canada to represent Aboriginal educational statistics vary in its display method from that of the 2001 Community Profile Statistics. Statistics Canada uses 25 years of age and over for displaying aboriginal educational data but uses more detailed age groupings for the Community Profiles. Furthermore, the groupings of post-secondary certification are more generally grouped within the aboriginal educational data than in the Community Profiles. This makes a direct comparison of the total community to Inuit impossible. The analysis in this section is, therefore, a generalized representation of the varying levels of education.

The 2001 educational statistics for the Hamlets of Cambridge Bay and Kugluktuk reveal similar trends. A high percentage of residents in both hamlets do not hold a high school diploma. Nearly one half of working-age Inuit do not hold high school diplomas. Approximately 30 percent of the residents in the two communities have varying levels of post-secondary accreditation, such as college certificates, diplomas and trade certifications. Only two percent of Inuit in Cambridge Bay, and zero percent in Kugluktuk, held Bachelor level degrees in 2001.

Census data show that formal education levels are somewhat higher in Cambridge Bay than in Kugluktuk. This difference may be due to Cambridge Bay's role as a regional government centre, attracting more migrant workers who have higher levels of education.

Female Inuit generally attain higher levels of education than do males in both communities. Higher numbers of Inuit males than females have *some* post-secondary education, however. This suggests that Inuit males are starting, but not completing, post-secondary education.

Employment

According to Statistics Canada's 2001 *Aboriginal Population Profile*, there are 1,030 aboriginal people living in Cambridge Bay and 1,115 living in Kugluktuk; all respondents were Inuit.

The 275 non-Inuit residents of Cambridge Bay make up 21 percent of that community's population. In Kugluktuk, the total non-Inuit population is 90 people, or 7.5 percent.

Source: Statistics Canada 2001 Labour force, employed and unemployed, numbers and rates and Statistics Canada 2001 Community Profiles and 2001 Aboriginal Profile

As shown in Table 4, Nunavut's Inuit unemployment rate in 2001 was just under 25 percent for males and about 21 percent for females. This compares with national rates of 8.1 percent and 7.1 percent for males and females respectively. The unemployment rate for Inuit in Nunavut is *three times* the national average.

The table also illustrates the regional differences that exist in these rates across the Territory. Significant differences in community population account for some of those differences. Both Rankin Inlet (population 2,177) and Iqaluit (population 5,236) are larger centres than exist in the Kitikmeot. Their role as regional service centres is supported by their larger populations. This, in turn, increases employment opportunities in these two communities.

TABLE 4: 2001 UNEMPLOYMENT RATES

	TOTAL			INUIT		
	Average	Male	Female	Average	Male	Female
Nunavut	17.4	18.4	16.3	22.9	24.9	20.6
Rankin Inlet	13.0	15.1	10.9	18.6	21.7	14.1
Iqaluit	8.9	9.2	8.6	17.6	20.2	15.5
Kugluktuk	22.8	23.2	21.7	26.2	27.3	23.1
Cambridge Bay	14.5	12.1	17.2	20.2	18.2	22.0
Canada	7.7	8.1	7.1	National Inuit Rates Unavailable		

Sources: Statistics Canada 2001 Labour force, employed and unemployed, numbers and rates and Statistics Canada 2001 Community Profiles and 2001 Aboriginal Profile.

Inuit unemployment rates compare unfavourably with total community rates. Cambridge Bay's overall unemployment rate for men is 12.1 percent, compared to 18.2 percent for Inuit men. A significant difference also exists between the unemployment rate of Inuit women in Cambridge Bay (22.0 percent) and the rate for all women in that community (17.2 percent). The same problem is seen in Kugluktuk, although to a lesser extent due to the lower percentage of non-Inuit residents there.

A total of 190 people were unemployed in Cambridge Bay and Kugluktuk in May 2001. This number would likely go down during the summer months, with seasonal industries providing increased opportunities for work. Nevertheless, the figures for Inuit unemployment are discouraging. Of the 90 unemployed people in Cambridge Bay in the spring of 2001, 83 (92 percent) were Inuit. In Kugluktuk, 94 percent of the 100 unemployed residents were Inuit.

Labour Force

The labour force analysis shows the total community labour force compared with Inuit labour force data for Cambridge Bay (Tables 5 and 6) and Kugluktuk (Tables 7 and 8) below. This illustrates where the majority of workers within the community are employed. The statistics reflect only those residents who were involved in wage economy activities by being either employed or self-employed.

For the purposes of this analysis the similarities, between the two Hamlets, in relation to employment fields will be used to illustrate existing trends.

The employment fields where Inuit employees appear to dominate in both communities are:

- Resource-based industries;
- Manufacturing and construction industries;
- Art, culture, recreation and sport;
- Sales and service occupations;
- Trades, transport and equipment operators and related occupations;
- Business, finance, administration and government;
- Occupations unique to primary industry; and
- Occupations unique to processing, manufacturing and utilities.

In comparison the employment fields that Inuit do not appear to have a strong presence include:

- Health and education;
- Other services;
- Management occupations, and
- Health occupations.

TABLE 5: 2001 CAMBRIDGE BAY WORKFORCE BY INDUSTRY

Characteristics	Total		Inuit	
	Male	Female	Male	Female
Industry				
Total experienced labour force	320	265	215	185
Natural resource workers	35	10	35	10
Manufacturing and construction	70	10	55	10
Wholesale and retail trade	25	20	15	15
Finance and real estate	10	10	10	10
Health and education	25	100	10	60
Business services	50	25	30	10
Other services	105	90	60	70

Sources: Statistics Canada, 2001 Community Profile and 2001 Aboriginal Profile.

TABLE 6: 2001 CAMBRIDGE BAY WORKFORCE BY OCCUPATION

Characteristics	Total		Inuit	
	Male	Female	Male	Female
Occupation				
Total experienced labour force	320	270	210	185
Management	55	25	25	10
Business, einance and administration	15	90	0	70
Natural and applied sciences	25	0	10	0
Health	10	10	0	0
Social science, education, government	20	65	0	40
Art, culture, recreation and sport	10	10	10	0
Sales and services	55	70	40	60
Trades, transport and equipment operators	115	0	100	0
Occupations unique to primary industry	20	0	20	0
Occupations processing, manufacturing	10	10	15	0

Sources: Statistics Canada, 2001 Community Profile and 2001 Aboriginal Profile.

Many of the fields that do not have a high level of Inuit involvement are those specialized fields typically requiring University training. The trades, primary sector, administration, government and more labour intensive activities or those activities related to traditional land use remain dominated by Inuit.

TABLE 7: 2001 KUGLUKTUK WORKFORCE BY INDUSTRY

Characteristics	Total		Inuit	
	Male	Female	Male	Female
Industry				
Total experienced labour force	260	215	215	185
Natural resource workers	75	10	70	15
Manufacturing and construction	25	10	20	30
Wholesale and retail trade	25	30	20	30
Finance and real estate	15	0	10	10
Health and education	15	65	20	85
Business services	25	15	30	15
Other services	80	60	55	45

Sources: Statistics Canada, 2001 Community Profile and 2001 Aboriginal Profile.

TABLE 8: 2001 KUGLUKTUK WORKFORCE BY OCCUPATION

Characteristics	Total		Inuit	
	Male	Female	Male	Female
Occupation				
Total Experienced labour force	260	220	210	185
Management	30	10	15	10
Business, Finance and Administration	10	50	0	45
Natural and Applied sciences	20	0	15	0
Health	0	10	0	10
Social Science, Education, Government	20	50	10	35
Art, culture, recreation and sport	0	10	10	0
Sales and Services	65	75	50	80
Trades, Transport and equipment operators	85	0	80	10
Occupations unique to primary industry	15	0	0	0
Occupations processing, manufacturing	10	0	0	0

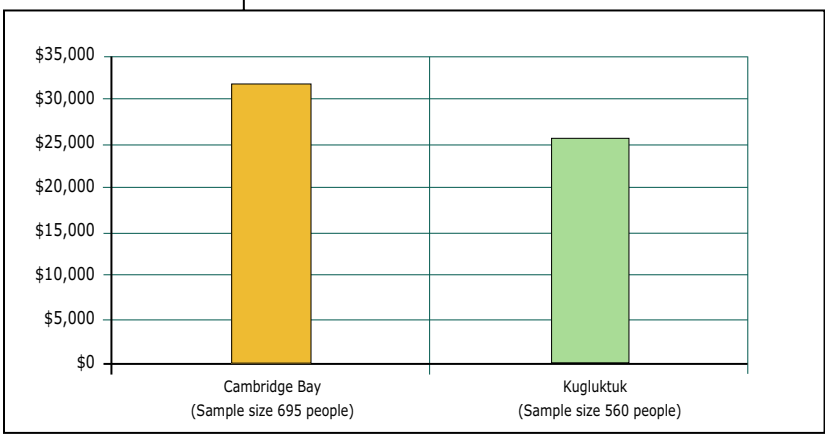
Sources: Statistics Canada, 2001 Community Profile and 2001 Aboriginal Profile.

Drastic differences include the fact that nearly 70 percent of management positions in Cambridge Bay are held by non-Inuit. Conversely resource-based resources jobs such as the harvesting and processsing of wildlife are nearly entirely dominated by Inuit.

Annual Income

In 1991, the average annual income in Kugluktuk was only about half that of Cambridge Bay. Ten years later, the gap had closed significantly. In 2001, Kugluktuk residents earned more than 80 percent as much as people living in Cambridge Bay. Average earnings in Cambridge Bay that year totaled $31,495; in Kugluktuk the figure was $25,502. This disparity between the two communities has grown smaller in part due to increased employment in Kugluktuk as a result of GN decentralization and more employment in the non-renewable resource sector.

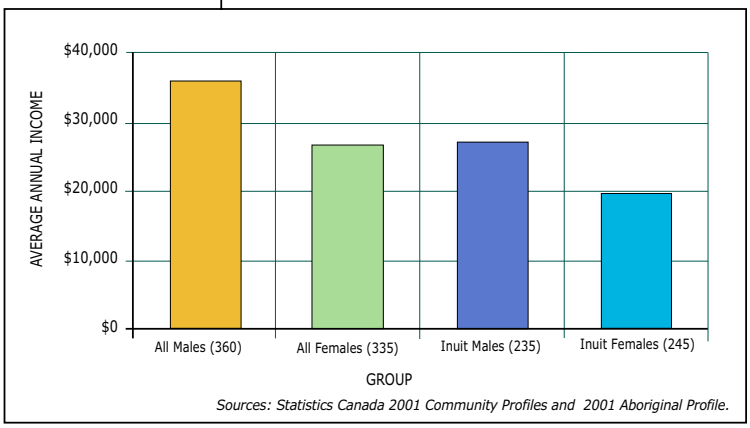
GRAPH 3: 2001 AVERAGE ANNUAL INCOME COMPARISON



A significant disparity still exists in both communities, however, between average annual income for Inuit as compared with non-Inuit.

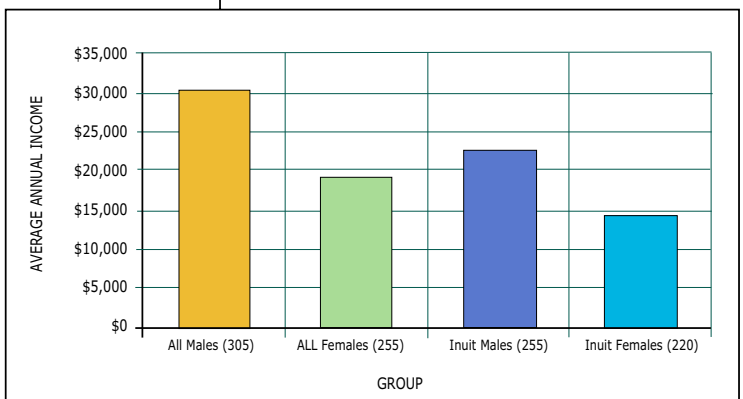
Average annual income for Inuit in Cambridge Bay was $23,117 in 2001. This figure is nearly $8,400 less than the community average. In the same year, Kugluktuk Inuit earned an average of $18,722, which is almost $6,800 less than the figure for the community as a whole. The lower discrepancy in Kugluktuk is attributable to the lower number of non-Inuit working in that community.

GRAPH 4: 2001 AVERAGE ANNUAL INCOME, CAMBRIDGE BAY



Sources: Statistics Canada 2001 Community Profiles and 2001 Aboriginal Profile.

GRAPH 5: 2001 AVERAGE ANNUAL INCOME, KUGLUKTUK



Sources: Statistics Canada 2001 Community Profiles and 2001 Aboriginal Profile.

A third discrepancy relates to gender. In 2001, Inuit women in Cambridge Bay earned, on average, $16,869 less than men in the community. The situation was virtually identical in Kugluktuk, where the difference was $16,659. This difference between male and female workers is less pronounced when only those with full-time employment are considered. In 2001, the average male full-time worker in Cambridge Bay earned $55,048, as compared with $49,169 for women. In Kugluktuk, the equivalent figures were $52,903 for men and $40,814 for women.

Economic Life

"The management of northern wildlife and the advancement of community economic development may appear to be distantly related endeavours to some… yet in Arctic and Sub-Arctic regions of Alaska and Canada, where local economies are supported with a mix of cash income and traditional subsistence harvests, styles of wildlife management and approaches to economic development are intimately linked." [25]

The Nunavut Economic Outlook a recent report on the economy of Nunavut confirms that: "Nunavut's unique mixed economy features both a land-based economy and a wage economy. The land-based economy or non-wage economy covers a number of activities including hunting, fishing and trapping, arts and crafts, sewing and informal child care." [26]

Consistent with these studies, the economy of the West Kitikmeot is best described as "mixed", in that it comprises both a land-based and a wage-based economy. Cash income is derived through wage employment, government transfer payments, and informal activities such as the sale of arts and crafts and other traditional activities. Major wage employment is available mainly from the primary (renewable and non-renewable resource development) and tertiary (public sector / government) sectors of the economy.

A defining characteristic of West Kitikmeot communities is the mix of casual and seasonal employment with work in the public sector.

Land-based economic activities lie at the heart of the culture of this region's people. These activities sustain the traditional way of life of West Kitikmeot Inuit society. Central to this land-based culture is the food that people get from the land and the ways in which they process it. The Areas of Influence maps presented earlier in this plan depict the pattern of traditional land use for each of the four communities in the region.

Country foods obtained through traditional harvesting are an important part of the diet of most Inuit families in Nunavut. "Almost 31 percent of Inuit indicate their household eats caribou meat daily or almost daily, while only 16 percent indicated they rarely or never eat caribou. Other sources of country food include fish, seal, ptarmigan, and musk ox. According to the 1999 Nunavut Community Labour Force Survey a significant portion 78 percent of Inuit males between the ages of 15 and 54 engage in harvesting activity frequently or occasionally. The replacement-cost value of country food harvested in Nunavut is estimated at a minimum of $30 million or at

least equal to the cost of food imports from Southern Canada. Without reliance on subsistence harvesting, the amount of southern imported food would increase substantially." [27]

Many Inuit in Cambridge Bay supplement their household income by providing game to Kitikmeot Foods, a community based enterprise. This company buys country foods such as arctic char and muskox from local hunters and trappers. Commercial activities like this are sustainable and offer important opportunities. They enable harvesters to use their traditional harvesting knowledge and skills while contributing to the local economy. They also provide direct employment and other benefits to the communities. Other community-based economic initiatives in the region include tourism and the arts. These involve Inuit and other residents using Inuit hospitality, culture and traditions for community-based, sustainable, economic ventures. Opportunities in tourism include guiding, fishing, hunting excursions and lodges as shown on the Tourism Potential Map (Map 9). Ecotourism ventures consist of canoeing pristine rivers, viewing wildlife and experiencing the rich Inuit culture and history. Employment opportunities exist in the local, national and international promotion and marketing of Inuit and northern art and artists.

The West Kitikmeot region holds enormous potential for mineral development. The current focus of most exploration is in the Slave Geological Province, south of Coronation Gulf. Many large gold deposits and several large base metal deposits have seen extensive drilling, and have been subject to preliminary resource assessments.

This extensive exploration activity is having a significant impact on the economy of the West Kitikmeot. Expenditures by exploration companies bring millions of dollars to the region. There is also a longer term potential for royalty revenues, both to the Crown and to Inuit through the development of Crown land and IOL.

Many developers have come to appreciate the value of hiring locally. West Kitikmeot residents are familiar with the environment and are accustomed to working in challenging conditions. Inuit also bring traditional land-based skills and knowledge of wildlife behaviour, which often prove beneficial to land users. Hiring and training Inuit and other residents to assist in their activities proves to be a win-win scenario for both developers and the communities of the West Kitikmeot.

Geological information is shown on the Rock Subtypes map (Map 7). Mineral assessment reports are filed with the INAC Mining Recorder's Office in Iqaluit

for Crown Land and with the NTI Lands and Resources Department in Cambridge Bay for IOL. These technical reports are an outstanding knowledge base for the region. People will use this knowledge to discover the mines of the future.

Mineral exploration has also identified various diamondiferous kimberlites in the West Kitikmeot, some of which will likely prove to be profitable as diamond mines.

The Bear Province in the West Kitikmeot contains a number of promising mineral prospects as well. Copper, uranium, silver, cobalt, lead, zinc, chromite, nickel and platinum group elements have all been found here. Silver, uranium, radium, copper and lead have been mined in the Great Bear Lake silver district to the southwest.

The platform rocks found in the northern parts of the region are part of an extensive geological formation that hosts oil and gas deposits around the community of Norman Wells, NWT. No exploration licences are currently active in the West Kitikmeot. Based on the still limited knowledge of the region, the potential for oil and gas is generally considered to be low.

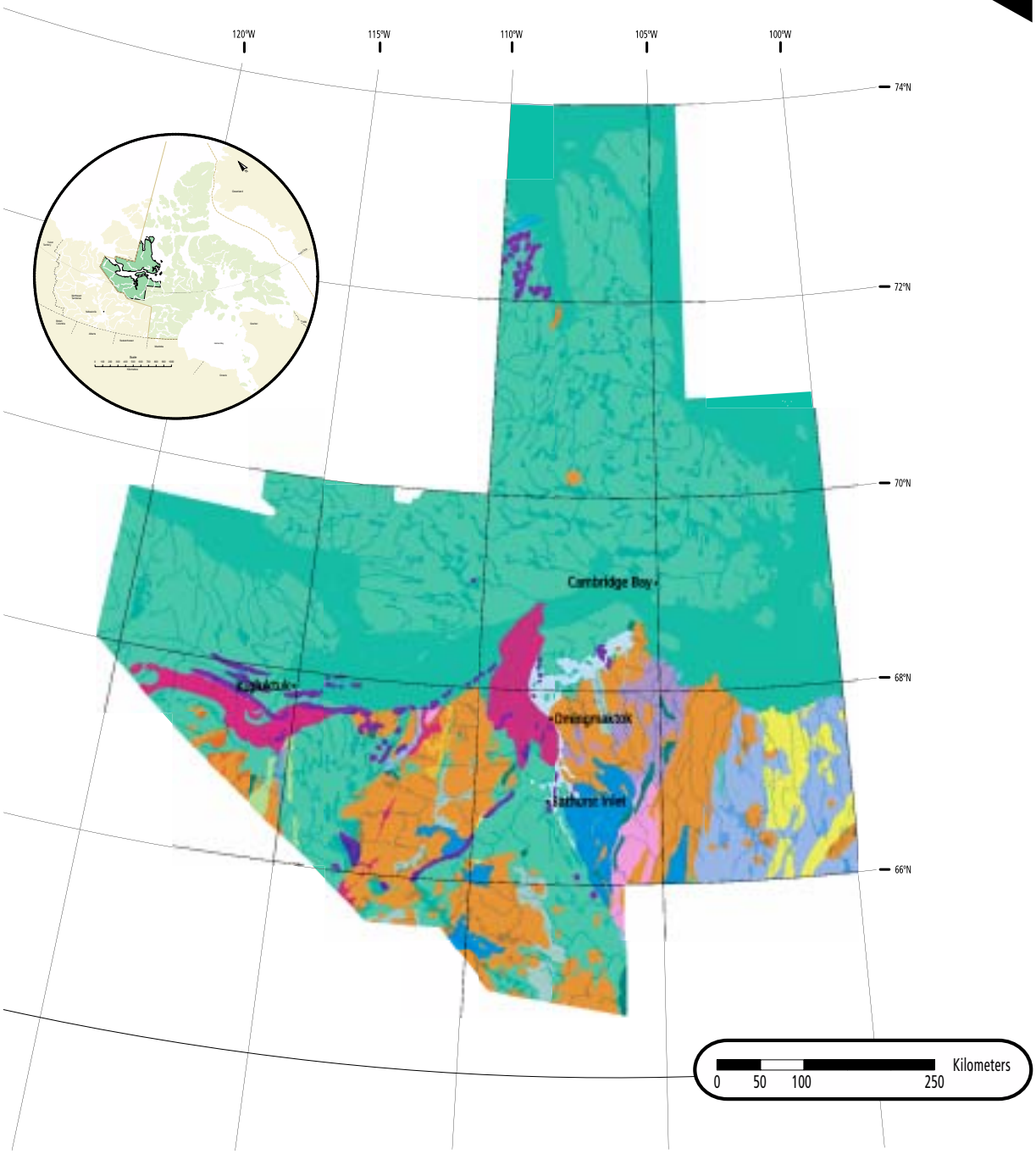
Along with metals, there are a few carving stone deposits in the West Kitikmeot. These sites are important to local artisans. Community carvers would benefit from the discovery of new deposits. As such, Government is required under NLCA Article 19 to notify the DIO (in this instance, the KIA) of the discovery of any deposit of carving stone on Crown Land.

Exploration and mining companies are encouraged to work with local people to locate and identify carving stone sites. This will enhance opportunities for Inuit artists in particular, and community economic development in general.

The region also contains numerous eskers and other glacial deposits derived from the flow of meltwater (glaciofluvial). These are valued by industry as a ready source of granular material for the construction of berms, roads, airstrips, building pads, and other infrastructure.

Rock Subtypes

7



- Binodal Volcanic Rocks
- Evaporite
- Felsic Volcanic Rocks
- Felsic-Intermediate Volcanic Rocks
- Intermediate Volcanic Rocks
- Mafic and Ultramafic Intrusive Rocks
- Mafic Intrusive Rocks-Diorite, Gabbro
- Mafic Volcanic Rocks
- Orthogneiss
- Paragneiss
- Paragneiss-Orthogneiss
- Syenite, Monzodrite
- Undivided Gneiss
- Undivided Sedimentary and Volcanic Rocks
- Undivided Granitoid Rocks
- Undivided Sedimentary Rocks
- Undivided Volcanic Rocks

Summary and Conclusion

The West Kitikmeot is a relatively flat, heavily glaciated expanse of tundra, ocean, islands, lakes and rivers. The ecology of the region is sensitive to disturbance. Once affected, wildlife habitats can take generations to rejuvenate. The people of the region depend heavily on wildlife for food and for the survival of Inuit culture and traditions.

The four communities of the region all maintain strong traditional links to Inuit culture and the land. The hamlets of Cambridge Bay and Kugluktuk are modern, with numerous amenities, while Omingmaktok and Bathurst Inlet continue to rely on the larger communities for many services.

The Slave Geological Province, located in the southern portion of the West Kitikmeot, has high mineral potential and has seen extensive exploration over the past ten years.

The planning region has a young population. Within ten years, many of these children will reach working age. The unemployment rate in the region is high, especially for Inuit, and it is projected to get worse due to the demographic pressures of the young population.

The Inuit workforce is directed more towards economic sectors that require skilled and unskilled labour, trades people and administration. Non-Inuit workers tend to fill jobs in sectors where advanced educational credentials are required. For a number of reasons, young Inuit are drawn towards post-secondary studies that provide accreditation below a bachelor's degree. On average, Inuit earn significantly less than non-Inuit.

The currently high unemployment rate among Inuit, which is projected to rise significantly in the next ten years, means that land use activities in the West Kitikmeot must create employment opportunities which include training for advancement. Formal education and on-the-job training are useful and practical approaches to increasing the number of Inuit in the skilled labour force.

Sustainable long-term development and local, formally accredited, post-secondary education and training programs -- beyond the trades -- are two key tools that can be used to reduce unemployment. Both approaches proactively prepare the region for the increased number of young residents who will be in the workforce within the next ten years. This is the very near future for this region. Failure to prepare for this increase in the working-age

population will almost certainly result in soaring unemployment rates and other significant negative social impacts.

The West Kitikmeot is a relatively flat, heavily glaciated expanse of tundra, ocean, islands, lakes and rivers.

The survival of Inuit society depends on clean water, healthy animals and opportunities to partake of traditional and cultural activities which are intrinsically linked to the land. None of these is inconsistent with the responsible development of non-renewable resources as a means of expanding the wage-based economy.

A fast-growing population will place considerable pressures on community and social services in the next ten years if the economy is not developed. Economic diversification is critical. The non-renewable resource development sector can provide shorter-term jobs and important training, but it is prone to boom and bust cycles. It's time to look towards sustainable, community-based business opportunities that make use of local resources.

The challenge of this land use plan is, therefore, no less than to ensure cultural and ecological survival through the promotion of sustainable economic development for the current and future generations of Killiniq.

Cambridge Bay.