

Localisation des massifs boisés

Légende

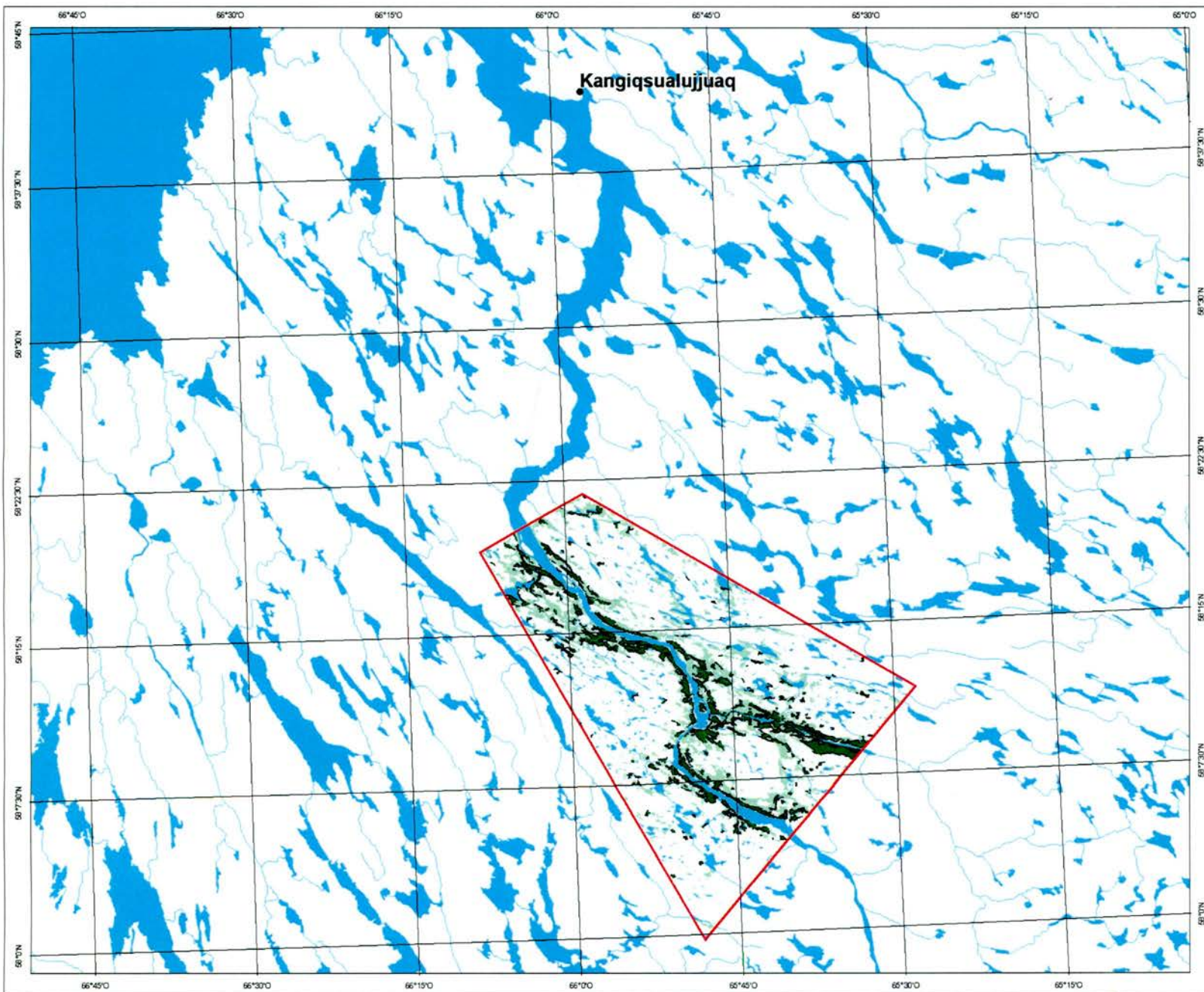
- Territoire avec droit exclusif de récolte : 61 710 ha
- Résineux mûr dense : 8 057 ha
- Résineux mûr ouvert : 17 737 ha

Image :
 Satellite **Landsat TM**
 composés colorés (RVB) : TMS/TM4/TM3
 Résolution 25m
 Date d'acquisition : juillet 2001

Projection :
 NAD : 1983
 Québec Conique Conforme Lambert
 GCS North American 1983



Réalisation : Direction des inventaires forestiers
 Date de production : juin 2005



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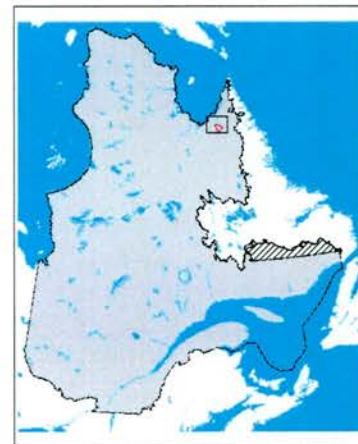
- Territoire avec droit exclusif de récolte : 52 856 ha
- Résineux mûr dense : 5 965 ha
- Résineux mûr ouvert : 10 734 ha

Image :

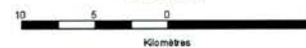
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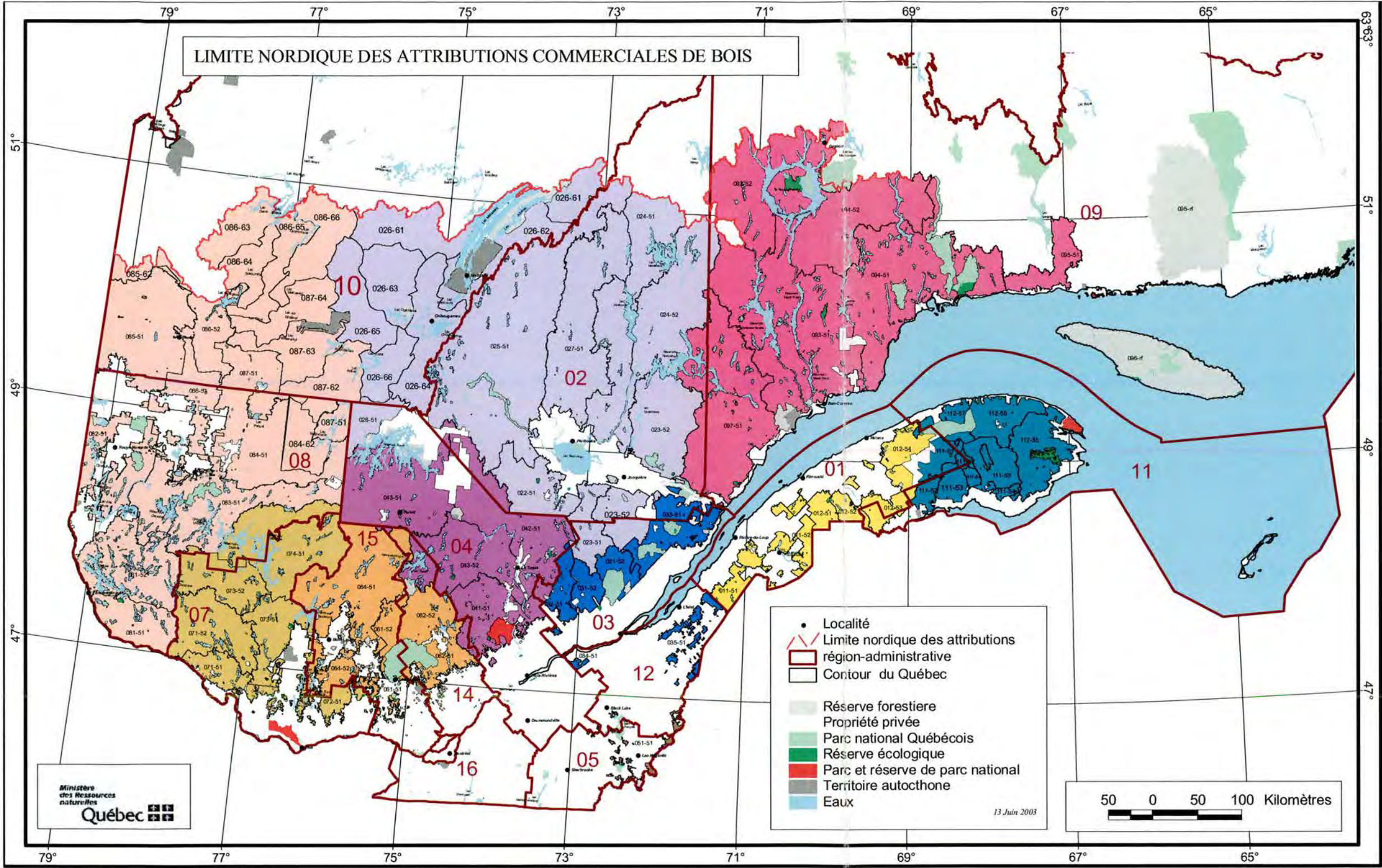


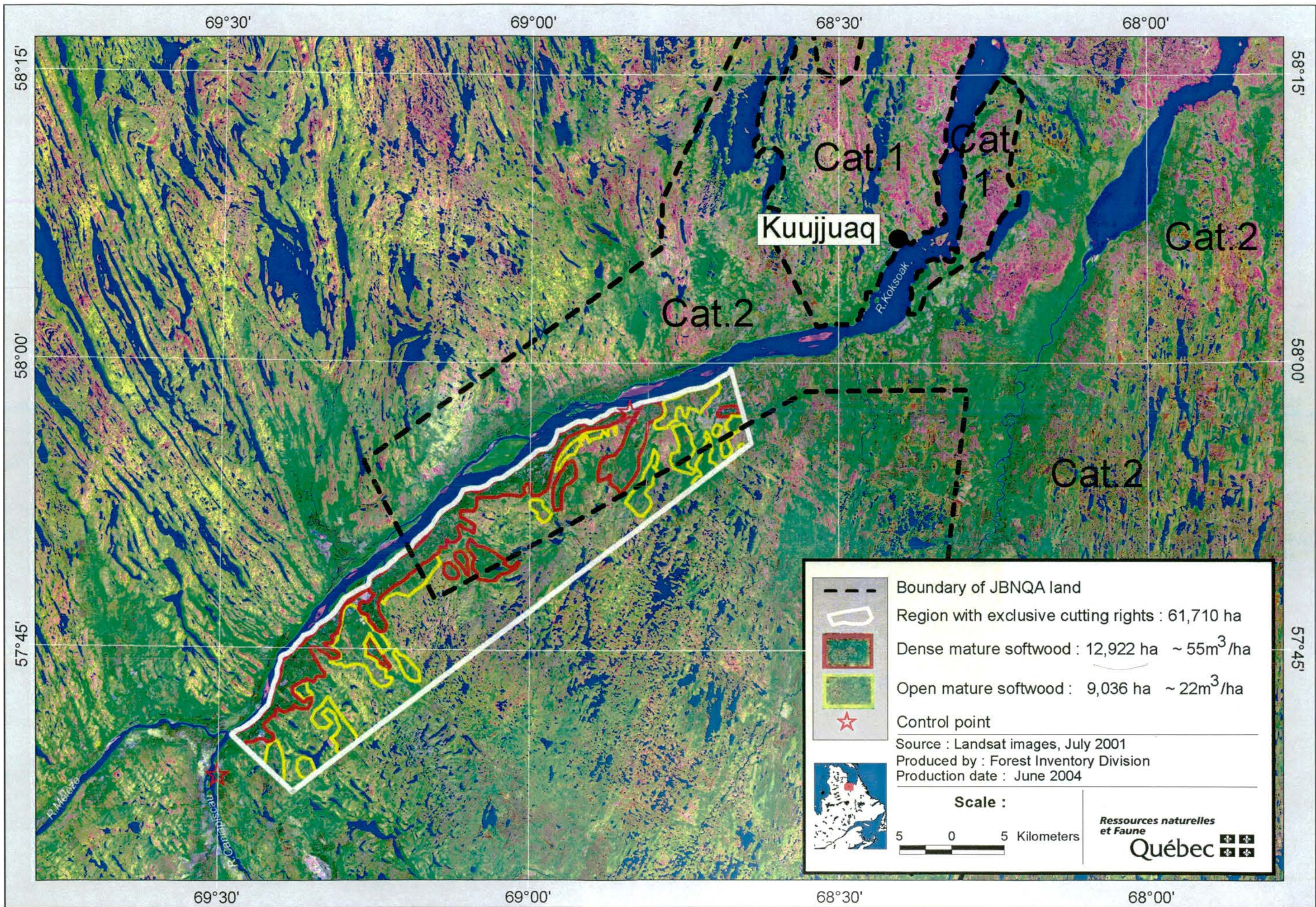
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Réalisation : Direction des inventaires forestiers
 Date de production : juin 2005

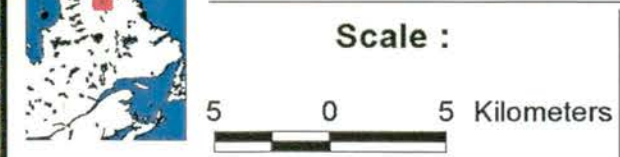
LIMITE NORDIQUE DES ATTRIBUTIONS COMMERCIALES DE BOIS



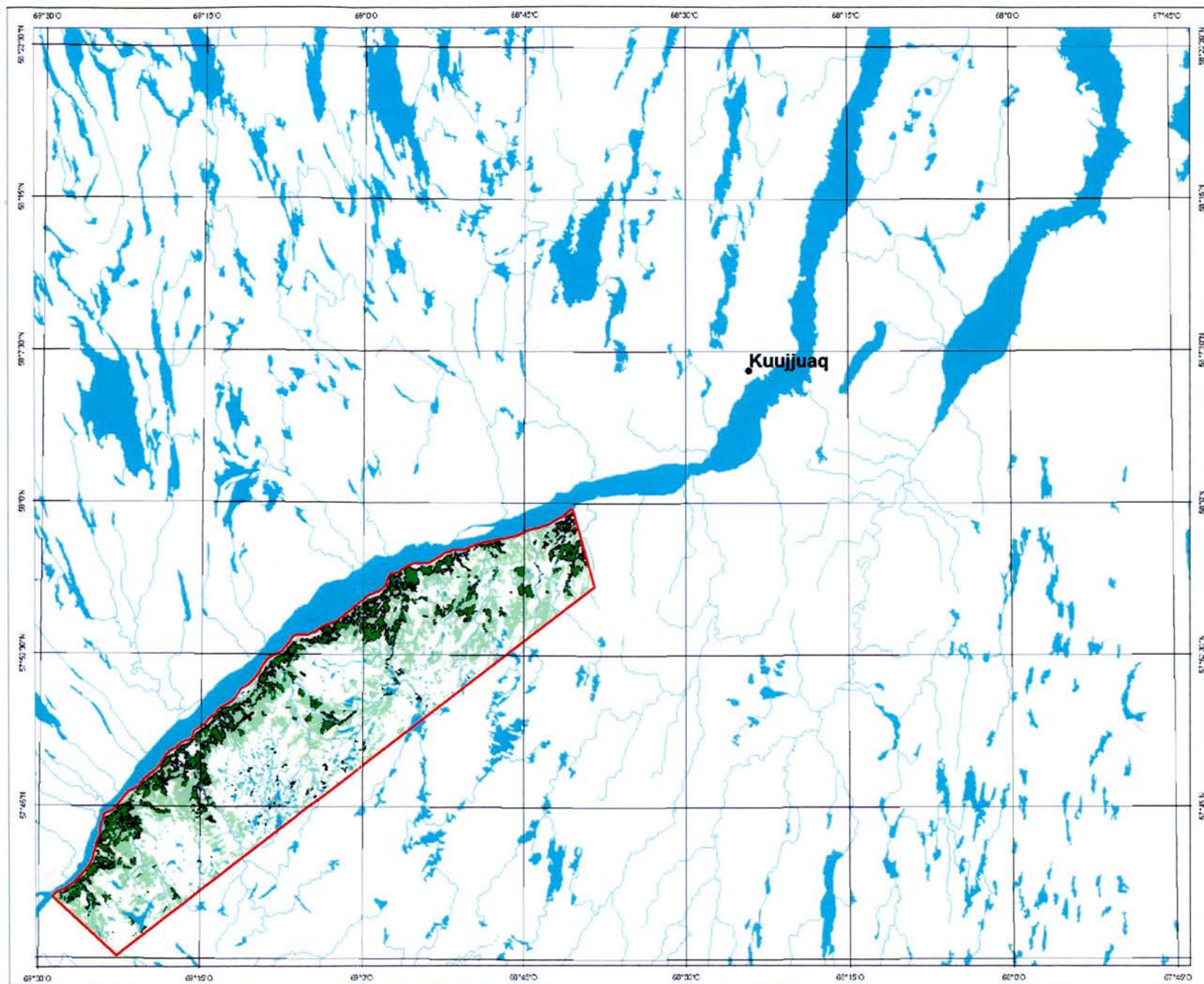


-  Boundary of JBNQA land
-  Region with exclusive cutting rights : 61,710 ha
-  Dense mature softwood : 12,922 ha ~ 55m³/ha
-  Open mature softwood : 9,036 ha ~ 22m³/ha
-  Control point

Source : Landsat images, July 2001
 Produced by : Forest Inventory Division
 Production date : June 2004



Ressources naturelles
 et Faune
Québec 



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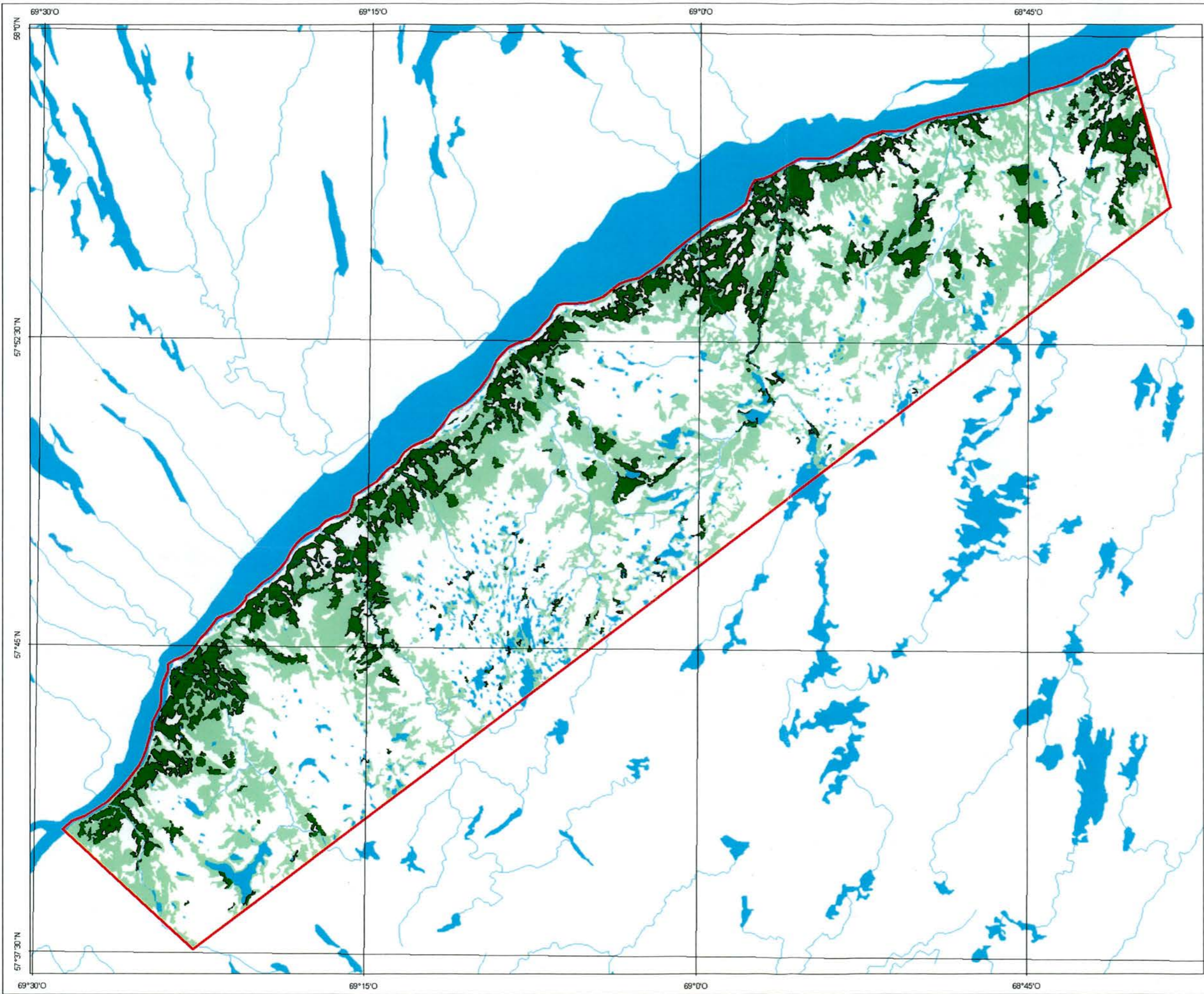
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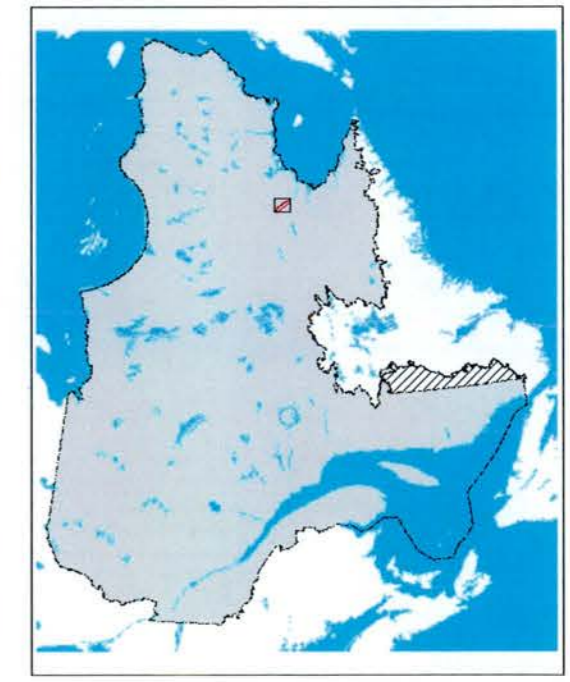
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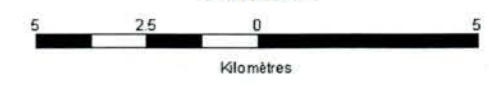
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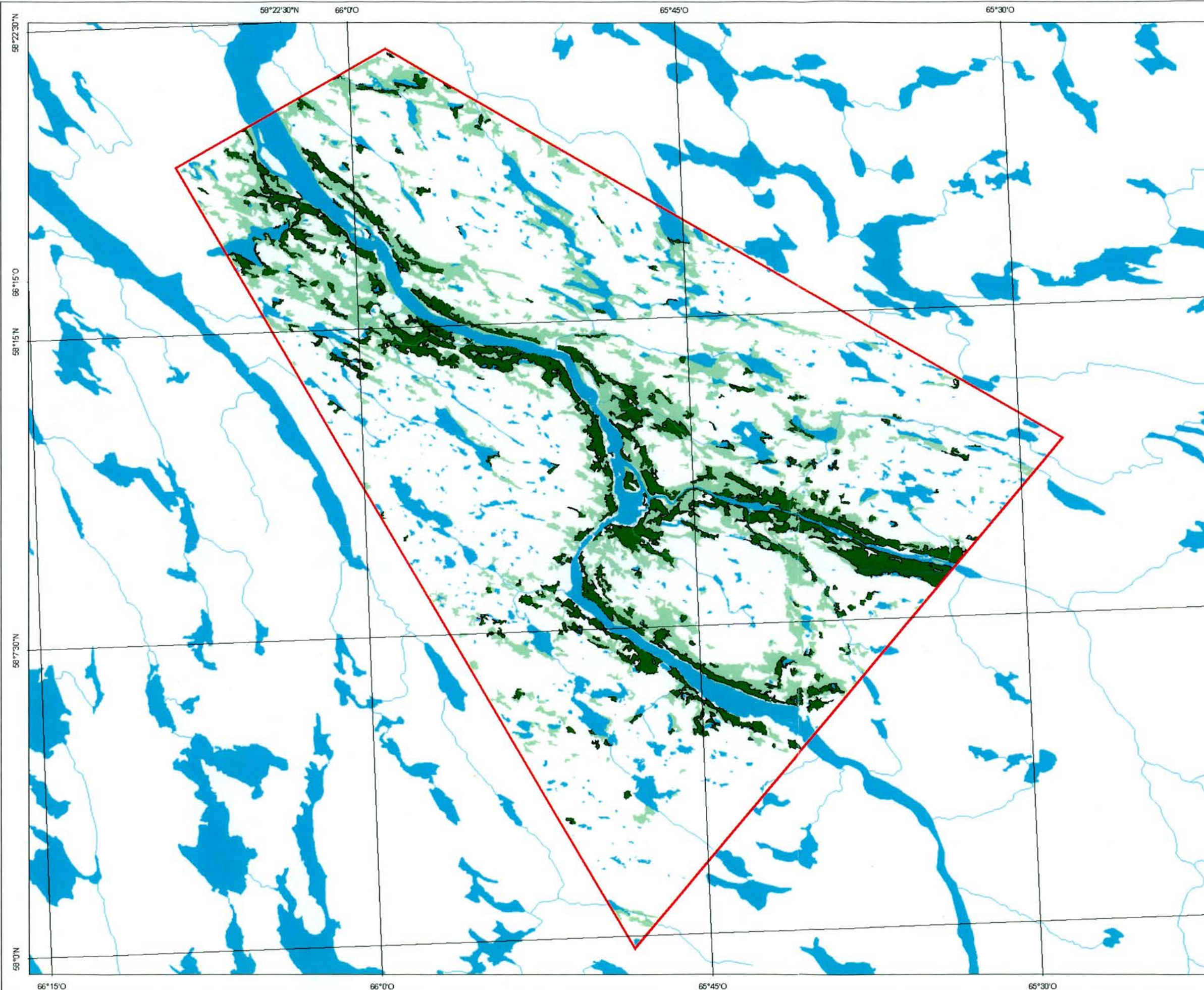
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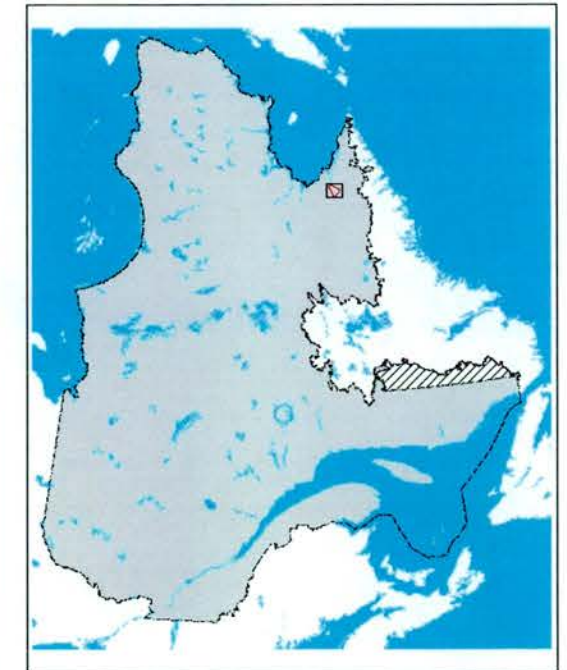
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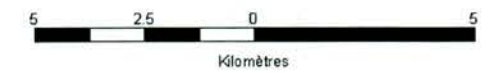
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LP^oΛ^b

Société Makivik

Makivik Corporation

PROJECT SPECIFICATIONS

Study of forest resources in Nunavik:

Tracts of land on which Inuit have exclusive timber rights under the James bay and Northern Quebec Agreement (JBNQA)

(S. 6.3.1)

1. Makivik Corporation (proponent)

The mandate of the Makivik Corporation is:

- To receive, administer, use and invest the compensation money intended for the Inuit, as provided for in the *James Bay and Northern Quebec Agreement*;
- To relieve poverty and to promote the welfare, advancement and education of the Inuit;
- **To foster, promote, protect and assist in preserving the Inuit way of life, values and traditions;**
- **To initiate, expand and develop opportunities for the Inuit to participate in the economic development of their society;**
- To exercise the functions vested in it by other acts or the Agreement;
- To develop and improve the Inuit communities and to improve their means of actions;
- **To assist in the creation, financing or developing of businesses, resources, properties and industries of the Inuit.**

2. The issue

The inhabitants of certain Nunavik communities located close to forest resources wish to explore the possibility of exploiting such resources to create employment, to use as supplemental fuel or to reduce the costs of construction lumber in the building of houses and hunting camps. However, as the issue of wood harvesting is new and particular in Nunavik, studies will be needed to ensure the longevity of the resource and the respect of the principle of sustainable development. In this regard, the report of the Coulombe Commission published in December 2004 pointed out that many Quebec regions are deficient in their knowledge of forest resources, which applies entirely to Nunavik. Indeed, the area north of the 55th parallel is dotted with forests that increasingly raise the interest of proponents. However, knowledge with respect to woody perennials is presently clearly lacking. We are trying to determine whether the region, and in particular the two tracts of land where the Inuit have lumber rights under

Section 6.3.1 of the JBNQA, could sustain logging activities. If so, what activities and how should they be conducted? Several questions must be answered prior to undertaking logging in such a fragile environment. In order to answer questions to determine whether logging is possible, it is imperative to proceed to an inventory of forest resources.

3. Description of the proposed pilot project

The project consists in logging within the two tracts of land defined in S. 6.3.1. of the JBNQA (see location in appendix 1). Logging would take place in winter with mechanical chain saws by Inuit from the communities of Kuujjuaq and Kangiqsualujjuaq who would reach the area on snowmobiles. The logs would also be transported by snowmobiles to the two above-mentioned communities, where the wood would be processed in summer. A portable sawmill would be used to process the logs. The project is to be done on a small scale and limited to only local needs.

4. Tasks description

This project specification deals with the study of the forest resources on two tracts of land located near the communities of Kuujjuaq and Kangiqsualujjuaq (see S. 6.3.1 of the JBNQA in appendix) so as to meet the demand of Inuit for small scale wood harvesting. The study should cover the following elements:

- Review of available literature, experiments conducted, impacts and possibilities of logging in northern areas;
- Development and analysis of various options to sustain logging while ensuring the regeneration and longevity of the exploited forest resource;
- With the help of people from Kuujjuaq and Kangiqsualujjuaq, carrying out of the forest inventory of the two tracts of land affected by the present specification so as to collect the data required to conduct a study. At least one person from each of the two above-mentioned communities shall be part of the field study team. They would be remunerated by the Makivik Corporation. It is estimated that fieldwork should take at most 15 days with two qualified people to conduct the work.
- Development of recommendations with respect to the quality and quantity of logs (height, diameter breast height, products), valued species and methods (type of logging, general observations, etc.) possible impacts and means of mitigating them;
- Writing of a progress report as soon as the field work is completed.

5. Carrying out of a forest inventory

The forest inventory would be carried out according to a method tested by the Direction des inventaires forestiers (DIF) of the MRNF. This method is widely used by DIF south of the 52nd parallel in public forest but will have to be adapted specifically to reflect all aspects specific to the northern environment.

5.1 Mapping of forest massifs

DIF has produced (see appendix 1) a summary map locating the wooded massifs of the two tracts of land by using recent Landsat imagery. The map may be used for the distribution of sample plots. Digital files showing the location of wooded massifs are available from DIF. Once sample plots are measured in the field and the area is better understood, the map showing wooded massifs could be reviewed prior to data compilation.

5.2 Survey on the territory

The forests located north of the 55th parallel are relatively little known. The tapering of stems is important. Since there are no recent aerial photography and the summary satellite imagery map only has two layers, an important number of sample plots must be provided for in order to characterize correctly the wood resources (quantity, dimensions, regeneration). The survey would have the following points:

Sampling intensity on each tract of land

- It is proposed to establish about 25 sample plots in each tract of land in the dense softwood layer (DSL).
- It is proposed to establish about 15 sample plots in the open softwood layer (OSL).
- Productivity is estimated at about 6 sample plots per team-day of 3 members (2 from the Firm and 1 Inuit assistant from the closest village) for an 8-hour work day in the field. Transport is not included in this estimation;
- Sample plots could be established as a cruise line of 6 over a length of 1,5 km. The sample plots will be distributed proportionally to the productive forest area. It is suggested that the survey plan be presented to the DIF for information prior to undertaking the work.

Field survey

Temporary sample plots will be established according to the 2005 DIF standard

*« norme d'inventaire forestier:
placettes échantillons temporaires » édition 2005*

Data will be collected using an electronic tablet. DIF will provide *Dendrodif*, a data collecting software. The forest mensuration data collected in each sample plot are shown in a table in appendix 2.

Compilation

Once the fieldwork is done, sample files will be transmitted to DIF, which will compile them in the SCIF system. The results will then be returned to the Firm for the preparation of the final report.

6. Requirements

- Understanding of the JBNQA, in particular of Inuit rights over the territory
- Knowledge of the components of forests in Nunavik (asset)
- Experience in conducting studies about northern forests
- Experience in carrying out forest surveys
- Good knowledge of *Dendrodif* Software
- Knowledge of the environmental and human characteristics of Northern Quebec
- Capacity to communicate with native and non-native people
- Working experience with native communities
- Mastering spoken and written French and English
- Mastering a word processing program
- Capacity for synthesizing and writing

7. Work conditions

Interested candidates must present a bid including the amount of required honorarium for the preparation of specifications, an estimate of related expenses and, if needed, solutions retained to reduce costs. The scale of the work might be modified according to the chosen bid and available budgets.

The project officer will provide the equipment required for their work and pay maintenance costs (computer, telephone, measurement tools, etc)

8. Schedule

The consultant shall undertake the study as soon as possible and table a final report at the latest in November 2005. A work schedule with deadlines for each of the following steps should be presented:

- Literature review
- Fieldwork in consultation with the Kuujjuaq and Kangiqsualujjuaq Landholding Corporations
- Presentation of recommendations and a progress report at the end of the fieldwork
- Presentation of the final report and recommendations

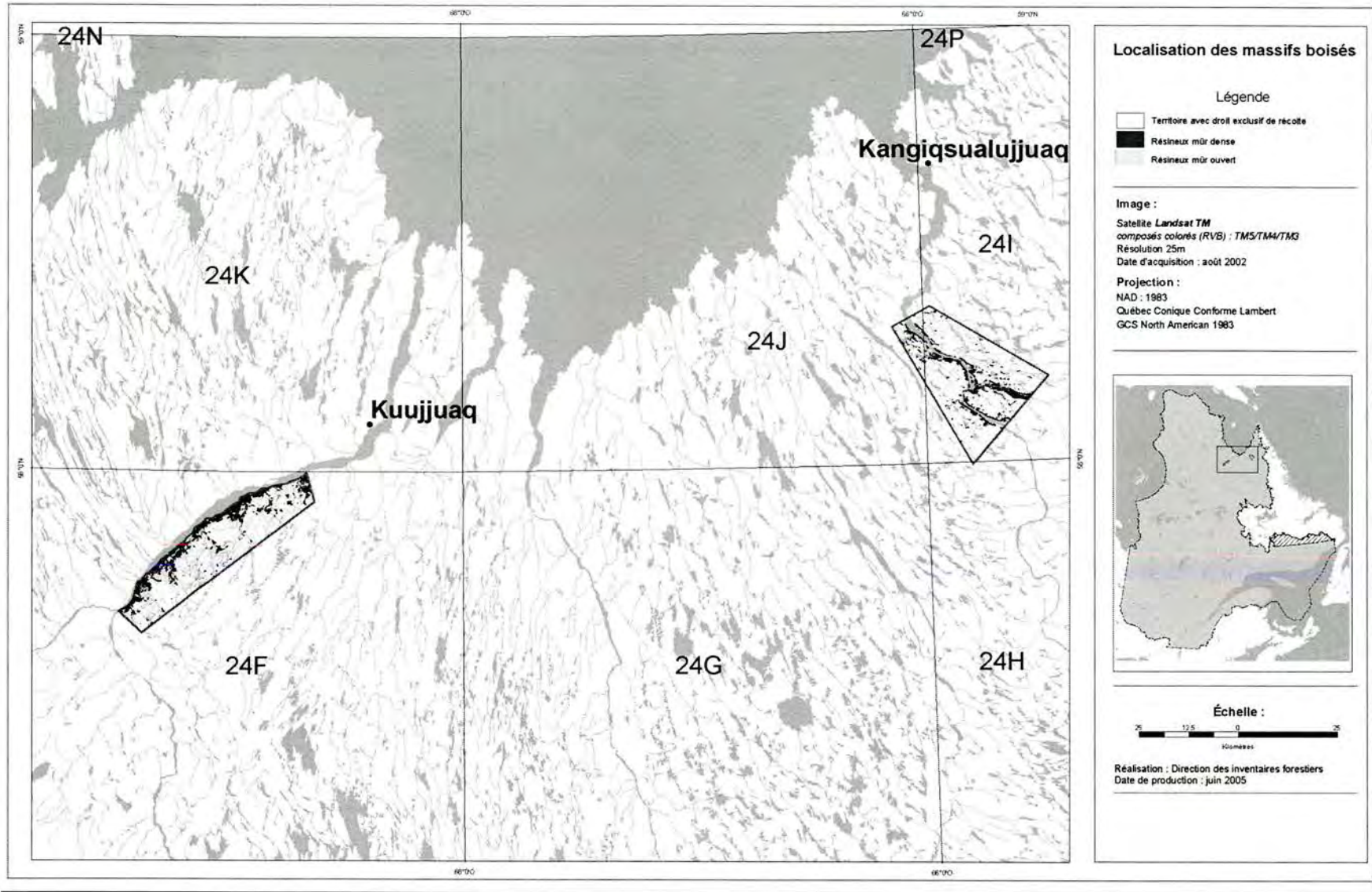
9. Study management

The consultant shall answer to Mr. Charles Dorais from Makivik Corporation and to Nathalie Girard from the Kativik Environmental Advisory Committee (KEAC), both being in charge of the file with respect to work direction. For any questions, the project officer shall refer to the above-mentioned persons at the address below.

Bids must be sent by e-mail to Charles Dorais (address below) at the latest on Friday August 19, 2005.

Makivik Corporation
P.O. Box 179, Kuujjuaq, QC. J0M 1C0
Tel: (819) 964-2925
Fax: (819) 964-2613
E-mail: c_dorais@makivik.org

Appendix 1. Location of the two tracts of land



Geographical coordinates of the study areas

Tract of land near Kuujjuaq (total area of 61 710 ha)

North-West quadrant ($68^{\circ} 40' 31$ O ; $57^{\circ} 59' 43$ N)

North-East quadrant ($68^{\circ} 38' 30$ O ; $57^{\circ} 55' 53$ N)

South-West quadrant ($69^{\circ} 28' 43$ O ; $57^{\circ} 40' 30$ N)

South-East quadrant ($69^{\circ} 22' 44$ O ; $57^{\circ} 37' 35$ N)

Tract of land near Kangiqsualujjuaq (total area of 52 856 ha)

North-West quadrant ($66^{\circ} 07' 52$ O ; $58^{\circ} 19' 04$ N)

North-East quadrant ($65^{\circ} 58' 12$ O ; $58^{\circ} 21' 44$ N)

South-West quadrant ($65^{\circ} 48' 24$ O ; $57^{\circ} 59' 46$ N)

South-East quadrant ($65^{\circ} 28' 03$ O ; $58^{\circ} 11' 45$ N)

Appendix 2.

**LIST OF FOREST MEASUREMENT VARIABLES OF TEMPORARY SAMPLE PLOTS
FOR MATURE FOREST SURVEY IN KUUJJUAQ AND KANGIQSUALUJJUAQ**

Section	Variable
1. Observed forest (terrestrial layer)	Type of canopy
	Original stress
	Medium stress
	Group of species
	Undergrowth (cup moss, moss, shrubs)
	Density - height
	Age class
	Slope class
	Terrain code
	Complement (description of the area and percentage affected)
2. Bush stake - BHD of 2, 4, 6 and 8 cm over 1/250 ha	Commercial species
	BHD (2 cm class)
	Number
3. Trees – BHD of more than 9 cm over 1/25 ha	Condition
	Commercial and non-commercial species
	BHD (2 cm class)
	Numbering of trees
	Identification of veterans
4. Study of trees	3 representative stems depending on the selection algorithm (P, Q and 30)
	Species
	Layer
	BHD (mm)
	Total height (dm)
	Total age of softwood (Survey core at 100 cm, BHD > 10 mm)
5. Soil characteristics	Surface deposit and thickness
	Drainage
6. GPS of sample plots	300 readings at the centre of the sample plots

APPENDIX 3.

Indications to facilitate the planning of costs related to fieldwork in the study area

- Estimation of transport costs
 - A return plane ticket Montreal-Kuujjuaq (direct flight on First Air): 1800\$
 - Transport by boat: 500\$ per day per boat (including a guide, the rental of the boat and gas)
 - A return plane ticket Kuujjuaq-Kangiqsualujjuaq (direct flight on Air Inuit): 500\$
 - Transport by helicopter (about 1400\$ per hour of flight, gas included) (both tracts of land are located at less than one hour of flight from Kuujjuaq where an helicopter can be rented*)
 - * For more information on helicopter services in Kuujjuaq, contact: *Nunavik Rotors Inc.* (819) 964-2271

- Access to the two tracts of land

According to Sammy Tukkiapik, regional agent for the KRG Hunting Support Program, it would be preferable to do the fieldwork as soon as possible (in August) if transport between the communities and study areas is to be done by boat. This would avoid the change of season period which brings windy and cold weather that involve dangerously high waves. It is almost impossible to travel on the George River and on the Koksoak River as of the end of September. Nevertheless, it would be possible to access the area up until Mid-October if a helicopter is used for transport.

- The two Inuit assistants that must be part of the field team are being paid by the Makivik Corporation.

- Accommodation
 - In Kuujjuaq
 - Hôtel Kuujjuaq Inn*, (819) 964-2903, 195\$ per night.
 - Hôtel des coopératives du Nouveau-Québec*, 1-866-336-2667, 195\$ per night
 - In Kangiqsualujjuaq
 - Hôtel des coopératives du Nouveau-Québec*, 1-866-336-2667, 195\$ per night

Outfitting or private camps maybe available close to the study area.

INTRODUCTION

La Société Makivik agit à titre de promoteur pour la réalisation d'une étude portant sur la ressource forestière disponible à l'intérieur de deux parcelles de territoires situées à proximité des villages de Kuujjuaq et Kangiqsualujjuaq au Nunavik. Ce projet s'inscrit dans le contexte d'une volonté croissante des populations des villages nordiques du Nunavik d'utiliser la matière ligneuse disponible dans certains massifs forestiers à des fins de combustible d'appoint ou comme matériel pour la construction de camps de chasse et de maisons. Les communautés de Kuujjuaq et Kangiqsualujjuaq possèdent des droits de récolte de bois accordés en vertu de la Convention de la Baie James et du Nord Québécois (art. 6.3.3) dans deux territoires situés à proximité des villages et accessibles par voie fluviale. Ces territoires sont ciblés pour initier un projet de récolte de bois à petite échelle par la population inuit pour des usages domestiques.

Comme les secteurs visés sont situés au nord de la limite nordique des attributions commerciales de bois, ils ne sont pas couverts par l'inventaire d'aménagement du ministère des Ressources naturelles et de la Faune du Québec. Par conséquent, les connaissances actuelles en matière de ressources ligneuses pour les territoires concernées sont insuffisantes voire inexistantes. Un inventaire des ressources forestières est donc essentiel pour obtenir les informations de base nécessaires à l'évaluation du potentiel forestier et à la planification des activités de récolte. Le présent projet vise donc à documenter le potentiel forestier des deux territoires visés et à identifier des méthodes de récolte de la matière ligneuse permettant d'assurer la pérennité de la forêt. Plus spécifiquement, **les activités suivantes doivent être conduites** :

- Review literature covering wood harvesting in Northern areas
 - put forth & analyse various harvesting methods while ensuring forest longevity
 - carry out a forest inventory of 2 areas
 - recommend wood volume, quality of wood, tree species
 - write a report of the "stages/steps"
- réaliser une revue de littérature couvrant les coupes de bois dans les régions nordiques;
 - élaborer et analyser différentes options d'aménagement permettant de soutenir une activité de récolte tout en assurant la pérennité de la forêt;
 - réaliser un inventaire forestier des deux territoires concernés;
 - élaborer des recommandations concernant les volumes de bois, la qualité des bois, les essences forestières;
 - rédiger un rapport d'étape.

Ce projet cadre exactement avec l'expertise développée par Del Degan, Massé et Associés inc. depuis plusieurs années. En effet, notre firme a réalisé plusieurs dizaines de projets d'inventaire écologique et forestier impliquant la collecte de données au terrain en plus de réaliser plusieurs projets similaires pour le compte de communautés autochtones au Québec. La présente offre démontre la capacité de Del Degan, Massé et Associés et de son personnel à réaliser le travail requis par la société Makivik.

C'est avec un grand intérêt que nous soumettons cette offre à votre attention.

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Comité Consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee

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From/De: Nancy Dea, Executuve Secretary
Fax/Télécopieur: (819)964-0694

Comments/Commentaires:

Thanks!!

HAPPY HALLOWEEN!

Secrétariat Secrtary
Comité consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee
C. P. P. box 911, Kuujuaq (Quebec) J0M 1G0

TÉL: (819) 964-2661, poste extension 2297
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Abbreviations:

HS: Host send
HR: Host receive
WS: Waiting send

PL: Polled local
PR: Polled remote
MS: Mailbox save

MP: Mailbox print
CP: Completed
FA: Fail

TU: Terminated by user
TS: Terminated by system
RP: Report

G3: Group 3
EC: Error Correct

My comments

THE FOREST RESOURCE IN
NUNAVIK
KUUJJUAQ AND KANGIQSUALUJJUAQ
SECTORS

Presented to the:
MAKIVIK CORPORATION

Prepared by:
DEL DEGAN, MASSÉ ET ASSOCIÉS INC.
825, Raoul-Jobin
Québec City (Québec) G1N 1S6

March 2006

TABLE OF CONTENTS

INTRODUCTION	1
1. GENERAL DESCRIPTION OF THE STUDY AREA.....	2
1.1 GEOGRAPHY	2
1.1.1 LOCATION	2
1.1.2 PHYSICAL ENVIRONMENT.....	2
1.1.2 LANDHOLDING REGIME	6
1.2 THE SOCIO-ECONOMIC CONTEXT.....	6
1.2.1 COMMUNITY HISTORY.....	6
1.2.2 DEMOGRAPHY	7
1.2.3 SOCIO-ECONOMICS	8
1.2.4 RESOURCE MANAGEMENT	10
1.3 REGULATORY AND LEGISLATIVE CONTEXT	10
1.3.1 AUTHORIZATIONS AND OTHER CONDITIONS	11
2. DESCRIPTION OF THE FOREST ENVIRONMENT.....	14
2.1 FOREST INVENTORY.....	14
2.1.1 FOREST MAPS	14
2.1.2 FIELD SAMPLING	15
2.1.3 COMPILATION OF FOREST INVENTORY DATA AND STATISTICS.....	18
2.1.4 BACKGROUND	20
2.1.5 FOREST REGENERATION.....	21
3. FOREST MANAGEMENT POTENTIAL	22
3.1.1 ESTABLISHING THE ALLOWABLE ANNUAL CUT.....	22
3.1.2 LUMBER POTENTIAL	26
3.1.3 OPERATIONAL CONSTRAINTS	27
3.1.4 SYLVICULTURAL TREATMENTS	30
4. RECOMMENDATIONS	32
CONCLUSION.....	33
REFERENCES	34

INTRODUCTION

The Makivik Corporation is the principal for this study of the forest resource in two parcels of land located near the villages of Kuujjuaq and Kangiqsualujjuaq in Nunavik. The study follows on from the desire of Nunavik's Northern communities to use the wood available in certain forest areas as supplementary fuel or for the construction of hunting camps and homes. The communities of Kuujjuaq and Kangiqsualujjuaq hold wood harvesting rights under the James Bay and Northern Québec Agreement (section 6.3.3) in two areas located near the villages and accessible by river. These areas have been targeted for small-scale harvesting by the Inuit population for domestic use.

Section 6.3.1 - Timber Rights

Because the sectors in question are located north of the northern boundary for commercial timber allocations, they are not covered by the management inventory carried out by Québec's Ministère des Ressources naturelles et de la Faune (MRNF). As a result, there is little or no information available on the timber resource in those sectors. During an exploratory visit carried out in March 2004, forestry professionals from the MRNF's Forest Inventory Branch (FIB) identified a number of stands with commercially-sized trees. However, the information currently available is insufficient to determine the forestry potential of the sectors in question.

Accordingly, a forest resource inventory was carried out with a view to obtaining the basic information required to assess the forestry potential of the areas in question and plan future harvesting activities. This document reports the results of the inventories in the target sectors and identifies timber harvesting methods that would help ensure the sustainability of the forest.

describes

- include relative examples - impacts
- methods
- uses

According to "Davis" → wood volume
quality of wood
tree species

audience of people who →
already know most of this
information.

1. GENERAL DESCRIPTION OF THE AREA UNDER STUDY

The area under study comprises two parcels of forest land granted to the Inuit under the James Bay and Northern Québec Agreement. This chapter describes their principal geographical, biophysical and socio-economic components.

1.1 GEOGRAPHY

1.1.1 LOCATION

ok.
The area under study comprises two parcels of land located in Nunavik, one near the village of Kuujjuaq and the other near the village of Kangiqsualujjuaq (see Figure 1). The Kuujjuaq parcel covers a total area of 62,241 hectares lying between latitudes 57° 59' 43" N. and 57° 37' 35" N., and longitudes 68° 40' 31" W. and 69° 22' 44" W. It is situated approximately 20 km south-west of Kuujjuaq village and is bordered to the north by the Koksoak River.

The Kangiqsualujjuaq parcel covers a total area of 73,240 hectares lying between latitudes 58° 19' 04" N. and 58° 11' 45" N., and longitudes 66° 07' 52" W. and 65° 28' 03" W. It is situated approximately 35 km south-west of Kangiqsualujjuaq village. The George River flows through the area from north to south.

1.1.2 PHYSICAL ENVIRONMENT

The two sectors are located in two different natural provinces, namely province K (Ungava Bay Basin) in the case of the Kuujjuaq parcel, and province L (Torngat Mountains) in the case of the Kangiqsualujjuaq parcel¹. Province K covers a total area of 103,000 km², and province L, a total area of 42,000 km². The following paragraphs describe the main variables of each province, including their geology, relief, surface deposits, hydrography and climate

¹ Source: *Portrait synthèse des données sur les aires protégées au Québec*.
Ministère du Développement durable, Environnement et Parcs, 1999.

FIGURE 1
LOCATION

1.1.2.1 GEOLOGY

The geological basement of the Ungava Bay Basin sector comprises volcanic and sedimentary rock to the west, and tonalites and gneiss to the east. Apart from the mountaintops, which are dominated by rock outcrops, most of the area is covered by thick moraine deposits and glaciofluvial sands and gravels

The geological basement of the Torngat Mountain sector is composed of granitic and gneissic rock. Because of the sector's relief, rock outcrops are dominant virtually everywhere except for the valleys, which contain some glacial and glaciofluvial deposits

1.1.2.2 RELIEF

The natural province of the Ungava Bay Basin comprises a large depression sloping towards the Bay and producing two separate types of relief. In the western portion of the sector, known as the Quebec Labrador Trough, there are several long, narrow mounds and small hills separated by valleys (some of which are encased). The sector also has a fairly flat plain (difference of elevation generally below 30 m) with a few small hills in the extreme south. The region adjacent to Ungava Bay, which includes the Kuujjuaq sector, is situated at sea level. This sector, too, boasts several long versants sloping gently towards the Koksoak River, with a large rocky plateau and some small hills

In the second natural province, the western and southern sectors resemble an eroded plateau on two separate levels. The first level, located near Ungava Bay, is composed of a series of long, narrow hills and valleys with elevation differences of up to 200 m in certain places. Altitude varies from sea level in the coastal sector to approximately 400 m in the inland sector. The second level presents a significant difference of elevation (between 400 m and 700 m) due to the presence of the Torngat Mountains on either side of the Québec-Labrador border. In the Kangiqsualujjuaq sector, the George River Valley is hemmed in by steep hills. The higher portion of the area is composed of large rocky plateaus, while the remaining sector is hilly and criss-crossed by deep valleys.

1.1.2.3 SURFACE DEPOSITS

The Quebec Labrador Trough and the hills located in the extreme south of the Ungava Bay Basin sector are composed of alternating thin glacial and rocky deposits. To the east of the Trough, the undulating plain is characterized thick moraine deposits that often contain forms of drumlins. The plain is also characterized by glaciofluvial deposits (eskers and outwash plains). Along Ungava Bay, at an altitude of less than 150 m, the depressions and valley floors are filled with marine

→ Is this section necessary?
→ OR talk about how
this information is of
consequence to the forested
areas & may impact harvest

11

deposits, with sandy littoral deposits on the rocky flanks. In the Kuujjuaq sector, the long slopes are composed of tills interspersed with glaciofluvial deposits, particularly along the Koksoak River. A large portion of the area is covered by organic deposits, while the mountaintops and large plateaus are composed of rock.

The Torngat Mountain natural province is characterized by its broad valleys, with glacial deposits and colluviums at the base of the slopes. Glaciofluvial or fluvial sands and gravels are found in the valley floors. Along the George River, the Kangiqsualujjuaq sector is dominated by very thick glaciofluvial deposits, while the steep slopes, mountaintops and plateaux are composed mostly of rock, with some till.

1.1.2.4 HYDROGRAPHY

The Ungava Bay natural province is characterized by a well-developed hydrographic network. It boasts numerous rivers, some larger than others, including the Caniapiscou, aux Mélézes, Whale, George (a large portion) and Koksoak. Only by the Koksoak River and some of its smaller tributaries flow through the parcel of land situated near Kuujjuaq.

The hydrographic network in the Torngat Mountain natural province is less developed. Its main watercourses are the George and Ford Rivers. Only the George River flows through the Kangiqsualujjuaq sector, from north to south.

1.1.2.5 CLIMATE

The Kuujjuaq sector (Ungava Bay Basin) has a subarctic or taiga climate². The average annual temperature is approximately -5 °C and the frost-free season lasts approximately 60 days. Annual precipitation totals roughly 475 mm, and nearly 40% falls as snow. In this type of climate, the permafrost extends to an estimated depth of at least 100 cm. There are approximately 700 growing degree days, and the growth season lasts for an average of 100 days per year.

The Kangiqsualujjuaq sector (Torngat Mountains) has a tundra climate². The average annual temperature is approximately -7 °C, while the frost-free season lasts approximately 40 days. The region receives roughly 500 mm of precipitation annually, approximately 40% of which falls as snow. In this type of climate, the permafrost extends to an estimated depth of 120 cm. There are approximately 600 growing degree days, and the growing season lasts for an average of 80 days per year.

² Source: *Le Nord du Québec : profil régional*. Gouvernement du Québec, 1984.

ok

1.1.2 LANDHOLDING REGIME

Québec's current borders were established by the 1912 Québec Boundaries Extension Act, which transferred a vast Northern region, including the sectors under study, to the province.

In 1975, the James Bay and Northern Québec Agreement (JBNQA) signed by the Inuit, the Cree and the Québec and Canadian governments, introduced a three-part landholding system composed of Category I, II and III lands. By definition, Category I lands are owned outright by the Aboriginal people for their own exclusive use. In the case of Category II lands, the Aboriginal people have exclusive hunting, fishing and trapping rights but no specific occupation rights. They have no exclusive privileges or rights at all on Category III lands.

Under the JBNQA, the areas under study in Kuujjuaq and Kangiqsualujjuaq are both classified as Category I lands. The JBNQA contains a number of provisions concerning forestry resources, and section 1.3 of this report contains a detailed examination of the rules applicable to forest management activities in these sectors.

1.2 THE SOCIO-ECONOMIC CONTEXT

1.2.1 COMMUNITY HISTORY

1.2.1.1 KUUJJUAQ

The municipality of Kuujjuaq, which translates as *big river*, was known until recently as Fort-Chimo. The Hudson's Bay Company (HBC) first established a fur trading post approximately five kilometres downstream of the village in the 1830s³, marking the beginning of the fur trade in Nunavik. The trading post was closed in 1842 and reopened in 1866. At the time, three Aboriginal nations, the Montagnais (or Innu), the Naskapi and the Inuit, came to trade at the HBC post.

In 1942, the American armed forces built a military base known as Crystal 1 on the west bank of the Koksoak River, where the village of Kuujjuaq currently stands⁴. The American army occupied the base from 1942 to 1945. Its presence boosted the community's development, in particular by creating infrastructures. The United States handed the base over to the Canadian government at the end of the Second World War. A Catholic mission was built in 1948, followed by a nursing station, a school and a weather station. In 1961, the community received a Surêté du Québec station, an administrative office, a hospital,

³ Source : Website www.nvkuujjuaq.ca

⁴ Source : *Le Nord du Québec : profil régional*. Gouvernement du Québec, 1984.

Not necessary
history, not history
No reference.

a French language school and a telephone service. Other facilities were constructed in the late 1970s, including a residence for non-Aboriginal Québec government personnel, teachers' houses, thirty or so homes for families and staff of the Kativik Regional Government (KRG), as well as a community centre, garage, office premises, a restaurant and a hotel. Since then, other hotels and restaurants have opened, along with stores selling a variety of objects including artwork and crafts, and a bank. Kuujjuaq is considered to be Nunavik's largest community, and now has its own airport with two runways that serves as the main transit point between the Inuit communities and southern Québec (Montreal).

1.2.1.2 KANGIQSUALUJJUAQ

Kangiqsualujjuaq is Nunavik's most easterly village, and is located approximately 160 kilometres north-east of Kuujjuaq. Its name means *large bay*. Like Kuujjuaq, it was originally a fur trading post during the periods 1838-1842, 1876-1915 and 1923-1932⁵. The trading post, operated by the HBC, was actually located south of the present village. Construction of the village itself began in 1962, and a number of infrastructures were added in 1963, including a school, a cooperative store and several government buildings. The municipality of Kangiqsualujjuaq was legally constituted in 1980.

1.2.2 DEMOGRAPHY⁶

Generally speaking, the Nunavik population is fairly young. Approximately 60% of the total population (double the rate for southern Québec) is under 30 years of age. The natural population growth rate among the Inuit is between three and four times higher than the average for Québec as a whole. The life expectancy of the Inuit population has changed significantly over the last half-century, from 48 years in 1950 to 64 years today.

Inuttitut is the mother tongue of the region's Aboriginal population, and English continues to be the second language, although the use of French appears to be spreading. Most of the Inuit population practises the Anglican religion.

The following sections examine the demographic profiles of the two communities.

⁵ Source: Website: www.nvkuujjuaq.ca

⁶ Source: Website: www12.statcan.ca

1.2.2.1 KUUJJUAQ

In 2001, the village of Kuuujuaq had a population of approximately 1,920 people, including 1,560 residents and 360 non-residents⁶. The resident population was evenly divided between men and women. Approximately 60% of Aboriginal residents were between 0 and 24 years of age, 37% were between 25 and 64 years of age, and 3% were aged 65 or over. The average age was 19 years.

In terms of education, the data show that 55% of the population aged 25 or over had not completed high school, while 5% had a high school diploma, 38% had completed postsecondary education or had obtained a qualification from a vocational institution or college (CEGEP), and 2% had a university degree.

1.2.2.2 KANGIQSUALUJJUAQ

In 2001, the village of Kangiqsualujjuaq had 705 inhabitants, including 670 residents and 35 non-residents⁷. The resident population was evenly divided between men and women. In terms of age, the figures are virtually identical to those for Kuuujuaq, with 59% of the population between 0 and 24 years of age, 37% between 25 and 64 years of age, and 3% aged 65 or over. The average age was 18.

In terms of education, 65% of the population had not completed high school, 4% had obtained a high school diploma, and 31% had completed postsecondary education or had obtained a qualification from a vocational institution or college (CEGEP). None of the residents had graduated from university.

1.2.3 SOCIO-ECONOMICS

The socio-economic development of Nunavik in general, and the communities of Kuuujuaq and Kangiqsualujjuaq in particular, began with the fur trade. The trading posts were key factors in converting the Inuit economy into one based on with the English and French. The cooperative movement was created in the 1950s, breathing new life into Nunavik's economic development. During the same period, the Inuit lifestyle changed significantly from semi-nomadic to sedentary, due mainly to the introduction of government residential construction programs and the creation of regional institutions. The James Bay and Northern Québec Agreement, signed in 1975, also boosted the socio-economic development of the local communities, among other things by creating a number of Inuit-managed institutions.

⁷ Source: Website: www12.statcan.ca

no relevance

*Instead of history
point out what the
benefits of harvesting
local timber would be*

Hunting and fishing activities are still practiced by many residents of the two municipalities.

1.2.3.1 KUUJJUAQ

Kuuujuaq is Nunavik's largest community and a focal point of economic activity in Northern Québec for the last forty years. As a result, it has become a growth centre for infrastructures, management services and trade. Kuuujuaq's economy relies on a network of facilities and commodities similar to those found in many of Québec's major cities – a modern, 500-seat convention centre, two three-star hotels, two restaurants, a branch of the Canadian Imperial Bank of Commerce, the Ungava Tulattavik health centre and numerous specialist stores and boutiques. Two airlines provide air transportation to Kuuujuaq, namely First Air, which offers North-South freight and passenger services, and Air Inuit, which serves the Northern villages.

When the James Bay and Northern Québec Agreement was signed in 1975, Kuuujuaq was named as Nunavik's administrative centre. Because of its new status, it became home to the region's newly-created agencies including the Makivik Corporation, the Kativik Regional Government, the Kativik Regional Development Board (known as Katutjiniq), the Nunavik Regional Health and Social Services Board and the Nunavik Research Centre.

Hunting and fishing are Kuuujuaq's principal tourist attractions. A number of outfitters have opened in the region to take advantage of the considerable fishing potential. Visitors are able to fish for Atlantic salmon, lake trout and Arctic char on the Koksoak River, and are able to hunt caribou. The majestic landscapes and wide-open spaces of the Great North also attract nature and outdoor enthusiasts, forming a new client base for the outfitters. Local firms now offer boat trips in the summer and sled trips in the winter.

1.2.3.2 KANGIQSUALUJJUAQ

Kangiqsualujjuaq's economy is dependent mainly on its cooperative store, government services and hunting and fishing activities. The cooperative – the first of its kind to be operated in Northern Québec – was created in 1959, and the store was built in 1963. It originally sold Arctic char, but other services have since been added, including retail sales (a general store), crafts, engravings, furs and leisure activities (a billiard hall and other facilities).

The government buildings offer health, educational and commercial services.

Hunting and fishing activities are of great economic importance to the local population. The Kangiqsualujjuaq sector is home to one of the largest caribou breeding grounds in the world, used by hundreds of thousands of animals. As far as fishing is concerned, the George River, along with the region's other rivers, abound with species such as the Arctic char, Atlantic salmon and trout (lake trout and brook trout). The region's other tourist attractions, including the Torngat Mountains, the Koroc River, the Hélène Falls and the Abloviak Fjord, attract nature lovers (hikers, canoers and kayakers). A new park is currently being developed to protect the Korok River and the Torngat Mountains.

1.2.4 RESOURCE MANAGEMENT

OK
The James Bay and Northern Québec Agreement (JBNQA), signed in 1975, led to the creation of numerous Inuit-managed institutions including the Kativik Regional Government (KRG), created in 1978. The KRG is responsible for various aspects of public administration, including economic development, transportation, policing, telecommunications and wildlife protection. The Makivik Corporation was also created in 1978, to protect the rights and interests of the Inuit people under the JBNQA. It is also responsible for collecting and managing compensation paid under the JBNQA.

Commercial, personal and community use of forest resources on Category I lands is overseen by the local landholding corporation. Kuujuuaq and Kangiqsualujjuaq have their own landholding corporations, Nayumivik and Qiniqtiq respectively. Forest resources can be harvested either under the corporation's supervision or by people acting with the corporation's consent⁸.

1.3 REGULATORY AND LEGISLATIVE CONTEXT

OK
The exclusive timber harvesting rights granted by section 6.3.1 of the JBNQA on the two parcels of land under study must be exercised within the prevailing regulatory and legislative context. The rights permit the harvesting of wood for personal and community use, and must be exercised in compliance with Québec's *Forest Act*. Among other things, a wood harvesting permit must be obtained from Québec's Minister of Natural Resources and Wildlife.

The remainder of this section examines the legislation and regulations applicable to logging activities in the areas in question, and establishes their scope with regard to the project under consideration.

⁸ Source: Éditeur officiel du Québec. *Act respecting the land regime in the James Bay and New Québec territories.*

1.3.1 AUTHORIZATIONS AND OTHER CONDITIONS

ok
In its Order-in-Council 734-2004, dated August 18, 2004, the Québec government, via the MRNF, introduced a program to issue annual forest management permits authorizing the harvesting of wood in Crown forest reserves located in the regional county municipalities of Minganie and Caniapiscau, the Basse-Côte-Nord region and north of the northern boundary established by the Minister. The program is available exclusively to small sawmills that do not have other supply sources on public land, and whose annual consumption is below 2,000 m³ of wood. It enables the needs of local communities to be met within the permitted harvesting range (the region's allowable annual cut) while protecting the sustainable development of the forest.

An annual forest management permit may be issued to a small wood processing mill on the following conditions:

- The volume requested must not exceed the allowable annual cut for the supply sector in question.
- The application must be sent in writing to the regional MRNF office, stipulating:
 - The year in which the wood will be harvested;
 - The volume of roundwood required for the mill's operations, up to 2,000 m³ per year;
 - The location of logging activities.
- The application must be supported by evidence showing that the applicant owns a mill that qualifies for the program.

In the case of the two areas under study, applications must be sent to the MRNF's Regional Office (Abitibi-Témiscamingue) by the designated parties (the land corporation) in each community.

The permit, once ratified by the Minister, is valid for up to 12 months, ending no later than March 31 following the date on which it is issued.

The program provides that permit holders must satisfy the following conditions:

- They must carry out the forest management activities identified in the permit, in compliance with the forest management standards (Regulation respecting standards of forest management for forests in the domain of the State – RSFM) and other conditions stipulated in the permit, in order to protect the forest environment and ensure its sustainable development.

- They must pay the logging dues prescribed by the Minister (section 106 of the *Forest Act*). The dues are payable in money, in silvicultural treatments or by the carrying out of other forest protection or development activities. However, given the situation of the sectors under study, along with the existing rights and the landholding system, it would appear that the Minister has the power to amend this particular condition⁹.
- They must scale the wood harvested, in accordance with the instructions contained in the permit. Again, the Minister may amend this condition⁹.
- In the three months following expiry of the permit, the holder must provide the Minister with a map to a scale of 1:20,000, showing the locations of sites on which logging and other forest management activities have been carried out, along with scaling details in accordance with the conditions set out in the permit.

In addition, because some small mills do not necessarily operate continuously, every year, the permit holder is not obliged to produce the plans and reports required by the other types of agreements and contracts applicable to the public forests (general forest management plan, five-year forest management plan, annual forest management plan and report).

It is important to emphasize that the program is designed exclusively for processing mills with an annual authorized consumption of 2,000 m³ or less. For a mill that processes more than 2,000 m³ of wood in a given year, the conditions for obtaining supplies from public forests are set out in one of several other types of agreements stipulated in the *Forest Act*. In the Kuuujuaq and Kangiqsualujjuaq sectors, the agreement that permits the harvesting of volumes in excess of 2,000 m³ is the forest management contract (FMC). Under the *Forest Act*, a forest management contract may be issued for resources in a forest reserve – in other words, an area of public land not covered by a timber supply and forest management agreement (TSFMA) or a forest management agreement (FMA). This particular definition applies to the two sectors under study (Kuuujuaq and Kangiqsualujjuaq). The requirements of a forest management contract are similar to those of a TSFMA or FMA; holders must produce: general and detailed management plans covering different timeframes, namely a general forest management plan (25 years), a five-year forest management plan (five years) and annual forest management plans and reports. Holders must also carry out the management activities stipulated in the contract, monitor the work done

⁹ Personal conversation with Mr. Gilles Lavoie of the MRNF

and present the results of its monitoring activities in accordance with the MRNF's instructions.

2. DESCRIPTION OF THE FOREST ENVIRONMENT

This chapter presents a profile of the forests in the two areas under study.

2.1 FOREST INVENTORY

The areas under study are located north of the northern boundary for commercial wood allocations. They are therefore not covered by the forest inventory program of the Ministère des Ressources naturelles et de la Faune du Québec (MRNF), and as a result virtually no information is available on the forest resource in the two areas. A forest inventory was therefore carried out with a view to estimating available volumes, stand growth and regeneration potential, tree quality and other factors.

2.1.1 FOREST MAPS

The areas in question have not been mapped from the air, and it was therefore necessary to use remote sensing and image classification techniques to produce a map of forest stands. The classification was performed by personnel from the MRNF's Forest Inventory Branch (FIB), on two moderate-resolution Landsat 7 satellite images. Table 1 shows the characteristics of the images.

TABLE 1
CHARACTERISTICS OF THE IMAGES

SECTOR	SENSOR	TRAJECTORY	RANGE	ACQUISITION DATE	RESOLUTION
Kuujuaq	Landsat ETM	15	20	July 17, 2001	25 m
Kangiqsualujuaq	Landsat ETM	13	19	August 7, 2002	25 m

The classification was performed in two parts. First, a preliminary classification was produced to identify the forest masses in other areas and to produce a preliminary map that was then used to plan the survey. Two classes were used for this purpose, namely dense softwood stands and open softwood stands. The spectral bands used for the classification were ETM3, ETM4 and ETM5.

Once the fieldwork was complete, a final image classification was produced from the samples obtained (control points and sample plots) and observations recorded by the field team during sampling and aerial

survey work. This detailed information was accurately plotted using GPS, and 17 different vegetation classes and sites were identified, including seven relating to the forest stands. Table 2 presents the list of classes and their respective areas in the two sectors under study.

TABLE 2
FOREST STRUCTURE IN THE TWO SECTORS

CLASS	DESCRIPTION	KUUJJUUAQ	KANGIQSUALUJJUAQ
AB	Low-growing scrubland	1 821	1 739
AH	High vegetation scrubland	771	858
EAU	Lakes, rivers, rapids	2 686	7 633
LE	Heathland	689	4 562
LH	Grass heath	5 221	1 787
LL	Lichen heath	1 446	602
LR	Stony heath	9 326	17 338
MH	Grassy wetland	550	4 138
R c C MU	Lichen-based mature medium-density softwood	343	126
R c D MU	Lichen-based mature open softwood	7 878	403
R c L MU	Lichen-based sparse softwood	2 053	9 207
R m B MU	Moss-based mature dense softwood	91	0
R m C MU	Moss-based mature medium-density softwood	1 432	3 439
R m D MU	Moss-based mature open softwood	14 284	7 968
R m L MU	Moss-based mature sparse softwood	12 211	11 420
RO	Rock outcrops	1 307	1 997
SD	Bare surface	131	22
TOTAL		62 241	73 240



*Description of what this means:
 diff. b/w lichen-based &
 moss-based*

Clearly, the areas in question are extremely diverse in terms of their strata. However, the available images and the methods used were insufficient for a more detailed description of the forest cover. Figures 2 and 3 present forest maps for the areas under study.

2.1.2 FIELD SAMPLING

The Forest Inventory Branch (FIB) established a sampling base of 40 sample plots per sector, distributed as follows:

- 25 plots in dense softwood strata
- 15 plots in open softwood strata

The sampling plan was drawn up in the office before the field team's departure, and was sent to the Forest Inventory Branch (FIB) for approval. The plots were established along transects of five to seven sample plots over distances not exceeding 1,500 metres.

FIGURE 2
FOREST MAP OF THE KUUJJUAQ SECTOR

FIGURE 3
FOREST MAP OF THE KANGIQSUALUJJUAQ SECTOR

Due to the high cost of aerial transportation, as many transects as possible were established in locations that could be accessed by boat. However, approximately 30% were situated in inland locations accessible only by helicopter, to ensure that sampling was representative of the area as a whole.

Transects and plots were established according to the standard specifications of the Forest Inventory Branch's (FIB) third ten-year program. All the plots were temporary, with a radius of 11.28 metres. The list of dendrometric variables was shortened to increase sampling productivity and reduce inventory costs. The data measured on site were collated on specially-prepared sheets and were then entered into the computer using the PLACETTE application. Plot locations were established in compliance with Forest Inventory Branch (FIB) requirements using a GPS sensor with differential correction capabilities. → what?

In addition to collecting the data, the inventory teams took one or more photographs of each site using a digital camera. The photographs provided representative images of the characteristic features of the vegetation in the surveyed areas, and a selection can be seen in the appendix to this report. Among other things, they were used to improve the satellite image classification by increasing the number of areas from specific, localized field data were taken.

Due to the lack of roads, long distances, transportation times, the timing of the inventory and the remote locations of the areas under study, a significant logistical planning effort was required to maximize the productivity of the survey team and ensure their safety. Sampling was carried out by a highly experienced inventory team, with technical support from the Inuit communities and a guide to help navigate the rivers. The team carried a satellite telephone at all times, and was able to communicate directly with local authorities if they encountered problems.

2.1.3 COMPILATION OF FOREST INVENTORY DATA AND STATISTICS

After sampling, the inventory data were entered into the computer, checked and handed over to the Forest Inventory Branch (FIB), whose specialists produced the final image classification using the new areas derived from the field information. The new classification was then used to add detail to the forest map by increasing the number of identifiable strata. → explain

The data were compiled using the SCIF application, which automatically generates the principal statistics for all the forest strata in a given area.

Keep technical words as simple as possible or explain what they mean.

example the word: Species type

Are these included in the presentation? all of them?

explain how?

Is this what we see in the large maps provided @ the presentation?

diff. in French.

The compilation process is divided into several phases, one of the most important of which is strata grouping. The grouping phase, as its name suggests, involves grouping two or more forest strata to form a single inventory stratum. Groupings are based on similarities between strata characteristics (species composition, average diameter, density, height, stand age, etc.). They produce more representative averages, and allow inventory statistics to be extended to unsampled strata. Table 3 presents the general statistics for the inventory strata.

Detailed inventory compilation results can be found in Appendix 1, including stand tables, stock tables, surface tables and tree studies.

TABLE 3
GENERAL FOREST STRATA STATISTICS

KUJJUAQ SECTOR							
No.	INVENTORY STRATUM	AREA	NO. OF PLOTS*	VOLUME PER HECTARE	MINIMUM VOLUME	MAXIMUM VOLUME	ESTIMATED ACCURACY
1	EAU	2 687	-	-	-	-	-
2	LR	19 956	1	7.5	7.5	7.5	0.0
3	RO	1 308	-	-	-	-	-
4	R c D MU	8 222	12 (4)	19.7	10.7	34.9	77.0
5	R m D MU	14 376	16	38.0	2.7	162.2	46.0
6	R c L MU	14 265	9 (6)	15.5	0.0	36.5	36.0
7	R m C MU	1 432	9	41.3	9.3	104.2	41.0
KANGIQSUALUJJUAQ SECTOR							
No.	INVENTORY STRATUM	AREA	NO. OF PLOTS*	VOLUME PER HECTARE	MINIMUM VOLUME	MAXIMUM VOLUME	ESTIMATED ACCURACY
1	EAU	7 634	-	-	-	-	-
2	LR	31 048	-	-	-	-	-
3	RO	1 997	-	-	-	-	-
4	R c D MU	529	11 (7)	20.3	12.7	32.6	79.2
5	R m D MU	20 627	7 (4)	15.1	0.0	36.5	25.1
6	R c L MU	3 439	11	28.9	12.3	86.5	49.4
7	R m C MU	139	21	44.4	3.7	100.1	73.2

* The figure in parentheses is the number of plots recruited.

units?

add a legend?

2.1.4 BACKGROUND

Very little information is available on the human and natural disturbances that have shaped the forest landscape in the two sectors under study. Logging appears to have taken place in both sectors several decades ago. We observed a very small disused processing site (sawmill) in the Kuujjuaq sector, but it was not possible, during the aerial surveys, to locate any former logging zones within the area under study. One former logging site was identified in the Kangiqsualujjuaq sector, however, and regeneration was clearly well established. In addition, firewood is taken from the area by community members who have built cottages or hunting camps on the banks of the Koksoak and George Rivers.

How did you research this? with who?

size?

near the areas?

Fire is the most significant natural disturbance and the element most likely to damage the Northern forests. During fieldwork, some fire-generated stands between 30 and 50 years old were identified. No traces of recent fires were found either on the satellite images or during the aerial surveys. The absence of regenerating and intermediary strata

also suggests that there have been no fires in the area for several decades.

→ Glossary of terms

2.1.5 FOREST REGENERATION

Sapling data (2 cm to 8 cm diameter classes) from the forest inventory show that the forest stands in the two areas are fairly well regenerated (see Table 4). Regeneration density varies from 1,071 to 3,583 trees per hectare. Mossy spruce stands exhibit the highest density, with results varying from 1,429 to 3,583 trees per hectare. These results do not include seedling trees (under 1.5 metres high), for which data were not collected. However, the low-growing scrubland data noted during sampling provides evidence of adequate seedling stage regeneration in most of the stands observed.

How does this compare to similar sites in other parts of Quebec/Canada similar env? Put this in perspective.

what is adequate types?
 aren't these the most important for regeneration?

TABLE 4
SAPLING REGENERATION STATISTICS

KUUJUAQ SECTOR					
FOREST STRATUM	DIAMETER CLASS				TOTAL
	2	4	6	8	
R c D MU	529	475	519	315	1 839
R c L MU	472	333	333	222	1 361
R m C MU	917	1 222	1 000	444	3 583
R m D MU	813	533	397	184	1 928

KANGIQSUALUJUAQ SECTOR					
FOREST STRATUM	DIAMETER CLASS				TOTAL
	2	4	6	8	
R c D MU	455	409	455	318	1 636
R c L MU	464	286	107	214	1 071
R m C MU	1 046	568	705	341	2 659
R m D MU	560	333	238	298	1 429

↑ these are just #'s → need explanation. Good or Bad?

Regeneration is a very important factor when considering the harvest of these areas. I feel there is a serious lack of information regarding this topic.

3. FOREST MANAGEMENT POTENTIAL

This section examines the forest management potential in the sectors under study, based on the legislative and regulatory framework governing forest resource management in the region, and the constraints deriving from its northern location. Specifically, it looks at the overall allowable annual cut and lumber yield, the silvicultural treatments suitable for the types of stands found in the areas under study, and the operational constraints on logging and transportation.

3.1.1 ESTABLISHING THE ALLOWABLE ANNUAL CUT

It is extremely important to ensure the sustainability of the forests in the areas under study, and the allowable annual cut must therefore be calculated on the basis of the sustained yield principle. Compliance with the allowable annual cut is a prerequisite for the granting of permits to cut wood in forest reserves.

3.1.1.1 ANNUAL VOLUME INCREMENT

The allowable annual cut calculation methods used for commercial forests, involving the Sylva II simulation application, are not appropriate for the areas in question because of the limited amount of information available. For example, stand growth models are not available for the areas in question. The method used to calculate the allowable annual cut is therefore based mainly on data from the inventory, and principally on the volume increment data from individual tree measurements. The method consists in establishing the annual volume increment of each forest stratum in the area. The increment is the amount of wood that can be harvested annually without affecting the forest capital. This particular method is suitable for both the type of forest and the scope of the project. It provides a reliable estimate of the area's allowable annual cut, based on tree growth levels recorded during the survey. The following paragraphs describe the calculation method in more detail.

To estimate the allowable annual cut, we used the basal area increment established from average radial increment (radius/total age) and current radial increment data for the last ten years (ri10). If we assume that starting volume p_v is the sum of basal surface rates p_k , height p_h and shape p_{cf} , then:

$$P_v = p_k + p_h \pm p_{cf}$$

*what is this?
✓ another reason →*

used in other projects?

*Complicated.
can it be made
simpler?*

Given that old-growth stands have a height increment and form increment of virtually zero, it is possible to estimate the volume increment P_v from the basal surface p_k . Schneider showed that the formula $p_k = 400/(n.dbh)$, where n is the time elapsed (number of rings in the last centimetre), provides a fairly accurate estimate of the volume increment in older stands.

For the purposes of our study, the time elapsed was replaced in the formula by current radial increment (average for the last ten years), since the two are related as follows: $ri = 1/n$, or $di = 2/n$ and $n = 1/ri$. Increment rates for each diameter class in the four forest strata present in the area under study are shown in Figure 4.

The table shows that average increment rates for the forest strata (excluding woodland heath) are around 1 (%), with a slight decline in the higher dbh classes. A regression analysis of the data reveals that diameter has only a slight impact on increment rates. This may be explained in part by the fact that most of the trees measured had already attained maturity. In view of these findings and the study goals, average increment rates by species and by stratum are considered accurate enough to produce an acceptable allowable annual cut estimate. Average increment rates are shown in Table 5.

FIGURE 4
INCREMENT RATES (MEAN ± STANDARD DEVIATION) BY STRATUM

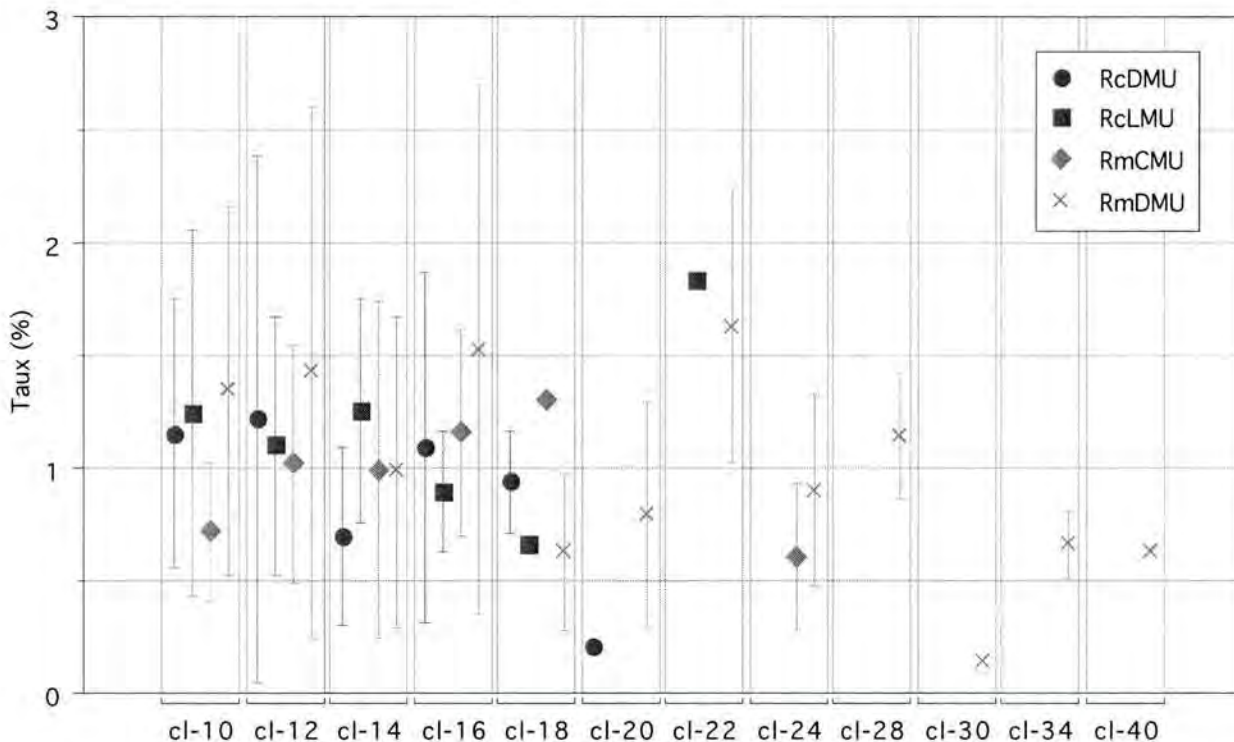


TABLE 5
VOLUME INCREMENT RATES BY SPECIES AND BY STRATUM

FOREST STRATUM	SPECIES	VOLUME INCREMENT RATE (%)	STANDARD DEVIATION	NO. OF OBSERV.	MINIMUM	MAXIMUM
R c D MU	EPN	0.96	0.82	29	0.21	4.41
R c D MU	MEL	0.54	0.16	4	0.39	0.68
R c L MU	EPB	1.26	0.37	3	0.99	1.69
R c L MU	EPN	1.08	0.60	14	0.40	2.64
R c L MU	MEL	0.68	-	1	-	-
R m C MU	EPN	0.88	0.55	54	0.28	3.36
R m C MU	MEL	1.08	0.67	3	0.32	1.60
R m D MU	EPB	1.07	0.69	15	0.13	2.65
R m D MU	EPN	1.06	0.90	73	0.20	4.56
R m D MU	MEL	1.73	1.17	14	0.23	4.65

What does this really say?

- legend -

Overall and unit-based annual increment rates (volume per hectare) were established for each forest stratum using the stock tables and previously calculated rates. The results are shown in Tables 6 and 7 for the Kuujjuaq and Kangiqsualujjuaq sectors respectively.

TABLE 6
OVERALL ANNUAL VOLUME INCREMENT –KUUJJUAQ SECTOR

FOREST STRATUM	AREA	AVERAGE VOLUME (m ³ /ha)	AVERAGE NO. OF TREES	AVERAGE BASAL AREA (m ² /ha)	VOLUME INCREMENT (m ³ /ha)	OVERALL INCREMENT (m ³)
R c D MU	8 222	20.12	2 419	10.63	0.16	1 316.4
R c L MU	14 265	15.53	1 683	7.23	0.18	2 505.1
R m C MU	1 432	41.34	4 575	19.46	0.40	568.6
R m D MU	14 376	28.06	3 792	11.85	0.29	4 213.2
						8 603.3

TABLE 7
OVERALL ANNUAL VOLUME INCREMENT –KANGIQSUALUJJUAQ SECTOR

FOREST STRATUM	AREA	AVERAGE VOLUME (m ³ /ha)	AVERAGE NO. OF TREES	AVERAGE BASAL AREA (m ² /ha)	VOLUME INCREMENT (m ³ /ha)	OVERALL INCREMENT (m ³)
R c D MU	529	20.31	2 227	10.49	0.16	84.7
R c L MU	20 627	15.14	1 396	6.48	0.18	3 622.3
R m C MU	3 439	28.88	3 436	13.81	0.40	1 365.5
R m D MU	7 968	44.39	2 118	14.58	0.29	2 335.1
						7 407.6

The annual volume increment for all forest strata is approximately 8,600 m³ for the Kuujjuaq sector and 7,400 m³ for the Kangiqsualujjuaq sector.

meaney ...

3.1.1.2 AREA REDUCTION

why?

The productive area must then be reduced to reflect the regulations applicable at the time of logging. The regulation with the most impact is that which prohibits logging in lichen-based softwood stands. Section 95 of the *Regulation respecting standards of forest management for forests in the domain of the State (RSFM)* states that management permit holders must leave intact all lichen-based black spruce stands having an area of 4 hectares or more and forming a single block. This impact of this particular provision reduces the size of the logging area by 21,156 hectares in the Kuujjuaq sector and 22,488 hectares in the Kangiqsualujjuaq sector. An additional 5% reduction is applied to take other provisions into account, such as the preservation of wooded strips along watercourses

As a result of these reductions, the allowable annual cut is approximately 4,500 m³ in the Kuujjuaq sector, and approximately 3,500 m³ in the Kangiqsualujjuaq sector.

3.1.2 LUMBER POTENTIAL

Because the wood cut would eventually be processed, it is important to estimate the amount of lumber that could be produced each year.

This involves establishing the saw log yield (expressed as a percentage of the total volume of wood per species) for each forest stratum in the areas under study. The estimate is based on individual tree measurement data collected from the sample plots.

The data used to estimate saw log yield are species, dbh and tree height. For tapered trees whose total height (H_t), DBH and nominal saw length (L_b) are known, it is possible to calculate the top diameter (T_d) using the following equation:

$$T_d = \frac{(H_t - L_b) * dbh}{H_t - 1} \quad \text{where } H_t = \text{Total height} \\ \text{and } L_b = \text{Log length}$$

It is then possible to establish the relationship between DBH and top diameter for logs of specific log lengths. An example of this relationship for the black spruce (Kuuujuaq sector) is shown in Figure 5.

The mathematical relationship $T_d = f(dbh)$ is established by means of a regression analysis for each species. The relationship can then be used to calculate the minimum dbh that a tree must have to produce one saw log of a given length and top diameter.

For the purposes of this study, we examine three nominal saw lengths, namely 2.4 metres (8 feet), 3.0 metres (10 feet) and 3.6 metres (12 feet). For the purposes of the estimate, we used a top diameter of 10 cm and a minimum tree length of 2.4 metres, which is the minimum size for production of 2" x 4" lumber. Table 8 shows the minimum dbh obtained for each of the three main species found in the areas under study.

FIGURE 5
RELATIONSHIP BETWEEN DBH AND TOP DIAMETER – BLACK SPRUCE

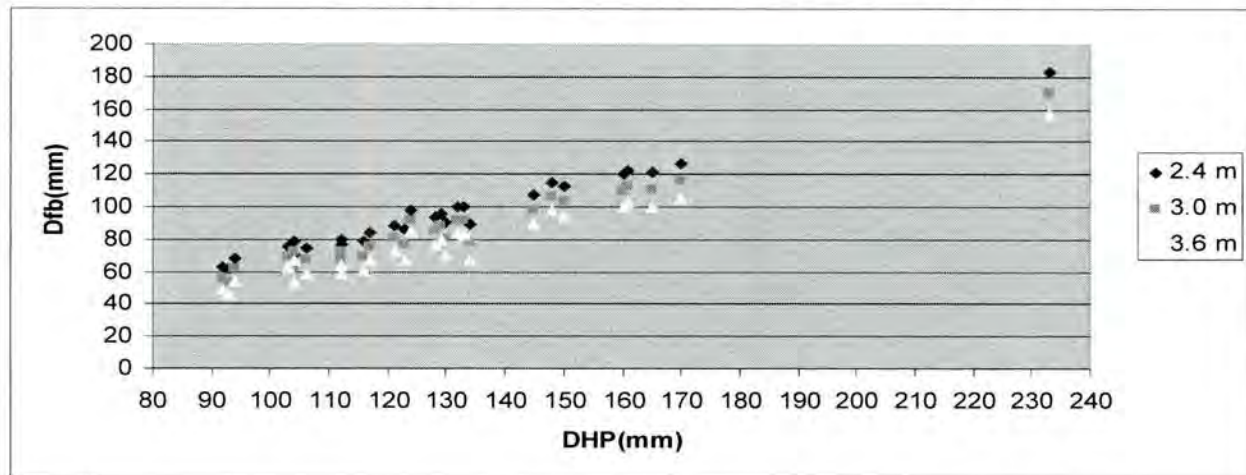


TABLE 8
MINIMUM DIAMETERS FOR LUMBER PRODUCTION (2 IN. X 4 IN.)

SPECIES	8' LENGTH	10' LENGTH	12' LENGTH
White spruce	13.9 cm	15.0 cm	16.2 cm
Black spruce	13.7 cm	14.9 cm	16.1 cm
Tamarack	13.3 cm	14.3 cm	15.3 cm

If we apply the 8' (2 x 4) results to the inventory, it is possible to establish the volume percentage for saw logs. Then, if we apply the percentages to the allowable annual cut, we obtain the volume of saw logs that can be harvested each year (see Table 9).

TABLE 9
SAW LOG VOLUMES

SECTOR	TOTAL AAC (m ³)	LUMBER (m ³)
Kuujjuaq	4 543	3 107
Kangiqsualujjuaq	3 516	2 355

3.1.3 OPERATIONAL CONSTRAINTS

Any future logging activities in the two areas under study will be subject to certain operational constraints relating mostly to access. There is no

road link to either sector; the only access is by boat in summer and by snowmobile in winter.

3.1.3.1 ACCESS

Although the Koksoak and George Rivers are navigable, they require experienced pilots and boats that are designed specifically for that particular type of watercourse. Both rivers are tidal, with levels fluctuating by up to 10 metres or more, depending on the season. There are several rapids between the Kuujuuaq and Kangiqsualujjuaq and the forested areas. The Koksoak River is especially dangerous at low tide because of low water levels, and boats must be handled with great care.

In winter, both sectors can be accessed fairly easily by snowmobile. However, the tides and rapids cause the ice to shift, and this can be quite dangerous in some places.

important

→ Although it is possible to transport people more or less throughout the year, the same cannot be said of timber. According to the information at our disposal, the boats currently available in the villages are not suitable for timber transportation operations. In theory it would be possible to envisage transporting logs via the river, but specially designed boats would have to be acquired and tested on both rivers.

Timber transportation would undoubtedly be easier to implement in the short term, at least in the Kuujuuaq sector. A winter trail could be built north of the Koksoak River, along the route of an existing trail that runs east along the river for approximately ten kilometres. The fairly flat topography on the north bank means the trail could be extended to the forest. An ice bridge could be built between the two river banks in winter, on a portion of the river that is not tidal. In the Kangiqsualujjuaq sector, however, it would be much more difficult to build a trail on the banks of the George River, due to the rugged topography.

A further problem of transporting timber in winter is the availability of a vehicle that can be driven on snow and still carry heavy loads. According to the information at our disposal, there are no forwarding machines, tractors or large crawler transporters suitable for this task in either village. Wood cut for domestic use (mainly firewood) is usually transported in a trailer on skis, pulled by a snowmobile

Operational testing would be required to establish the feasibility of the various timber transportation options.

3.1.3.2 LOGGING METHODS

The choice of a logging method depends on several criteria, including:

- The availability of machinery for harvesting and transportation;
- The availability of labour;
- The timber transportation method used;
- The scope, timing and duration of logging operations;
- Stand composition (species and tree sizes);
- Topography;
- Management conditions.

According to the information at our disposal, there is no mechanical logging or hauling machinery in either Kuujjuaq or Kangiqsualujjuaq. The only available pieces of equipment that could be used for logging are small devices such as chainsaws, ORVs and snowmobiles.

The lack of qualified labour may also be a significant constraint for any future logging projects. In the past, logging in Nunavik has almost always been carried out on an irregular basis for domestic purposes, using a chainsaw. There are no experienced forestry workers in the communities.

The forests themselves are suitable for manual logging and the use of small machines and apparatus. The trees, mostly black spruce, are small and located in fairly sparse stands. They can therefore be cut and handled manually without too much difficulty.

Clearly, then, any logging operations in the sectors in question will have to be relatively modest in scope. In the short term, logging would only be possible under the MRNF program that authorizes the harvesting of wood in Crown forest reserves located north of the northern boundary. Currently, the maximum volume that can be authorized through this program is 2,000 m³ per year, or approximately 50 hectares.

As far as timing is concerned, logging could take place in the periods of the year when the sectors in question can be accessed safely by water or by land. August to October and January to March would therefore be the most appropriate times for harvesting. However, winter operations are more likely to be affected by bad weather and snow.

The topography of the forested areas in the Kuujjuaq sector does not constitute an operational constraint. In the Kangiqsualujjuaq sector, however, the steep slopes would limit vehicle movements. Many areas

important point

who told you this?

simply cannot be accessed without special equipment, and special harvesting methods would also be required.

In view of all these factors, there is some uncertainty concerning the feasibility of logging operations and the most effective logging methods. In our opinion, the selected logging methods should be manual and will have to be adjusted to allow for use of the equipment currently available in the communities. Any plans to harvest wood from the areas in question should be preceded by a pilot project to test and compare the suitability of different logging and transportation processes.

3.1.4 SYLVICULTURAL TREATMENTS

The forest stands are composed virtually exclusively of mature softwood trees, meaning that there are very few silvicultural options available. The inventory results and field observations revealed the presence of satisfactory regeneration in most forest strata. Logging should nevertheless be carried out in such a way as to protect and develop established regeneration. Exposure to wind limits tree growth in the areas in question, and this should be borne in mind when harvesting the wood.

3.1.4.1 CUTTING WITH PROTECTION OF REGENERATION AND SOILS (CPRS)

"harsh" word Clear-cutting with protection of regeneration and soils is still the main logging method used in stands such as these. However, there are no reference cuts in comparable situations at these latitudes in Québec, and care will be needed when applying silvicultural treatments in order to avoid damaging the environments disturbed by logging and ensure that they are able to regenerate properly. *they place of similar env ?*

Can you provide a visual concept of this?

We believe the size of single-block logging sites should be limited to a few hectares (maximum of five). In addition, sites should be distributed in a mosaic or block pattern, preserving at least 50% of the canopy in the area being logged. This would not only provide a range of cover for wildlife, it would also provide better protection from the wind for regenerating sites. Logging could be carried out in summer or winter. However, in winter the snow cover would provide additional protection for regeneration during logging operations.

Given the number of areas available for logging and the type of logging methods being considered at the present time, we believe the application of these measures would not have a significant impact on harvesting costs.

3.1.4.2 PARTIAL CUTTING

like...? Partial cutting methods such as pre-commercial thinning or selection cutting may also be possible in stands with appropriate structures and densities. These methods have the advantage of allowing more saw logs to be cut than would be the case with CPRS. The fact that a forest canopy is preserved also means better protection for regenerating trees. Partial cutting is recommended in stands located alongside bare or sparsely wooded areas such as peat bogs, scrubland, heath and so on. *explain this method*

3.1.4.3 REGENERATION WORK

Regeneration work will not be required because established regeneration is already present in the stands. If it were to become necessary, seedling crops would be the only possible solution, due to the lack of nurseries and the difficulty of transporting plants to the reforestation sites.

*meaning
growing seedlings in Nunavik?*

3.1.4.4 MONITORING

The logged areas must be monitored in the years following harvesting, to check the status of the stands and see whether work is required to correct regeneration deficiencies or make adjustments to logging methods if necessary.

How long would the regeneration take mature into a harvestable forest? Turn-over rate?

4. RECOMMENDATIONS

This study of the forests in two parcels of land in Kuujuaq and Kangiqsualujuaq has shown that the areas in question offer real potential for logging activities, subject to certain operational constraints for which solutions must be identified, examined and tested. Additional information will also be required before deciding to undertake harvesting and processing activities on an annual basis. The next steps are:

- To carry out a market survey for lumber products and firewood in the communities concerned.
- To carry out a pilot project aimed at establishing the technical feasibility and economic viability of an annual wood harvesting and processing project.
- To see whether such a project would be socially acceptable in the Kuujuaq and Kangiqsualujuaq communities.
- Where applicable, to identify and acquire a wood processing unit (mobile or fixed sawmill) tailored to local needs.

Given the uncertainty surrounding wood harvesting and transportation operations, a pilot project is absolutely essential to determine the feasibility of logging in the areas in question. Such a project should receive priority and be undertaken within the coming year, in order to provide the information needed by local leaders to reach their decision.

*env. impact needed - consider wildlife & birds - habitat
- plant species*

CONCLUSION

This project constitutes the first step of a process undertaken by the Kuujjuaq and Kangiqsualujjuaq communities to decide whether or not logging should be carried out in two areas located near the villages and accessible by river. The forest inventory work performed in the fall of 2005 identified a potential for small-scale harvesting activities in both areas. Analysis of the inventory data, combined with field observations, resulted in an estimated allowable annual cut of 4,500 m³ and 3,500 m³ respectively in the Kuujjuaq and Kangiqsualujjuaq sectors. This is well above the volume that could be allocated each year by the MRNF through its program to authorize the harvesting of wood in Crown forest reserves located north of the northern boundary. Although most of the trees are small in size, two-thirds of the volume harvested would be suitable for the production of small lumber.

In operational terms, the distance separating the villages from the forests and the lack of road infrastructures place significant constraints on both the harvesting and subsequent transportation of the wood. Harvesting methods and silvicultural treatments must be adjusted to the prevailing climate. In addition, the communities possess very little specialized forestry equipment. All these factors must be considered when deciding whether or not to go ahead with plans to log the areas in question, and methods must be identified that are suited to the prevailing conditions in northern forests and to the limited means available in the communities. We therefore recommend that, as a next step, a pilot project be carried out to establish the technical and economic feasibility of logging in the areas concerned


DEL DEGAN, MASSÉ ET ASSOCIÉS INC.

Bernard Massé, F.Eng.

*with a recommendation
of a env. impact
B4 proceeding*

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Establishment of an integrated and regional approach by the Minister of Natural Resources and Wildlife

Kuujuaq


November 5 and 6th, 2007

Resources naturelles et Faune
Québec 


1

Presentation's plan

- Government and MNRW major files
- New context: new way of work
- A new integrated and regional approach
- Progress report on MNRW's reflections
- Responsibilities of the Regional Commission
- Regional Plan of integrated development of natural resources of the territory.

Resources naturelles et Faune
Québec 

2



Government and MNRW major files

Resources naturelles et Faune
Québec 

3

Regionalization

- A new way of management within MNRW: a regionalization project.
- The regionalization is part of the Government Project about regional and municipal autonomy.
- It is also a follow-up about recommendations made by the Commission Coulombe (Commission for the study of public forest management in Québec).
- The regionalization project will serve as a concrete outcome from the « Commission d'étude sur la maximisation des retombées économiques de l'exploitation des ressources naturelles dans les régions ressources (COMMAX) ».
- Finally, it is a way that Québec regions could take an active part in the provincial Energy Strategy and management of natural resources.
- In fact MNRW is carrying out a new leadership regarding regionalization.

New context: new way of work

Main facts regarding operation mode within MNRW

- Increase of multiple-uses cases.
- Natural resources and territory management represents a growing issue for Québec population
- Consultations and accomodation practices with Native People.
- A turning point in forest management: the Ecosystemic forest management.
- Decrease of workforce and operating budget.

Results desired

- A sustainable development :

Economy : looking for an intensive and diverse economy through regional consensus and territory uses harmonization.

Social : improve involment of Native and communities.

Environment : Ecosystem capacity respectful development

- Quality customer services

A new integrated and regional approach




A project which supports the participation

- A structure of project which supports the participation:

- ✓ A Consultative Committee MNRW-CRE

- ✓ Exchanges supported with Natives

- ✓ A phase of reflexion which challenges all the party of the underworld



Progress report on MNRW's reflections

Resources naturelles
et Faune
Québec

10

Responsibilities of the Regional Commission

- The commission will be responsible to plan, consult and promote the durable development of the areas in the field of the natural resources and the territory
- With this intention, they will take care of the realization and will collaborate in the setting of implementation of the Regional Plans of Integrated Development of the Resources and the Territory (RPIDRT)
- Will be in charge for this file in the area: Marie-Noël Breton

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et Faune
Québec

11

The RIDPRT

- The regional integrated development plan aims to optimize economic gain from natural resources and land development while addressing environmental and social concerns.
- This optimization exercise will be realized by favoring the complementary use, and:
 - favoring the regions potential
 - determining the stakes linked to development or conservation
 - Prioritizing development possibilities

Resources naturelles
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Québec

12

The RIDPRT

- The RIDPRT made of integrated planning
 - Recreational
 - Conservation (regional parks) and restoration (mining sites)
 - Wildlife management
- New elements that can be added to the RIDPRT
 - Road access planning
 - Orientations for mining development ★
 - Opportunities to develop wildlife resources

Guy Hébert

Responsibilities for the Regional General Directions

- Regional operations relating to the development, the installation and the protection of the resources and the territory
- Delivery of the services to the citizens
- Support for the Regional Commissions on the Natural Resources and the Territory in the preparation of regional plans of integrated development of the natural resources and the territory
- Direct link with the CRÉ and the natives communities

Establishing the new regional directorat

- July 2006, nomination of the general director
- January 2007, nomination of the sectarian directors
- First results and action plan

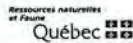
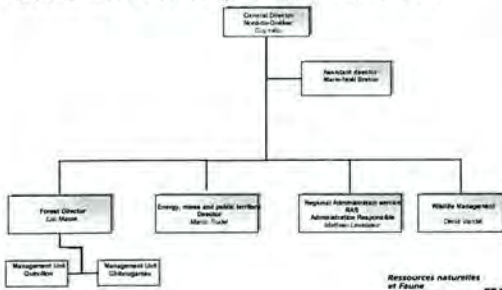
Establishing the new regional directorat

- With respect to all employees :
 - La Direction du Nord-du-Québec s'engage à valoriser le partenariat en créant des liens avec les intervenants, en faisant preuve de disponibilité, d'accessibilité et d'ouverture d'esprit et ce dans le respect des individus. Cet engagement se fait en s'appuyant sur les valeurs de gestions suivantes :
- **Qualité des services**
 - S'assurer d'offrir un service de qualité au citoyen de façon courtoise tout en étant préoccupé par l'amélioration des services.
- Favoriser le **Travail d'équipe** intra sectoriel et inter domaines d'affaires
- Favoriser la **Reconnaissance**
 - Valoriser et reconnaître le travail des employés
- **Créativité – Innovation – Initiative** - Favoriser ces trois valeurs
- Faire preuve de **transparence**, en étant disposé à expliquer et à communiquer nos décisions.
- Communication, honnêteté, respect



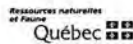
Implementation of DGR10

- October first announce operationalisation of DGR



Forest

- Allocating timber volumes (TSFMA, timber allocation agreements and contracts, etc.)
- Disseminating forestry research results and public forest survey results.
- Delivering permits: (recreational, harvesting, public utilities)
- Producing seedlings and improved seeds.
- Monitoring forest operations.
- Providing financial assistance through various programs.
- Job creation program :
 - ✓ Silvicultural operation program;
 - ✓ Regional involvement in forest development program;
 - ✓ Development of forest products and technologies program.
- Fostering forest development and job creation.
- Provide expertise and advice, link with forestry management and industrial developments projects.
- Administering specific forest programs.



Energy

- Information on the wind power in Quebec.
- Gasoline price.
- Hydro-electric installation.
- Licence for oil equipment users.

Mines

- Mining titles delivery (claims).
- Exploration leases delivery.
- Maintaining a geology data bank.
- Disseminating information on the mining potential of the region.
- Assessing the mineral potential of the region.
- Manage sand and gravel exploitation on public land.
- Collecting royalties.
- Providing services to the mining exploration industry and the other users.
- Educating the population on the mining industry.
- Monitoring mining activities.
- Acquiring and analyzing geoscience data.

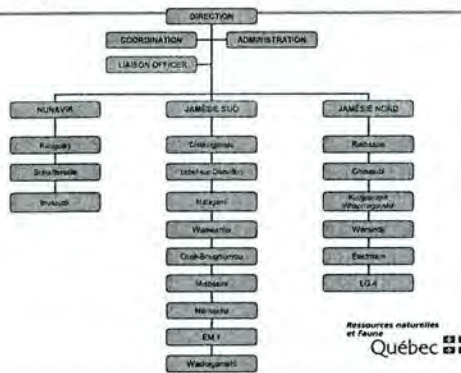
Public territory

- Orienting and informing users.
- Elaborating a descriptive portrait of the regional public territory.
- Providing advice and expertise on regional public territory issues: knowledge, development, planning, management and integrity.
- Promote the development of the regional public territory and resources.
- Analyzing projects related to regional public territory development, Coaching promoters and monitoring progress of projects.
- Managing programs related to regional public territory development.
- Conducting studies on regional public territory management, propose management plan and participate to their implementation.
- Coordinate or conduct regional territory planning and participate to regional territory management exercise.
- Monitoring the integrity of the regional public territory.

Wildlife management

- Managing wildlife in organized and non-organized territories (establishing development and monitoring modalities).
- Delivering permits and authorizations (scientific, educational and wildlife management).
- Providing advice and expertise, specifically on impact studies.
- Making modifications to laws and regulations respecting development and conservation of wildlife species and habitats.
- Compiling and transmitting knowledge on wildlife species and habitats (wildlife populations, resources development monitoring, wildlife diseases, etc.)
- Responding questions on wildlife species and habitats.
- Represent the general direction by the participation in forums on wildlife issues at the regional, provincial, national and international scale.

Wildlife protection



Wildlife protection

- Monitoring an adapted version of the program entitled, "La faune et vous" for Cree and Inuit users (Grade 6 Elementary School).
- Providing information on hunting and fishing regulations to the public (Promotional booth, phone, internet).
- Registering wildlife species: moose, caribou, black bear and salmon.
- Delivering hunting permits to handicapped users.
- Enforcing regulations with the objective to produce infraction or event reports respecting protection of wildlife, habitats and the environment.
- Providing assistance to the Sûreté du Québec in emergency measures.
- Helping the MRNF (Territory) identifying and locating illegal camps.
- Informing Aboriginal communities on hunting, fishing and trapping regimes (northern agreements).
- Training wildlife sanctuary employees, wildlife protection assistants originating from Inuit communities and wildlife protection auxiliary agents originating from Cree communities.

Meeting of November 5, 2007

Time: 1:30 to 3:30 hours PM

Place: To be specified by Mr. Michael Barrett

Participants: MRNF, KRG and Makivik Corporation

AGENDA

1. Presentation of the new DGR-10 structure
2. CRRNT
3. Agreement – Mining site
4. Presentation of pilot project - Forestry

Guy Hébert, General Director



Nov. 5/07 Meeting w MRNF (KRG + Makivik)

#1 New structure within MRNF ~ regionalization project (11 new general directions)
took into account Coulombe Commission

3 ^{Deputy Ministers} ~~Ministers~~

- aim towards ecosystemic forest management
- less employees, assets are frozen (Gov't wants to ↓ spending)

only one door to knock @

Nunavik CRE? Join the MN RW-CRE table. Table = Native ppl.?

(KRG + Makivik)

Nunavik will sign agreement to participate in Reg. Comm.

Marie ^{Noël} ~~Bréton~~ Bréton

↳ reflexion of what Comm. will look like

no sign. delays work/progress

#2 CRRNT - Commission Régionale Ressources Naturelles + les Terrains

Subject: FW: Projet récolte de bois au Nunavik

Date: Wednesday, January 17, 2007 9:51 AM

From: Nathalie Girard <ngirard@krq.ca>

To: NDea <ndea@krq.ca>

Hi Nancy, just to let you know how much the government is running after us to give us money...It's too bad this file is under Makivik files because I have a feeling that it will not move so far...after have put so much energy on this file I'm sorry to see that.

Have a nice day

Nathalie

----- Forwarded Message

From: <Denis.Audette@mrnf.gouv.qc.ca>

Date: Tue, 16 Jan 2007 16:46:46 -0500

To: <c_dorais@makivik.org>

Cc: <ngirard@krq.ca>, <Jean-Pierre.Letourneau@mrnf.gouv.qc.ca>

Conversation: Projet récolte de bois au Nunavik

Subject: Projet récolte de bois au Nunavik

Bonjour M. Dorais,

Durant l'année financière 2005-2006 nous avons financé une étude préliminaire concernant l'objet en rubrique. Le rapport, préparé par la firme Del Degan, était encourageant concernant la réalisation d'un projet de récolte de bois à des fins communautaires.

Durant l'année financière actuelle (2006-2007), votre organisme n'a pas présenté de nouvelle demande de subvention pour poursuivre, le cas échéant, une étude complémentaire ou un autre projet de nature forestière.

En prévision de la prochaine année financière, débutant le 1er avril prochain, j'aimerais savoir si votre organisme envisage de présenter une demande de subvention à notre ministère. Si tel est le cas, j'aimerais en connaître les grandes lignes dès que possible afin que je puisse m'assurer qu'elle sera admissible à notre programme de subvention (et le cas échéant, de faire les ajustements requis).

Par ailleurs, j'aimerais vous souligner, que malgré le contexte forestier difficile, certains fournisseurs ont actuellement en stock des scieries portatives performantes et ce, à prix compétitif. Bien que notre programme ne subventionne pas l'achat de machineries, il peut financer une étude de faisabilité effectuée par un consultant compétent en la matière.

Dans l'attente de vos nouvelles, je vous souhaite une bonne année 2007 avec un peu de retard.

Bonne journée!

Denis Audette, biologiste, M. Sc. Env.

Coordonnateur

Affaires autochtones et fauniques (CAAF!)

Forêt Québec (MRNF)


Bureau régional de l'Abitibi-Témiscamingue

Rouyn-Noranda (Qc) J9X 6R1

Tél. (819) 763-3407 poste 291 téléc. (819) 763-3216

mailto:denis.audette@mrnf.gouv.qc.ca

Ce message est confidentiel et ne s'adresse qu'au destinataire. S'il vous a été transmis par mégarde, veuillez le détruire et nous en aviser aussitôt. Merci!

 Devez-vous vraiment imprimer ce courriel ? Si oui, pensez l'imprimer recto-verso!

----- End of Forwarded Message

Projet de récolte et de transformation du bois pour la production de
bois d'œuvre de petites dimensions et de bois de chauffage au
Nunavik – région de Kuujjuaq
ÉTUDE DE FAISABILITÉ

Présentée au :
MINISTÈRE DES RESSOURCES NATURELLES
ET DE LA FAUNE DU QUÉBEC

Préparée par :
SOCIÉTÉ MAKIVIK
Kuujjuaq, Nunavik

Décembre 2006

TABLE DES MATIÈRES

INTRODUCTION.....	1
1. CONTENU DE L'ÉTUDE.....	2
1.1 ÉTUDE DE MARCHÉ	2
1.2 MAIN D'ŒUVRE FORESTIÈRE.....	2
1.3 CAPACITÉ MATÉRIELLE	3
1.4 ÉQUIPEMENTS DE TRANSFORMATION.....	3
1.5 ACCEPTABILITÉ SOCIALE.....	3
1.6 PROMOTEUR	4
1.7 AUTRES TERRITOIRES POTENTIELS D'APPROVISIONNEMENT	4
1.8 ANALYSE FINANCIÈRE	4
2. COÛT ET ÉCHÉANCIER	5

INTRODUCTION

Ce projet s'inscrit dans le contexte de la volonté des communautés nordiques du Nunavik d'utiliser la matière ligneuse disponible dans certains massifs forestiers à des fins de combustible d'appoint ou comme matériel pour la construction de camps de chasse et de maisons. Les communautés de Kuujuaq et Kangiqsualujuaq possèdent des droits de récolte de bois accordés en vertu de la Convention de la Baie James et du Nord Québécois (art. 6.3.3) dans deux territoires situés à proximité des villages et accessibles par voie fluviale. Ces territoires sont ciblés *targeted* pour initier un projet de récolte de bois à petite échelle par la population inuit pour des usages domestiques.

Dans une première étape, la Société Makivik a fait réaliser en 2006 une étude portant sur la ressource forestière disponible à l'intérieur de deux parcelles de territoires visées par le projet. Les résultats de l'inventaire forestier conduit dans ces deux parcelles démontrent l'existence d'une possibilité forestière suffisante pour approvisionner une petite unité de transformation de bois pour la production de bois d'oeuvre de petites dimensions.

Dans une seconde étape, la Société Makivik souhaite faire réaliser une étude de faisabilité technique et financière visant à déterminer la viabilité du projet de transformation de bois. Dans ce contexte, la Société Makivik sollicite l'appui du ministère des Ressources naturelles du Québec pour financer l'étude de faisabilité à l'aide des fonds disponibles dans le cadre du programme _____

Le présent document décrit brièvement le contenu de l'étude visée de même que les coûts estimés pour sa réalisation.

1. CONTENU DE L'ÉTUDE

1.1 ÉTUDE DE MARCHÉ

La viabilité économique du projet repose sur la capacité d'écouler les bois transformés sur le marché local du bois d'œuvre ^{Timber} et du bois de chauffage ^{fire wood}. La taille du marché de même que les prix payés localement pour les bois importés du sud doivent être connus afin de déterminer la pertinence d'un projet d'usine de transformation. ^{mill}

^{Indicator} Ce volet de l'étude visera à établir la consommation annuelle de bois d'œuvre pour la construction résidentielle et commerciale ainsi que la construction de campements. On déterminera les quantités annuelles estimées par type de produits ainsi que les prix payés pour le bois importés. Le marché étudié s'étendra à l'ensemble des communautés inuit du Nunavik.

Les données seront ^{collected} recueillies par enquête auprès des organisations administratives locales et régionales, des commerces et des entreprises en construction oeuvrant localement.

1.2 MAIN D'ŒUVRE FORESTIÈRE

La disponibilité d'une main d'œuvre locale spécialisée (récolte, transport, transformation) peut représenter un obstacle à la réalisation du projet. Ce volet de l'étude vise à déterminer la disponibilité d'une main d'œuvre apte à réaliser les travaux de récolte et de transformation ainsi que leur niveau de compétences.

Dans un premier temps, définir la nature des postes de travail : abatteur, transport, mécanicien, opérateur de scierie, etc. Vérifier la disponibilité de la main d'œuvre spécialisée auprès des organismes locaux. Identifier le pool potentiel pour chaque poste

et déterminer les besoins de formation. Déterminer le budget de formation. Déterminer le coût de la main d'œuvre et les modes de rémunération.

Les informations seront recueillies auprès des organismes locaux d'emploi et de formation de la main d'œuvre : Employment and training KRG, Kativik School board, Makivik construction, etc.

1.3 CAPACITÉ MATÉRIELLE

La non disponibilité d'équipements spécialisés (récolte, transport, transformation) peut représenter un obstacle à la réalisation du projet. Ce volet de l'étude vise à déterminer les types d'équipements disponibles localement pour réaliser les opérations de récolte et de transport du bois.

Dans un premier temps, définir les méthodes de récolte et de transport potentielles : abattage, débardage, transport saisonnier (été, hiver), etc. Identifier les équipements disponibles localement. Déterminer les adaptations nécessaires. Identifier les équipements devant être acquis le cas échéant. Déterminer le coût d'achat ou de location.

1.4 ÉQUIPEMENTS DE TRANSFORMATION

En fonction du volume de bois à être récolté et de la dimension des tiges à être transformées, identifier un ou des modèles de scierie portable rencontrant les besoins, le prix et les particularités de chacun. Déterminer le coût d'achat (livré à Kuujuaq), les frais d'installation, les besoins de formation, les coûts d'entretien et d'opération.

1.5 ACCEPTABILITÉ SOCIALE

La récolte de bois dans les secteurs visés est un sujet sensible qui peut rencontrer une certaine opposition au sein de la communauté. Avant d'aller de l'avant avec le projet, il faudra valider l'acceptabilité sociale du projet. Les moyens pour déterminer l'acceptabilité sociale du projet sont à discuter avec les décideurs locaux (Makivik, KRG, etc.).

1.6 PROMOTEUR

Identifier quel organisme ou personne agira à titre de promoteur du projet pour son éventuel mise en oeuvre. Élaborer la structure organisationnelle de l'entreprise.

*Who will be project proponent?
organization*

1.7 AUTRES TERRITOIRES POTENTIELS

D'APPROVISIONNEMENT

Ce volet fait suite aux commentaires exprimés lors de la présentation de la phase 1 à Kuujjuaq. Il vise à identifier d'autres territoires potentiels pour l'approvisionnement de l'usine dans l'alternative où le choix des secteurs visés n'est pas acceptable socialement ou économiquement. L'analyse d'images satellitaires sera nécessaire pour identifier ces secteurs. Aucun inventaire forestier ne sera conduit dans le cadre de l'étude mais des survols aériens pourront être requis pour valider la présence de peuplements forestiers potentiels pour la récolte et la transformation en bois d'oeuvre.

Other parcels of land to harvest?

*Aerial view over areas of interest
Satellite images*

1.8 ANALYSE FINANCIÈRE

Élaborer différents scénarios réalistes de mise en oeuvre du projet de récolte et transformation. Réaliser une analyse financière des différents scénarios potentiels afin de déterminer la faisabilité économique du projet. Identifier le ou les scénarios les plus réalistes.

*Financial analysis
- diff. scenarios (realistic)
- economic feasibility*

2. COÛT ET ÉCHÉANCIER

Le coût de l'étude est évalué à 65000. Une période de 6 mois est prévue pour sa réalisation.

Subject: FW: coupes forestières

Date: Thursday, October 5, 2006 1:21 PM

From: Nathalie Girard <ngirard@krg.ca>

To: NDea <ndea@krg.ca>

FYI ! A easy proof showing lack of work from Del Degan Masse!

Have a good day!

Nathalie

----- Forwarded Message

From: Serge Payette <Serge.payette@bio.ulaval.ca>

Date: Thu, 05 Oct 2006 13:02:01 -0400

To: <NGirard@krg.ca>

Subject: coupes forestières

Bonjour Nathalie,

Va sur GOOGLE et entre les mots suivants :

cutting northernmost forest

et tu trouveras beaucoup de documents relatifs à la coupe forestière à la limite des arbres (comme à Kuujjuaq), notamment en Finlande, en Scandinavie et en Russie.

En introduisant des mots semblables à ce que je te suggère tu pourras certainement rassembler une jolie pile d'articles et de rapports pertinents.

Tiens-moi au courant

Serge

----- End of Forwarded Message

**ÉTUDE DE LA RESSOURCE
FORESTIÈRE AU NUNAVIK
SECTEURS DE KUUJJUAQ
ET DE KANGIQSUALUJJUAQ**

SOMMAIRE EXÉCUTIF

**Présentée à la :
SOCIÉTÉ MAKIVIK**

**Préparée par :
DEL DEGAN, MASSÉ ET ASSOCIÉS INC.
825, rue Raoul-Jobin
Québec (Québec) G1N 1S6**

Juin 2006

TABLE DES MATIÈRES

INTRODUCTION.....	1
1. LOCALISATION DU TERRITOIRE	1
2. TENURE DU TERRITOIRE	1
3. SOCIO-ÉCONOMIE	3
4. GESTION DES RESSOURCES	3
5. CONTEXTE RÉGLEMENTAIRE ET LÉGAL	3
6. INVENTAIRE FORESTIER	4
7. POSSIBILITÉ FORESTIÈRE.....	6
8. POTENTIEL EN BOIS D'ŒUVRE.....	6
9. CONTRAINTES OPÉRATIONNELLES.....	7
10. TRAITEMENTS SYLVICOLES.....	7
11. RECOMMANDATIONS.....	7

INTRODUCTION

La Société Makivik agit à titre de promoteur pour la réalisation d'une étude portant sur la ressource forestière disponible à l'intérieur de deux parcelles de territoires situées à proximité des villages de Kuujjuaq et Kangiqsualujjuaq au Nunavik. Les communautés de Kuujjuaq et Kangiqsualujjuaq possèdent des droits de récolte de bois accordés en vertu de la Convention de la Baie James et du Nord Québécois (art. 6.3.3) dans deux territoires situés à proximité des villages et accessibles par voie fluviale. Ces territoires sont ciblés pour initier un projet de récolte de bois à petite échelle par la population inuit pour des usages domestiques.

Une visite exploratoire réalisée en mars 2004 par les professionnels forestiers de la Direction des inventaires forestiers du MRNF a permis de constater la présence plusieurs peuplements d'arbres de dimensions commerciales dans les territoires concernées. Toutefois, les informations recueillies lors de cette visite ne permettent pas d'établir de façon suffisamment précise le potentiel forestier des territoires. Par conséquent, un inventaire des ressources forestières a été réalisé afin d'obtenir les informations de base nécessaires à l'évaluation du potentiel forestier et à la planification d'éventuelles activités de récolte.

1. LOCALISATION DU TERRITOIRE

La première parcelle, localisée à environ 50 km du village de Kuujjuaq couvre une superficie de 62 241 ha le long de la rivière Koksoak. La seconde parcelle, d'une superficie de 73 240 ha, est traversée par la rivière George au sud-ouest du village de Kangiqsualujjuaq (figure 1). Les territoires sont situés à des latitudes nordiques (57° et 58° N) et sont caractérisés par une courte saison de croissance de la végétation (80- 100 jours). Bien qu'ils se situent bien au nord de la limite nordique des forêts attribuables, on y retrouve des peuplements forestiers soutenant la croissance d'arbres de dimensions commerciales.

2. TENURE DU TERRITOIRE

En vertu de la Convention de la Baie James et du Nord québécois (CBJNQ) signée en 1975, les parcelles des secteurs de Kuujjuaq et Kangiqsualujjuaq relèvent des terres de catégorie I. Par définition, les terres de catégorie I sont attribuées en pleine propriété aux autochtones pour leur usage exclusif, alors que sur les terres de catégorie II, les autochtones possèdent des droits exclusifs de chasse, de pêche et de trappage, sans toutefois y avoir un droit spécial d'occupation. Sur le plan des ressources forestières, certaines dispositions sont prévues dans la Convention.

FIGURE 1

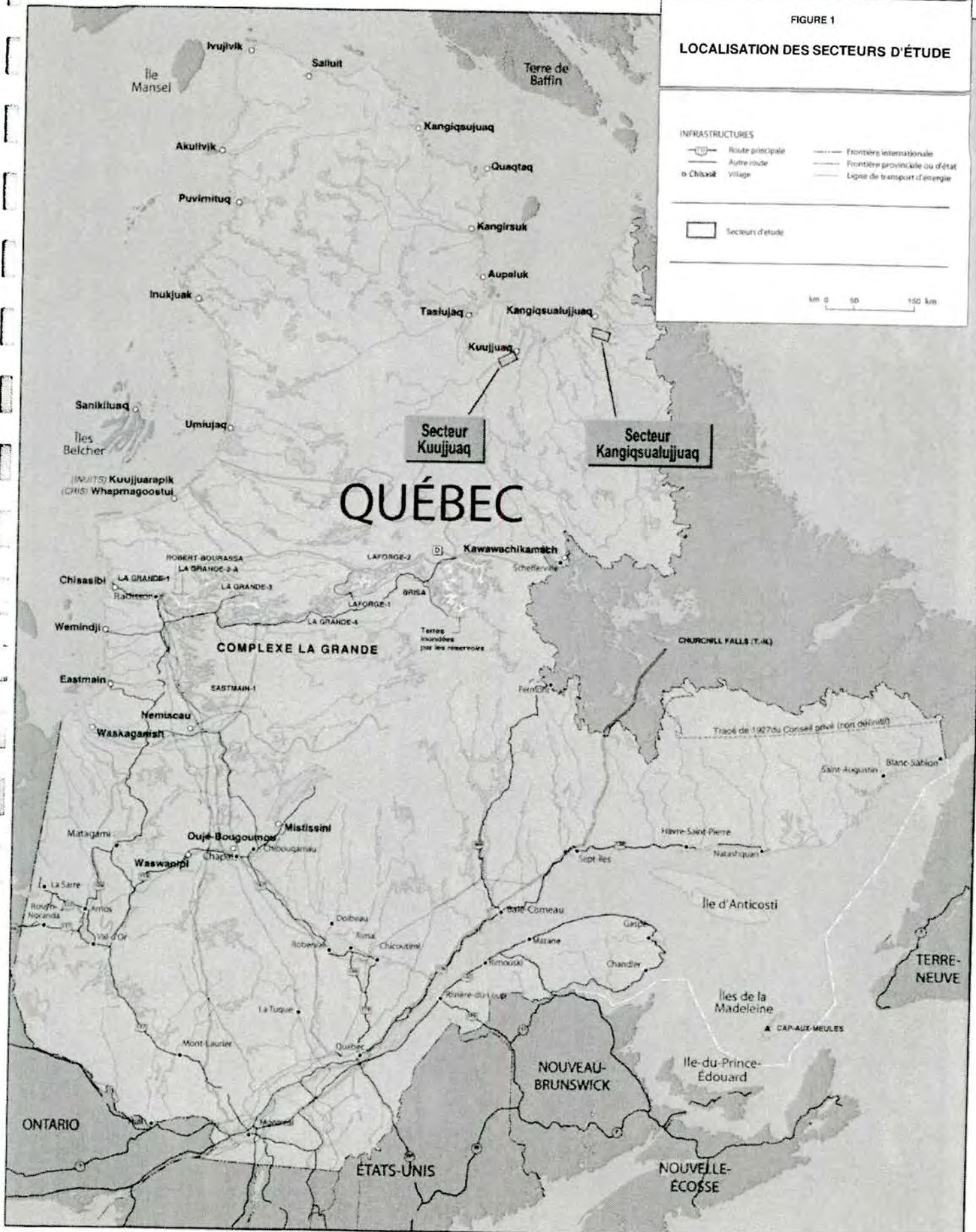
LOCALISATION DES SECTEURS D'ÉTUDE

INFRASTRUCTURES

-  Route principale
-  Autre route
-  Châssat
-  Frontière internationale
-  Frontière provinciale ou d'état
-  Ligne de transport d'énergie

 Secteur d'étude

km 0 50 100



3. SOCIO-ÉCONOMIE

Kuujjuaq, la plus importante communauté du Nunavik, constitue la plaque tournante des activités économiques du Nord du Québec depuis une quarantaine d'années. Elle est devenue un centre de services de gestion et de commerce composé de diverses infrastructures. Lors de la signature de la Convention de la Baie James et du Nord québécois en 1975, Kuujjuaq a été désignée comme étant le centre administratif du Nunavik. Ce statut s'est matérialisé par l'établissement de nombreux organismes régionaux, dont la Société Makivik, l'Administration régionale Kativik, le Conseil régional de développement Kativik, la Régie régionale de la santé et des services sociaux du Nunavik et le Centre de recherche du Nunavik.

L'économie de Kangiqsualujjuaq, pour sa part, repose principalement sur la présence d'un magasin coopératif, de services gouvernementaux et d'activités liées à la chasse et à la pêche. Les édifices gouvernementaux englobent les services associés, entre autres, aux soins de santé, à l'enseignement et aux services commerciaux.

Aucune des deux communautés ne dispose, à ce moment-ci, d'une usine de transformation du bois.

4. GESTION DES RESSOURCES

L'exploitation commerciale, personnelle ou communautaire des ressources de la forêt des terres de catégorie I relève des corporations foncières locales (*landholding corporation*). Les corporations foncières des municipalités de Kuujjuaq et de Kangiqsualujjuaq possèdent des droits exclusifs de récolte de bois sur les deux territoires visés et identifiés à l'annexe 2 de la section de la CBJNQ. La récolte de ces massifs forestiers peut se faire en régie ou par l'intermédiaire de personnes agissant avec le consentement de la corporation foncière¹ qui agit comme gestionnaire de la ressource.

5. CONTEXTE RÉGLEMENTAIRE ET LÉGAL

Les droits exclusifs de récolte de bois consentis en vertu de l'article 6.3.1 de la CBJNQ, sur les deux parcelles, doivent s'opérer dans le contexte réglementaire et légal prévalant sur ces territoires. Les droits sont octroyés à des fins personnelles et communautaires, et sont exercés en accord avec la Loi sur les forêts du Québec. La récolte de bois doit notamment être autorisée par le biais d'un permis d'intervention émis par le ministre des Ressources naturelles et de la Faune du Québec.

Le permis d'intervention peut être obtenu par le biais d'un programme du MRNF visant à permettre l'approvisionnement de petites scieries ne possédant pas de sources d'approvisionnement sur terres publiques et dont la consommation annuelle n'excède pas 2 000 m³ de bois. La délivrance du permis annuel d'intervention est assujettie aux conditions suivantes :

¹ Source : Éditeur officiel du Québec. *Loi sur le régime des terres dans les territoires de la Baie-James et du Nouveau-Québec.*

- Le volume demandé ne doit pas excéder la possibilité forestière déterminée pour le secteur d'approvisionnement identifié.
- La demande de permis doit être adressée par écrit auprès des autorités régionales du MRNF, en précisant l'année de la récolte, le volume de bois ronds demandé et la localisation des activités de récolte.
- La demande doit être accompagnée des pièces démontrant que le demandeur est propriétaire d'une usine conforme aux exigences du programme.

Au niveau des obligations dévolues au titulaire du permis, les dispositions du programme prévoient que celui-ci doit satisfaire les conditions suivantes :

- Réaliser les activités d'aménagement forestier prévues dans le respect des normes et conditions précisées au permis en vue d'assurer la protection du milieu forestier et l'aménagement durable des forêts.
- Acquitter les droits de coupe prescrits par le ministre.
- Mesurer les bois récoltés, conformément aux instructions prévues à chaque permis.
- Dans les trois mois suivant l'échéance du permis, soumettre un rapport d'intervention sur les activités d'aménagement réalisées.

6. INVENTAIRE FORESTIER

Des travaux d'inventaire forestier ont été réalisés afin de pouvoir estimer les volumes disponibles, le potentiel de croissance et de régénération des peuplements, la qualité des tiges, etc.

Tout d'abord, une cartographie des peuplements forestiers a été réalisée par la classification de deux images satellitaires de moyenne résolution provenant du capteur Landsat 7 captées en période estivale en 2001 et 2002. Le TABLEAU 1 dresse la liste des classes identifiées et de leur superficie respective pour les deux territoires. Les superficies couvertes par des peuplements forestiers sont de 38292 ha pour le secteur de Kuujjuaq et de 32563 ha pour le secteur de Kangiqsualujjuaq.

L'inventaire a été complété par des travaux de sondage au terrain au cours desquels 40 placettes-échantillons par secteur ont été établies.

Les données ont été compilées à l'aide du logiciel SCIF. Les statistiques générales des strates forestières sont présentées au TABLEAU 2.

TABLEAU 1
CONTENANCE FORESTIÈRE DES TERRITOIRES

CLASSE	DESCRIPTION	SECTEUR KUUJJUAQ	SECTEUR KANGIQSUALUJJUAQ
AB	Arbustaie basse	1 821	1 739
AH	Arbustaie haute	771	858
EAU	Lacs, rivières, rapides	2 686	7 633
LE	Lande à éricacées	689	4 562
LH	Lande herbacée	5 221	1 787
LL	Lande à lichens	1 446	602
LR	Lande rocheuse	9 326	17 338
MH	Milieu humide herbacé	550	4 138
R c C MU	Résineux moyennement dense mûr à fond de cladonie	343	126
R c D MU	Résineux ouvert mûr à fond de cladonie	7 878	403
R c L MU	Résineux épars mûr à fond de cladonie	2 053	9 207
R m B MU	Résineux dense mûr à fond de mousses	91	0
R m C MU	Résineux moyennement dense mûr à fond de mousses	1 432	3 439
R m D MU	Résineux ouvert mûr à fond de mousses	14 284	7 968
R m L MU	Résineux épars mûr à fond de mousses	12 211	11 420
RO	Affleurement rocheux	1 307	1 997
SD	Surface dénudée	131	22
TOTAL		62 241	73 240

TABLEAU 2
STATISTIQUES GÉNÉRALES DES STRATES FORESTIÈRES

SECTEUR KUUJJUAQ							
N ^o	STRATE D'INVENTAIRE	SUPERFICIE	NOMBRE DE PLACETTES*	VOLUME A L'HECTARE	VOLUME MINIMUM	VOLUME MAXIMUM	PRÉCISION ESTIMÉE
1	EAU	2 687	-	-	-	-	-
2	LR	19 956	1	7,5	7,5	7,5	0,0
3	RO	1 308	-	-	-	-	-
4	R c D MU	8 222	12 (4)	19,7	10,7	34,9	77,0
5	R m D MU	14 376	16	38,0	2,7	162,2	46,0
6	R c L MU	14 265	9 (6)	15,5	0,0	36,5	36,0
7	R m C MU	1 432	9	41,3	9,3	104,2	41,0
SECTEUR KANGIQSUALUJJUAQ							
N ^o	STRATE D'INVENTAIRE	SUPERFICIE	NOMBRE DE PLACETTES*	VOLUME A L'HECTARE	VOLUME MINIMUM	VOLUME MAXIMUM	PRÉCISION ESTIMÉE
1	EAU	7 634	-	-	-	-	-
2	LR	31 048	-	-	-	-	-
3	RO	1 997	-	-	-	-	-
4	R c D MU	529	11 (7)	20,3	12,7	32,6	79,2
5	R c L MU	20 627	7 (4)	15,1	0,0	36,5	25,1
6	R m C MU	3 439	11	28,9	12,3	86,5	49,4
7	R m D MU	7 968	21	44,4	3,7	100,1	73,2

* Le nombre entre parenthèses indique le nombre de placettes recrutées.

7. POSSIBILITÉ FORESTIÈRE

Comme la récolte de bois sur les territoires visés est réalisée avec l'objectif d'assurer la pérennité de la forêt, il importe de déterminer la possibilité annuelle de coupe que peuvent soutenir les territoires selon le principe du rendement soutenu. Le respect de la possibilité forestière est également une exigence obligatoire à l'émission d'un permis d'intervention dans le cadre du programme de récolte de bois dans les réserves forestières.

L'accroissement annuel en volume dans les strates forestières est de l'ordre de 8 600 m³ et de 7 400 m³ pour les secteurs de Kuujuaq et Kangiqsualujuaq respectivement. Toutefois, des réductions en superficie productive sont appliquées pour tenir compte des normes d'intervention en milieu forestier. La modalité ayant le plus d'impact en termes de réduction est celle interdisant la récolte dans les pessières à épinette noire et cladonies. En effet, l'article 95 du règlement sur les normes d'intervention dans les forêts du domaine de l'État (RNI) stipule que le titulaire d'un permis d'intervention doit laisser intact une pessière à épinette noire et cladonies d'une superficie de 4 ha et plus d'un seul tenant. L'application de cette modalité retranche des superficies de 21 156 et 22 488 ha respectivement aux secteurs de Kuujuaq et Kangiqsualujuaq. Une réduction additionnelle de 5 % de la superficie est appliquée pour tenir compte des autres modalités comme la conservation des lisières boisées le long des cours d'eau.

L'application des réductions porte la possibilité forestière du secteur de Kuujuaq à environ 4 500 m³ et celle du secteur de Kangiqsualujuaq à environ 3 500 m³.

8. POTENTIEL EN BOIS D'ŒUVRE

Compte tenu des objectifs de transformation qui sous-tendent un éventuel projet de récolte de bois dans les secteurs visés, il importe d'évaluer la quantité de bois d'œuvre qui pourrait être transformée annuellement. Le rendement (exprimé en pourcentage du volume total de bois par essence) en bois de sciage des strates forestières des deux territoires inventoriés a été estimé à partir des données sur les études d'arbres recueillies dans les placettes-échantillons. L'analyse des données révèle qu'environ les deux tiers du volume récoltable peuvent être transformés en bois d'œuvre.

TABLEAU 3
POSSIBILITÉ FORESTIÈRE EN BOIS D'ŒUVRE

TERRITOIRE	POSSIBILITÉ TOTALE (m ³)	POSSIBILITÉ EN BOIS D'ŒUVRE ESTIMÉE(m ³)
Kuujuaq	4 543	3 107
Kangiqsualujuaq	3 516	2 355

9. CONTRAINTES OPÉRATIONNELLES

La réalisation d'éventuelles activités de récolte de bois est confrontée à plusieurs contraintes opérationnelles liées principalement à l'accessibilité des territoires. Les deux territoires ne sont desservis par aucun lien routier et on ne peut y accéder que par bateau en été et par motoneige en période hivernale. Le transport du bois récolté représente le facteur le plus limitatif. Que ce soit par la voie terrestre ou fluviale, des équipements permettant le transport de lourdes charges et adaptés devront être utilisés. Des tests opérationnels permettraient de déterminer la faisabilité des différentes options de transport de bois.

Selon les informations obtenues, les seuls équipements existants pouvant être utilisés dans le cadre d'activités de récolte de bois sont des équipements légers comme la scie à chaîne, les véhicules tout terrain (VTT) et les motoneiges. Au niveau de la main d'œuvre, il n'existe pas, au sein des communautés, de travailleurs expérimentés dans la coupe de bois mécanisée.

La nature des peuplements forestiers est favorable à des coupes manuelles et à l'utilisation de machineries ou d'engins de petit gabarit. La topographie du terrain peut constituer une contrainte majeure à la réalisation d'activités de récolte dans le secteur de Kangiqsualujuaq.

Il est clair que l'envergure d'un projet de récolte dans les secteurs visés demeurera modeste. En supposant une récolte annuelle de 2000 mètres cubes, cela représente une superficie de traitement d'environ 50 ha annuellement. Les méthodes de récolte devraient, dans un premier temps, s'appuyer sur des techniques manuelles et être adaptées aux moyens matériels actuellement disponibles à l'intérieur des communautés.

10. TRAITEMENTS SYLVICOLES

La coupe totale avec protection de la régénération et des sols demeure encore la principale façon d'intervenir dans ces peuplements. Toutefois, comme il n'existe pas de référence sur des coupes forestières dans des situations comparables et à ces latitudes au Québec, la prudence doit prévaloir dans l'application des traitements sylvicoles afin d'éviter une dégradation des milieux perturbés par la coupe et assurer que ceux-ci seront convenablement régénérés. Aussi, nous sommes d'avis que la dimension des coupes devrait être restreinte à quelques hectares (maximum 5) d'un seul tenant.

Un suivi des travaux devra être réalisé dans les parterres au cours des années suivant la récolte pour vérifier l'état des peuplements. Ce suivi permettra d'établir la nécessité de réaliser des travaux pour corriger une déficience au niveau de la régénération et d'apporter des ajustements aux méthodes de récolte le cas échéant.

11. RECOMMANDATIONS

Cette étude sur la ressource forestière dans les deux parcelles de Kuujuaq et Kangiqsualujuaq démontre le potentiel réel des territoires à pouvoir soutenir des activités de récolte de bois d'une certaine envergure. La mise en œuvre de telles activités est toutefois confrontée à plusieurs contraintes d'ordre opérationnel pour lesquelles des solutions

devront être développées, analysées et testées. Aussi, des informations additionnelles sont nécessaires avant de décider d'entreprendre un projet de récolte et de transformation de bois sur une base régulière. Les étapes restant à franchir sont les suivantes :

- Conduire une étude de marché couvrant les produits de bois d'œuvre et de bois de chauffage à l'intérieur de chaque communauté.
- Réaliser un projet-pilote visant à déterminer la faisabilité technique et la viabilité économique d'un projet de récolte et de transformation de bois sur une base annuelle.
- Vérifier l'acceptabilité sociale d'un tel projet par les membres des communautés de Kuujuaq et Kangiqsualujuaq.
- Le cas échéant, identifier et acquérir une unité de transformation du bois (scierie mobile ou fixe) adaptée aux besoins.

Compte tenu des incertitudes entourant la réalisation d'opérations de récolte et de transport de bois, la réalisation d'un projet-pilote est un élément primordial pour déterminer la faisabilité du projet. Par conséquent, une telle étude devrait être priorisée et entreprise au cours de la prochaine année afin de fournir les informations nécessaires aux dirigeants locaux dans le processus décisionnel.

THE FOREST RESOURCE IN
NUNAVIK
KUUJJUAQ AND KANGIQSUALUJJUAQ
SECTORS

EXECUTIVE SUMMARY

Presented to the:
MAKIVIK CORPORATION

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TABLE OF CONTENTS

INTRODUCTION	1
1. LOCATION OF THE TERRITORY	1
2. LANDHOLDING REGIME.....	1
3. SOCIO-ECONOMICS	3
4. RESOURCE MANAGEMENT.....	3
5. REGULATORY AND LEGISLATIVE CONTEXT.....	3
6. FOREST INVENTORY	4
7. THE ALLOWABLE ANNUAL CUT.....	6
8. LUMBER POTENTIAL	6
9. OPERATIONAL CONSTRAINTS	6
10. SYLVICULTURAL TREATMENTS	7
11. RECOMMANDATIONS.....	7

INTRODUCTION

Makivik Corporation is the principal for this study of the forest resource in two parcels of land located near the villages of Kuujjuaq and Kangiqsualujjuaq in Nunavik. The communities of Kuujjuaq and Kangiqsualujjuaq hold wood harvesting rights under the James Bay and Northern Québec Agreement (section 6.3.3) in two areas located near the villages and accessible by river. These areas have been targeted for small-scale harvesting by the Inuit population for domestic use.

During an exploratory visit carried out in March 2004, forestry professionals from the MRNF's Forest Inventory Branch (FIB) identified a number of stands with commercially-sized trees. However, the information currently available was insufficient to determine the forestry potential of the sectors in question. Accordingly, a forest resource inventory was carried out with a view to obtaining the basic information required to assess the forestry potential of the areas in question and plan future harvesting activities.

1. LOCATION OF THE TERRITORY

The first parcel, located nearly 50 km from the village of Kuujjuaq covers an area of 62 241 ha along the Koksoak river. The second parcel is situated approximately 35 km south-west of Kangiqsualujjuaq village (figure 1) and covers an area of 73 240 ha and is crossed by the George river. The territories are located at northern latitudes (57° and 58° N) and are characterized by a short growing season (80-100 days). Although the sectors are located north of the northern boundary for commercial timber allocations, number of forest stands with commercially-sized trees can be found.

2. LANDHOLDING REGIME

→ Under the JBNQA, the areas under study in Kuujjuaq and Kangiqsualujjuaq are subject to special rights granted to the communities. Both are classified as Category I lands. By definition, Category I lands are owned outright by the Aboriginal people for their own exclusive use. In the case of Category II lands, the Aboriginal people have exclusive hunting, fishing and trapping rights but no specific ownership rights. The JBNQA contains a number of provisions concerning forestry resources. *Category I and II provides certain rights under section 6.3.1*

FIGURE 1
LOCATION

3. SOCIO-ECONOMICS

Kuujuuaq is Nunavik's largest community and a focal point of economic activity in Northern Québec. As a result, it has grown as a centre for various infrastructures, management services and commercial opportunities. When the James Bay and Northern Québec Agreement was signed in 1975, Kuujuuaq was named as Nunavik's administrative centre. Because of its new status, it became home to the region's newly-created agencies including the Makivik Corporation, the Kativik Regional Government, the Kativik Regional Development Board (known as Katutjiniq), the Nunavik Regional Health and Social Services Board and the Nunavik Research Centre.

Kangiqsualujjuaq's economy depends mainly on its cooperative store, government services and hunting and fishing activities. The government buildings offer health, educational and commercial services.

At the present time, none of the two communities owns a sawmill.

4. RESOURCE MANAGEMENT

Commercial, personal and community use of forest resources over Category I lands is overseen by the local landholding corporations. The two landholding corporations have exclusive and joined timber rights on those tracks of land identified in schedule 2 attached to section 6 of the JBNQA. Such rights are for community and personal uses, subject to the right to develop the lands over which the rights are granted. Hence, the two corporations act as manager of the resource.

5. REGULATORY AND LEGISLATIVE CONTEXT

The exclusive timber harvesting rights granted by section 6.3.1 of the JBNQA on the two parcels of land under study must be exercised within the prevailing regulatory and legislative context. The rights permit the harvesting of wood for personal and community use, and must be exercised in compliance with Québec's Forest Act. Among other things, a wood harvesting permit must be obtained from Québec's Minister of Natural Resources and Wildlife.

The wood harvesting permit can be obtained via a program of the MNRW authorizing the harvesting of wood in Crown forest reserves. The program is available exclusively to small sawmills that do not have other supply sources on public land, and whose annual consumption is below 2,000 m³ of wood. An annual forest management permit may be issued to a small wood processing mill on the following conditions:

- The volume requested must not exceed the allowable annual cut for the supply sector in question.
- The application must be sent in writing to the regional MRNF office, stipulating the year in which the wood will be harvested, the volume of roundwood required and the location of logging activities.
- The application must be supported by evidence showing that the applicant owns a mill that qualifies for the program.

Project must be passed in front of —

The program provides that permit holders must satisfy the following conditions:

- They must carry out the forest management activities identified in the permit, in compliance with the forest management standards and other conditions stipulated in the permit, in order to protect the forest environment and ensure its sustainable development.
- They must pay the logging dues prescribed by the Minister¹.
- They must scale the wood harvested, in accordance with the instructions contained in the permit.
- Within three months following expiry of the permit, the holder must provide the Minister with a report on the forest management activities that have been carried out.

6. FOREST INVENTORY

A forest inventory was carried out with a view to estimating available volumes, stand growth and regeneration potential, tree quality and other factors.

The areas in question have not been mapped using air surveys, and it was therefore necessary to use remote sensing and image classification techniques to produce a map of forest stands. The classification was performed by personnel from the MRNF's Forest Inventory Branch (FIB), on two moderate-resolution Landsat 7 satellite images. Table 1 presents the list of classes and their respective areas in the two sectors under study. The areas occupied by forest stands totalize 38922 ha for the Kuujuaq sector and 32563 ha for the Kangiqsualujuaq sector.

The forest inventory has been completed by a network of 40 sample plots established in each sector.

The data were compiled using the SCIF application, which automatically generates the principal statistics for all the forest strata in a given area. Table 2 presents the general statistics for the inventory strata.

¹ Personal conversation with Mr. Gilles Lavoie of the MRNF

TABLE 1
FOREST STRUCTURE IN THE TWO SECTORS

CLASS	DESCRIPTION	KUUJJUUAQ	KANGIQSUALUJJUAQ
AB	Low-growing scrubland	1 821	1 739
AH	High vegetation scrubland	771	858
EAU	Lakes, rivers, rapids	2 686	7 633
LE	Heathland	689	4 562
LH	Grass heath	5 221	1 787
LL	Lichen heath	1 446	602
LR	Stony heath	9 326	17 338
MH	Grassy wetland	550	4 138
R c C MU	Lichen-based mature medium-density softwood	343	126
R c D MU	Lichen-based mature open softwood	7 878	403
R c L MU	Lichen-based sparse softwood	2 053	9 207
R m B MU	Moss-based mature dense softwood	91	0
R m C MU	Moss-based mature medium-density softwood	1 432	3 439
R m D MU	Moss-based mature open softwood	14 284	7 968
R m L MU	Moss-based mature sparse softwood	12 211	11 420
RO	Rock outcrops	1 307	1 997
SD	Bare surface	131	22
TOTAL		62 241	73 240

TABLE 2
GENERAL FOREST STRATA STATISTICS

KUUJJUUAQ SECTOR							
No.	INVENTORY STRATUM	AREA	NO. OF PLOTS*	VOLUME PER HECTARE	MINIMUM VOLUME	MAXIMUM VOLUME	ESTIMATED ACCURACY
1	EAU	2 687	-	-	-	-	-
2	LR	19 956	1	7.5	7.5	7.5	0.0
3	RO	1 308	-	-	-	-	-
4	R c D MU	8 222	12 (4)	19.7	10.7	34.9	77.0
5	R m D MU	14 376	16	38.0	2.7	162.2	46.0
6	R c L MU	14 265	9 (6)	15.5	0.0	36.5	36.0
7	R m C MU	1 432	9	41.3	9.3	104.2	41.0
KANGIQSUALUJJUAQ SECTOR							
No.	INVENTORY STRATUM	AREA	NO. OF PLOTS*	VOLUME PER HECTARE	MINIMUM VOLUME	MAXIMUM VOLUME	ESTIMATED ACCURACY
1	EAU	7 634	-	-	-	-	-
2	LR	31 048	-	-	-	-	-
3	RO	1 997	-	-	-	-	-
4	R c D MU	529	11 (7)	20.3	12.7	32.6	79.2
5	R m D MU	20 627	7 (4)	15.1	0.0	36.5	25.1
6	R c L MU	3 439	11	28.9	12.3	86.5	49.4
7	R m C MU	139	21	44.4	3.7	100.1	73.2

* The figure in parentheses is the number of plots recruited.

7. THE ALLOWABLE ANNUAL CUT

It is extremely important to ensure the sustainability of the forests in the areas under study, and the allowable annual cut must therefore be calculated on the basis of the sustained yield principle. Compliance with the allowable annual cut is a prerequisite for the granting of permits to cut wood in forest reserves.

The gross annual volume increment for all forest strata is approximately 8,600 m³ for the Kuujjuaq sector and 7,400 m³ for the Kangiqsualujjuaq sector. The productive area must then be reduced to reflect the regulations applicable at the time of logging. The regulation with the most impact is that which prohibits logging in lichen-based softwood stands. Section 95 of the *Regulation respecting standards of forest management for forests in the domain of the State* (RSFM) states that management permit holders must leave intact all lichen-based black spruce stands having an area of 4 hectares or more and forming a single block. This impact of this particular provision reduces the size of the logging area by 21,156 hectares in the Kuujjuaq sector and 22,488 hectares in the Kangiqsualujjuaq sector. An additional 5% reduction is applied to take other provisions into account, such as the preservation of wooded strips along watercourses.

As a result of these reductions, the allowable annual cut is approximately 4,500 m³ in the Kuujjuaq sector, and approximately 3,500 m³ in the Kangiqsualujjuaq sector.

8. LUMBER POTENTIAL

Because the wood cut would eventually be processed, it is important to estimate the amount of lumber that could be produced each year. This involves establishing the saw log yield (expressed as a percentage of the total volume of wood per species) for each forest stratum in the areas under study. The estimate is based on individual tree measurement data collected from the sample plots. Data analysis shows that nearly the two-thirds of the allowable cut could be processed as lumber.

TABLE 3
SAW LOG VOLUMES

SECTOR	TOTAL AAC (m ³)	ESTIMATED LUMBER YIELD (m ³)
Kuujjuaq	4 543	3 107
Kangiqsualujjuaq	3 516	2 355

9. OPERATIONAL CONSTRAINTS

Any future logging activities in the two areas under study will be subject to certain operational constraints relating mostly to access. There is no road link to either sector; the only access is by boat in summer and by snowmobile in winter. Timber transportation is the most limitative factor. Either the transportation being done on the land or by the river, adapted equipments allowing the transport of heavy loads will be

necessary. Operational testing would be required to establish the feasibility of the various timber transportation options.

According to the information at our disposal, the only available pieces of equipment that could be used for logging are small devices such as chainsaws, ORVs and snowmobiles. On the labour side, there are no experienced forestry workers in the communities.

The forests themselves are suitable for manual logging and the use of small machines and apparatus. The topography of the forested areas in the Kuujjuaq sector does not constitute an operational constraint. In the Kangiqsualujjuaq sector, however, the steep slopes would limit vehicle movements. Many areas simply cannot be accessed without special equipment, and special harvesting methods would also be required.

It seems clear that the scope of a logging project in the targeted sectors should remain modest. Assuming an annual harvest of 2000 cubic meters, the area to be cut would represent roughly 50 ha. In our opinion, the selected logging methods should be manual and will have to be adjusted to allow the use of the equipment currently available in the communities.

10. SYLVICULTURAL TREATMENTS

Clear-cutting with protection of regeneration and soils is still the main logging method used in stands such as these. However, there are no reference cuts in comparable situations at these latitudes in Québec, and care will be needed when applying silvicultural treatments in order to avoid damaging the environments disturbed by logging and ensure that they are able to regenerate properly. We believe the size of single-block logging sites should be limited to a few hectares (maximum of five).

The logged areas must be monitored in the years following harvesting, to check the status of the stands and see whether work is required to correct regeneration deficiencies or make adjustments to logging methods if necessary.

11. RECOMMANDATIONS

This study of the forests in two parcels of land in Kuujjuaq and Kangiqsualujjuaq has shown that the areas in question offer an existing potential for logging activities, subject to certain operational constraints for which solutions must be identified, examined and tested. Additional information will also be required before deciding to undertake harvesting and processing activities on an annual basis. The next steps are:

- To carry out a market survey for lumber products and firewood in the communities concerned.
- To carry out a pilot project aimed at establishing the technical feasibility and economic viability of an annual wood harvesting and processing project.
- To see whether such a project would be socially acceptable in the Kuujjuaq and Kangiqsualujjuaq communities.
- Where applicable, to identify and acquire a wood processing unit (mobile or fixed sawmill) tailored to local needs.

Given the uncertainty with regards to wood harvesting and transportation operations, a feasibility study followed by a pilot project is recommended to determine the feasibility of logging in the areas in question. Such a project should receive priority and be undertaken within the coming year, in order to provide the information needed by local leaders to reach their decision. Although it is not required by the MNRW, a forest management plan should be prepared following the feasibility study if ever a long-term logging project is to be undertaken. A social and environmental impact assessment could also be found necessary by the Kativik environmental advisory committee prior to logging activities.



THE FOREST RESOURCE IN
NUNAVIK
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SECTORS

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TABLE OF CONTENTS

INTRODUCTION	1
1. GENERAL DESCRIPTION OF THE STUDY AREA.....	2
1.1 GEOGRAPHY	2
1.1.1 LOCATION	2
1.1.2 PHYSICAL ENVIRONMENT.....	2
1.1.2 LANDHOLDING REGIME	6
1.2 THE SOCIO-ECONOMIC CONTEXT.....	6
1.2.1 COMMUNITY HISTORY	6
1.2.2 DEMOGRAPHY	7
1.2.3 SOCIO-ECONOMICS	8
1.2.4 RESOURCE MANAGEMENT	10
1.3 REGULATORY AND LEGISLATIVE CONTEXT	10
1.3.1 AUTHORIZATIONS AND OTHER CONDITIONS	11
2. DESCRIPTION OF THE FOREST ENVIRONMENT.....	14
2.1 FOREST INVENTORY.....	14
2.1.1 FOREST MAPS	14
2.1.2 FIELD SAMPLING	15
2.1.3 COMPILATION OF FOREST INVENTORY DATA AND STATISTICS.....	18
2.1.4 BACKGROUND.....	20
2.1.5 FOREST REGENERATION.....	21
3. FOREST MANAGEMENT POTENTIAL	22
3.1.1 ESTABLISHING THE ALLOWABLE ANNUAL CUT.....	22
3.1.2 LUMBER POTENTIAL	26
3.1.3 OPERATIONAL CONSTRAINTS	27
3.1.4 SYLVICULTURAL TREATMENTS	30
4. RECOMMENDATIONS	32
CONCLUSION.....	33
REFERENCES	34

INTRODUCTION

The Makivik Corporation is the principal for this study of the forest resource in two parcels of land located near the villages of Kuujjuaq and Kangiqsualujjuaq in Nunavik. The study follows on from the desire of Nunavik's Northern communities to use the wood available in certain forest areas as supplementary fuel or for the construction of hunting camps and homes. The communities of Kuujjuaq and Kangiqsualujjuaq hold wood harvesting rights under the James Bay and Northern Québec Agreement (section 6.3.3) in two areas located near the villages and accessible by river. These areas have been targeted for small-scale harvesting by the Inuit population for domestic use.

Because the sectors in question are located north of the northern boundary for commercial timber allocations, they are not covered by the management inventory carried out by Québec's Ministère des Ressources naturelles et de la Faune (MRNF). As a result, there is little or no information available on the timber resource in those sectors. During an exploratory visit carried out in March 2004, forestry professionals from the MRNF's Forest Inventory Branch (FIB) identified a number of stands with commercially-sized trees. However, the information currently available is insufficient to determine the forestry potential of the sectors in question.

Accordingly, a forest resource inventory was carried out with a view to obtaining the basic information required to assess the forestry potential of the areas in question and plan future harvesting activities. This document reports the results of the inventories in the target sectors and identifies timber harvesting methods that would help ensure the sustainability of the forest.

1. GENERAL DESCRIPTION OF THE AREA UNDER STUDY

The area under study comprises two parcels of forest land granted to the Inuit under the James Bay and Northern Québec Agreement. This chapter describes their principal geographical, biophysical and socio-economic components.

1.1 GEOGRAPHY

1.1.1 LOCATION

The area under study comprises two parcels of land located in Nunavik, one near the village of Kuujjuaq and the other near the village of Kangiqsualujjuaq (see Figure 1). The Kuujjuaq parcel covers a total area of 62,241 hectares lying between latitudes 57° 59' 43" N. and 57° 37' 35" N., and longitudes 68° 40' 31" W. and 69° 22' 44" W. It is situated approximately 20 km south-west of Kuujjuaq village and is bordered to the north by the Koksoak River.

The Kangiqsualujjuaq parcel covers a total area of 73,240 hectares lying between latitudes 58° 19' 04" N. and 58° 11' 45" N., and longitudes 66° 07' 52" W. and 65° 28' 03" W. It is situated approximately 35 km south-west of Kangiqsualujjuaq village. The George River flows through the area from north to south.

1.1.2 PHYSICAL ENVIRONMENT

The two sectors are located in two different natural provinces, namely province K (Ungava Bay Basin) in the case of the Kuujjuaq parcel, and province L (Torngat Mountains) in the case of the Kangiqsualujjuaq parcel¹. Province K covers a total area of 103,000 km², and province L, a total area of 42,000 km². The following paragraphs describe the main variables of each province, including their geology, relief, surface deposits, hydrography and climate

¹ Source: *Portrait synthèse des données sur les aires protégées au Québec*.
Ministère du Développement durable, Environnement et Parcs, 1999.

FIGURE 1
LOCATION

1.1.2.1 GEOLOGY

The geological basement of the Ungava Bay Basin sector comprises volcanic and sedimentary rock to the west, and tonalites and gneiss to the east. Apart from the mountaintops, which are dominated by rock outcrops, most of the area is covered by thick moraine deposits and glaciofluvial sands and gravels

The geological basement of the Torngat Mountain sector is composed of granitic and gneissic rock. Because of the sector's relief, rock outcrops are dominant virtually everywhere except for the valleys, which contain some glacial and glaciofluvial deposits

1.1.2.2 RELIEF

The natural province of the Ungava Bay Basin comprises a large depression sloping towards the Bay and producing two separate types of relief. In the western portion of the sector, known as the Quebec Labrador Trough, there are several long, narrow mounds and small hills separated by valleys (some of which are encased). The sector also has a fairly flat plain (difference of elevation generally below 30 m) with a few small hills in the extreme south. The region adjacent to Ungava Bay, which includes the Kuuujuaq sector, is situated at sea level. This sector, too, boasts several long versants sloping gently towards the Koksoak River, with a large rocky plateau and some small hills

In the second natural province, the western and southern sectors resemble an eroded plateau on two separate levels. The first level, located near Ungava Bay, is composed of a series of long, narrow hills and valleys with elevation differences of up to 200 m in certain places. Altitude varies from sea level in the coastal sector to approximately 400 m in the inland sector. The second level presents a significant difference of elevation (between 400 m and 700 m) due to the presence of the Torngat Mountains on either side of the Québec-Labrador border. In the Kangiqsualujuaq sector, the George River Valley is hemmed in by steep hills. The higher portion of the area is composed of large rocky plateaus, while the remaining sector is hilly and criss-crossed by deep valleys.

1.1.2.3 SURFACE DEPOSITS

The Quebec Labrador Trough and the hills located in the extreme south of the Ungava Bay Basin sector are composed of alternating thin glacial and rocky deposits. To the east of the Trough, the undulating plain is characterized thick moraine deposits that often contain forms of drumlins. The plain is also characterized by glaciofluvial deposits (eskers and outwash plains). Along Ungava Bay, at an altitude of less than 150 m, the depressions and valley floors are filled with marine

deposits, with sandy littoral deposits on the rocky flanks. In the Kuujuuaq sector, the long slopes are composed of tills interspersed with glaciofluvial deposits, particularly along the Koksoak River. A large portion of the area is covered by organic deposits, while the mountaintops and large plateaus are composed of rock.

The Torngat Mountain natural province is characterized by its broad valleys, with glacial deposits and colluviums at the base of the slopes. Glaciofluvial or fluvial sands and gravels are found in the valley floors. Along the George River, the Kangiqsualujjuaq sector is dominated by very thick glaciofluvial deposits, while the steep slopes, mountaintops and plateaux are composed mostly of rock, with some till.

1.1.2.4 HYDROGRAPHY

The Ungava Bay natural province is characterized by a well-developed hydrographic network. It boasts numerous rivers, some larger than others, including the Caniapiscau, aux Mélézes, Whale, George (a large portion) and Koksoak. Only by the Koksoak River and some of its smaller tributaries flow through the parcel of land situated near Kuujuuaq.

The hydrographic network in the Torngat Mountain natural province is less developed. Its main watercourses are the George and Ford Rivers. Only the George River flows through the Kangiqsualujjuaq sector, from north to south.

1.1.2.5 CLIMATE

The Kuujuuaq sector (Ungava Bay Basin) has a subarctic or taiga climate². The average annual temperature is approximately -5 °C and the frost-free season lasts approximately 60 days. Annual precipitation totals roughly 475 mm, and nearly 40% falls as snow. In this type of climate, the permafrost extends to an estimated depth of at least 100 cm. There are approximately 700 growing degree days, and the growth season lasts for an average of 100 days per year.

The Kangiqsualujjuaq sector (Torngat Mountains) has a tundra climate². The average annual temperature is approximately -7 °C, while the frost-free season lasts approximately 40 days. The region receives roughly 500 mm of precipitation annually, approximately 40% of which falls as snow. In this type of climate, the permafrost extends to an estimated depth of 120 cm. There are approximately 600 growing degree days, and the growing season lasts for an average of 80 days per year.

² Source: *Le Nord du Québec : profil régional*. Gouvernement du Québec, 1984.

1.1.2 LANDHOLDING REGIME

Québec's current borders were established by the 1912 Québec Boundaries Extension Act, which transferred a vast Northern region, including the sectors under study, to the province.

In 1975, the James Bay and Northern Québec Agreement (JBNQA) signed by the Inuit, the Cree and the Québec and Canadian governments, introduced a three-part landholding system composed of Category I, II and III lands. By definition, Category I lands are owned outright by the Aboriginal people for their own exclusive use. In the case of Category II lands, the Aboriginal people have exclusive hunting, fishing and trapping rights but no specific occupation rights. They have no exclusive privileges or rights at all on Category III lands.

Under the JBNQA, the areas under study in Kuuujuaq and Kangiqsualujuaq are both classified as Category I lands. The JBNQA contains a number of provisions concerning forestry resources, and section 1.3 of this report contains a detailed examination of the rules applicable to forest management activities in these sectors.

1.2 THE SOCIO-ECONOMIC CONTEXT

1.2.1 COMMUNITY HISTORY

1.2.1.1 KUUJJUAQ

The municipality of Kuuujuaq, which translates as *big river*, was known until recently as Fort-Chimo. The Hudson's Bay Company (HBC) first established a fur trading post approximately five kilometres downstream of the village in the 1830s³, marking the beginning of the fur trade in Nunavik. The trading post was closed in 1842 and reopened in 1866. At the time, three Aboriginal nations, the Montagnais (or Innu), the Naskapi and the Inuit, came to trade at the HBC post.

In 1942, the American armed forces built a military base known as Crystal 1 on the west bank of the Koksoak River, where the village of Kuuujuaq currently stands⁴. The American army occupied the base from 1942 to 1945. Its presence boosted the community's development, in particular by creating infrastructures. The United States handed the base over to the Canadian government at the end of the Second World War. A Catholic mission was built in 1948, followed by a nursing station, a school and a weather station. In 1961, the community received a Surêté du Québec station, an administrative office, a hospital,

³ Source : Website www.nvkuujuaq.ca

⁴ Source : *Le Nord du Québec : profil régional*. Gouvernement du Québec, 1984.

a French language school and a telephone service. Other facilities were constructed in the late 1970s, including a residence for non-Aboriginal Québec government personnel, teachers' houses, thirty or so homes for families and staff of the Kativik Regional Government (KRG), as well as a community centre, garage, office premises, a restaurant and a hotel. Since then, other hotels and restaurants have opened, along with stores selling a variety of objects including artwork and crafts, and a bank. Kuujjuaq is considered to be Nunavik's largest community, and now has its own airport with two runways that serves as the main transit point between the Inuit communities and southern Québec (Montreal).

1.2.1.2 KANGIQSUALUJJUAQ

Kangiqsualujjuaq is Nunavik's most easterly village, and is located approximately 160 kilometres north-east of Kuujjuaq. Its name means *large bay*. Like Kuujjuaq, it was originally a fur trading post during the periods 1838-1842, 1876-1915 and 1923-1932⁵. The trading post, operated by the HBC, was actually located south of the present village. Construction of the village itself began in 1962, and a number of infrastructures were added in 1963, including a school, a cooperative store and several government buildings. The municipality of Kangiqsualujjuaq was legally constituted in 1980.

1.2.2 DEMOGRAPHY⁶

Generally speaking, the Nunavik population is fairly young. Approximately 60% of the total population (double the rate for southern Québec) is under 30 years of age. The natural population growth rate among the Inuit is between three and four times higher than the average for Québec as a whole. The life expectancy of the Inuit population has changed significantly over the last half-century, from 48 years in 1950 to 64 years today.

Inuttitut is the mother tongue of the region's Aboriginal population, and English continues to be the second language, although the use of French appears to be spreading. Most of the Inuit population practises the Anglican religion.

The following sections examine the demographic profiles of the two communities.

⁵ Source: Website: www.nvkuujjuaq.ca

⁶ Source: Website: www12.statcan.ca

1.2.2.1 KUUJJUAQ

In 2001, the village of Kuuujuaq had a population of approximately 1,920 people, including 1,560 residents and 360 non-residents⁶. The resident population was evenly divided between men and women. Approximately 60% of Aboriginal residents were between 0 and 24 years of age, 37% were between 25 and 64 years of age, and 3% were aged 65 or over. The average age was 19 years.

In terms of education, the data show that 55% of the population aged 25 or over had not completed high school, while 5% had a high school diploma, 38% had completed postsecondary education or had obtained a qualification from a vocational institution or college (CEGEP), and 2% had a university degree.

1.2.2.2 KANGIQSUALUJJUAQ

In 2001, the village of Kangiqsualujjuaq had 705 inhabitants, including 670 residents and 35 non-residents⁷. The resident population was evenly divided between men and women. In terms of age, the figures are virtually identical to those for Kuuujuaq, with 59% of the population between 0 and 24 years of age, 37% between 25 and 64 years of age, and 3% aged 65 or over. The average age was 18.

In terms of education, 65% of the population had not completed high school, 4% had obtained a high school diploma, and 31% had completed postsecondary education or had obtained a qualification from a vocational institution or college (CEGEP). None of the residents had graduated from university.

1.2.3 SOCIO-ECONOMICS

The socio-economic development of Nunavik in general, and the communities of Kuuujuaq and Kangiqsualujjuaq in particular, began with the fur trade. The trading posts were key factors in converting the Inuit economy into one based on with the English and French. The cooperative movement was created in the 1950s, breathing new life into Nunavik's economic development. During the same period, the Inuit lifestyle changed significantly from semi-nomadic to sedentary, due mainly to the introduction of government residential construction programs and the creation of regional institutions. The James Bay and Northern Québec Agreement, signed in 1975, also boosted the socio-economic development of the local communities, among other things by creating a number of Inuit-managed institutions.

⁷ Source: Website: www12.statcan.ca

Hunting and fishing activities are still practiced by many residents of the two municipalities.

1.2.3.1 KUUJJUAQ

Kuuujuaq is Nunavik's largest community and a focal point of economic activity in Northern Québec for the last forty years. As a result, it has become a growth centre for infrastructures, management services and trade. Kuuujuaq's economy relies on a network of facilities and commodities similar to those found in many of Québec's major cities – a modern, 500-seat convention centre, two three-star hotels, two restaurants, a branch of the Canadian Imperial Bank of Commerce, the Ungava Tulattavik health centre and numerous specialist stores and boutiques. Two airlines provide air transportation to Kuuujuaq, namely First Air, which offers North-South freight and passenger services, and Air Inuit, which serves the Northern villages.

When the James Bay and Northern Québec Agreement was signed in 1975, Kuuujuaq was named as Nunavik's administrative centre. Because of its new status, it became home to the region's newly-created agencies including the Makivik Corporation, the Kativik Regional Government, the Kativik Regional Development Board (known as Katutjiniq), the Nunavik Regional Health and Social Services Board and the Nunavik Research Centre.

Hunting and fishing are Kuuujuaq's principal tourist attractions. A number of outfitters have opened in the region to take advantage of the considerable fishing potential. Visitors are able to fish for Atlantic salmon, lake trout and Arctic char on the Koksoak River, and are able to hunt caribou. The majestic landscapes and wide-open spaces of the Great North also attract nature and outdoor enthusiasts, forming a new client base for the outfitters. Local firms now offer boat trips in the summer and sled trips in the winter.

1.2.3.2 KANGIQSUALUJJUAQ

Kangiqsualujjuaq's economy is dependent mainly on its cooperative store, government services and hunting and fishing activities. The cooperative – the first of its kind to be operated in Northern Québec – was created in 1959, and the store was built in 1963. It originally sold Arctic char, but other services have since been added, including retail sales (a general store), crafts, engravings, furs and leisure activities (a billiard hall and other facilities).

The government buildings offer health, educational and commercial services.

Hunting and fishing activities are of great economic importance to the local population. The Kangiqsualujjuaq sector is home to one of the largest caribou breeding grounds in the world, used by hundreds of thousands of animals. As far as fishing is concerned, the George River, along with the region's other rivers, abound with species such as the Arctic char, Atlantic salmon and trout (lake trout and brook trout). The region's other tourist attractions, including the Torngat Mountains, the Koroc River, the Hélène Falls and the Abloviak Fjord, attract nature lovers (hikers, canoers and kayakers). A new park is currently being developed to protect the Korok River and the Torngat Mountains.

1.2.4 RESOURCE MANAGEMENT

The James Bay and Northern Québec Agreement (JBNQA), signed in 1975, led to the creation of numerous Inuit-managed institutions including the Kativik Regional Government (KRG), created in 1978. The KRG is responsible for various aspects of public administration, including economic development, transportation, policing, telecommunications and wildlife protection. The Makivik Corporation was also created in 1978, to protect the rights and interests of the Inuit people under the JBNQA. It is also responsible for collecting and managing compensation paid under the JBNQA.

Commercial, personal and community use of forest resources on Category I lands is overseen by the local landholding corporation. Kuujjuaq and Kangiqsualujjuaq have their own landholding corporations, Nayumivik and Qiniqtiq respectively. Forest resources can be harvested either under the corporation's supervision or by people acting with the corporation's consent⁸.

1.3 REGULATORY AND LEGISLATIVE CONTEXT

The exclusive timber harvesting rights granted by section 6.3.1 of the JBNQA on the two parcels of land under study must be exercised within the prevailing regulatory and legislative context. The rights permit the harvesting of wood for personal and community use, and must be exercised in compliance with Québec's *Forest Act*. Among other things, a wood harvesting permit must be obtained from Québec's Minister of Natural Resources and Wildlife.

The remainder of this section examines the legislation and regulations applicable to logging activities in the areas in question, and establishes their scope with regard to the project under consideration.

⁸ Source: Éditeur officiel du Québec. *Act respecting the land regime in the James Bay and New Québec territories.*

1.3.1 AUTHORIZATIONS AND OTHER CONDITIONS

In its Order-in-Council 734-2004, dated August 18, 2004, the Québec government, via the MRNF, introduced a program to issue annual forest management permits authorizing the harvesting of wood in Crown forest reserves located in the regional county municipalities of Minganie and Caniapiscau, the Basse-Côte-Nord region and north of the northern boundary established by the Minister. The program is available exclusively to small sawmills that do not have other supply sources on public land, and whose annual consumption is below 2,000 m³ of wood. It enables the needs of local communities to be met within the permitted harvesting range (the region's allowable annual cut) while protecting the sustainable development of the forest.

An annual forest management permit may be issued to a small wood processing mill on the following conditions:

- The volume requested must not exceed the allowable annual cut for the supply sector in question.
- The application must be sent in writing to the regional MRNF office, stipulating:
 - The year in which the wood will be harvested;
 - The volume of roundwood required for the mill's operations, up to 2,000 m³ per year;
 - The location of logging activities.
- The application must be supported by evidence showing that the applicant owns a mill that qualifies for the program.

In the case of the two areas under study, applications must be sent to the MRNF's Regional Office (Abitibi-Témiscamingue) by the designated parties (the land corporation) in each community.

The permit, once ratified by the Minister, is valid for up to 12 months, ending no later than March 31 following the date on which it is issued.

The program provides that permit holders must satisfy the following conditions:

- They must carry out the forest management activities identified in the permit, in compliance with the forest management standards (Regulation respecting standards of forest management for forests in the domain of the State – RSFM) and other conditions stipulated in the permit, in order to protect the forest environment and ensure its sustainable development.

- They must pay the logging dues prescribed by the Minister (section 106 of the *Forest Act*). The dues are payable in money, in silvicultural treatments or by the carrying out of other forest protection or development activities. However, given the situation of the sectors under study, along with the existing rights and the landholding system, it would appear that the Minister has the power to amend this particular condition⁹.
- They must scale the wood harvested, in accordance with the instructions contained in the permit. Again, the Minister may amend this condition⁹.
- In the three months following expiry of the permit, the holder must provide the Minister with a map to a scale of 1:20,000, showing the locations of sites on which logging and other forest management activities have been carried out, along with scaling details in accordance with the conditions set out in the permit.

In addition, because some small mills do not necessarily operate continuously, every year, the permit holder is not obliged to produce the plans and reports required by the other types of agreements and contracts applicable to the public forests (general forest management plan, five-year forest management plan, annual forest management plan and report).

It is important to emphasize that the program is designed exclusively for processing mills with an annual authorized consumption of 2,000 m³ or less. For a mill that processes more than 2,000 m³ of wood in a given year, the conditions for obtaining supplies from public forests are set out in one of several other types of agreements stipulated in the *Forest Act*. In the Kuujuuaq and Kangiqsualujjuaq sectors, the agreement that permits the harvesting of volumes in excess of 2,000 m³ is the forest management contract (FMC). Under the *Forest Act*, a forest management contract may be issued for resources in a forest reserve – in other words, an area of public land not covered by a timber supply and forest management agreement (TSFMA) or a forest management agreement (FMA). This particular definition applies to the two sectors under study (Kuujuuaq and Kangiqsualujjuaq). The requirements of a forest management contract are similar to those of a TSFMA or FMA; holders must produce general and detailed management plans covering different timeframes, namely a general forest management plan (25 years), a five-year forest management plan (five years) and annual forest management plans and reports. Holders must also carry out the management activities stipulated in the contract, monitor the work done

⁹ Personal conversation with Mr. Gilles Lavoie of the MRNF

and present the results of its monitoring activities in accordance with the MRNF's instructions.

2. DESCRIPTION OF THE FOREST ENVIRONMENT

This chapter presents a profile of the forests in the two areas under study.

2.1 FOREST INVENTORY

The areas under study are located north of the northern boundary for commercial wood allocations. They are therefore not covered by the forest inventory program of the Ministère des Ressources naturelles et de la Faune du Québec (MRNF), and as a result virtually no information is available on the forest resource in the two areas. A forest inventory was therefore carried out with a view to estimating available volumes, stand growth and regeneration potential, tree quality and other factors.

2.1.1 FOREST MAPS

The areas in question have not been mapped from the air, and it was therefore necessary to use remote sensing and image classification techniques to produce a map of forest stands. The classification was performed by personnel from the MRNF's Forest Inventory Branch (FIB), on two moderate-resolution Landsat 7 satellite images. Table 1 shows the characteristics of the images.

TABLE 1
CHARACTERISTICS OF THE IMAGES

SECTOR	SENSOR	TRAJECTORY	RANGE	ACQUISITION DATE	RESOLUTION
Kuujuuaq	Landsat ETM	15	20	July 17, 2001	25 m
Kangiqsualujjuaq	Landsat ETM	13	19	August 7, 2002	25 m

The classification was performed in two parts. First, a preliminary classification was produced to identify the forest masses in other areas and to produce a preliminary map that was then used to plan the survey. Two classes were used for this purpose, namely dense softwood stands and open softwood stands. The spectral bands used for the classification were ETM3, ETM4 and ETM5.

Once the fieldwork was complete, a final image classification was produced from the samples obtained (control points and sample plots) and observations recorded by the field team during sampling and aerial

survey work. This detailed information was accurately plotted using GPS, and 17 different vegetation classes and sites were identified, including seven relating to the forest stands. Table 2 presents the list of classes and their respective areas in the two sectors under study.

TABLE 2
FOREST STRUCTURE IN THE TWO SECTORS

CLASS	DESCRIPTION	KUUJUUAQ	KANGIQSUALUJUAQ
AB	Low-growing scrubland	1 821	1 739
AH	High vegetation scrubland	771	858
EAU	Lakes, rivers, rapids	2 686	7 633
LE	Heathland	689	4 562
LH	Grass heath	5 221	1 787
LL	Lichen heath	1 446	602
LR	Stony heath	9 326	17 338
MH	Grassy wetland	550	4 138
R c C MU	Lichen-based mature medium-density softwood	343	126
R c D MU	Lichen-based mature open softwood	7 878	403
R c L MU	Lichen-based sparse softwood	2 053	9 207
R m B MU	Moss-based mature dense softwood	91	0
R m C MU	Moss-based mature medium-density softwood	1 432	3 439
R m D MU	Moss-based mature open softwood	14 284	7 968
R m L MU	Moss-based mature sparse softwood	12 211	11 420
RO	Rock outcrops	1 307	1 997
SD	Bare surface	131	22
TOTAL		62 241	73 240

Clearly, the areas in question are extremely diverse in terms of their strata. However, the available images and the methods used were insufficient for a more detailed description of the forest cover. Figures 2 and 3 present forest maps for the areas under study.

2.1.2 FIELD SAMPLING

The Forest Inventory Branch (FIB) established a sampling base of 40 sample plots per sector, distributed as follows:

- 25 plots in dense softwood strata
- 15 plots in open softwood strata

The sampling plan was drawn up in the office before the field team's departure, and was sent to the Forest Inventory Branch (FIB) for approval. The plots were established along transects of five to seven sample plots over distances not exceeding 1,500 metres.

FIGURE 2
FOREST MAP OF THE KUUJJUAQ SECTOR

FIGURE 3
FOREST MAP OF THE KANGIQSUALUJJUAQ SECTOR

Due to the high cost of aerial transportation, as many transects as possible were established in locations that could be accessed by boat. However, approximately 30% were situated in inland locations accessible only by helicopter, to ensure that sampling was representative of the area as a whole.

Transects and plots were established according to the standard specifications of the Forest Inventory Branch's (FIB) third ten-year program. All the plots were temporary, with a radius of 11.28 metres. The list of dendrometric variables was shortened to increase sampling productivity and reduce inventory costs. The data measured on site were collated on specially-prepared sheets and were then entered into the computer using the PLACETTE application. Plot locations were established in compliance with Forest Inventory Branch (FIB) requirements using a GPS sensor with differential correction capabilities.

In addition to collecting the data, the inventory teams took one or more photographs of each site using a digital camera. The photographs provided representative images of the characteristic features of the vegetation in the surveyed areas, and a selection can be seen in the appendix to this report. Among other things, they were used to improve the satellite image classification by increasing the number of areas from specific, localized field data were taken.

Due to the lack of roads, long distances, transportation times, the timing of the inventory and the remote locations of the areas under study, a significant logistical planning effort was required to maximize the productivity of the survey team and ensure their safety. Sampling was carried out by a highly experienced inventory team, with technical support from the Inuit communities and a guide to help navigate the rivers. The team carried a satellite telephone at all times, and was able to communicate directly with local authorities if they encountered problems.

2.1.3 COMPILATION OF FOREST INVENTORY DATA AND STATISTICS

After sampling, the inventory data were entered into the computer, checked and handed over to the Forest Inventory Branch (FIB), whose specialists produced the final image classification using the new areas derived from the field information. The new classification was then used to add detail to the forest map by increasing the number of identifiable strata.

The data were compiled using the SCIF application, which automatically generates the principal statistics for all the forest strata in a given area.

The compilation process is divided into several phases, one of the most important of which is strata grouping. The grouping phase, as its name suggests, involves grouping two or more forest strata to form a single inventory stratum. Groupings are based on similarities between strata characteristics (species composition, average diameter, density, height, stand age, etc.). They produce more representative averages, and allow inventory statistics to be extended to unsampled strata. Table 3 presents the general statistics for the inventory strata.

Detailed inventory compilation results can be found in Appendix 1, including stand tables, stock tables, surface tables and tree studies.

TABLE 3
GENERAL FOREST STRATA STATISTICS

KUUJJUAQ SECTOR							
NO.	INVENTORY STRATUM	AREA	NO. OF PLOTS*	VOLUME PER HECTARE	MINIMUM VOLUME	MAXIMUM VOLUME	ESTIMATED ACCURACY
1	EAU	2 687	-	-	-	-	-
2	LR	19 956	1	7.5	7.5	7.5	0.0
3	RO	1 308	-	-	-	-	-
4	R c D MU	8 222	12 (4)	19.7	10.7	34.9	77.0
5	R m D MU	14 376	16	38.0	2.7	162.2	46.0
6	R c L MU	14 265	9 (6)	15.5	0.0	36.5	36.0
7	R m C MU	1 432	9	41.3	9.3	104.2	41.0
KANGIQSUALUJJUAQ SECTOR							
NO.	INVENTORY STRATUM	AREA	NO. OF PLOTS*	VOLUME PER HECTARE	MINIMUM VOLUME	MAXIMUM VOLUME	ESTIMATED ACCURACY
1	EAU	7 634	-	-	-	-	-
2	LR	31 048	-	-	-	-	-
3	RO	1 997	-	-	-	-	-
4	R c D MU	529	11 (7)	20.3	12.7	32.6	79.2
5	R m D MU	20 627	7 (4)	15.1	0.0	36.5	25.1
6	R c L MU	3 439	11	28.9	12.3	86.5	49.4
7	R m C MU	139	21	44.4	3.7	100.1	73.2

* The figure in parentheses is the number of plots recruited.

2.1.4 BACKGROUND

Very little information is available on the human and natural disturbances that have shaped the forest landscape in the two sectors under study. Logging appears to have taken place in both sectors several decades ago. We observed a very small disused processing site (sawmill) in the Kuujuuaq sector, but it was not possible, during the aerial surveys, to locate any former logging zones within the area under study. One former logging site was identified in the Kangiqsualujjuaq sector, however, and regeneration was clearly well established. In addition, firewood is taken from the area by community members who have built cottages or hunting camps on the banks of the Koksoak and George Rivers.

Fire is the most significant natural disturbance and the element most likely to damage the Northern forests. During fieldwork, some fire-generated stands between 30 and 50 years old were identified. No traces of recent fires were found either on the satellite images or during the aerial surveys. The absence of regenerating and intermediary strata

also suggests that there have been no fires in the area for several decades.

2.1.5 FOREST REGENERATION

Sapling data (2 cm to 8 cm diameter classes) from the forest inventory show that the forest stands in the two areas are fairly well regenerated (see Table 4). Regeneration density varies from 1,071 to 3,583 trees per hectare. Mossy spruce stands exhibit the highest density, with results varying from 1,429 to 3,583 trees per hectare. These results do not include seedling trees (under 1.5 metres high), for which data were not collected. However, the low-growing scrubland data noted during sampling provides evidence of adequate seedling stage regeneration in most of the stands observed.

TABLE 4
SAPLING REGENERATION STATISTICS

KUUJJUAQ SECTOR					
FOREST STRATUM	DIAMETER CLASS				TOTAL
	2	4	6	8	
R c D MU	529	475	519	315	1 839
R c L MU	472	333	333	222	1 361
R m C MU	917	1 222	1 000	444	3 583
R m D MU	813	533	397	184	1 928
KANGIQSUALUJJAQ SECTOR					
FOREST STRATUM	DIAMETER CLASS				TOTAL
	2	4	6	8	
R c D MU	455	409	455	318	1 636
R c L MU	464	286	107	214	1 071
R m C MU	1 046	568	705	341	2 659
R m D MU	560	333	238	298	1 429

3. FOREST MANAGEMENT POTENTIAL

This section examines the forest management potential in the sectors under study, based on the legislative and regulatory framework governing forest resource management in the region, and the constraints deriving from its northern location. Specifically, it looks at the overall allowable annual cut and lumber yield, the silvicultural treatments suitable for the types of stands found in the areas under study, and the operational constraints on logging and transportation.

3.1.1 ESTABLISHING THE ALLOWABLE ANNUAL CUT

It is extremely important to ensure the sustainability of the forests in the areas under study, and the allowable annual cut must therefore be calculated on the basis of the sustained yield principle. Compliance with the allowable annual cut is a prerequisite for the granting of permits to cut wood in forest reserves.

3.1.1.1 ANNUAL VOLUME INCREMENT

The allowable annual cut calculation methods used for commercial forests, involving the Sylva II simulation application, are not appropriate for the areas in question because of the limited amount of information available. For example, stand growth models are not available for the areas in question. The method used to calculate the allowable annual cut is therefore based mainly on data from the inventory, and principally on the volume increment data from individual tree measurements. The method consists in establishing the annual volume increment of each forest stratum in the area. The increment is the amount of wood that can be harvested annually without affecting the forest capital. This particular method is suitable for both the type of forest and the scope of the project. It provides a reliable estimate of the area's allowable annual cut, based on tree growth levels recorded during the survey. The following paragraphs describe the calculation method in more detail.

To estimate the allowable annual cut, we used the basal area increment established from average radial increment (radius/total age) and current radial increment data for the last ten years (ri_{10}). If we assume that starting volume p_v is the sum of basal surface rates p_k , height p_h and shape p_{cf} , then:

$$P_v = p_k + p_h \pm p_{cf}$$

Given that old-growth stands have a height increment and form increment of virtually zero, it is possible to estimate the volume increment P_v from the basal surface p_k . Schneider showed that the formula $p_k = 400/(n.dbh)$, where n is the time elapsed (number of rings in the last centimetre), provides a fairly accurate estimate of the volume increment in older stands.

For the purposes of our study, the time elapsed was replaced in the formula by current radial increment (average for the last ten years), since the two are related as follows: $ri = 1/n$, or $di = 2/n$ and $n = 1/ri$. Increment rates for each diameter class in the four forest strata present in the area under study are shown in Figure 4.

The table shows that average increment rates for the forest strata (excluding woodland heath) are around 1 (%), with a slight decline in the higher dbh classes. A regression analysis of the data reveals that diameter has only a slight impact on increment rates. This may be explained in part by the fact that most of the trees measured had already attained maturity. In view of these findings and the study goals, average increment rates by species and by stratum are considered accurate enough to produce an acceptable allowable annual cut estimate. Average increment rates are shown in Table 5.

FIGURE 4
INCREMENT RATES (MEAN \pm STANDARD DEVIATION) BY STRATUM

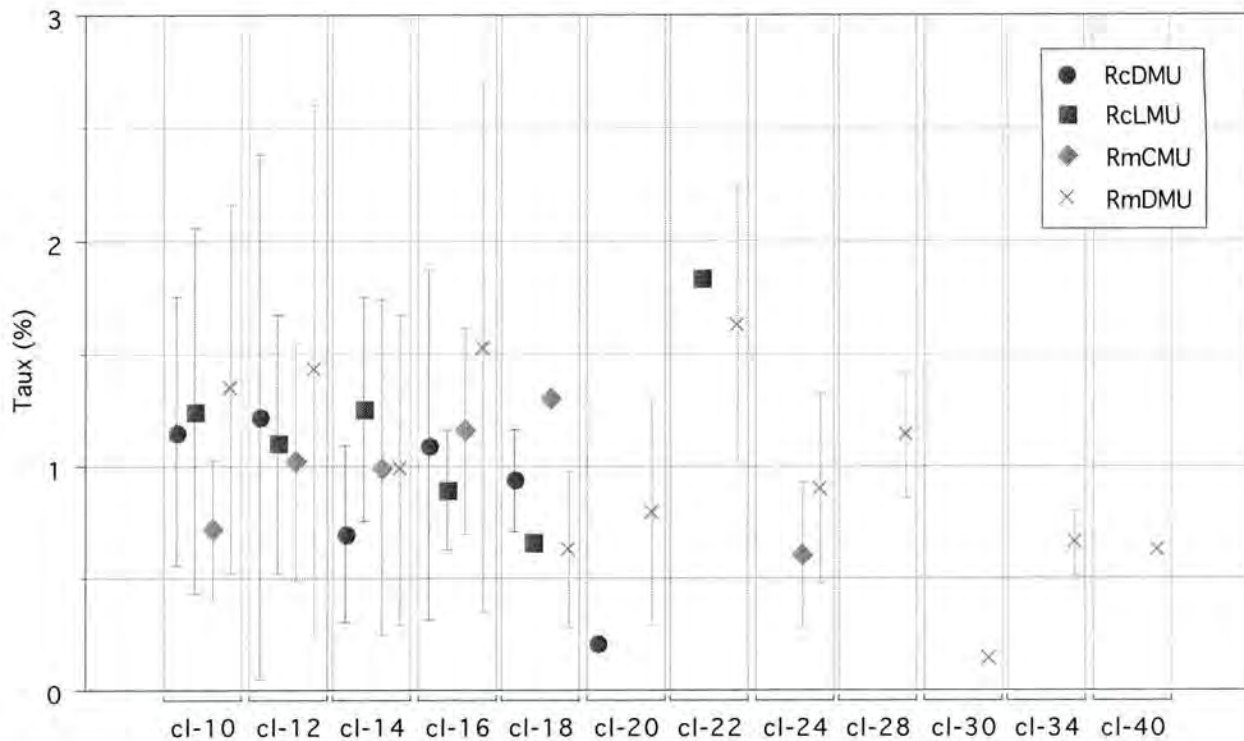


TABLE 5
VOLUME INCREMENT RATES BY SPECIES AND BY STRATUM

FOREST STRATUM	SPECIES	VOLUME INCREMENT RATE (%)	STANDARD DEVIATION	NO. OF OBSERV.	MINIMUM	MAXIMUM
R c D MU	EPN	0.96	0.82	29	0.21	4.41
R c D MU	MEL	0.54	0.16	4	0.39	0.68
R c L MU	EPB	1.26	0.37	3	0.99	1.69
R c L MU	EPN	1.08	0.60	14	0.40	2.64
R c L MU	MEL	0.68	-	1	-	-
R m C MU	EPN	0.88	0.55	54	0.28	3.36
R m C MU	MEL	1.08	0.67	3	0.32	1.60
R m D MU	EPB	1.07	0.69	15	0.13	2.65
R m D MU	EPN	1.06	0.90	73	0.20	4.56
R m D MU	MEL	1.73	1.17	14	0.23	4.65

Overall and unit-based annual increment rates (volume per hectare) were established for each forest stratum using the stock tables and previously calculated rates. The results are shown in Tables 6 and 7 for the Kuujuaq and Kangiqsualujuaq sectors respectively.

TABLE 6
OVERALL ANNUAL VOLUME INCREMENT –KUUJJUAQ SECTOR

FOREST STRATUM	AREA	AVERAGE VOLUME (m ³ /ha)	AVERAGE NO. OF TREES	AVERAGE BASAL AREA (m ² /ha)	VOLUME INCREMENT (m ³ /ha)	OVERALL INCREMENT (m ³)
R c D MU	8 222	20.12	2 419	10.63	0.16	1 316.4
R c L MU	14 265	15.53	1 683	7.23	0.18	2 505.1
R m C MU	1 432	41.34	4 575	19.46	0.40	568.6
R m D MU	14 376	28.06	3 792	11.85	0.29	4 213.2
						8 603.3

TABLE 7
OVERALL ANNUAL VOLUME INCREMENT –KANGIQSUALUJJUAQ SECTOR

FOREST STRATUM	AREA	AVERAGE VOLUME (m ³ /ha)	AVERAGE NO. OF TREES	AVERAGE BASAL AREA (m ² /ha)	VOLUME INCREMENT (m ³ /ha)	OVERALL INCREMENT (m ³)
R c D MU	529	20.31	2 227	10.49	0.16	84.7
R c L MU	20 627	15.14	1 396	6.48	0.18	3 622.3
R m C MU	3 439	28.88	3 436	13.81	0.40	1 365.5
R m D MU	7 968	44.39	2 118	14.58	0.29	2 335.1
						7 407.6

The annual volume increment for all forest strata is approximately 8,600 m³ for the Kuujjuaq sector and 7,400 m³ for the Kangiqsualujjuaq sector.

3.1.1.2 AREA REDUCTION

The productive area must then be reduced to reflect the regulations applicable at the time of logging. The regulation with the most impact is that which prohibits logging in lichen-based softwood stands. Section 95 of the *Regulation respecting standards of forest management for forests in the domain of the State* (RSFM) states that management permit holders must leave intact all lichen-based black spruce stands having an area of 4 hectares or more and forming a single block. This impact of this particular provision reduces the size of the logging area by 21,156 hectares in the Kuujjuaq sector and 22,488 hectares in the Kangiqsualujjuaq sector. An additional 5% reduction is applied to take other provisions into account, such as the preservation of wooded strips along watercourses

As a result of these reductions, the allowable annual cut is approximately 4,500 m³ in the Kuujjuaq sector, and approximately 3,500 m³ in the Kangiqsualujjuaq sector.

3.1.2 LUMBER POTENTIAL

Because the wood cut would eventually be processed, it is important to estimate the amount of lumber that could be produced each year.

This involves establishing the saw log yield (expressed as a percentage of the total volume of wood per species) for each forest stratum in the areas under study. The estimate is based on individual tree measurement data collected from the sample plots.

The data used to estimate saw log yield are species, dbh and tree height. For tapered trees whose total height (H_t), DBH and nominal saw length (L_b) are known, it is possible to calculate the top diameter (T_d) using the following equation:

$$T_d = \frac{(H_t - L_b) * dbh}{H_t - 1} \quad \text{where } H_t = \text{Total height} \\ \text{and } L_b = \text{Log length}$$

It is then possible to establish the relationship between DBH and top diameter for logs of specific log lengths. An example of this relationship for the black spruce (Kuujuuaq sector) is shown in Figure 5.

The mathematical relationship $T_d = f(dbh)$ is established by means of a regression analysis for each species. The relationship can then be used to calculate the minimum dbh that a tree must have to produce one saw log of a given length and top diameter.

For the purposes of this study, we examine three nominal saw lengths, namely 2.4 metres (8 feet), 3.0 metres (10 feet) and 3.6 metres (12 feet). For the purposes of the estimate, we used a top diameter of 10 cm and a minimum tree length of 2.4 metres, which is the minimum size for production of 2" x 4" lumber. Table 8 shows the minimum dbh obtained for each of the three main species found in the areas under study.

FIGURE 5
RELATIONSHIP BETWEEN DBH AND TOP DIAMETER – BLACK SPRUCE

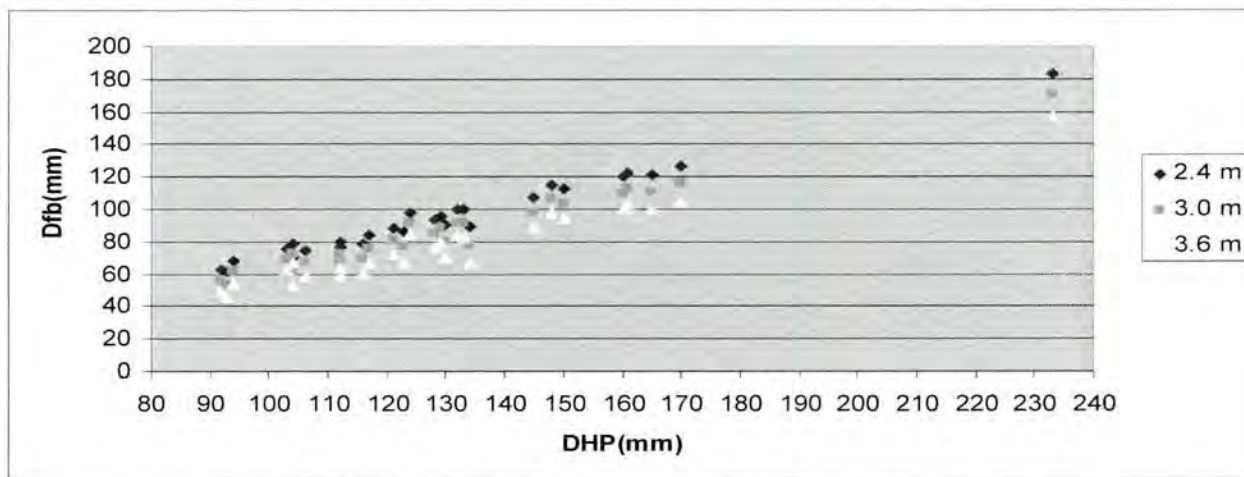


TABLE 8
MINIMUM DIAMETERS FOR LUMBER PRODUCTION (2 IN. X 4 IN.)

SPECIES	8' LENGTH	10' LENGTH	12' LENGTH
White spruce	13.9 cm	15.0 cm	16.2 cm
Black spruce	13.7 cm	14.9 cm	16.1 cm
Tamarack	13.3 cm	14.3 cm	15.3 cm

If we apply the 8' (2 x 4) results to the inventory, it is possible to establish the volume percentage for saw logs. Then, if we apply the percentages to the allowable annual cut, we obtain the volume of saw logs that can be harvested each year (see Table 9).

TABLE 9
SAW LOG VOLUMES

SECTOR	TOTAL AAC (m ³)	LUMBER (m ³)
Kuujjuaq	4 543	3 107
Kangiqsualujjuaq	3 516	2 355

3.1.3 OPERATIONAL CONSTRAINTS

Any future logging activities in the two areas under study will be subject to certain operational constraints relating mostly to access. There is no

road link to either sector; the only access is by boat in summer and by snowmobile in winter.

3.1.3.1 ACCESS

Although the Koksoak and George Rivers are navigable, they require experienced pilots and boats that are designed specifically for that particular type of watercourse. Both rivers are tidal, with levels fluctuating by up to 10 metres or more, depending on the season. There are several rapids between the Kuujuuaq and Kangiqsualujjuaq and the forested areas. The Koksoak River is especially dangerous at low tide because of low water levels, and boats must be handled with great care.

In winter, both sectors can be accessed fairly easily by snowmobile. However, the tides and rapids cause the ice to shift, and this can be quite dangerous in some places.

Although it is possible to transport people more or less throughout the year, the same cannot be said of timber. According to the information at our disposal, the boats currently available in the villages are not suitable for timber transportation operations. In theory it would be possible to envisage transporting logs via the river, but specially designed boats would have to be acquired and tested on both rivers.

Timber transportation would undoubtedly be easier to implement in the short term, at least in the Kuujuuaq sector. A winter trail could be built north of the Koksoak River, along the route of an existing trail that runs east along the river for approximately ten kilometres. The fairly flat topography on the north bank means the trail could be extended to the forest. An ice bridge could be built between the two river banks in winter, on a portion of the river that is not tidal. In the Kangiqsualujjuaq sector, however, it would be much more difficult to build a trail on the banks of the George River, due to the rugged topography.

A further problem of transporting timber in winter is the availability of a vehicle that can be driven on snow and still carry heavy loads. According to the information at our disposal, there are no forwarding machines, tractors or large crawler transporters suitable for this task in either village. Wood cut for domestic use (mainly firewood) is usually transported in a trailer on skis, pulled by a snowmobile

Operational testing would be required to establish the feasibility of the various timber transportation options.

3.1.3.2 LOGGING METHODS

The choice of a logging method depends on several criteria, including:

- The availability of machinery for harvesting and transportation;
- The availability of labour;
- The timber transportation method used;
- The scope, timing and duration of logging operations;
- Stand composition (species and tree sizes);
- Topography;
- Management conditions.

According to the information at our disposal, there is no mechanical logging or hauling machinery in either Kuujjuaq or Kangiqsualujjuaq. The only available pieces of equipment that could be used for logging are small devices such as chainsaws, ORVs and snowmobiles.

The lack of qualified labour may also be a significant constraint for any future logging projects. In the past, logging in Nunavik has almost always been carried out on an irregular basis for domestic purposes, using a chainsaw. There are no experienced forestry workers in the communities.

The forests themselves are suitable for manual logging and the use of small machines and apparatus. The trees, mostly black spruce, are small and located in fairly sparse stands. They can therefore be cut and handled manually without too much difficulty.

Clearly, then, any logging operations in the sectors in question will have to be relatively modest in scope. In the short term, logging would only be possible under the MRNF program that authorizes the harvesting of wood in Crown forest reserves located north of the northern boundary. Currently, the maximum volume that can be authorized through this program is 2,000 m³ per year, or approximately 50 hectares.

As far as timing is concerned, logging could take place in the periods of the year when the sectors in question can be accessed safely by water or by land. August to October and January to March would therefore be the most appropriate times for harvesting. However, winter operations are more likely to be affected by bad weather and snow.

The topography of the forested areas in the Kuujjuaq sector does not constitute an operational constraint. In the Kangiqsualujjuaq sector, however, the steep slopes would limit vehicle movements. Many areas

simply cannot be accessed without special equipment, and special harvesting methods would also be required.

In view of all these factors, there is some uncertainty concerning the feasibility of logging operations and the most effective logging methods. In our opinion, the selected logging methods should be manual and will have to be adjusted to allow for use of the equipment currently available in the communities. Any plans to harvest wood from the areas in question should be preceded by a pilot project to test and compare the suitability of different logging and transportation processes.

3.1.4 SYLVICULTURAL TREATMENTS

The forest stands are composed virtually exclusively of mature softwood trees, meaning that there are very few silvicultural options available. The inventory results and field observations revealed the presence of satisfactory regeneration in most forest strata. Logging should nevertheless be carried out in such a way as to protect and develop established regeneration. Exposure to wind limits tree growth in the areas in question, and this should be borne in mind when harvesting the wood.

3.1.4.1 CUTTING WITH PROTECTION OF REGENERATION AND SOILS (CPRS)

Clear-cutting with protection of regeneration and soils is still the main logging method used in stands such as these. However, there are no reference cuts in comparable situations at these latitudes in Québec, and care will be needed when applying silvicultural treatments in order to avoid damaging the environments disturbed by logging and ensure that they are able to regenerate properly.

We believe the size of single-block logging sites should be limited to a few hectares (maximum of five). In addition, sites should be distributed in a mosaic or block pattern, preserving at least 50% of the canopy in the area being logged. This would not only provide a range of cover for wildlife, it would also provide better protection from the wind for regenerating sites. Logging could be carried out in summer or winter. However, in winter the snow cover would provide additional protection for regeneration during logging operations.

Given the number of areas available for logging and the type of logging methods being considered at the present time, we believe the application of these measures would not have a significant impact on harvesting costs.

3.1.4.2 PARTIAL CUTTING

Partial cutting methods such as pre-commercial thinning or selection cutting may also be possible in stands with appropriate structures and densities. These methods have the advantage of allowing more saw logs to be cut than would be the case with CPRS. The fact that a forest canopy is preserved also means better protection for regenerating trees. Partial cutting is recommended in stands located alongside bare or sparsely wooded areas such as peat bogs, scrubland, heath and so on.

3.1.4.3 REGENERATION WORK

Regeneration work will not be required because established regeneration is already present in the stands. If it were to become necessary, seedling crops would be the only possible solution, due to the lack of nurseries and the difficulty of transporting plants to the reforestation sites.

3.1.4.4 MONITORING

The logged areas must be monitored in the years following harvesting, to check the status of the stands and see whether work is required to correct regeneration deficiencies or make adjustments to logging methods if necessary.

4. RECOMMENDATIONS

This study of the forests in two parcels of land in Kuujjuaq and Kangiqsualujjuaq has shown that the areas in question offer real potential for logging activities, subject to certain operational constraints for which solutions must be identified, examined and tested. Additional information will also be required before deciding to undertake harvesting and processing activities on an annual basis. The next steps are:

- To carry out a market survey for lumber products and firewood in the communities concerned.
- To carry out a pilot project aimed at establishing the technical feasibility and economic viability of an annual wood harvesting and processing project.
- To see whether such a project would be socially acceptable in the Kuujjuaq and Kangiqsualujjuaq communities.
- Where applicable, to identify and acquire a wood processing unit (mobile or fixed sawmill) tailored to local needs.

Given the uncertainty surrounding wood harvesting and transportation operations, a pilot project is absolutely essential to determine the feasibility of logging in the areas in question. Such a project should receive priority and be undertaken within the coming year, in order to provide the information needed by local leaders to reach their decision.

CONCLUSION

This project constitutes the first step of a process undertaken by the Kuujjuaq and Kangiqsualujjuaq communities to decide whether or not logging should be carried out in two areas located near the villages and accessible by river. The forest inventory work performed in the fall of 2005 identified a potential for small-scale harvesting activities in both areas. Analysis of the inventory data, combined with field observations, resulted in an estimated allowable annual cut of 4,500 m³ and 3,500 m³ respectively in the Kuujjuaq and Kangiqsualujjuaq sectors. This is well above the volume that could be allocated each year by the MRNF through its program to authorize the harvesting of wood in Crown forest reserves located north of the northern boundary. Although most of the trees are small in size, two-thirds of the volume harvested would be suitable for the production of small lumber.

In operational terms, the distance separating the villages from the forests and the lack of road infrastructures place significant constraints on both the harvesting and subsequent transportation of the wood. Harvesting methods and silvicultural treatments must be adjusted to the prevailing climate. In addition, the communities possess very little specialized forestry equipment. All these factors must be considered when deciding whether or not to go ahead with plans to log the areas in question, and methods must be identified that are suited to the prevailing conditions in northern forests and to the limited means available in the communities. We therefore recommend that, as a next step, a pilot project be carried out to establish the technical and economic feasibility of logging in the areas concerned

DEL DEGAN, MASSÉ ET ASSOCIÉS INC.

Bernard Massé, F.Eng.

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Kativik Environmental Advisory Committee

Date: Sept. 12/06

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Nbre pages:
2

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Obj(c)t: PRESENTATION ON FORESTRY PILOT PROJECT- INVENTORY

Greetings,

During the course of late Summer-Fall 2005, a forestry inventory has been performed by *Del Degan, Massé & Associates Inc.*, the firm contracted to that effect, over two parcels of land located in the Kuujjuaq and Kangiqsualujjuaq vicinity.

This inventory was part of the tasks identified in assessing the feasibility of a Forestry Pilot Project, as presented in 2005 to members of a Working Group (Makivik, LHCs, NVs, KEAC, KRG).

Hence, you are invited to attend a presentation on the Forestry Inventory Report prepared by the consulting firm, on Friday September 8, 2006, from 10h00 to 12h00 at the Kuujjuaq Makivik Office. This meeting is to replace the meeting of June 26 that was cancelled.

Travel arrangements are to be provided to the representatives of Kangiqsualujjuaq.

Please have confirmed your participation in returning the following page to the undersigned and, for any request, feel free to contact me at the followings: T (819) 964-2925, E: cdorais@makivik.org.

Regards,

Charles Dorais
Assistant to the
VP Economic Development

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July 11, 2006.

PILOT PROJECT ON FORESTRY

**PRESENTATION OF THE REPORT
ON FORESTRY RESOURCES IN NUNAVIK (2005)
PREPARED BY DEL DEGAN, MASSÉ ET ASSOCIÉS INC.**

Confirmation of Participation to September 8, Presentation: yes
no

Names of Delegates: Sandy Gordon
Michael Barrett
Caroline Larrivee
Nancy DEA - KEAC.

Kangiqsualujuaq Delegates:
Do you agree to travel on September 8 to yes
Kuujuuaq (10h30-11h10) return (16h45-17h25)? no

**TO BE FAXED AS SOON AS POSSIBLE TO THE ATTENTION OF
NOAH PARTRIDGE AT 819-964-2613**

NAKURMIK

ÉTUDE DE LA RESSOURCE
FORESTIÈRE AU NUNAVIK
SECTEURS DE KUUJJUAQ
ET DE KANGIQSUALUJJUAQ

Présentée à la :
SOCIÉTÉ MAKIVIK

Préparée par :
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Mars 2006

TABLE DES MATIÈRES

INTRODUCTION	1
1. DESCRIPTION GÉNÉRALE DU TERRITOIRE D'ÉTUDE	2
1.1 GÉOGRAPHIE DU TERRITOIRE	2
1.1.1 LOCALISATION DU TERRITOIRE	2
1.1.2 MILIEU PHYSIQUE	2
1.1.2 TENURE DU TERRITOIRE.....	6
1.2 CONTEXTE SOCIO-ÉCONOMIQUE	7
1.2.1 HISTORIQUE DES COMMUNAUTÉS	7
1.2.2 DÉMOGRAPHIE.....	8
1.2.3 SOCIO-ÉCONOMIE	9
1.2.4 GESTION DES RESSOURCES	11
1.3 CONTEXTE RÉGLEMENTAIRE ET LÉGAL	12
1.3.1 AUTORISATIONS REQUISES ET AUTRES MODALITÉS	12
2. DESCRIPTION DU MILIEU FORESTIER	15
2.1 INVENTAIRE FORESTIER.....	15
2.1.1 CARTOGRAPHIE FORESTIÈRE.....	15
2.1.2 SONDRAGE AU TERRAIN	16
2.1.3 COMPILATION DES DONNÉES D'INVENTAIRE ET STATISTIQUES FORESTIÈRES	20
2.1.4 HISTORIQUE FORESTIER.....	21
2.1.5 RÉGÉNÉRATION FORESTIÈRE	22
3. POTENTIEL D'AMÉNAGEMENT FORESTIER.....	23
3.1.1 DÉTERMINATION DE LA POSSIBILITÉ FORESTIÈRE.....	23
3.1.2 POTENTIEL EN BOIS D'ŒUVRE.....	27
3.1.3 CONTRAINTES OPÉRATIONNELLES	29
3.1.4 TRAITEMENTS SYLVICOLES.....	31
4. RECOMMANDATIONS	34
CONCLUSION	35
RÉFÉRENCES	36

INTRODUCTION

La Société Makivik agit à titre de promoteur pour la réalisation d'une étude portant sur la ressource forestière disponible à l'intérieur de deux parcelles de territoires situées à proximité des villages de Kuujjuaq et Kangiqsualujjuaq au Nunavik. Ce projet s'inscrit dans le contexte de la volonté des communautés nordiques du Nunavik d'utiliser la matière ligneuse disponible dans certains massifs forestiers à des fins de combustible d'appoint ou comme matériel pour la construction de camps de chasse et de maisons. Les communautés de Kuujjuaq et Kangiqsualujjuaq possèdent des droits de récolte de bois accordés en vertu de la Convention de la Baie James et du Nord Québécois (art. 6.3.3) dans deux territoires situés à proximité des villages et accessibles par voie fluviale. Ces territoires sont ciblés pour initier un projet de récolte de bois à petite échelle par la population inuit pour des usages domestiques.

Comme les secteurs visés sont situés au nord de la limite nordique des attributions commerciales de bois, ils ne sont pas couverts par l'inventaire d'aménagement du ministère des Ressources naturelles et de la Faune du Québec (MRNF). Par conséquent, les connaissances actuelles en matière de ressources ligneuses pour les territoires concernées sont insuffisantes, voire inexistantes. Une visite exploratoire réalisée en mars 2004 par les professionnels forestiers de la Direction des inventaires forestiers du MRNF a permis de constater la présence plusieurs peuplements d'arbres de dimensions commerciales dans les territoires concernées. Toutefois, les informations recueillies ne permettent pas d'établir de façon suffisamment précise le potentiel forestier des territoires.

Par conséquent, un inventaire des ressources forestières a donc été réalisé afin d'obtenir les informations de base nécessaires à l'évaluation du potentiel forestier et à la planification d'éventuelles activités de récolte. Le présent projet vise donc à documenter le potentiel forestier des deux territoires visés et à identifier des méthodes de récolte de la matière ligneuse permettant d'assurer la pérennité de la forêt.

1. DESCRIPTION GÉNÉRALE DU TERRITOIRE D'ÉTUDE

Le territoire d'étude touche deux parcelles de territoire forestier octroyées aux Inuits dans le cadre de la Convention de la Baie James et du Nord québécois. Le présent chapitre décrit les principales composantes liées aux caractéristiques géographiques, biophysiques et socio-économiques propres à ce territoire.

1.1 GÉOGRAPHIE DU TERRITOIRE

1.1.1 LOCALISATION DU TERRITOIRE

Le territoire analysé est composé de deux parcelles localisées au Nunavik, à proximité, pour la première parcelle, du village de Kuujjuaq et, pour la seconde, du village de Kangiqsualujjuaq (figure 1). Plus précisément, la parcelle du secteur de Kuujjuaq couvre une superficie totale de 62 241 ha comprise entre les latitudes 57° 59' 43" N. et 57° 37' 35" N. et les longitudes 68° 40' 31" O. et 69° 22' 44" O. Cette parcelle se retrouve à environ 20 km au sud-ouest du village de Kuujjuaq et est bordée, à sa limite nord, par la rivière Koksoak.

La parcelle du secteur de Kangiqsualujjuaq occupe une superficie totale de 73 240 ha comprise entre les latitudes 58° 19' 04" N. et 58° 11' 45" N. et les longitudes 66° 07' 52" O. et 65° 28' 03" O. Située à environ 35 km au sud-ouest du village de Kangiqsualujjuaq, cette parcelle est traversée du nord au sud par la rivière George.

1.1.2 MILIEU PHYSIQUE

Les secteurs sous étude se retrouvent dans deux provinces naturelles, soit la province K (Bassin de la baie d'Ungava), pour le territoire de Kuujjuaq, et la province L (Monts Torngat), pour le territoire de Kangiqsualujjuaq¹. La superficie de ces provinces s'élève à 103 000 km² (province K) et à 42 000 km² (province L). Les lignes suivantes décrivent les principales variables de chacune des provinces, telles la géologie, le relief, les dépôts de surface, l'hydrographie et le climat.

¹ Source : *Portrait synthèse des données sur les aires protégées au Québec*.
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FIGURE 1
LOCALISATION DU TERRITOIRE

1.1.2.1 GÉOLOGIE

Le socle géologique, pour le secteur relatif au bassin de la baie d'Ungava, se compose, à l'ouest du territoire, de roches volcaniques et sédimentaires, alors que des tonalites et des gneiss s'y retrouvent davantage à l'est. Si l'on fait abstraction des sommets des collines, où les affleurements rocheux prévalent, le territoire est recouvert majoritairement par des dépôts morainiques épais et des sables et graviers fluvio-glaciaires.

En ce qui a trait au secteur des monts Torngat, les roches granitiques et gneissiques sont à l'origine de la composition du socle géologique. Considérant le type de relief présent sur ce territoire, les affleurements rocheux dominant largement, à l'exception des vallées où l'on retrouve quelques dépôts glaciaires et fluvio-glaciaires.

1.1.2.2 RELIEF

La province naturelle du Bassin de la baie d'Ungava se démarque par la présence d'une grande dépression inclinée vers la baie et de laquelle sont issus deux types de reliefs distincts. Ainsi, si l'on se réfère à l'ouest du territoire, connu sous l'appellation fosse du Labrador, on note la présence de buttes et de basses collines étroites et allongées séparées par des vallées parfois encaissées. Le secteur offre une plaine peu accidentée (dénivelés généralement inférieurs à 30 m) avec, à l'extrémité sud, quelques basses collines. Dans la région située en bordure de la baie d'Ungava, dont le secteur de Kuujjuaq, l'altitude correspond au niveau de la mer. De même, on retrouve dans ce secteur de longs versants peu inclinés vers la rivière Koksoak et composés d'un grand plateau rocheux et de basses collines.

Pour la seconde province naturelle, les secteurs ouest et sud s'apparentent à un plateau érodé où l'on retrouve deux types de paliers distincts. Situé à proximité de la baie d'Ungava, le premier palier est composé d'une succession de collines et de vallées allongées et étroites avec une dénivellation atteignant, à certains endroits, 200 m. L'altitude de ce palier varie du niveau de la mer, pour le secteur de la côte, à environ 400 m, pour celui situé à l'intérieur des terres. Quant au second palier, il présente une dénivellation importante (entre 400 m et 700 m) avec, de part et d'autre de la limite interprovinciale (Québec et Labrador), la présence des monts Torngat. Le secteur de Kangiqsualujjuaq offre un encaissement bordant la grande vallée de la rivière George et est caractérisé par la présence de pente forte. La portion du territoire en altitude correspond à de grands plateaux rocheux, alors que la majorité du secteur étudié est accidenté et découpé de plusieurs vallées profondes.

1.1.2.3 DÉPÔTS DE SURFACE

La fosse du Labrador et les collines localisées à l'extrémité sud du secteur de la province naturelle du Bassin de la baie d'Ungava sont composées en alternance de dépôts glaciaires minces et de roc. À l'est de cette fosse, la plaine ondulée renferme des dépôts morainiques épais à l'intérieur desquels on retrouve fréquemment des formes de drumlins. Elle renferme également des dépôts fluvio-glaciaires (eskers et plaines d'épandage). En bordure de la baie d'Ungava, soit à une altitude de moins de 150 m, les dépressions et fonds de vallée ont été remplis par des dépôts marins et, sur les flancs rocheux, des dépôts littoraux sableux. Pour le secteur de Kuujjuaq, les longs versants sont constitués de tills entrecoupés de dépôts fluvio-glaciaires, ces derniers étant très présents le long de la rivière Koksoak. Une grande portion de ce territoire est occupée par des dépôts organiques. Les sommets et les vastes plateaux sont composés de roc.

La province naturelle des Monts Torngat se distingue par l'existence, dans les vallées importantes, de dépôts glaciaires ou de colluvions dans les bas de versants, alors que l'on retrouve des sables et graviers fluvio-glaciaires ou fluviatiles dans le fond des vallées. Le long de la rivière George, le secteur de Kangiqsualujjuaq est dominé par des dépôts fluvio-glaciaires très épais. En ce qui a trait aux versants abrupts, aux sommets et aux plateaux, ceux-ci sont occupés essentiellement par le roc et, en moindre importance, par le till.

1.1.2.4 HYDROGRAPHIE

La province naturelle du Bassin de la baie d'Ungava est caractérisée par un réseau hydrographique bien développé. On retrouve plusieurs rivières, dont certaines plus importantes que d'autres, soit les rivières Caniapiscau, aux Mélézes, à la Baleine, George (une grande partie) et Koksoak. Mentionnons que la parcelle située à proximité de Kuujjuaq est touchée uniquement par la rivière Koksoak et quelques-uns de ses petits tributaires.

Contrairement au secteur précédent, la seconde province n'est pas occupée par un réseau hydrographique développé. En fait, les principaux cours d'eau présents se composent des rivières George et Ford. La parcelle du secteur de Kangiqsualujjuaq est touchée exclusivement par la rivière George, qui la traverse du sud au nord.

1.1.2.5 CLIMAT

Le climat rencontré dans le secteur de Kuujjuaq (province du Bassin de la baie d'Ungava) est de type subarctique ou taïga². La température moyenne annuelle atteint environ -5 °C et la saison sans gel dure environ 60 jours. Au niveau des précipitations annuelles, celles-ci totalisent environ 475 mm, dont près de 40 % tombent sous forme de neige. Ce type de climat implique que le pergélisol peut se retrouver jusqu'à une profondeur minimum de 100 cm. Le nombre de degrés-jours de croissance de la végétation s'établit à environ 700, alors que la durée moyenne annuelle de la saison de croissance est d'environ 100 jours.

En ce qui a trait au secteur de Kangiqsualujjuaq (province des Monts Torngat), le type de climat rencontré s'apparente au type toundra². La température moyenne annuelle atteint environ -7 °C et la saison sans gel dure environ 40 jours. Cette région reçoit, annuellement, quelque 500 mm de précipitations, dont environ 40 % sont sous forme de neige. On estime que le sol gelé en permanence atteint environ 120 cm. Le nombre de degrés-jours de croissance de la végétation s'établit à environ 600, alors que la durée moyenne annuelle de la saison de croissance est d'environ 80 jours.

1.1.2 TENURE DU TERRITOIRE

Les frontières actuelles du Québec ont été établies en vertu de la loi de 1912 sur l'Extension des frontières du Québec et a permis de transférer à la province une immense région du nord comprenant les secteurs visés par l'étude.

En 1975, la Convention de la Baie James et du Nord québécois (CBJNQ), signée par les Inuits, les Cris et les gouvernements du Québec et du Canada, a donné naissance à un régime de tenure des terres définie selon trois types : terres de catégories I, II et III. Par définition, les terres de catégorie I sont attribuées en pleine propriété aux autochtones pour leur usage exclusif, alors que sur les terres de catégorie II, les autochtones possèdent des droits exclusifs de chasse, de pêche et de trappage, sans toutefois y avoir un droit spécial d'occupation. Enfin, sur les terres de catégorie III, les populations autochtones ne détiennent pas de privilège ni de droit exclusif.

En vertu de cette Convention, les parcelles des secteurs de Kuujjuaq et Kangiqsualujjuaq relèvent des terres de catégorie I. Sur le plan des ressources forestières, certaines dispositions sont prévues dans la Convention. La section 1.3 du présent rapport traite en détail des

² Source : *Le Nord du Québec : profil régional*. Gouvernement du Québec, 1984.

modalités entourant la réalisation d'activités d'aménagement forestier sur le territoire.

1.2 CONTEXTE SOCIO-ÉCONOMIQUE

1.2.1 HISTORIQUE DES COMMUNAUTÉS

1.2.1.1 KUUJJUAQ

La municipalité de Kuujjuaq, qui en français se traduit comme *la grande rivière*, a porté jusqu'à tout récemment le nom de Fort-Chimo. Au plan historique, les recherches effectuées font état que vers les années 1830, la Compagnie de la Baie d'Hudson (CBH) a établi un poste de traite des fourrures à environ cinq kilomètres en aval du village³. La création de ce poste de traite a marqué, en quelque sorte, le début du commerce des fourrures au Nunavik. Ce poste a été fermé en 1842, pour ensuite être rouvert en 1866. À cette époque, trois nations autochtones, les Montagnais (ou Innus), les Naskapis et les Inuits, venaient échanger des fourrures au poste de la CBH.

C'est en 1942 que les forces armées américaines ont procédé à la construction d'une base militaire appelée Crystal 1, localisée sur la rive ouest de la rivière Koksoak, à l'emplacement actuel du village de Kuujjuaq⁴. L'armée américaine a occupé cette base de 1942 à 1945. L'installation de cette base a accéléré de façon importante le développement de la communauté, principalement en ce qui a trait à la mise en place de diverses infrastructures. Lorsque la Seconde Guerre mondiale a pris fin, les États-Unis ont cédé la base au gouvernement canadien. Les années subséquentes ont été marquées par l'établissement, en 1948, d'une mission catholique, puis d'un poste de soins infirmiers (dispensaire), d'une école et d'une station météorologique. En 1961, la localité a été dotée d'un poste de la Sûreté du Québec, d'un bureau d'administration, d'un hôpital, d'une école de langue française et d'un service téléphonique. D'autres installations ont été construites à la fin des années 70, soit une résidence pour le personnel allochtone du gouvernement du Québec, des maisons pour les professeurs, une trentaine de résidences pour des familles et le personnel de l'Administration régionale Kativik (ARK), un centre communautaire, un garage, des bureaux, un restaurant et un hôtel. Depuis cette période, se sont ajoutés d'autres hôtels et restaurants, des magasins d'objets divers, de produits d'art et d'artisanat, de même qu'une banque. Considérée comme la plus importante communauté du Nunavik, Kuujjuaq dispose d'un aéroport composé de deux pistes

³ Source : site Web : www.nvkuujjuaq.ca

⁴ Source : *Le Nord du Québec : profil régional*. Gouvernement du Québec, 1984.

d'atterrissage qui desservent la principale voie d'accès aérien entre les communautés inuites et le sud du Québec (Montréal).

1.2.1.2 KANGIQSUALUJJUAQ

Situé à environ 160 km au nord-est de Kuujjuaq, Kangiqsualujjuaq, dont le nom en français signifie *la très grande baie*, s'avère le village le plus à l'est du Nunavik. À l'instar de Kuujjuaq, cette localité a été le site d'un poste de traite des fourrures au cours des périodes 1838-1842, 1876-1915 et 1923-1932⁵. Ce poste, exploité par la CBH, était situé au sud du village actuel. C'est en 1962 que la construction du village a été amorcée. L'année suivante, différentes infrastructures ont été construites, dont une école, un magasin coopératif et des édifices gouvernementaux. En 1980, la municipalité de Kangiqsualujjuaq a été légalement constituée.

1.2.2 DÉMOGRAPHIE⁶

D'une façon générale, la population du Nunavik est relativement jeune. Les personnes de moins de 30 ans comptent pour environ 60 % de la population totale, soit le double du taux que l'on retrouve dans le sud du Québec. Le taux de croissance naturel de la population chez les Inuits est de trois à quatre fois supérieur à la moyenne québécoise. Un fait intéressant à noter s'avère l'espérance de vie de la population inuite. Cet indice, qui atteignait une moyenne de 48 ans dans les années 1950, s'établit de nos jours à 64 ans.

L'inuttitut constitue la langue maternelle de la population autochtone vivant sur ce territoire, alors que la langue seconde reste l'anglais, mais l'emploi du français semble connaître une progression sur l'ensemble du territoire. La religion anglicane est pratiquée par la majorité de la population inuite.

Les lignes qui suivent présentent le profil démographique des deux communautés.

1.2.2.1 KUUJJUAQ

La population du village de Kuujjuaq s'élevait, en 2001, à environ 1 920 habitants, dont 1 560 résidents et 360 non-résidents⁶. Au niveau des résidents, la population est divisée à part égale entre les hommes et les femmes. Pour cette même année, 60 % de la population autochtone se situait entre 0 et 24 ans, 37 % entre 25 et 64 ans, et 3 % plus de 65 ans. L'âge moyen était de 19 ans.

⁵ Source : site Web : www.nvkuujjuaq.ca

⁶ Source : site Web : www12.statcan.ca

Sur le plan de la scolarité pour la population des 25 ans et plus, les informations recueillies indiquent que 55 % des personnes avaient un niveau inférieur au certificat d'études secondaires, 5 % un certificat d'études secondaires, 38 % avaient fait des études post-secondaires ou possédaient un diplôme d'une école de métiers ou d'un collège (Cégep) et 2 % avaient un grade universitaire ou supérieur.

1.2.2.2 KANGIQSUALUJJUAQ

On dénombrait, en 2001, environ 705 habitants à Kangiqsualujjuaq, dont 670 résidents et 35 non-résidents⁷. Les populations masculine et féminine sont représentées sensiblement de façon équivalente. La représentativité des personnes, selon le barème retenu au point précédent, est pratiquement identique aux données de Kuujjuaq, soit 59 % de la population se retrouvait entre 0 et 24 ans, 37 % entre 25 et 54 ans, et 3 % à plus de 65 ans. L'âge moyen s'établissait à près de 18 ans.

Au niveau de la scolarité, 65 % des personnes ont un niveau inférieur au certificat d'études secondaires, 4 % ont un certificat d'études secondaires et 31 % ont fait des études post-secondaires ou possèdent un diplôme d'une école de métiers ou d'un collège (Cégep). Les données révèlent l'absence de personnes ayant un grade universitaire ou supérieur.

1.2.3 SOCIO-ÉCONOMIE

Le développement socio-économique du Nunavik, en général, et des deux localités sous étude, en particulier, s'est d'abord articulé autour du commerce des fourrures. L'implantation des postes de traite s'est avérée un facteur déterminant en transformant l'économie des Inuits en une économie d'échanges avec les traiteurs anglais ou français. La fin des années 50 a été marquée par la création du mouvement coopératif, lequel a insufflé une relance dans l'évolution économique du Nunavik. Au cours de cette même période, le mode de vie des Inuits s'est sensiblement modifié, passant peu à peu du semi-nomadisme à la sédentarité. Ce changement peut s'expliquer par la mise en œuvre de programmes gouvernementaux qui se sont traduits par la construction d'habitations résidentielles et par l'établissement d'organismes régionaux. La signature de la CBJNQ, en 1975, a également contribué à accélérer le développement socio-économique des communautés locales, notamment par la création de plusieurs institutions dirigées par des Inuits.

⁷ Source : site Web : www12.statcan.ca

En parallèle, les activités liées à la chasse et à la pêche constituent, encore de nos jours, un mode de vie pratiqué par plusieurs résidents de ces municipalités.

1.2.3.1 KUUJJUAQ

Kuujjuaq, la plus importante communauté du Nunavik, constitue la plaque tournante des activités économiques du Nord du Québec depuis une quarantaine d'années. Ce faisant, la municipalité s'avère un véritable pôle d'attraction en termes de construction d'infrastructures et d'implantation de services variés de gestion et de commerce. De façon plus spécifique, la vie économique s'appuie sur un réseau d'installations et de commodités s'apparentant à ce que l'on retrouve dans les centres urbains du Québec : 1 centre des congrès moderne de 500 places, 2 hôtels 3 étoiles, 2 établissements de restauration, 1 succursale de la Banque canadienne impériale de Commerce, le centre de santé Tulattavik de l'Ungava de même que plusieurs magasins spécialisés, d'objets divers et boutiques. Au niveau du transport aérien, deux compagnies sont présentes sur le territoire, soit First Air, qui assure le transport du fret et des passagers entre le nord et le sud, et Air Inuit, qui maintient la liaison entre les villages du Nunavik.

Lors de la signature de la Convention de la Baie James et du Nord québécois en 1975, Kuujjuaq a été désignée comme étant le centre administratif du Nunavik. Ce statut s'est matérialisé par l'établissement de nombreux organismes régionaux, dont la Société Makivik, l'Administration régionale Kativik, le Conseil régional de développement Kativik (connu sous le nom de Katutjiniq), la Régie régionale de la santé et des services sociaux du Nunavik et le Centre de recherche du Nunavik.

Les activités de chasse et de pêche représentent, à elles seules, des attraits touristiques de première importance pour cette localité. Considérant le fort potentiel halieutique de cette région, différents pourvoyeurs se sont installés sur ce territoire et offrent des services de pêche au saumon de l'Atlantique, au touladi (truite grise) et à l'omble chevalier, sur la rivière Koksoak, ainsi que de chasse au caribou. L'attrait des paysages majestueux et des grandes étendues sauvages du Nord attire également les amateurs de la nature et les amateurs de plein air qui constituent une clientèle pour les pourvoyeurs. Les services d'excursions en bateau, l'été, et en traîneaux à chiens, l'hiver, sont disponibles et offerts par des entreprises locales.

1.2.3.2 KANGIQSUALUJJUAQ

L'économie de cette municipalité repose principalement sur la présence d'un magasin coopératif, de services gouvernementaux et d'activités liées à la chasse et à la pêche. La coopérative, la première du genre à être exploitée au Nord du Québec, a été fondée en 1959, et la construction du magasin a été réalisée en 1963. Basée initialement sur la commercialisation de l'omble chevalier, les dirigeants de la coopérative ont ajouté d'autres services dont la vente au détail (magasin général), l'artisanat, la gravure, la mise en marché des fourrures et la récréation (salle de billard et autres).

Les édifices gouvernementaux, quant à eux, englobent les services associés, entre autres, aux soins de santé, à l'enseignement et aux services commerciaux.

Les activités de chasse et de pêche représentent un apport majeur, au plan économique, pour la population locale. En effet, ce secteur se distingue par la présence de terrains de mise bas du plus important troupeau de caribous du monde, estimé à plusieurs centaines de milliers de têtes. Au niveau de la pêche, la rivière George, ainsi que d'autres rivières de la région, regorgent d'espèces variées, dont l'omble chevalier, le saumon de l'Atlantique et les truites (omble de fontaine et touladi). D'autre part, les attraits touristiques particuliers que renferme la région, tels les monts Torngat, la rivière Koroc, les chutes Hélène et le fjord Abloviak, attirent les amateurs de la nature (randonneurs, canoteurs et kayakistes). De plus, la création d'un parc protégeant la rivière Korok et les monts Torngats est actuellement en développement.

1.2.4 GESTION DES RESSOURCES

La CBJNQ, signée en 1975, a mené à la création de diverses institutions gérées par les Inuits. Parmi celles-ci, on peut citer l'Administration régionale Kativik (ARK), créée en 1978, et qui œuvre dans différents domaines de l'administration publique, dont le développement économique, les transports, les services policiers, les télécommunications et la protection de la faune. Également en 1978, la Société Makivik a été constituée et est le porte-parole des Inuits en ce qui a trait à la protection de leurs droits et de leurs intérêts liés à la CBJNQ. De plus, cette société est responsable de la perception et de la gestion des sommes compensatoires provenant de la CBJNQ.

Par ailleurs, l'exploitation commerciale, personnelle ou communautaire des ressources de la forêt des terres de catégorie I relève de la corporation foncière locale (*landholding corporation*). Pour les municipalités de Kuujjuaq et de Kangiqsualujjuaq, on recense deux

corporations foncières, soit Nayumivik et Qiniqtiq, respectivement. La récolte de ces massifs forestiers peut se faire en régie ou par l'intermédiaire de personnes agissant avec le consentement de la corporation foncière⁸.

1.3 CONTEXTE RÉGLEMENTAIRE ET LÉGAL

Les droits exclusifs de récolte de bois consentis en vertu de l'article 6.3.1 de la CBJNQ, sur les deux parcelles de territoire, doivent s'opérer dans le contexte réglementaire et légal prévalant sur ces territoires. Les droits sont octroyés à des fins personnelles et communautaires, et exercés en accord avec la Loi sur les forêts du Québec. La récolte de bois doit notamment être autorisée par le biais d'un permis d'intervention émis par le ministre des Ressources naturelles et de la Faune du Québec.

Cette section vise à identifier les lois et règlements auxquels sont assujettis les travaux de récolte de bois sur les territoires visés, et à définir leur portée dans le contexte du présent projet.

1.3.1 AUTORISATIONS REQUISES ET AUTRES MODALITÉS

En vertu du décret 734-2004 du 18 août 2004, le gouvernement du Québec, par l'entremise du MRNF, a instauré un programme relatif à la délivrance de permis annuels d'intervention en milieu forestier, autorisant la récolte de bois disponibles dans les réserves forestières du domaine de l'État situées dans les municipalités régionales de comté de Minganie et de Caniapiscau, sur le territoire de la Basse-Côte-Nord et au nord de la limite nordique définie par le ministre. Ce programme vise à permettre l'approvisionnement de petites scieries ne possédant pas de sources d'approvisionnement sur terres publiques. Sa particularité repose sur le fait qu'il s'adresse uniquement aux usines de transformation dont la consommation annuelle n'excède pas 2 000 m³ de bois. L'émission d'un tel permis vise à combler les besoins des communautés locales, en respectant le niveau de récolte permis (possibilité forestière du territoire) et tout en assurant la protection et l'aménagement durable du milieu forestier.

Plus concrètement, la délivrance du permis annuel d'intervention, pour l'approvisionnement d'une petite usine de transformation du bois, est assujettie aux conditions suivantes :

- Le volume demandé ne doit pas excéder la possibilité forestière déterminée pour le secteur d'approvisionnement identifié.

⁸ Source : Éditeur officiel du Québec. *Loi sur le régime des terres dans les territoires de la Baie-James et du Nouveau-Québec.*

- La demande de permis doit être adressée par écrit auprès des autorités régionales du MRNF, en précisant :
 - l'année de la récolte;
 - le volume de bois ronds demandé pour assurer le fonctionnement de l'usine jusqu'à concurrence de 2 000 m³ annuellement;
 - la localisation des activités de récolte.
- La demande doit être accompagnée des pièces démontrant que le demandeur est propriétaire d'une usine conforme aux exigences du programme.

Dans le cas des deux territoires visés, la demande doit être acheminée à la Direction régionale du MRNF (Abitibi-Témiscamingue) par les personnes désignées (les deux corporations foncières) dans chacune des communautés.

Une fois entériné par le ministre, le permis délivré est valide pour une période maximale de 12 mois se terminant, au plus tard, le 31 mars suivant la date d'émission.

Au niveau des obligations dévolues au titulaire du permis, les dispositions du programme prévoient que celui-ci doit satisfaire les conditions suivantes :

- Réaliser les activités d'aménagement forestier identifiées à son permis annuel en respectant les normes d'intervention en milieu forestier (règlement sur les normes d'intervention en milieu forestier – RNI) et selon les autres conditions précisées au permis en vue d'assurer la protection du milieu forestier et l'aménagement durable des forêts.
- Acquitter les droits de coupe prescrits par le ministre (article 106 de la Loi sur les forêts). Ces droits sont payables en argent, en traitements sylvicoles ou par la réalisation d'autres activités de protection ou de mise en valeur des ressources du milieu forestier. Toutefois, compte tenu de la localisation des secteurs analysés, des droits consentis et de la tenure de ces territoires, il appert que ce volet pourrait être adapté suivant des modalités particulières définies par le ministre⁹.
- Mesurer les bois récoltés, conformément aux instructions prévues à chaque permis. Encore là, cet élément pourra faire l'objet de modalités distinctes établies par le ministre⁹.
- Dans les trois mois suivant l'échéance du permis, soumettre au ministre la localisation, sur une carte à l'échelle 1/20 000, les

⁹ Communication personnelle avec monsieur Gilles Lavoie du MRNF

sites où le bois a été récolté et où d'autres activités d'aménagement forestier ont été réalisées, de même que le résultat, le cas échéant, du mesurage des bois récoltés effectué selon les instructions du permis.

En outre, considérant que certaines de ces usines n'opèrent pas nécessairement de façon continue année après année, le titulaire du permis n'est pas tenu de produire les différents plans et rapports requis dans d'autres types d'entente sur terres publiques (plan général d'aménagement forestier (PGAF), plan quinquennal d'aménagement forestier (PQAF), plan et rapport annuels d'interventions forestières (PRAIF)).

Il convient de rappeler que ce programme est destiné exclusivement aux usines de transformation ayant une consommation annuelle autorisée égale ou inférieure à 2 000 m³ de bois. Pour approvisionner une usine transformant plus de 2 000 m³ annuellement, les modalités d'approvisionnement sur terres publiques doivent être établies selon un autre type d'entente entre le bénéficiaire et le MRNF prévu à la Loi sur les forêts. Dans le cas des secteurs de Kuujjuaq et de Kangiqsualujjuaq, le type d'entente qui permettrait de récolter un volume de bois supérieur à 2 000 m³ est la convention d'aménagement forestier (CvAF). Selon la Loi sur les forêts, une CvAF constitue une réserve forestière, c'est-à-dire un territoire du domaine de l'État où ne s'exerce aucun contrat d'approvisionnement et d'aménagement forestier (CAAF) ou de contrat d'aménagement forestier (CtAF). Cette définition s'applique aux deux parcelles concernées (secteurs de Kuujjuaq et de Kangiqsualujjuaq). Les obligations liées à une CvAF s'apparentent sensiblement à celles consenties aux bénéficiaires de CAAF ou de CtAF, soit la production de plans d'aménagement généraux et détaillés couvrant différents horizons de planification : un plan général d'aménagement (25 ans), un plan quinquennal d'aménagement (5 ans) ainsi que les plans et rapports annuel d'interventions. Le bénéficiaire est également tenu de réaliser les activités d'aménagement prévues à la convention, d'assurer le suivi des travaux et de présenter les résultats de ces suivis selon les directives du MRNF.

2. DESCRIPTION DU MILIEU FORESTIER

Ce chapitre présente le portrait forestier des deux territoires d'étude.

2.1 INVENTAIRE FORESTIER

Les territoires d'étude sont situés au nord de la limite nordique des attributions commerciales de bois. Ces territoires ne sont pas couverts par le programme d'inventaire forestier du ministère des Ressources naturelles et de la Faune du Québec (MRNF) et les informations sur les connaissances forestières sont à toute fin pratique inexistantes. Par conséquent, des travaux d'inventaire forestier ont été réalisés afin de pouvoir estimer les volumes disponibles, le potentiel de croissance et de régénération des peuplements, la qualité des tiges, etc.

2.1.1 CARTOGRAPHIE FORESTIÈRE

Comme aucune couverture photographique aérienne ne couvre les territoires d'étude, on a dû recourir aux techniques de télédétection et de classification d'images pour produire une cartographie des peuplements forestiers. La classification a été réalisée par le personnel de la Direction des inventaires forestiers du MRNF sur deux images satellitaires de moyenne résolution provenant du capteur Landsat 7. Les caractéristiques des images sont présentées au tableau 1.

TABLEAU 1
CARACTÉRISTIQUES DES IMAGES

SECTEUR	CAPTEUR	TRAJECTOIRE	RANGE	DATE D'ACQUISITION	RÉSOLUTION
Kuujjuaq	Landsat ETM	15	20	17 juillet 2001	25 m
Kangiqsualujjuaq	Landsat ETM	13	19	7 août 2002	25 m

La classification a été réalisée en deux étapes. Une première classification a été produite pour identifier les massifs forestiers des autres terrains et produire une carte préliminaire devant servir à la planification du sondage. Deux classes ont été identifiées à cette fin, soit les peuplements résineux denses et les peuplements résineux ouverts. Les bandes spectrales utilisées pour la classification sont : ETM3, ETM4 et ETM5.

À la suite des travaux de terrain, une classification finale des images a été produite à partir des relevés effectués (points de contrôle et

placettes-échantillons) et des observations faites par l'équipe de terrain lors du sondage et des survols aériens. À l'aide de ces informations détaillées et localisées précisément par GPS, il a été possible d'identifier 17 classes de végétation ou de terrain différentes, dont 7 relatives aux peuplements forestiers. Le tableau 2 dresse la liste des classes identifiées et de leur superficie respective pour les deux territoires.

TABLEAU 2
CONTENANCE FORESTIÈRE DES TERRITOIRES

CLASSE	DESCRIPTION	SECTEUR KUJJJUAQ	SECTEUR KANGIQSUALUJJUAQ
AB	Arbustaie basse	1 821	1 739
AH	Arbustaie haute	771	858
EAU	Lacs, rivières, rapides	2 686	7 633
LE	Lande à éricacées	689	4 562
LH	Lande herbacée	5 221	1 787
LL	Lande à lichens	1 446	602
LR	Lande rocheuse	9 326	17 338
MH	Milieu humide herbacé	550	4 138
R c C MU	Résineux moyennement dense mûr à fond de cladonie	343	126
R c D MU	Résineux ouvert mûr à fond de cladonie	7 878	403
R c L MU	Résineux épars mûr à fond de cladonie	2 053	9 207
R m B MU	Résineux dense mûr à fond de mousses	91	0
R m C MU	Résineux moyennement dense mûr à fond de mousses	1 432	3 439
R m D MU	Résineux ouvert mûr à fond de mousses	14 284	7 968
R m L MU	Résineux épars mûr à fond de mousses	12 211	11 420
RO	Affleurement rocheux	1 307	1 997
SD	Surface dénudée	131	22
TOTAL		62 241	73 240

Le territoire recèle très certainement une plus grande diversité de strates, mais les limites des images disponibles et des méthodes utilisées ne permettent pas une identification et une description plus précise du couvert forestier. La cartographie forestière des deux secteurs est présentée aux FIGURE 2 et 3.

2.1.2 SONDAGE AU TERRAIN

La prescription de sondage établie par la Direction des inventaires forestiers a été fixée à 40 placettes-échantillons par secteur, réparties de la façon suivante :

- 25 placettes dans les strates de résineux denses
- 15 placettes dans les strates de résineux ouverts

Le plan de sondage a été préparé en cabinet avant le départ sur le terrain et soumis à la DIF pour approbation. Les placettes ont été

FIGURE 2
CARTOGRAPHIE FORESTIÈRE DU SECTEUR DE KUUJJUAQ

FIGURE 3
CARTOGRAPHIE FORESTIÈRE DU SECTEUR DE
KANGIQSUALUJJUAQ

établies sur des virées de 5 à 7 placettes-échantillons et d'une longueur n'excédant pas 1 500 m.

En raison des coûts très élevés du transport aérien, le plus grand nombre de virées possible a été placé à des endroits accessibles par bateau. Toutefois, afin d'assurer un échantillonnage représentatif de l'ensemble du territoire, environ 30 % des placettes ont été situées dans les massifs intérieurs, accessibles uniquement par hélicoptère.

Les virées et placettes ont été établies selon les spécifications normatives du 3^e programme décennal de la DIF. Les placettes-échantillons établies sont de type temporaire, de 11,28 m de rayon. Certains allègements ont été apportés à la liste des variables dendrométriques à collecter dans le but d'augmenter la productivité journalière des équipes et diminuer le coût de l'inventaire. Les données mesurées sur le terrain ont été colligées sur des fiches papier prévues à cet effet et, par la suite, saisies à l'ordinateur à l'aide du logiciel de collecte PLACETTE. La localisation des placettes a été relevée, en respectant les exigences de la DIF, à l'aide d'un capteur GPS permettant la correction différentielle.

En plus des données d'inventaire à recueillir, une ou plusieurs photographies terrestres ont été prises à l'aide d'un appareil numérique. Ces photographies constituent une base d'images représentatives des éléments caractéristiques de la végétation des territoires inventoriés, et une sélection de celle-ci est présentée en annexe au présent document. Ces photographies ont été utiles, entre autres, pour assister et améliorer la classification de l'image satellite, en permettant d'augmenter le nombre d'aires d'entraînement avec des données précises et localisées provenant du terrain.

En raison de l'absence d'accès routier, des distances et des temps de transport, de la période d'exécution et de l'isolement des territoires à inventorier, la réalisation du sondage au terrain a demandé un effort de planification logistique relativement important pour maximiser la productivité des équipes tout en assurant leur pleine sécurité. Le sondage a été réalisé par une équipe d'inventaire très expérimentée pouvant compter sur l'appui d'un aide technique des communautés inuites et d'un guide pour la navigation en rivière. L'équipe était pourvue d'un téléphone satellitaire, en tout temps, et était en mesure de communiquer directement avec les autorités locales si un problème survenait.

2.1.3 COMPILATION DES DONNÉES D'INVENTAIRE ET STATISTIQUES FORESTIÈRES

Au terme des travaux de sondage, les données d'inventaire saisies et vérifiées ont été remises aux responsables de la DIF. Le personnel de la DIF s'est chargé de leur compilation. La classification finale des images a également été complétée par les spécialistes de la DIF, à l'aide de nouvelles aires d'entraînement déduites à partir des informations recueillies sur le terrain. Cette nouvelle classification a permis de préciser la cartographie du couvert forestier en augmentant le nombre de strates identifiables.

Les données ont été compilées à l'aide du logiciel SCIF. Cet outil permet de produire de façon automatisée les principales statistiques forestières caractérisant les strates forestières d'un territoire. Le processus de compilation comporte plusieurs étapes dont une des plus importantes est le regroupement de strates. L'étape de regroupement, comme son nom l'indique, consiste à regrouper deux ou plusieurs strates forestières dans une même strate d'inventaire. Les critères guidant le regroupement s'appuient sur la similitude des caractéristiques des strates (composition en essences, diamètre moyen, densité, hauteur, âge des peuplements, etc.). Le regroupement permet d'obtenir des résultats moyens plus représentatifs et d'associer des statistiques d'inventaire aux strates qui n'ont pu être sondées. Les statistiques générales des strates regroupées (ou strates d'inventaire) sont présentées au tableau 3.

Les résultats détaillés de la compilation d'inventaire sont présentés à l'annexe 1. On y retrouve notamment les tables de peuplement, les tables de stock et de surface terrière ainsi que les études d'arbres.

TABLEAU 3
STATISTIQUES GÉNÉRALES DES STRATES FORESTIÈRES

SECTEUR KUUJJUAQ							
N ^o	STRATE D'INVENTAIRE	SUPERFICIE	NOMBRE DE PLACETTES*	VOLUME À L'HECTARE	VOLUME MINIMUM	VOLUME MAXIMUM	PRÉCISION ESTIMÉE
1	EAU	2 687	-	-	-	-	-
2	LR	19 956	1	7,5	7,5	7,5	0,0
3	RO	1 308	-	-	-	-	-
4	R c D MU	8 222	12 (4)	19,7	10,7	34,9	77,0
5	R m D MU	14 376	16	38,0	2,7	162,2	46,0
6	R c L MU	14 265	9 (6)	15,5	0,0	36,5	36,0
7	R m C MU	1 432	9	41,3	9,3	104,2	41,0
SECTEUR KANGIQSUALUJJUAQ							
N ^o	STRATE D'INVENTAIRE	SUPERFICIE	NOMBRE DE PLACETTES*	VOLUME À L'HECTARE	VOLUME MINIMUM	VOLUME MAXIMUM	PRÉCISION ESTIMÉE
1	EAU	7 634	-	-	-	-	-
2	LR	31 048	-	-	-	-	-
3	RO	1 997	-	-	-	-	-
4	R c D MU	529	11 (7)	20,3	12,7	32,6	79,2
5	R c L MU	20 627	7 (4)	15,1	0,0	36,5	25,1
6	R m C MU	3 439	11	28,9	12,3	86,5	49,4
7	R m D MU	7 968	21	44,4	3,7	100,1	73,2

* Le nombre entre parenthèses indique le nombre de placettes recrutées.

2.1.4 HISTORIQUE FORESTIER

Peu d'information est disponible sur les perturbations passées ayant façonné le paysage forestier des deux secteurs concernés, et ce, qu'elles soient d'origine humaine ou naturelle. En fait, on rapporte que des activités de coupe ont déjà eu lieu il y a quelques dizaines d'années dans chacun des deux secteurs. Nous avons pu observer dans le secteur de Kuujjuaq un ancien site de transformation (sciage) de très petite dimension, mais il n'a pas été possible, lors des survols aériens, de localiser, à l'intérieur des territoires d'étude, des zones où des coupes auraient été effectuées. Une ancienne coupe a été identifiée dans le secteur de Kangiqsualujjuaq et nous avons pu observer une bonne régénération du site. D'autre part, les territoires sont utilisés par les membres des communautés ayant établi des chalets ou des camps de chasse aux abords des rivières Koksoak et George pour s'approvisionner en bois de chauffage.

Le feu demeure la perturbation naturelle la plus importante et la plus susceptible d'affecter les forêts à ces latitudes nordiques. Au cours des travaux de terrain, quelques peuplements d'origine de feux, datant de 30 à 50 ans, ont été observés. Toutefois, aucune trace de feu récent n'a été décelée sur l'imagerie satellitaire et lors des survols aériens. De plus,

l'absence de strates en régénération ou à des stades intermédiaires de développement suggère que les derniers passages du feu sur ces territoires datent de plusieurs dizaines d'années.

2.1.5 RÉGÉNÉRATION FORESTIÈRE

Les données d'inventaire forestier démontrent que les peuplements forestiers des territoires sont généralement assez bien régénérés, si on se fie aux résultats obtenus pour les tiges au stade de gaulis (classes de 2 à 8 cm de diamètre) et présentés au tableau 4. On observe une densité de tiges en régénération variant de 1 071 à 3 583 tiges/ha. Les pessières à mousses sont les peuplements présentant les meilleures densités avec des résultats variant de 1 429 à 3 583 tiges/ha. De plus, ces résultats ne font pas état des semis (hauteur inférieure à 1,5 m) pour lesquels aucune donnée d'inventaire n'a été récoltée. Toutefois, les informations notées au cours des travaux de sondage sur la strate arbustive basse montrent la présence d'une bonne régénération au stade de semis dans la plupart des peuplements rencontrés.

TABLEAU 4
STATISTIQUES SUR LA RÉGÉNÉRATION AU STADE DE GAULIS

SECTEUR KUJJUAQ					
STRATE FORESTIÈRE	CLASSE DE DIAMÈTRE				TOTAL
	2	4	6	8	
R c D MU	529	475	519	315	1 839
R c L MU	472	333	333	222	1 361
R m C MU	917	1 222	1 000	444	3 583
R m D MU	813	533	397	184	1 928
SECTEUR KANGIQSUALUJJAQ					
STRATE FORESTIÈRE	CLASSE DE DIAMÈTRE				TOTAL
	2	4	6	8	
R c D MU	455	409	455	318	1 636
R c L MU	464	286	107	214	1 071
R m C MU	1 046	568	705	341	2 659
R m D MU	560	333	238	298	1 429

3. POTENTIEL D'AMÉNAGEMENT FORESTIER

Cette section traite du potentiel d'aménagement forestier des territoires d'étude au regard du cadre légal et réglementaire régissant l'aménagement des ressources forestières des territoires concernés et des contraintes propres à ces territoires nordiques. On y traite plus spécifiquement de la possibilité forestière globale et en bois d'œuvre, des traitements sylvicoles pouvant s'appliquer aux peuplements et des contraintes opérationnelles liées à la réalisation de travaux de récolte et au transport du bois.

3.1.1 DÉTERMINATION DE LA POSSIBILITÉ FORESTIÈRE

Comme la récolte de bois sur les territoires visés est réalisée avec l'objectif d'assurer la pérennité de la forêt, il importe de déterminer la possibilité annuelle de coupe que peuvent soutenir les territoires selon le principe du rendement soutenu. Le respect de la possibilité forestière est également une exigence obligatoire à l'émission d'un permis d'intervention dans le cadre du programme de récolte de bois dans les réserves forestières.

3.1.1.1 ACCROISSEMENT ANNUEL EN VOLUME

Les données de connaissance forestière disponibles pour le territoire étant limitées, le recours aux méthodes de calcul de la possibilité utilisées dans les forêts commerciales et faisant appel aux logiciels de simulation Sylva II n'est pas approprié. En l'absence de modèles de croissance des peuplements adaptés aux territoires concernés, la méthode retenue pour déterminer la possibilité forestière s'appuie essentiellement sur les données d'inventaire récoltées, plus particulièrement sur les données d'accroissement provenant des études d'arbres. La méthode consiste à déterminer l'accroissement annuel en volume de chacune des strates forestières du territoire. Cet accroissement correspond d'une certaine façon à la quantité de bois qui peut être prélevée annuellement sans affecter le capital forestier des territoires. Cette méthode est adaptée au type de forêt en présence et à l'envergure du projet. Elle permet d'obtenir un estimé fiable de la possibilité forestière du territoire, basé sur les mesures de croissance des tiges recueillies lors de l'inventaire. Les lignes qui suivent présentent le cheminement méthodologique emprunté pour déterminer l'accroissement en volume des territoires.

Pour estimer la possibilité de coupe, nous avons utilisé le taux d'accroissement en surface terrière à partir des données sur la croissance radiale moyenne, soit rayon/âge total et la croissance radiale courante des 10 dernières années (ir_{10}). Considérons au départ que le taux en volume p_v est la somme des taux en surface terrière p_k , en hauteur et en coefficient de forme (p_{cf}), à savoir :

$$P_v = p_k + p_h \pm p_{cf}$$

Sachant que les vieux peuplements ont un taux d'accroissement en hauteur et en forme pratiquement nul, il est alors possible d'estimer le taux en volume (P_v) à l'aide du taux en surface terrière (p_k). En effet, Schneider a démontré que la formule $p_k = 400/(n.dhp)$, où n est le temps de passage (nombre de cernes sur le dernier centimètre), permet une estimation relativement précise du taux d'accroissement en volume pour les peuplements âgés.

Pour les besoins de notre étude, le temps de passage a été remplacé dans la formule par l'accroissement radial courant (moyenne des 10 dernières années), car entre les deux, il existe la relation suivante : $ir = 1/n$, ou $id = 2/n$ et $n = 1/ir$. La détermination des taux d'accroissement par classe de diamètre pour les quatre strates forestières des territoires est présentée à la figure 4.

Les résultats sur le taux de croissance pour les strates forestières (sauf les landes boisées) indiquent qu'en moyenne ce taux se situe autour de 1 (%), avec une légère baisse dans les classes de dhp supérieures. L'analyse de régression sur ces mêmes données démontre une faible influence du diamètre sur le taux de croissance. Ceci peut s'expliquer en partie par le fait que la grande majorité des tiges observées avait déjà atteint l'état de maturité. Compte tenu de ces résultats et des objectifs de l'étude, l'utilisation d'un taux d'accroissement moyen par essence et par strate est considérée suffisamment précise pour produire un bon estimé de la possibilité forestière. Les taux moyens d'accroissement sont présentés au tableau 5.

FIGURE 4
TAUX DE CROISSANCE (MOYENNE ± ÉCART TYPE) SELON LA STRATE

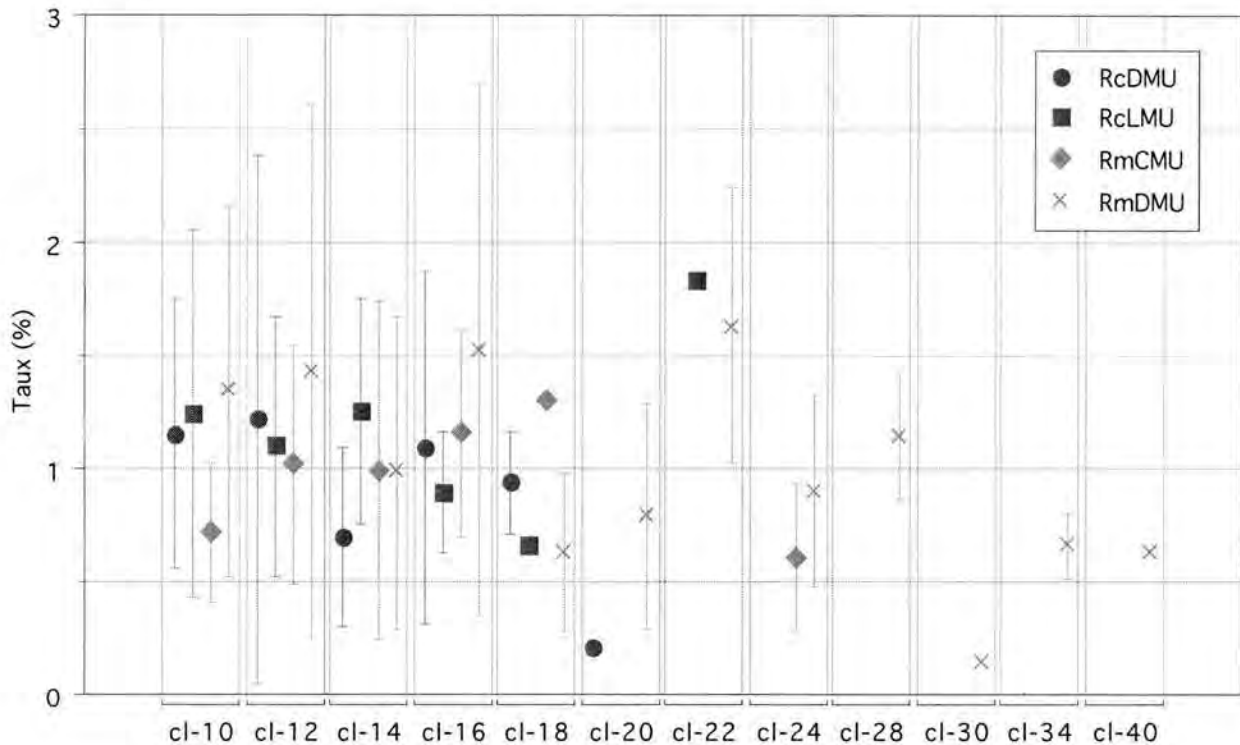


TABLEAU 5
TAUX D'ACCROISSEMENT EN VOLUME PAR ESSENCE ET PAR STRATE

STRATE FORESTIÈRE	ESSENCE	TAUX D'ACCR. EN VOLUME (%)	ÉCART-TYPE	NOMBRE D'OBSERV.	MINIMUM	MAXIMUM
R c D MU	EPN	0,96	0,82	29	0,21	4,41
R c D MU	MEL	0,54	0,16	4	0,39	0,68
R c L MU	EPB	1,26	0,37	3	0,99	1,69
R c L MU	EPN	1,08	0,60	14	0,40	2,64
R c L MU	MEL	0,68	-	1	-	-
R m C MU	EPN	0,88	0,55	54	0,28	3,36
R m C MU	MEL	1,08	0,67	3	0,32	1,60
R m D MU	EPB	1,07	0,69	15	0,13	2,65
R m D MU	EPN	1,06	0,90	73	0,20	4,56
R m D MU	MEL	1,73	1,17	14	0,23	4,65

À l'aide des tables de stock et des taux calculés précédemment, les taux d'accroissement annuel globaux et unitaires (volume par hectare) ont été déterminés pour chaque strate forestière. Les résultats sont présentés aux tableaux 6 et 7 pour les secteurs de Kuujuaq et Kangiqsualujuaq respectivement.

TABLEAU 6
ACCROISSEMENT ANNUEL EN VOLUME GLOBAL – SECTEUR KUUJJUAQ

STRATE FORESTIÈRE	SUPERFICIE	VOLUME MOYEN (m ³ /ha)	NBRE DE TIGES MOYEN	SURFACE TERRIÈRE MOYENNE (m ² /ha)	ACCROISSEMENT EN VOLUME (m ³ /ha)	ACCROISSEMENT GLOBAL (m ³)
R c D MU	8 222	20,12	2 419	10,63	0,16	1 316,4
R c L MU	14 265	15,53	1 683	7,23	0,18	2 505,1
R m C MU	1 432	41,34	4 575	19,46	0,40	568,6
R m D MU	14 376	28,06	3 792	11,85	0,29	4 213,2
						8 603,3

TABLEAU 7
ACCROISSEMENT ANNUEL EN VOLUME GLOBAL – SECTEUR KANGIQSUALUJJUAQ

STRATE FORESTIÈRE	SUPERFICIE	VOLUME MOYEN (m ³ /ha)	NBRE DE TIGES MOYEN	SURFACE TERRIÈRE MOYENNE (m ² /ha)	ACCROISSEMENT EN VOLUME (m ³ /ha)	ACCROISSEMENT GLOBAL (m ³)
R c D MU	529	20,31	2 227	10,49	0,16	84,7
R c L MU	20 627	15,14	1 396	6,48	0,18	3 622,3
R m C MU	3 439	28,88	3 436	13,81	0,40	1 365,5
R m D MU	7 968	44,39	2 118	14,58	0,29	2 335,1
						7 407,6

L'accroissement annuel en volume dans les strates forestières est de l'ordre de 8 600 m³ et de 7 400 m³ pour les secteurs de Kuujjuaq et Kangiqsualujjuaq respectivement.

3.1.1.2 RÉDUCTION EN SUPERFICIE

Des réductions en superficie productive sont appliquées pour tenir compte des modalités d'intervention lors de la récolte. La modalité ayant le plus d'impact en termes de réduction est celle interdisant la récolte dans les pessières à épinette noire et cladonies. En effet, l'article 95 du règlement sur les normes d'intervention dans les forêts du domaine de l'État (RNI) stipule que le titulaire d'un permis d'intervention doit laisser intact une pessière à épinette noire et cladonies d'une superficie de 4 ha et plus d'un seul tenant. L'application de cette modalité retranche des superficies de 21 156 et 22 488 ha respectivement aux secteurs de Kuujjuaq et Kangiqsualujjuaq. Une réduction additionnelle de 5 % de la superficie est appliquée pour tenir compte des autres modalités comme la conservation des lisières boisées le long des cours d'eau.

L'application des réductions porte la possibilité forestière du secteur de Kuujjuaq à environ 4 500 m³ et celle du secteur de Kangiqsualujjuaq à environ 3 500 m³.

3.1.2 POTENTIEL EN BOIS D'ŒUVRE

Compte tenu des objectifs de transformation qui sous-tendent un éventuel projet de récolte de bois dans les secteurs visés, il importe d'évaluer la quantité de bois d'œuvre qui pourrait être transformée annuellement.

Il s'agit de déterminer le rendement (exprimé en pourcentage du volume total de bois par essence) en bois de sciage des strates forestières des deux territoires inventoriés. Cette estimation est faite à partir des données sur les études d'arbres recueillies dans les placettes-échantillons.

Les données utiles pour l'estimation du rendement sciage sont l'essence, le dhp et la hauteur des tiges observées. Pour les arbres à fort défilement dont on connaît la hauteur totale (H_t), le DHP et la longueur nominale de sciage (L_b), on peut estimer le diamètre au fin bout (Dfb) par l'équation suivante:

$$Dfb = \frac{(H_t - L_b) * dhp}{H_t - 1} \quad \begin{array}{l} \text{où } H_t = \text{Hauteur totale} \\ \text{et } L_b = \text{Longueur de la bille} \end{array}$$

À partir des observations, on peut déterminer la relation entre le dhp et le diamètre au fin bout pour une longueur de bille donnée. Un exemple de cette relation pour l'épinette noire (secteur Kuujuaq) est illustré à la figure 5.

La relation mathématique de $Dfb = f(dhp)$ est établie par une analyse de régression pour chaque essence. À l'aide de cette relation, on peut ensuite déterminer le dhp minimum qu'une tige doit avoir pour produire une bille de sciage d'une longueur et d'un diamètre au fin bout donnés.

Pour les besoins de la présente étude, nous considérons trois longueurs nominales de sciage, soit 2,4 m (8 pi); 3,0 m (10 pi) et 3,6 m (12 pi). Pour les fins de l'estimation, nous avons utilisé un diamètre au fin bout de 10 cm et une longueur de tige minimum de 2,4 m, soit une dimension de tige minimum pour la production de bois d'œuvre de 2 po x 4 po. Les dhp minimums obtenus pour les trois principales essences peuplant le territoire sont présentés au tableau 8.

FIGURE 5
RELATION ENTRE LE DHP ET LE DIAMÈTRE AU FIN BOUT POUR L'ÉPINETTE NOIRE

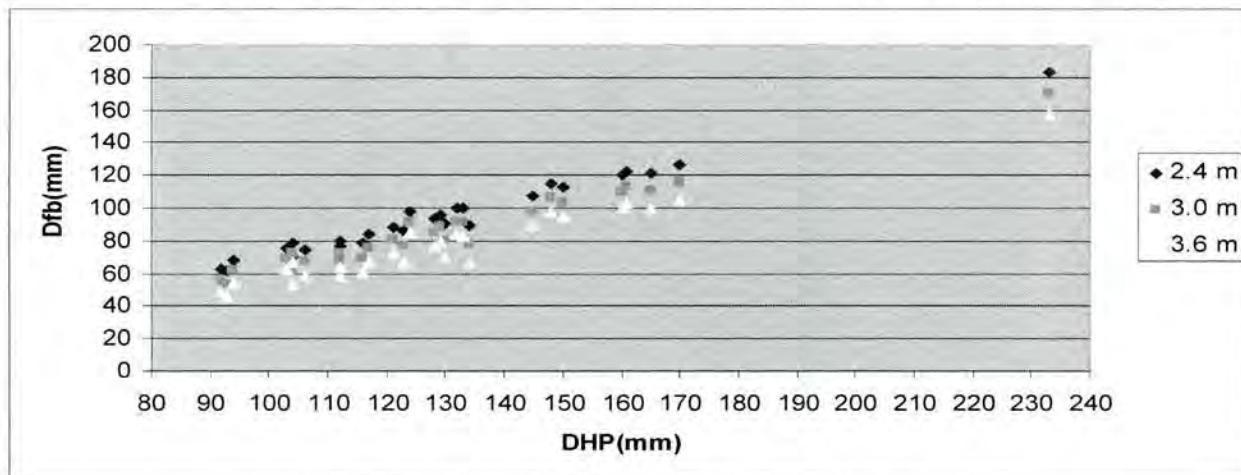


TABLEAU 8
DIAMÈTRES MINIMUMS POUR LA PRODUCTION DE BOIS D'ŒUVRE
(2 x 4 PO)

ESSENCE	LONGUEUR 8 PI	LONGUEUR 10 PI	LONGUEUR 12 PI
Épinette blanche	13,9 cm	15,0 cm	16,2 cm
Épinette noire	13,7 cm	14,9 cm	16,1 cm
Mélèze laricin	13,3 cm	14,3 cm	15,3 cm

En appliquant les résultats pour une longueur de 8 pi (2 x 4) à l'inventaire, on peut déterminer la proportion de volume composée de tiges de dimension sciage. En appliquant les proportions obtenues à la possibilité forestière, on obtient le volume de bois de dimension sciage récoltable annuellement. La possibilité forestière en bois d'œuvre est présentée au tableau 9.

TABLEAU 9
POSSIBILITÉ FORESTIÈRE EN BOIS D'ŒUVRE

TERRITOIRE	POSSIBILITÉ TOTALE (m ³)	POSSIBILITÉ EN BOIS D'ŒUVRE (m ³)
Kuujuaq	4 543	3 107
Kangiqsualujuaq	3 516	2 355

3.1.3 CONTRAINTES OPÉRATIONNELLES

La réalisation d'éventuelles activités de récolte de bois dans les deux territoires est confrontée à plusieurs contraintes opérationnelles liées principalement à l'accès. En effet, les deux territoires ne sont desservis par aucun lien routier et on ne peut y accéder que par bateau en été et par motoneige en période hivernale.

3.1.3.1 ACCÈS AUX TERRITOIRES

Si la navigation sur les rivières Koksoak et George est possible, elle demeure réservée aux pilotes expérimentés et doit se faire avec des embarcations conçues pour naviguer sur ce type de cours d'eau. Les deux rivières sont en effet assujetties à d'importantes marées faisant fluctuer le niveau d'eau de plus de 10 m selon les saisons. Plusieurs rapides ponctuent le parcours des rivières entre les villes de Kuujjuaq et de Kangiqsualujjuaq et les territoires forestiers. À marée basse, la rivière Koksoak est particulièrement dangereuse en raison du faible tenant d'eau, et la navigation doit s'effectuer avec une grande prudence.

En hiver, les secteurs sont accessibles par motoneige sans trop de difficultés. Cependant, l'effet des marées et la présence de rapides entraînent des mouvements de glace qui peuvent présenter un danger en certains endroits.

Si le transport de personnel est possible durant une bonne partie de l'année, c'est le transport du bois récolté qui représente le facteur le plus limitatif. En effet, selon les informations obtenues, les embarcations actuellement disponibles pour la navigation dans les villages ne permettent pas de transporter le bois récolté sur une base opérationnelle. Le transport de bois par voie navigable est potentiellement envisageable, aussi des embarcations conçues pour cette fonction devront être acquises et testées sur les deux rivières.

Le transport de bois en période hivernale présente sans doute moins de difficultés à mettre en œuvre à court terme, du moins dans le secteur de Kuujjuaq. Au nord de la rivière Koksoak, un sentier d'hiver pourrait être aménagé à même un sentier déjà existant qui longe la rivière sur plus d'une dizaine de kilomètres vers l'ouest. La topographie relativement peu accidentée sur la rive nord permettrait de prolonger ce sentier jusqu'à la hauteur du territoire forestier. Une route de traverse sur la glace pourrait être aménagée vers la rive sud durant la période hivernale, dans une portion de la rivière soustraite à l'influence des marées. Dans le secteur de Kangiqsualujjuaq, l'aménagement d'un sentier de transport sur la rive de la rivière George est beaucoup plus problématique en raison de la topographie très accidentée du secteur.

La difficulté dans le transport du bois en hiver réside également dans la disponibilité d'un véhicule de transport approprié pour circuler sur la neige, et permettant de transporter des charges de bois appréciables. Selon les informations recueillies, il n'existe pas, au sein des villages, de véhicules de type débusqueuse, tracteur ou véhicules sur chenilles de gros gabarit qui permettraient de réaliser ce travail. Le bois coupé pour les usages domestiques (bois de chauffage principalement) est habituellement transporté à l'aide d'une remorque sur skis couplée à une motoneige.

Des tests opérationnels permettraient de déterminer la faisabilité des différentes options de transport de bois.

3.1.3.2 MÉTHODES DE RÉCOLTE

Le choix d'une méthode de récolte des bois repose sur plusieurs critères dont les principaux sont :

- la disponibilité de la machinerie pour la récolte et le transport;
- la disponibilité de la main-d'œuvre;
- le mode de transport de bois utilisé;
- l'envergure, la période et la durée des opérations;
- la composition des peuplements (essences et dimension des tiges);
- la topographie du terrain;
- les modalités d'intervention.

Selon les informations obtenues, il n'existe pas d'équipements de récolte forestière pour l'abattage mécanisé ou le débardage dans les communautés de Kuujjuaq et Kangiqsualujjuaq. Les seuls équipements existants pouvant être utilisés dans le cadre d'activités de récolte de bois sont des équipements légers comme la scie à chaîne, les véhicules tout terrain (VTT) et les motoneiges.

La disponibilité d'une main-d'œuvre qualifiée peut également constituer une limitation importante dans la mise en oeuvre d'un projet de récolte de bois. L'historique de travaux de récolte de bois au Nunavik se résume presque exclusivement à des travaux ponctuels pour des fins domestiques effectués manuellement à la scie à chaîne. Il n'existe pas, au sein des communautés, de travailleurs expérimentés dans la coupe de bois mécanisée.

La nature des peuplements forestiers est favorable à des coupes manuelles et à l'utilisation de machineries ou d'engins de petit gabarit. En effet, les tiges, composées en grande majorité d'épinette noire, sont de dimensions modestes et croissent en peuplements relativement peu denses. Elles peuvent donc être facilement abattues et manipulées à main d'homme.

Il est clair que l'envergure d'un projet de récolte dans les secteurs visés demeurera modeste. À court terme, tout projet de récolte ne pourra s'inscrire qu'à l'intérieur du programme du MRNF autorisant la récolte de bois disponibles dans les réserves forestières du domaine de l'État situées au nord de la limite nordique. À l'heure actuelle, le volume maximum qui peut être autorisé en vertu de ce programme est de 2 000 m³ annuellement. En supposant une récolte à ce niveau, cela représente une superficie de traitement d'environ 50 ha annuellement.

Au niveau de la période d'exécution, des opérations de récolte peuvent être conduites durant les périodes de l'année où les secteurs sont accessibles de façon sécuritaire par voie maritime ou terrestre. Les périodes d'août à octobre et de janvier à mars apparaissent les plus appropriées. Toutefois, les opérations menées en hiver sont plus sujettes à être affectées par des conditions climatiques adverses et par l'enneigement.

La topographie des terrains forestiers dans le secteur de Kuujjuaq ne constitue pas un facteur limitatif au niveau des opérations de récolte. À l'inverse, les fortes pentes du secteur de Kangiqsualujjuaq imposent une limite aux déplacements des véhicules et plusieurs secteurs demeureront inaccessibles sans des appareils et des méthodes adaptées à ces conditions.

Considérant l'ensemble de ces facteurs, plusieurs incertitudes demeurent sur la faisabilité des opérations de coupe ainsi que sur la ou les méthodes de récolte les plus efficaces. À notre avis, les méthodes de récolte devraient, dans un premier temps, s'appuyer sur des techniques manuelles et être adaptées aux moyens matériels actuellement disponibles à l'intérieur des communautés. Aussi, la mise en oeuvre d'un projet de récolte de bois à l'intérieur des territoires visés devrait être précédée d'un projet-pilote visant à tester et comparer différents processus de récolte et de transport de bois adaptés au contexte de ces territoires nordiques.

3.1.4 TRAITEMENTS SYLVICOLES

Compte tenu de la faible diversité des peuplements qui sont constitués quasi exclusivement d'essences résineuses à maturité, les traitements

sylvicoles qui peuvent s'appliquer sont peu variés. Les résultats d'inventaire et les observations faites sur le terrain montrent la présence d'une régénération satisfaisante dans la plupart des strates forestières. Les travaux de coupe doivent toutefois être réalisés de façon à assurer la protection et le développement de la régénération préétablie. L'exposition aux vents constitue un facteur limitatif de la croissance des arbres dans les territoires concernés et les interventions de coupe doivent être réalisées en considération de ce facteur.

3.1.4.1 COUPE AVEC PROTECTION DE LA RÉGÉNÉRATION ET DES SOLS (CPRS)

La coupe totale avec protection de la régénération et des sols demeure encore la principale façon d'intervenir dans ces peuplements. Toutefois, comme il n'existe pas de référence sur des coupes forestières dans des situations comparables et à ces latitudes au Québec, la prudence doit prévaloir dans l'application des traitements sylvicoles afin d'éviter une dégradation des milieux perturbés par la coupe et assurer que ceux-ci seront convenablement régénérés.

Aussi, nous sommes d'avis que la dimension des coupes devrait être restreinte à quelques hectares (maximum 5) d'un seul tenant. De plus, les coupes devraient être réparties suivant le principe de la mosaïque en maintenant un minimum de 50 % du couvert à l'intérieur du chantier de coupe. En plus de favoriser une diversité de couvert forestier pour la faune, ces dispositions permettent une meilleure protection des parterres en régénération contre l'agression du vent. Les coupes peuvent être réalisées en période estivale ou hivernale. Toutefois, la couverture nivale assure une protection accrue de la régénération lors de la récolte.

Compte tenu de la quantité de superficies disponibles pour la coupe et de la nature des méthodes de récolte envisagées à ce moment-ci, nous sommes d'avis que l'application de telles mesures n'aura pas d'impact significatif sur les coûts de récolte.

3.1.4.2 COUPES PARTIELLES

Des coupes partielles de type éclaircie commerciale ou jardinage peuvent également être envisagées dans les peuplements présentant une structure et une densité de tiges appropriées à ces traitements. Le recours à ce type de coupe offre l'avantage de permettre la récolte d'une proportion plus importante de tiges de dimension sciage en comparaison avec la CPRS. Le maintien d'un couvert forestier assure également une meilleure protection des tiges en régénération. Ce type de coupe devrait notamment être favorisé dans les peuplements situés en bordure des

terrains dénudés ou faiblement boisés : tourbières, arbustaies, landes, etc.

3.1.4.3 TRAVAUX DE RÉGÉNÉRATION

En raison de la régénération préétablie dans les peuplements visés par la coupe, des travaux de régénération ne sont pas prévus. Si de tels travaux s'avéraient nécessaires, l'ensemencement demeurerait la seule solution possible compte tenu de l'absence de pépinière et de la difficulté que représenterait l'acheminement de plants aux sites de reboisement.

3.1.4.4 SUIVI DES TRAVAUX

Un suivi des travaux devra être réalisé dans les parterres au cours des années suivant la récolte pour vérifier l'état des peuplements. Ce suivi permettra d'établir la nécessité de réaliser des travaux pour corriger une déficience au niveau de la régénération et d'apporter des ajustements aux méthodes de récolte le cas échéant.

4. RECOMMANDATIONS

Cette étude sur la ressource forestière dans les deux parcelles de Kuujjuaq et Kangiqsualujjuaq démontre le potentiel réel des territoires à pouvoir soutenir des activités de récolte de bois d'une certaine envergure. La mise en œuvre de telles activités se bute toutefois à plusieurs contraintes d'ordre opérationnel pour lesquelles des solutions devront être développées, analysées et testées. Aussi, des informations additionnelles sont nécessaires avant de décider d'entreprendre un projet de récolte et de transformation de bois sur une base annuelle. Les étapes restant à franchir sont les suivantes :

- Conduire une étude de marché couvrant les produits de bois d'œuvre et de bois de chauffage à l'intérieur de chaque communauté.
- Réaliser un projet-pilote visant à déterminer la faisabilité technique et la viabilité économique d'un projet de récolte et de transformation de bois sur une base annuelle.
- Vérifier l'acceptabilité sociale d'un tel projet par les membres des communautés de Kuujjuaq et Kangiqsualujjuaq.
- Le cas échéant, identifier et acquérir une unité de transformation du bois (scierie mobile ou fixe) adaptée aux besoins.

Compte tenu des incertitudes entourant la réalisation d'opérations de récolte et de transport de bois, la réalisation d'un projet-pilote est un élément primordial pour déterminer la faisabilité du projet. Par conséquent, une telle étude devrait être priorisée et entreprise au cours de la prochaine année afin de fournir les informations nécessaires aux dirigeants locaux dans le processus décisionnel.

CONCLUSION

Ce projet constitue une première étape dans le cheminement décisionnel des communautés de Kuujjuaq et Kangiqsualujjuaq de procéder à des activités de récolte sur deux territoires situés à proximité des villages et accessibles par voie fluviale. Les travaux d'inventaire forestier réalisés au cours de l'automne 2005 démontrent la présence d'un potentiel forestier suffisant pour soutenir des travaux de récolte de bois à petite échelle à l'intérieur des deux territoires visés. Les analyses et observations tirées des données d'inventaire établissent la possibilité forestière des territoires de Kuujjuaq et Kangiqsualujjuaq à 4 500 m³ et 3 500 m³ respectivement. Ces possibilités sont largement supérieures aux limites de volume attribuable annuellement par le MRNF dans le cadre de son programme autorisant la récolte de bois disponible dans les réserves forestières du domaine de l'État situées au nord de la limite nordique. Bien que les tiges soient généralement de faibles dimensions, environ le deux tiers du volume peut être destiné à la production de bois d'œuvre de petites dimensions.

Sur le plan opérationnel, la distance séparant les secteurs des villages et l'absence de lien routier imposent des contraintes à la réalisation de travaux, particulièrement au transport du bois. Les modalités de récolte et les traitements sylvicoles doivent être adaptés aux conditions climatiques prévalant à ces latitudes. De plus, les communautés disposent de peu d'équipements spécialisés pouvant être utilisés dans le cadre des opérations. Par conséquent, l'élaboration d'un projet de récolte de bois devra considérer l'ensemble de ces contraintes et prévoir des méthodes adaptées au contexte des forêts nordiques et aux limites de moyens des communautés. Il est donc recommandé de procéder, dans une deuxième étape, à la réalisation d'un projet-pilote de coupe visant à établir la faisabilité technique et économique d'un projet de récolte dans les secteurs concernés.

DEL DEGAN, MASSÉ ET ASSOCIÉS INC.

Bernard Massé, ing. f.

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Makivik Corporation
Meeting of the Board of Directors
(Place)
_____, 2005

Resolution No. 2005-_____

Re: **Appointed signatory – Funding Agreement with the MNR on Forestry development Project**

WHEREAS the Corporation wishes to undertake a commercial forestry project;

WHEREAS a Funding Agreement of \$50,000.00 has been negotiated with the Ministry of Natural Resources (M.N.R.) for the completion of the first phase of the commercial forestry project promoted by the latter, being the performance of an inventory of the forestry potentials on already identified parcels of lands;

WHEREAS one Makivik representative needs to be duly appointed by way of resolution for the signature of said funding agreement;

Upon motion moved by _____ and seconded by _____, it was resolved:

THAT the preamble is an integral part of the present resolution;

THAT Mr. Adamie Alaku, Vice-President Economic Development, be and is hereby authorized for and on behalf of the Corporation to sign a \$50,000.00 Funding Agreement with the MNR, and to sign and execute and any and all other documents necessary to give effect to the foregoing.

Certificate

I, the undersigned, George Berthe, Corporate Secretary, certify that this is a true copy of a resolution duly adopted at a duly called meeting of the board of directors of Makivik Corporation, held in _____, on the ___th day of _____, 2005.

(place), this ___th day of _____, 2005.



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Comité Consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee

Kuujjuaq, November 29, 2005

Working Group for Pilot Forestry Project in Nunavik:

Charles Dorais, Makivik Corporation
Nathalie Girard, KRG, Renewable Resources Department
Sandy Gordon, KRG, Director of Renewable Resources Department
Michael Barrett, KRG, Assistant Director of Renewable Resources Department
Alan Gordon, President of Nayumivik Landholding Corporation
Larry Watt, Mayor of Kuujjuaq

Subject: Identify *Kativik Environmental Advisory Committee* comments towards the proposed pilot logging project

Created in 1975 pursuant to the *James Bay and Northern Québec Agreement (JBNQA)*, the Kativik Environmental Advisory Committee (KEAC) is a consultative body to responsible government, regional and local officials in matters relating to environmental and social protection in Nunavik. According to *Chapter 23, section 23.5.34*, of the JBNQA, "*the Department of Lands and Forests shall, when preparing a management plan for Crown forests and forestry operations, forward such management plan to the Advisory Committee for its consideration and comments before approving the said management plan*".

During the 104th KEAC meeting held July 5-7, 2005 in Inukjuak, Nunavik, the members asked that the following information be brought to your attention.

In June 2004, in the context of the above mandate, the KEAC responded to the Québec public forests management task force (Commission d'étude sur la gestion de la forêt publique québécoise), concerning their knowledge of the forested region of Northern Québec. It was suggested that in order for there to be a better understanding of the forest inventory of this region, the KEAC recommended to the Commission to establish a group to examine this northern portion of Québec (from the 52nd parallel to the tree line).

The 3 recommendations made to the Commission were:

1– The Kativik Environmental Advisory Committee recommended to the Commission that a fact-finding group be established to compile and round out current knowledge of

forest resources in Nunavik. This group would analyze and consolidate the studies (effectiveness of reforestation, soil quality, post-fire harvesting) necessary to ensure protection and conservation of Nunavik's wood resources.

2- Before the results of the preceding recommendation become known and with the exception of personal use, the KEAC recommend to the Commission the suspension of all activities (forestry operations, commercial harvesting, etc.) that could contribute to the decline of forest resources in Nunavik. This recommendation should apply until such time that the impacts of these activities are understood and that a management plan has been established to foster the complete restoration.

3- North of the 55th parallel, the forestry management plan must respect the Inuit rights as set out in the *James Bay and Northern Quebec Agreement* (JBNQA) in section 24 with respect to wildlife conservation and harvesting. It must also respect the principle of environmental protection as set out in section 23 of the JBNQA.

The KEAC supports your inventory project, as it falls in line with our mandate and the above recommendations made to the Commission. We would also appreciate a copy of the study once it has been completed.

The Committee would like to thank the working group for initiating the forest inventory project and look forward to it's progress.



Nancy Dea
Executive Secretary

Kativik Environmental Advisory Committee
Comité Consultatif L'Environnement Kativik

QINIQTIQ LANDHOLDING CORPORATION OF KANGIQSUALUJJUAQ

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Telephone: (819) 337-5449

Telecopier: (819) 337-5752

Kangiqsualujjuaq, August , 2005

*Transmitted by telefax: (819) 964-0694
(819) 964-1706*

Nathalie Girard

Kativik Environmental Advisory Committee
P.O. Box 9, Kuujjuaq, J0M 1C0

Charles Dorais

Makivik Corporation
P.O. Box 179, Kuujjuaq, PQ, J0M 1C0

Subject: Appointment of representatives to the Working Group on Forestry

Following the request presented by Mrs. Nathalie Girard while she was in our community, Qiniqtiq LHC of Kangiqsualujjuaq met with its fellows Epigituk Directors and decided to appoint the three (3) following representatives on behalf of the corporations to the working group on forestry:

NAME:	HOME PHONE#	WORK PHONE #
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____

Those representatives have been appointed by way of resolution, the latter being attached to the present.

We hope the present is to your satisfaction, and we remain,

Sincerely yours,

Per Qiniqtiq LHC of Kangiqsualujjuaq

Sophie Annanack, Manager

P.j./

Qiniqtiq Landholding Corporation of Kangiqsualujjuaq

Resolution 2005-

Re: **Appointed representatives – Working Group on Forestry**

WHEREAS Qiniqtiq has been invited to join a working group that considers the possibility of developing the forestry potentials of the two (2) parcels of lands identified at 6.3.1. JBNQA where timber rights are guaranteed to the Inuit community corporations of Kuujjuaq and Kangiqsualujjuaq;

WHEREAS representatives need to be appointed to such purpose;

WHEREAS Qiniqtiq agrees to have two (2) representatives appointed to the working group along with one (1) representative from Epigituk Landholding Corporation of Killiniq;

Upon motion moved by _____ and seconded by _____, it was resolved:

THAT the preamble is an integral part of the present resolution;

THAT the following Directors are appointed as Qiniqtiq representatives on the working group on forestry:

- 1.
- 2.
- 3.

THAT the current resolution comes in effect from the present day of adoption.

Certificate

I, the undersigned, Tommy Etok, Secretary-Treasurer, certify that this is a true copy of a resolution duly adopted at a duly called meeting of the corporation held in Kangiqsualujjuaq on the ___th day of _____, 2005.

Kangiqsualujjuaq, this ___th day of _____, 2005.

Tommy Etok



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Comité Consultatif de l'environnement Kativik
Kativik Environmental Advisory Committee

Date: July 28, 2005

Nombre de pages (Incluant celle-ci): 3 8½ x 11
 8½ x 14

À / TO: Qiniqtig land holding corporation
Kangisualujjuag
Fax: (819) 337-5752

DE / FROM: Nathalie Girard for Myliwe launivère.

Message

Please find attached documents related to forestry.
These documents follow the memo I sent you a
few days ago.

yours truly,

Nathalie



LP^εΔ^ι
Société Makivik
Makivik Corporation

MEMO

DATE: July 27, 2005

TO: Charles Dorais

C.c.: Nathalie Girard (KEAC)

FROM: Mylène Larivière

OBJECT: Pilot Project: Development Program of Inuit parcels of land subject to exclusive lumber rights (section 6.3.1. JBNQA)

The present memo details discussions held on July 13, 2005, between Mr. Létourneau and Audette, representatives of the MNR, and Nathalie Girard, KEAC and member of your working group on forestry. Despite my very-limited role in the project, I attended the meeting on behalf of Makivik in order to report all findings to the corporation. Also included at the present memo are subsequently undertaken or on-going actions.

JULY 13 MEETING VIA CONFERENCE CALL: CONCLUSIONS

1. *Devis* – Terms of reference

Proposals have been made by MNR representatives to have elements included and questions answered at the draft terms of reference, to facilitate the awarding of the contract or the review of the final datas. Nathalie Girard and Mr. Létourneau have provided these informations at a subsequent conference call (July 21). Thus questions about the costs, transportation, accommodation, timeframe, 60's forestry cuts or inventory details have been integrated at the terms of reference already transmitted by Nathalie via electronic mail.

ACTIONS: The final terms of reference, reviewed by all parties and by myself on behalf of Makivik, has to be translated into English. Considering the timeframe proposed, I took the liberty to transmit such document to Winnie M. with the appropriate budget number in order to have the task performed before July 29.

Mr. Létourneau remains as the contact person for any technical aspect on the terms of reference. He will furthermore provide names of firms experienced in forest inventories in northern environments. As early as August 1st or soon thereafter, Makivik is expected to open the call for tenders, being without or upon invitation, to its discretion. I hereby

recommend that such selection process be made upon invitation.

2. Entente de financement – Funding Agreement

As mentioned at the conference call, Mr. Audette produced a funding agreement towards the completion of the project. That agreement, in its French and English versions, has been revised by the undersigned and appears to be to her satisfaction. A resolution appointing a Makivik signatory has been prepared and is attached to the present sending for completion.

The MNR already commits itself for a \$50,000.00 funding envelope, total envelop to be completed by Makivik depending on bids to be received. The governmental funding is subject to the signature of the agreement (3 copies of the French and English versions). Whenever Makivik is ready to proceed with such signature, Mr. Christian Leclerc (MNR) should be contacted to have the final agreement agreed upon thus signed by all parts.

3. Maître d'oeuvre – Promoter of the project:

The question being raised, it has been confirmed that Makivik is acting as the promoter of the project, such confirmation being subject to final corroboration by Charles.

4. Assessment of needs:

One important aspect that still need to be assess by the promoter and partners of the project is on the goals and needs pursued by the project; needs and proposed uses of the harvested wood will impact the size, type and dimension of the harvesting thus the feasibility of the project. That important question leads to the following proposals prepared by the undersigned:

PROPOSALS:

1. Plan of actions:

a) 1st Phase: Inventory – Forestry

In assessing the economical potentials of the proposed project and also environmental components of the exploitation of such fragile and distinctive resources, an **inventory** of the forestry potentials of the two (2) identified parcels of land identified at 6.3.1. needs to be conducted. It shall be undertaken this coming Fall 2005 consequent to awarding a contract to that effect. Such inventory will enable the assessment of the feasibility of the project (with data on the trees density, harvesting potentials, etc.)

b) Decision – Economic and Financial Viability of forestry.

After the completion of the 2005 inventory, a first report should be produced to duly assess the chances of success of the project. An economical decision will need to be taken considering the findings of the report (inventory) in conjunction with the completion of a business plan. **Needs** and **uses** of the wood thereto have to be defined. Thus, a

comprehensive **business plan** shall be prepared considering the 2005 inventory and the proposed uses of the harvesting products.

c) 2e Phase: JBNQA Impact Assessment & Management Plan

If the first phase and business plan show positive results, a second phase should be conducted in 2006 to fulfill the legal requirements of the JBNQA and the Environmental Quality Act for a **social and environmental impact assessment**. Contracts may need to be awarded at such phase, to assess, among others, the following:

- potential impacts on fish and fisheries in any rivers or streams in the vicinity of the forestry operation;
- potential impacts of woodcutting on riverbanks or drainage areas of rivers and streams;
- potential impacts on wildlife inhibiting or using the area contemplated by section 6.3.1. JBNQA;
- sustainable development aspects of forestry operation in light of extreme ecosystem and environment which severely delays vegetation regeneration;
- potential impacts of forestry on water fowl feeding, staging and history habitats on adjoining rivers and streams;
- potential impacts of forestry on migratory species (birds and caribous);
- potential erosion impact of forestry on streams, rivers and shores.

In addition to relevant provision of the JBNQA, the pertaining regulations applicable on the Québec territory and the general principles on sustainable development, a **management plan** of the resource may need to be agreed upon for the commercial harvesting on said parcels.

d) Harvesting

Considering various requirements that all need to be fulfilled prior to the actual forestry operations, commercial harvest could not be reasonably performed before Winter 2006-2007.

e) Sawmill Operations

Sawmill activities are subject to the performance of the first commercial harvesting operations.

2. Revision of applicable regime:

The JBNQA identifies at its section 6.3.1 two (2) parcels of land subject to exclusive timber rights devolved **jointly** to the landholding corporations of Kuujjuaq and Kangiqsualujjuaq. In terms of those rights, the exploitation of those forestry resources should be for **personal or community use** and be exercised with respect to management plans to be agreed upon with the MNR.

Nevertheless, development of the identified parcels of lands is permitted thus any other commercial project may have precedence over the personal or community rights therein granted. The forestry project presently foreseen is a development project as defined at the JBNQA.

Since that development cannot be considered as being the exercise of the timber rights protected under section 6.3.1 JBNQA, which are for "personal or commercial use", **authorization** without compensation needs to be obtain from **both** LHCs for the conduct of commercial activities on parcels of lands where **joint** treaty rights are guaranteed (Kuujjuaq and Kangiqsualujjuaq need to authorize the development on the "Kuujjuaq" parcel, and *vice-versa*). **Resolutions** shall be adopted by the concerned organizations to that effect.

Already, the communities of Kuujjuaq and Kangiqsualujjuaq have been approached concerning the ongoing project, yet no representatives have been **appointed** by Qiniqtiq LHC and the Northern Village of Kangiqsualujjuaq.

Hope the present memo is to your satisfaction, and please let me know if you need additional information or assistance. Note that I will be back in the office on August 25, 2005.



LP^εΔ^ι
Société Makivik
Makivik Corporation

MEMO

DATE: July 27, 2005

TO: Charles Dorais

C.c.: Nathalie Girard (KEAC)

FROM: Mylène Larivière

OBJECT: Pilot Project: Development Program of Inuit parcels of land subject to exclusive lumber rights (section 6.3.1. JBNQA)

The present memo details discussions held on July 13, 2005, between Mr. Létourneau and Audette, representatives of the MNR, and Nathalie Girard, KEAC and member of your working group on forestry. Despite my very-limited role in the project, I attended the meeting on behalf of Makivik in order to report all findings to the corporation. Also included at the present memo are subsequently undertaken or on-going actions.

JULY 13 MEETING VIA CONFERENCE CALL: CONCLUSIONS

1. *Devis* – Terms of reference

Proposals have been made by MNR representatives to have elements included and questions answered at the draft terms of reference, to facilitate the awarding of the contract or the review of the final datas. Nathalie Girard and Mr. Létourneau have provided these informations at a subsequent conference call (July 21). Thus questions about the costs, transportation, accommodation, timeframe, 60's forestry cuts or inventory details have been integrated at the terms of reference already transmitted by Nathalie via electronic mail.

ACTIONS: The final terms of reference, reviewed by all parties and by myself on behalf of Makivik, has to be translated into English. Considering the timeframe proposed, I took the liberty to transmit such document to Winnie M. with the appropriate budget number in order to have the task performed before July 29.

Mr. Létourneau remains as the contact person for any technical aspect on the terms of reference. He will furthermore provide names of firms experienced in forest inventories in northern environments. As early as August 1st or soon thereafter, Makivik is expected to open the call for tenders, being without or upon invitation, to its discretion. I hereby

recommend that such selection process be made upon invitation.

2. Entente de financement – Funding Agreement

As mentioned at the conference call, Mr. Audette produced a funding agreement towards the completion of the project. That agreement, in its French and English versions, has been revised by the undersigned and appears to be to her satisfaction. A resolution appointing a Makivik signatory has been prepared and is attached to the present sending for completion.

The MNR already commits itself for a \$50,000.00 funding envelope, total envelop to be completed by Makivik depending on bids to be received. The governmental funding is subject to the signature of the agreement (3 copies of the French and English versions). Whenever Makivik is ready to proceed with such signature, Mr. Christian Leclerc (MNR) should be contacted to have the final agreement agreed upon thus signed by all parts.

3. Maître d'oeuvre – Promoter of the project:

The question being raised, it has been confirmed that Makivik is acting as the promoter of the project, such confirmation being subject to final corroboration by Charles.

4. Assessment of needs:

One important aspect that still need to be assess by the promoter and partners of the project is on the goals and needs pursued by the project; needs and proposed uses of the harvested wood will impact the size, type and dimension of the harvesting thus the feasibility of the project. That important question leads to the following proposals prepared by the undersigned:

PROPOSALS:

1. Plan of actions:

a) 1st Phase: Inventory – Forestry

In assessing the economical potentials of the proposed project and also environmental components of the exploitation of such fragile and distinctive resources, an **inventory** of the forestry potentials of the two (2) identified parcels of land identified at 6.3.1. needs to be conducted. It shall be undertaken this coming Fall 2005 consequent to awarding a contract to that effect. Such inventory will enable the assessment of the feasibility of the project (with data on the trees density, harvesting potentials, etc.)

b) Decision – Economic and Financial Viability of forestry.

After the completion of the 2005 inventory, a first report should be produced to duly assess the chances of success of the project. An economical decision will need to be taken considering the findings of the report (inventory) in conjunction with the completion of a business plan. **Needs** and **uses** of the wood theréto have to be defined. Thus, a

comprehensive **business plan** shall be prepared considering the 2005 inventory and the proposed uses of the harvesting products.

c) 2e Phase: JBNQA Impact Assessment & Management Plan

If the first phase and business plan show positive results, a second phase should be conducted in 2006 to fulfill the legal requirements of the JBNQA and the Environmental Quality Act for a **social and environmental impact assessment**. Contracts may need to be awarded at such phase, to assess, among others, the following:

- potential impacts on fish and fisheries in any rivers or streams in the vicinity of the forestry operation;
- potential impacts of woodcutting on riverbanks or drainage areas of rivers and streams;
- potential impacts on wildlife inhabiting or using the area contemplated by section 6.3.1. JBNQA;
- sustainable development aspects of forestry operation in light of extreme ecosystem and environment which severely delays vegetation regeneration;
- potential impacts of forestry on water fowl feeding, staging and history habitats on adjoining rivers and streams;
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LPA **ᓄᓕᓄᓐᓴᓂᓐ**
Makivik Corporation Société Makivik

Bureau du président

President's Office

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(KEAC) **Télécopie /Fax**

À/To:
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Nathalie Girard

De/From:
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Hylène

Télécopieur:

964-0694

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Date:

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July 27, 2005

Re:

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Articles intéressants!

Urgent

**Pour révision
For review**

**Commentaires SVP
Comments please**

**Pour votre information
For your information**

Message/ᓄᓐᓴᓂᓐᓴᓂᓐ:

avec mes articles!



LE DEVOIR

#0694

Protéger la forêt

Josée Boileau

Édition du mardi 24 mai 2005

Mots clés : Québec (province), Forêt, Richard Desjardins

Richard Desjardins était-il trop optimiste quand il affirmait, il y a deux mois, que le discours alarmiste sur les pertes d'emplois en forêts, dans la foulée de la décision gouvernementale d'en réduire le niveau d'exploitation, resterait sans effet? Des régions entières sont aujourd'hui mobilisées. Et la démagogie n'est pas très loin.

Il y a de l'effervescence depuis le début mai dans le dossier de l'exploitation de la forêt au Québec. D'abord, le Conseil de l'industrie forestière du Québec (CIFQ) s'est trouvé un directeur fougueux, l'ancien ministre péquiste Guy Chevrette -- sans doute un juste retour des choses, lui qui fut ministre des Ressources naturelles dans cette décennie où le rythme annuel des coupes s'est emballé. Et M. Chevrette est bien déterminé à ce que le point de vue de l'industrie soit entendu «haut et fort».

En même temps, les impacts de la déforestation, qui se traduisent notamment par le blocus de routes, se multiplient dans les régions touchées par la baisse de 20 % en trois ans de la coupe de bois résineux.

Enfin, le sujet a trouvé une nouvelle tribune : la Cour supérieure. Toute la semaine dernière, la compagnie Kruger et les Betsiamites s'y sont colletés au sujet de l'île René-Levasseur, sur la Côte-Nord, qui abrite une forêt d'une grande valeur. Droits ancestraux des autochtones et protection de l'environnement s'opposent aux droits de coupe acquis par Kruger en 1997 et à la protection des emplois.

Et tout ce mouvement illustre à quel point la moindre victoire écologique est d'une grande fragilité.

Le gouvernement Charest a fait un geste courageux en adoptant deux grandes recommandations de la commission Coulombe sur la gestion de la forêt publique québécoise : la réduction du volume de bois coupé et la création d'un poste de forestier en chef pour dépolitiser cette gestion. Mais les régions, les syndicats, l'industrie dénoncent l'absence d'un véritable plan de transition alors que les règles du jeu sont changées. C'est la survie des petites scieries, de la grande industrie, des villages, et même de régions tout entières qui est en jeu, disent-ils.

Ces craintes sont légitimes. Richard Desjardins lui-même s'en est fait l'écho ce week-end en réclamant à Québec de tenir des États généraux sur la forêt. Mais, chez certains, il y a aussi un désir très net de ne pas bouger; de ne pas voir que l'industrie elle-même n'a su ni se moderniser ni se discipliner; de ne même pas admettre que les forêts du Québec courent présentement à leur perte. Et qu'il faut sortir les régions des mono-industries dont elles sont dépendantes.

Ainsi, quand le Syndicat canadien des communications, de l'énergie et du papier réclame des gouvernements des investissements «dans la formation et le développement de nouveaux emplois», elle ne plaide pas pour la diversité industrielle, mais pour obtenir des fonds afin de «revaloriser le travail en forêt» et «encourager les jeunes à choisir les métiers de la forêt». Comme si là était l'avenir !

Il faut voir aussi combien le discours sur le développement durable est complètement détourné de son sens dans la bataille actuelle. L'efficacité économique, dit-on, doit être mise sur le même pied que l'intégrité écologique et l'équité sociale. La moindre menace immédiate à l'emploi brise donc ce bel équilibre.

Pourtant, ce n'est pas ce que la commission Bruntland avait en tête lorsqu'elle a élaboré le concept de développement durable dans les années 80 : il s'agissait plutôt d'opposer au développement économique les limites des écosystèmes. Or, on aura beau chicaner sur les manières de le calculer, la forêt québécoise a

atteint-les limites de son renouvellement. Toute discussion sur la protection des emplois actuels, comme si de rien n'était, devient du coup oiseuse.

Cela ne minimise en rien les drames que vivent les travailleurs et les communautés, que le gouvernement ne doit surtout pas abandonner. Mais cela appelle à un discours plus responsable de la part de tous ceux qui sont en position de pouvoir -- patronal, syndical et local. Crier haro sur les écologistes, ceux qui «plaignent sur toutes les tribunes», comme l'a si éloquemment dit M. Chevrette à son entrée en fonction au CIFQ, est d'un ridicule consommé. Si, il y a des années, les morues avaient pu compter sur l'argumentaire d'écologistes et le film coup-de-poing d'un poète-vedette, il y aurait aujourd'hui bien moins de pêcheurs en détresse.

La fragilité des gains écologiques, enfin, tient aussi à la limite des discours officiels. Le cas de l'île René-Levasseur, où les arbres ont jusqu'à 300 ans et dont le BAPE a souligné l'«importance patrimoniale remarquable», en offre un bel exemple. Là où il faudrait prudence et protection, sur fond de discussions réelles avec les autochtones, Québec a choisi l'inaction. Et c'est encore un tribunal qui devra trancher ce qui devrait relever d'une obsession de société : la préservation d'un petit coin exceptionnel de la planète.

jboileau@ledevoir.ca

MEMO

DATE: June 28, 2005

TO: Qiniqtiq LHC of Kangiqsualujjuaq

C.c.: Epigituk LHC of Killiniq

FROM: Nathalie Girard (KEAC) for the Working Group on Forestry

OBJECT: Pilot Project: Development Program of Inuit parcels of land subject to exclusive lumber rights (section 6.3.1. JBNQA)

The present memo summarizes the genesis of the pilot project concerning the development of the forestry resources located on the parcels of land described at the JBNQA section 6.3.1., and the past and on-going actions undertaken at that file of common interest.

BACKGROUND

The JBNQA identifies at its section 6.3.1 two (2) parcels of land subject to exclusive timber rights devolved to the landholding corporations of Kuujjuaq and Kangiqsualujjuaq. The exploitation of those forestry resources should be for personal or community use and be exercised with respect to management plans to be agreed upon with the MNR. Nevertheless, any type of development over the identified parcels of lands is permitted thus any other commercial project may have precedence over the personal or community rights therein granted. A map describing the concerned pieces of land is attached here to for your information.

Makivik Corporation recently undertook discussions with representatives of the MNR, the KRG, the KEAC, the Northern Village of Kuujjuaq and Nayumivik LHC of Kuujjuaq. A small-scale project of commercial timber (exploitation and transformation) was reviewed and it has been agreed to form an unofficial "working group" to duly answer important preliminary questions towards the completion of the pilot project. The Kuujjuammiut sites contemplated for the small-scale timber exploitation are located at the area identified at section 6.3.1 and schedule 2 JBNQA.

Also, mandate has been given to such working group, composed of Ms. Nathalie Girard, Secretary of the KEAC, and Mr. Charles Dorais, Makivik Economic Development Dept. Head, to initiate discussion with representatives of the community of Kangiqsualujjuaq to verify their interest with respect to their implication within the proposed project concerning the area for timber rights for the community of George River (schedule 2 JBNQA).

TECHNICAL MANDATE OF THE WORKING GROUP

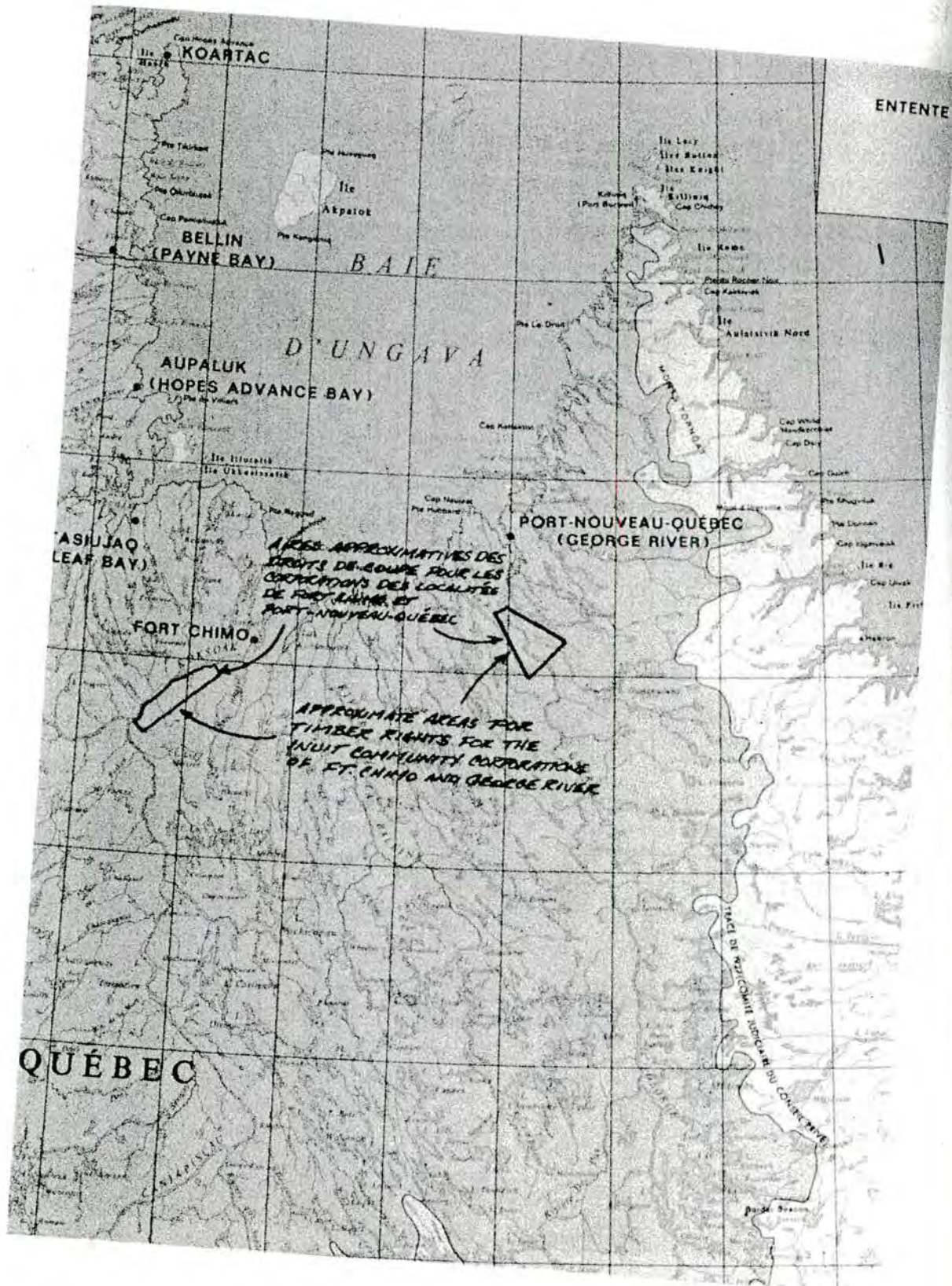
The Working Group wishes to assess the economical potentials of the proposed project, but also the environmental components of the exploitation of such fragile and distinctive resources. Thus, with respect with the provision of the JBNQA, the pertaining regulations applicable on the Québec territory, the need to have agreed upon a

management plan of the resource and the general principles on sustainable development, the Working Group wants to have prepared an assessment study of the forestry potentials of the two (2) land parcels identified at 6.3.1. Indeed, a bid has been prepared and will be awarded before August 2005. The time schedule foresees the reception of a complete study before November 2005 and the concerned communities will participate towards the completion of the study, per instance while sending crews for the field trips. Of course, a management plan and a complete inventory of the resource need to be prepared then approved by the MNR before the conduct of any timber activity.

COMING ACTIONS AND IMPLICATION OF YOUR COMMUNITY

The Working Group is in charge of conducting any study and review, and will prepare all required documents and plans. Reports will be produced and information duly transmitted to the regional actors at the file, those being Makivik, the KRG, the KEAC, the Northern Village of Kuujuaq and Nayumivik LHC. Of course, if your community is interested in the pilot project, your Northern Village and Qiniqtiq LHC will receive same reports and information. Proving your interest, members of your organizations should be appointed by way of letter as your representatives within such file. Their participation actually implies an undefined number of conference calls and about two (2) face-to-face meetings for which budgets are provided. It has to be noted that honorariums are not included at such budgets since sole transportation and accommodation expenses will be covered. Your representatives would be responsible to have all information duly transmitted to your organizations and to inform the committee of your community's wills, intents and decisions.

The Working Group looks forward to work with you for the development of your communities and the respect of your environment and resources.



6.2.2 *Criteria for Selection*

Category II land selections shall take into account the wildlife productivity of the land, the usability of such lands for harvesting, and existing developments as well as other lands necessary as a habitat for the protection of wildlife, and all existing rights granted at the time of the Agreement, and known development projects.

Each unit of land selected shall comprise an area of not less than fifty (50) square miles.

No more than three (3) discontinuous units of land, not including intertidal zone selections, per community shall be selected unless agreed to otherwise by Québec. Each unit of land shall be compact and each portion of such land shall have a ratio of average width to length of four (4) to one (1), unless agreed to otherwise by Québec.

Such lands shall be selected within two (2) years of the date of execution of the Agreement, and the selection shall be subject to mutual approval of the respective communities and Québec failing which Québec shall have the right to designate such Category II lands after consultation with the interested Native party.

In front of Category I and II lands, the intertidal zone may be selected as Category II lands.

The aggregate of Category I and Category II selections shall not exceed fifty-five percent (55%) of the coastline of the Territory north of the 55th parallel, distributed as evenly as possible along the coast.

6.3 *Other Rights*

6.3.1 *Timber Rights*

The Inuit Community Corporations of Kuudjuak (Fort Chimo) and Kangirsualujuak (George River) shall have exclusive timber rights on those tracts of land identified in Schedule 2 attached to this Section. Such rights shall be for personal and community use and shall be exercised in accordance with management plans to be agreed upon with the Department of Lands and Forests. However, such timber rights shall be subject to the right to develop the lands over which the timber rights are granted herein.

Where, in accordance with the said plans, additional forestry operations are permitted, the said Inuit Community Corporations shall be permitted to supply timber to other Inuit Community Corporations.

6.4 *Great Whale River*

Should a majority of the Inuit of Great Whale River decide to move to Richmond Gulf within a period of five (5) years from the date of the coming into force of the Agreement, Québec agrees that Québec and/or its agencies or mandataries shall assist the Inuit of Great Whale, such assistance

MEMO

DATE: June 28, 2005

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C.c.: Epigituk LHC of Killiniq

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TECHNICAL MANDATE OF THE WORKING GROUP

The Working Group wishes to assess the economical potentials of the proposed project, but also the environmental components of the exploitation of such fragile and distinctive resources. Thus, with respect with the provision of the JBNQA, the pertaining regulations applicable on the Québec territory, the need to have agreed upon a

management plan of the resource and the general principles on sustainable development, the Working Group wants to have prepared an assessment study of the forestry potentials of the two (2) land parcels identified at 6.3.1. Indeed, a bid has been prepared and will be awarded before August 2005. The time schedule foresees the reception of a complete study before November 2005 and the concerned communities will participate towards the completion of the study, per instance while sending crews for the field trips. Of course, a management plan and a complete inventory of the resource need to be prepared then approved by the MNR before the conduct of any timber activity.

COMING ACTIONS AND IMPLICATION OF YOUR COMMUNITY

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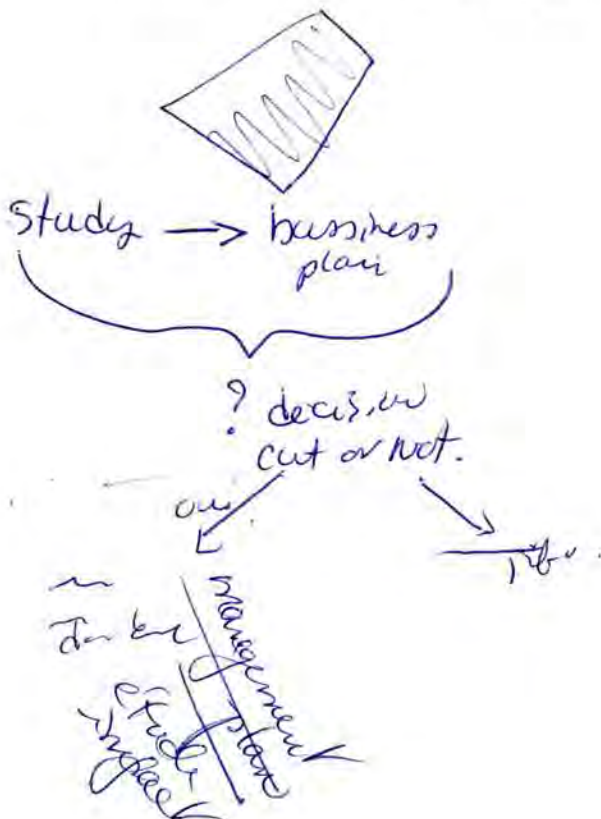
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management plan of the resource and the general principles on sustainable development, the Working Group wants to have prepared an assessment study of the forestry potentials of the two (2) land parcels identified at 6.3.1. Indeed, a bid has been prepared and will be awarded before August 2005. The time schedule foresees the reception of a complete study before November 2005 and the concerned communities will participate towards the completion of the study, per instance while sending crews for the field trips. Of course, a management plan and a complete inventory of the resource need to be prepared then approved by the MNR before the conduct of any timber activity.

COMING ACTIONS AND IMPLICATION OF YOUR COMMUNITY

The Working Group is in charge of conducting any study and review, and will prepare all required documents and plans. Reports will be produced and information duly transmitted to the regional actors at the file, those being Makivik, the KRG, the KEAC, the Northern Village of Kuujuaq and Nayumivik LHC. Of course, if your community is interested in the pilot project, your Northern Village and Qiniqtiq LHC will receive same reports and information. Proving your interest, members of your organizations should be appointed by way of letter as your representatives within such file. Their participation actually implies an undefined number of conference calls and about two (2) face-to-face meetings for which budgets are provided. It has to be noted that honorariums are not included at such budgets since sole transportation and accommodation expenses will be covered. Your representatives would be responsible to have all information duly transmitted to your organizations and to inform the committee of your community's wills, intents and decisions.

The Working Group looks forward to work with you for the development of your communities and the respect of your environment and resources.



MEMO

DATE: June 28, 2005

TO: Qiniqtiq LHC of Kangiqsualujjuaq

C.c.: Epigituk LHC of Killiniq

FROM: Nathalie Girard (KEAC) for the Working Group on Forestry

OBJECT: Pilot Project: Development Program of Inuit parcels of land subject to exclusive lumber rights (section 6.3.1. JBNQA)

The present memo summarizes the genesis of the pilot project concerning the development of the forestry resources located on the parcels of land described at the JBNQA section 6.3.1., and the past and on-going actions undertaken at that file of common interest.

BACKGROUND

The JBNQA identifies at its section 6.3.1 two (2) parcels of land subject to exclusive timber rights devolved to the landholding corporations of Kuujjuaq and Kangiqsualujjuaq. The exploitation of those forestry resources should be for personal or community use and be exercised with respect to management plans to be agreed upon with the MNR. Nevertheless, any type of development over the identified parcels of lands is permitted thus any other commercial project may have precedence over the personal or community rights therein granted. A map describing the concerned pieces of land is attached here to for your information.

Makivik Corporation recently undertook discussions with representatives of the MNR, the KRG, the KEAC, the Northern Village of Kuujjuaq and Nayumivik LHC of Kuujjuaq. A small-scale project of commercial timber (exploitation and transformation) was reviewed and it has been agreed to form an unofficial "working group" to duly answer important preliminary questions towards the completion of the pilot project. The Kuujjuammiut sites contemplated for the small-scale timber exploitation are located at the area identified at section 6.3.1 and schedule 2 JBNQA.

Also, mandate has been given to such working group, composed of Ms. Nathalie Girard, Secretary of the KEAC, and Mr. Charles Dorais, Makivik Economic Development Dept. Head, to initiate discussion with representatives of the community of Kangiqsualujjuaq to verify their interest with respect to their implication within the proposed project concerning the area for timber rights for the community of George River (schedule 2 JBNQA).

TECHNICAL MANDATE OF THE WORKING GROUP

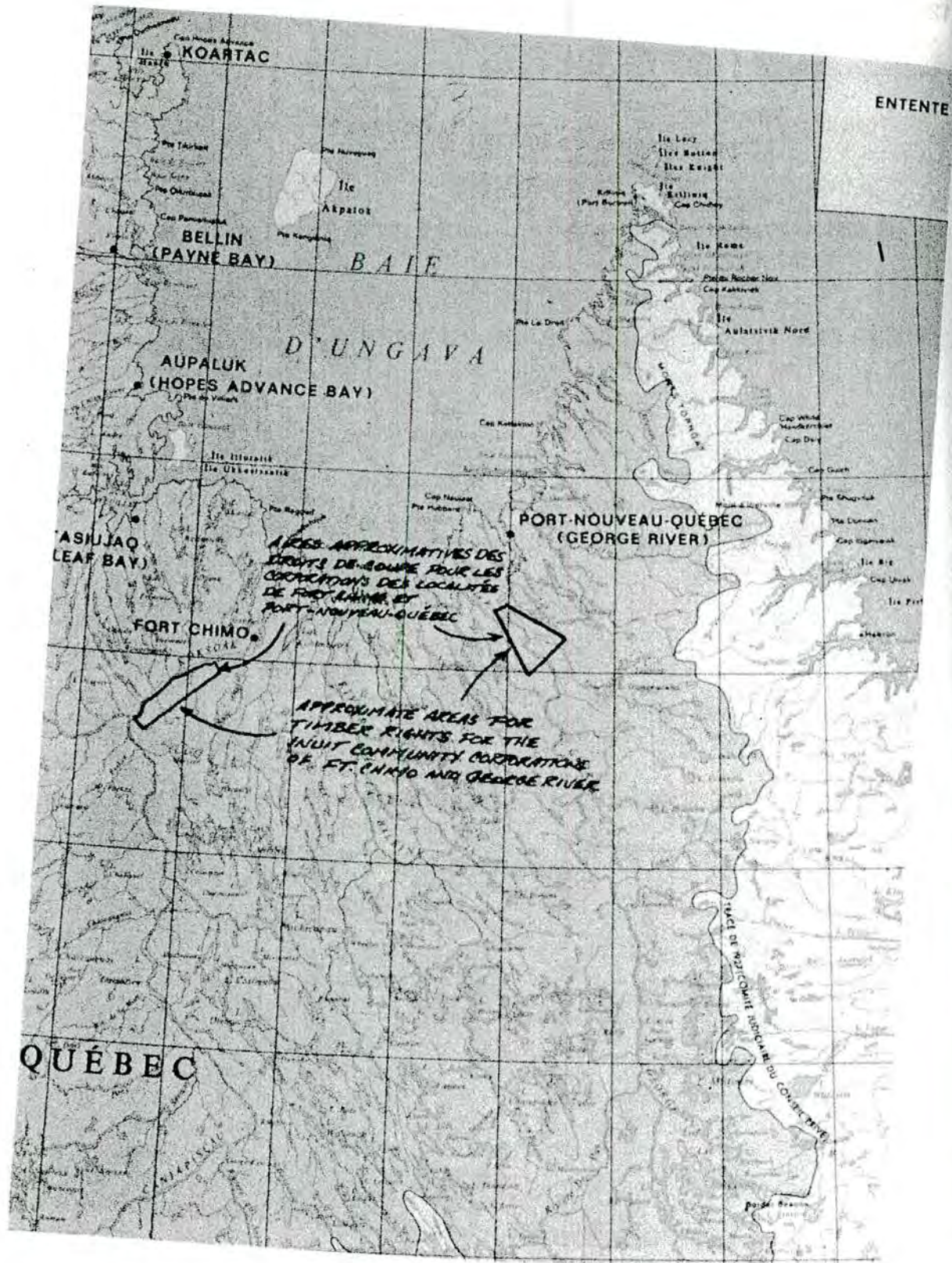
The Working Group wishes to assess the economical potentials of the proposed project, but also the environmental components of the exploitation of such fragile and distinctive resources. Thus, with respect with the provision of the JBNQA, the pertaining regulations applicable on the Québec territory, the need to have agreed upon a

management plan of the resource and the general principles on sustainable development, the Working Group wants to have prepared an assessment study of the forestry potentials of the two (2) land parcels identified at 6.3.1. Indeed, a bid has been prepared and will be awarded before August 2005. The time schedule foresees the reception of a complete study before November 2005 and the concerned communities will participate towards the completion of the study, per instance while sending crews for the field trips. Of course, a management plan and a complete inventory of the resource need to be prepared then approved by the MNR before the conduct of any timber activity.

COMING ACTIONS AND IMPLICATION OF YOUR COMMUNITY

The Working Group is in charge of conducting any study and review, and will prepare all required documents and plans. Reports will be produced and information duly transmitted to the regional actors at the file, those being Makivik, the KRG, the KEAC, the Northern Village of Kuujuaq and Nayumivik LHC. Of course, if your community is interested in the pilot project, your Northern Village and Qiniqtiq LHC will receive same reports and information. Proving your interest, members of your organizations should be appointed by way of letter as your representatives within such file. Their participation actually implies an undefined number of conference calls and about two (2) face-to-face meetings for which budgets are provided. It has to be noted that honorariums are not included at such budgets since sole transportation and accommodation expenses will be covered. Your representatives would be responsible to have all information duly transmitted to your organizations and to inform the committee of your community's wills, intents and decisions.

The Working Group looks forward to work with you for the development of your communities and the respect of your environment and resources.



6.2.2 *Criteria for Selection*

Category II land selections shall take into account the wildlife productivity of the land, the usability of such lands for harvesting, and existing developments as well as other lands necessary as a habitat for the protection of wildlife, and all existing rights granted at the time of the Agreement, and known development projects.

Each unit of land selected shall comprise an area of not less than fifty (50) square miles.

No more than three (3) discontinuous units of land, not including intertidal zone selections, per community shall be selected unless agreed to otherwise by Québec. Each unit of land shall be compact and each portion of such land shall have a ratio of average width to length of four (4) to one (1), unless agreed to otherwise by Québec.

Such lands shall be selected within two (2) years of the date of execution of the Agreement, and the selection shall be subject to mutual approval of the respective communities and Québec failing which Québec shall have the right to designate such Category II lands after consultation with the interested Native party.

In front of Category I and II lands, the intertidal zone may be selected as Category II lands.

The aggregate of Category I and Category II selections shall not exceed fifty-five percent (55%) of the coastline of the Territory north of the 55th parallel, distributed as evenly as possible along the coast.

6.3 *Other Rights*

6.3.1 *Timber Rights*

The Inuit Community Corporations of Kuudjuak (Fort Chimo) and Kangirsualujuak (George River) shall have exclusive timber rights on those tracts of land identified in Schedule 2 attached to this Section. Such rights shall be for personal and community use and shall be exercised in accordance with management plans to be agreed upon with the Department of Lands and Forests. However, such timber rights shall be subject to the right to develop the lands over which the timber rights are granted herein.

Where, in accordance with the said plans, additional forestry operations are permitted, the said Inuit Community Corporations shall be permitted to supply timber to other Inuit Community Corporations.

6.4 *Great Whale River*

Should a majority of the Inuit of Great Whale River decide to move to Richmond Gulf within a period of five (5) years from the date of the coming into force of the Agreement, Québec agrees that Québec and/or its agencies or mandataries shall assist the Inuit of Great Whale, such assistance

Subject: TR: Projet pilote pour le Nunavik

Date: Monday, June 27, 2005 1:50 PM

From: Christian.Leclerc@mrrnf.gouv.qc.ca

To: <NGirard@krg.ca>

Rebonjour Nathalie,

Mon premier message à ton endroit ne s'est pas rendu.

Alors, en rediffusion, voici l'intégral...

Christian Leclerc

-----Message d'origine-----

De : Leclerc, Christian (BSMAFQ-RA)

Envoyé : 27 juin 2005 13:49

À : Leclerc, Christian (BSMAFQ-RA)

Objet : TR: Projet pilote pour le Nunavik

-----Message d'origine-----

De : Leclerc, Christian (BSMAFQ-RA)

Envoyé : 27 juin 2005 12:45

À : 'NGirard@krg.ca'

Cc : Audette, Denis (BR08, Forêt); Paul, André W. (BR08, Forêt); Plante,

Marc (BR02); St-Onge, Daniel (DGSR); Létourneau, Jean-Pierre

(Inventaires); Gravel, Jean-François (BSMAFQ-RA)

Objet : TR: Projet pilote pour le Nunavik

Bonjour Nathalie,

J'ai pris connaissance du devis joint à ce message et je le transmets par la présente à plusieurs personnes du ministère qui ont été associé jusqu'à présent dans les premières phases de votre projet.

Il a été décidé à l'interne que la porte d'entrée pour ce projet pilote serait la direction régionale de l'Abitibi-Témiscamingue, plus précisément M.Denis Audette, biologiste M.Sc.Env au bureau régional de Rouyn (voir ses coordonnées e-mail en cc). Denis a déjà oeuvré quelques années à Kuujuaq et est le répondant de Forêt-Québec en matière autochtone au niveau régional. Par ailleurs, si le promoteur du projet pilote vis-à-vis le ministère est la Société Makivik, il sera important que l'on dispose rapidement des coordonnées de M. Charles Dorais. Peux-tu notamment lui refiler ce courriel?

Concernant le devis de travail comme tel, je laisse le soin à Denis qui pourra référer à M.Létourneau, de la Direction des inventaires forestiers, d'en faire l'analyse la plus exhaustive possible dans les délais impartis, et de vous conseiller adéquatement en ayant en tête bien évidemment la question des coûts, compte tenu de votre localisation et celle des blocs forestiers en question.

Il vous a été mentionné que nous souhaitons que ce projet se réalise le plus possible en partenariat. Il y a des éléments de logistique importants à convenir au préalable avec notre vis-à-vis (Makivik?) avant de consigner l'aide financière que nous mettrons à votre disposition en 2005-06 dans une entente de financement. La personne ou la firme qui réalisera le travail devra elle aussi connaître ce qui serait mis ou non à sa

disposition.

Le programme d'assistance financière dédié aux communautés autochtones pour des projets en milieu forestier comporte un cadre normatif qui couvre certains volets comme des dépenses pour des honoraires professionnels mais sous-entend la création d'emplois "autochtone". Cet aspect avait d'ailleurs été abordé lors de notre conférence téléphonique.

Espérant que le tout répond à vos préoccupations du moment.

Au plaisir

C.Leclerc ing.f

-----Message d'origine-----

De : Nathalie Girard

Envoyé : 23 juin 2005 16:23

À : Leclerc, Christian (BSMAFQ-RA)

Objet : Projet pilote pour le Nunavik

Bonjour M. Leclerc, je vous remercie pour votre participation à la réunion de jeudi dernier. Depuis, j'ai eu l'occasion de finaliser le devis de travail, que vous trouverez ci-joint, pour un éventuel contrat. De plus j'ai rencontré Charles Dorais plus tôt aujourd'hui. Ce dernier m'a donné les références comme convenu. Enfin, j'ai pris connaissance du programme que vous nous avez présenté. À ce sujet, avez vous statué le nom de la personne avec qui nous devons faire affaire?

Quand serez vous en mesure de me donner des commentaires sur le devis de travail préliminaire ci-joint?

À titre informatif, je serai en réunion à l'extérieur de la ville la semaine du 4 juillet.

Merci pour votre précieuse collaboration.

Nathalie Girard, biologiste M.Sc.

Secrétaire exécutive

Comité consultatif de l'environnement Kativik

C.P. 930, Kuujuaq, QC. J0M 1C0

téléphone: (819) 964-2961 poste 2287

télécopieur: (819) 964-0694

Subject: TR : Projet pilote pour le Nunavik

Date: Monday, July 11, 2005 1:14 PM

From: Denis.Audette@mrnf.gouv.qc.ca

To: <NGirard@krq.ca>

2e essai.

Denis Audette, biologiste, M. Sc. Env.
Coordonnateur
Affaires autochtones et fauniques (CAAF!)
Forêt Québec (MRNF)
Bureau régional de l'Abitibi-Témiscamingue
et du Nord-du-Québec
Rouyn-Noranda (Qc) J9X 6R1
Tél. (819) 763-3407 poste 291 téléc. (819) 763-3216
mailto:denis.audette@mrnf.gouv.qc.ca

Ce message est confidentiel et ne s'adresse qu'au destinataire. S'il vous a été transmis par mégarde, veuillez le détruire et nous en aviser aussitôt. Merci!

-----Message d'origine-----

De : Audette, Denis (BR08, Forêt)
Envoyé : 11 juillet 2005 08:46
À : 'NGirard@krq.ca'
Cc : Létourneau, Jean-Pierre (Inventaires)
Objet : TR : Projet pilote pour le Nunavik

Bonjour madame Girard,

Comme discuté au téléphone dans la semaine du 4 juillet, voici mes commentaires et questionnements pour ce projet:

- est-ce que Kangiqsuallujuaq veut embarquer cette année?
- avez-vous rejoint M. Dorais de Makivik pour avoir une estimation concernant les coûts de transport (avion et hélico) qui pourraient être requis pour le projet (afin de donner des balises aux soumissionnaires)?
- la partie échantillonnage requise (ex, nombre de parcelles sur le terrain, images satellites, etc.) devra être complétée avec M. Létourneau de l'inventaire forestier);
- il faudrait joindre une carte au devis de travail;
- l'étude également évaluer s'il y a des liens entre le parcours de migration des caribous et le lieu de récolte;

Bref, il reste beaucoup de points à clarifier avant de transmettre le devis pour invitation à soumissionner.

Je suggère donc une conférence téléphonique à 3 (vous, M. Létourneau et moi) et idéalement avec M. Dorais à compter de mercredi le 13 juillet.
Faites moi savoir vos disponibilités par téléphone car je serai sur la route lundi et mardi.

À bientôt.

Denis Audette, biologiste, M. Sc. Env.
Coordonnateur
Affaires autochtones et fauniques (CAAF!)
Forêt Québec (MRNF)
Bureau régional de l'Abitibi-Témiscamingue
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Ce message est confidentiel et ne s'adresse qu'au destinataire. S'il vous a été transmis par mégarde, veuillez le détruire et nous en aviser aussitôt. Merci!

-----Message d'origine-----

De : Leclerc, Christian (BSMAFQ-RA)

Envoyé : 27 juin 2005 12:45

À : 'NGirard@krq.ca'

Cc : Audette, Denis (BR08, Forêt); Paul, André W. (BR08, Forêt); Plante, Marc (BR02); St-Onge, Daniel (DGSR); Létourneau, Jean-Pierre (Inventaires); Gravel, Jean-François (BSMAFQ-RA)

Objet : TR: Projet pilote pour le Nunavik

mar. 2005/06/21 10:49

André W. Paul et Denis Audette

Bonjour messieurs,

J'ai bien reçu le message de André concernant sa proposition que la direction régionale de Rouyn via Denis Audette soit l'interlocuteur des Inuits pour leur projet forestier.

Il ne manque que la confirmation de Mario pour celler le tout, et transmettre l'information à M.Dorais tel que je m'y suis engagé lors de la rencontre du 16 juin 05. Voir ci-après.

C.Leclerc

Voici un compte rendu succinct des discussions qui se sont tenues avec M.Dorais , jeudi 16 juin 2005 et auxquelles assistaient M.Jean-Pierre Létourneau , du SIF.

Cette rencontre était la suite en quelque sorte de celle qui s'était tenue l'an dernier à peu près à la même date et où avaient participé , entre autres, des gens de la DDIPF . Au sortir de cette rencontre , il avait été indiqué à M.Dorais des étapes ultérieures à réaliser. Pour toutes sortes de raisons, M. Dorais n'a pu y donner suite et il profite de l'occasion qu'il est dans le "sud" pour différents dossiers afin de renouer contact avec le MRNF.

À partir du "Rapport Létourneau" d'avril 2004, et dans la foulée de la rencontre mentionnée précédemment, il avait été établi la séquence suivante d'événements dans ce dossier: 1- réalisation d'un inventaire forestier, 2- confection d'un plan d'aménagement/ gestion du territoire, 3- projet-pilote d'une scierie portative.

Il y a 2 secteurs "forestiers" couverts par la convention de la Baie-James , celui près de Kuujuaq et l'autre à Kangiqsualujuaq (George River). M.Dorais a des préoccupations pour ces 2 secteurs alors que Mme Nathalie Girard, biologiste, du comité consultatif sur l'environnement Kativik, qui s'est jointe aux discussions par téléphone est davantage préoccupée par celui de Kuujuaq.

Essentiellement, les préoccupations de Mme Girard sont davantage à caractère écologique, sans être incompatibles avec celles de M.Dorais plus à caractère économique. Il y a consensus sur le fait qu'il importe de réaliser un inventaire forestier qui tenterait de déterminer les secteurs où la récolte de bois serait à déconseiller et d'autres où la

qualité et le diamètre des arbres permettraient leur transformation en bois d'oeuvre pour des fins personnelles ou communautaires. Donc ils ont exprimé le besoin d'un inventaire forestier qui serait l'outil pour la confection du plan d'aménagement à suivre.

En terme pratique, il leur a été mentionné qu'ils auraient à être maître d'oeuvre du projet mais que le ministère a un programme d'assistance financière à l'intention des autochtones qui pourrait être mis à contribution pour défrayer une partie des coûts tout en insistant sur le fait qu'il serait souhaitable que Makivik ou Kativik y contribue également. Dans un premier temps, un soutien technique de la part du SIF est demandé pour les aider à préparer un genre de cahier de charge à l'intention de firmes de consultants potentiels. Entre temps, nous nous sommes engagés à leur identifier une porte d'entrée régionale pour la présentation de leur projet lorsque complété.

Christian Leclerc, ing.f.
Service des relations avec les autochtones

lun. 2005/06/27 12:45
Denis,

Les coordonnées de Charles Dorais ne sont pas joint à ce message,

A suivre

C.Leclerc

-----Message d'origine-----

De : Nathalie Girard [mailto:NGirard@krg.ca]
Envoyé : 27 juin 2005 14:27
À : Leclerc, Christian (BSMAFQ-RA)
Objet : Re: TR: Projet pilote pour le Nunavik

Merci.

Je vous transmet les coordonnées de M. Charles Dorais de la Société Makivik et membre du comité de travail sur les forêts. M. Dorais est actuellement très occupé et sera en vacance tout le mois de juillet. Comme nous avons été nommés lui et moi pour faire progresser ce dossier, je vous invite à me tenir au courant des échanges courriel que vous aurez avec Charles afin d'assurer un suivi rapide. Plus tard cette semaine je rencontrerai les autorités du village de George River afin de discuter de l'avancement de ce dossier. Merci de votre compréhension. Salutations Nathalie Girard

lun. 2005/06/27 12:45
Bonjour Nathalie,

J'ai pris connaissance du devis joint à ce message et je le transmets par la présente à plusieurs personnes du ministère qui ont été associé jusqu'à présent dans les premières phases de votre projet.

Il a été décidé à l'interne que la porte d'entrée pour ce projet pilote serait la direction régionale de l'Abitibi-Témiscamingue, plus précisément M.Denis Audette, biologiste M.Sc.Env au bureau régional de Rouyn (voir ses coordonnées e-mail en cc). Denis a déjà oeuvré quelques années à Kuujjuaq et est le répondant de Forêt-Québec en matière autochtone au niveau régional. Par ailleurs, si le promoteur du projet pilote vis-à-vis le ministère est la Société Makivik, il sera important que l'on dispose rapidement des coordonnées de M. Charles Dorais. Peux-tu notamment lui refilet ce courriel?

Concernant le devis de travail comme tel, je laisse le soin à Denis qui pourra référer à

M.Létourneau , de la Direction des inventaires forestiers, d'en faire l'analyse la plus exhaustive possible dans les délais impartis, et de vous conseiller adéquatement en ayant en tête bien évidemment la question des coûts, compte tenu de votre localisation et celle des blocs forestiers en question.

Il vous a été mentionné que nous souhaitons que ce projet se réalise le plus possible en partenariat . Il y a des éléments de logistique importants à convenir au préalable avec notre vis-à-vis (Makivik?) avant de consigner l'aide financière que nous mettrons à votre disposition en 2005-06 dans une entente de financement. La personne ou la firme qui réalisera le travail devra elle aussi connaître ce qui serait mis ou non à sa disposition.

Le programme d'assistance financière dédié aux communautés autochtones pour des projets en milieu forestier comporte un cadre normatif qui couvre certains volets comme des dépenses pour des honoraires professionnels mais sous-entend la création d'emplois "autochtone". Cet aspect avait d'ailleurs été abordé lors de notre conférence téléphonique.

Espérant que le tout répond à vos préoccupations du moment.

Au plaisir

C.Leclerc ing.f

-----Message d'origine-----

De : Nathalie Girard

Envoyé : 23 juin 2005 16:23

À : Leclerc, Christian (BSMAFQ-RA)

Objet : Projet pilote pour le Nunavik

Bonjour M. Leclerc, je vous remercie pour votre participation à la réunion de jeudi dernier. Depuis, j'ai eu l'occasion de finaliser le devis de travail, que vous trouverez ci-joint, pour un éventuel contrat. De plus j'ai rencontré Charles Dorais plus tôt aujourd'hui. Ce dernier m'a donné les références comme convenu. Enfin, j'ai pris connaissance du programme que vous nous avez présenté. À ce sujet, avez vous statué le nom de la personne avec qui nous devons faire affaire? Quand serez vous en mesure de me donner des commentaires sur le devis de travail préliminaire ci-joint? À titre informatif, je serai en réunion à l'extérieur de la ville la semaine du 4 juillet.

Merci pour votre précieuse collaboration.

Nathalie Girard, biologiste M.Sc.

Secrétaire exécutive

Comité consultatif de l'environnement Kativik

C.P. 930, Kuuujuaq, QC. J0M 1C0

téléphone:(819) 964-2961 poste 2287

télécopieur: (819) 964-0694



Devis de travail

*Étude de la ressource forestière au Nunavik :
territoires où les inuits ont des droits de coupe exclusifs en
vertu de la Convention de la Baie James et du Nord
Québécois (CBJNQ) (art.6.3.1)*

1. La Société Makivik (promoteur)

La Société Makivik a pour mandat de :

- Recevoir, administrer, utiliser et investir l'indemnité destinée aux inuits, conformément aux dispositions de la Convention de la Baie James et du Nord québécois.
- Lutter contre la pauvreté et promouvoir le bien-être, le progrès et l'éducation des Inuits.
- **Encourager, promouvoir et protéger le mode de vie, les valeurs et les traditions des inuits, ainsi que contribuer à leur conservation.**
- **Créer, stimuler et développer des occasions permettant aux Inuits de participer à l'expansion économique de leur société.**
- Exercer les fonctions qui lui sont dévolues par la loi et la Convention.
- Développer les collectivités inuites et améliorer leurs habilités d'agir.
- **Contribuer à la création, au financement ou à l'expansion des entreprises et des industries des inuits, ainsi qu'au développement de leurs ressources et propriétés.**

2. Problématique

Certains habitants des villages nordiques du Nunavik situés à proximité de ressources forestières souhaitent explorer la possibilité d'exploiter cette ressource pour créer de l'emploi, comme combustible d'appoint ou pour diminuer les coûts du bois de construction des camps de chasse et des maisons. Cependant, comme la question de la coupe forestière au Nunavik est nouvelle et particulière, des études sont nécessaires afin d'assurer la pérennité de cette

ressource dans un esprit de respect des principes de développement durable. À cet égard, dans le rapport de la Commission Coulombe rendu public en décembre 2004, on a réitéré le manque à gagner de plusieurs régions du Québec quant aux connaissances en matière de ressource forestière, et ce constat s'applique intégralement au Nunavik. Effectivement, le nord du 55^e parallèle est parsemé de forêts qui attirent de plus en plus l'intérêt de promoteurs. Cependant, les connaissances actuelles en matière de ressources ligneuses sont nettement déficitaires. Nous cherchons actuellement à savoir si la région, et plus particulièrement les deux territoires où les Inuits ont des droits de récolte en vertu de la CBJNQ (atr. 6.3.1), serait capable de supporter des activités de coupe de bois. Le cas échéant, de quel type et comment? Plusieurs interrogations doivent être élucidées avant d'entreprendre la coupe dans un tel milieu fragile. Afin de répondre aux questions en vue de savoir si la coupe forestière pourrait être possible, un inventaire des ressources forestières est devenu un exercice incontournable.

3. Description du projet pilote envisagé

Le projet consiste à faire une coupe de bois dans les 2 territoires définis à la CBJNQ art. 6.3.1. (localisation en annexe). La coupe serait effectuée durant l'hiver avec des scies à chaîne mécaniques par des Inuits des villages de Kuujjuaq et de Kangiqsualujjuaq qui se rendraient sur les lieux en motoneige. Cette dernière ferait aussi office de moyen de transport du bois coupé vers les deux communautés précédemment citées où le bois serait transformé durant la période estivale. Pour faire la transformation du bois, on prévoit utiliser un moulin à scie portatif. Le projet se veut à petite échelle et se limiterait uniquement aux besoins locaux.

4. Description des tâches

Le présent devis de travail concerne l'étude de la ressource forestière de deux territoires situés près du village de Kuujjuaq et de Kangiqsualujjuaq (voir art. 6.3.1 de la CBJNQ en annexe) en vue de répondre à une demande de récolte forestière à petite échelle par les Inuits. L'étude devrait contenir les éléments suivants :

- Revue de la littérature disponible concernant les coupes de bois dans les régions nordiques, les expériences relatées, les impacts et les possibilités.
- Élaboration et analyse de diverses options visant à soutenir une coupe de bois en veillant à la régénération pour assurer la pérennité de la forêt coupée.
- Aidé par des gens des villages de Kuujjuaq et de Kangiqsualujjuaq, réalisation d'un inventaire forestier des deux territoires faisant l'objet de ce devis afin d'y récolter les données nécessaires à la réalisation de l'étude. Au moins deux personnes provenant des 2 communautés plus haut citées

devra faire partie de l'équipe de travail sur le terrain. Ces personnes seraient rémunérées par la Société Makivik. On estime que le travail de terrain devrait prendre au plus 15 jours de terrain où deux personnes qualifiées seraient nécessaires pour réaliser les travaux.

- Élaboration de recommandations concernant des quantités de bois, la qualité du bois (hauteur, DHP, produits), les essences à privilégier et les techniques à utiliser (type de coupe, généralités à observer, etc.), les impacts possibles et les moyens de minimiser ces impacts.
- Rédaction d'un rapport d'étape dès la fin des travaux de terrain terminés.

5. Réalisation d'inventaire forestier

Cet inventaire forestier pourrait être réalisé selon une méthode éprouvée de la Direction des inventaires forestiers (DIF) du MRNF. Cette dernière méthode d'inventaire est largement utilisée par la DIF au sud du 52^e parallèle pour la forêt publique mais demandera un effort particulier d'adaptation à l'exécutant afin de refléter toutes spécificités nordiques.

5.1 Cartographie des massifs forestiers

La DIF a produit (annexe 1) une carte sommaire localisant les massifs boisés des deux territoires en utilisant des images satellites Landsat récentes. La carte pourra être utilisée pour la distribution des placettes sur le terrain. Les fichiers numériques présentant la localisation des massifs boisés sont disponibles à la DIF. Suite à la mesure des placettes sur le terrain et à une meilleure connaissance du milieu la carte présentant les massifs boisés pourra être révisée avant compilation.

5.2 Sondage sur le territoire

Les forêts au Nord du 55^e parallèle sont relativement peu connues. Le défilement des tiges est important. Comme il n'y a pas de photographies aériennes récentes et que la carte sommaire confectionnée avec l'image satellite ne comporte que deux strates, il faut prévoir un nombre de placettes assez important pour bien caractériser les ressources ligneuses (quantité, dimension, régénération). Les caractéristiques du sondage seraient les suivantes :

Intensité d'échantillonnage par territoire

- Nous proposons d'établir pour chaque territoire environ 25 placettes dans la strate des résineux denses (RD).
- Nous proposons d'établir environ 15 placettes dans la strate des résineux ouverts (RO).
- Nous évaluons la productivité à environ 6 placettes par jour-équipe de trois (3) personnes (2 de la firme + 1 assistant inuit du village le plus près de la placette d'étude) pour une journée de 8 heures de travail sur le terrain. Le transport est donc exclu de cette évaluation ;
- Les placettes pourront être établies sous forme d'une virée de 6 placettes de 1,5 km de longueur. Les placettes seront réparties proportionnellement aux superficies forestières productives. Il est suggéré que le plan de sondage soit présenté à la DIF pour avis avant d'entreprendre les travaux.

Sondage sur le terrain

Les placettes temporaires seront établies selon la norme de la DIF.

*« norme d'inventaire forestier :
placettes échantillons temporaire » édition 2005*

Les données seront collectées avec une tablette électronique. Le logiciel de collecte de données « *dendrodif* » sera fourni par la DIF. Les variables dendrométriques collectées dans chaque placette sont fournies dans un tableau à l'annexe 2.

Compilation

Au retour du terrain, les fichiers de placettes seront remis à la DIF qui les compilera sur ses systèmes de compilation (SCIF). Après compilation, les résultats seront retournés à la firme pour la préparation du rapport final.

6. Qualités requises

- Compréhension de la CBJNQ, notamment des droits des Inuits sur le territoire conventionné
- Familiarité avec les composantes des forêts du Nunavik (atout)
- Expérience en réalisation d'étude, concernant les forêts nordiques
- Expérience en réalisation d'inventaires forestiers (sondage)
- Bonne connaissance du logiciel *Dendrodif*
- Connaissances des caractéristiques environnementales et humaines du Territoire du Nord du Québec
- Aptitudes en communication auprès des autochtones et des non-autochtones
- Expérience de travail avec les communautés autochtones
- Maîtrise du français oral et de l'anglais oral
- Maîtrise du français écrit ou de l'anglais écrit
- Maîtrise d'un logiciel de traitement de texte
- Esprit de synthèse et habiletés rédactionnelles

7. Conditions de travail

Les personnes intéressées présenteront une offre de service comprenant le montant des honoraires exigibles pour la réalisation du devis, une estimation des dépenses afférentes et, s'il y a lieu, les solutions retenues pour réduire les coûts. L'envergure du travail pourrait être modifiée en fonction de l'offre de service choisie et des budgets disponibles.

Le chargé de projet fournira l'équipement requis pour son travail et en assumera les frais d'entretien (ordinateur, téléphone, instruments de mesure, etc)

8. Calendrier de travail

Le consultant amorcera son étude le plus tôt possible et déposera le rapport final au plus tard en novembre 2005. Il devra présenter un calendrier de travail fixant l'échéance des étapes suivantes :

- Revue de littérature
- Travaux de terrain et consultation des corporations foncières de Kuujuaq et de Kangiqsualujjuaq
- Présentation de recommandations et d'un rapport d'étape dès la fin des travaux de terrain
- Présentation du rapport et recommandations finals

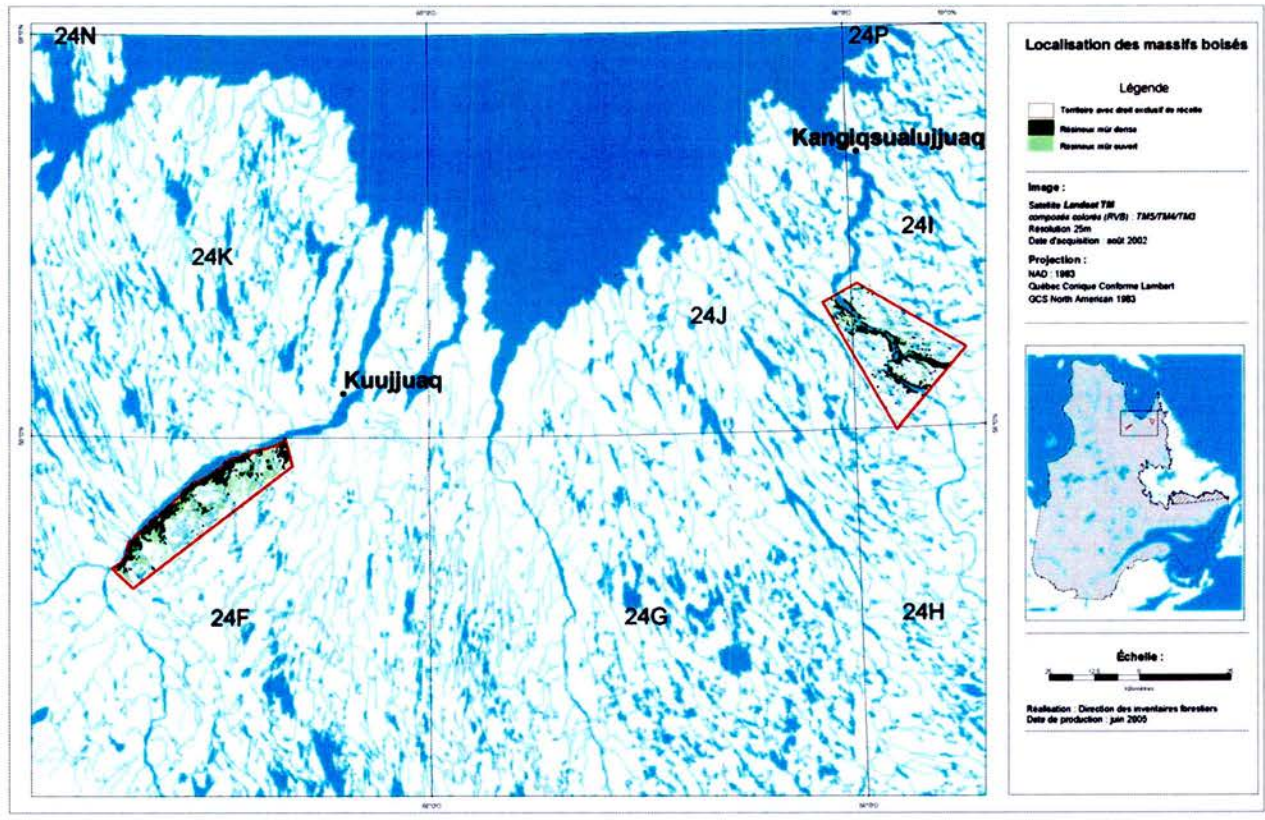
9. Responsables de l'étude

Le consultant relèvera de M. Charles Dorais de la Société Makivik et de Nathalie Girard du Comité consultatif de l'environnement Kativik (CCEK), tous deux responsables du dossier quant aux orientations du travail. Pour toutes questions, le chargé de projet se référera aux dits responsables aux coordonnées ci-bas mentionnées.

Les offres de service doivent parvenir à M. Charles Dorais, au plus tard vendredi le 19 août, 2005.

Société Makivik
C.P.179, Kuujuaq, QC. J0M 1C0
téléphone:(819) 964-2925
télécopieur: (819) 964-2613
courriel : c_dorais@makivik.org

Annexe 1. Localisation des deux territoires



Coordonnées géographiques des deux territoires à l'étude

Parcelle près de Kuujjuaq (superficie totale de 61 710 ha)

Coin nord-ouest (68° 40' 31 O ; 57° 59' 43 N)

Coin nord-est (68° 38' 30 O ; 57° 55' 53 N)

Coin sud-ouest (69° 28' 43 O ; 57° 40' 30 N)

Coin sud-est (69° 22' 44 O ; 57° 37' 35 N)

Parcelle près de Kangiqsualujjuaq (superficie totale de 52 856 ha)

Coin nord-ouest (66° 07' 52 O ; 58° 19' 04 N)

Coin nord-est (65° 58' 12 O ; 58° 21' 44 N)

Coin sud-ouest (65° 48' 24 O ; 57° 59' 46 N)

Coin sud-est (65° 28' 03 O ; 58° 11' 45 N)

Annexe 2.

LISTE DE VARIABLES DENDROMÉTRIQUES DES PLACETTES-ÉCHANTILLONS TEMPORAIRES DE L'INVENTAIRE FORESTIER DES PEUPELEMENTS MÛRS DE KUUJJUAQ ET KANGIQUALUJJUAQ

Section	Variable
1. Peuplement observé (strate terrestre)	Type de couvert
	Perturbation d'origine
	Perturbation moyenne
	Groupement d'essences
	Végétation de sous-bois (cladonie, mousse, arbuste)
	Densité - hauteur
	Classe d'âge
	Classe de pente
	Code de terrain
	Complément (description de la superficie et pourcentage de la superficie affectée)
2. Gaules de classes DHP de 2, 4, 6 et 8 cm sur sur 1/250 ha	Essences commerciales
	Dhp (classes de 2 cm)
	Nombre
3. Arbres de classes de DHP de plus de 9 cm sur 1/25 ha	État
	Essences commerciales et non commerciales
	Dhp (classes de 2 cm)
	Numérotation des arbres
	Identification des vétérans
4. Étude d'arbres	3 tiges représentatives selon l'algorithme de sélection (P, Q et 30)
	Essence
	Étage
	Dhp (mm)
	Hauteur totale (dm)
	Âge total résineux (Carottes de sondage à 100 cm, dhp > 10 mm)
5. Caractéristiques du sol	Dépôt de surface et son épaisseur
	Drainage
6. Points GPS des placettes	300 lectures au centre de la placette

Annexe 3.

Indication pour faciliter la planification des coûts reliés au travail de terrain dans la région d'étude.

- Estimation des coûts de transport
 - Transport (aller-retour) en avion de Montréal à Kuujjuaq (compagnie aérienne *First Air*, vol direct): 1800\$ par personne
 - Transport en bateau : 500\$ par jour par embarcation (incluant le guide, la location d'un bateau et l'essence)
 - Transport (aller-retour) par avion de Kuujjuaq à Kangiqsualujjuaq (compagnie aérienne *Air Inuit*, vol direct) : 500\$ par personne
 - Transport par hélicoptère (environ 1400\$ de l'heure de vol incluant l'essence) (les deux territoire à l'étude sont à moins d'une heure de vol de Kuujjuaq où il y a un service d'hélicoptère*)
 - *Pour plus d'information sur les services d'hélicoptère à Kuujjuaq, joindre : *Nunavik Rotors Inc.* (819) 964-2271
- Périodes limites pour accéder aux deux territoires d'étude

Selon Sammy Tukkiapik, agent régional du programme d'aide aux chasseurs à l'ARK, il est préférable d'effectuer le travail de terrain le plus tôt possible (dès le mois d'août) si les voies maritimes sont envisagées comme transport entre les villages et les territoires d'étude. Ceci afin d'éviter la période de changement de saison qui entraîne du mauvais temps froid et venteux impliquant la naissance de vagues d'amplitude dangereuse. Il devient donc presque impossible de naviguer sur la rivière George et la rivière Koksoak dès la fin septembre. Néanmoins, il serait possible de faire du terrain jusqu'à la mi-octobre si l'hélicoptère est utilisée comme moyen de transport.
- Les 2 assistants inuits qui devront faire parti intégrante de l'équipe de terrain seront rémunérés par la Société Makivik.
- Hébergement possible
 - À Kuujjuaq
 - Hôtel Kuujjuaq Inn*, (819) 964-2903, 195\$ par nuit.
 - Hôtel des coopératives du Nouveau-Québec*, 1-866-336-2667, 195\$ par nuit
 - À Kangiqsualujjuaq
 - Hôtel des coopératives du Nouveau-Québec*, 1-866-336-2667, 195\$ par nuit

Des camps de pourvoyeurs ou des camps privés sont peut-être disponibles près des territoires d'étude.



LPᑭᐱᑲ
Société Makivik
Makivik Corporation

PROJECT SPECIFICATIONS

*Study of forest resources in Nunavik:
Tracts of land on which Inuit have exclusive timber rights under the James bay and
Northern Quebec Agreement (JBNQA)
(S. 6.3.1)*

1. Makivik Corporation (proponent)

The mandate of the Makivik Corporation is:

- To receive, administer, use and invest the compensation money intended for the Inuit, as provided for in the *James Bay and Northern Quebec Agreement*;
- To relieve poverty and to promote the welfare, advancement and education of the Inuit;
- **To foster, promote, protect and assist in preserving the Inuit way of life, values and traditions;**
- **To initiate, expand and develop opportunities for the Inuit to participate in the economic development of their society;**
- To exercise the functions vested in it by other acts or the Agreement;
- To develop and improve the Inuit communities and to improve their means of actions;
- **To assist in the creation, financing or developing of businesses, resources, properties and industries of the Inuit.**

2. The issue

The inhabitants of certain Nunavik communities located close to forest resources wish to explore the possibility of exploiting such resources to create employment, to use as supplemental fuel or to reduce the costs of construction lumber in the building of houses and hunting camps. However, as the issue of wood harvesting is new and particular in Nunavik, studies will be needed to ensure the longevity of the resource and the respect of the principle of sustainable development. In this regard, the report of the Coulombe Commission published in December 2004 pointed out that many Quebec regions are deficient in their knowledge of forest resources, which applies entirely to Nunavik. Indeed, the area north of the 55th parallel is dotted with forests that increasingly raise the interest of proponents. However, knowledge with respect to woody perennials is presently clearly lacking. We are trying to determine whether the region, and in particular the two tracts of land where the Inuit have lumber rights under

Section 6.3.1 of the JBNQA, could sustain logging activities. If so, what activities and how should they be conducted? Several questions must be answered prior to undertaking logging in such a fragile environment. In order to answer questions to determine whether logging is possible, it is imperative to proceed to an inventory of forest resources.

3. Description of the proposed pilot project

The project consists in logging within the two tracts of land defined in S. 6.3.1. of the JBNQA (see location in appendix 1). Logging would take place in winter with mechanical chain saws by Inuit from the communities of Kuujjuaq and Kangiqsualujjuaq who would reach the area on snowmobiles. The logs would also be transported by snowmobiles to the two above-mentioned communities, where the wood would be processed in summer. A portable sawmill would be used to process the logs. The project is to be done on a small scale and limited to only local needs.

4. Tasks description

This project specification deals with the study of the forest resources on two tracts of land located near the communities of Kuujjuaq and Kangiqsualujjuaq (see S. 6.3.1 of the JBNQA in appendix) so as to meet the demand of Inuit for small scale wood harvesting. The study should cover the following elements:

- Review of available literature, experiments conducted, impacts and possibilities of logging in northern areas;
- Development and analysis of various options to sustain logging while ensuring the regeneration and longevity of the exploited forest resource;
- With the help of people from Kuujjuaq and Kangiqsualujjuaq, carrying out of the forest inventory of the two tracts of land affected by the present specification so as to collect the data required to conduct a study. At least one person from each of the two above-mentioned communities shall be part of the field study team. They would be remunerated by the Makivik Corporation. It is estimated that fieldwork should take at most 15 days with two qualified people to conduct the work.
- Development of recommendations with respect to the quality and quantity of logs (height, diameter breast height, products), valued species and methods (type of logging, general observations, etc.) possible impacts and means of mitigating them;
- Writing of a progress report as soon as the field work is completed.

5. Carrying out of a forest inventory

The forest inventory would be carried out according to a method tested by the Direction des inventaires forestiers (DIF) of the MRNF. This method is widely used by DIF south of the 52nd parallel in public forest but will have to be adapted specifically to reflect all aspects specific to the northern environment.

5.1 Mapping of forest massifs

DIF has produced (see appendix 1) a summary map locating the wooded massifs of the two tracts of land by using recent Landsat imagery. The map may be used for the distribution of sample plots. Digital files showing the location of wooded massifs are available from DIF. Once sample plots are measured in the field and the area is better understood, the map showing wooded massifs could be reviewed prior to data compilation.

5.2 Survey on the territory

The forests located north of the 55th parallel are relatively little known. The tapering of stems is important. Since there are no recent aerial photography and the summary satellite imagery map only has two layers, an important number of sample plots must be provided for in order to characterize correctly the wood resources (quantity, dimensions, regeneration). The survey would have the following points:

Sampling intensity on each tract of land

- It is proposed to establish about 25 sample plots in each tract of land in the dense softwood layer (DSL).
- It is proposed to establish about 15 sample plots in the open softwood layer (OSL).
- Productivity is estimated at about 6 sample plots per team-day of 3 members (2 from the Firm and 1 Inuit assistant from the closest village) for an 8-hour work day in the field. Transport is not included in this estimation;
- Sample plots could be established as a cruise line of 6 over a length of 1,5 km. The sample plots will be distributed proportionally to the productive forest area. It is suggested that the survey plan be presented to the DIF for information prior to undertaking the work.

Field survey

Temporary sample plots will be established according to the 2005 DIF standard

*« norme d'inventaire forestier:
placettes échantillons temporaires » édition 2005*

Data will be collected using an electronic tablet. DIF will provide *Dendrodif*, a data collecting software. The forest mensuration data collected in each sample plot are shown in a table in appendix 2.

Compilation

Once the fieldwork is done, sample files will be transmitted to DIF, which will compile them in the SCIF system. The results will then be returned to the Firm for the preparation of the final report.

6. Requirements

- Understanding of the JBNQA, in particular of Inuit rights over the territory
- Knowledge of the components of forests in Nunavik (asset)
- Experience in conducting studies about northern forests
- Experience in carrying out forest surveys
- Good knowledge of *Dendrodif* Software
- Knowledge of the environmental and human characteristics of Northern Quebec
- Capacity to communicate with native and non-native people
- Working experience with native communities
- Mastering spoken and written French and English
- Mastering a word processing program
- Capacity for synthesizing and writing

7. Work conditions

Interested candidates must present a bid including the amount of required honorarium for the preparation of specifications, an estimate of related expenses and, if needed, solutions retained to reduce costs. The scale of the work might be modified according to the chosen bid and available budgets.

The project officer will provide the equipment required for their work and pay maintenance costs (computer, telephone, measurement tools, etc)

8. Schedule

The consultant shall undertake the study as soon as possible and table a final report at the latest in November 2005. A work schedule with deadlines for each of the following steps should be presented:

- Literature review
- Fieldwork in consultation with the Kuujjuaq and Kangiqsualujjuaq Landholding Corporations
- Presentation of recommendations and a progress report at the end of the fieldwork
- Presentation of the final report and recommendations

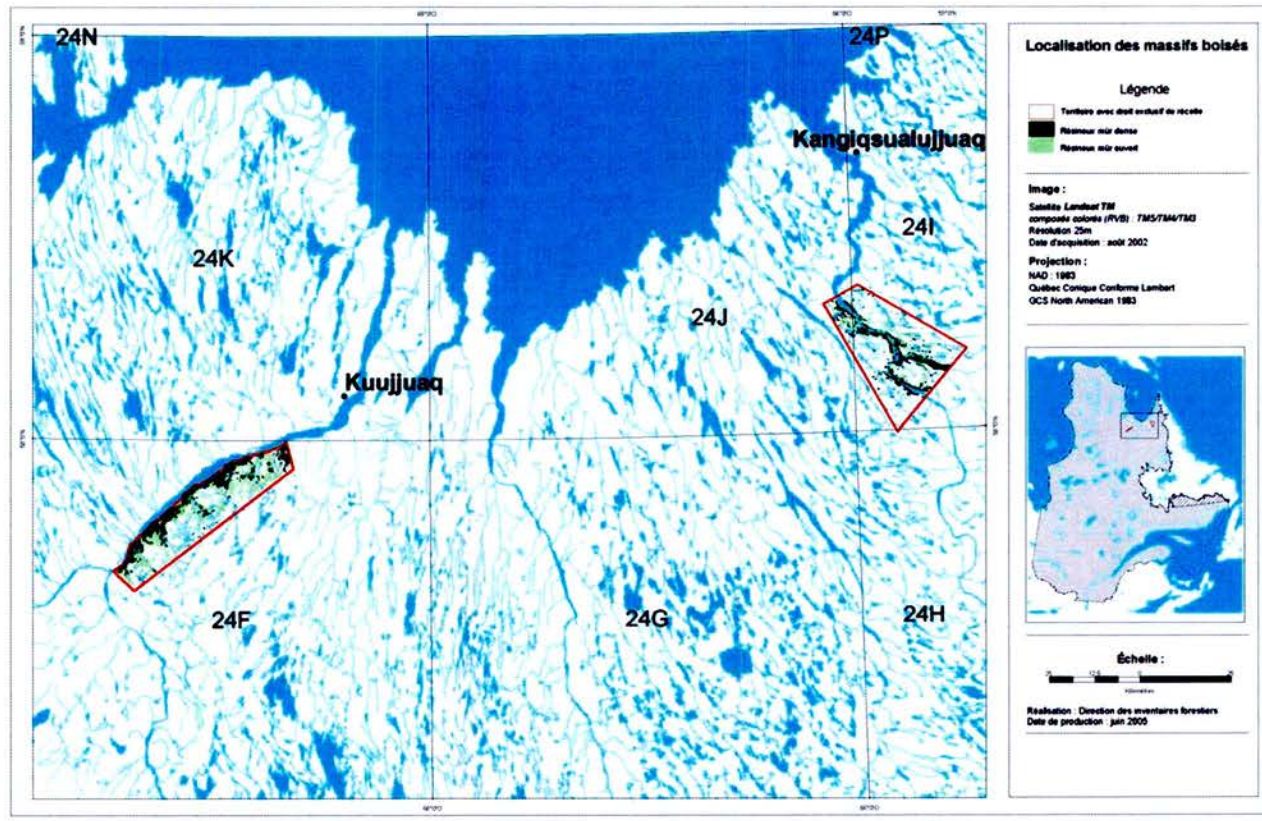
9. Study management

The consultant shall answer to Mr. Charles Dorais from Makivik Corporation and to Nathalie Girard from the Kativik Environmental Advisory Committee (KEAC), both being in charge of the file with respect to work direction. For any questions, the project officer shall refer to the above-mentioned persons at the address below.

Bids must be sent by e-mail to Charles Dorais (address below) at the latest on Friday August 19, 2005.

Makivik Corporation
P.O. Box 179, Kuujuaq, QC. J0M 1C0
Tel: (819) 964-2925
Fax: (819) 964-2613
E-mail: c_dorais@makivik.org

Appendix 1. Location of the two tracts of land



Geographical coordinates of the study areas

Tract of land near Kuujjuaq (total area of 61 710 ha)

North-West quadrant (68° 40' 31 O ; 57° 59' 43 N)
North-East quadrant (68° 38' 30 O ; 57° 55' 53 N)
South-West quadrant (69° 28' 43 O ; 57° 40' 30 N)
South-East quadrant (69° 22' 44 O ; 57° 37' 35 N)

Tract of land near Kangiqsualujjuaq (total area of 52 856 ha)

North-West quadrant (66° 07' 52 O ; 58° 19' 04 N)
North-East quadrant (65° 58' 12 O ; 58° 21' 44 N)
South-West quadrant (65° 48' 24 O ; 57° 59' 46 N)
South-East quadrant (65° 28' 03 O ; 58° 11' 45 N)

Appendix 2.**LIST OF FOREST MEASUREMENT VARIABLES OF TEMPORARY SAMPLE PLOTS
FOR MATURE FOREST SURVEY IN KUJJUAQ AND KANGIQUALUJUAQ**

Section	Variable
1. Observed forest (terrestrial layer)	Type of canopy
	Original stress
	Medium stress
	Group of species
	Undergrowth (cup moss, moss, shrubs)
	Density - height
	Age class
	Slope class
	Terrain code
	Complement (description of the area and percentage affected)
2. Bush stake - BHD of 2, 4, 6 and 8 cm over 1/250 ha	Commercial species
	BHD (2 cm class)
	Number
3. Trees – BHD of more than 9 cm over 1/25 ha	Condition
	Commercial and non-commercial species
	BHD (2 cm class)
	Numbering of trees
4. Study of trees	Identification of veterans
	3 representative stems depending on the selection algorithm (P, Q and 30)
	Species
	Layer
	BHD (mm)
	Total height (dm)
5. Soil characteristics	Total age of softwood (Survey core at 100 cm, BHD > 10 mm)
	Surface deposit and thickness
6. GPS of sample plots	Drainage
	300 readings at the centre of the sample plots

APPENDIX 3.

Indications to facilitate the planning of costs related to fieldwork in the study area

- Estimation of transport costs
 - A return plane ticket Montreal-Kuujuaq (direct flight on First Air): 1800\$
 - Transport by boat: 500\$ per day per boat (including a guide, the rental of the boat and gas)
 - A return plane ticket Kuujuaq-Kangiqsualujuaq (direct flight on Air Inuit): 500\$
 - Transport by helicopter (about 1400\$ per hour of flight, gas included) (both tracts of land are located at less than one hour of flight from Kuujuaq where an helicopter can be rented*)
 - * For more information on helicopter services in Kuujuaq, contact: *Nunavik Rotors Inc.* (819) 964-2271

- Access to the two tracts of land

According to Sammy Tukkiapik, regional agent for the KRG Hunting Support Program, it would be preferable to do the fieldwork as soon as possible (in August) if transport between the communities and study areas is to be done by boat. This would avoid the change of season period which brings windy and cold weather that involve dangerously high waves. It is almost impossible to travel on the George River and on the Koksoak River as of the end of September. Nevertheless, it would be possible to access the area up until Mid-October if a helicopter is used for transport.

- The two Inuit assistants that must be part of the field team are being paid by the Makivik Corporation.

- Accommodation
 - In Kuujuaq
 - Hôtel Kuujuaq Inn*, (819) 964-2903, 195\$ per night.
 - Hôtel des coopératives du Nouveau-Québec*, 1-866-336-2667, 195\$ per night
 - In Kangiqsualujuaq
 - Hôtel des coopératives du Nouveau-Québec*, 1-866-336-2667, 195\$ per night

Outfitting or private camps maybe available close to the study area.

Subject: État de situation du projet forestier au Nunavik

Date: Friday, July 22, 2005 10:12 PM

From: Denis.Audette@mrnf.gouv.qc.ca

To: <NGirard@krg.ca>

Cc: <Jean-Pierre.Letourneau@mrnf.gouv.qc.ca>, <Pierre.Menard@mrnf.gouv.qc.ca>, <Christian.Leclerc@mrnf.gouv.qc.ca>, <Andre.Roy@mrnf.gouv.qc.ca>, <Nicole.Grenier@mrnf.gouv.qc.ca>

Priority: UrgentHighest

Bonjour madame,

À la suite de nos récentes conversations téléphoniques, voici un bref résumé du dossier (pour le bénéfice des différents intervenants).

Projet 2005-2006: pour cette année le projet sera consacré à la réalisation d'une étude de faisabilité comprenant principalement 2 inventaires forestiers dans les 2 secteurs identifiés dans la Convention de la Baie James et du Nord québécois (CBJNQ). Ces inventaires permettraient d'évaluer la faisabilité du projet (ex. densité des arbres, volume récoltable commercialement, etc).

Si l'étude préliminaire est concluante, il y aura une 2e phase en 2006-2007 pour réaliser une évaluation environnementale du projet conformément aux exigences de la CBJNQ et de la loi sur la qualité de l'environnement. Par conséquent, pour respecter ces différentes exigences, la récolte ne pourra pas débuter avant l'hiver 2006-2007 (si les études sont concluantes).

D'ici là, un inventaire forestier sera réalisé cet automne (2005). M. Létourneau de la direction de l'inventaire forestier, va compléter le devis au cours des prochains jours en tenant compte de nos diverses discussions (ex. ajouter une annexe sur les renseignements relatifs au transport et au logement, informer les soumissionnaires qu'il y aura un assistant inuit, ajout d'une clause pour diminuer le contrat si la réalisation des 2 inventaires est trop onéreuse, etc.).

Le devis devra être complété pour le retour du représentant du promoteur M. Dorais de la Société Makivik (lundi 1er août). Par la suite, Makivik ira en appel d'offres auprès de firmes aptes à réaliser des inventaires forestiers en région éloignée (M. Létourneau fournira une liste des firmes connues au MRNF).

Après les travaux sur le terrain, prévues en septembre ou octobre, la firme retenue fournira un rapport d'étape. Celui-ci permettra de "réenligner" le projet si requis.

Pour financer ce beau projet, le MRNF a débloqué une enveloppe budgétaire maximale de 50 000\$ qui devra être complétée par une contribution financière de Makivik (en fonction des soumissions reçues).

Le versement, par le MRNF, de l'argent est conditionnel à la signature d'une entente de financement en 3 copies (des versions françaises et anglaises). Les projets d'entente sont inclus en annexe.

Avant d'enclencher le processus de signature, l'entente devra être validée par Christian Leclerc (qui travaille au bureau du directeur des services régionaux au MRNF).

Les points à vérifier (et à discuter avec Makivik et mme Girard) sont:

- section 2 sur le début du projet (suggestion vers le 2 août ou plus tard);
- section 3.1 sur la description des travaux. Une fois que le libellé en français sera approuvé, il faudra le traduire en anglais.

De plus, aux sections 4.2 b et 5.1 b, j'ai ajusté les libellés en français et en anglais, pour "lier" le dépôt du rapport d'étape après les travaux sur le terrain. Comme la fin

des travaux sur le terrain est difficile à déterminer de façon précise à ce moment ci, je suggère de demeurer "général".

Finalement, concernant le suivi de ce dossier au MRNF durant mon absence jusqu'au 12 août, je suggère de séparer la tâche en 2.

M. Létourneau demeure responsable de l'aspect technique (validation du devis et liste des firmes compétentes).

De son côté, M. Leclerc sera présent dans la semaine du 25 juillet et il va s'assurer de la conformité du projet d'entente de financement.

Si tout va bien, le résultat des soumissions sera disponible après mon retour. On pourra alors organiser une conférence téléphonique pour compléter le tout ou réajuster le projet en fonction des montants demandés vs ceux disponibles.

P.S. Durant mon absence, ajouter le nom de mon supérieur, Pierre Ménard, à la liste d'envoi de vos courriels.

P.S.S. Pour Nicole Grenier: peux-tu appeler Mme Girard au 819-964-2961 #2287 pour vérifier si elle a bien reçu ce courriel? Merci.

Denis Audette, biologiste, M. Sc. Env.
Coordonnateur
Affaires autochtones et fauniques (CAAF!)
Forêt Québec (MRNF)
Bureau régional de l'Abitibi-Témiscamingue
et du Nord-du-Québec
Rouyn-Noranda (Qc) J9X 6R1
Tél. (819) 763-3407 poste 291 téléc. (819) 763-3216
mailto:denis.audette@mrnf.gouv.qc.ca

Ce message est confidentiel et ne s'adresse qu'au destinataire. S'il vous a été transmis par mégarde, veuillez le détruire et nous en aviser aussitôt. Merci!

-----Message d'origine-----

De : Nathalie Girard [mailto:NGirard@krg.ca]
Envoyé : 22 juillet 2005 15:40
À : Audette, Denis (BR08, Forêt)
Objet : FW: Pour assurer la continuité du dossier durant l'absence de M. Audette

Bonjour M. Audette, voici les modifications proposées par Madame Larrivière, avocate pour la société Makivik. Elle rédigera une résolution de signature la semaine prochaine. Cependant il lui sera impossible de faire signer la résolution ni l'entente avant l'arrivée en poste de M. Dorais le 1 août prochain. Nous devons donc souhaiter que ce dernier traite le dossier en priorité dès son retour.

Pourriez vous m'identifier qui sera votre intérim durant votre absence svp est ce bien M.Christian Leclerc à Québec?

Merci de votre collaboration, bonnes vacances!



Date: July 22, 2005

Nombre de pages (Incluant celle-ci): 2 8½ x 11
 8½ x 14

À / TO: Sophie
Kangiqsuallujjuq
(@) 337-5752

DE / FROM: Nathalie Girard

Message

Hi dear Sophie,
As discussed earlier over the phone, could you please identify on this map where are camps or facilities we could rent to go on the field next fall studying forest? Please identified only those in the box if their is some.
Thank you very much for your help.

Nathalie Girard ☺

Document informel de travail

Questions et réponses pour la conférence téléphonique du 21 juillet 05 au sujet du projet de coupe dans deux parcelles au Nunavik

**Estimation des coûts de transport pour effectuer du travail de terrain sur les deux parcelles de terre identifiées.*

- Transport (aller-retour) en avion de Montréal à Kuujjuaq : 1500\$ par personne
- Transport en bateau : 500\$ par jour par embarcation (incluant le guide, la location d'un bateau et l'essence)
- Transport (aller-retour) par avion de Kuujjuaq à Kangiqsualujjuaq : 500\$ par personne
- Transport par hélicoptère (environ 1400\$ de l'heure de vol incluant l'essence) (les deux parcelles sont à moins d'une heure de vol de Kuujjuaq où il y a un service d'hélicoptère)

**Période limites pour accéder aux deux parcelles par voies maritimes.*

Selon Sammy Tukkiapik, agent régional du programme d'aide aux chasseurs à l'ARK, il est préférable d'effectuer le travail de terrain le plus tôt possible (dès le mois d'août) afin d'éviter la période de changement de saison qui entraîne de mauvais temps froid et venteux impliquant la naissance de vagues d'amplitude dangereuse. Il devient donc presque impossible de naviguer sur la rivière George et la rivière Koksoak dès la fin septembre. Néanmoins, il serait possible de faire du terrain jusqu'à la mi-octobre si l'hélicoptère est utilisée comme moyen de transport.

**Historique de coupe près de Kangiqsualujjuaq.*

Selon un rapport produit par Avataq, le village de Kangiqsualujjuaq fut créé suite à l'installation de la première coopérative (1959) qui visait à améliorer l'économie de la région et des inuits. Ainsi, le gouvernement canadien (via le ministère des Affaires indiennes et du Nord canadien) en collaboration avec les inuits de Kangiqsualujjuaq ont créé la coopérative sous l'égide duquel ils ont mis en branle des projets à saveur économique dont une poissonnerie et une scierie. La coupe de bois a eu lieu à l'endroit de l'ancien poste de traite de Kangiqsualujjuaq (i.e. sur les rives de la rivière George dans le secteur en aval de la rivière à 100km de l'embouchure).

**Coordonnées géographiques des deux parcelles de terre à l'étude*

Parcelle près de Kuujjuaq (superficie totale de 61 710 ha)

Coin nord-ouest (68° 40' 31 O ; 57° 59' 43 N)

Coin nord-est (68° 38' 30 O ; 57° 55' 53 N)

Coin sud-ouest (69° 28' 43 O ; 57° 40' 30 N)

Coin sud-est (69° 22' 44 O ; 57° 37' 35 N)

Parcelle près de Kangiqsualujjuaq (superficie totale de 52 856 ha)

Coin nord-ouest (66° 07' 52 O ; 58° 19' 04 N)

Coin nord-est (65° 58' 12 O ; 58° 21' 44 N)

Coin sud-ouest (65° 48' 24 O ; 57° 59' 46 N)

Coin sud-est (65° 28' 03 O ; 58° 11' 45 N)

**Maître d'œuvre du projet (promoteur)*

La Société Makivik



Date: July 15, 2005

Nombre de pages (Incluant celle-ci): 7 8½ x 11
 8½ x 14

À / TO: - Kangihsualujjuag Land Holding corporation
- Killiniq " " "
- Kangihsualujjuag municipality
Fax: 337-5302

DE / FROM: Nathalie Girard
Kativik Environmental Advisory Committee

Message

Hi,

Please find attached, the memo concerning the pilot project study on Inuit parcel of land subject to exclusive lumber rights.

I'm looking forward to know names of the persons you wish to be on the working group.

yours truly,

Nathalie Girard ☺

Kuujuuaq, le 2 juin 2005-

Présent : Charles Dorais, Société Makivik
Nathalie Girard, Comité consultatif de l'environnement Kativik

Objet : Étude sur la ressource forestière au Nunavik en vue de la réalisation d'un projet de coupe

Questions et réponses importantes à cette étape

- Quelle région est visée pour l'étude? (bassin versant de l'Ungava où il y a des arbres? Tout le Nunavik sous la limite des arbres?)
Pour l'instant, nous croyons qu'il est préférable de limiter l'étude aux deux parcelles de terre prescrites par la CBJNQ où les Inuits ont des droits exclusifs de coupe (chapitre 6, annexe 2 de la CBJNQ).
- Est-ce que nous devrions impliquer les Nascapis dès cette étape?
Non, puisque nous n'étalerons pas l'étude à un plus grand territoire que celui cité à la question précédente. Ces deux parcelles de terrain ne sont pas près du territoire Nascapi.
- Quelle est l'ampleur des projets envisagés? (projet de 3-4 semaines de coupe à 15 hommes à raison de 7h par jour?)
Il s'agit d'un projet pilote de faible envergure qui comprendrait un travail pour quelques personnes et se limiterait au plus à quelques semaines de coupe sur le terrain durant la période hivernale suivi de quelques semaines de transformation au village durant l'été.
- Quelles sont les raisons évoquées pour justifier la réalisation d'un projet de coupe au Nunavik?
Par ce projet pilote, on souhaite vérifier si il y a possibilité de diminuer les hauts coûts de transport du bois pour la construction de camps de chasse et de maisons. Aussi, on souhaite que les activités de coupe créer des emplois dans la région.
- Quel est le type de machinerie que l'on souhaite utiliser sur le terrain pour la réalisation des projets de coupe envisagés? (petite machinerie portative?)
Seul des scies à chaînes seraient utilisées sur le terrain l'hiver afin de permettre le transport du bois coupés par des motoneiges vers le village où l'on procéderait à la transformation du bois à l'aide d'un moulin à scie portatif.
- Combien d'argent est actuellement disponible pour l'étude?
Environ 5 000\$ (ces chiffres seront confirmés ultérieurement par Charles D.) est actuellement disponible chez Makivik.
- Quels sont les organismes qui pourraient subventionner l'étude?

La société Makivik, les corporations foncières de Kuujjuaq et de Kangiqsualujuaq, le ministère des Ressources naturelles et de la faune du Québec, le Conseil régional de développement Kativik (KRDC) et l'Administration régionale Kativik via son programme d'emplois et formation.

- Combien de temps devrait être alloué à l'étude? (limite de 6 mois?)
Idéalement, l'étude devrait être remise avant la fin septembre afin de, possiblement, débiter un projet pilote à l'hiver 2006.
- Le contrat devrait-il inclure une visite sur le terrain ciblé pour l'étude?
Oui.
- Dans l'affirmative, quel serait le contenu de cette visite (consultation des corporations foncières?)
En plus d'une consultation avec les corporations foncières de Kuujjuaq et de Kangiqsualujuaq, la visite devrait inclure un survol des parcelles ciblées par l'étude. Aussi, il faudrait prévoir des arrêts dans ces parcelles afin d'y recueillir des données et possiblement des échantillons (carottage, DHP, etc.).
- Quels villages devraient être impliqués (Tasiuaq? Kuujjuaq? Kangiqsualujuaq?)
Pour cette première étude, seuls les villages de Kuujjuaq et de Kangiqsualujuaq seraient impliqués.

Le contrat d'étude intitulé : *Évaluation de la ressource forestière* pourrait être composé de la façon suivante :

Introduction

- Description générale (appuyée de cartes) de la composition de l'écosystème forestier du secteur d'étude
- Conditions de régénération naturelle, après coupe et après feu pour toutes les essences à potentiel de coupe de la région (mélèzes, épinettes blanches, épinettes noires, etc.)
- Brève description des types d'essence favorables à la coupe dans le secteur d'étude (qualité du bois, densité, etc.)
- Historique de coupe des arbres dans le secteur d'étude et à Kuujjuaq

Analyse

- Évaluation du potentiel de coupe du secteur d'étude
- Estimation des coûts versus rentabilité associés à la coupe dans le secteur d'étude
- Impacts biophysiques (glissements de terrain, détérioration du sol, etc.), biologiques (perte d'habitat, etc.) et social (aire de villégiature, économie, etc.) de la coupe dans le secteur d'étude
- Réglementation relative aux forêts du secteur d'étude (CBJNQ, Loi sur les forêts du Québec, CCEK, Internationale, etc.)

Conclusion

- Résumé
- Recommandations

Références

Dans l'étude
16. Juin possible
le terrain
et gravel

Kuujuaq, le 2 juin 2005-

Présent : Charles Dorais, Société Makivik
Nathalie Girard, Comité consultatif de l'environnement Kativik

Objet : Les forêts du Nunavik

Questions auxquelles nous devrions répondre à cette étape

- Quelle région est visée pour l'étude? (bassin versant de l'Ungava ou il y a des arbres? Tout le Nunavik sous la limite des arbres?) *2 parcs de la couronne (CBJNQ)*
- *voir selon carte de Charles*
- Est-ce que nous devrions impliquer les Nascapis? *pas maintenant seulement les informer peut-être*
- Quelle est l'ampleur des projets envisagés? (projet de 3-4 semaines de coupe à 15 hommes à raison de 7h par jour?) *projet pilote. pendant l'hiver.*
- Quelles sont les raisons évoquées pour justifier la réalisation d'un projet de coupe au Nunavik? *- coût transport
- réaction employé*
- Quel est le type de machinerie que l'on souhaite utiliser sur le terrain pour la réalisation des projets de coupe envisagés? (petite machinerie portative?) *chain saw sur le terrain + skidoo. (transport dans village)*
- Combien d'argent est actuellement disponible pour l'étude? *25000 Budget fait incluant salaire de 15000*
- Quels sont les organismes qui pourraient subventionner l'étude? *Landholding, MRN, KRDC, KRG (Makivik) employé training*
- Combien de temps devrait être alloué à l'étude? (deadline de 6 mois?) *fin sept. 30.*
- Le contrat devrait-il inclure une visite sur le terrain ciblé pour l'étude? *oui*
- Dans l'affirmative, quel serait le contenu de cette visite (consultation des corporations foncières?) *pendre des données*
- Quels villages devraient être impliqué (Tasiuaq? Kuujuaq? Kangiqsualujuaq?) *George River*

#??
Piper une conférence avec MRN. M. Létourneau.

Le contrat d'étude intitulé : *Évaluation de la ressource forestière* pourrait être composé de la façon suivante :

Introduction

- Description générale (appuyée de cartes) de la composition de l'écosystème forestier du secteur d'étude
- Conditions de régénération naturelle, après coupe et après feu pour toutes les essences à potentiel de coupe (mélèzes, épinettes blanches, épinettes noires, etc.)
- Brève description des types d'essence favorable à la coupe dans le secteur d'étude (qualité du bois (densité, etc.)
- Historique de coupe des arbres dans le secteur d'étude et à Kuujuaq

Analyse

- Évaluation du potentiel de coupe du secteur d'étude
- Estimation des coûts versus rentabilité associés à la coupe au Nunavik
- Impacts biophysiques (glissements de terrain, détérioration du sol, etc.), biologiques (perte d'habitat, etc.) et social (aire de villégiature, économie, etc.) de la coupe au Nunavik
- Réglementation relative aux forêts du secteur d'étude (CBJNQ, Loi sur les forêts du Québec, CCEK, Internationale, etc.)

Conclusion

- Résumé
- Recommandations

appeler Payette connaître Carpo ??

Julie Sanson → MRU
Christian Leclerc → MRU
Jean-Fr. Gravel → MRU
Jean Pierre Lefebvre → jeune technicien
Francis Rouleau → jeune technicien

Questi d'IS pour Serge Payette.

• voir historique conseil GO à Kuujuu-
Coop.

thèse de maîtrise
Aurélien Delwalle
coop.

• connaît Cerfo?

gros groupe
SIVA



Dire à Serge que les habitats des boulaux sont déjà sortis et
laisse sentir le pollen. Comme il y a beaucoup de vent
fort c'est temps-ci ?? pas garanti bon résultat.

Morceaux de la plante ??

- hauteur
- diamètre recensement
- coordonnées GPS
- photo
- description du site de cueillette du pollen.

Agenda
Forestry Management Meeting
Kuujuaq, Qc
May 30 2005

1. Opening Prayer
2. Review of agenda
3. Background/Objectives
4. Report from the Ministry of Natural resources
5. Our Needs
6. The forestry management plan
7. CERFO
8. Harvesting
9. Plan of action
10. Others

C - doc@makivik.org. Charles Dorais
Makivik

ᑭᑎᑎᑦ ᑭᑎᑎᑦ ᑭᑎᑎᑦ ᑭᑎᑎᑦ ᑭᑎᑎᑦ ᑭᑎᑎᑦ ᑭᑎᑎᑦ ᑭᑎᑎᑦ
COMITÉ CONSULTATIF DE L'ENVIRONNEMENT KATIVIK
KATIVIK ENVIRONMENTAL ADVISORY COMMITTEE

- resource assessment

Nunavik need management plan
what's our need?
what should we do
l'habitat? outour.

- Gov. people
- universities
- private consultant.

① who should we involve? George river.
is it very shepper?

~~10/23~~

-> information sur ce qui a été fait a propos des forêts.
envoyer à Charles (Makivik)

- best management plan (inventory and ^{Forestry} resource assessment)
 - cost
 - time frame.
- ← terme trop complet, trop long!

JBNQA

sec. 24 secteur partie de la coupe de bois.

voir ce qui c'est passé dans les années où il y a eu

- contacter Donat Savois, le tenir informé

makivik pour ça.

Fleur de bouleau glanduleux #

région donnée?

composition
condition
régénération naturelle
évaluation le potentiel



Memo

To: Pita Aatami, Anthony Ittoshat, Adamie Alaku, George Berthe, Johnny Peters
From: Charles Dorais
CC: Sandy Gordon, Tikile Kleist
Date: June 30, 2004
Re: Small Scale Forestry Project

The following is to report on the meeting that Sandy Gordon and I had with the Ministry of Natural Resources in Quebec City on June 23, 2004. The MNR group was led by Jean-Francois Gravel, who is in charge of aboriginal affairs at the Ministry and reports directly to the deputy minister on these matters.

You will find enclosed the report of the exploratory visit made by Jean-Pierre Letourneau who came to Kuujuaq in March 2004, the section of the JBNQA that relates to the exclusive forestry rights of the Inuit and finally a short memo Native lumber requirements.

The meeting was very positive and the MNR representatives seem to agree that the Kuujuaq exclusive right area could sustain a small-scale harvest. They were rather impressed with the relative quantity and quality of the wood observed in Kuujuaq. They stated that both areas would require a forestry management plan as well as an environmental impact study before any harvesting begins. They suggest starting with the Kuujuaq area as a pilot project and state they are willing to assist us in the process so a pilot harvest could take place in February/March 2005. In other words, they are ready to fast track this project.

They however, warned us that harvesting in other areas than the two identified will be more complicated and would require more study. Although we briefly discussed the types of portable sawmills available on the market, they suggest we wait until the management plan is completed before making a purchase decision. They state that we could still harvest in the winter 2005 and do the wood transformation after the first boat in the summer.

Nonetheless, after assessing our needs we could still get a sawmill for the last ship of the year if we want.

In order to proceed with the forest management plan with the Ministry we need to assess our needs, decide who will do the harvest (NV, the Landholding Corp. or Makivik) or would take the form of a joint venture.

Upon a successful pilot harvest of 3 to 4 weeks by snowmobile, we could then decide to expand the project to other communities. Overall, the ministry is ready to make this project reality for the winter of 2005.

Report on a visit to Kuujuaq

March 23 and 24, 2004

requested by

the Kativik Regional Government

by

Jean-Pierre Létourneau, Forester

**MINISTÈRE DES RESSOURCES NATURELLES,
DE LA FAUNE ET DES PARCS
FOREST INVENTORY DIVISION
June 2004**

TABLE OF CONTENTS

1. Background.....	1
2. Visit to Kuujuaq.....	1
2.1 Forest flyover.....	1
2.2 Meeting and discussions.....	4
CONCLUSION.....	5

1. Background

When the *James Bay and Northern Québec Agreement* (JBNQA) was signed, the Kuujjuaq and Kangiqsualujjuaq landholding corporations were granted exclusive cutting rights on two blocks of forest. Those forest blocks are located respectively on the south east bank of the Koksoak river (614 km²) and on both sides of the George river (739 km²). See Appendix for the section 6.3.1 and the map of the JBNQA.

In 1980, two MRNFP professionals visited Kuujjuaq to meet with members of the two landholding corporations. During this trip, they flew over two compartments where these corporations held exclusive cutting rights under the *James Bay and Northern Québec Agreement*. No followup has been taken on this meeting.

In August 2003, following a meeting between minister Corbeil and Kativik Regional Government (KRG) representatives, the Forest Inventory Division (FID) prepared a report on the availability of timber in two areas:

- Regions covered by hardwood on a scale of 1:250,000 24K, 24J, 24E, and 24F
- Regions within a 50 km radius of Kuujjuaq for all management methods

This forest data (sample plots and forest areas) is over 20 years old and was collected as part of an extensive inventory of forest biomass. The Landsat satellite images dating back to between 1973 and 1981 were used to draw up a forest map at 1:250,000 scale, and a very scant sampling was taken to estimate volume.

2. Visit to Kuujjuaq

I visited Nunavik on March 23 and 24, 2004, in response to a request for technical support and forestry expertise by Mr. Johnny Adams, Chairman of the Kativik Regional Government (KRG).

The visit included—

- A helicopter flyover of the region in the morning
- A meeting and discussions in the afternoon

We agreed with our hosts that this visit was an exploratory one and that we were there to learn about their needs and plans. The KRG's objective is to explore its cut potential for individuals and communities with a view to economic development.

2.1 Forest flyover

We flew over the area south of the Koksoak River, along the Caniapiscou River and Lake Lemoyne. In addition, we flew over the area (figure 1) where the Kuujjuaq Landholding Corporation has exclusive cutting rights under JBNQA. The helicopter flyover was planned using Landsat satellite images from July 21, 2001, and our hosts' knowledge of the ground. We landed three times (near the Koksoak River and Lake Lemoine) to see the size of the trees and take samples (rings).

Figure 1 Satellite image of the area

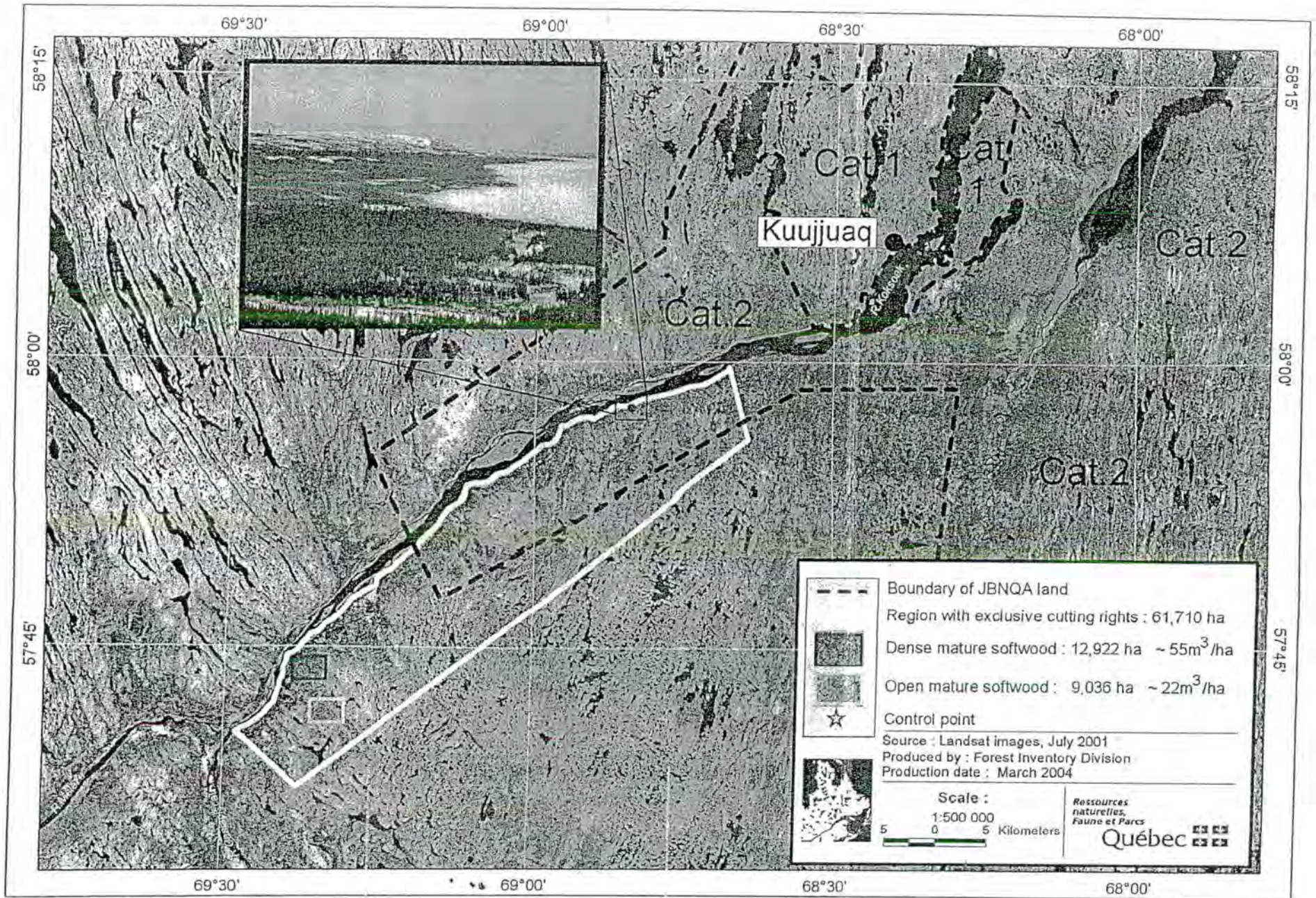


Figure 1 presents the satellite image of a portion of the region we flew over and identifies the area where the Inuit have exclusive harvesting rights. It also identifies category 1 and 2 lands under the JBNQA.

The most promising stand of forest is located on either side of the Koksoak River. This forest stands on a flat that slopes gently towards the river. We made two stops in this forest and brought back two rings selected from among the dominant trees. These two samples showed no signs of decay.

- 1st tree: Black Spruce, DBH= 28 cm, 88 years old
- 2nd tree: , Black Spruce, DBH= 30 cm, 106 years old

The forest covering this flat has a density of 50% to 60% and the dominant tree height is about 12 to 13 m. Black spruce is the most common tree species, but we also found larch and white spruce that were often very sizeable. This forest is located in a microclimate. As soon as we moved away from the river, the tree diameters and canopy density dropped significantly. Growth in diameter for stands bordering the Koksoak River is exceptional for this latitude (58°). The forest is mature throughout, and we saw no evidence of fires having occurred for a number of decades. Due to the snow, we were unable to observe if they were spruce-moss or mossy spruce stands. Since these forests are located on the tree line, they are fragile. If the forest were harvested, its regeneration would be difficult to predict. We recommend partial cuts.

In the area shown in Figure 1, we tried to estimate (low accuracy) the volume of timber by mapping the two large stratum using the sample plots set in the North in 1983.

1) Dense mature softwood (coniferous)

For this stratum, only two sample plots were measured in 1983. The area of the stand was calculated based on the interpretation of the satellite image.

Stratum area: 12,922 ha

Volume per hectare: 55 m³/ha

Gross merchantable volume of this stratum 710,710 m³

2) Open mature softwood (coniferous)

To make a rough estimate of the volume, we interpreted the satellite image and used the vol/ha of this stand in 1983.

Stratum area: 9,036 ha

Volume per hectare: 22 m³/ha

Gross merchantable volume: 198,292 m³

The estimated gross merchantable volume for the region (617 km²) with exclusive harvest rights (low accuracy) is 909,502 m³.

2.2 Meeting and discussions

In the afternoon, I had an exploratory meeting with the following people:

Sandy A. Gordon, Director of Renewable Resources Department
Kativik Regional Government

Michael Gordon, Mayor of Kuujjuaq, Kuujjuaq Landholding Corporation

Charles Dorais, Head of the Department of Economic Development
Makivik Corporation

Michael Barrette, Special Projects Coordinator
Kativik Regional Government (KRG)

The first three accompanied me on the flyover, and Michael Barrette joined us later for the afternoon meeting.

The KRG would like to harvest a block of forest to meet individual and community needs in Kuujjuaq and in of three or four other Inuit communities. This would reduce the cost of wood (imports from the south) and contribute to the region's economic development. As there is no road, the Inuit plan to transport the wood by snowmobile in winter over the Koksoak River. The wood would be processed using a mobile mill. The timber harvest could be used for the following products:

- Fuelwood
- Light structural timber for residential and hunting camp construction
- Transoms and beams for bridges
- Wood for sled production

CONCLUSION

The softwood forest located on either side of the Koksoak River has a sufficient standing volume (dense mature softwood) and trunk size to run a small sawmill (mobile mill). The forest away from the river is not as robust and has a low volume per hectare.

The current forest inventory data is not detailed enough to calculate an allowable annual cut or conduct forest planning. No arial photographs or large scale topographic maps are available. If we need to conduct a detailed forest inventory, we would need to draw up an ecoforestry map of the region (photo or satellite image) and establish a certain number of sample plots.

The Kativik Regional Government (KRG) wants to take charge of its economic development and diversify village economies by exploiting its natural resources for internal consumption. In the village of Kuujjuaq, nearly 60% of the population is under 20. The municipality is currently undergoing a residential construction boom. A new

school is being built. All the construction materials come from the south and are very expensive.

KRG does not currently have the know how to undertake a such project of economic development. They would like MRNFP's assistance in the following areas:

- Determining more accurate harvest needs based on expected timber consumption. The August 2003 Note on timber needs for the construction of a house and the recommendations on mobile sawmills by François Rouleau of Service du développement technologique et industriel (SDTI) would be very useful (this Note is enclosed in appendix);
- Identifying a territory and estimating the volume available in this territory (FID). The individuals I met with expressed a desire to have a copy of my report on available forest resources. The estimated available standing volumes on page 3 are an order of magnitude, with very few sample plots. This estimate is not adequate to calculate an allowable annual cut;
- Information (who, how, how much, etc.) on the process for obtaining a license or forest management agreement and the requirements that come with them (DGSF)
- Developing forestry expertise to ensure ongoing success. MRNFP could act as facilitator in the development of a such expertise.

6.2.2 *Criteria for Selection*

Category II land selections shall take into account the wildlife productivity of the land, the usability of such lands for harvesting, and existing developments as well as other lands necessary as a habitat for the protection of wildlife, and all existing rights granted at the time of the Agreement, and known development projects.

Each unit of land selected shall comprise an area of not less than fifty (50) square miles.

No more than three (3) discontinuous units of land, not including intertidal zone selections, per community shall be selected unless agreed to otherwise by Québec. Each unit of land shall be compact and each portion of such land shall have a ratio of average width to length of four (4) to one (1), unless agreed to otherwise by Québec.

Such lands shall be selected within two (2) years of the date of execution of the Agreement, and the selection shall be subject to mutual approval of the respective communities and Québec failing which Québec shall have the right to designate such Category II lands after consultation with the interested Native party.

In front of Category I and II lands, the intertidal zone may be selected as Category II lands.

The aggregate of Category I and Category II selections shall not exceed fifty-five percent (55%) of the coastline of the Territory north of the 55th parallel, distributed as evenly as possible along the coast.

6.3 Other Rights

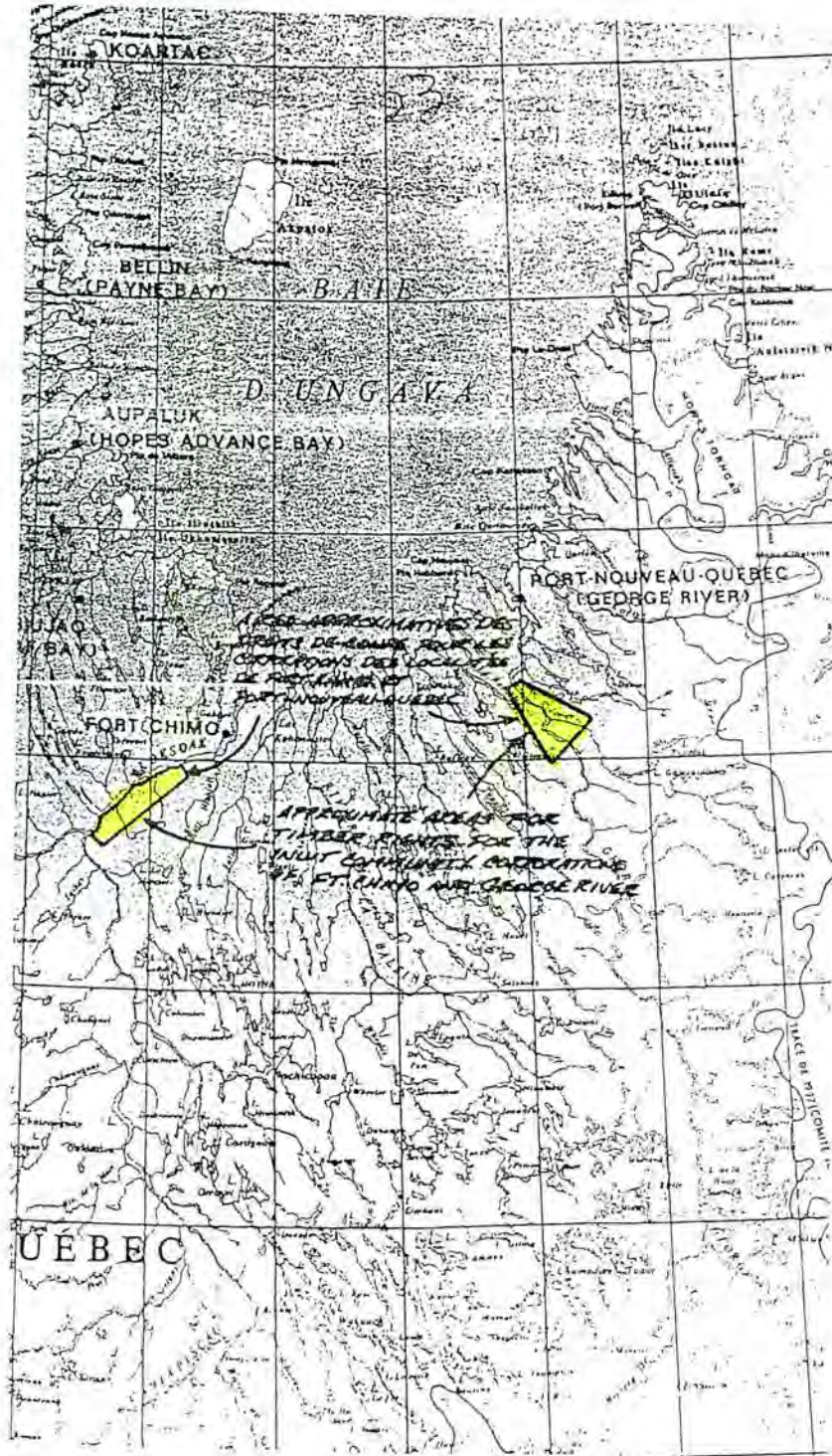
6.3.1 *Timber Rights*

The Inuit Community Corporations of Kuudjuak (Fort Chimo) and Kangirsualuak (George River) shall have exclusive timber rights on those tracts of land identified in Schedule 2 attached to this Section. Such rights shall be for personal and community use and shall be exercised in accordance with management plans to be agreed upon with the Department of Lands and Forests. However, such timber rights shall be subject to the right to develop the lands over which the timber rights are granted herein.

Where, in accordance with the said plans, additional forestry operations are permitted, the said Inuit Community Corporations shall be permitted to supply timber to other Inuit Community Corporations.

6.4 Great Whale River

Should a majority of the Inuit of Great Whale River decide to move to Richmond Gulf within a period of five (5) years from the date of the coming into force of the Agreement, Québec agrees that Québec and/or its agencies or mandataries shall assist the Inuit of Great Whale, such assistance



To: Mr. Marc Ledoux
Assistant Deputy Minister for Forests

Date: August 22, 2003

RE: Native lumber requirements

1. Calculated requirement for 20 homes

- ♦ Average lumber requirement for one home: 10,000 bd. ft.
- ♦ Estimated number of homes: 20 units
- ♦ Estimated annual lumber requirement: 20 units x 10,000 bd. ft. = 200,000 bd. ft.
- ♦ Material yield: 6 m³ per 1,000 bd. ft.
- ♦ **Estimated annual roundwood requirement:**
200,000 bd. ft./yr. x 6 m³/1,000 bd. ft. = 1,200 m³/yr.

2. Available equipment

- ♦ A mobile sawmill seems to be the best choice for this lumber volume.
- ♦ Model and price:
 - Wood-Mizer—\$9,000 to \$20,000
1 m³ to 3 m³ per hour, or 50 to 150 workdays for the estimated volume
 - Gilbert mobile sawmill—\$4,500 to \$7,500
1 m³ to 2 m³ per hour, or 75 to 150 workdays for the estimated volume

Please see the enclosed information.

François Rouleau
Department Head
Technological and Industrial Development

c.c. Mr. Alain Gaudreault

*c.c. Johnny Adams
Michael Gordon
Louis Mercier*

**Economic Development
Department**

Memo

To: Pita Aatami, Anthony Ittoshat, Adamie Alaku, George Berthe, Johnny Peters
From: Charles Dorais
CC: Sandy Gordon, Tikile Kleist
Date: June 30, 2004
Re: Small Scale Forestry Project

The following is to report on the meeting that Sandy Gordon and I had with the Ministry of Natural Resources in Quebec City on June 23, 2004. The MNR group was led by Jean-Francois Gravel, who is in charge of aboriginal affairs at the Ministry and reports directly to the deputy minister on these matters.

You will find enclosed the report of the exploratory visit made by Jean-Pierre Letourneau who came to Kuujuaq in March 2004, the section of the JBNQA that relates to the exclusive forestry rights of the Inuit and finally a short memo Native lumber requirements.

The meeting was very positive and the MNR representatives seem to agree that the Kuujuaq exclusive right area could sustain a small-scale harvest. They were rather impressed with the relative quantity and quality of the wood observed in Kuujuaq. They stated that both areas would require a forestry management plan as well as an environmental impact study before any harvesting begins. They suggest starting with the Kuujuaq area as a pilot project and state they are willing to assist us in the process so a pilot harvest could take place in February/March 2005. In other words, they are ready to fast track this project.

They however, warned us that harvesting in other areas than the two identified will be more complicated and would require more study. Although we briefly discussed the types of portable sawmills available on the market, they suggest we wait until the management plan is completed before making a purchase decision. They state that we could still harvest in the winter 2005 and do the wood transformation after the first boat in the summer.

Nonetheless, after assessing our needs we could still get a sawmill for the last ship of the year if we want.

In order to proceed with the forest management plan with the Ministry we need to assess our needs, decide who will do the harvest (NV, the Landholding Corp. or Makivik) or would take the form of a joint venture.

Upon a successful pilot harvest of 3 to 4 weeks by snowmobile, we could then decide to expand the project to other communities. Overall, the ministry is ready to make this project reality for the winter of 2005.

Report on a visit to Kuujuaq
March 23 and 24, 2004
requested by
the Kativik Regional Government

by
Jean-Pierre Létourneau, Forester

**MINISTÈRE DES RESSOURCES NATURELLES,
DE LA FAUNE ET DES PARCS
FOREST INVENTORY DIVISION
June 2004**

TABLE OF CONTENTS

1. Background.....	1
2. Visit to Kuujuaq.....	1
2.1 Forest flyover.....	1
2.2 Meeting and discussions	4
CONCLUSION.....	5

1. Background

When the *James Bay and Northern Québec Agreement* (JBNQA) was signed, the Kuujjuaq and Kangiqsualujjuaq landholding corporations were granted exclusive cutting rights on two blocks of forest. Those forest blocks are located respectively on the south east bank of the Koksoak river (614 km²) and on both sides of the George river (739 km²). See Appendix for the section 6.3.1 and the map of the JBNQA.

In 1980, two MRNFP professionals visited Kuujjuaq to meet with members of the two landholding corporations. During this trip, they flew over two compartments where these corporations held exclusive cutting rights under the *James Bay and Northern Québec Agreement*. No followup has been taken on this meeting.

In August 2003, following a meeting between minister Corbeil and Kativik Regional Government (KRG) representatives, the Forest Inventory Division (FID) prepared a report on the availability of timber in two areas:

- Regions covered by hardwood on a scale of 1:250,000 24K, 24J, 24E, and 24F
- Regions within a 50 km radius of Kuujjuaq for all management methods

This forest data (sample plots and forest areas) is over 20 years old and was collected as part of an extensive inventory of forest biomass. The Landsat satellite images dating back to between 1973 and 1981 were used to draw up a forest map at 1:250,000 scale, and a very scant sampling was taken to estimate volume.

2. Visit to Kuujjuaq

I visited Nunavik on March 23 and 24, 2004, in response to a request for technical support and forestry expertise by Mr. Johnny Adams, Chairman of the Kativik Regional Government (KRG).

The visit included—

- A helicopter flyover of the region in the morning
- A meeting and discussions in the afternoon

We agreed with our hosts that this visit was an exploratory one and that we were there to learn about their needs and plans. The KRG's objective is to explore its cut potential for individuals and communities with a view to economic development.

2.1 Forest flyover

We flew over the area south of the Koksoak River, along the Caniapiscau River and Lake Lemoyne. In addition, we flew over the area (figure 1) where the Kuujjuaq Landholding Corporation has exclusive cutting rights under JBNQA. The helicopter flyover was planned using Landsat satellite images from July 21, 2001, and our hosts' knowledge of the ground. We landed three times (near the Koksoak River and Lake Lemoine) to see the size of the trees and take samples (rings).

Figure 1 Satellite image of the area

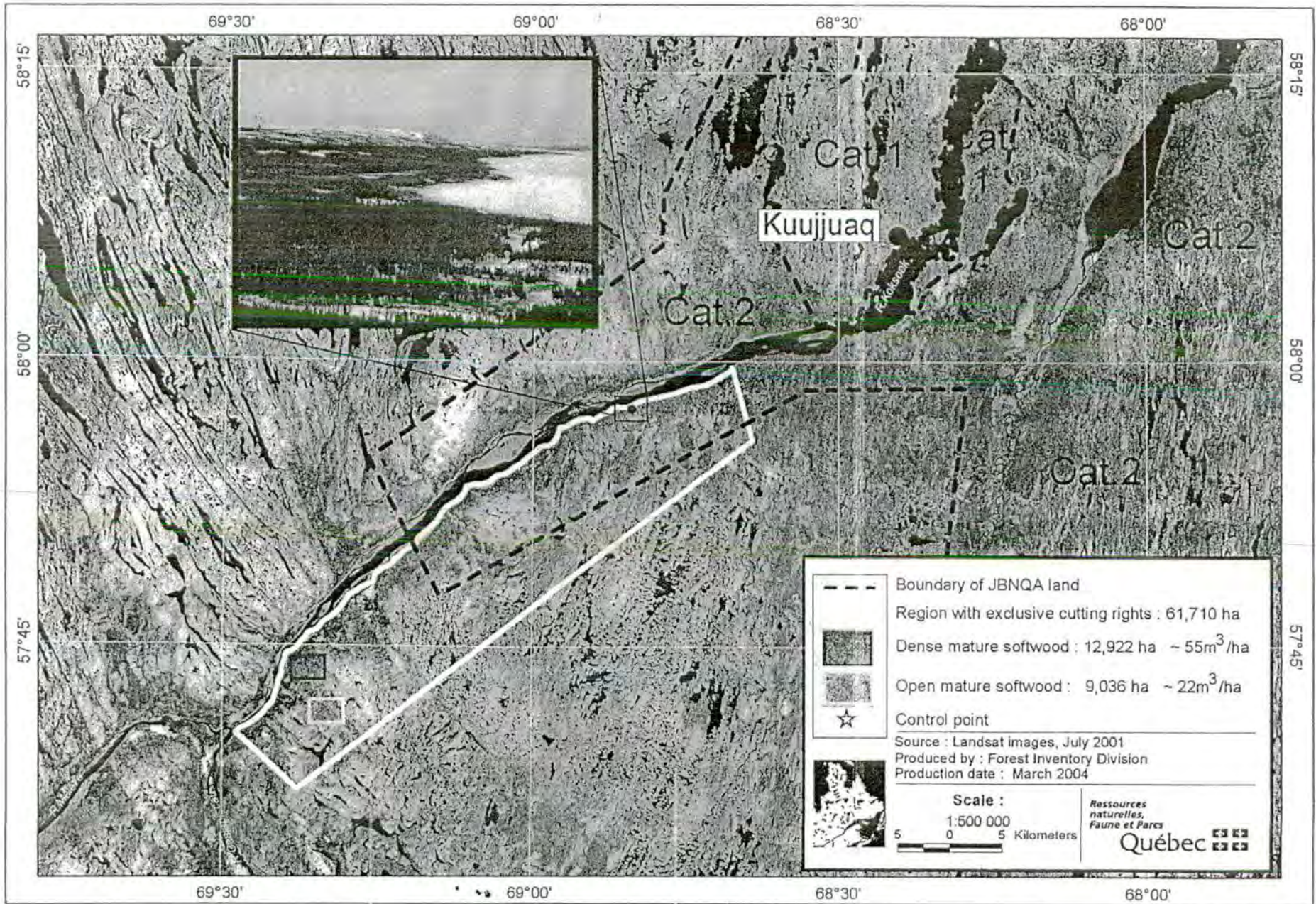


Figure 1 presents the satellite image of a portion of the region we flew over and identifies the area where the Inuit have exclusive harvesting rights. It also identifies category 1 and 2 lands under the JBNQA.

The most promising stand of forest is located on either side of the Koksoak River. This forest stands on a flat that slopes gently towards the river. We made two stops in this forest and brought back two rings selected from among the dominant trees. These two samples showed no signs of decay.

- 1st tree: Black Spruce, DBH= 28 cm, 88 years old
- 2nd tree: , Black Spruce, DBH= 30 cm, 106 years old

The forest covering this flat has a density of 50% to 60% and the dominant tree height is about 12 to 13 m. Black spruce is the most common tree species, but we also found larch and white spruce that were often very sizeable. This forest is located in a microclimate. As soon as we moved away from the river, the tree diameters and canopy density dropped significantly. Growth in diameter for stands bordering the Koksoak River is exceptional for this latitude (58°). The forest is mature throughout, and we saw no evidence of fires having occurred for a number of decades. Due to the snow, we were unable to observe if they were spruce-moss or mossy spruce stands. Since these forests are located on the tree line, they are fragile. If the forest were harvested, its regeneration would be difficult to predict. We recommend partial cuts.

In the area shown in Figure 1, we tried to estimate (low accuracy) the volume of timber by mapping the two large stratum using the sample plots set in the North in 1983.

1) Dense mature softwood (coniferous)

- For this stratum, only two sample plots were measured in 1983. The area of the stand was calculated based on the interpretation of the satellite image.

Stratum area: 12,922 ha

Volume per hectare: 55 m³/ha

Gross merchantable volume of this stratum 710,710 m³

2) Open mature softwood (coniferous)

To make a rough estimate of the volume, we interpreted the satellite image and used the vol/ha of this stand in 1983.

Stratum area: 9,036 ha

Volume per hectare: 22 m³/ha

Gross merchantable volume: 198,292 m³

The estimated gross merchantable volume for the region (617 km²) with exclusive harvest rights (low accuracy) is 909,502 m³.

2.2 Meeting and discussions

In the afternoon, I had an exploratory meeting with the following people:

Sandy A. Gordon, Director of Renewable Resources Department
Kativik Regional Government

Michael Gordon, Mayor of Kuujjuaq, Kuujjuaq Landholding Corporation

Charles Dorais, Head of the Department of Economic Development
Makivik Corporation

Michael Barrette, Special Projects Coordinator
Kativik Regional Government (KRG)

The first three accompanied me on the flyover, and Michael Barrette joined us later for the afternoon meeting.

The KRG would like to harvest a block of forest to meet individual and community needs in Kuujjuaq and in of three or four other Inuit communities. This would reduce the cost of wood (imports from the south) and contribute to the region's economic development. As there is no road, the Inuit plan to transport the wood by snowmobile in winter over the Koksoak River. The wood would be processed using a mobile mill. The timber harvest could be used for the following products:

- Fuelwood
- Light structural timber for residential and hunting camp construction
- Transoms and beams for bridges
- Wood for sled production

CONCLUSION

The softwood forest located on either side of the Koksoak River has a sufficient standing volume (dense mature softwood) and trunk size to run a small sawmill (mobile mill). The forest away from the river is not as robust and has a low volume per hectare.

The current forest inventory data is not detailed enough to calculate an allowable annual cut or conduct forest planning. No arial photographs or large scale topographic maps are available. If we need to conduct a detailed forest inventory, we would need to draw up an ecoforestry map of the region (photo or satellite image) and establish a certain number of sample plots.

The Kativik Regional Government (KRG) wants to take charge of its economic development and diversify village economies by exploiting its natural resources for internal consumption. In the village of Kuujjuaq, nearly 60% of the population is under 20. The municipality is currently undergoing a residential construction boom. A new

school is being built. All the construction materials come from the south and are very expensive.

KRG does not currently have the know how to undertake a such project of economic development. They would like MRNFP's assistance in the following areas:

- Determining more accurate harvest needs based on expected timber consumption. The August 2003 Note on timber needs for the construction of a house and the recommendations on mobile sawmills by François Rouleau of Service du développement technologique et industriel (SDTI) would be very useful (this Note is enclosed in appendix);
- Identifying a territory and estimating the volume available in this territory (FID). The individuals I met with expressed a desire to have a copy of my report on available forest resources. The estimated available standing volumes on page 3 are an order of magnitude, with very few sample plots. This estimate is not adequate to calculate an allowable annual cut;
- Information (who, how, how much, etc.) on the process for obtaining a license or forest management agreement and the requirements that come with them (DGSF)
- Developing forestry expertise to ensure ongoing success. MRNFP could act as facilitator in the development of a such expertise.

6.2.2 *Criteria for Selection*

Category II land selections shall take into account the wildlife productivity of the land, the usability of such lands for harvesting, and existing developments as well as other lands necessary as a habitat for the protection of wildlife, and all existing rights granted at the time of the Agreement, and known development projects.

Each unit of land selected shall comprise an area of not less than fifty (50) square miles.

No more than three (3) discontinuous units of land, not including intertidal zone selections, per community shall be selected unless agreed to otherwise by Québec. Each unit of land shall be compact and each portion of such land shall have a ratio of average width to length of four (4) to one (1), unless agreed to otherwise by Québec.

Such lands shall be selected within two (2) years of the date of execution of the Agreement, and the selection shall be subject to mutual approval of the respective communities and Québec failing which Québec shall have the right to designate such Category II lands after consultation with the interested Native party.

In front of Category I and II lands, the intertidal zone may be selected as Category II lands.

The aggregate of Category I and Category II selections shall not exceed fifty-five percent (55%) of the coastline of the Territory north of the 55th parallel, distributed as evenly as possible along the coast.

6.3 Other Rights

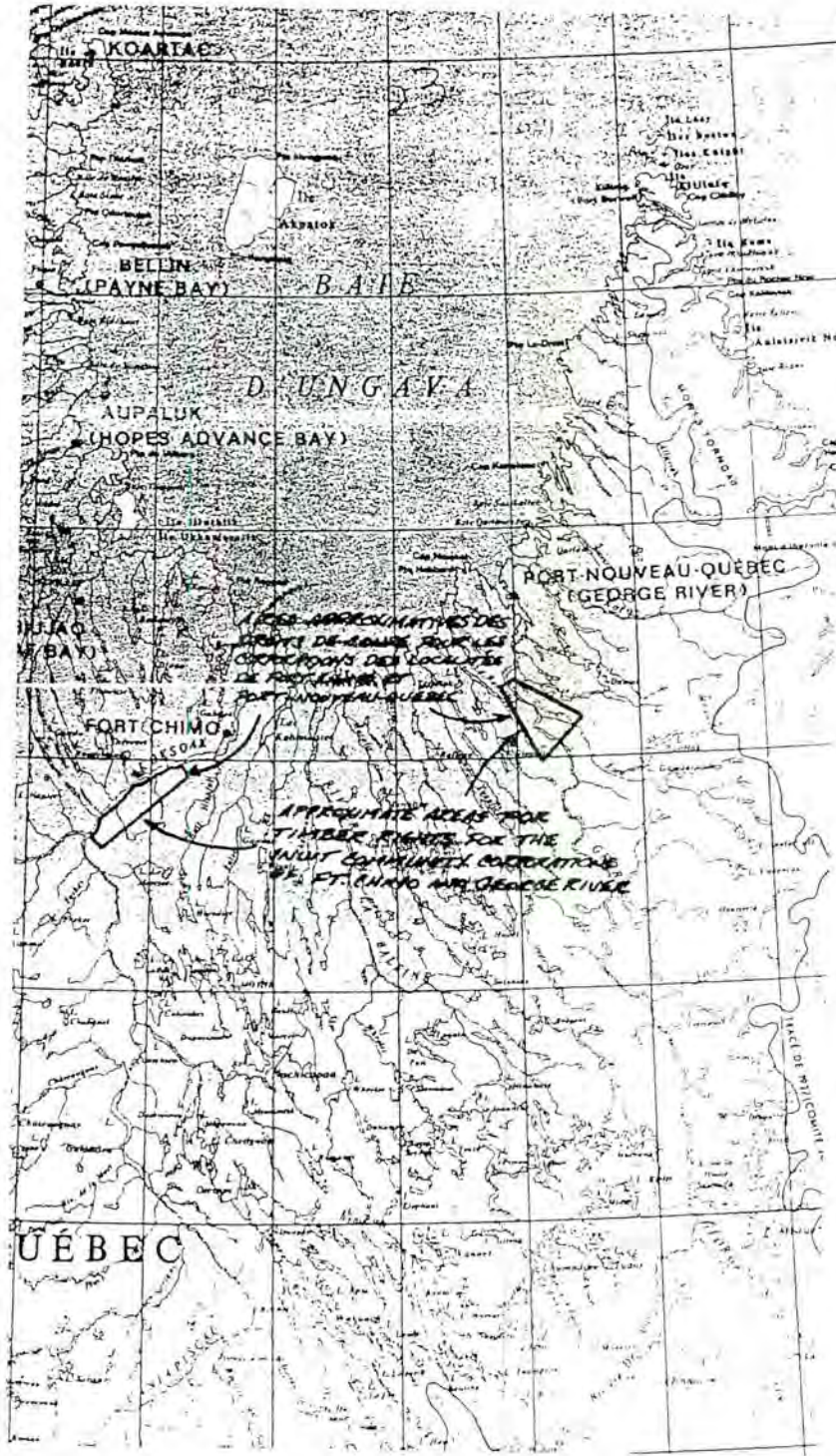
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To: Mr. Marc Ledoux
Assistant Deputy Minister for Forests

Date: August 22, 2003

RE: Native lumber requirements

1. Calculated requirement for 20 homes

- ♦ Average lumber requirement for one home: 10,000 bd. ft.
- ♦ Estimated number of homes: 20 units
- ♦ Estimated annual lumber requirement: 20 units x 10,000 bd. ft. = 200,000 bd. ft.
- ♦ Material yield: 6 m³ per 1,000 bd. ft.
- ♦ Estimated annual roundwood requirement:
200,000 bd. ft./yr. x 6 m³/1,000 bd. ft. = 1,200 m³/yr.

2. Available equipment

- ♦ A mobile sawmill seems to be the best choice for this lumber volume.
- ♦ Model and price:
 - Wood-Mizer—\$9,000 to \$20,000
1 m³ to 3 m³ per hour, or 50 to 150 workdays for the estimated volume
 - Gilbert mobile sawmill—\$4,500 to \$7,500
1 m³ to 2 m³ per hour, or 75 to 150 workdays for the estimated volume

Please see the enclosed information.

François Rouleau
Department Head
Technological and Industrial Development

c.c. Mr. Alain Gaudreault

To: Marc Ledoux
Associate Deputy Minister for Forestry

Date: August 22, 2003

RE: First Nation lumber requirements

1. Calculated requirements for 20 homes

- Average lumber requirements for one home: 10,000 bd. ft.
- Estimated number of homes: 20
- Estimated annual lumber requirements: 20 units x 10,000 bd. ft. = 200,000 bd. ft.
- Lumber yield: 6 m³ per 1,000 bd. ft.
- Estimated annual log requirements:
200,000 bd. ft./year x 6 m³/1,000 bd. ft. = 1,200 m³/year

2. Available equipment

- A mobile sawmill seems to be the preferred choice for this volume of wood.
- Models and prices:
 - Wood-Mizer: \$9,000 to \$20,000
Production rate of 1 m³ to 3 m³ per hour, or 50 to 150 working days for the estimated volume
 - Gilbert: \$4,500 to \$7,500
Production rate of 1 m³ to 2 m³ per hour, or 75 to 150 working days for the estimated volume

See enclosed information.

François Rouleau
Head, Technological and Industrial Development Division

c.c. Alain Gaudreault

Destinataire : Monsieur Marc Ledoux
Sous-ministre associé aux Forêts

Date : Le 22 août 2003

Objet : Besoins de sciage par les autochtones

1. Calcul des besoins pour 20 maisons

- ♦ Besoins moyens en sciage pour une maison : 10 000 pmp
- ♦ Nombre de maisons estimées : 20 unités
- ♦ Besoins annuels estimés en sciage : 20 unités X 10 000 pmp = 200 000 pmp
- ♦ Rendement matière : 6 m³ par 1000 pmp
- ♦ Besoins annuels estimés en bois ronds :
 $200\,000 \text{ pmp/an} \times 6 \text{ m}^3/1000 \text{ pmp} = 1\,200 \text{ m}^3/\text{an}$.

2. Équipements disponibles

- ♦ Une scierie mobile semble le choix le plus avisé pour ce volume de bois.
- ♦ Modèle et prix :
 - Wood-Mizer de 9 000 \$ à 20 000 \$
Entre 1 m³ et 3 m³ à l'heure, soit entre 50 et 150 jours de travail pour le volume estimé.
 - Scierie mobile Gilbert de 4 500 \$ à 7 500 \$
Entre 1 m³ et 2 m³ à l'heure, soit entre 75 et 150 jours pour le volume estimé.


Voir information annexée.

Le chef du Service du développement
technologique et industriel,



François Rouleau

c. c. M. Alain Gaudreault



Scieries Professionnelles

LT70 : Une scierie professionnelle



Puissances disponibles:

25 CV électrique 3-Phase de série

42 CV Turbo Diesel industriel en option

Si votre préoccupation principale est la productivité!

Tout ce à quoi vous vous attendez de Wood-Mizer et plus... Outre toutes les caractéristiques retrouvées sur le LT40 Super hydraulique, les caractéristiques de série du LT70 incluent l'ordinateur programmable Accuset, l'embrayage automatique, ainsi que le système de lubrification automatique. De plus, on retrouve des cales à billes verticales, un stabilisateur de vibration, des guides-lames améliorés, des carters de poulies à charnières, et bien plus! Le modèle LT70 peut même être équipé d'un pupitre de commandes à distance pouvant être déplacé!

Caractéristiques:

Capacité de la bille:

36" (91cm) dia. X 20'2" (6.15m) long.*

Manutention de la bille:

Charge-bille, compensateurs de défilement, serre, tourne-bille à chaîne, tous hydrauliques.

Entraînement de la tête de sciage:

12 V électrique (3/4 CV)

Emplacement de l'opérateur:

Il est possible de marcher, de suivre assis, ou encore d'obtenir le pupitre de commandes à distance pouvant être déplacé.

LT40 Super Hydraulique:



Puissance et productivité au bout de vos doigts!

Le modèle Super 40 hydraulique a été introduit en 1996 et a su faire sa place! Le moteur le plus populaire pour ce modèle a été le 42 cv diesel Kubota (aussi disponible avec moteur électrique 25 cv ou 36 cv à essence). Combinez ce modèle puissant à des options telles que l'ordinateur programmable Accuset et l'écorceur et vous pouvez affronter presque tout contrat de sciage.

Puissances disponibles:

25 CV électrique de série

36 CV à essence en option

42 CV Turbo Diesel industriel en option

Caractéristiques:

Capacité de la bille:

36" (91cm) dia. X 21' (6.4m) long.*

Manutention de la bille:

Charge-bille, compensateurs de défilement, serre, tourne-bille à griffe, tous hydrauliques.

Entraînement de la tête de sciage:

12 V électrique (3/4 CV)

Emplacement de l'opérateur:

Il est possible de marcher, de suivre assis, ou encore d'obtenir le pupitre de commandes à distance.

LT40 Hydraulique:*Des fonctions hydrauliques pour une manutention aisée!*

Le modèle LT40 hydraulique permet à une seule personne de transformer des billes en matériaux utilisables. Il ne restera qu'à dégager les matériaux sciés. Toute la manutention de la bille se fait hydrauliquement (charger, niveller, serrer, tourner). Et avec une vitesse réglable, la versatilité est sans égal.

Puissances disponibles:

25 CV à essence de série

36 CV à essence en option

33 CV Turbo Diesel industriel en option

Caractéristiques:

Capacité de la bille:

36" (91cm) dia. X 21' (6.4m) long.*

Manutention de la bille:

Charge-bille, compensateurs de défilement, serre, tourne-bille à griffe, tous hydrauliques.

Entraînement de la tête de sciage:

12 V électrique (1/2 CV)

Emplacement de l'opérateur:

Il est possible de marcher, de suivre assis, ou encore d'obtenir le pupitre de commandes à distance.

LT40 :*Le modèle qui a tout débuté, il y a déjà 20 ans!*

**Puissances disponibles:**

25 CV à essence deux cylindres de série

36 CV à essence en option

33 CV diesel en option

Il y a 20 ans, la première scierie Wood-Mizer était un LT30, la version plus courte du LT40. Ce modèle offre certaines des options et les mêmes qualités que les modèles plus gros mais sans les fonctions hydrauliques. Toutefois, l'ensemble de manutention de billes (treuil, tourne-bille, compensateurs) aide au positionnement des billes. Vitesse réglable et ajustement de la hauteur électrique de série.

Caractéristiques:

Capacité de la bille:

36" (91cm) dia. X 21' (6.4m) long.*

Manutention de la bille:

Manuelle (Ens. de manutention de billes LDP en option)

Entraînement de la tête de sciage:

12 V électrique (1/2 CV)

Emplacement de l'opérateur:

Il est possible de marcher ou de suivre assis.

Scieries personnelles**LT27:****Puissances disponibles:**

15 CV à essence à démarrage électrique de série

18 CV à essence à démarrage électrique en option

Pour les travaux de fin de semaine!

Le modèle LT27 vous propose les mêmes facilité d'utilisation et durabilité que nos modèles plus gros. Le réglage de la vitesse et de la hauteur de coupe se fait à l'aide de manivelles. Conçu pour une utilisation à temps partiel, ce modèle se transporte aisément et peut scier des billes jusqu'à 32" de diamètre, 21' de long.

Caractéristiques:

Capacité de la bille:

32" (81cm) dia. X 21' (6.4m) long.

Manutention de la bille:

Manuelle (Ens. de manutention de billes LDP en option)

Entraînement de la tête de sciage:
À manivelle

Emplacement de l'opérateur:
L'opérateur doit marcher.

LT15 :



Puissances disponibles:

13 CV à essence à démarrage à lancement de série

10 CV au diesel à démarrage électrique en option

10 CV électrique 3-phase en option

15 CV à essence à démarrage électrique en option

Pour mettre vos projets en marche!

Voici la façon idéale d'obtenir vos matériaux pour vos projets. Obtenez les mêmes précision et qualité de bois, mais avec des fonctions simplifiées. Ce modèle s'installe au sol, ainsi, les billes ne doivent pas être soulevées pour les scier. Des sections supplémentaires peuvent être ajoutées pour scier plus long que les 11' de base. Chaque section supplémentaire rajoute 6'8". Une option de remorque est également disponible.

Caractéristiques:

Capacité de la bille:
28" (71cm) dia. X 11' (3.35m) long*.

Manutention de la bille:
Manuelle (Tourne-bille manuel)

Entraînement de la tête de sciage:
À manivelle

Emplacement de l'opérateur:
L'opérateur doit marcher

Scieries industrielles

LT300 - Scie de tête



Pour mettre vos projets en marche!

Équipement de manutention pour LT300

L'équipement de manutention Wood-Mizer pour LT300 est conçu pour maximiser la production de la scie de tête industrielle LT300. Le système comprend une table d'alimentation pour billes, un convoyeur incliné, ainsi qu'une trappe d'aiguillage pour planches.

Ces équipements de manutention sont construits selon des normes de qualité élevées. Ils résistent aux chocs, à la tension et au stress occasionnés par la

La scie LT300 est la scierie Wood-Mizer la plus puissante et la plus performante. Conçue pour des applications commerciales, nous l'avons équipée de la plus grosse tête de sciage et du système hydraulique de manutention le plus rapide de notre gamme de scieries Wood-Mizer. La scie de tête LT300 à trait de scie mince a été conçue pour rendre désuètes les petites scieries à lames circulaires et pour accéder au prochain échelon des scieries portatives transformées en fixe. Les ingénieurs de Wood-Mizer ont conçu une scierie plus productive et fournissant un meilleur rendement de bois, à une fraction du coût des autres scieries sur le marché!

Rendement élevé et qualité supérieure signifient profits. La scierie LT300, est sans contredit, la scierie la plus rapide, la plus imposante et la plus productive de l'histoire de Wood-Mizer. De plus, les profits augmentent lorsque la manutention requise lors des opérations diminue. En retrait, afin de permettre une meilleure perspective, le poste de l'opérateur est équipé de leviers de commandes et d'un positionneur programmable sophistiqué mais simple à utiliser. L'opérateur contrôle les fonctions de manutention des billes. Il détermine l'épaisseur des coupes et les mouvements de la tête de sciage. Un jet d'air nettoie la surface sciée, accordant une vision claire du sciage. La scie LT300 est également équipée d'un régulateur de vitesse optimisant la vitesse de croisière, pour une production maximale. De plus, l'équipement de manutention vient s'intégrer à toute opération, déjà existante ou non.

La scie de tête LT300 de Wood-Mizer est source de puissance, de productivité et de rentabilité!

La scierie LT300 peut produire 2 millions de p.m.p. de bois de grade, par année (800-1200 p.m.p. par heure). Avec la technologie de trait de scie mince, elle peut scier jusqu'à 40% plus de bois que les scieries circulaires. Le moteur électrique de 30 cv transforme les plus grosses billes avec une fraction de la puissance requise pour opérer les scieries. Cela signifie des économies importantes en consommation énergétique et en coûts d'opération. La scierie LT300 est aussi l'une des plus sécuritaires sur le marché. Contrairement aux scieries circulaires, les lames sont bien protégées, alors qu'opérateur et porteurs travaillent loin de la tête de sciage.

Équipement de manutention

Table d'alimentation pour billes

Les tables d'alimentation pour billes alimentent la scierie LT300, en approchant les billes à scier et en les chargeant sur la scierie au besoin.

Disponibles en 2 longueurs, ces tables d'alimentation hydrauliques sont contrôlées à partir du poste de l'opérateur. Les billes sont

manutention de grosses billes et du bois scié. Le tout fonctionne en harmonie pour diriger sans efforts les billes et les matériaux sciés, en évitant la congestion, lors des opérations.



Convoyeur incliné



Table d'alimentation pour billes



Trappe d'aiguillage pour planches

avancées par une chaîne à entraînement hydraulique. La table est équipée d'un détecteur permettant de charger une seule bille à la fois sur la scierie.



Caractéristiques:

Capacité :

Quantité de billes de 20" de diam.

LD12

LD20

6 billes

11 billes

Convoyeur incliné

Le convoyeur incliné travaille en tandem avec le système intégré de dégagement des planches de la scierie LT300. Lorsque la scierie repousse la planche venant d'être sciée, le convoyeur la dégage de la scierie. Le système est efficace et rentable puisqu'il élimine un manutentionnaire. Le convoyeur enlève les dosses, les quartelots, les planches et comme la table d'alimentation, il est contrôlé à partir du poste de l'opérateur.



Trappe d'aiguillage pour planches

Les ingénieurs de Wood-Mizer ont pensé à une méthode efficace permettant d'acheminer les planches provenant de la scierie tout en réduisant encore la main d'oeuvre. La trappe d'aiguillage pour planches, de Wood-Mizer, se sert de la gravité pour accomplir la tâche. Lorsque les matériaux arrivent à la trappe d'aiguillage, l'opérateur transfère le débit de côté (vers un autre convoyeur ou vers l'aire d'empilage) ou le laisse descendre sur une table à rouleaux, pour la prochaine étape.



Des questions ?

Appelez-nous: **1-877-866-0667** (sans frais, du Québec), + 450-562-2414, de l'extérieur du Québec.

Ou écrivez-nous, [Cliquer ici](#)

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 SCIERIES MOBILES GILBERT INC
 PORTABLE SAWMILL

Nos modèles:

CARACTÉRISTIQUES	SPÉCIFICATIONS	
	20 hp	13 hp
Moteur Honda	20 hp	13 hp
Démarrreur	Électrique	Manuel
Alternateur	20 amp.	
Réservoir à essence	12 litres (2)	
Réservoir à eau	20 litres	20 litres
Embrayage	Centrifuge	Centrifuge
Commande	Manuelle	Manuelle
Avance	Manuelle	Manuelle
Poids	950 lbs	800 lbs
Volant	20"	18"
Lames	156 à 168	156 à 162
Lames	1 1/4-1 1/2, .042-.045	1 1/4, .035-.042<
Tension	Hydraulique	Hydraulique
Longueur châssis	21'	21'
Longueur Coupe	17' et plus 32" diamètre	17' et plus 32" diamètre
Extension 4'	Option	Option
Poteau	2+3	2+3
Serre-billes	2	2
Rendement possible	3500 pmp	2500
Remorque	Option	Option

La scierie mobile Gilbert 20 hp est l'outil idéal pour celui qui veut être autonome (boss) et scier pour une clientèle choisie ou pour faire de la production sans avoir à investir 1 an de salaire avant de commencer à travailler.

La scierie mobile Gilbert 13 hp est l'outil idéal pour l'agriculteur qui a souvent besoin de réparer ou de bâtir ou pour le propriétaire de lot à bois qui veut scier son bois et obtenir un meilleur prix ou encore pour le retraité qui veut rendre service tout en s'amusant.

Le chariot de la scierie est soudé et la mécanique est pré-assemblée avant l'expédition. La base est soit assemblée par l'acheteur (environ 5 heures), soit livrée soudée. L'ensemble peut être expédié sur palette pour transport à un coût très abordable.

Garantie 1 an contre tout défaut du manufacturier à l'exception des lames et des courroies.

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LISTE DE PRIX	Prix
	(\$ Can.)
Scierie 13 HP Honda Base soudée 21' Convoyeur inclus	5 695.00 \$
Scierie 20 Hp Honda Base soudée 21' Convoyeur inclus	7 495.00 \$
Options	
Scierie 13 HP avec base de 20 (assemblez votre base vous-	4 895.00 \$
Scierie 13 Hp sans la base	4 500.00 \$
Équipements	
Remorque	750.00 \$
Rampe de chargement (2)	275.00 \$
Défileur amovible	225.00 \$
1 boîte de lames 1 1/4 (10 lames) 156"	275.00 \$
1 boîte de lames 1 1/4 (10 lames) 162"	285.00 \$
Ensemble d'affutage semi automatique	1 295.00 \$
Déligneuse 13 HP Honda	4 895.00 \$
Délais de livraison: 10 jours	
Prix sujet à changement sans préavis. Taxes en plus, f.a.b. Québec	

La Scierie Mobile Gilbert est le fruit de 50 années d'expériences acquises dans le sciage du bois, de la fabrication de portes et fenêtres, la construction, l'ébénisterie, la machinerie et expert en évaluation pour les assureurs, auto, camion et machinerie.

La Scierie Mobile Gilbert a été pensée, développée et améliorée suite aux suggestions d'acheteurs dans le but de fabriquer une scierie mobile fiable, solide, facile à utiliser et efficace.

La Scierie Mobile Gilbert est fabriquée à Québec dans des ateliers spécialisés qui ont ajouté leur expérience pour mettre sur le marché une scierie de grande qualité vendue directement aux consommateurs à un prix qui défie toute compétition.

À ce jour, plusieurs centaines de scieries mobile Gilbert ont été vendues dans tout le Québec, dans l'est du Canada et des Etats-Unis, en Amérique du Sud et en Europe. Vous trouverez ci-dessus la liste de prix de nos différents modèles qui, je l'espère, vous permettront de faire le meilleur choix.

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Installation spéciale / Special setup





(13 hp Honda)

December 2002

SAWMILL REVIEW

Wood-Mizer LT40-HD33 Diesel

Jack Spruill has turned to a new mill to maximize the usable material from each log.

BY JOE DENIG



This is my golf, and I want to be the Tiger Woods of this game," says Jack Spruill on his experience operating a portable sawmill. Spruill has been at it a long time, since August of 1982, when he purchased his first Wood-Mizer mill. Twenty years and more than 3 million board feet later, he's still at it from his home in Edenton, North Carolina.

The retired Navy veteran purchased his first mill (a Wood-Mizer LT30) when an old school friend showed him an advertisement in the back of a magazine. His initial project was to remodel his house. Sitting on the Albemarle Sound, his house is filled with Atlantic white cedar (locally known as juniper) paneling that he cut on his mill. His pier and deck were built from pressure-treated cypress, which he also cut.

Talking with Spruill, you feel his involvement in portable mills has come full circle. He began by looking for something to do, got heavily involved in custom sawing, and he now saws, as he puts it, "not for a living, it's my hobby." Today, Spruill utilizes a Wood-Mizer LT40-HD33 Diesel mill. It is the sixth mill he's owned, and, as I write this, it's still

relatively new – he's racked up only 157 hours on it. The last time *Sawmill & Woodlot* reviewed a Wood-Mizer was four years ago when I reviewed the LT40 Super Hydraulic; I was very interested in seeing what improvements the company had made to its mills.

To see the mill, Spruill took me to where he was currently sawing: at a company called Swings & Things, a small cypress outdoor-furniture producer. Owner William Craft, Spruill's customer for about 9 years, produces outdoor rocking chairs, swings and tables predominantly out of small-diameter cypress logs. Both of the

72-year-old gentlemen, Spruill and Craft, have a penchant to squeeze the most out of the raw material as possible. Craft's assistant for the day was Glenn Deaver (Deaver's father normally works with Craft, but was under the weather the day I visited.)

DIESEL: A STEP UP

The Wood-Mizer LT40-HD33 Diesel is a fairly mechanized mill with hydraulic log loading, log turning, log tapering and log dogging. What impressed me the most is that Wood-Mizer has taken the steps to make it maintenance-friendly. Sawmill equipment, after all – whether it is a portable mill or a 24,000-pound carriage used in a conventional mill – will wear and get out of alignment due to the harsh environment it's used in and the weight of logs. As you might expect, with only 157 hours of use on the engine, Spruill has not had any maintenance issues.

Wood-Mizer uses its cantilevered bandmill head design. The operator



The engine on the Wood-Mizer LT40HD33 Diesel mill, says Jack Spruill, provides him with more power than his previous gas-engine model, ensuring a constant saw speed in the cut.

WOOD-MIZER LT40-HD33 DIESEL

walks with the sawhead as it moves along the length of the log. The controls for the sawhead and motor are attached to the head, while the hydraulic controls for the log loader, turner, tapers and dog are stationary at the mill's trailer hitch end. The location of the controls is certainly convenient when sawing long logs; for short logs, however, the sawyer has to return all the way to the end of the track in order to operate the hydraulic controls. Life is full of compromises, so I understand why Wood-Mizer placed the controls where they are: It would have been a great additional expense to place them elsewhere; and few customers would be willing to pay extra for the potential higher production when sawing short logs.

The mill is powered by a 33-horsepower Kubota diesel engine, and Spruill feels that the diesel engine is a real step up from his last mill, which was gasoline-powered. The diesel engine provides him with more power, he says, ensuring a constant saw speed in the cut – diesel engines slow down less when a load is applied. He did say that he felt less comfortable working around the diesel since this was his first diesel engine. I suspect, however, that, with time, he'll quickly gain more confidence.

There is, by the way, an important lesson in this experience: If you expect to saw accurately and fast, you need horsepower. If you are planning to purchase a mill, don't scrimp in this area. This is especially true with all of the other optional equipment the engine has to power nowadays, in addition to driving the bandsaw.

A HOST OF FEATURES

The main frame that the cantilevered sawhead travels down is well designed and built using 4 x 8 x 3/16-inch steel tubing, with the bed frame made from 4 x 4-inch, 3/16-inch tubular steel. Screw adjustments change the levelness of the head with respect to the bed rails.

Mill Overview

Band or circle: Band
Stationary or portable: Portable
Standard equipment: Stainless-steel bed sleeves, 12-volt electric power feed system, hydraulic roller toeboards, hydraulic steel claw log turner, patented cantilever head, roller/block blade guides, fully supported swing arms
Cutting capacity: 36 in. diameter x 21 ft. long (up to 45 ft. with bed extension); production rates 250 - 400 BF/hr.
Weight: 3,900 lbs. (w/optional trailer)
Length and width of mill: 26 ft., 2 in. length; 6 ft., 6 in. width

Frame and Carriage

Size and construction of frame: Welded steel tubing (4 x 8-in. main torque tube)
Tracks are made of: 1-in.-diameter induction-hardened precision steel rod
Replaceable tracks? No
Wheels are made of: n/a
Carriage bearings: 7 roller bearings w/steel housing
Carriage support system: Dual-rail mast

Sawing Head

Wheel diameter: 19 in.
Wheel face: Loose belt
Wheel construction: Cast
Wheel speed (RPM): Unpublished
Saw speed (SFPM): Unpublished
Recommended saw blade: .045 in. x 1-1/4-in. wide (other blades available, depending upon species/type of logs sawed)

Guides and Strain System

Type of guides: Roller block blade guides
Strain system used: Hydraulic blade tensioner
Wheel tilting system: Adjustable horizontal and vertical

Networks

Method of networks: Manual scale/optional Accuset
Set display: LCD (optional Accuset)
Automatic sets: 16 user-defined presets

Four cross-supports (bed rails), made from 2 x 4-inch tubular steel, are covered with stainless-steel replaceable wear surfaces. These are all adjustable in height using a screw mechanism, which aids in the alignment of the sawhead parallel to the bed. The mill comes with adjustable jacks for easy leveling during set up. It takes 10 to 15 minutes to put the mill in position and level it up –

Power Plant

Standard/as reviewed: 33 hp Kubota water-cooled diesel
Options: 25 hp/36 hp gas engines

Other

Factory alignment: Full saw head/bed/guides alignment
Log turner: Hydraulic claw turner
Log loader: Hydraulic loading arms
Log dogs: 2-plane hydraulic clamp
Carriage feed system type: Solid-state power feed
Towing package: Optional trailer package w/adjustable outriggers, axle, rim, tires, fenders, wiring harness, running/turning/stop lights, trailer hitch w/ball coupler assembly, safety chains

Guarantee

15-day money back; 2/5-year limited warranty

Options Available

Trailer, Acuset networks, blade lube system, laser sight, debarker, bed extensions (6-, 12- and 24-ft.); also offers an optional operator seat to ride with the head, or sawyers can opt for a Command Control station.

Base Price

\$24,707

Manufacturer's Comments

The LT40 Hydraulic sawmill offers unmatched convenience for its size. Hydraulic log handling features, and computerized cutting controls offer maximum performance and ease of operation. Stainless-steel bed sleeves protect the saw bed from wear and prevent the staining of hardwoods, while the roller block blade guides improve accuracy, blade stability and help to increase blade sharp life. Wood-Mizer's patented cantilever head ensures fast setup, easy leveling, and accurate cuts.

Wood-Mizer

8180 W. 10th Street
 Indianapolis, IN 46214
 800/553-0182
 www.woodmizer.com

from the time Spruill arrives on site to when he begins sawing, he says.

Wood-Mizer uses 19-inch cast iron wheels on the LT40-HD33 Diesel. The wheel face is similar to a pulley, and a rubber v-belt slightly larger than the diameter of the wheel is fitted over the wheel. The outside face of the v-belt fitted to the wheel thus becomes the surface, or wheel face, that the bandsaw rides on. The 57-

SAWMILL REVIEW

inch belt fits the wheels with some slop. The belt absorbs shock when a sliver gets caught between the blade and wheel, and tends to be self-cleaning because of the loose fit.

The LT40-HD33 Diesel's hydraulic log loader, says Spruill, has plenty of power (he has loaded large pine logs that contained 52 2 x 4s onto the mill without any trouble). He uses both the log turner and the log dog to turn the log. The log dog is constructed using two hydraulic cylinders in different axes so that there are two motions – in and out to hold the log, and up and down. The log is clamped against two stops, which can be hydraulically adjusted for height (the mill also comes with two additional manually adjusted stops). The hydraulically adjusted stops come equipped with rollers on top, to assist during log turning. The up-and-down motion on the log dog is so that you can steady larger logs (dogging in the up position), hold a bowed cant flat on the bed (clamp

the piece and then bring the clamp down), hold the last remaining board without sawing off the top of the clamp, and turn small cants (using the up motion of the log dog).

The log-tapering devices consist of two rolls powered by hydraulic cylinders, located on either end of the frame bed. Many of the cypress logs that Craft had provided were



The log-tapering devices consist of two rolls powered by hydraulic cylinders, located on either end of the frame bed.

short in order to minimize the effect of sweep. In order to clamp (or dog) the log, it had to be centered on the frame; to accomplish this, Spruill raised the rollers so he could easily push the log lengthwise to center it.

During Spruill's sawing demo, some logs did spring when cut; the log would move off of the frame after the face was sawn. The result: varying thickness along the length of the sawn board. This problem is not inherent to the mill's design, but rather due to the inherent growth stress in the logs Spruill was tackling. To minimize this, sawyers can take these actions: Immediately saw logs after they're cut; turn the log more often, balancing the stress as the log's cut; take a thin shim so you don't produce a piece of miscut lumber; and use three or more log clamps to restrain the log from springing in the cut. For the small operator, the first three actions are the most applicable. Log spring generates a huge amount of force; logs will even spring on con-

ventional carriages when faces are sawed too deeply.

The mill is equipped with two 2-inch, hardened roller guides. The outside of the guide has a ceramic wear surface. The outboard guide is remotely adjustable using an electric motor in order to stabilize the saw during the cut. Note: One warning Spruill had was to make sure that the movable guide was far enough out so it does not hit the log during the cut.

BLADE TALK

As Spruill worked, I jotted down these notes regarding blades and related topics:

- Tensioning: The tensioning device on the mill is a simple closed-loop hydraulic system. Spruill believes that, to obtain the best sawing accuracy, he should use the maximum amount of tension the unit can generate. On larger bandmills, the rule of thumb is to use the minimum amount of strain that produces an accurate cut (as you increase strain, it places more stress on the blade, increasing the chance of cracks forming in the gullets and requiring increased blade maintenance).

- Blade lubrication: The mill is equipped with a blade-lubrication system. With cypress, Spruill does not use a saw lubricant or coolant. The interior of the cypress logs he was cutting that morning were still wet, and wood residue was not building up on the saw blade. Water is a good coolant choice because there are no adverse environmental impacts; another option is vegetable oil.

- Board rule: To adjust the depth of cut, the mill is equipped with a board rule. One complaint Spruill has with this is that, since he's getting up in age, it's more difficult for him to see the board rule and make accurate adjustments. He recommends that the manufacturer include a magnifying viewer with the board rule. Another suggestion for those with declining eyesight, myself included: electronic networks, which is available as an option on this mill.

- Sharpening: Spruill sends his



"Each log is like a Christmas present," says Spruill. "You never know what you really have until you open it up."

blades to Wood-Mizer to be set and sharpened. For the low price of this service, he reasons that he's getting a bargain. I don't think he really enjoys spending the time in the shop sharpening blades. From his viewpoint, he's getting a saw that is more accurately set and sharper than when he performs the task himself.

OFF THE GREEN

Jack Spruill loves wood – he wants to get the most out of a precious resource that he sees declining. He's learned that each log or piece of wood is different. He studies each log and cut, deciding which sawing pattern to use to bring out the most beauty from the wood, and maximizing the log's usable material. "Each log is like a Christmas present," he says, "you never know what you really have until you open it up."

His guiding philosophy when dealing with customers is to cut the log into lumber as the customer wants. It's their wood, and he's there to produce what they want. He's not there to do it the fastest or easiest way, but the way that produces the best results for the customer.

He has two major concerns for the future. The first is the decline in the

availability of some species, such as Atlantic white cedar. He has a love for this species, including its unique aroma, durability and limited geographic range. When he purchased his initial mill, he produced a great deal of Atlantic white cedar lumber; today, he does not run across stands of Atlantic white cedar as often.

His second concern is that he sees a decline in the number of people that want to fix up their property with local materials. When he started out, many of his clients were farmers who wanted to repair farm buildings or build fences. He sees this kind of business rapidly declining, a decline he believes is largely due to generational differences – today's generation would rather purchase buildings from contractors than construct them from their own lumber.

Neither of these factors, however, is going to prevent him from doing what he cherishes – working with wood. As long as he still gets a thrill from sawing, it's unlikely you'll see this "Tiger" on the golf course – but rather running his mill, so that he can be the best he can be. ■

Joe Denig is a Wood Products Extension Specialist at North Carolina State University.

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Description	Price (CAN\$)
13 HP Honda, Welded base, 21' long	5 695.00 \$
20 HP Honda, Welded base, 21' long, with conveyor	7 495.00 \$
Options Assemble the base yourself	
11 HP Honda, Bolted base, 16' long	4 695.00 \$
13 HP Honda, Bolted base, 21' long	4 895.00 \$
Equipments	
Trailer	750.00 \$
Loading ramp	275.00 \$
Extension 4'	75.00 \$
1 Package 1< (10 blades) 156"	275.00 \$
1 Package 1< (10 blades) 162"	285.00 \$
Sharpening kit, semi automatic	1 295.00 \$
Edger 13 HP Honda	4 895.00 \$
Delivery: 10 days	
Price as of september 2001, taxes extra, f.o.b. Quibec city	

Gilbert Mobile Band Sawmill is the result of 50 years experience gained from working with wood as door & window manufacturer and cabinet maker, working with metals as machinist and mechanic, and more recently selling and promoting portable sawmills in the province of Quibec.

Gilbert Mobile Band Sawmill has been designed and crafted in close cooperation with saw mills operators to deliver a machine which is reliable, rugged and user friendly.

Gilbert Mobile Band Sawmill is assembled in Quibec City from parts manufactured by a few selected shops whose experiences have also been incorporated into the product in order to deliver a great quality mobile sawmill. Selling is done directly from the manufacturer in order to keep prices bottom low.

As of the present date, over 100 units have been sold all over the Province of Quibec, in Ontario and in the United States. Current price list appears on the table above. I hope it will give you the opportunity to make the best choice.

Gilbert Mobile Band Sawmills are sold ready to run right at delivery. The product is guaranted against manufacturing defect for one year. The guaranty does not cover the blades nor the belts.



Sawmills/Personal

SAWMILLS BLADES EDGER KILNS SECONDARY PROCESSING CUSTOMER SUPPORT PERSONAL BEST

LT15

Compact, Accurate, and Affordable

Features
Specifications
Options
Video
Mill Comparisons
Financing
Profitability Book

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The LT15 is the smallest and most affordable sawmill Wood-Mizer has to offer, and it's regarded as the market leader for personal mills. The LT15 is built with the same quality steel used on our professional and industrial mills, with the same attention to detail.

You can use the LT15 to cut hardwoods for cabinets, furniture, fencing materials, or produce lumber for home improvement projects. Some LT15 owners have even built small barns, log cabins, and similar projects.

There are just a few simple steps to turning logs into lumber with the help of the LT15. A simple hand crank drives the blade through the log. Measuring tools help you accurately determine board thickness. Wood-Mizer's thin-kerf technology means you're getting more wood (and less sawdust) out of the log than with conventional saws.

The LT15 comes equipped with two bed sections, but you can get as many extensions as you need, so there really is no limit to the length of logs you cut!

Getting the LT15 home is simple. Wood-Mizer can ship it to you on a single pallet. Or you can come by Wood-Mizer, load it into the bed of a standard-sized pickup truck and take it home. There's also an optional trailer package so you can hitch the mill to the back of your vehicle and drive it home or to job sites.

Setup is fast and easy, too. Each bed section has four integral levelers, so you'll get it level quickly. The LT15 features a semi-cantilevered head, which lowers both cost and weight. This patented Wood-Mizer design keeps the cuts accurate, even on uneven terrain. When it comes to log loading, an optional pro package features loading ramps, a log taper wedge, and cant hook.

The LT15 is the sawmill a hobbyist, craftsman or all-around handyman needs.

Sawmills/Personal

SAWMILLS **BLADES** **EDGER** **KILNS** **SECONDARY PROCESSING** **CUSTOMER SUPPORT** **PERSONAL BEST**

LT15 • SPECIFICATIONS

Dimensions (with trailer package)

Length	13'8" (4.2m)
Width	6'3" (1.9m)
Height	6'3" (1.9m)
Weight	1374 lb (618kg)

Maximum Cutting Capacities

Log Lengths	11' (3.5m) or No Limit
Log Diameter	28" (71cm)
Production Rates	75-125 bdf/hr

Power Selections

Standard	13hp (9.7kW) Gasoline
Optional	15hp (11.2kW) Gasoline 10hp (7.5kW) Electric

Blades	.042" (1mm) thick x 1.25" (32mm) wide
Feed System	Hand Crank
Up/Down	Hand Crank
Trailer Optional	Optional
Bed Extensions	Unlimited 6'8" Bed Sections
Stainless Bed Sleeves	No
Log Turner	No
Toe Boards	Optional
Board Return	No
Remote Operator Station	No
Simple Setworks	No
Accuset	No
Manual Winch	No
Debarker	No

LT15
Features
Options
Video
Mill Comparisons
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LT27

A Cut Above the Ordinary...

Features
Specifications
Options
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Cantilevered Head
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The LT27 personal sawmill offers increased productivity and additional log handling features compared to the [LT15](#). It's an ideal choice for the sawyer in transition from woodworking as a hobby, to woodworking as a business.

Quality construction is one of the hallmarks of the LT27. The main rails are induction hardened, precision steel rods welded to the bottom of the torque tube of the main frame. That enables Wood-Mizer's cantilevered head to do its work—minimizing setup time and maximizing accuracy and productivity. Stainless steel bed rails protect the saw bed from wear and also prevent staining of hardwoods.

The optional manual winch allows a single operator to load logs weighing several thousand pounds onto the bed and is used in conjunction with the manual log turner to rotate logs. It all turns almost impossible work into something certainly doable.

One unique feature sets the LT27 apart from other personal, portable bandmills—this mill uses the same blade guides used on our professional mills. This means consistently true and accurate cuts, greater blade stability, less blade deflection, and longer blade life.

The LT27 is easy to hitch to a truck and drive home, thanks to an optional trailer package.

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Sawmills/Personal

SAWMILLS **BLADES** **EDGER** **KILNS** **SECONDARY PROCESSING** **CUSTOMER SUPPORT** **PERSONAL BEST**

LT27 • SPECIFICATIONS

LT27
Features
Options
Video
Cantilevered Head
Mill Comparisons
Financing
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Dimensions (with trailer package)

Length	26'2" (8m)
Width	6'6" (2m)
Height	7'8" (2.4m)
Weight	2573 lb (1158kg)

Maximum Cutting Capacities

Log Lengths	21' (6.4m) and up to w/ BX*
Log Diameter	32" (81cm)
Production Rates	100-200 bdft/hr

Power Selections

Standard	15hp (11.2kW) Gasoline
Optional	20hp (15kW) Gasoline

Blades	.042" (1mm) thick x 1.25" (32mm) wide
Feed System	Hand Crank
Up/Down	Hand Crank
Trailer Optional	Optional
Bed Extensions	No
Stainless Bed Sleeves	Optional
Log Turner	Manual (Optional)
Toe Boards	Manual (Optional)
Board Return	No
Remote Operator Station	No
Simple Setworks	No
Accuset	No
Manual Winch	Optional
Debarker	No

* Available in shorter length as LT25

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Sawmill/Professional

SAWMILLS BLADES EDGER KILNS SECONDARY PROCESSING CUSTOMER SUPPORT PERSONAL BEST

LT40

Dependable, Accurate, and Flexible

Features
Specifications
Options
Video
Cantilevered Head
Mill Comparisons
Financing
Profitability Book

Why Wood-Mizer?
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The Wood-Mizer LT40 is the most powerful of the manual mills. It (and its smaller sibling the [LT30](#)) formed the foundation of Wood-Mizer. It's the most popular mill Wood-Mizer has ever made. And the reasons for its popularity are fairly obvious.

It's extremely operator friendly—it even allows the sawyer to walk or ride along with the head, thanks to the optional [operator seat](#).

All cutting controls are located in one centralized console, so you can control head movement and blade guide arm in-out, and also program the board thickness. All this from one convenient station.

The manual winch makes it possible for one person to heave the heaviest logs onto the sawmill bed with minimal effort. The manual log turner lifts and turns logs or cants with its steel claw.

The mill also comes with Wood-Mizer's [cantilevered head](#), which minimizes setup time, but maximizes accuracy and productivity.

The optional [Accuset Setworks](#) allows you to program board thickness from the first cut to the last, calculating everything including kerf loss.

An optional [debarker](#) removes mud, rocks, and bark just before the cut, extending the life of your [blade](#).

You may also select the optional trailer package for the LT40, for easy and smooth transportation to job sites.

Sawmills/Professional

SAWMILLS **BLADES** **EDGER** **KILNS** **SECONDARY PROCESSING** **CUSTOMER SUPPORT** **PERSONAL BEST**

LT40 • SPECIFICATIONS

LT40
Features
Options
Video
Cantilevered Head
Mill Comparisons
Financing
Profitability Book

Dimensions (with trailer package)

Length	26'2" (8m)
Width	6'6" (2m)
Height	7'8" (2.4m)
Weight	3221 lb (1449kg)

Maximum Cutting Capacities

Log Lengths	21' (6.4m) and up to 45' (13m) w/ BX*
Log Diameter	36" (91cm)
Production Rates	150-200 bdf/hr

Power Selections

Standard	25hp (18.6kW) Gasoline
Optional	33hp (24kW) Diesel 36hp (22.3kW) Diesel

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Blades	.045" (1.14mm) or .042" (1mm) thick x 1.25" (32mm) wide
Feed System	12V Electric
Up/Down	12V Electric
Trailer Optional	Optional
Bed Extensions	6', 12', 24' Bed Extensions (Optional)
Stainless Bed Sleeves	Yes
Log Turner	Manual (Optional)
Toe Boards	Manual (Optional)
Board Return	No
Remote Operator Station	No
Simple Setworks	Optional
Accuset	Optional
Manual Winch	Optional
Debarker	Optional

*Available in smaller size as LT30

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LT40 HYDRAULIC

Power at Your Fingertips

Features
Specifications
Options
Video
Cantilevered Head
Mill Comparisons
Financing
Profitability Book

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The LT40 Hydraulic is Wood-Mizer's introductory hydraulic sawmill, and eliminates much of the aches and pains typically associated with manual mills. The LT40HD (and its smaller sibling, the [LT30HD](#)) also offers a variety of features that add flexibility and convenience to your business operation.

The LT40HD offers automatic log loading, turning, and clamping. In other words, production rates just took a huge leap forward!

As you saw, you can walk along with the head or take a ride on the optional [operator seat](#). The [Command Control](#) operator station is available if you want all of your controls (the hydraulics, [Accuset Networks](#), [AutoClutch](#), and [LaserSight](#)) located at the head of the mill.

This mill does its job with little hesitation and plenty of speed. The solid-state power feed unit drives the carriage at up to 125 feet per minute and returns the carriage at 145 feet per minute. A 12-volt electric motor powers the head drive.

The design of the Wood-Mizer mill chassis is much more durable than most twin rail designs. The [cantilevered head](#) makes this mill, and all Wood-Mizer mills, the most portable on the market—without equal, in fact.

But the LT40HD isn't just made to be portable and extremely functional, it's made to be tough. The stout, fully supported swing arms adjust for different log lengths and special bracing improves bed rigidity and strength.

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LT40 HYDRAULIC • SPECIFICATIONS

LT40 Hydraulic
Features
Options
Video
Cantilevered Head
Mill Comparisons
Financing
Profitability Book

Why Wood-Mizer?
Customers/Links
Request a Catalog
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Sales Department

Dimensions (with trailer package)

Length	26'2" (8m)
Width	6'6" (2m)
Height	7'8" (2.4m)
Weight	3486 lb (1561kg)

Maximum Cutting Capacities

Log Lengths	21' (6.4m) and up to 45' (13m) w/ BX*
Log Diameter	36" (91cm)
Production Rates	250-400 bdft/hr

Power Selections

Standard	25hp (18.6kW) Gasoline
Optional	33hp (24kW) Diesel 36hp (22.3kW) Diesel

Blades	.045" (1.14mm) or .042" (1mm) thick x 1.25" (32mm) wide
Feed System	12V Electric
Up/Down	12V Electric
Trailer Optional	Optional
Bed Extensions	6', 12', 24' Bed Extensions (Optional)
Stainless Bed Sleeves	Yes
Log Turner	Hydraulic
Toe Boards	Hydraulic
Board Return	No
Remote Operator Station	Optional
Simple Setworks	Optional
Accuset	Optional
Debarker	Optional

*Available in smaller size as LT30HD

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LT40 SUPER HYDRAULIC

Higher Productivity with all the Extras

[Features](#)

[Specifications](#)

[Options](#)

[Video](#)

[Cantilevered Head](#)

[Mill Comparisons](#)

[Financing](#)

[Profitability Book](#)

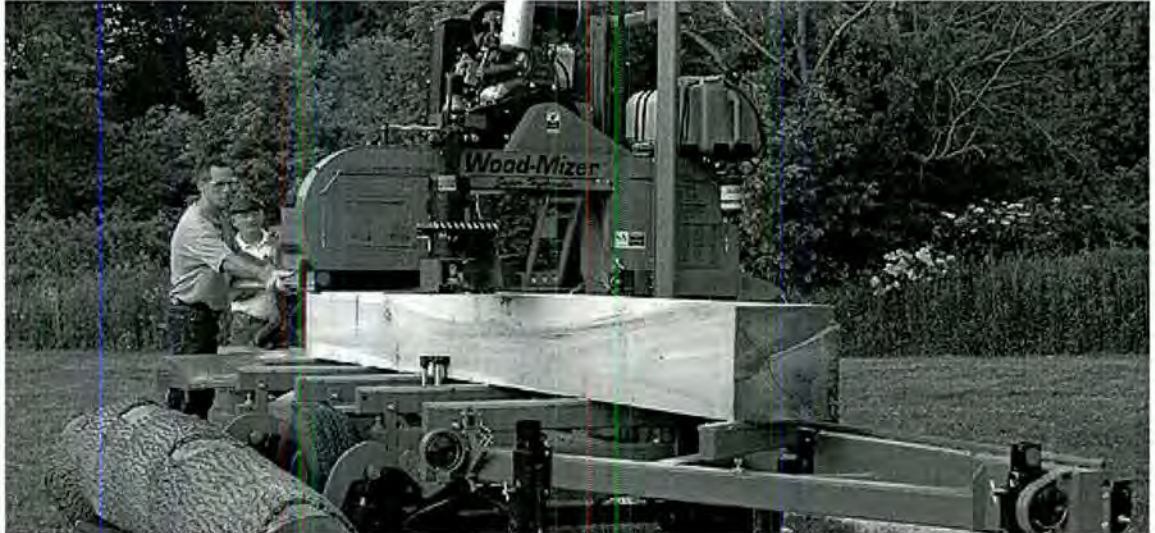
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[Customers/Links](#)

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The LT40 Super Hydraulic is one of Wood-Mizer's most impressive and popular sawmills, largely due to its convenience-enhancing features, super-fast hydraulics, and increased power.

This sawmill (and its smaller sibling the LT30 Super Hydraulic), with its speed and high production rate, is set to take your business to the next level.

The 12-volt, dual pump, hydraulic power pack produces twice the power of the LT40HD sawmill—loading, leveling, clamping, and turning logs up to 40% faster. Imagine what that could do for your operation.

An automatic board-return system, with its heavy-duty and reliable board-grabbing fingers, makes off-bearing practically a breeze.

The optional Command Control station puts the sawyer in the center of the action. This console sits at the front of the mill and contains all cutting controls, including the hydraulic log handling. Accuset Setworks and AutoClutch are also included in Command Control. Perhaps the biggest benefit to Command Control is that you, the operator, stay away from all the sawdust and exhaust.

The high-output electric motors move the head up and down and drive the carriage at any speed up to 150 feet per minute, and return the carriage at 200 feet per minute.

You have your choice of several other convenient options on the LT40 Super, such as the trailer package, debarker, the operator seat, and LaserSight.



[Spec sheet](#)
(pdf 88k)

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LT40 SUPER HYDRAULIC • SPECIFICATIONS

LT40 Super
Features
Options
Video
Cantilevered Head
Mill Comparisons
Financing
Profitability Book

Dimensions (with trailer package)

Length	26'2" (8m)
Width	6'6" (2m)
Height	7'8" (2.4m)
Weight	3916 lb (1762kg)

Maximum Cutting Capacities

Log Lengths	21' (6.4m) and up to 45' (13m) w/ BX*
Log Diameter	36" (91cm)
Production Rates	375-500 bdft/hr

Power Selections

Standard	25hp (18.6kW) Electric
Optional	36hp (22.3kW) Gasoline 42hp (31kW) Diesel

Blades	.045" (1.14mm) or .042" (1mm) thick x 1.25" (32mm) wide
Feed System	High-Output 12V Electric
Up/Down	High-Output 12V Electric
Trailer Optional	Optional
Bed Extensions	6', 12', 24' Bed Extensions (Optional)
Stainless Bed Sleeves	Yes
Log Turner	Heavy Duty (Hydraulic)
Toe Boards	Roller (Hydraulic)
Board Return	Yes
Remote Operator Station	Optional
Simple Setworks	Optional
Accuset	Optional
Manual Winch	No
Debarker	Optional

*Available in smaller size as LT30 Super

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Sawmills/Professional

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LT70

The Highest-Performing Portable Sawmill

Features
Specifications
Options
Video
Cantilevered Head
Mill Comparisons
Financing
Profitability Book

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The LT70 is the most flexible and functional of all Wood-Mizer portable mills, and it's easy to see why.

One reason is the remote operator station, which places complete control of all log handling and cutting functions in one easy-to-understand console. It allows you, the sawyer, to move the station to various positions around the mill, giving you the best visual reference of the log or cant. It's ideal for judging the grade of lumber.



[Spec sheet](#) (pdf)

104k

The hydraulic chain turner moves logs and cants twice as fast as a standard steel claw turner, and works just as well in either direction.

The entire cutting process moves more quickly with the help of the automatic board-return system. It expedites off-bearing, allowing a faster turnaround time for the next cut. As an added convenience, you can adjust the width of the board-grabbing fingers for different sized-boards.

The blades are tensioned using air bags — so you'll have improved blade tension consistency and there are no irritating oil leaks. Once the blades are tensioned, you engage the blade through front panel switches, instead of a separate manual lever.

The single-column mast lets the blade cover swing open, so it's much easier to change blades. It's also easier to maintain and align. And that ease of use is part of the benefit of Wood-Mizer's cantilevered head. It also makes setup quick and easy.

Sawyers who would prefer to travel with the cutting head can do so on an optional operator seat. Standard on the LT70 is Accuset Networks. This computer lets you set precise board thickness, and automatically takes everything into consideration — including kerf loss. You can even cut patterns through Accuset.

The LT70 also comes standard with LubeMizer — an important part of keeping blades clean and cutting smooth. The mill's special two-plane hydraulic log-clamping system simplifies the sawing of stressed logs.

The LT70 is also available in shorter length as the LT60, or in a longer length as the LT80.

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LT70 • SPECIFICATIONS

LT70
Features
Options
Video
Cantilevered Head
Mill Comparisons
Financing
Profitability Book

Why Wood-Mizer?
Customers/Links
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Sales Department

Dimensions (with trailer package)

Length	26'2" (8m)
Width	6'6" (2m)
Height	7'8" (2.4m)
Weight	4540 lb (2059kg)

Maximum Cutting Capacities

Log Lengths	20'2" (6.1m) and up to 45' (13m) w/ BX*
Log Diameter	36" (91cm)
Production Rates	400-600 bdft/hr

Power Selections

Standard	25hp (18.6kW) Electric
Optional	42hp (31kW) Diesel

Blades	.045" (1.14mm) or .042" (1mm) thick x 1.25" (32mm) wide
Feed System	High-Output 12V Electric
Up/Down	High-Output 12V Electric
Trailer Optional	Optional
Bed Extensions	6', 12', 24' Bed Extensions (Optional)
Stainless Bed Sleeves	Yes
Log Turner	Chain (Hydraulic)
Toe Boards	Roller (Hydraulic)
Board Return	Yes
Remote Operator Station	Optional
Simple Setworks	No
Accuset	Yes
Manual Winch	No
Debarker	Optional

*Available in smaller size as LT60 and larger size as LT80

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Sawmills/Industrial

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LT300

The best path to primary breakdown

Features
Specifications

A New Dimension in Industrial Sawmills

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LT300 Material Handling System

Wood-Mizer's LT300 material handling system is built to maximize the productivity of the LT300 industrial sawmill. The system contains a log deck, inclined conveyor, and transfer table. Though the system was designed specifically for the LT300, each component can be used with other mills.

These material handling components are built to the highest quality standards to ensure they properly absorb the shock, strain, and stress of heavy log and lumber handling. The individual pieces work seamlessly together to eliminate bottlenecks and move logs and lumber with minimum effort.

The LT300 is the most powerful and productive Wood-Mizer ever. Designed for commercial applications, it's equipped with the largest cutting head and fastest hydraulic handling package in the world-renowned Wood-Mizer sawmill line. When designing the LT300, we set out to create a better alternative to older circle mills and wide bandmills that's more efficient in production and in yield. Wood-Mizer's engineers produced a bandmill that met these goals, but at only a fraction of the cost of other mills!



Sheet
(pdf 1.1mb)

High yield and high-quality lumber is what will drive your profits. The LT300 is, hands down, the fastest, largest, and most productive mill in Wood-Mizer's long history. It can increase profits by decreasing log and labor requirements. The headrig is controlled from a separate operator's station—where the sawyer has the best possible view—by joysticks and a sophisticated yet easy-to-use setworks. From there, the operator controls all log-handling functions, determines board thickness, and controls movement of the cutting head. An air jet sweeps sawdust from the freshly cut surface, providing an unobstructed view of the cutting. The LT300 also has a unique feature—a cruise control system that automatically regulates feed speed to



Inclined Conveyor



Log Deck



Transfer Table

the highest possible rates, resulting in maximum production. The optional LT300 material handling system ([log decks](#), [inclined conveyor](#), and [transfer table](#)) make this mill easy to integrate into any installation, new or existing.

The Wood-Mizer LT300: High Productivity with Superior Safety

Wood-Mizer's LT300 is the key to power, productivity, and profitability.

The LT300 has the ability to produce two million bd.ft. per year of grade lumber (between 800-1,200 board feet per hour). With its [thin-kerf](#), narrow-band blades, it produces up to 40% more lumber than circle saws. The 30HP electric motor can process the biggest logs — at just a fraction of the power needed to operate larger mills. That means significant savings in energy and maintenance costs.

The LT300 is also one of the safest mills on the market. Unlike circle mills, the blade is extensively guarded, and the operator and off-bearers are working away from the cutting head.

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LT300

SPECIFICATIONS

LT300
Features

Overall Dimensions

Length - without control station	24' (7.3m)
Length - bed & control station with 10" in between	29' (8.8m)
Width	9' 8" (2.9m)
Height (ground to mast)	8' 6" (2.6m)
Height (max head position)	9' (2.7m)
Bed height (ground to bed)	31" (79cm)

Weight

Bed & head assembly	5280 lbs (2395Kg)
Control station (with cab & air)	2120 lbs (962Kg)
Control station (without cab)	1040 lbs (472Kg)
Complete mill (head, bed, control station, cab w/air)	7400 lbs (3357Kg)

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Cutting Specs

Length	19' 6" (5.9m)
Length with board removal	18' 10" (5.7m)
Diameter	36" (91cm)
Maximum clamp width	26" (66cm)
Minimum clamp width	2" (5cm)
Maximum throat width (guide to guide)	28" (71cm)
Maximum cant width	25" (64cm)
Maximum cutting depth at 24" (61cm) wide	5" (13cm)
Maximum cutting depth at 22" (56cm) wide	13" (33cm)

Motor

Make	Lincoln
HP rating	30hp (22.4kW)
RPM (no load)	1725

Power Requirements

- 460v/3 phase 100
- amp service
- 50/60Hz cycle

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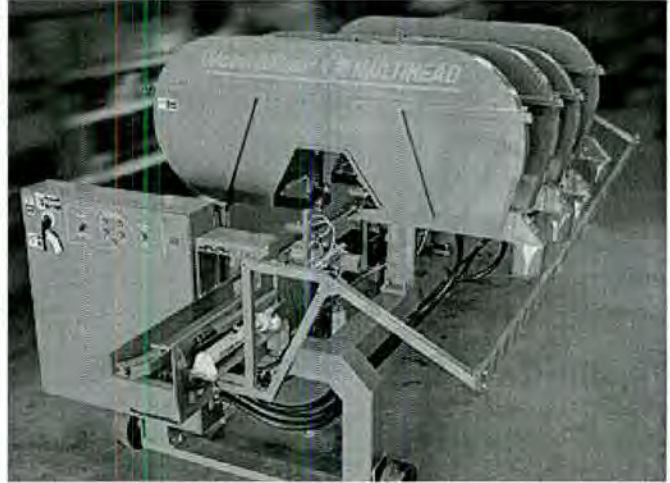
MultiHead Resaw

Industrial Strength Cant Breakdown

Features
Specifications

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Wood-Mizer has created one of the fastest and most economical ways to add value to wood through resawing. The MultiHead horizontal band resaw uses a durable and dependable, steel, slat-bed conveyor to feed material into the saws. The steel conveyor has a much longer life than rubber belt conveyors and helps produce more accurate lumber. If you need to resaw cants, slabs, or even eight-foot-long grade lumber, the Wood-Mizer MultiHead is your best choice.



The MultiHead can saw butt-to-butt up to 100 feet per minute and is ideal for sawing cants into any dimension and manufacturing pallet boards, fencing, and even flooring blanks. The MultiHead can cut your sawing time in half by cutting up to six boards in one pass. It can quickly cut most species of wood, even frozen or kiln-dried. An optional merry-go-round automatically feeds uncut cant portions through the MultiHead.

The MultiHead is designed to be easy to operate and maintain. It handily defeats circle gangs when it comes to reduced labor costs and increased lumber yield. There are hundreds of MultiHeads in operation around the world. Satisfied owners continually vouch for its quality!



Spec

sheet
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BRIGADE FOR SECONDARY AND TERTIARY WOOD PROCESSING

STRATEGY FOR
THE RESOURCE
REGIONS

Québec 

DESCRIPTION

This program is intended to secure a significant portion of the financing for exploratory research and to accompany entrepreneurs in their efforts to identify opportunities for developing projects for secondary and tertiary processing in the resource regions.

ELIGIBILITY CRITERIA

This program applies to citizens or entrepreneurs who do not have the technical ability and financial capacity to conduct the research.

Projects that target creation of less than 50 jobs are eligible.

TYPE OF FINANCING

Assistance is in the form of a subsidy and covers 80% of the costs of the exploratory research.

Ministry of Natural Resources


INFORMATION

Nord-du-Québec
National

Yvon Bouchard (418) 748-2647, poste 235
François Rouleau (418) 627-8644, poste 4119

DEVELOPING FOREST ENVIRONMENT RESOURCES

STRATEGY FOR
THE RESOURCE
REGIONS

Québec 

DESCRIPTION

This program is intended to finance, in conjunction with the community, projects involving silviculture, wildlife, the environment, recreation, or education, in private as well as public forests.

ELIGIBILITY CRITERIA

This program is intended for:

- All individuals, organizations, and Native communities who care about the development of Québec's forests.

The development activities must:

- promote the protection or enhancement of forest environment resources;
- be the subject of a financing agreement between the recipient of the contract or of the forest management agreement and the other players involved (promoters, RCMs, RDCs).

TYPE OF FINANCING

A maximum of 90% of the total costs of a project are eligible.

Ministry of Natural Resources

INFORMATION

Nord-du-Québec
National

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FORESTRY JOB CREATION;

STRATEGY FOR
THE RESOURCE
REGIONS

Québec 

DESCRIPTION

The forestry job creation program is intended to:

- support regional activity by creating jobs in the forest management field;
- develop the new generation of silvicultural workers required to carry out the forest management strategies planned for public and private forests.

This program is managed by REXFOR.

ELIGIBILITY CRITERIA

Component Supporting Regional Economic Activity:

- forest management businesses (forestry cooperatives, common management organizations, private businesses).

Component Supporting In-house Human-resource Development

- training projects are intended for workers with no experience.

TYPE OF FINANCING

Component Supporting In-house Human-resource Development:

- the promoter must bear a minimum of 40% of the total cost of the project.

Ministry of Natural Resources

INFORMATION

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