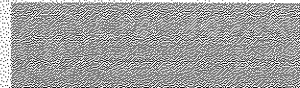


Caribou Commercialization Project Environmental Impact Study: Phase 1



DECEMBER 2001

Report submitted by:



Caribou Commercialization Project
Environmental Impact Study : Phase 1

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Résumé

Le gouvernement du Québec proposait déjà en 1984 l'exploitation du caribou à des fins commerciales comme moyen de gérer les populations croissantes de caribous. Par la suite, la Société Makivik a lancé en 1990 l'initiative du commerce intercommunautaire, dans laquelle l'exploitation du caribou à des fins commerciales allait jouer un rôle prépondérant.

Au total, quatre usines de transformation ont été construites dans quatre communautés différentes. Comme ces usines n'étaient pas rentables, elles ont fermé leurs portes en 1996. En 1998, 1999 et 2000, l'entreprise Les Aliments arctiques du Nunavik (1998) Inc. a démarré un projet pilote visant à exploiter le caribou à des fins commerciales au lac Mollet, situé à 110 km au nord-est de Kuujjuarapik-Whapmagoostui, au Nunavik. Il n'y a pas eu de chasse en 2001, mais l'entreprise a l'intention de reprendre ses activités en février ou mars 2002 au même endroit.

La présente étude a été réalisée dans le but de déterminer les impacts environnementaux et sociaux, de même que les retombées économiques du projet de commercialisation du caribou sur les communautés qui sont directement touchées par ce projet, sur l'environnement aux alentours du lac Mollet et sur la population de caribous.

Plus précisément, cette étude définit et justifie le projet, décrit le milieu naturel et social dans lequel il se déroule, de même que l'état du troupeau de caribous, discute des impacts et propose des mesures d'atténuation et des programmes de surveillance. Un second volet de l'étude se réalisera en mars 2002, soit en même temps que la chasse, et portera sur la surveillance de la chasse, une consultation plus approfondie auprès des communautés et l'inspection des lieux de décharge brute.

Le projet a des retombées économiques positives en termes de salaires pour les travailleurs inuits et cris, pour la pourvoirie Nunami, une filiale de la Corporation foncière Sakkuq, qui a obtenu le contrat d'exécuter le travail, de même que pour Air Inuit

et deux compagnies d'hélicoptères appartenant à des Inuits. Toutefois, même si le projet en soi est viable, il ne s'est pas avéré rentable jusqu'à présent.

Malgré les retombées économiques, les représentants de la Corporation foncière Sakkuq sont ambivalents quant à l'avenir du projet. D'ailleurs, certaines préoccupations relatives au troupeau de caribous, à l'incertitude du projet d'une année à l'autre et aux conflits possibles entre les activités commerciales et le tourisme d'aventure ont été soulevées.

Le projet a des répercussions sur l'environnement à l'échelle régionale et locale. D'abord, bien que les blessures, le stress et la mort soient néfastes pour le caribou chassé, l'exploitation à des fins commerciales permet de réduire la compétition pour la nourriture, ce qui somme toute est salubre pour le troupeau. À l'échelle locale, l'élimination des résidus d'abattoir soulève de vives préoccupations et sera surveillée de près. Toutefois, selon des rapports et des photos prises des lieux de décharge brute plusieurs mois après que les résidus d'abattoir y ont été apportés, il semble y avoir très peu d'impacts visuels et écologiques.

L'exploitation commerciale cible le troupeau de la rivière aux Feuilles. Ce troupeau, qui comptait 250 000 têtes en 1993, est estimé à 550 000 (\pm 40 %) en 2001. Le quota de 5000 caribous qu'a déterminé le Comité de coordination de chasse, pêche et piégeage n'aura pas d'incidence nuisible sur le troupeau. L'entreprise Les Aliments arctiques du Nunavik (1998) Inc. ne prévoit que chasser environ 2000 caribous.

Par ailleurs, des mesures d'atténuation seront prises. Dans le cas où les lieux de décharge brute seraient polluants, les résidus d'abattoir seront éparpillés dans plusieurs lieux de décharge de moins grande taille. Le grand public sera tenu informé avant, pendant et après la réalisation du projet. Le site sera également réhabilité. Enfin, des études de surveillance seront réalisées sur les eaux du lac Mollet et sur la santé du troupeau de caribous.

Summary

Caribou commercial harvest has been proposed by Québec back in 1984 as a way of managing the increasing caribou population. In response, Makivik Corporation launched in 1990 the Inter-Community Trade (ICT) initiative, within which caribou commercial harvesting was to play a predominant role.

Four processing plants were built in four communities. Not being profitable, these plants were closed in 1996. In 1998, 1999 and 2000, Nunavik Arctic Foods (1998) Inc. (NAF (1998)) initiated a pilot project to harvest caribou on a commercial basis at Mollet Lake, 110km north east of Kuujjuarapik-Whapmagoostui in Nunavik. No harvest was conducted in 2001 but NAF (1998) intends to resume its operation in February-March 2002 at the same location.

This study was undertaken to identify the environmental, social and economic impacts of the Caribou Commercialization Project (the Project) on the communities directly affected by it, on the environment around Mollet Lake and on the caribou population.

This report defines and justifies the Project, describes the environmental and social environment as well as the status of the caribou herd, discusses the impacts and proposes mitigating measures and monitoring programs. A second phase that will be conducted in March 2002 at the same time as the harvest, will entail monitoring the harvest, a more thorough consultation with the communities and an inspection of the dumpsite.

The project has positive economic impacts in terms of salaries for the Inuit and Cree workers, for Nunami Outfitters, a wholly-owned subsidiary of Sakkuq Landholding Corporation, who is contracted to carry out the work, and for Air Inuit and two Inuit owned helicopter companies. However, the project itself, while viable, has not been economically profitable for NAF (1998) up to now.

In spite of these benefits, the Sakkuq Landholding representatives are ambivalent about the Project. Concerns have been raised regarding the caribou herd, the uncertainty of the project from year to year and the possible conflicts of commercial activities and adventure tourism.

The environmental impacts occur on two scales : a regional scale where death, stress and injuries are negative impacts on individual caribou. But the reduce competition for food is a positive impact on the population. A local scale where the disposal of offal is the greatest concern. This will be carefully monitored. However, reports and pictures taken at the dipsosal site months after the disposal of carcasses show that there are very few visual and ecological impacts.

The Leaf River herd is targeted by this harvest. It is estimated at 550,000 (\pm 40%) animals in 2001 up from 250,000 in 1993. The quota of 5,000 caribou allocated by Hunting, Fishing and Trapping Coordinating Committee will not negatively affect the herd. NAF (1998) intends to harvest only around 2,000 animals.

Mitigation measures will be taken. If the dumpsite turns out to be polluting, the offal will be spread out over several smaller dumps. Public information will be done before, during and after the Project. The site will be rehabilitated. Finally, monitoring studies will be conducted on the waters of Mollet Lake and the health of the caribou herd.



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1. Introduction

1.1 Purpose of the Study

Nunavik Arctic Foods (1998) Inc. (NAF (1998)) intends to harvest caribou for commercial purposes in February-March 2002 at Mollet Lake near the community of Kuujjuaraapik - Whapmagoostui, as a continuation of a pilot project undertaken in 1998 at the same location.

At the time, the experimental nature of the project was such that it was exempted from an environmental impact study by the Kativik Environmental Quality Commission (KEQC). But after three years of operation, the KEQC feels that an impact study should be conducted, and to this end issued, in February 2000, guidelines entitled *Recommendations on the Scope and Content of the Impact Assessment Statement*.

In response to these guidelines, this study was undertaken to identify the environmental, social and economic impacts of the Caribou Commercialization Project (the Project) on the communities directly affected by it, on the environment around Mollet Lake and on the caribou population.

This report pertains to the first phase of a two-phase study. It defines and justifies the Project, describes the environmental and social environment as well as the status of the caribou herd, discusses the impacts and proposes mitigating measures and monitoring programs.

The second phase of the study, which will be conducted in March 2002 at the same time as the harvest, will entail monitoring the harvest, a more thorough consultation with the communities and an inspection of the dumpsite. It will be devoted to rounding out the data, verifying impact projections in the field and finalizing recommendations and mitigating measures.

1.2 Methodology

To meet the goals set out for the first phase of the impact study, the following ten-step methodology was established:

1. In order to respond appropriately to the KEQC expectations, a review of its document of February 2000 entitled *Recommendations on the Scope and Content of the Impact Assessment Statement* was conducted;
2. A letter dated November 13, 2001 was addressed to the President of the KEQC, Mr. Peter Jacobs, requesting permission to conduct the impact study in two phases (see appendix 1). This permission was granted verbally by the Secretary of the KEQC during the first week of December. A letter is forthcoming;
3. A review of the literature related to environmental and social impacts of caribou commercialization was conducted;
4. A review of social and environmental impact studies conducted on the communities of Kuujjuaraapik -Whapmagoostui and Umiujaq was carried out. Studies conducted by Hydro-Quebec for the Great-Whale-River hydroelectric project and, more recently, by Makivik for the Umiujaq marine infrastructures, were primarily considered;
5. The Sakkuq Landholding Corporation (LHC) was also consulted, since it represents the two Inuit communities affected by the Project, Kuujjuaraapik and Umiujaq.

On November 13, 2001 a short discussion took place with Mr. Alec Tuckatuck, President of the Sakkuq LHC and, the following day, a telephone conference was held with the LHC representatives who were attending a meeting in Umiujaq. The Project coordinator was unable to attend because a chartered flight had to be

cancelled due to bad weather, which also prevented the Geographic Information System (GIS) technician from going to Umiujaq to update Makivik's database on Land Use and Traditional Knowledge. This work will be done during phase two of the project, scheduled to take place in March of 2002.

6. On November 16, 2001 a lengthy interview was conducted with Mr. Neil Greig, Manager of NAF (1998), to obtain a project description and discuss environmental and social impacts, remedial measures and monitoring programs.

7. On November 21, 2001 Mr. Peter Palmer, Manager of Nunami Outfitters Inc., was consulted to give a description of the Mollet Lake camp and to submit his views on possible impacts of the harvest project.

8. On November 28, 2001 Mr. Marcel Parent, formally of Environment Quebec and presently with the Société de la faune et des parcs du Québec, was asked to report on his inspection visit to Mollet Lake in June of 1999.

9. The Makivik database was used to retrieve data on Inuit land use and traditional knowledge. Fortunately, the land use data pertaining to Chisasibi and Kuujjuaraapik hunters was updated last August, with interviews focusing on four main topics: landmarks, travel routes, animal ecology, and current hunting and fishing areas. The data were recorded on a mosaic of 1 : 250 000 scale topographic maps of the region. Transparent plastic overlays allowed Inuit hunters to identify hunting areas, travel routes, landmarks, and so on by drawing lines or polygons with permanent markers. Field notes were taken and, at the same time, comments from hunters were recorded on tape for subsequent transcription. Upon return to Kuujjuaq, land use data were digitized and geo-referenced into the GIS software *ArcView GIS 3.2*.

10. A study was carried out by Marty Weinstein circa 1995 on the land use and ecological knowledge of the Crees of Whapmagoostui. This report has never been released and we hope to be able to include the needed information in phase II of the

Environmental Impact Study. The Grand Council of the Crees (Quebec) and the Chief of Whapmagoostui were contacted in order to obtain a copy of the said report. As of December 17, we are still awaiting for an answer.

2. The Setting

2.1 Social Description

2.1.1 Kuujjuaraapik - Whapmagoostui

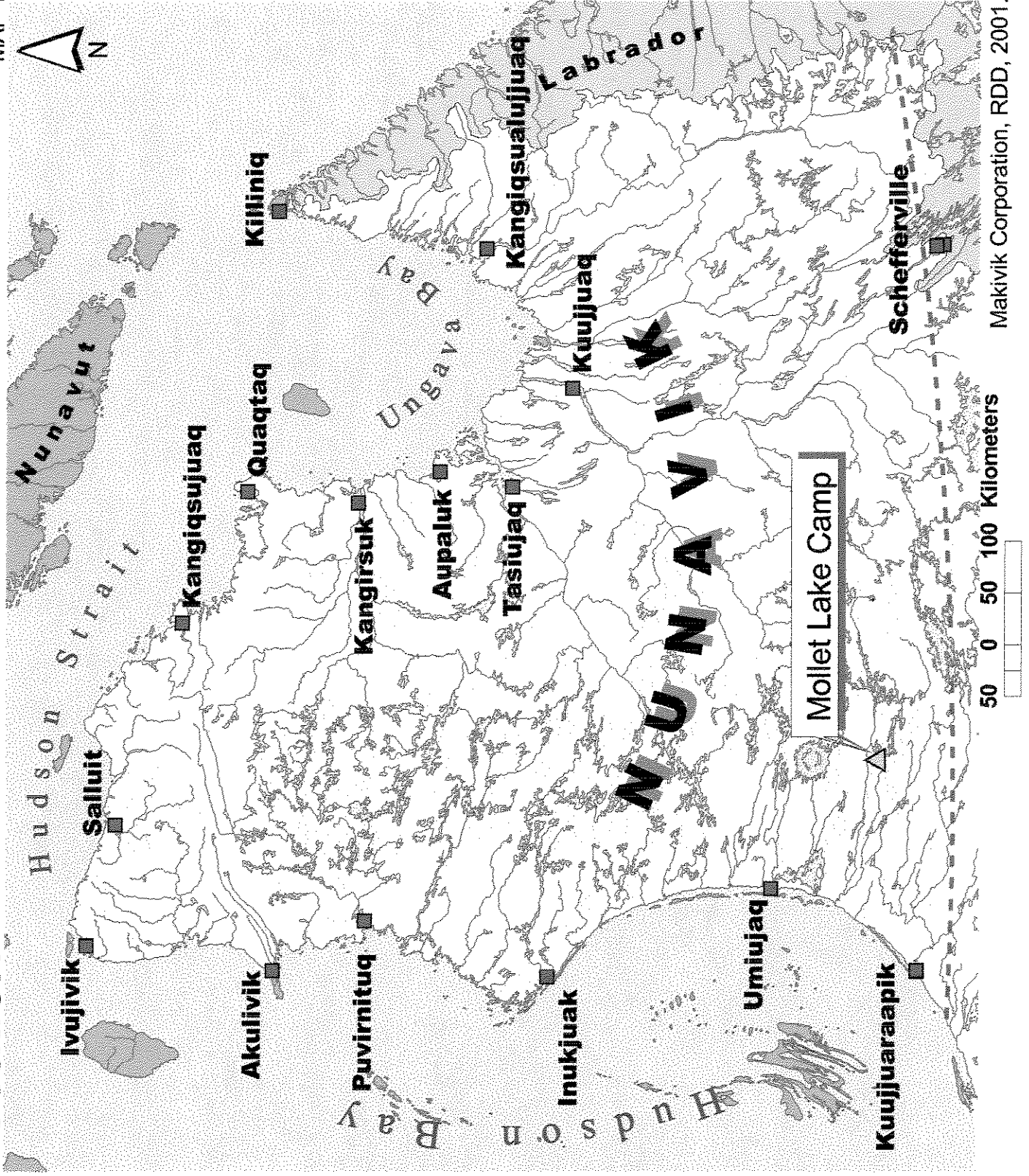
The Kuujjuaraapik - Whapmagoostui community, inhabited by three ethnic groups, and speaking four languages, is located on Hudson Bay just north of the 55th parallel (Map 1). The Kuujjuaraapik-Whapmagoostui area has been used by both Inuit and Crees for hundreds of years. At the turn of the 20th century, though the settlement consisted of just a few buildings, the Great Whale trading post, as it was then known, was regularly frequented by Inuit and Crees. In the early 1950s the Department of Defense established a radar base at Kuujjuaraapik - Whapmagoostui. Many Inuit families from the Belcher Islands, Richmond Gulf, Nastapoka area and Inukjuak as well as many Cree families from the James Bay area migrated to Kuujjuaraapik - Whapmagoostui.

Until the early 1960s, the Government of Canada was the sole provider of programs for the Crees and the Inuit. In 1963, the Government of Quebec started offering some programs through the Direction Générale du Nouveau-Québec (DGNQ). Subsequently, two schools, two dispensaries and a number of job-creation programs were put into place.

When the James Bay and Northern Quebec Agreement (JBNQA) came into force in 1975, the Department of Indian Affairs and Northern Development (DIAND), the DGNQ and the Commission Scolaire du Nouveau-Québec gave way to the new institutions arising from the Agreement, notably the Kativik School Board and the Kativik Health

Location

MAP 1



and Social Services Council, the Cree School Board and the Cree Board of Health and Social Services.

Today, the Native population occupies two distinct areas of the town: in the west, the Inuit sector borders along the existing north-south runway, while in the east, the Cree sector is located near and partly on the old east-west runway. The non-Native neighborhood is located on the old radar site in the northern part of the village.

2.1.1.2 Demographics

Kuujjuaraapik -Whapmagoostui is a community of approximately 1300 native people. According to the records of the Ministère de la Santé et des Services Sociaux, there were 577 Inuit and 732 Crees in 2001 (as quoted in Hydro-Québec, September 2001: 67). For the non-native population, Statistics Canada reported approximately 100 persons in 1996. As is the case in most native communities, the population of Kuujjuaraapik-Whapmagoostui is very young, with over 50 % of its residents under 25 years of age.

The Inuit population of Kuujjuaraapik grew at a steady pace until 1986, when it reached 616 people. It decreased in that year when some 280 people relocated to the new community of Umiujaq. However, according to Robitaille's projection (as quoted in Hydro-Québec 1993: 15), the population should increase to 610 by 2004.

As for the Crees of Whapmagoostui, the population went from 496 in 1989 to 626 in 1996 (Statistics Canada) and as mentioned above, to 732 in 2001.

2.1.1.3 Economy

Starting in the 1950s, the Inuit and Crees of Northern Quebec went from a semi-nomadic to a sedentary way of life. Their subsistence economy, which centered on hunting, fishing

and trapping, gave way to a mixed economy, in which wage earning employment played an increasingly important role.

The community of Kuujjuaraapik -Whapmagoostui was no exception. Its economy is now dominated by the service sector, and the Native people participate largely in the cash-economy. Hunting and fishing for subsistence is also actively pursued by many of the residents (see section 2.1.3. Land Use).

2.1.1.4. Employment and cash income

In 1990, out of 226 part-time and full-time jobs, 91 were occupied by Inuit, 50 by Crees and 85 by non-native people (Hydro-Québec 1993: 126). In 1996 however, under its “Persons in the labor force” heading, Statistics Canada reported 200 in Kuujjuaraapik and 260 in Whapmagoostui.

It is difficult to explain such an increase. One can speculate that it results from a simple statistical error, that many jobs have been created in a short time span, or that people are abandoning traditional hunting and fishing as a way of life to join the work force. Statistics Canada renders it somewhat more confusing when it reports, for Kuujjuaraapik, 0 person in its category “ Persons in agriculture and other resources-based industries” while it reports 70 Crees in this same category. Considering the total population, it seems likely that Hydro-Quebec underestimated the labor force in 1990.

The Inuit per-capita income has steadily increased over the past decades. It went from 1 913 \$ in 1973, to 4 594 \$ in 1983 (Hydro-Québec 1993: 132), to 21 129 \$ in 1996 (Statistics Canada).

The Cree per-capita income went from 3 808 \$ in 1981 to 19 628 \$ in 1996.

2.1.1.5 Non-cash income

In its 1993 study, Hydro-Québec mentions that it appears subsistence production declined at a constant rate between 1968 and 1984. Whereas such production accounted for 63.3 % of the total income in 1968, it fell to 20.7% by 1984. But the decrease occurred primarily in the early 1970s. By 1976, subsistence production had already dropped to 34%. Since then, the decline has been gradual but constant. In less than twenty years, subsistence production, which used to be the main source of income, has declined significantly.

No recent data exist regarding the contribution of hunting, fishing and trapping to the economy of Kuujjuaraapik -Whapmagoostui. However, traditional activities are still bringing in a substantial quantity of food. For the Inuit of Kuujjuaraapik alone, Hydro-Québec (1993: 120) reported that land use activities produced 208 705 pounds of edible weight in 1989. While it may be difficult to convert edible weight to its equivalent in cash-income, such an amount of food still makes up an important contribution.

For the Crees, no data was found on edible weight but, as mentioned earlier, Statistics Canada reported that, in 1996, out of a total of 220 persons active in “ all industries”, 70 were active in “agriculture and other resource-based industries”.

2.1.2 Umiujaq

Umiujaq is located 168 km north of Kuujjuaraapik - Whapmagoostui at 56°33' North by 76°33' West (Map 1). This community was built following a referendum regarding the possible relocation to Umiujaq held in 1982 in Kuujjuaraapik. In all, 280 people left Kuujjuaraapik and moved to the new village of Umiujaq.

2.1.2.1 Demographics

The population of Umiujaq is mostly Inuit and has fluctuated since the founding of the community: it rose from 280 in 1986 to 311 in 1992 and then fell to 259

in 1995 (Duhaime et al, 1998: p. 20). In October 1999, however, 308 Inuit were registered, compared to 251 in June 1997 (Makivik 2000: 48). These figures suggest that the population has not yet stabilized. It seems that in the early years many went back to Kuujjuaraapik and over the past few years, many returned to Umiujaq.

As is the case in other native communities, the population is young: 41% were under 15 years of age in 1996, and as of October 26, 2000 the pool of available manpower comprised approximately 160 persons aged between 16 and 60 years (Makivik 2000: 49).

2.1.2.2 Economy

As in Kuujjuaraapik - Whapmagoostui, the Inuit of Umiujaq practice traditional pursuits to varying degrees. Some hunt and fish on a recreational basis while others pursue such traditional activities on a full-time basis. Here also, it is impossible to estimate the economic impact of hunting and fishing with any degree of accuracy. Hydro-Québec (1993: 120) reports an amount of 131 600 edible pounds of food from the 1989 harvest. For 280 people, this total weight represents about 470 pounds of food per person over one year.

There are few employers in Umiujaq: the municipal council, the landholding corporation, the school board, and the cooperative. In 1995, 73 Inuit were employed either full- or part-time (Makivik 2000: 57). The average per capita income in 1996 was 19 547 \$ (Makivik 2000: 54). As in Kuujjuaraapik, cash income for Umiujaq, which is derived from two main sources, that is wage labor and transfer payments, can only be partially estimated. In 1990, close to 1.2 million dollars were paid in wages and 425 000 \$ came from transfer payments (Gétic 1998: 20).

2.1.3 Kuujjuaraapik-Umiujaq land use

Accurate information pertaining to land use and wildlife is required to understand the environmental and social impacts of the Project. To achieve this goal, as explained in the

methodology section, the Makivik database pertaining to land use and ecological knowledge was used. Within the ongoing database updating process, Inuit hunters from Chisasibi and Kuujjuaraapik were interviewed last August.

As mentioned in the methodology section, updating of land use and ecological knowledge of Umiujaq hunters will be done next March since it proved impossible to reach Umiujaq in November as scheduled. The available data for Umiujaq dates back to 1989. However, there is no reason to believe that land use patterns have changed drastically over the years, anymore than there was for Kuujjuaraapik, where only minimal changes were recorded. Consequently, the information from the database gives an accurate description of land use in that community.

The following refers to animals that are important to Inuit livelihood. It does not refer to all animal species that may be present on the territory. The data is usually represented by lines drawn on a map. To facilitate reading and for a more accurate representation of the land use, a 2km-buffer zone was delimited on each side of the data lines.

2.1.3.1 Outer boundaries of hunting areas (Map 2)

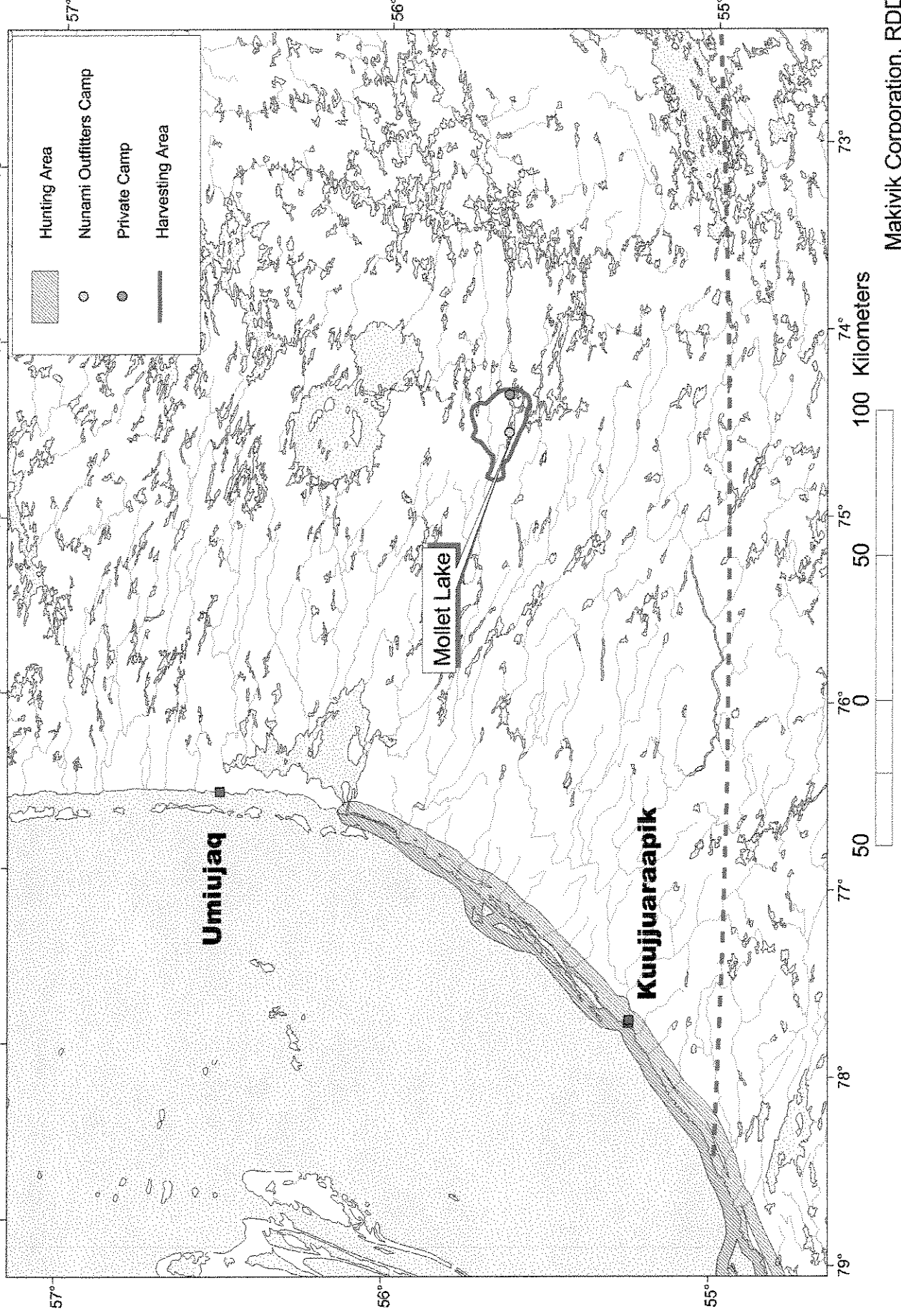
Areas used for hunting of land mammals, other than caribou, are limited to the coastline near Kuujjuaraapik, to about 10 km inland. They extend 100 km to the northeast, and to Long Island southwest of the community.

2.1.3.2 Outer boundaries of caribou hunting areas (Map 3)

Most of the areas used for caribou hunting are along the coast. The hunting territories around Kuujjuaraapik extend 75 km northeast from the village and to Long Island (not shown on the map) in the southwest.

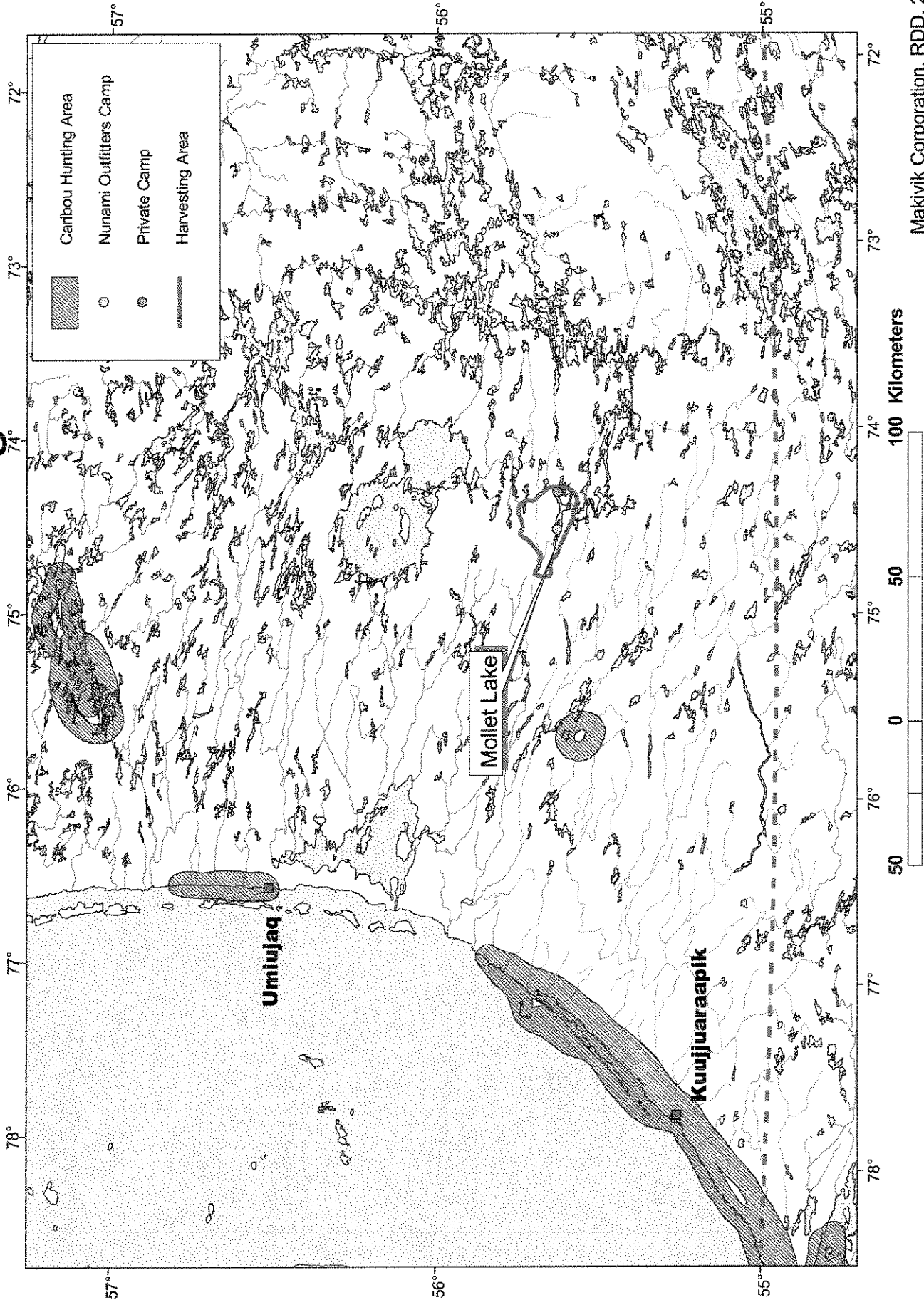
KUJJUARAAPIK - UMIJUAQ: Outerboundaries Hunting Areas

MAP 2
Hunting areas for all land
mammals except caribou.



KUJJUARAAPIK - UMIUJAJQ Outerboundaries Caribou Hunting Areas

MAP 3



The hunting areas of the community of Umiujaq are located along the nearby coast and around lake Minto. A hunting zone 75 km west of Mollet Lake was exploited *circa* 1970, but is no longer used.

2.1.3.3 Outer boundaries of fishing areas (Map 4)

Fishing areas used by Inuit stretch along the coast between the villages of Kuujjuaraapik and Umiujaq and around Richmond Gulf and Minto Lake. There is a small lake trout fishing area 90 km southwest of Mollet Lake, which is used only during summer months.

2.1.3.4 Travel routes (Map 5)

This map clearly shows that most of the snowmobile routes used by the communities of Kuujjuaraapik and Umiujaq are located on the Hudson Bay coast. Inuit from Umiujaq also use inland roads mainly around Minto Lake and Richmond Gulf of which the southeastern extremity is located at approximately 100 km from the proposed harvest area.

2.1.3.5 Outfitters, cabins, camping and archeological sites (Map 6)

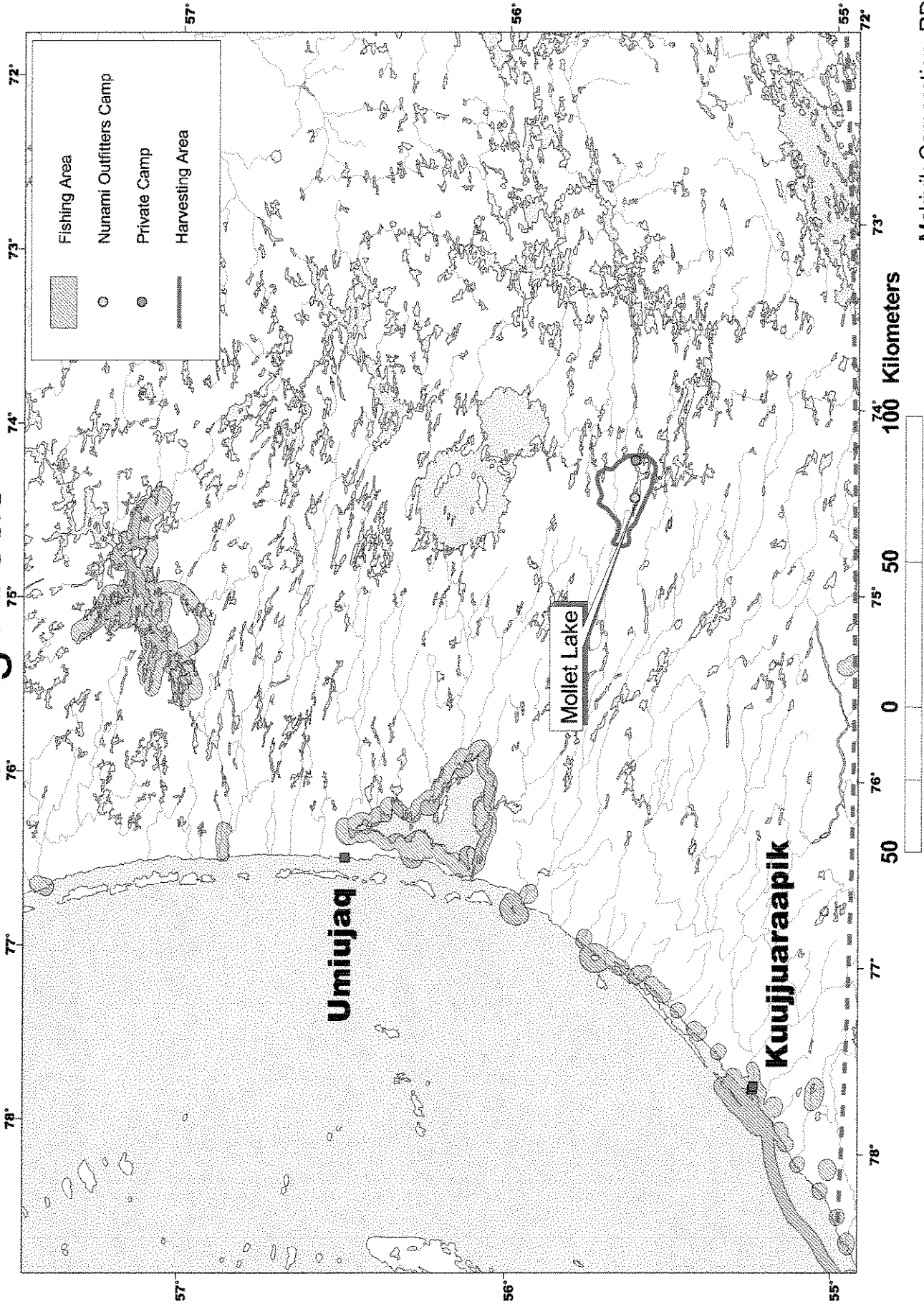
Camps and archeological sites are mainly located along the coast and in the Richmond Gulf and Minto Lake areas. The nearest archeological site is close to Clearwater Lake, located about 50 km northeast of the proposed harvest area.

2.1.3.6. Land categories (Map 7)

The area designated for the commercial hunt falls within the Category III land. It is located 80 km southeast of the Umiujaq Category II land and 90 km east of the Whapmagoostui Cree Category II land.

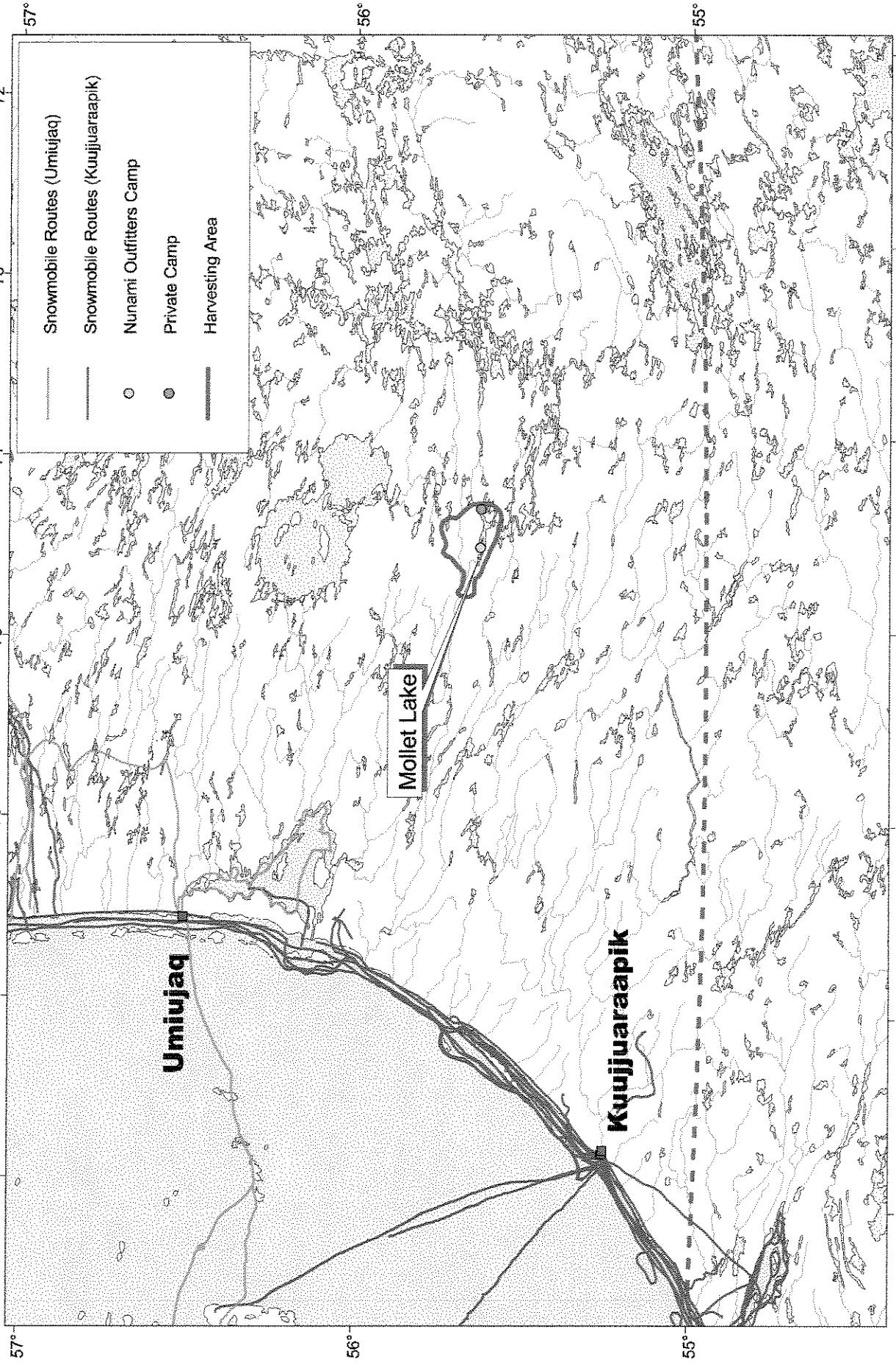
KUJUAARAPIK - UMIUJAJQ: Outerboundaries Fishing Areas

MAP 4

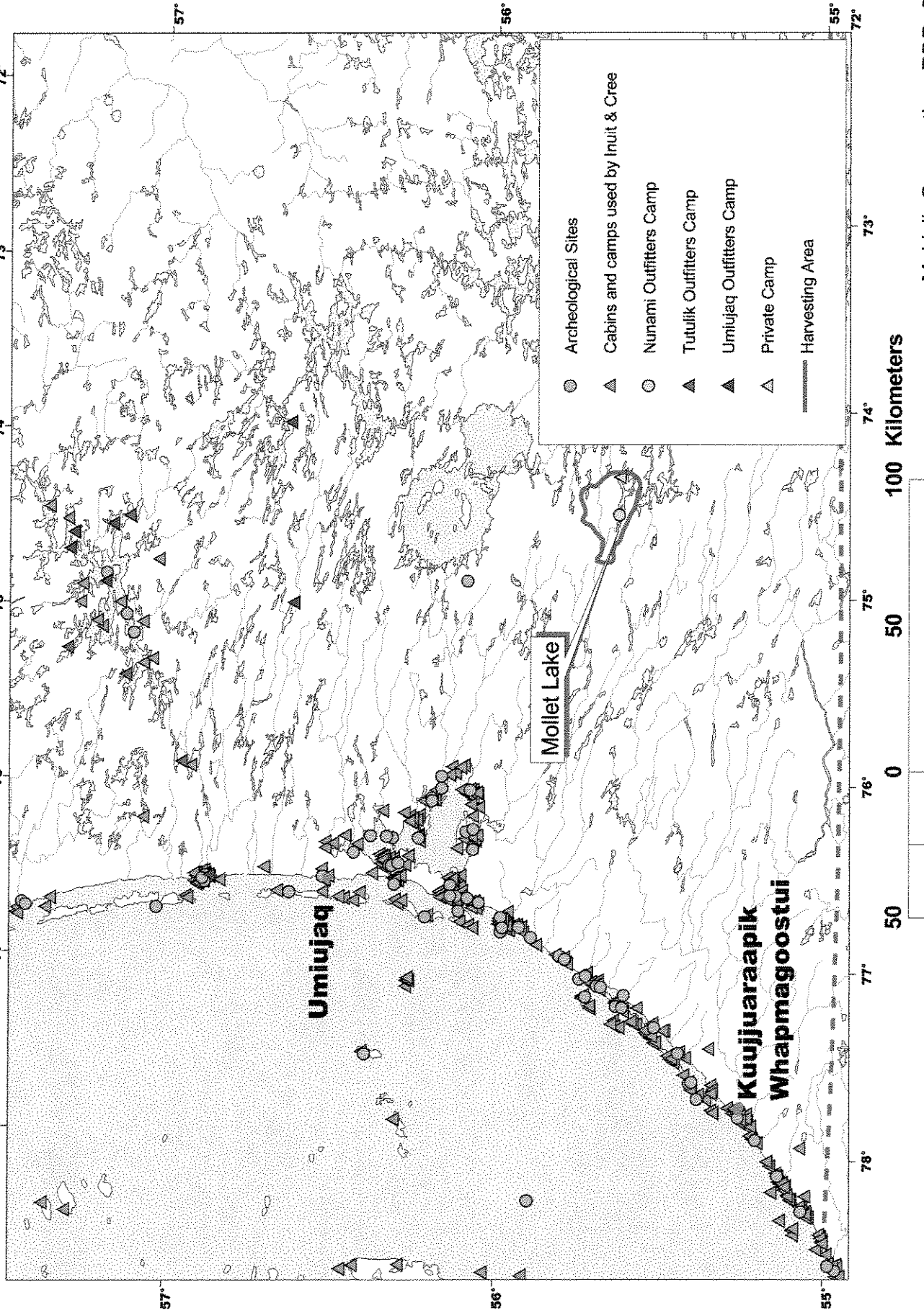


KUJJUARAAPIK - UMIUJAQ: Travel Routes

MAP 5



Outfitters, Cabins, Camping & Archeological Sites



2.2 Environment

The state of the environmental setting on a regional scale is mostly lichen-bare rock, lichen-woodland or burnt over land, lichen-shrubland, and to a lesser extent shrub-woodland (Thibault and Saucier 1991). Lichen-bare rock is an area covered mainly by lichen only. Lichen-woodland is typically composed of sparse stands of white spruce (*Picea glauca*), black spruce (*Picea mariana*), or larch (*Larix laricina*) with a carpet of lichen as the understory. This area is also composed of peat bogs. Lichen-shrubland also has an understory of lichens, but the local climate does not favour tree growth, so shrubs, heath and dwarf birch (*Betula glandulosa*) grow in their stead. Burned areas are characterized by lichen groundcover (after a few decades) and regrowth of whatever other vegetation the climate and permafrost will allow. The burned areas will initially be lacking lichen ground cover, but lichen (*Cladonia spp.*) will recover after three decades to densities of 1500 to 8500 kg/ha. The small zone of shrub-woodland in the harvest area supports little lichen. The understory is shrub, and trees grow at varying densities. There is little human perturbation in the area; just sport hunting and Cree hunting and trapping (Map 8).

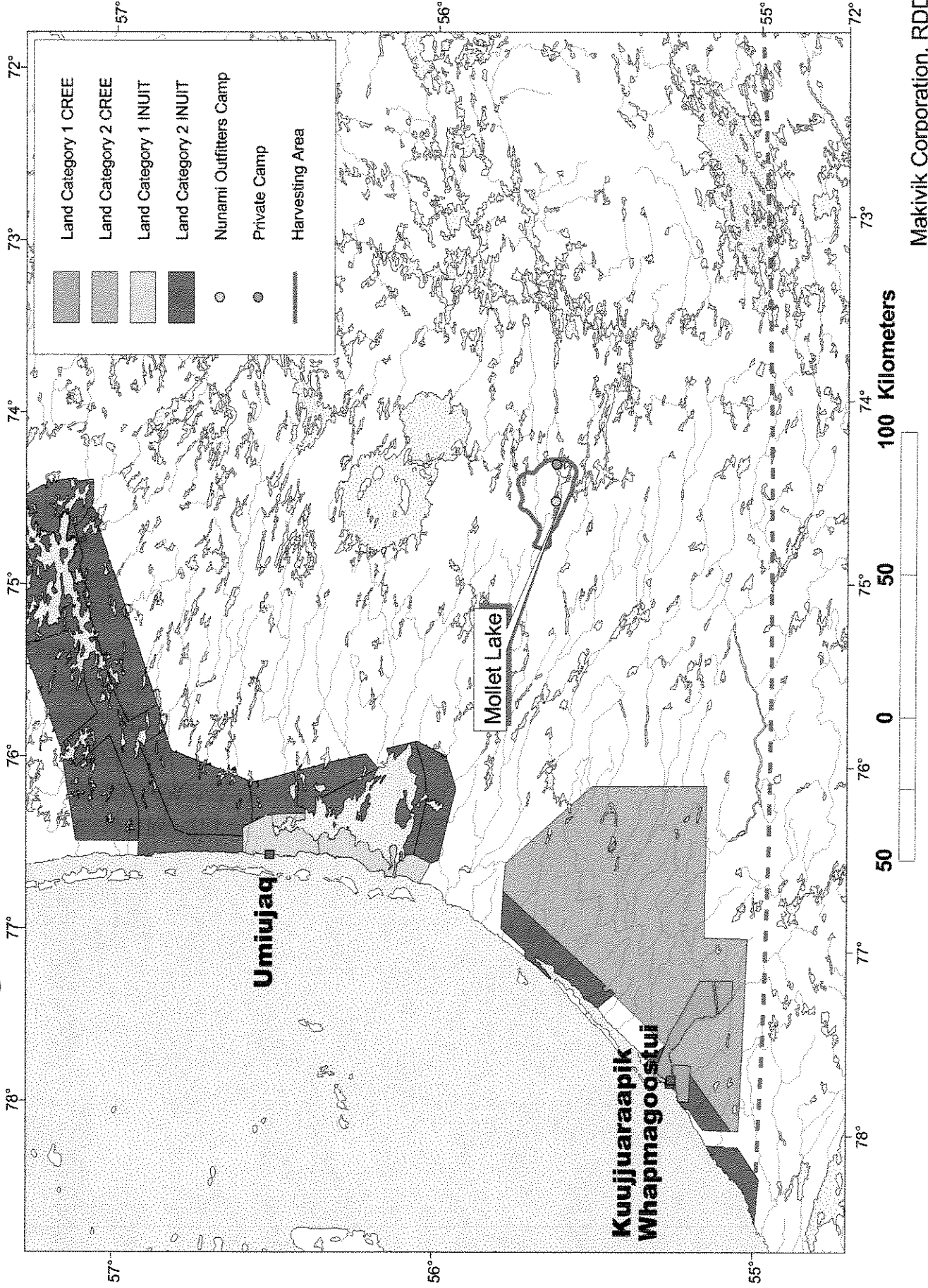
The environment surrounding the camp, processing plant and dump is already altered previous to the start of the harvest. The camp was originally a Hydro Quebec work camp and has since been run as an outfitting camp in the summer and fall. The processing plant is a temporary structure that will be built on the ice of Mollet Lake. The dump that will be used for the offal has been in use for three winters already, so it is impossible to describe it before this year's harvest.

2.2.1 Rare or threatened species (animal and plant) liable to be affected by the project

The following species are listed as endangered or threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in the document, Canadian Species at Risk (COSEWIC 1999), and could potentially occur in the study area:

Land Categories: Whapmagoostui, Kuujjuaraapik, Umiujaq

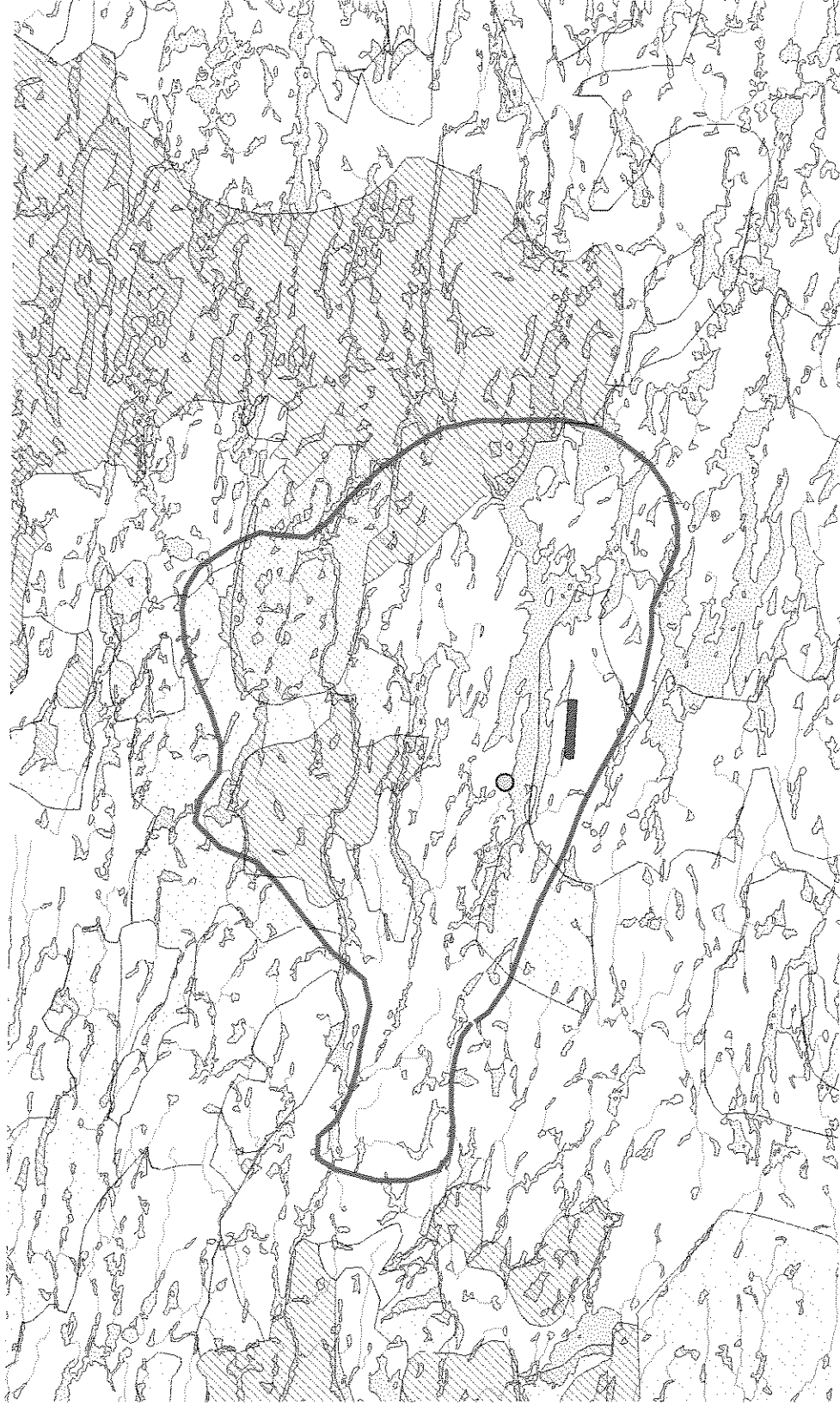
MAP 7









Land Cover

MAP 8




Based on Landsat 5 image from August 1997.



LAND COVER

-  BURNT AREA
-  LICHEN - WOODLAND
-  SHRUB - WOODLAND
-  LICHEN - SHRUBLAND
-  LICHEN - BARE ROCK
-  MAINLY BARE ROCK

5 0 5 10 Kilometers

-  Dump
-  Harvesting Area
-  Mollet Lake Camp

Endangered: Wolverine (*Gulo gulo*)
Harlequin duck (*Histrionicus histrionicus*)

Threatened: Anatum peregrine falcon (*Falco peregrinus anatum*)

Additionally, on its website¹, McGill University's Redpath Museum lists the above as species at risk in Quebec along with the following species that could occur in the study area:

Golden eagle (*Aquila chrysaeto*)
Bald eagle (*Haliaeetus leucocephalus*)
Lynx (*Lynx canadensis*)

No endangered plants, fish, reptiles, nor amphibians occur in the study area. None of the four bird species listed above are of concern because the caribou harvest occurs in February and March when the birds have migrated south. Though the bird species might benefit from the carcass dump upon their return. Only wolverine and lynx could potentially be affected by the project.

No wolverine has been seen in Quebec since 1982. Neither were any wolverine or lynx caught during a trapping effort to provide tissues for contaminant analysis in 1990 (Legaré 1991). During that sampling campaign trapping in the caribou harvest area yielded 35 marten (*Martes americana*), 11 weasels (*Mustela vison*), 16 ermine (*Mustela erminea*), 12 snowshoe hare (*Lepus americanus*), 2 wolves (*Canis lupus*), 10 red fox (*Vulpes vulpes*), 1 beaver (*Castor canadensis*), and 1 river otter (*Lontra canadensis*). Trapping just outside the study area at nearby Seal Lakes and Kuujjuarapik produced an additional 1 marten, 1 ermine, 6 snowshoe hare, 4 wolves, 9 red fox, and 1 muskrat (*Ondatra zibenthicus*).

¹ (www.redpathmuseum.mcgill.ca/Qbp/Species_at_risk/speciesatrisk.html)

A research is presently being arranged by the sponsor to examine the Hudson Bay Company archives in Winnipeg. The researcher will be looking for records of lynx and wolverine hides traded through Hudson Bay Company posts surrounding the study area.

2.2.2 Natural habitat or wildlife/plant habitat in need of special protection

No habitat of particular significance is known in the area. The area as a whole is fairly homogenous, so if denning habitat for a given species is available at any one location in the harvest area, it is likely available elsewhere as well. Nonetheless, the landholding corporation in Kuujjuarapik which manages the camp during the sport hunting season will be contacted and asked whether hunters remarked on any dens they may have come across. The Hunting, Fishing and Trapping Associations in Kuujjuarapik and Umiujaq will also be contacted and asked the same questions regarding the subsistence hunters.

2.2.3 Caribou

The *Caribou Co-Management Plan 2001-2006* is being developed under the auspices of the Hunting, Fishing and Trapping Coordinating Committee (HFTCC) through a collective effort involving members from the Inuit, Cree, Naskapi, federal and provincial parties sitting on the Committee. It should be noted that the HFTCC has the authority to establish the upper limit of kill for caribou (which includes total kill for subsistence, sport and commercial purposes).

In addition to a few thousand sedentary woodland caribou living between the 50th and 54th parallels and the Bienville herd, that has been variously estimated at between 1 500 (LeHenaff and Hayeur, 1983) and 7 000 animals (Hydro-Québec, 1982), Quebec is home to three migratory caribou herds that until recently totaled approximately one million animals. The largest of these, and possibly the largest in the world, is the George River herd accounting for over 600 000 individuals according to 1993 data, while preliminary results from the census conducted by FAPAQ in summer 2001 show 440 000 animals (\pm 25%CI) (HFTCC, November and December 12, 2001). This herd spends part of its

migratory cycle in Labrador, and its calving grounds are located along the border of and part way into Labrador (Map 9).

The Leaf River herd is also sizeable with an estimated 250 000 animals based on 1993 data and 550,000 (\pm 40 % CI) animals in 2001 (HFTCC, December 12, 2001). Its calving grounds are in the northern part of Nunavik. The herd migrates mainly in a north-south direction, and 10-15% of its range overlaps that of the George River herd (HFTCC, November 2001) (Map 9).

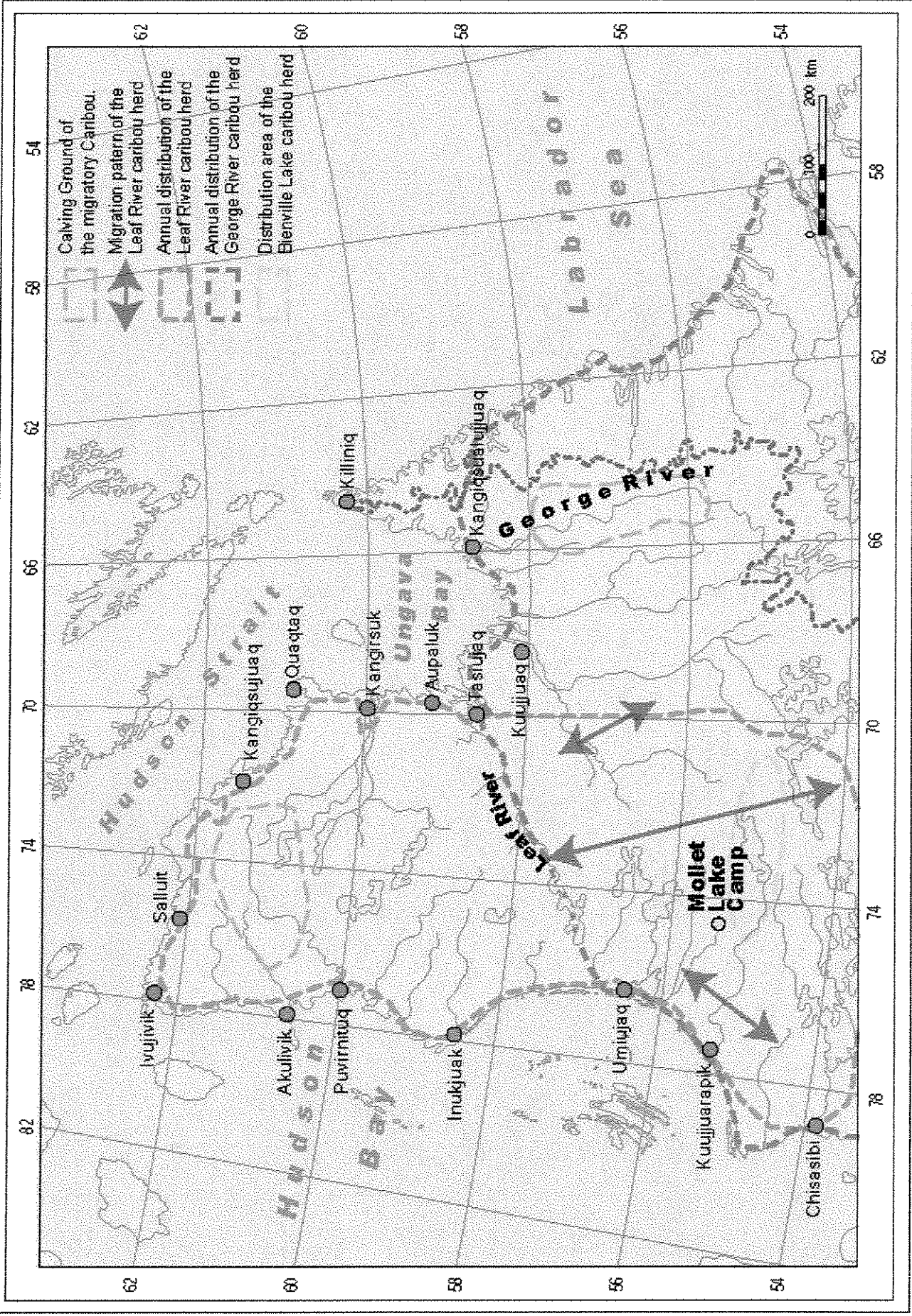
Calf recruitment data (39 calves/100 females permitting numeric stability in the population) appear to corroborate the decline in the George River population (since 1984 there have been fewer than 39 calves/100 females). Equally the reverse is shown for the Leaf River herd; over recent years there have been more than 39 calves/100 females indicating a population increase, which corroborates this years census results. Interestingly the intermixing of radio collared George River and Leaf River female caribou during the rut and the presence of radio collared George River female caribou on the Leaf River calving grounds suggests at least some degree of genetic interchange. This lends great support to the belief espoused by many Inuit that the two so called herds are indeed the same or at the most “splinter groups” and has led to the preliminary theory of a Nunavik caribou “Mega population” recently suggested by a Quebec caribou biologist (HFTCC, November 2001).

In summary, the reader must be cautioned that these data are of a preliminary nature and a good deal of caution must be employed in their interpretation. Notwithstanding, it appears that the combined total of caribou in Nunavik remains in the order of one million animals. There has however been a decline in George River numbers and concurrently an increase in Leaf River caribou. Superior body condition and increased forage available on summer habitat occupied by George River animals indicates that the decline trend for those animals may be tapering off or the decline may be shorter in duration than expected.

Map 9

CARIBOU DISTRIBUTION IN 1999

MAP 9



Sources: S. Couturier & Q. van Ginhoven
Gauthier & Guillemette, 1990.

The third migratory herd, the so-called Torngat Mountain herd is much smaller (estimates are in the order of 10 000 animals), and little is known about it. It appears to be much more sedentary than the George River or Leaf River herds, although it does cross provincial boundaries between Labrador and Quebec.

The *Caribou Co-Management Plan* deals by choice primarily with the Leaf River and George River herds. Its primary focus is to suggest solutions on how both herds may be utilized to their fullest sustainable capacity while meeting expectations of stakeholders and users. The right to harvest, which is guaranteed under both the *James Bay and Northern Quebec Agreement* and the *North-Eastern Quebec Agreement*, is at the core of the management plan. Specifically, this ensures that native subsistence requirements for caribou will be met first, followed by sport hunting needs and finally by commercial caribou harvest quotas. Specific goals defined in the plan include:

- to ensure that native caribou users have access to their resource and that beneficiaries of the respective land claim agreements can fulfill their guaranteed harvest levels;
- to promote a caribou-based economic development when the resource, the basic knowledge available for decision-making and the infrastructures permit;
- to carry out adequate monitoring and research of the herds to permit informed management decisions;
- to maintain the caribou populations at levels suited to the habitat, while providing sufficient harvests for users;
- to encourage research on the Northern Quebec caribou, while promoting exchanges between scientific knowledge and traditional ecological knowledge;
- to raise public awareness about the Northern Quebec caribou;
- to enhance the role played by native people in caribou management;
- to protect the caribou and its habitat from unintended and deleterious human impacts;
- to continue scientific cooperation with Newfoundland and Labrador on the transboundary caribou herds, and to begin discussions on developing an inter-provincial joint co-management plan for the George River and Torngat Mountain caribou herds.

The caribou management plan is an evolving tool allowing managers to respond to changes in population dynamics with the objective of ensuring harvest sustainability. Nevertheless, wildlife management is clearly an extremely complex matter, and wildlife managers should in no way be expected to control demographic trends of the herds by stopping their growth or avoiding their decline. They can, however, assess population numbers, predict trends in population dynamics, and monitor the herds' migration movements, recruitment and mortality rates and physical condition. The plan is also intended to monitor and regulate sport and commercial harvests of caribou and to protect critical habitat including calving grounds. Specific research studies will be implemented on a priority basis over specified timetables. Inuit traditional ecological knowledge will also form a critical component of the co-management plan and contribute to decisions flowing from it.

Currently, estimated subsistence levels of caribou harvested by Inuit, Cree, Naskapi and Innu is approximately 11 000 animals per year. Caribou sport hunting in Quebec has been on the rise since 1964, when a sport-hunting season was first opened north of the 52nd parallel. Over the past 30 years, the numbers of licenses sold increased from a low of 1 139 in 1972-73 to a high of 16 303 in 1998-99. Over the same period, the total kill reported by sport hunters ranged from a low of 887 animals to a high of 22 423 in 1997-98. Data for caribou harvested in Labrador indicate that from 1990-91 to 1995-96 the total combined harvest (sport, resident, native and commercial) was on average 11 500 (ranging from 8 000 to 15 000 animals), most belonging to the George River herd. In addition, Nunavik Arctic Foods has harvested caribou for commercial purposes in Quebec since 1994-95, while Ipushin Intercontinental Trading Co. carried out a hunt on a very small scale (100 animals) in 1995-96. Although commercial quotas have been allocated to the Naskapi Band of Quebec since 1995-96, to date no caribou have been taken for commercial purposes by the Naskapi (primarily due to the absence of caribou in the vicinity of their community of Kawawachikamach).

Nunavik Arctic Foods has harvested an average of 1 156 caribou over five years. Numbers of animals taken yearly range from a low of 382 in 1994-95 to a high of 3 815 in 1998-99 at Mollet Lake. On the basis of telemetry collar data, the great majority of animals taken at Mollet Lake belong to the Leaf River herd. Also, mitochondrial DNA analyses of caribou from either herd are to determine their degree of genetic discretion and to help identify individuals and their genetic provenance.

With a view towards regulating caribou harvests, the current co-management plan contemplates several scenarios based on the numbers of caribou (at a given time) and on the apparent growth or decline of that population. It suggests what should be done with regard to the caribou harvest levels for subsistence, sport and commercial purposes, which account for the three key uses of the species.

A specific example for the George River herd would be the following: at its peak level (more than 600 000 animals) the herd could sustain a continued subsistence usage, a continued high usage by sport hunters, and a continued high usage for commercial purposes, whether the population was showing an increasing or declining trend. At the other end of the spectrum, at its conservation level (below 200 000 animals), the herd could sustain continued subsistence usage, a reduced usage by sport hunters and no commercial usage if the population trend was on the rise. If the population trend was showing a decline, subsistence usage would be reduced, and both sport and commercial utilization would be eliminated.²

The Leaf River herd is considered to be at its peak level when it numbers 300 000 animals, while its conservation level is thought to be below 100 000 head. These levels are determined according to the same criteria used for the George River herd.

Clearly any decision regarding harvest levels must take into consideration their impacts on the overall populations of both herds. Moreover, the principle of conservation rests at

² The terms *peak level*, *conservation level*, *sustainable level*, and *user-crisis* are used according to caribou population numbers as determined by photo censuses conducted over given time periods.

the core of any management decision in general and of the management plan in particular, and must be respected at all times.

3. The Project

3.1 Project Objectives and Justification

In 1984 a feasibility study conducted by the Ministère du Loisir, de la Chasse et de la Pêche du Québec proposed to carry out a caribou commercial harvest as a way of managing the increasing caribou population. In response, Makivik Corporation launched the Inter-Community Trade (ICT) initiative, within which caribou commercial harvesting was to play a predominant role.

The ICT initiative pursued two main objectives. First, the project was expected to create new employment opportunities in a traditional area of activities as well as a viable country food operation. Processing plants and storage facilities would allow Inuit to consume country foods year round and to participate in the commercial harvest. Secondly, the commercial harvest would help to control the caribou population and keep it at a sustainable and healthy level. Conservation and management practices were to be observed to ensure the plenitude of the resource.

Four processing plants were built in four communities. The eventual profits of this project were to be invested back into the community to reduce the price of country food. Unfortunately, however, the initiative never reached self-sufficiency. The plants were closed in 1996, and alternative solutions that would meet the Canadian food Inspection Agency (CFIA) regulations regarding meat-processing facilities were investigated.

The possibility of building a processing plant near Tasiujaq was assessed, but the idea was rejected because of the high number of outfitters in the vicinity and the remoteness of that site from known caribou migration routes.

The current Project does not present such disadvantages. Nunami Outfitters Inc (Nunami) is the only outfitter operating in the designated Project area. A private camp is located at the east-end of Mollet Lake (Map 6), but it is not used in winter, and its owners have agreed to the commercial harvest as long as their own building would not be affected. Moreover, Nunami's camp at Mollet Lake is well located in regard to the caribou migration routes.

3.1.1 Similar projects considered

A similar pilot project was undertaken by NAF (1998) in 1998, and carried out again in 1999 and 2000. Since its inception, it was established in accordance with CFIA regulations for the establishment of commercial caribou and musk ox harvests in the Western Arctic.

3.1.2 Provisions of the James Bay and Northern Quebec Agreement

Decisions will be taken in agreement with the HFTCC, created under section 24 of the JBNQA, and with the Nunavik Hunting, Fishing and Trapping Association (HFTA), which acts as an advisory agency to the HFTCC Inuit party on local and regional wildlife management issues.

Over the past three years (1998, 1999 and 2000), the HFTCC allocated a yearly harvest quota of 7200 animals to the Inuit party. A quota of 5 000 was allocated for 2002.

3.1.3 Project funding and investment to date

Makivik Corporation is the only funding agency involved with the current Project. Over the past 10 years, an estimated of 10 M \$ has been invested in this venture. The equipment used for the Project is owned and maintained by Makivik, and the Mollet Lake camp is owned and operated by Nunami, a wholly-owned subsidiary of the Sakkuq LHC. NAF (1998) itself does not own any fixed assets.

3.1.4 Profitability criteria and adaptation to marketing conditions

Economic profitability is only one of the criteria used to evaluate the success of the Project. During the first three years, no profits were realized but jobs were created, and Inuit businesses were awarded substantial contracts. In addition, efficient harvest, processing and shipping methods were investigated and developed. These, however, are still rather costly and must be further refined in order for the Project to become more profitable.

In the short term at least, the development of new markets, notably in Europe, is not contemplated as red deer from Scotland and New Zealand compete for the same market share and are produced at a lower cost. Instead of increasing the harvest, which is costly, the marketing strategy is to adapt to fluctuations in market demands by providing clients with specialized cuts of meat, pâté, sausages and stew, which produce higher returns on investment. In other words, the NAF (1998) intends to adapt to market conditions, not by increasing quantities but by securing special niches.

Diversification through the sale of by-products is difficult. The specific time of the year during which the harvest must take place is not conducive to the development of other caribou-related products such as velvet and hides.

3.2 Project description

3.2.1 Study area

The HFTA and Makivik's Renewable Resource Department jointly identified the Project area. The setting was chosen because of existing infrastructures and its satisfactory location with respect to the caribou migratory routes. The absence of other outfitting operations in the vicinity was also taken into consideration. The Project area is located far

inland, about 110 km NE of Kuujjuaraapik, and is highly unlikely to conflict with the hunting and fishing activities of the native population (Map 2).

The harvest zone has a radius of 50 km from the Mollet Lake base camp. However, most of the harvest is carried out within a 30 km radius mostly west and northeast of the camp.

3.2.2 Segment of caribou population targeted

The commercial harvest will target the Leaf River herd specifically. In 1998, 5 % of the harvest was estimated to be from the George River herd, whose members are said to be smaller than those of the Leaf River herd (Neil Greig, personal communication). As mentioned previously, the HFTCC also stated that “the majority of caribou taken at Mollet Lake are from the Leaf River herd based on telemetry collar data.”

All animals taken in the past were migratory. Mostly bulls were harvested (up to 95 %) and most animals were adults with very few yearlings being taken (Neil Greig, personal communication).

As discussed in section 2.2.3, for the 2002 harvest, the same segment of caribou population is targeted with an upper limit of 2 000 head, which means the harvest will be well under the 5 000 head quota allocated by the HFTCC. It has been estimated by the HFTCC that the Leaf River herd can sustain this harvest level without unwanted decrease or negative impact on the population.

3.2.3 Time constraints

In order to conform with strict CFIA regulations, harvesting can only take place within a limited period of time. In accordance with regulations first applied to the Innuvialuit harvest, the outdoor temperature must be around -15° C and meat cutting must be carried on the snow floor of the processing plant, which must be recovered every day with fresh snow. The months of February and March are therefore appropriate for the harvest. To

conform to provincial regulations, the harvest has to end by March 31st so as to avoid killing pregnant females.

3.2.4 Identification and integration of facilities and services

The facilities to be installed on the iced-over lake include processing and packaging plants, as well as an airstrip. The processing plant is approximately 100 X 30 feet (Photos 1-2). It is equipped with a chain on which carcasses are hung, and includes an eviscerating and skinning area and stainless steel inspection tables. One of the walls has an opening through which viscera and other wastes can be discarded outdoors. The skinning process is performed using propane burners. The cold temperature within the processing unit prevents using of water for this procedure. There is also a small area reserved for knife sterilization, which is carried out with boiling water. The plywood walls are lined with plastic, and a small furnace maintains an ambient temperature of about 0° C.

The processing plant is linked by an overhead rail and pulley system to a tent measuring 30 X 40 feet (Photos 1-2), which is used for packaging the meat. Each quarter of meat is wrapped in plastic or cheesecloth and put into heavy corrugated boxes holding 800 kg. These are strapped and moved to a holding area. When a full load is assembled (approximately 5000 kg), it is immediately shipped by air to Radisson, from where the meat is transported by road to a certified meat packing plant in the south.

3.2.5 Conditions and methods for tracking/ killing and transporting caribou

In the past few years, the area was over flown when supplies were brought into the camp, so as to roughly estimate the number and track the position of animals in the vicinity. Such reconnoitering was also carried out while the helicopter transported carcasses and using from time to time a Single Otter aircraft. The same procedure will be used in 2002.

Photo 1, 2



PHOTO 1: Processing plant – Mollet Lake Camp

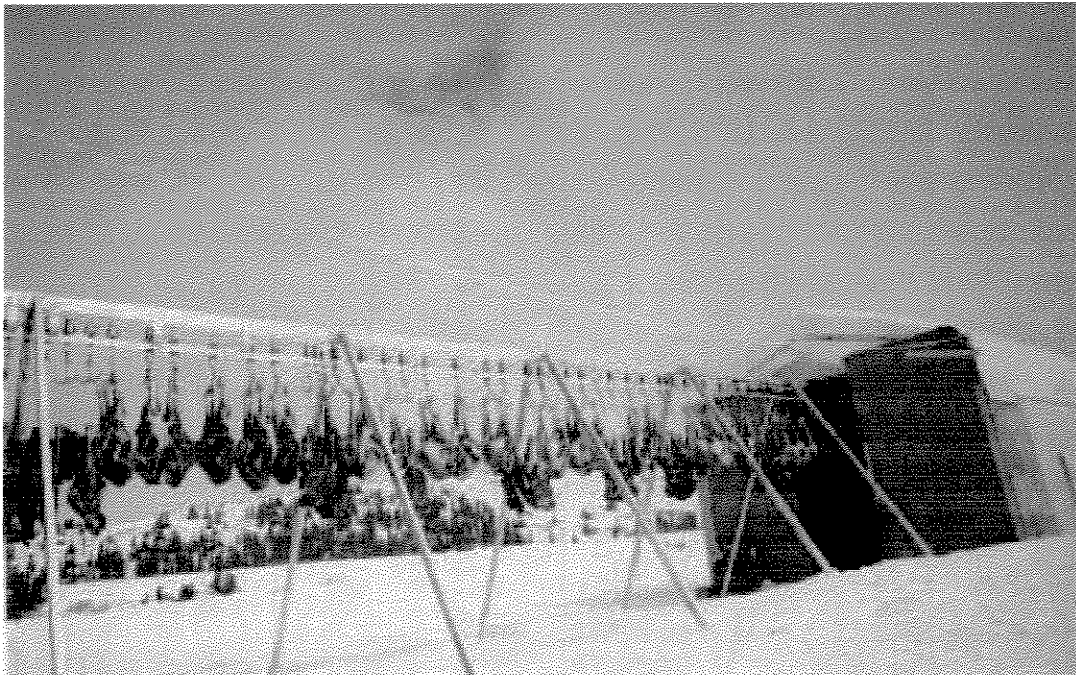


PHOTO 2: Packaging Plant

As in the past, the slaughtering process must conform to CFIA regulations. Animals will be killed on the land using high-power rifles. Immediately after the kill they must be bled by severing the jugular vein without cutting the wind-pipe.

Prior experiences (1998 harvest and the ICT initiative) showed that using snowmobiles to move harvested animals is not cost effective, especially when carcasses must be brought to the processing plant within one hour of the kill. During the subsequent harvests (1999 and 2000), it was found that airlifting carcasses by helicopter from the location of the hunt to the camp was more effective.

For the 2002 season another option is being considered, i.e. to herd the animals into a snow-fenced area using snowmobiles. This method will decrease harvest costs and is expected to be effective in diminishing the number of inaccurate shots. In addition, animals will not be submitted to a high level of stress prior to the kill, which could also improve meat quality.

3.2.6 Access to the territory and transport

The meat is to be transported by air to Radisson and from there south as described above in section 3.2.4. The workers and goods will be transported by airplane. A Twin-Otter and a HS-748 were the two types of aircraft utilized in the past.

3.2.7 Type of housing, capacity of the work camps

The work camp to be used for the project is Nunami's Mollet Lake camp. It was built by Hydro-Quebec in 1990 as a center from where studies pertaining to the environmental impacts of the Great-Whale-River Hydroelectric Project could be carried out. The camp consists of tents, with wooden floors, that can accommodate up to 45 persons at a time. There are also solid-frame buildings for the kitchen and for showers and toilets (Photo 3).



PHOTO 3: Mollet Lake Base Camp



PHOTO 4: Waste Disposal Site - Winter

3.2.8 Drinking water supply

Drinking water is supplied by the camp's well. No water is used for meat processing. Only a limited amount of water, about 100 liters per day, drawn from the lake, will be required for sterilizing knives and the general maintenance of the processing plant and related facilities.

3.2.9 Disposal of wastewater

The camp has two septic tanks and a purification field capable of handling the wastewater generated by 102 persons.

3.2.10 Disposal of solid waste

Caribou wastes are transported by snowmobile to a disposal site located 1 km from the camp. The site is on bare rock, about 800 meters from Mollet Lake in an elevated and well-exposed area. The waste is simply scattered on the ground and left to freeze (Photos 4-5).

3.2.11 Waste recovery and management of contaminated wastes

In the past, most carcasses that were rejected had been improperly killed. Very few (59 out of 3 818 caribou harvested) were rejected due to disease. No contaminated carcass either carrying a zoonotic disease or liable to contaminate other animals was ever found during inspection.

Due to distance and transportation costs, it is not economical to send by-products south for further transformation (to produce meat meal for example). In some cases, badly-shot animals rejected during the inspection process but still suitable for human consumption are given to local communities. Hides and velvet are not usable at this time of year, however, antlers are provided to Inuit carvers on request.

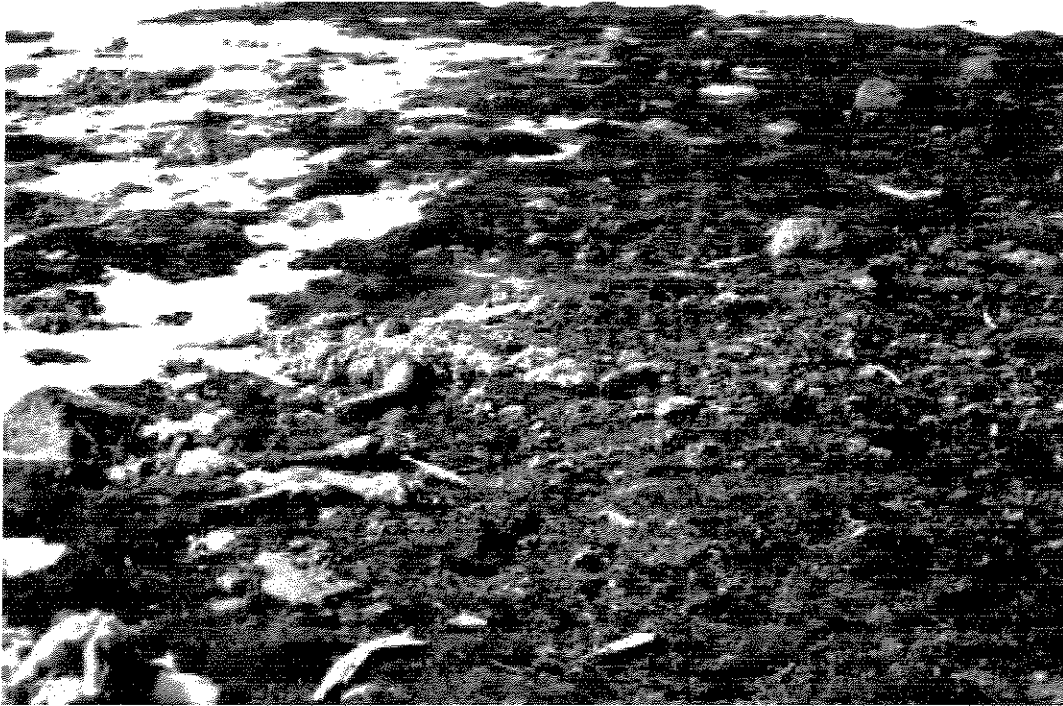


PHOTO 5: Waste Disposal Site – Spring



PHOTO 6: Inspection of Firearms

3.2.12 Hiring programs and job opportunities

All harvesters are members of the Inuit and Cree communities. People from the neighboring village are to be hired for both the harvesting and the general maintenance of the camp. Nunami is responsible for the hiring process.

The number of jobs created by the harvest carried out in 1995 by Nunavik Arctic Food in the four communities where processing plants were located is not available. However, out of a total expenditure of 435 000 \$, 272 000 \$ was spent in Nunavik, of which 195 000 \$ went towards salaries (NAF, 1995: Appendix M).

No harvest was undertaken the following two years. In 1998, NAF was restructured to become Nunavik Arctic Foods (1998) Inc. From March 5 to March 27, NAF (1998) hired 29 Inuit who received 44 200 \$ in wages. Nunami Outfitters Inc., a wholly owned subsidiary of the Sakkuq Landholding Corporation, was awarded a 26 083 \$ contract. Part of that money went towards salaries (NAF (1998), 1998: 18).

From February 14 to March 25, 1999, 18 Inuit, 4 Crees, 1 beneficiary and 11 non-beneficiaries worked at Mollet Lake. The Inuit received 88 000 \$ in salaries, the Crees 25 000 \$ and the one beneficiary 2 800 \$. The total amount disbursed for salaries was 115 800 \$ for 23 northerners, for an average of 4 500 \$ per person for six weeks of work.

In 2000, 218 000 \$ was disbursed in salaries for native workers. This increase from the previous year is attributed to the fact that the harvest period was two weeks longer. (NAF (1998): Income Statement for year ending December 2000. The Income Statement does not provide a job breakdown).

For 2002, it is estimated that salaries for native workers will be at the same level as in 1999, i.e. in the vicinity of 115 000 \$.

3.2.13 Contracts for Inuit companies

Since its creation in 1995, NAF and NAF (1998) Inc. made all efforts to do business with Inuit-owned companies, which were awarded contracts for 75 000 \$ in 1995, 400 000 \$ in 1998, 300 000 \$ in 1999 and 360 000 \$ in 2000. (NAF and NAF (1998) 1995, 1998, 1999 and Income Statement, 2000).

Since harvest began at Mollet Lake in 1998, Nunami has been involved in the project and was awarded contracts for over 100 000 \$ each year for the rental of Mollet Lake facilities and work performed. The other companies benefiting from this venture are: First Air, Air Inuit, Nunavik Rotors (a joint-venture based in Kuujjuaq) and Takatakiaq Helicopter Inc. (a joint-venture of the Sakkuq Landholding Corporation). Furthermore, Cree-owned companies were awarded contracts worth 50 000 \$ in 2000.

For 2002, the projected figure for contracts to be awarded is in the same order as that for 1999, i.e. 300 000 \$.

3.2.14 Project schedule

The opening of the camp is expected to begin in mid-January, when three people are scheduled to carry out general maintenance and to build on-ice facilities. The harvest is expected to begin in mid-February and to last until the middle or end of March.

3.2.15 Existing services and infrastructures used or affected by the project

The Mollet Lake camp is the only infrastructure present in the area that will be used for the project. Apart from the private camp on Mollet Lake, there are no other services or infrastructures in this area that will be affected by the project. The nearest outfitters are located much further north at Minto lake (Map 6).

3.2.16 Training programs

Due to the relatively short period of employment, this project could not be aimed at improving the employability of its workforce. There might be some skills acquired during the butchering of the animals at Mollet Lake prior to being transferred to a federally-approved facility in the South. However, those skills do not improve the employability of people within the Nunavik region.

4. Impacts

4.1 The Inuit Point of View — Consultation

On November 14, 2001 a conference call was held with the Sakkuq Landholding Cooperation. No scientific questionnaire had been prepared, and the discussion regarding the project and its positive and negative impacts as perceived by the representatives of the LHC remained informal.

In essence, the LHC is ambivalent about the project. On the one hand, it appreciates the income provided by such a venture, on the other hand, it wants to develop adventure tourism. Tourists “may not like to see caribou being slaughtered” and it is difficult to see how these two activities can be practiced at the same time and place.

The Umiujaq representatives do not see much advantage for their community. Apart from workers who directly benefit from the project, no one else does. Last year, two people from Umiujaq worked on the project until one fell ill and had to be sent home. So the benefits were minimal.

As the harvesting is carried out far inland and far from the Umiujaq community, hunters have raised no concerns over the harvest project.

To the question: “Is the herd affected by this harvest?”, the answer was, “We cannot see any impact. The caribou have not changed their migration patterns because of it. Also, carcasses do not stay long on the ground as they are rapidly eaten up by other animals.”

To the question: “Are the hunters from Kuujjuaraapik disturbed by the harvest?”, the answer was, “ The Crees hunt much more inland than the Inuit and they did complain regarding the harvest. But some Crees work at the camp and they are very happy when they get paid.”

4.2 Economic Impacts

The harvest has a direct impact on the economy of Nunavik and on the communities of Kuujjuaraapik - Whapmagoostui and Umiujaq.

Workers from these communities receive wages. In 1999, they were paid 4 500 \$ per person, which is not a tremendous amount of money, but salaries increased to approximately 9 000 \$ the following year. For most, the work is short term (4 to 6 weeks) and for a few workers it may last up to 8 weeks. The wages earned supplement yearly incomes.

Also, Kuujjuaraapik benefits from contracts awarded to Nunami, a wholly-owned subsidiary of the Sakkuq LHC. Nunami has been interested in the harvest project since its inception in 1998. The commercial harvest is a good source of income, which has contributed to set up Nunami as a major outfitter. Last year, Nunami accommodated 450 hunters jointly with Tuttulik Outfitters located further north at Minto Lake.

Other Inuit companies also benefit from the project. Winter being a low season for Air Inuit and more particularly for the two helicopter companies involved, the project creates and/or helps maintain jobs, which benefits Nunavik as a whole.

Finally, Nunami has experienced a negative impact: “Ravens, attracted by the dump site, have caused 10 000 \$ worth of damage to the Mollet Lake camp.” (Peter Palmer, personal communication). However, there is no data regarding the raven population attracted by the outfitting activities.

4.3 Social Impacts

The hunting season is short, lasting only from July to September. Nunami’s goal is to be operating year-round and avoid having to close and reopen its camp. Consequently, the Mollet Lake camp was open to trophy hunters last October. The owners are also contemplating adventure tourism for the months of March to May. Nunami is first and foremost in the business of hunting, trophy hunting and adventure tourism. It wants to avoid conflicts between the commercial harvest and outfitting.

Questions pertaining to the caribou migration patterns are being raised. What is the effect on the caribou movements around Mollet Lake? If caribou migration patterns change there will be an obvious affect on sport and trophy hunting. Another question pertains to how sport hunters and adventure tourists may perceive commercial harvesting and its effects. According to A. Tuckatuck, “Hunters and tourists may not like to see the numerous carcasses left at the dumpsite.” Another issue regards the time spent by Nunami on the harvest project. There is a perception that organizing and conducting the harvest demand a lot of time and put ‘ stress’ on the business: “it is not only a matter of 6 to 8 weeks, a lot of work has to be done before and after the harvest. It is time consuming” (P. Palmer).

Finally, the uncertainty surrounding the harvest project is another issue for the community as well as Nunami. This situation seems to be created by the fact that it is very difficult, if not impossible, for NAF (1998) to plan for the long term. The economics of the project are too unpredictable: the cost of the harvest is high, market demands fluctuate and the caribou herd is unpredictable.

The project cost, which stands at about 1 million \$ per year, is extremely high and renders the operation unprofitable for NAF (1998). As described in section 3.2 above, every year since the beginning of the project means have been sought to lower the cost of production: the four Inter-Community Trade plants were closed, the entire project was rethought, and in 1998 Mollet Lake was chosen. In the first and second year of operation, caribou carcasses were transported from the field to the processing plant by snowmobile, and in 2000 by helicopter. And now, herding of caribou and even a change of location are being discussed for 2002³.

NAF (1998) had to create a market for caribou meat. It is never easy to predict market fluctuations, and the company adapted by launching new products, like pâté and special cuts of meat. But the marketing success or failure of the operation must be re-assessed on a yearly basis.

Also, the caribou migration routes have to be known before undertaking the harvest; no one can predict where they are going to be from one year to the next and whether the herd can sustain such a hunt for a long period. This is why the HFTCC allocates a quota on a yearly basis.

Many factors, therefore, render long-term decisions almost impossible. This situation creates uncertainty for the community and for Nunami.

In a personal communication, Peter Palmer summarized this uncertainty in the following terms: “I think that Nunami wants to go ahead, but what is not totally clear is what does it bring to the community, to Nunami and to Makivik? Nunami will make a decision as to the acceptance or rejection of a contract with NAF (1998) in Kuujjuaraapik during the first week of December.” At the time of writing, this decision is still not made and as just noted, a proposal will be submitted to NAF (1998) on December 19, 2001.

³ Nunami is to submit a proposal to NAF (1988) as to the most efficient harvest option by December 19, 2001.

The fishing and hunting activities of the Native people will not be directly affected by the harvest. As shown on maps 2, 3 and 4, the hunting and fishing areas of the communities are located on the nearby coast and around Minto Lake, far from the proposed harvest area.

As well the snowmobile routes used by the communities of Kuujjuaraapik and Umiujaq are located on the Hudson Bay coast. Inuit from Umiujaq also use inland roads but mainly around Minto Lake and Richmond Gulf whose southeastern extremity is located at approximately 100 km from the harvesting area. The proposed area for the commercial hunt is therefore relatively far from the trails known to be used by Inuit people.

Finally, outfitters, cabins, camping and archeological sites are mainly located along the coast and in the Richmond Gulf and Minto Lake area. The nearest archeological site is close to Clearwater Lake, located about 50 km northeast of the proposed harvest area. Except for a private camp, there are no other outfitting operations in the vicinity that could suffer negative impacts.

4.4 Environmental Impacts

4.4.1 Positive and negative impacts on the caribou herd and the environment

The environmental impacts of the project occur on two scales. A regional scale encompassing the study area, which is principally affected by the harvest activities, and a local scale surrounding the camp where human activities and animal processing are concentrated.

4.4.1.1 Regional impacts

The caribou harvest is machine intensive and requires large amounts of fossil fuels. The impact of this is impossible to measure and likely not serious because of the area over which it is spread.

Negative impacts on the caribou themselves are: death, stress, injury, and increased susceptibility to predation. A caribou may be shot and harvested. A caribou may be shot and escape to die later, or injure itself fleeing and possibly die later. A caribou may escape injury but use up valuable winter resources in doing so, leaving it more vulnerable to predation. Caribou are gregarious and have evolved the habit of traveling in groups. Two of the reasons for this are so that younger animals can learn skills from older animals and so that there is a greater chance of an approaching predator being detected. Animals not harvested are therefore more susceptible to predation because of a reduced group size.

While these impacts are negative to individual caribou in the short term, at the population level they are positive impacts in that they combine to reduce competition for food. The population dynamics of the Bienville herd are not known, but, as we have seen in the caribou section, the Leaf River herd is increasing. Resources are scarce in winter and fewer animals on the wintering habitat may mean more food per animal.

Regionally, predators of the caribou are not expected to be affected by the removal of 5000⁴ of their prey, because the hunt will leave the remaining animals in a more susceptible state and predators in the north are wide ranging by nature.

A final negative impact on the regional scale is the concern of nutrient export from the study area. Under normal conditions caribou gather their resources over a vast area, and return those resources to the environment through defecation, urination and death more or less randomly over their range. If 30kg of each animal harvested is exported from Nunavik, 5 000 animals will mean the loss of 150 tons. Assuming a 5% conversion efficiency, that represents 3 000 tons of food, or the lichen standing stock from 600 hectares of good habitat. However, when compared to the over 20 000 kill by sport hunting, this loss of nutrient is minimal.

4. For calculation purposes, the maximum quota was used. In fact, NAF (1998) plans to harvest only 2 000 caribou.

Table 1

Table 2. Matrix of anticipated local environmental effects.

Impact of concern	Human waste and chemical byproducts of project.	Harvest of other wildlife for recreation.	Effect of caribou dump on aquatic habitat.	Effect of caribou dump on terrestrial predators.	Effect of caribou dump on plants and primary consumers.
Short term effect	<i>None.</i> Facility is built to accommodate impacts of this nature. Small hydrocarbon spills may occur.	Negative.	<i>Positive.</i> The additional organic matter that will eventually find its way to Mollet Lake is expected to fertilize the lake and increase productivity.	<i>Positive.</i> Predators and scavengers will benefit from the abundance of carrion deposited on the dumpsite.	<i>Positive.</i> The area of high organic material will provide a uniquely rich habitat for plant growth and primary consumers in the north. <i>Negative.</i> Primary consumers will be confronted with elevated predator densities.
Long term effect	None.	Insignificant.	<i>Positive.</i> As above.	<i>Positive or None.</i> The increased predator and scavenger densities that the dump will support may result in increased disease transmission.	<i>Positive.</i> As above. <i>Negative.</i> As above.
Monitoring and follow-up by proponent	<i>None.</i>	<i>None.</i>	Mollet Lake will be monitored for winter and summer profundal oxygen levels. In summer a survey will be conducted for benthic invertebrates indicative of poor water quality. Water samples from sites near the dump will be compared to control sites for bacteria, nitrogen and phosphorus.	A survey of the types and densities of animal tracks using the dumpsite will be made during the winter operation and compared to control sites. Bait sites may be established to collect hair for genetic analysis to estimate the number of bear using the site.	Summer survey of plant types and densities will be made.
Remediation	If a hydrocarbon spill occurs for some reason the site will be marked, and bioremediation of the soil will be performed the following summer.	<i>None.</i>	If it is found that there are negative impacts to the aquatic environment resulting from the dump, a new dumpsite will be located.	<i>None.</i>	<i>None.</i>

Monitoring and follow-up on a regional scale are too large to be undertaken by the proponent and fall under the mandate of the provincial government. Makivik contributes both financially and in-kind to the provinces caribou and wildlife monitoring.

4.4.1.2 Local impacts

The camp will host about 35 people for approximately 40 days. Assuming 1kg of human waste per person per day, 1400kg of human waste can be anticipated. The camp operates as an outfitting camp in the summer and fall at a higher capacity and was originally designed to handle the waste of 102 persons. Garages and work areas for machine maintenance have also been in place for several years, so no new ground will be contaminated by accidental chemical and hydrocarbon spills during machine maintenance.

There is some recreational harvest of other species of wildlife by individuals at the camp. In a week stay at the camp during the commercial caribou harvest in 2000, one of Makivik biologists, who has taken part in the writing of this report, saw willow ptarmigan, lake trout, and a river otter harvested.

The disposal of the offal is, of course, the greatest concern in this project. Assuming a very successful hunt of 5 000 animals and 120kg waste per animal, as much as 600 tons of animal waste may be dumped on the land and part of it will eventually find its way to the lake. During the environmental assessment for the Great Whale Hydroelectric Complex, Hydro-Québec found a north-south productivity ecotone from 57°N to 55°N that resulted in gillnetting efficiencies ranging from 1-5 kg of fish per net day in the northern lakes to more than 36kg in the south. Mollet Lake lies midway along this gradient at 16-21kg of fish per net day. The offal will fertilize the lake and increase the standing stock of fish. In lakes that receive too much organic matter, or which are not sufficiently deep, winter anoxia can become a problem. The combined surface area of Lenormand and Mollet Lakes is 234 km² and the maximum depth is 15m. It is anticipated

Table 2. Matrix of anticipated local environmental effects.

Impact of concern	Human waste and chemical byproducts of project.	Harvest of other wildlife for recreation.	Effect of caribou dump on aquatic habitat.	Effect of caribou dump on terrestrial predators.	Effect of caribou dump on plants and primary consumers.
Short term effect	<i>None.</i> Facility is built to accommodate impacts of this nature. Small hydrocarbon spills may occur.	Negative.	<i>Positive.</i> The additional organic matter that will eventually find its way to Mollet Lake is expected to fertilize the lake and increase productivity.	<i>Positive.</i> Predators and scavengers will benefit from the abundance of carrion deposited on the dumpsite.	<i>Positive.</i> The area of high organic material will provide a uniquely rich habitat for plant growth and primary consumers in the north. <i>Negative.</i> Primary consumers will be confronted with elevated predator densities.
Long term effect	None.	Insignificant.	<i>Positive.</i> As above.	<i>Positive or None.</i> The increased predator and scavenger densities that the dump will support may result in increased disease transmission.	<i>Positive.</i> As above. <i>Negative.</i> As above.
Monitoring and follow-up by proponent	<i>None.</i>	<i>None.</i>	Mollet Lake will be monitored for winter and summer profundal oxygen levels. In summer a survey will be conducted for benthic invertebrates indicative of poor water quality. Water samples from sites near the dump will be compared to control sites for bacteria, nitrogen and phosphorus.	A survey of the types and densities of animal tracks using the dumpsite will be made during the winter operation and compared to control sites. Bait sites may be established to collect hair for genetic analysis to estimate the number of bear using the site.	Summer survey of plant types and densities will be made.
Remediation	If a hydrocarbon spill occurs for some reason the site will be marked, and bioremediation of the soil will be performed the following summer.	<i>None.</i>	If it is found that there are negative impacts to the aquatic environment resulting from the dump, a new dumpsite will be located.	<i>None.</i>	<i>None.</i>

that no winter kill will occur because of the great size of the lakes, but the situation will be monitored.

The offal should be a boon to predators such as fox, wolves, lynx, various mustelids, and bear; none of whom are above scavenging. The true scavengers will also benefit, such as ravens and whiskeyjacks. The stronger predator population will adversely affect other prey species in the area such as squirrels, voles, lemmings and hares. There is the potential that higher predator densities could result in increased disease transmission, but considering that predators in Nunavik occur at lower densities than in more productive areas in the south, this likely need not be a concern.

Plant communities will also be affected by the carcass disposal. Plants that require more nitrogen, phosphorous, and potassium will be favored. More abundant plant growth will benefit primary consumers, as will the abundant calcium, usually a fairly scarce micronutrient in the environment.

However, pictures taken at the disposal site months after the disposal of carcasses show that there are very few visual and ecological impacts. It is thought that predators and natural decomposition due to insects provide a satisfactory turn over of the wastes.

4.4.2 Environmental degradation and planned disposal method

No experience was gleaned during the experimental phase. Because the north is depauperate in nutrients, it is anticipated that the environment will have a high capacity to absorb the waste resulting from the harvest. The risks to the environment are as stated above and will be assessed as to their severity by follow-up monitoring. Fortunately, because the camp is run as an outfitting operation in the summer and fall, and is used for the commercial caribou harvest in the winter, it is possible to put a good monitoring program into effect.

On the question of the efficiency of the planned disposal methods, the present method of hauling away the unused portions of the carcasses is certainly the most cost efficient method of disposal available. If follow-up monitoring reveals that the concentration of organic matter is negatively impacting the environment, it may be necessary to move to a less efficient scenario where the carcasses are deposited in lower concentrations at more sites.

If efficiency refers to the use of a greater proportion of the animal, this is being achieved as new markets such as the caribou pâté market are being developed which permit the use of smaller muscle groups.

4.4.3 New infrastructures, potential on caribou population dynamics and consequences for non-migratory and migratory population

No new infrastructure or logistic facility is needed. The processing plant is a temporary structure that is built on the lake and dismantled at the culmination of the project.

As mentioned, the Leaf River Herd will be mainly targeted but the George River Herd and, to a lesser degree, the Bienville Herd may also be harvested. As much as 20% of the Bienville herd's winter habitat (Gauthier & Guillemette Consultants Inc. 1991) (Map 9) lies within the study area. Although the Bienville animals numerically represent less than 1% of the combined three herds, if the Leaf and George River herds do not drop down into the study area during the harvest, the Bienville herd will be disproportionately harvested. No genetic data are available to suggest that the Bienville herd is distinct from the other two but genetic similarity among several herds across Quebec, Ontario and Manitoba would suggest that they are not (ibid). Even if the Bienville herd were entirely concentrated in the northeast corner of their range – the section that lies within the study area – the hunters would not have the capacity to harvest more than a couple hundred in a day. The remaining animals would likely retreat to the rest of their habitat.

As mentioned above, the harvest will be detrimental to individual caribou that experience harvesting activities, but will be beneficial in the long term since it will allow the habitat

to rebound somewhat and thus increase individual fitness of caribou that are not hunted or chased.

The disposal site is located on bare rock, at about 800 m from the lake in a high and well-exposed area. This location ensures a rapid turn over of the waste in appropriate aerobic conditions and an efficient propagation of the odor facilitating the finding of the site by scavengers. Being at a fair distance from the lake, the possibility of a major waste run off is reduced.

In fact, according to Mr. Marcel Parent (personal communication) who inspected the site in June of 1999, “ the decomposition is very rapid and there was nothing left”.

If carcasses either carrying zoonotic disease or liable to contaminate other animals were ever found during inspection, they would be buried with lime. As this procedure has not been used in the past, it is difficult to estimate its environmental impacts. However, it is fair to assume that few if any contaminated carcasses would be found, and therefore environmental impacts would be negligible.

5. Mitigation Measures

5.1 Disturbed Site Rehabilitation (techniques, etc.)

If the dumpsite turns out to be polluting the land or water nearby, the offal in the future will be spread over several smaller dumps, further from the water, and possibly in other drainage.

If a hydrocarbon spill occurs away from the camp, the site will be marked for identification in summer. In summer, commercial fertilizer and peat moss will be shoveled into the spill site to provide nutrients and oxygen to bacteria that will accelerate the breakdown of the hydrocarbons.

5.1.1 Protected areas and buffer zones of special interest sites/areas

If the dumpsite is considered polluting to the lake, a greater buffer zone will be established.

5.1.2 Protection of significant sites, including wildlife habitat, sources of drinking water supply and sites with cultural and archeological value

There is no significant wildlife habitat known in the area, but if some are identified in the future during the harvest, follow-up monitoring, or by sport and subsistence hunters, buffer zones around the sites will be established at a size that reflects the lifestyle and habits of the species in question.

Examples of significant wildlife sites that might eventuate are golden eagle nests and harlequin duck nesting sites. The area to the northwest of Mollet Lake was identified by Hydro-Québec as having nesting potential for golden eagles, although no nests were located. The caribou dump may make the area more appealing to golden eagles. Similarly, there is a lot of harlequin duck activity along Little Whale River. If the caribou dump fertilizes the lake and hence the Little Whale River, there would be more benthic macro invertebrates for the harlequins. Likely, some harlequin nesting already occurs along the Little Whale River. These sites would not need protection during the harvest but possibly in summer during the outfitting seasons.

5.2 Public Information Program

As reported in section 4.1, the Sakkuq LHC was consulted at length on the matter. As soon as NAF (1998) is ready to go ahead with the harvest, its representative will use the local radio station to further explain the project and gather comments from the population.

The directors representing Kuujjuaraapik and Umiujaq on the Makivik Board will be responsible for informing their communities on an ongoing basis.

5.3 Safety Measures Related to Commercial Hunting

Commercial Inuit harvesters are chosen after completing Hunter Certification Training. Inspectors from the Ministère de l'Environnement et de la Faune ensure that the firearms used are only high caliber rifles ($\leq 6\text{mm}$), which are the only firearms approved for the commercial hunting of caribou (Photo 6).

5.4 Disturbed Site Rehabilitation

Fuel drums are the greatest hazard and are transported empty from the site back to the fuel dealer in Radisson. There is a financial incentive to comply with this, users being refunded for the empty drums. Propane and diesel fuel are handled in the same manner at the camp's cost and responsibility.

At the end of the commercial hunt the mobile processing plant and tent will be dismantled and stored at a secure facility at Mollet Lake. No materials will be left around the lake.

6. Monitoring and Follow-up Programs

Dissolved oxygen profiles of Mollet Lake will be measured in the summer and winter near the dump site and at control sites to determine whether the added organic matter is causing an increasing in the biological oxygen demand in the lake. The lake near the dump will be sampled for benthic macroinvertebrates indicative of diminished water quality. Water samples will be collected near the dump and at control sites and analysed for bacteria counts, nitrogen, phosphorus, and chlorophyll levels. The lake is expected to be the area where the impacts will be most significant, however even in the lake no impacts are expected to be detectable.

Winter surveys of the types of animal tracks and the density of animal tracks around the dump and at control sites will be made to estimate the change in predator densities resulting from the dump. Bird densities will be estimated too.

In summer, inventories of plant life near the dump and away from it will be made to estimate the impact of the added organic matter.

Also in summer, a study may be designed to passively collect black bear hair using barbed wire at bait stations. The hair could be analysed to determine the number of different bears in the area and compared to other areas.

6.1 Follow-up Programs with Other Parties

The proponent has regarded the commercial caribou harvest as a net benefit to the welfare of the herds and so have not carried out any monitoring on the environment. The monitoring that Makivik has supported to date rather has piggybacked on the commercial harvest and has focused on the prevalence of disease in the herd such as brucellosis.

The proponent and Makivik Corporation will determine whether historical records are available for traplines in Nunavik and particularly in the Bienville area and compare them to returns in the future to assess whether a decrease that can be related to nutrient export from the region is detectable. It is not anticipated that a change will be evident.

If a summer bear hair collecting program proceeds, the proponent and Makivik Corporation would carry out the field work, but would expect the province to perform the genetic analysis for which Makivik is not equipped.

Also, the proponent would expect Québec to determine whether the Bienville herd of caribou are genetically distinct from other caribou herds, so that if in a given winter they

are harvested disproportionately by the commercial operation there is no danger that a unique subspecies is at risk.

Nunami and Makivik Corporation will monitor the dumpsite by making at least one visit during the summer to evaluate the speed of the carcass decomposition process

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Makivik
Corporation

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Société
Makivik

Kuujuuaq, November 13, 2001

Mr. Peter Jacobs
Chairman
Kativik Environmental Quality Commission
École d'architecture et de paysage
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Dear Sir,

The Board of Directors of Nunavik Arctic Foods (1998) (NAF) decided at the beginning of November to go ahead with a caribou harvest next February or March. To this end, a request for a 5000-head quota was made to the Hunting, Fishing and Trapping Coordinating Committee.

As you know, NAF started a pilot project in 1998 to market caribou meat. The project was again carried out in 1999 and 2000, but interrupted in 2001 because it was not economically viable and also accumulated inventory was sufficient to supply the demand of the new market developed by NAF (pates, sausages and stews). However, stocks are now exhausted and NAF must either cease its activities, which would result in losing its acquired market, or else go ahead with a fourth harvest even though, in the short term, this would not be economically profitable. Nevertheless, to retain market share and minimize losses, the Board of Directors chose to go ahead for one more year.

The pilot project was first exempted from an environmental assessment by the Commission. But since the project must move from a pilot project to a permanent one, the Commission issued, in February 2000, guidelines for an impact study. However, there was no harvest in 2001, and the study was not initiated. The recent decision of the Board of Directors concerns this year only and in no way commits the NAF for the years to come. The question as to whether the project is a pilot project or a permanent one has not been resolved. In addition, the Sakkuq Landholding Corporation, owner of Mollet Lake and party to the preceding harvests, in a letter sent on November 8, 2001 to Mr. Adamie Alaku (Makivik), showed an interest for the project but requested further information prior to committing for another year.

In this context, we, nevertheless, propose to undertake a study of social and environmental impact to meet the guidelines requirements. However, I believe it is impossible to conduct an adequate study before the 15th of December. The task has to be

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carried out in several coordinated steps: it is difficult to find available resource people on short notice in order to build a team that will prepare a questionnaire, organize consultation meetings in the three villages affected by the project (Whapmagoostui, Kuujjuaraapik and Umiujaq), collect data available within the various governmental departments and finally produce a report.

As a solution, we propose a two-phase approach:

Phase I: production of a preliminary report prior to December 15 to :

- . define and justify the project,
- . describe it and determine its spatial and time limitations,
- . describe the environment:
 - habitat
 - vegetation
 - drainage basins
 - proximity of villages and of other camps and outfitters
 - caribou
 - population
 - health
 - migratory routes
- . describe and discuss the social dimension:
 - description of communities affected
 - jobs provided in the first three years
 - a first consultation with the villages
- . mapping of data regarding land use by the Inuit of Kuujjuaraapik and Umiujaq.

Phase II: impact assessment to be carried out in the field at the same time as the harvest in February-March:

- . social dimension :
 - consultation with the communities, reaction to the unfolding project,
 - use of the territory by the Cree community of Whapmagoostui
- . environment:
 - number of people at camp during harvest
 - observation of unfolding operations
 - inspection of dump
- . preparation of a final report, in April, including mitigating measures and recommendations for the years to come.

This new approach is different from what is usually done, and therein lies its strength. It will provide pertinent results allowing for a better understanding of impacts in order to formulate accurate recommendations.

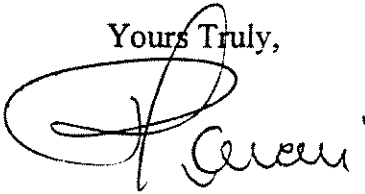
The follow-up phase of the Raglan project has shown this to be the case. The impacts that the Raglan Committee must deal with on a nearly daily basis often have nothing to do with the projections of impact studies carried out before implementation. Numerous surprises may arise from a project, and it is during the follow up phase that mitigating measures can best be defined.

It's an exceptional formulae. I believe we should attempt it. We are offered the opportunity to innovate. The project, in particular if it becomes economically viable, will go on for several years, and therefore the study must meet the requirements of the guidelines and even go further. If the project does not go on, the study will have the merit of having highlighted the impacts of these last few years and, if necessary, mitigating measures can be taken consequently.

We hope that the Commission will endorse this approach which will be sufficiently comprehensive to assess major impacts during the first phase. The second phase will be devoted to rounding out the data, verifying impact projections in the field and finalizing recommendations and mitigating measures.

We look forward to receiving a favorable response to this request.

Yours Truly,

A handwritten signature in cursive script, appearing to read "R Lanari". The signature is written in black ink and is positioned to the left of the typed name.

Robert Lanari
Project Director
Resources Development Department



Kuujuuaq, le 13 novembre 2001

Monsieur Peter Jacobs
Président
Commission de la Qualité de l'Environnement Kativik
École d'architecture et de paysage
Université de Montréal
5620, rue Darlington, 3^e étage
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Monsieur,

Le conseil d'administration des Aliments arctique du Nunavik (1998) (AAN) a décidé début novembre d'aller de l'avant avec une récolte de caribou en février et mars prochain. À cet effet, une demande pour un quota de 5000 têtes a été déposée auprès du Comité conjoint - Chasse, Pêche et Piégeage.

Comme vous le savez, les AAN ont entrepris, sous forme de projet pilote, de commercialiser la viande de caribou en 1998. L'expérience fut reconduite en 1999 et en 2000, mais interrompue en 2001 puisqu'elle n'était pas économiquement viable et les stocks accumulés suffisaient à la demande du nouveau marché développé par les AAN (pâtés, saucisses et ragoûts). Les stocks sont maintenant épuisés et les AAN doivent ou bien cesser leurs activités, ce qui aurait pour effet de perdre le marché acquis, ou bien aller de l'avant avec une quatrième récolte même si, à court terme, cela n'est pas économiquement rentable. Pour minimiser les pertes et conserver le marché des AAN, le conseil d'administration a donc choisi d'aller de l'avant pour une autre année.

La Commission a d'abord exempté le projet pilote d'une évaluation environnementale. Le projet devant passer de son statut de projet pilote à un statut de projet permanent, la Commission émettait, en février 2000, une directive pour une étude d'impacts. Toutefois, il n'y a pas eu de récolte en 2001, et l'étude n'a pas été mise en branle. La décision récente du conseil d'administration est ponctuelle et n'engage en rien les AAN pour les années à venir. La question de savoir si le projet est pilote ou permanent n'est toujours pas résolue. De plus, la Corporation foncière Sakkuq, propriétaire du lac Mollet et partie prenante aux précédentes récoltes, dans une lettre du 8 novembre adressée à M. Adamie Alaku (Makivik), signale son intérêt pour le projet mais demande plus d'informations avant de s'engager pour une autre année.

Dans ce contexte, nous proposons tout de même d'entreprendre une étude des répercussions sociales et sur l'environnement répondant aux exigences de la directive. Mais, je crois sincèrement qu'il est impossible de réaliser une étude adéquate avant le 15 décembre. La tâche doit être coordonnée en plusieurs étapes : il est difficile de trouver des personnes-ressources à quelques jours d'avis pour bâtir un équipe qui élaborera un

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questionnaire, organisera des réunions de consultation dans les 3 villages touchés par le projet (Whapmagoostui, Kuujjuaraapik et Umiujaq), rassemblera les données disponibles dans les divers ministères et enfin produira un rapport.

Comme solution, nous proposons une approche en deux phases :

Phase I : production, d'ici le 15 décembre, d'un rapport préliminaire pour :

- . définir et justifier le projet,
- . décrire et circonscrire le projet dans l'espace et le temps,
- . décrire l'environnement :
 - l'habitat
 - la végétation
 - les bassins versants
 - la proximité des communautés et autres camps ou pourvoies
 - le caribou
 - population
 - santé
 - routes migratoires
- . discuter de la dimension sociale :
 - description des communautés affectées
 - bilan de l'emploi des 3 premières années
 - une première consultation avec les villages
- . cartographier les données d'utilisation du territoire par les Inuit de Kuujjuaraapik et d'Umiujaq.

Phase II: évaluation des impacts sur le terrain en même temps que la récolte en février-mars :

- . dimension sociale :
 - consultation avec les communautés, réaction au projet en cours
 - utilisation du territoire par la communauté crie de Whapmagoostui
- . environnement :
 - nombre de personnes présentes au camp durant la récolte
 - observation des opérations en cours
 - inspection du dépotoir
- . rédaction d'un rapport final, en avril, y compris les mesures d'atténuation et les recommandations pour les années à venir.

Cette nouvelle approche est différente de ce qui se fait habituellement et c'est justement là sa force. Elle apportera des résultats pertinents qui permettront une meilleure compréhension des impacts et la formulation de recommandations plus justes.

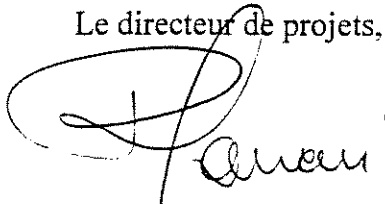
Nous en avons l'expérience avec le suivi de la mine Raglan. Les répercussions avec lesquelles nous devons composer au Comité Raglan sur une base quasi-quotidienne n'ont souvent rien à voir avec les projections des études d'impacts faites avant la mise en œuvre. Un projet réserve de nombreuses surprises, et c'est lors du suivi que l'on peut mieux définir des mesures d'atténuation.

C'est une formule inusitée. Je crois qu'il faut la tenter. L'occasion nous est offerte d'innover. Le projet, tout particulièrement s'il devient économiquement viable, se poursuivra sur plusieurs années et l'étude se doit donc de répondre aux exigences de la directive et même d'aller au-delà. Si le projet est interrompu, l'étude aura le mérite d'avoir fait ressortir les impacts des dernières années et, au besoin, des mesures d'atténuation pourront être prises en conséquence.

Nous osons croire que la Commission entérinera cette approche qui sera suffisamment exhaustive pour permettre l'évaluation des impacts majeurs dès la première phase. La deuxième phase servira à compléter les données, à vérifier sur le terrain les projections des impacts, et à peaufiner recommandations et mesures d'atténuation.

Dans l'attente d'une réponse favorable, nous vous prions d'accepter, Monsieur, nos salutations distinguées.

Le directeur de projets,

A handwritten signature in black ink, appearing to read 'R Lanari', written over a large, stylized circular flourish.

Robert Lanari
Service du développement des ressources