Health Risk Perception And Hydro-Electric Development In Kuujjuarapik, Québec Final Report©

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1.0 INTRODUCTION

This report describes the results of a study on the perceptions held by Inuit people of Kuujjuarapik Québec about the health risks posed by environmental changes associated with a proposed hydro-electric development close to the community. Our interest in conducting this study, and two parallel studies in other Aboriginal communities, was stimulated by a growing recognition of the importance of incorporating the knowledge and perspective of local populations into development decisions. Further, it is becoming recognized that community level senses of health are variable between cultures and reflect specific lifestyles and history. These too should be given adequate consideration in development initiatives.

This report was conducted as one part of a multi-site project investigating a variety of influences on health risk perception in Aboriginal communities in Canada facing large scale development initiatives. We have situated the data gathered with people in Kuujjuarapik during this study in a political, economic and historical framework which underlines the cultural rationality of health risk perceptions held by the people of Kuujjuarapik. As such, this study addresses a number of key issues in environmental health in northern and Aboriginal communities. These include:

- incorporating community understandings of health into environmental impact assessment of development projects;

- developing ways to foster empowerment of Aboriginal communities to be heard and to effect change in development policies which impact on their communities;

- exploring new techniques for disseminating scientific findings in remote communities where linguistic and cultural differences limit the effectiveness of established forms of risk communication by scientific investigators;

- understanding how culture influences the ways that community level comprehensions of risk are shaped, both in daily activities and with respect to the impacts of development.

Our research draws from a theoretical literature which suggests that public perceptions of risk, while different in many cases from scientific determinations, are both valid and critical to protecting people from environmental illness (Johnson and Covello 1987) and that social and cultural dimensions of risk are understandable within a framework of cultural rationality (Douglas and Wildavsky 1982). Further the incorporation of human health impacts from development has been a neglected component of the EIA process in Northern communities (CEARC 1989). This oversight is beginning to be addressed and we situate this work within that process.

The Kuujjuarapik case study was undertaken in the midst of a hotly contested and politically volatile environmental review of the Great Whale hydro-electric development in Northern Québec. The town of Poste-de-la-Baleine (Great Whale River in English), at the mouth of the Great Whale River, comprises two Aboriginal groups: the Cree and Inuit people. Whapmagoostui is the Cree name for their portion of the town and Kuujjuarapik is the Inuit name for their section. The political representatives of the two communities took different positions toward participation in the formal review process around the project. The Inuit bodies participated throughout the development of the EIA process and the Cree representatives did not. The different stances became part of a well publicized media exploration of development in Northern Québec and the role that Aboriginal communities had to play in this process. In southern Québec the Great Whale project polarized political and social organizations for and

against the development and these issues were incorporated into a larger political rhetoric around the political sovereignty of the province and its territorial integrity. It was in this context that we undertook field work in Kuujjuarapik to examine community perceptions of health risk.

Kuujjuarapik/Whapmagoostui is home to over 1000 Inuit and Cree people. The proximity of the community to some of the largest elements of the proposed development made the people there and their lifestyle a focus of considerable attention worldwide. This exposure provided some opportunity for the people there to express their concerns about environmental change widely and to press their interests politically. Exposure did not come without a price however. The backlash from some parties was considerable and frequently unflattering. This public discussion of life in Aboriginal communities facing development driven change circled around a basic question regarding the appropriateness of Aboriginal lifestyles in the world today. Is the Aboriginal lifestyle of hunting, fishing and trapping anachronistic in the modern world, folkloric and a hindrance to social and economic development, as some portrayed it, or is it the source from which people draw meaning in their lives – a model of human - environment harmony to be adopted globally if we are to survive, as others suggested? Through this debate some of the privacy which people had enjoyed in their homes was lost and the problems which the community faced were discussed widely in the press. Privacy was also lost through the conduct of numerous studies related to the EIA process including this one.

Within this frenzy of attention and activity was the availability in the community of considerable information about risks and dangers associated with hydro-electric development. This information came from a variety of sources, reflected a variety of interests and was frequently contradictory, predictive or difficult to comprehend. Part of our objectives were to examine how people came to achieve their understanding of danger in the environment and in what way was that influenced by local ways of experiencing health? Ultimately this report addresses the political and cultural context of knowledge about risk.

METHODS

The methods used consisted of open ended interviews, participant observation and the administration of a survey in the community. Additionally, we draw on a number of published sources for information about the impressions people have in the community about industrial development in general and the specific impacts of the Great Whale project. One of us (Fletcher) had conducted a number of interviews prior to this study on related issues which were placed in the public domain (Roy & Fletcher 1992). We make a number of references to this source as a way to avoid re-interviewing the same people for the same impressions. Community fatigue with research was quite evident during the fieldwork and we tried not to exacerbate those feelings with our study. The community council of Kuujjuarapik was contacted at the beginning of the research process and informed of the objectives of this study and how it would be undertaken. On arrival in the community we met with the Mayor and council members to finalize community acceptance of the study. The Mayor subsequently informed the community via local FM radio of our intentions and the council's support for the project.

Prior to the fieldwork the surveys were reviewed and corrected for cultural relevance. The survey was translated from English to Inuktitut by an individual with considerable experienced in health translation and service delivery. A back translation was conducted by a second interpreter. Questions were revised based on this process. Dialectical differences between the original translator and research assistants in Kuujjuarapik were incorporated manually into each survey.

The survey was administered to 74 adults in Kuujjuarapik. Each survey took between one and three hours to complete and most were conducted in Inuktitut with the help of a research assistant. Respondents were identified by a "snowball" approach and efforts were made to

have the sample representative of the age structure of the community; 62% of respondents were between the ages of 18 and 39 years, 38% were 40 years or older. Thirty eight of the respondents were women and 36 were men. The sample size consists of one third of the available adult population of Kuujjuarapik at the time of the study.

SOCIO-POLITICAL CONTEXT OF THE GREAT WHALE PROJECT EIA

The Great Whale environmental review process pitted a variety of organizations, the Provincial, Federal and local governments, and proponents and opponents of the project in a prolonged debate over the suitability of hydro-electric development in general and, more specifically, the place of indigenous peoples rights within the process of industrialization. At the national level, the discourse around the development of the Great Whale River Basin took place in a political context which encompassed the status of the relationship between the Provincial and Federal governments in light of failed constitutional renewal and the historic equation of hydro-electric development with Québec nationalism and societal transformation in the post-quiet revolution era. Another critical factor in the Provincial political climate around the Great Whale project was the hardening of public attitudes towards Aboriginal peoples in the wake of the Oka crisis.

In the community approaches to the environmental impact assessment process diverged on ethnic lines. The Cree had taken a resolute stance of resistance to the project. Their position were clear; The project was not acceptable and they would not participate in studies towards it. The Inuit political bodies had elected to cooperate in the process with an eye towards maximizing economic benefits should the project be approved. While this suggests a division between the Cree and Inuit of Poste-de-la-Baleine it should be remembered that people have coexisted here for a long time and daily life continued despite the political machinations. Additionally, Inuit of Kuujjuarapik were not “for” the project per se, their political representatives were participating in the process. In many instances during conversations in the community the Cree position was remarked on as being more representative of the position of the Kuujjuarapik Inuit. No one encountered during the course of this study wanted new hydro dams built near the community. Some were resigned to the inevitability of development, seeing the Aboriginal populations as powerless to stop the government, and others saw the community of Kuujjuarapik as a pawn in the march towards self-government supported by regional organizations located in other communities.

The proximity of the Poste-de-la-Baleine to a major generating station and reservoir of the project, and its location within the traditional hunting territories of both the Cree and the Inuit, provoked considerable debate around the meaning of these changes within the community and outside of it. This discourse demonstrated the different historical, philosophical and political perspectives held by Aboriginal peoples in Kuujjuarapik and southern Canadians about risks and benefits of development. This climate provided a stimulating environment in which to examine both the construction of risk and the dissemination of information about environmental change at the local level.

The Great Whale hydro-electric project design called for the diversion of two major rivers flowing into Hudson Bay (the Great and Little Whale Rivers) to service three generating stations. This would entail the construction of a series of dams and retaining walls to create reservoirs stretching from near the mouth of the Great Whale River inland some 350 kilometers to Lac Bienville. The project would require an infrastructure of roads, including one connecting the town to the rest of the province for the first time. Additionally, airports, hundreds of kilometers of transmission line corridor, several temporary construction camps and two new permanent worker villages would need to be built. This development posed a monumental change to the natural condition of the rivers and lands surrounding them and engaged a lengthy debate about the effects of environmental change on the ecological landscape. The

effort to estimate of impacts also encompassed the human population and the effects that environmental change would engender in them. Thus the debate focused on the positive and negative changes to the local and global environments which could result from the project, and incorporated the relationship between the Aboriginal population and the local environment they draw their livelihood from into this discourse. Risks to the Aboriginal community were considered in a unique light and of a different nature than those to non-natives and went beyond the economic and biophysical changes to encompass the less tangible realm of environmental ethos of culture. In their summary volume of the EIA Hydro-Québec posed the risk benefit equation in explicitly tradition versus modern terms.

> *In the context of a rapid and ongoing succession of social changes experienced by the Native people, the Grande-Baleine complex and road system would bring about further change. The complex and road system are perceived by the Crees and Inuit in the study area as elements likely to undermine the foundations of their mode of subsistence and to contaminate all aspects of their environment. They believe these factors would not be compatible with their traditional values and way of life.*
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> *It has been shown, however, that negative impacts could be mitigated with appropriate measures and that the project would offer a number of attractive benefits, particularly in terms of economic spinoffs and regional development. (Hydro-Québec 1993: 264)*

As we can see here the tradition - modern playoff was a key element of the discourse around the risks of Hydro development and one which found considerable currency within the community itself.

The investigation of impacts on the human population explicitly linked the lifestyle of the Aboriginal people with the effects on the natural environment. Here were people who have drawn their livelihood in whole or part from the land for millennia. What were the effects of environmental change going to be on the people who lived in such a way? How could these effects be measured, understood and expressed? Was it possible to estimate the changes to the physical, cultural and social health of the people living closest to the project? And, what actions could be taken to mitigate or compensate for those changes? The debate around the scope of these changes itself was subject to dispute and served to draw the people of Kuujjuarapik/Whapmagoostui into a larger sphere of contestation of Westernization, industrialization, nationalism, environmentalism, rights and law.

ORGANIZATION OF THE REPORT

This report is divided into 4 sections. The first section presents of the objectives, methods and context of the research in Kuujjuarapik. Section 2 presents a historical, social and political overview of the Great Whale hydro-electric project. The objective in this section is to situate the localized impacts of the project in a larger discourse around development and risk in southern Canada and to place the development of hydro-electric power in the Province of Québec in a social and political context.

Section 3 contains a brief description of the history of Kuujjuarapik, a description of the development of Inuit political and governmental powers and, a presentation of the community and elements of contemporary Inuit lifestyle. In this section we show how the historical, political and local spheres contribute to a community based comprehension of environmental health risk perception.

In section 4 we present an analysis of some of the data gathered in the survey with regards to perceptions of risk in land use activities under normal and changed conditions. This is contrasted with risk associated with everyday activities and with common medical

procedures. The objective here is to understand the diversity of risk perceptions within the community and to develop a conceptual framework for understanding how risk is interpreted by people in Kuujjuarapik. Also in this section we explore the variety of ways in which information is made available to the community and how it is incorporated into the understanding about risk that people make. The final section presents the conclusions drawn from this research.

2.0 OVERVIEW OF THE GREAT WHALE PROJECT

We begin with a description of the historical significance of hydro-electric development in Québec. This is followed by a review of the Provincial and national political context of the Great Whale project, including a review of the EIA process and organizations involved. Also included is this section is a description of the principle modifications to the biophysical and social landscape posed by the project.

SOCIO-POLITICAL CONTEXT OF HYDRO-ELECTRIC DEVELOPMENT IN QUÉBEC

The history of hydro power in Québec is intricately linked with the modernization of Québec society and the development of a distinct national political agenda. The Province of Québec emerged from the second world war as an underdeveloped region of the country scarred by the conscription battle and politicized by the wartime imprisonment of populist Montreal mayor Camillon Houde. The divisions between the secular urban population and the religious dominated traditional rural sectors of society were becoming more marked. While there was clearly a development of the industrial sector in the province this was almost exclusively controlled by a small number of non-francophone families. Rural populations were primarily served by Church controlled social welfare, health and educational institutions. As a result the Provincial government was relatively powerless to direct policy towards either the rural or urban milieus. In particular the potential for the Province to plan coherent economic development was limited by the control that banks in English Canada had over capital, a source of frustration for an emerging French speaking political class.

In 1944 the Liberal Party purchased Montreal, Light and Power to create Hydro-Québec, the first state run energy industry in the province. By 1960, MLP and three other companies produced 90% of the power in the province and together they saw the need to develop additional capacity. Both the province and labour organizations saw the political advantage in nationalizing hydro-electricity. The province would extend its control over primary resources and be able to break the bank monopoly by raising capital through bond issues. The French and English business communities were opposed to nationalization as ideologically repugnant. Despite the early changes in Hydro-Québec, it was not until the emergence from the quiet revolution period that the Provincial government began to seriously explore the concentration of the energy sector and the promotion of industrial development in the North. René Levesque, Liberal Party minister of natural resources in the late 1960s, initiated the nationalization of hydro-electric companies. This was motivated by a desire to transform the Québec economy from one still dominated by primary resource extraction and agriculture to modern industrial society. Hydro-electricity was seen as the key to luring large industry to the province. Indeed, aluminum companies had already tapped into the hydro potential of the province running their own hydro generating plants to service the plants.

In the 1970s the development of the hydro-electric potential of the province became intimately associated with the personality and political mission of the late premier Robert Bourassa. Since shortly after the FLQ crisis in 1971, when he first announced the Hydro electric development program of the province, Bourassa remained unwavering in his vision of hydro as the economic engine of the province. The linkage between social peace, economic progress and hydro-electricity were clearly established in the two books he published: the first *James Bay* (1973) is a political and economic manifesto designed to bring Québec out of the turbulence of the 1960s into a productive future, free of it's historical subjugation by church and government. The second, *Power From the North* (1985) is dedicated to the youth of Québec and is a more measured and better documented book about the economic necessity of Hydro-electric development. It has an internationalist tone in which boundaries between Québec, Canada and the US are presented as artificial in the global economy. The book also presents the ultimate development vision of Bourassa; the transformation of James Bay itself into a freshwater reservoir, to be pumped south and sold to the US. Clearly, Bourassa's vision was to access the enormous resource potential of the North for the direct benefit of the majority population.

In 1972 plans were drawn and construction contracts were tendered to begin the development of the La Grande River basin. The La Grande flows through a large swath of central Québec into James Bay. The hydrological basin of this river system was entirely within the territory occupied by the James Bay Cree and a small number of Inuit people living on the coast. They had not been consulted prior to the initial development and, once apprised of the repercussions to the land base, began legal manoeuvers to resist the development. Among other tactics the Cree and Inuit requested and received a court injunction on Nov. 15, 1973 stopping construction. The injunction was quickly suspended and ultimately overturned but caused significant concern in the province and led to the beginnings of negotiations leading to the James Bay and Northern Québec Agreement (JBNQA). These negotiations involved Federal, Provincial and Aboriginal political bodies because of the historical association of indigenous populations with the Federal government. Additionally, as the Crees and the Inuit had never ceded their ancestral rights to the territory, the legitimacy of the Province in developing the La Grande River watershed was brought into question. After two years of negotiations the JBNQA was signed on November 11, 1975.

The provisions in the JBNQA define the management of the northern portion of Québec territory by instituting two regional governments (one each in Cree and Inuit territories) with powers over health and social services, justice, education, police, the environment, hunting, trapping, fishing, economic development and administration. In return for the extinguishment of Aboriginal rights to the territory, a land regime established three principle categories of land over which the Inuit and Cree have varying degrees of exclusive rights. On Category 1 lands the Aboriginal population have exclusive exploitation rights, semi-exclusive rights in Category 2 lands and the same rights as other Quebeckers over Category 3 lands. The Provincial government formally acquired the jurisdiction over the native populations in this portion of the province and exercises jurisdiction over the territory of Québec as defined by the 1912 border extension (which gave Québec its current territorial boundaries). Sections of the JBNQA deal explicitly with future development of hydro-electric potential on category 2 and 3 lands and were written in anticipation of additional developments in the north.

Specifically, two projects were envisioned: The NBR complex involving the drainage basins of the Nottaway, Broadback and Rupert Rivers and the Great Whale complex involving the drainage basins feeding into the Great Whale, Little Whale and Coats Rivers. The NBR complex would harness the major drainage basins below the La Grande complex in Cree territory while the Great Whale complex involved those immediately above it and touches land used by both Cree and Inuit. In the early 1980s hydro-Québec revived plans to develop both river systems and began the EIA process towards this. Advanced sales of power were rapidly put into place with neighboring American states and the development planning process accelerated by the end of the 1980s.

The plans to develop the Great Whale river basin set off a complex series of political reactions and negotiations involving the Federal, Provincial Cree and Inuit governmental bodies. A detailed chronology of events around this process, culled from newspaper accounts, is presented in appendix A. In the early stages of this process the Provincial government used the JBNQA provisions regarding future developments as an argument against doing a serious EIA. Additionally, social impacts were not to be considered at all. The Cree and Inuit political responses were quite similar at this point; opposition to the development based on an inadequate EIA process. As negotiations progressed the Inuit organizations chose to take part in the studies towards the EIA and while the Cree did not. In the early 1990s critical positions were taken against Hydro-Québec with regards to the project by a number of influential North American environmental organizations. They begin a campaign of public protest and political pressure on American legislatures to ensure that an EIA would be conducted before states purchased power from Québec. These organizations promoted heavily in the media and the subsequent public response to the project brought the development of resources in the

Province of Québec to international scrutiny. Throughout this process the Cree were actively promoting their perspective on Hydro-electric development in international tribunals and at public events. The campaign against the project garnered intense media coverage in Canada and abroad. At the same time the jurisdictional disputes between the Province and Ottawa around environmental issues begin to intensify. The multiple Provincial and Federal environmental laws provoked considerable conflict over who had the responsibility to study what and how. This brought the project into a larger debate over Québec sovereignty and was used by some as evidence that the aspirations of Quebeckers were being restricted by the Province's inclusion in the Canadian federation. In the press, the political rhetoric was heated with some public figures suggesting that Quebeckers would be living in the dark without the project and that without hydro-electricity the Province will be obliged to build nuclear reactors.

From the beginning of the negotiation around the EIA until late in 1991 the Province had been backing a two phase review of the project which separated the assessment of the roads and infrastructure from the energy generating structures. This approach was the subject of considerable opposition from the Cree and the Inuit. Many saw it as an attempt to subvert the EIA process and begin construction before a proper assessment was done. A unified review process by all involved parties was agreed in January 1992 and public hearings on the scoping of the review were undertaken in communities in northern and southern Québec. Throughout this period the EIA was treated as a legal formality by the premier and close cabinet members. At best it is seen as a plan for mitigative measures to be established. The Provincial environment minister, Pierre Paradis, supported an EIA which could stop the project if it were shown to be too damaging to the environment. By 1992 it became clear that the decision to proceed or not with the project would be a political one and not contingent on the environmental consequences it entailed.

With the unified review in place the political will to undertake the project was flagging in the face of public pressures and the media campaign against the Province in the US and in Europe was taking a toll. The NBR complex is shelved for at least four years as energy demands in the province were reported to be decreasing. The EIS was submitted in the summer of 1993 and a conformity review of the statement with the scoping guidelines was undertaken. During this time the Makivik corporation, Hydro-Québec and the Province signed an agreement which would give 500 million dollars over 50 years to the Inuit in return for agreeing to not oppose the project using the courts. In June the EIS was rejected by the conformity committee which returned it to the proponent for revision. In late 1994 after Bourassa has withdrawn from politics because of health problems and the Liberals have lost the Provincial election, Jacques Parizeau effectively ended the EIA process by declaring his government's decision to not proceed with the Great Whale project for the foreseeable future.

The consolidation of hydro-electric capacity in Québec began as a movement to assert a distinct Provincial imprimatur on the social and economic landscape of the province. This involved the exertion of political jurisdiction over the largely ignored Northern two thirds of the province beginning in the 1960s. With the 1970s we see the era of the hydro-electric mega-project and the consolidation of political authority over the North and the indigenous populations of the region through the extension of regional governmental capacities locally. The political accords reached between the nations were explicitly oriented to future development and laid down legally binding guidelines for the administration of environmental review of the projects which involve representation by all affected groups.

Through the political wrangling over the project assessment we see a distinct context from which notions of risk associated with the Great Whale project are read by the project's proponents in the south. Here the risks of the project are presented as resulting from the absence of proceeding with it. The discourse which suggests that Quebeckers will be freezing in their homes, or that the economy will not grow is based on a particular western cultural precept of progress as equivalent to health and one in which the state is presented

metaphorically as a single body. Without the project, the argument goes, cultural, social and economic stagnation will have negative repercussions for all Quebeckers – the social organism will become ill. Additionally, the public perceptions of risk associated with the nuclear industry are invoked in an attempt to manipulate southern opinions about the Great Whale project and to place the environmental risks of hydro-electricity in direct contrast with those of the nuclear industry. While attempting to portray hydro-electricity as clean and ultimately healthy to the province as a whole we see that the notions of risk in the south are also informed by a political, historical and cultural context. The language in which the risk is portrayed reflects the communicative norms which foster a sense of legitimacy about information people receive. In this case risk is presented in an essentializing dialogue framed by scientific knowledge which serves to distract people from its political context and naturalize the information produced. In many instances during this study people in Kuujjuarapik articulated what they saw as the duplicity of the southern perspective and resisted the presentation of their understandings as biased while those of the south were not. As we continue in this report we draw on the perspective that risks, in the north and the south, are social constructions which reflect the times, ideology and aspirations of people. That the understandings people have of risk exist to most as seemingly objective and externalized realities is a testament to the power of culture in perception.

In the remainder of this section the structures agreed to for the unified environmental review of the Great Whale River project are briefly described. This is preceded by an overview of the development of Inuit political institutions.

INUIT POLITICAL ORGANIZATION

The Inuit occupied territory north of the 55th parallel constitutes a single political region called Nunavik. This is administered by the Kativik Regional Government (KRG) which is locally controlled and has a board composed of appointed members from each of the 14 communities. Inuit representation in Federal and Provincial matters is undertaken by the Makivik Corporation, which also administers the compensation package received from the JBNQA. The Makivik corporation is charged with promoting economic, social and cultural development and to protect the rights and interests of all Inuit in northern Québec. Locally, an elected mayor and community council administer the community resources and budget. One member of each municipality is appointed by the community council to the board of the KRG. Based in Kuujjuaq, the KRG administers most of the regional services north of the 55th parallel in the territory.

The KRG sets community standards for housing, water quality, transportation, and administers regional budgets for the services under agreement in the JBNQA including health, education, justice and employment. The budget for these activities is supplied by the appropriate Provincial or Federal ministry. The Kativik Regional Health and Social Services Council (KRHSSC) administers the two hospitals in the Nunavik territory, one in Kuujjuaq the other in Povungnituk, and the nursing stations in each community. Responsibility for primary and secondary education falls to the Kativik School Board (KSB). The Department of Environment and Natural Resource Management of the KRG is responsible for hunting, fishing and trapping management in the territory as well as for the environmental programs. Also within this department is the Kativik Environmental Quality Commission (KEQC), established to monitor the environmental and social protection regime of the Agreement north of the 55th parallel.

The development of Inuit run political institutions in Northern Québec has been remarkably rapid and coherent. In the space of two decades the Inuit of Nunavik have developed capacity over policy development and service delivery which reflects the local priorities addressed. Internationally, Inuit led organizations are helping shape policy towards global issues in environmental protection, among others.

GREAT WHALE ENVIRONMENTAL REVIEW PROCESS

There are three sections of the JBNQA which define the environmental impact assessment process for the NBR and Great Whale developments, modifications to the La Grande complex and for additional future development above and below the 55th parallel. In section 8.1.3 *Other Projects*, the NBR and Great Whale complexes are described as future developments and identified by the rivers to be diverted and the locations and levels of future reservoirs. The assessment process is defined in the following:

> *It is agreed that these known projects [NBR and Great Whale] and any additions and/or substantial modifications to Le Complexe La Grande (1975), if built, shall be considered as future projects subject to the environmental regime only in respect to ecological impacts and that sociological factors or impacts shall not be grounds for the Crees and/or the Inuit to oppose or prevent said developments (Québec et al. 1976:111)*

The exclusion of social impacts in these projects is significant for its differentiation from the process outlined in Sections 22 and 23 which provide for the application of Federal and Provincial laws on social and environmental impact assessment and mitigation. It also proved to be a significant legal obstacle to the Cree and Inuit parties in their struggle for a complete review of the project which began in 1986. Additionally, the issue of potential repercussions to human health as a result of hydro-electric development are not explicitly detailed in the JBNQA despite provisions for the development of a regional health board and locally responsive community health programs.

Section 22 of the JBNQA deals with the assessment of impacts below the 55th parallel on lands in Cree territory or used by the Cree. It provides for an advisory committee of Cree, Federal and Provincial representatives to review social and environmental regulations. It also provides for special status for Cree people in evaluating the future development of the territory.

Likewise, section 23 provides for the application of the environmental review process in Inuit occupied regions north of the 55th parallel. It also provides for special status but not exclusively for Inuit.

> *A special status and involvement for the Native people and the other inhabitants of the Region over and above that provided for in procedures involving the general public through consultation or representative mechanisms wherever such is necessary to protect or give effect to the rights and guarantees in favour of the Native people established by and in accordance with the [JBNQ] Agreement (p:311)*

Section 23 of the JBNQA defines a Federal and Provincial level EIS process which both require the involvement of the regional government. It also provides for administrative structures to oversee and advise on the environmental regime and impact reviews. The Environmental Quality Commission (EQC) is a nine member board (4 Inuit representatives, 4 Provincial and 1 mutually agreed upon chairman) which deals with impact statements pertaining to Provincial jurisdiction while the Screening Committee, under the administration of the Environmental and Social Impact Review Panel made up of two regional government and two Federal representatives deals with the impact statements required through the Federal environmental review process. A tripartite committee (the Environmental Advisory Committee) with three members from each of the Federal, Provincial and regional governments acts as a consultative board to the three governments on measures to the existing environmental and social impact review processes and on laws and regulations relating to the Environmental and Social Protection regime. The Kativik Regional Development Council was also established as a consulting body on all development related public consultation, research and reports. It may also, according to the Agreement, hold public meetings on development issues.

The Great Whale River region confounds the administration of the two environmental regimes by including Cree people who live north of the 55th parallel and Inuit who regularly hunt south of it. This region has traditionally been one of overlap between the two peoples where the Inuit occupy the coast and the Cree occupy the hinterland. The selected Cree category 1 and 2 lands around Great Whale River are exempt from the provisions of section 23 of the JBNQA but included in section 22.

The territorial issues around the JBNQA and the community of Kuujjuarapik-Whapmagoostui, plus the proximity of the Inuit community Sanikiluaq, on the Belcher Islands in the North West Territories, to the Great Whale River region, created considerable debate around which and how many EIA processes would be apply to the project. Ultimately both sections 22 and 23 of the agreement and the Federal Environmental Assessment Review Process have been applied to the Great Whale Project. The problem of duplicate studies by different organizations was eliminated, after considerable political and legal maneuvering, through a memorandum of understanding between the Cree, Inuit, Federal and Provincial governments (signed January 1992) which unites the various processes under a single review. There are six groups involved in the review process, five created under the Agreement and one under Federal Environmental Assessment Review Process (FEARP):

- COMEV: a six member committee (2 members each Cree, Federal and Provincial) mandated under section 22 of the Agreement to present guidelines for the environmental review of impacts below the 55th parallel covering both Provincial and Federal jurisdiction.

- COMEX: (5 member committee of which 2 are Cree) reviews impact statement under Provincial domain south of the 55th parallel

- COFEX-south: (5 member committee of which 2 are Cree) reviews impact statement under Federal domain south of the 55th parallel

- KEQC: (9 member commission, 4 of which are Inuit) mandated under section 23 of the Agreement to issue guidelines and review the EIS is the Provincial review body for the region north of the 55th parallel.

- COFEX-north (5 member committee of which 2 are Inuit) issues guidelines and reviews the EIS for aspects of the region north of the 55th parallel under Federal jurisdiction

The FEARO Process is enacted for projects that affect matters of Federal jurisdiction, which the Great Whale project does. This consists of three appointed members of a review panel. In the interest of harmonizing the process the Federal government appointed the same people to its three committees (COFEX-north, COFEX-south and the FEARP). The FEARO Panel is mandated to review social and environmental impacts of the project. Areas under its jurisdiction include migratory birds, navigable waters and the Belcher Islands. This is the only representation this region has in the process, despite its proximity to the project. (Great Whale Public Review Support Office 1994).

BASIC BIOPHYSICAL AND SOCIAL IMPACTS OF GREAT WHALE

The basic changes to the biophysical environment around Kuujjuarapik, if the Great Whale project was built according to the specifications in the EIS, and their potential direct impact in the Inuit community are briefly described below. This is by no means an exhaustive listing of all modifications to the environment as it now is, nor a complete account of all the potential social

and cultural ramifications of the project. We are simply outlining the elementary changes which would effect the people of Kuujjuarapik.

PROJECT DESCRIPTION

The project designed called for three generating stations at various stages along the Great Whale River and a reservoir at Lac Bienville. The GB1 generating station would be the largest and closest to the community of Kuujjuarapik, about 40 km north along the Hudson Bay coast. The flow of the Great Whale, Little Whale, Coats, Domanchin and Boutin rivers was to be almost completely diverted, the water passing through the turbines at GB1 and entering through the spillway into Manitounuk Sound at high volume and year round. For the project to be built and serviced an extension of the road network from Radisson northward would be necessary. The road would go to Lac Fagnant then east to GB2, GB3 and the Bienville reservoir and west to GB1 where it would split south to Kuujjuarapik and north again to the Boutin River diversion. Important airstrips on the Kuujjuarapik-GB1 road, at the Boutin diversion and at GB2 were to be constructed, as well as a temporary one at Lac Fagnant. The electricity would be transported along two 315 kV power corridors, one connecting GB1 to the Radisson substation and the second connecting GB2, GB3 and the Chissibi substation at LG3. A large influx of labour during construction would be housed at various work sites along the river system. Permanent worker villages were to be located at GB1 and between GB2 and GB3. Construction of the project from the beginning of the road network extension to the commissioning of the final reservoirs was estimated to take 10 years. Over 22,000 person years of labour would be needed to construct the project (excluding the road network). The basic project elements are shown in the map on the following page.

PRINCIPLE IMPACTS ON THE INUIT COMMUNITY

- Diversion of the Little Whale River, reduction of flow by 90%
- Diversion of the Great Whale River, reduction of flow by 83%
- Creation of reservoir at Domanchin river, near Manitounuk sound.
- Tailrace exit in Manitounuk sound, year round open water on highly traveled route.
- Decade long construction of project infrastructure.
- Presence of large numbers of workers in proximity to the village.
- Creation of permanent workers village close to GB1.
- Constant operation of Kuujjuarapik airport during start up phase, frequent arrival and departure of Hercules type aircraft.
- Opening of community to Provincial road network.
- Mercury accumulation in some fish species in reservoir areas.

The opening of the community to the Provincial road network would provide one of the most important changes in the community's history. For the first time people would be able to leave for the south overland by car or truck and people and goods would be able to arrive similarly. The La Grande complex service road (the northern-most road in eastern North America) has already proven to be an attraction to many who arrive from southern Québec, Canada and the United States at Radisson each summer by car, truck and RV. The allure of a road to Great Whale would presumably be just as great. Likewise there is some possibility that people Kuujjuarapik/Whapmagoostui would drive south to Radisson, Val d'Or and other areas for a variety of reasons. The corridor hunting phenomenon noted in the Chisasibi area after the construction of the La Grande Complexe (Salisbury 1986) would also likely be taken up by the Inuit and the Cree in the region. The price of goods would likely decrease as transportation by truck is less expensive than by air. The question of the road network is one of the more ambiguous changes felt by the Inuit. The increased access to the territory is beneficial for hunters and people who have vehicles, decreases costs and permits quicker access to some hunting areas. On the other hand, it places Inuit hunters in competition with non-natives for

resources on the same road network, increases the likelihood of accidents, and the arrival of non-natives in the community. It also accentuates the differences between those with incomes and those without as it will presumably be those with jobs who will be able to afford and maintain trucks.

The location of the GB1 tail race exit would also have a significant impact on the Cree and Inuit who hunt and travel along the Manitounuk Sound corridor. The tail race would empty into the Manitounuk Sound across from Schooner Opening producing a year round ice free or dangerous ice zone making travel dangerous if not impossible on the sound in this area. The sound is currently the principle north-south travel route for people going to all hunting areas to the north of the community and is heavily frequented in all seasons. In the spring and fall ducks and geese are taken in large numbers from the islands and onshore areas. Bearded seals congregate at the northern tip of the sound in the fall and are hunted there. In winter seals are hunted at the polynia at Boat and Schooner openings and from the cracks in the ice surface around the islands. The ice conditions in the sound are good for snowmobile travel particularly compared to the conditions on the outside of the islands. Fishing by net and by line occurs in the sound and the various rivers which flow into it during the ice free season. The problems of changing ice conditions on transportation and exploitation would be accentuated by the flow of water from the reservoirs, which will be carrying a higher than natural mercury load, into the sound. The fish which make it through the turbines from the reservoirs are likely to be eaten by waterfowl and seals which may park themselves at the exit of the tailrace. It is also likely that the ice free zone would be frequented by a semi-permanent population of seals in winter as are other polynia.

3.0 KUUJJUARAPIK COMMUNITY PROFILE

In the preceding sections we have provided an overview of the socio-political context of hydro-electric energy development in Québec followed by the repercussions this has had in the development of Inuit political institutions in the past two decades. We also examined the EIA process around the Great Whale project in light of these developments and presented the basic impacts of the project on the Inuit community. In this section we concentrate on the internal dynamics of life in Kuujjuarapik with emphasis on contemporary land use activities and their relationship to health risk perception. We begin with the historical processes of Inuit contact with southerners and the subsequent concentration of the population into the present community. This provides a background for understanding the local perceptions of the impacts of the Great Whale project. The emergence of formal Inuit political power and capacity in Nunavik since the signing of the JBNQA more than twenty years ago has permitted the incorporation Inuit cultural perspectives on land use and traditional activities into the political organizational culture and its institutions. The relationship between political development and land use is examined in light of the EIA process for the Great Whale project. Finally, the community profile illustrates the local importance of the traditional food harvest and factors which influence hunting efficiency, rates of country food[1] consumption and its quality.

This section begins with a historical summary of events which acted to bring Inuit, Cree and Non-native people together in the community of Poste-de-la-Baleine. Running throughout this series of events is the reality that the orientation of production in the lives of Aboriginal people in this region was rapidly changed from a focus on family-based collective units towards the economic priorities of southern Canadian and world markets. This shift in economic locus has to some extent followed that of the rest of the country – from rural based self-sufficiency to specialized production and global insertion. However, we would suggest that this it has occurred in the north without the corresponding expansion of opportunity or changes in ideology seen in the south. Aboriginal peoples remain on the margins of the mainstream economy, a fact evident in the chronic lack of meaningful employment and the subsequent high rate of dependence on social benefits.

The dislocation of people from traditional economies has come about as southern consumer demand has drawn primary resources from the north to south. This is equally the case for energy today as it was for fur and whale oil in the past. In this sense the Great Whale project is a continuation of a long process, with which people are well acquainted and their perceptions of health risks arising from Hydro-electric development can be situated within this historical context. Indeed the economic history of people in this region can be seen as inscribed in the health of people, on their bodies and in their collective memory of illness. Shifts in the economic priorities of daily life over time are played out in the biology of communicable disease and the presence of pathogenic substances in the environment. We argue that the social relations through which the risks to health are made meaningful to people today draw from culturally modulated experiences of illness in the past and that these were, and continue to be, constituted through the development of the local economy.

HISTORICAL ORIGINS OF KUUJJUARAPIK

The first HBC trading post opened at Kuujjuarapik in 1756 (Duhaime 1985) earlier than anywhere else in the region[2]. The Great Whale River post closed at the end of the 1790s to reopen primarily as a whaling station in 1854. This post was an early attempt to incorporate the

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[1] The term "country food" is used here to designate all foods harvested and consumed by people in Kuujjuarapik. This parallels the Inuktitut term *nirituinaq* or "genuine food".

[2] There was a short lived post operating on an island in Richmond Gulf shortly prior to this time.

Inuit into the fur trade and exploit the beluga whale for its oil. For many people in Kuujjuarapik the comprehension of environmental impacts resulting from increasing encroachment of southerners has its origin in the Beluga hunt at the Little Whale River and Great Whale River by the HBC in the 1800s. This hunt, which used nets across the mouth of the river to trap the animals in the bay to be dispatched by rifle, took over ten thousand beluga between 1850 and 1870 when it was abandoned (Francis & Morantz 1983). The Beluga have never returned in any appreciable number to the Great Whale River, although they are still seen annually at the Little Whale River. This species has intense site fidelity and an ability to learn and outmaneuver hunting techniques (which decreased the HBCs catch to unprofitable levels). Most experienced hunters are aware of the history of the beluga hunt and often prefaced statements about potential effects of Hydro-electric development on the beluga with the observation that there used be numerous beluga in the Great Whale River estuary at certain times of the year and now there are few.

In the 19th and early 20th century the trading posts in the Hudson Bay region were largely taping into the existing trapping routines of the people in the region. Returns were never spectacular and efforts to encourage more intensive trapping by Inuit were not particularly successful. At this stage bartering for trade goods was largely an secondary activity to the normal seasonal cycle of the people on the land. While some trade goods were quickly adopted into the repertoire, particularly tea, tobacco, rifles and knives, the skills needed to survive remained largely unchanged and the relationship of symbolic reciprocity between the animals and the people was maintained. Anglican missionaries established a mission at Great Whale River in 1876 which continues today. Among their contributions to Inuit cultural development was the introduction of the syllabic writing system through bible teachings. Both literacy and Christian religious themes were quickly adopted and transmitted to neighboring groups. The influence of Christianity on religious life was significant and by the 1920s Inuit lay preachers had largely supplanted the shaman as spiritual leaders.

Despite the relatively long history of contact and commercial presence at Great Whale River few Inuit lived permanently in the community until the US military built a base there as part of the Mid-Canada Line of Radar control bases in 1955. Prior to this time people from the entire eastern Hudson Bay coastal region would go to Great Whale River for varying lengths of time to trade goods and make purchases. The construction of the military base coupled with early housing programs of the Federal government meant that in the summer 1955 a large number of jobs were available for the first time. According to Balkci (1959) all Inuit groups in the region concentrated at Great Whale River to seek wage labour. At one point a portion of the labouring population abandoned their jobs and returned to the land thus creating, for the first time, social stratification between hunting families and labouring ones. The current settlement pattern has been largely influenced by the commercial history and by attempts by the government to introduce health, housing and education programs in the North.

The location of Kuujjuarapik, like many aboriginal communities, is largely an accident of history based on the commercial interests of southern Canadians. While the setting of the community is practical in terms of space and access to the outside world, it does not reflect the historical movement of people in the region. People did hunt at the river mouth in the past when the beluga were present however areas to the north and the south were more productive and frequented for longer periods of the year. To the north, Richmond Gulf is a rich environment with a large populations of seals, seasonal caribou and plenty of fish. To the south the Long Island area is home to large numbers of migratory birds, fish, and seals. Both of these areas continue to be frequented by hunters from Kuujjuarapik in all seasons. For many people in Kuujjuarapik the history of the exploitation of the Great Whale river begins with the HBC Beluga harvest and the effects of that are common knowledge in the community today. The lesson provided by the Beluga of long term ecological repercussions for short term economic benefits

makes up an important analogy in understanding and describing the potential impacts to of hydro-electric development.

HEALTH AND HEALTH SERVICES

The influence of commerce on the historical settlement of Inuit at Kuujjuarapik is one significant factor in the development of this community. Another is the effect of epidemic disease on Inuit populations in the first half of this century and the subsequent concentration of relief at the site. A pattern of synergy between illness and living in the community is evident. As contact from the outside became more frequent transmission of communicable illness did as well. As people became incapacitated from disease and families fractured by death they increasingly looked to the sources of relief available from the outside which were provided by non-Natives in the region. As the time spent in the community increased, and the number of people there rose, the risk of contracting disease also rose returning the families to the beginning of the cycle. This in turn encouraged greater inputs from the outside to manage the disease which afflicted people and by extension the people themselves.

Missionary and trader reports at the turn of the century indicated that contagious diseases were widespread in the Hudson Bay region. In an excerpt from the Hudson Bay Co. journal, reproduced in *Memories of Kuujjuarapik* (Mippigaq 1990), six people are reported to have died at Kuujjuarapik in October 1902 from measles (p. 30). Reports like these prompted the government to include medical personnel on board the annual supply ship. In the early 1900's the annual Canadian Arctic Patrol vessel landed goods in the summer and usually carried out limited medical surveys among the Aboriginal populations (Vanast 1991). The Arctic Patrol vessels established the first sustained relationship between the government and the Inuit of Québec. The medical personnel evaluated the health of people at each of their stops and brought some of the sick to the south for treatment. As smallpox, tuberculosis and measles were widespread from the 1930's well into the 1950's more and more people and were removed each year. In a significant way the changing ecology of human habitation, which resulted in part from the annual ship's visit, exacerbated the health conditions they were charged with alleviating. The increased contact with non-natives coupled with the concentration of unusually large numbers of people in small areas made the transmission of infectious disease more likely. It is safe to say that most adults in Kuujjuarapik today lost family members to epidemic disease and the memory of the epidemics is still strong. This experience continues to inform some of the health risk perceptions around the Great Whale project impacts. In particular, the possibility of increased rates of AIDS and other sexually transmitted diseases as a result of the presence of large numbers of southern construction workers at the work sites is of considerable concern to some people.

The role of the HBC trader in the administration of health services remained important into the 1950s. Illnesses and injury which were not treated indigenously were brought to the attention of the missionary or the HBC manager's wife. Problems beyond the abilities of the local white population were reported to the nurse in Port Harrison, Fort George or a resident doctor in Moose Factory. It was understood that only true emergencies would necessitate a radio phone call (Honigmann 1952). The introduction of formalized medical services was a direct result of the new awareness brought about by the regularized contacts between the Inuit and southerners (Jenness 1964). The importance of the American military presence at Great Whale in upgrading the profile of native health in government should not be underestimated. Large numbers of Americans combined with an apparently impoverished and under-serviced native population pushed awareness of the issue of aboriginal health considerably.

DESCRIPTION OF THE COMMUNITY

In this section we provide a general description of the social dynamics of Kuujjuarapik. In this description of the community we concentrate on issues which influence health risk perception and draw on the data gathered in the survey, from interviews and from published sources.

The assignment of lands, based on selection during the JBNQA negotiation process, resulted in cadastral divisions of Poste-de-la-Baleine based on ethnic composition. A map of the community is presented on the following page. Kuujjuarapik, the Inuit community, is a municipality as defined in Provincial legislation. Whapmagoostui, the Cree name for the community, is an Indian reserve with a nominal Federal presence. There is also a small non-native population which is concentrated in Provincial and regional government housing at the northern end of the community, around the site of an old US military installation. Within Kuujjuarapik/Whapmagoostui there is a near complete duplication of services between the Cree and Inuit sections of the community. Both have primary and secondary schools, radio station, nursing stations, administrations, council offices and recreational facilities, the latter are shared between the communities.

The presence of the Federal government is limited in Poste-de-la-Baleine as most services come under regional or Provincial government jurisdiction through the JBNQA. The Northern Stores chain (Northern Stores bought out the Hudson Bay Company in 1989), an Inuit cooperative and several independent operations sell consumer goods in the community. Radio, television and telephone communications are provided by satellite links to the rest of the world. Inuktitut and Cree language programming on television and radio are provided by CBC North. The community has a paved airstrip which is capable of handling regular commercial and military jets and It is the transfer point for most flights between the six other Hudson Bay region communities (Umiujaq, Inukjuak, Povungnituk, Akulivik, Ivujivik and Salluit) and for Sanikiluaq on the Belcher Islands. Kuujjuarapik is the southernmost Inuit community in Canada (and the world) and Whapmagoostui is the northernmost Cree community in Québec.

At the time of this study the Inuit population at Kuujjuarapik was about 475 while the total population of Kuujjuarapik/Whapmagoostui was over 1200 including the non-native residents. The Inuit population is quite young, about half of the population is under 18, and less than 5% over 65. The presence of a large youth population is apparent when taking a walk through town or visiting the store. The size of the school and recreational facilities in comparison to the size of the town is striking to the southern visitor and reflects the demographic importance of young people in the north. The emphasis on a young population is also reflected in regional investments in hockey arenas in most communities and, in the case of Kuujjuarapik, a triple gymnasium. With a young and growing population concerns over hydro-electric development impacts were often made in reference to the children who will be growing up in a changed milieu. Conversely, the large number of young people worries some people who see little possibility of jobs without large scale industrial development. For some adults this is the source of an equivocal attitude towards the Great Whale Project. They do not want to see changes to the natural environment which would threaten the health of their children nor do they want their children to grow up without a job and means to support their own families. Instances of local problems with alcohol abuse and violence were sometimes referred to as the result of “boredom” and lack of meaningful roles in life for the young. The potential effects of development on the youth of the community is clearly the focus of concern of adults when they consider the health risks associated with hydro-electric development.

With more than one quarter of the population in the school age cohort considerable energy and resources have been placed into education in Nunavik. The Kativik School Board has worked to develop a culturally relevant curriculum for Nunavik schools and to train local teachers. (N.E.T.F. 1992). Teacher training programs have been developed in conjunction with

McGill University in Montreal and each year a number of graduates take their place in the community schools. Additionally, the transient southern teacher population characteristic of schooling in the past, is slowly changing. As the southern job market has shrunk and local housing and facilities become more attractive, southern teachers are making longer commitments to the North. Despite improvements over the past few years the numbers of high school graduates each year remains a small proportion of the potential. While education offers hope for the future to many, it is not a panacea to the numerous difficulties young people in the North face. In reality, even if all succeeded in school, very few would be able to find jobs within their communities.

Within the sample of 74 adults surveyed during this study almost 20% declared that they had no formal education, 41% had less than grade nine, 34% had some high school and 6% had graduated from high school. These figures are comparable to those for the region where 25% of people have never attended school, 45% have an elementary level education and 29% have attended high school The low formal education rates in the community should be considered within a historical context where education was first available in the middle of this century and where high school education was provided in residential school settings outside of the province until quite recently. The older segments of the population had no exposure to formal education and middle aged people had limited access to secondary schooling. A low rate of formal education does not mean that knowledge is not shared within this community rather it points to the importance of locally produced information which is “traditional” in the sense that it reflects historical and cultural developments unique to the people of this region. The elders of the community are generally recognized as the most knowledgeable people in town, a reflection of their accumulated experience with the land and with people over the years. Wisdom, *isuma* in Inuktitut, is embodied in those who have experience gathered through practice, the *Isumatait*. In some respects we would expect a generational difference in health risk perceptions which reflects the different knowledge traditions. This does not seem to be the case (although it is not possible to demonstrate statistically given the sample size). No systematic qualitative differences in risk perception between the young and old were evident during the course of this study. When we investigated the degree of trust that respondents had in information from a variety of sources elders were ranked as the most trusted (80% of respondents were either fairly trusting or very trusting of elders). This would seem to indicate that locally produced knowledge is given more validity than that coming form outside sources.

As religious affiliation has been shown to have an important impact on risk perception the survey included questions regarding religious activity. Religion is a major focus of social organization throughout Nunavik and in recent years Evangelical Pentecostalism has gained an important place in most communities although this is not the case in Kuujjuarapik. At the time of this study there were no bible meetings and no independent Evangelical missions or missionaries in the community. More than 90% of respondents were members of the Anglican church.

The opening of the new village of Umiujaq in 1986 prompted people with traditional land use ties to the areas north of Kuujjuarapik to move there and, by design or by coincidence, nearly the entire Pentecostal community also moved north. The link between family groups, land use practices and religious affiliation are quite strong in Nunavik (Dorais *in press*). A brief description of the move of some people from Kuujjuarapik to Umiujaq examines this relationship.

THE UMIUJAQ RELOCATION

Umiujaq is located about 160 kilometers north of Kuujjuarapik on the Hudson Bay shore east of the northern tip of Richmond Gulf. The community was established through negotiation of the JBNQA (section 6.4). It was originally conceived as a new village to which nearly all the

Inuit residents of Kuujjuarapik would relocate. Some elements of the decision by people from Kuujjuarapik to move to Umiujaq can be related to health risk perception and the impacts of development on the La Grande river system. For example there is evidence that people who chose to move and stay in Umiujaq were doing to distance themselves form the risks they associated with the La Grande project.

Construction of the community of Umiujaq began in 1984 after approval from a community plebiscite. In 1986 about half of the Inuit living in Kuujjuarapik moved to the new village. For the most part, those people who opted to move to Umiujaq had historical ties to land in the region and hence their move brought them closer to those lands. People who stayed in Kuujjuarapik tended to have links with areas south of it or have personal or economic reasons to stay in the community. The Richmond Gulf area close to Umiujaq is a rich environment where intensive harvesting is undertaken. The coastal area of Great Whale River is a less ecologically productive zone than those around it. In this respect the choice to relocate to Umiujaq can be seen as strategic move to be closer to productive hunting grounds and, perhaps, as a traditionalist movement.

Kemp (1985) reviewed Inuit opinions about the Umiujaq relocation plan. He finds that the Inuit view the new community as a mechanism to assert cultural integrity, principles of community organization and resource use methods which reflect Inuit values and ensure Inuit control. It was felt by some that in Kuujjuarapik Inuit control was reduced because of the historical concentration of power in the hands of non-natives. The feeling of loss or lack of control and participation in political decision making processes is evident in some of the citations presented in the report. Similarly the feeling that Inuit communities are impotent in the face of southern bodies which hold the real power is evident in the following statement:

> *Do people from the south really understand us and try to figure out what we are saying? We don't like to be suspicious but what chance is there when everybody thinks they know better. When the lawyers and government people ask us for opinions we try and explain and they say they understand, but I don't think they really do. It's probably said because they are professionals that get paid for saying they understand.*
>
> *How can they really understand when we don't have a life of our own and a tradition we can call ours." (Kemp 1985: 5)*

Here we see the isolation from traditional sources of authority linked to the abandonment of cultural heritage. For some people at least relocation was intended to reassert Inuit authority and traditional sources of social solidarity. Another strong sentiment for relocation was a desire to escape encroaching development from the south as represented by the James Bay Project. When discussing the Great Whale project with residents of Umiujaq in 1990 people emphasized their desire to live and hunt on "natural" lands and equated untainted lands with cultural integrity and family strength. Several people said that they chose to move in order to distance themselves from lands affected by development of the James Bay Project. In another review one person from Umiujaq said:

> *In this area, a long time ago before the Qallunaat came to Great Whale River, the wildlife used to be rich, we decided to move to Umiujaq because it was predicted that the was going to be destroyed, that's why we moved and they are following us again and look what happens to the Cree people, they are suffering with their country food, they are not allowed to eat fish anymore*. *The same thing will happen here (Roy & Fletcher 1992:66).*

At an early phase of Great Whale project planning the Nastapoka River (which drains into Hudson Bay north of Richmond Gulf) discharge was to be reduced by an estimated 10% through diversions within its headwaters. This aspect was of particular concern to the Inuit population of Umiujaq because of the Importance of the Nastapoka estuary for Beluga

harvesting in the summer and the presence of freshwater seals in the lakes upriver. The early design of the Great Whale project was seen as particularly menacing to the community and the Richmond Gulf hunting areas which would be surrounded by altered waterways and lands. Thus the Inuit there felt that they would be surrounded, literally and symbolically, by unusable, contaminated land, the wildlife affected and their own existence rendered questionable. In both Kuujjuarapik and Umiujaq people saw the Great Whale project as a threat to the cultural values which some had sought strengthen by moving to the Richmond Gulf region. Additionally, the decision to move to Umiujaq reflected a desire by some people to distance themselves from the risks associated with the La Grande project.

INTERCULTURAL RELATIONS AT POSTE-DE-LA-BALEINE

Due to its unique multi-ethnic composition relations between the different groups of people in Great Whale River have intrigued researchers for some time. Historically, research on the subject is largely development driven in that large projects such as the US military base of the 1950s and the Great Whale project free up funding to examine the issue. In the case of the military presence numerous papers appeared based on research done in the 1950s which directly or indirectly discussed the issue (Balikci 1959, 1972 Honigmann 1951, 1952, 1960, Honigmann & Honigmann 1959, Desgoffe 1955). In the case of the Great Whale project, reports commissioned by Hydro-Québec and others also addressed the subject. The issue remains important in the community given the very different political approaches adopted by the Cree and the Inuit in response to hydro development and the relatively large non-Aboriginal population (about 150 people). It seems sensible to investigate the effect that the different approaches have on relationships between peoples in the community particularly where three distinct ethnic groups under three different administrative arrangements occupy the same few square kilometers. However, the issue of inter-ethnic relations is one that preoccupies southern researchers more than it does the Inuit of the community with whom we spoke. Our analysis of the situation therefore remains impressionistic.

Language use is a good indicator of interethnic interaction and, while there been no specific study done on the issue, it can be said that no single language dominates in the community of Kuujjuarapik. There are four languages in daily usage (Cree, Inuktitut, English, French) and some people in town are tri and quadrilingual. Some are bilingual and speak neither French or English. In the survey 81% of respondents were bilingual, 15% spoke three languages and 12% spoke four. Parents suggested that children in the school system now are more likely to speak at least three languages because there is more interaction between the Cree and Inuit in that age group than in the past. This is a result of compulsory schooling, the concentration of people into the community setting and because of shared youth activities such as weekend dances, skating and badminton. Almost all survey respondents spoke Inuktitut in the everyday lives.

INUIT - CREE RELATIONS

Until the 1840s, when trade at Fort George was regularized with the Inuit, relations between the Cree and Inuit were marked by a series of murders and retaliations. In effect there seem to have been organized raiding parties of James Bay Cree who would kill Inuit in the Great Whale River region. Inuit also took part in a number of murders of traders and their families before this time, which were retaliated. Traders used exclusively Cree labour until well into the late 1800s with the exception of a few translators and guides who were Inuit. The organized whale hunt at the Great Whale River and Little Whale River sites were exclusively manned by Cree and traders. Once the Inuit became more regularly involved in the fur trade they were not extended credit over the trapping season as was the case with the Cree. Latter the establishment of the Great Whale River and Little Whale River posts in the mid 1800s was welcomed by the Inuit and no other murders are reported.

Honigmann (1952) lists several factors which limited Cree and Inuit interactions at Great Whale River for the pre-military base period. These include different seasonal hunting itineraries, different species use, different geographic occupation, linguistic isolation and ethnocentrism. Until the middle of this century interaction between the Cree and Inuit was structured around the trading post and largely limited to the summer season when labour was needed for the ship arrival. In general the Inuit and Cree showed little antagonism towards each other. Beluga whales when caught in proximity to the Great Whale River by Cree or Inuit were shared between both groups. The HBC sponsored a summer feast for the Cree who returned to Great Whale River for trading and another in the winter for the Inuit who generally visited the post around Christmas. Religious services were held twice a day once in Cree and again in Inuktitut. Informal trade between the Cree and the Inuit seemed frequent at the time with the Cree using the Inuit made Ulu knife and the Inuit using the Cree made crooked knife. Cree men and women wore sealskin kamiks, particularly since the caribou herd had diminished, and Inuit women were paid to prepare skins for some Cree hunters. Various games and sports would involve both the Cree and Inuit communities as would occasional dances in the HBC warehouse.

In the interviews we have done with people in Kuujjuarapik no one has ever suggested that relations between the Cree and the Inuit have deteriorated as a result of differences in community responses to the Great Whale project. In reality the entire community is united against the development of the project despite the different approaches taken by their respective political bodies. Members of both communities would like to see more jobs available in the region, but the same people say that jobs through development of the Great Whale project are not worth it. They see the project as a huge price to pay for a relatively few jobs which most people perceive as being temporary anyway. Inuit hunters we spoke with in the community described the feeling of meeting up with Cree hunters on the land as being the same as meeting other Inuit. Glad to see people out hunting, stopping to share tea and information on animal locations etc. Interethnic animosity resulting from the project is not an issue among the Cree and Inuit. It is an issue for some between Inuit and non-Aboriginal people.

INUIT - WHITE RELATIONS

Research on interactions between Aboriginal peoples and the majority non-Aboriginal population are often framed in the paradigm of acculturation in which Eurocanadian society is culturally dominant and aboriginal culture is inevitably altered towards that of the majority. This paradigm offers a useful structure to examine aboriginal - white relations but does not adequately explain the cultural persistence of Aboriginal people in the face of lengthy contact with Eurocanadians. Regardless some general observations on Inuit - White interactions and relations have been recorded in the past and are made based on recent field work.

Honigmann (1952) describes in some detail the structure and style of interactions between the Cree, the Inuit and the White resident populations at Great Whale River. The community at this time consisted of 5 houses, the HBC store, warehouses and a few ancillary buildings. The Inuit of the Great Whale River census region including Richmond Gulf numbered 193, the Cree 171, and “four or five Eurocanadians, only one a woman” (p.510). The Cree hunters were considered wealthier than the Inuit because of their greater returns from trapping although the Inuit were provided with more government relief.

In the early 1950s the white population determined what was available to purchase and controlled access to material goods. They also controlled communications with the outside through radio telephone and written reports. The Federal government provided limited relief largely at the discretion of the HBC manager and sent directives on what could be purchased through him. The importance of the HBC manager was paramount as he controlled income

through occasional labour, prices paid for furs, credit, availability and price of goods, as well as family allowance and emergency relief distribution. In some cases, Inuit expressed frustration towards the HBC manager for not hiring enough people in the summer and for ignoring reports of starvation in the winter. The white population made frequent negative reference towards the Inuit and Cree population and tended to be self isolating.

Several factors influenced the distribution of relief by the managers during this period. These include exhaustion of local wildlife populations while large numbers of people gathered at the post, the need to disperse people from the annual visits to the post, the desire to maximize trapping returns, a philosophy of encouraging hunting for profit as opposed to subsistence, no known deaths due to starvation in a decade, and an institutional culture which looked down on excessive relief distribution (Honigmann 1951).

Balikci (1959) defines three historical "acculturative phases" (p.122) of interaction between Great Whale River region Inuit and Eurocanadians: the first occurs in the 19th century with the arrival of the HBC and the subsequent incorporation of trapping and trading into the traditional economy and the introduction metal goods and firearms to the Inuit. The second phase continues from the last third of the 19th century until the 1950s and is characterized by increasing importance of the HBC in supplying goods to the local population (including some food) and the subsequent increasing participation of the Inuit in the fur trade. The decline of the caribou herd exploited by the Inuit likely increased the importance of this relationship. This second phase was also marked by religious conversion to Anglicanism and the widespread diffusion of the Inuktitut syllabary. The third phase begins with the arrival of the Federal government through the programs of the Department of Indian Affairs and Northern Development.

A succinct summary of the historical and contemporary structure of Inuit - White relations is presented in the following citation:

> *The non-natives have never stopped trying to control us. It used to be the [Hudson Bay] Company and the administrator we always had to please in order to be able to live our life. Now they call this consultation and we just keep explaining why we should be allowed to do what is really our right. (Kemp 1985:13)*

Within this historical dynamic of control by whites over the lives of Inuit in Kuujjuarapik we must place the researcher as proponent of Southern values and priorities. It is quite common to encounter resistance to research in all settings, however in the North this takes on a particular tenor. The Inuit have been the object of intensive study since their "discovery" and this has in no small way resulted in their dislocation from traditional structures of authority. In the contemporary situation, the role of researchers play is conflictual to some in the community who associate research with a loss of power and direction in the community. The intercultural dynamic between Inuit and whites is therefore influenced by researchers who act as mediators of culture between the local population and the outside. Certainly researchers are not the only ones who do this but they have had a significant impact on the propagation of stereotypes of Inuit lives.

Below the generally pleasant interactions between ourselves and most of the people we spoke with during the course of this study lay feelings of resentment and anger about the way things are and the way they have been in the past. For example, one of us was confronted by an individual who said that it was rude to walk into people's houses and expect force them to answer questions. Despite our best efforts to emphasize the voluntary nature of participating in the study we recognize that this work fits into a historical continuum of research and externalized decision making. The presence of researchers had also become a constant in the lives of people in Kuujjuarapik during the EIA process around the Great Whale project. At times it seemed as if everything and everyone was being scrutinized for some reason. The social

research fatigue that we encountered is in itself an impact of the pre-development phase which can increase individual stress and influence community dynamics.

Also at the heart of people's objections to research methodologies is resistance to the idea that individual experience can be incorporated to aggregates of data which are generalized to represent society at large. In many instances people interviewed qualified their responses as representative of their own experiences only, and had no comment to make on those of others. One person reflected on the relationship between data and knowledge of people:

> *… your questions will never tell you anything about me and about my life. It doesn't matter how long you stay in the north, one year, three years, whatever, you will never know what I have experienced and what I think. How can you say what Inuit people think or feel with these questions. What gives you the right to do that and not me an Inuk who has gone to school in [southern cities]. Why can you ask these questions and I am not considered qualified, because you have a diploma from Manitoba or Montreal or wherever. Why are you qualified to do this and I, an Inuk, am not qualified.*

Admittedly there are several issues involved in this person's feelings but his comments it point out that the level of abstraction used in survey methods can be unacceptable to some people, even offensive. It also points to the frustration that people can have with researchers poking around in their personal lives. Thus the dynamic of Inuit-White relations remains, for some, one of researcher–subject with the insignificance of the individual implied in the relationship and, in turn, harshly felt by some people.

During fieldwork, several people discussed how they felt that the white people living in town were going to be the only ones to benefit from any development, and pointed to evidence of positioning in the building and maintenance trades in the community to take advantage of any forthcoming development. Indeed, the intense three year EIA study period had been of some benefit to local non-native businessmen with relatively little economic benefits to the Inuit except in temporary employment. The feeling that non-natives were going to be advantaged is reflected in other aspects of life in the community. Occasionally we heard expressions of resentment towards whites because they are seen as receiving preferential treatment in a variety of areas. The whites have many of the good jobs in town, get northern premiums, paid cargo allowances and free trips to the south, while most Inuit occupied positions do not have the same structures built in. In some cases, well paying and interesting jobs with regional organizations, which indicate Inuktitut knowledge as essential on the posting, go to people who have no knowledge of the language and no apparent superior qualifications to compensate. Other jobs which had been previously occupied by Inuit sometimes go to non-natives when they turn over. These instances indicate to some people that Inuit lack power within their own community.

The people of this region have survived a long series of injustices since the turn of the century, all of them associated in some way with the presence of white people. They have experienced epidemics, isolation in hospitals, starvation, forced relocation into communities, welfare dependency, humiliation at the hands of white administrators, sexual exploitation by army (and other) personnel, manipulation for political gain by the Federal and Provincial governments, repeated study by anthropologists, had their dogs shot by the RCMP and been subjected to intense media scrutiny reinforcing the stereotype of hopeless native lives. Through these generations of experiences they have been expected to adapt to new conditions over which they have had little if any control and no voice for opposition until quite recently. For many a hydro project is just one more injustice to add to the list.

EMPLOYMENT AND THE HYBRID ECONOMY IN KUUJJUARAPIK

In the survey sample 70% of people interviewed had held a job in the preceding two years. Of those who had not (n=21) a significant proportion would not have been available for work because of their age, responsibilities toward family or their full time hunting activities. There is a complex system of sharing in place in the community based on extended family networks which redistributes cash, equipment and goods between people. In general this system serves to provision people who can't regularly hunt with adequate supplies of local foods and to support those without paid work who hunt regularly. A symbiotic relationship between cash and traditional economies is quite evident throughout the North.

The discourse around jobs and local employment was a strong element in the public debate around the Great Whale project. Those who were pro-development consistently used the lack of jobs in the region as a rational for the project. Even those people in Kuujjuarapik who were most ardently against the project saw the importance of new employment in the region, particularly for young people with families. The level of interest people in Nunavik had in working on the construction of the Great Whale project was explored in detail in a 1991 study (Lamothe and Lemire 1991). the profile of those most interested consists of people living in proximity to the worksite (i.e. Kuujjuarapik and Umiujaq), and who were 15 to 34 year old single men with high school education and who had previous construction or truck driver experience but who were currently unemployed.

In the feasibility report on the Great Whale project the relationship between Jobs and traditional lifestyles is presented as a beneficial spin-off on the project.

> *Jobs from the Grande-Baleine complex construction would allow Native people to initiate their transition to a wage economy while continuing their wildlife harvesting activities, a fundamental element of cultural identity. Wage income would also aid in financing these activities within the context of trade and support networks. These traditional networks would also be reinforced in the process. It should be kept in mind that hunting and fishing today involve expensive technical methods. (Hydro-Québec 1993: 265) .*

The hybridization of cash and bush economies is a complicated issue that goes beyond the positive spin given in the summary report. While it is true that hunting requires cash and is technology dependent this does not necessarily translate into enhanced social networks as a result of more jobs available. Some people see quite the opposite when they reflect on the changes which are wrought by increased emphasis on cash and jobs. One person from Kuujjuarapik described the following scenario based on the precedent of the changes the La Grande Complexe brought to the people of Chisasibi;

> *I am saying this will affect a lot. Like the people in Chisasibi even their own relatives are saying pay me, give me money and I will sell you this. So in the future if my brother wants something from me I will say, "You got some money?" It's going to affect a lot especially my kids. There are three or four families who are related to me and their kid will say, "Do you want to buy this, it will cost that much." They will say that to each other. (Roy & Fletcher 1992:43)*

Another person made similar observations about the enhancement of differences between people who are relatively well off and those who are not as a result of having to cover greater distances to avoid areas changed by the project:

> *They will have to go further because the animals will be contaminated here. The people's concerns are not really being taken into consideration here. The people will be living a much harder life. The poor people especially who want to go hunting, will not be able to hunt in the immediate surroundings. He is saying god created this land to be used in a good way both by the rich and the poor, to be shared by all and not to be destroyed. He say's put more emphasis on people's concerns (ibid. p.42).*

In these statements we see a link between industrialization and a shift towards individual accumulation of wealth which runs counter to social norms of selflessness, communal ownership and sharing as a demonstration of personal integrity. For people in the community, who are already faced with difficult social problems, a reduction in social cohesion arising from economic change can only exacerbate the current problems. On the other hand people readily equate joblessness and lack of opportunity with the existing social problems they face. Young people, we were told, need some direction and stability in their lives in order to properly raise their families. Without relevant work they wander about the town, stay up all night and sleep all day, even when they are well into their twenties.

The issue of jobs in the community present a serious dilemma. Cash is a necessity and this will not change, however, being too well off tends to isolate the individual from others who he or she normally shares the expense of land use activities with. In Kuujjuarapik there is a sense that a delicate balance between cash and its redistribution is needed to maintain the social networks which in turn support the traditional economy. While modernity is resolutely cash based, the values behind southern economies do not reflect the local organizational principles. If we extend this perspective back into the area of health risk perception we see that it is social harmony which is perceived to be at risk and, further, that social harmony is in part at least determined by factors which influence access to the land.

INUIT LAND USE

The Inuit have traditionally looked to the sea for their livelihood. This is reflected in the thousands of topographic place names used to delineate the coast, its bays, points and islands (Muller-Willie 1991). Inuit land occupation is concentrated on the immediate coastal regions and the food harvest is based in large part on marine mammals, fish and, to a lesser extent, mollusks. Caribou also make an important contribution to the annual harvest, particularly in recent years on the Hudson Bay coast. Certain places in the interior (Lakes Minto, Payne, Klotz, for example) have always been used by hunting parties from Kuujjuarapik. The winter harvest includes fish, seals and especially caribou. In the spring and summer, many families move to camp sites where they concentrate on fishing and hunting for seals. With the warmth of summer people spend time berry picking around the campsites and the community. Also during the spring and summer beluga whales will be taken in the mouths of the Little Whale and Nastapoka rivers, where the animals congregate each year, and when they are spotted moving along the coast. The fall season is marked by the goose hunt. The seasonal frequency of consumption of country foods by people surveyed is presented in the following table.

Table 1: Percentage of Respondents who report eating Country Food at least once a month (n= 72)

Country Food	Summer %	Fall %	Winter %	Spring %
Land Animals	52.3	50.8	92.2	57.8
Sea Mammals	85.9	80.0	69.4	73.8
Birds	83.3	90.8	48.4	87.7
Fish	89.4	83.1	69.2	85.9
Berries	87.5	76.9	9.5	37.5
Mussels, etc.	63.9	56.9	15.6	27.7

Land mammals, primarily caribou, were eaten by almost all respondents in winter and by more than 50% in the other seasons. Sea mammals and fish were eaten by a large majority of respondents in all seasons. Migratory birds were consumed by more than 80% of respondents in the spring and summer and by more than 90% of people in the fall. Berries also are consumed by most people when they are present in the summer and into the fall. The country foods consumed by people in Kuujjuarapik present a diverse diet throughout the year. It is through the country food diet that the most direct associations between hydro-electric development and health risks are made by people in Kuujjuarapik. This is due to the significant role that country foods play in the local models of health and the place that land use activities have in forming identity.

The quality of an individual's blood is directly linked to the physical and emotional health of people. Borré (1991) describes the link between the consumption of seal meat and Inuit notions of health and identity in Clyde River NWT. Interviews we conducted showed that similar ideas are common in Kuujjuarapik. In brief, the blood of the individual is rejuvenated by the blood of the animal. Only country foods have the restorative capacity that people specifically look for. When they feel run down, weak, unhappy, tired or depressed many people will seek out seal, ptarmigan, beluga and other foods to improve their condition. The food provides a physical sensation of fullness and bodily replenishment of strength through the blood. Elders discussed how their veins feel empty they are when unable to consume their regular diet while in the south and mothers described how their children will smell fresh and healthy and their cheeks will look smooth and full if they are brought up eating country foods. Even people who do not generally participate in the hunting lifestyle will go out hunting when they are feeling weak from a lack of blood rich foods. To hunt and consume country foods is at once a way to reestablish physical vitality for the individual and a symbolic gesture which asserts the validity of the indigenous lifestyle and identity. When the cultural schema of health and country foods are undermined by the possibility of impacts from hydro-electric development it is health and an Inuit identity which is threatened;

> *... Yes, more mercury. We can't help it, we have to eat here, that's our culture. Even if I am hungry and a white person tells me "don't eat it it's got mercury" I will eat it. It's my culture. (Roy & Fletcher 1992:62)*

The differences between "white food and Inuit food" parallel the differences between white people and Inuit people and define that difference perhaps more singularly than any other thing.

Even for example, if a white man hunts with an Inuk in the north, imagine if the white man ran out of his own diet and the Inuk had his own diet, the white man would be weak while he doesn't have anymore of his food, he would not want to have raw seal or raw caribou, while the Inuk is having his own diet. The white man wouldn't have anymore strength because he has finished all his favorite menu, and that is what I am worried about my children, my grand children, if the animals are affected. I have been like that when I was in the south for five years. I was dying for raw meat because there is nothing in the South. The meals I ate didn't have any blood in them and it kept me weak.(ibid. p.84)

Elders in particular will not accept imported food as a substitute for food from the land:

Inuit people have been depending on wild food without southern way of eating. This way of eating will remain the same. Mostly the mature men like him, they don't want white man's food. They are crap to him. They are not food not satisfactory.[...]"(ibid. p.43)

I met a guy from Chisasibi, he told me Hydro-Québec is trying to stop them from eating the fish but this guy said he's not going to stop even if he dies, because they are his food. If the same happens here I will do the same, I'm an old man that means that you can say J.T. died from Hydro-Québec from Mercury. (ibid. p.62).

Today the importance of the traditional or country food diet is reflected in the organizational structures established to support land use activities. For example, all Arctic Québec Inuit communities benefit from a hunter support program which was established in the JBNQA. Each community maintains a freezer from which anyone can take food, with priority going to widows, elders and the disabled. The community has discretionary powers over funds which are used to buy meat from hunters, equipment for full time hunters who are in need and other community based hunting activities. In some cases hunter support money is used to encourage youth land use activities. During the course of the fieldwork for this study the hunter support manager announced over the radio that young people on welfare were eligible to sell one caribou for two hundred dollars. Several people took advantage of the opportunity. Hunter support money is used as an income supplement in some cases and also to encourage certain sectors of the population to participate in the hunting lifestyle. Food availability in the freezer is seasonal and highly variable. When questioned about the frequency with which they got food from the freezer most people answered "when there is some".

As is the case throughout Nunavik, people in Kuujjuarapik maintain a strong attachment to the lifestyle of their ancestors and to the diet provided by the local resources. In the following table the rates of response to questions concerning frequency of land use activities are presented:

Table 2: Percentage of Respondents engaged in Land Use Activities

Type of Activities	LAND USE ACTIVITIES	
	Lifetime % (n=74)	Last Year % (n=73)
Hunt Land Animals	81.1	53.4
Hunt Sea Animals	74.3	47.9
Prepare Game after Hunt	81.1	53.4
Smoke Meat/Fish	81.1	54.8
Trapping	51.4	21.9
Skinning/Tanning	63.5	41.1
Fishing	95.9	80.8
Berry Picking	95.9	79.5
Gather Mussels, etc.	81.1	58.9

More than eighty percent of respondents had hunted land animals, fished, prepared game, preserved meats, picked berries and mollusks in their lifetime. Three quarters of respondents had hunted sea mammals. Slightly more than half of respondents had trapped and 63.5% of people had prepared skins in their lifetime. The comparatively low rates of participation in the last two activities reflect a gender based division of labour. Trapping is primarily undertaken by men, and skin preparation by women. Sea mammal hunting is a demanding task that requires a coordinated effort between hunters who have access to boats and other equipment. The taking of the first beluga whale is an important milestone in the lives of young people as several people told us during the course of this study. The possibility of a reduction or contamination of this species is both immediate – the loss of an important food source – and long term. Without the beluga young people loose an opportunity to prove themselves and gain respect. Whether this species is particularly at risk of disappearing as a direct result of the Great Whale project is not all that relevant because it is the potential for this which is a socially manifested impact. Hunting is both an economic activity and one which reproduces identity, anchoring people today to the lifestyle of their ancestors.

Responses to land use activities undertaken in the past year are somewhat lower than the lifetime activities. A number of factors influence the ability of people to get out on the land. For example families with very young children will tend to stay in town until the kids are a bit older. Other people surveyed had health problems which prohibited them from going out and some felt that they were too old or too busy. Regardless of their degree of participation in wildlife harvesting almost everyone in the community benefits from the land use activities of those who do by consuming country foods.

The annual food harvest is an integral part of life in the community both for its supply of food and for the pleasure these activities bring to people. Children learn the skills needed to hunt through observation and practice with their parents. The accumulated knowledge that experienced hunters have of wildlife behaviour and the land is critical when people are planning land use activities. Also important is the knowledge needed to move on the land in all weather conditions and the ability to maintain and use equipment safely. The skills needed for these activities go beyond the ability to predict the location and behaviours of a given species. Hunting is dependent first on the relationships between people which support the knowledge base and the organization of land use activities. The social attributes of land use activities are

transmitted to young people when on the land with their families. In this sense, land use activities constitute more than an economic system, they are in fact better represented as a value system. One in which social norms and cultural ideology are transposed onto the land and its resources and reflected back onto individuals when they move over it.

Often when talking with people in Kuujjuarapik about the potential changes that development could bring to the land they were left searching for words and ways to convey their concerns. The almost inarticulable dread of change that was often demonstrated through anger, frustration, resistance and sometimes tears, was for a long time difficult to reconcile with the apparently rational analyses that experts and partisans of all stripes had tried to impress on people. Despite these interpretations, many of which would have been easy to adhere to as rational for reducing the sense of risk, for many people mitigation was unthinkable, localized impacts were a fiction and the duration of effects were forever. When people talked about their impression of impacts of the project they frequently made the link between the devastation of the flora and fauna with the devastation of the Inuit way of life. These statements were spontaneous and often highly emotionally charged. The people we talked with do not view and discuss the potential impacts to the environment resulting from the project through the perspective of a detached observer. Rather they see themselves as a part of the ecology which is to be effected.

> *All the salt water species will be diminished. When fish, seal and other species do not have access to their diet, they too will diminish. And we too are part of the living chain of these animals (Roy & Fletcher 1992:32)*

> *Our hunting grounds are going to be destroyed and the animals are not going to be around and not passing through, also we will loose our culture slowly (ibid. p.37)*

The sense that an Inuit identity is made up in part of the individual's participation in the hunt comes through in the following citation as does the idea that changes to the biophysical environment are inseparable from the effects in the social environment:

> *Here, life for us is mostly a relation with animals; that is what gives us pride, something to look forward to every week-end and holiday seasons, and for the hunters they are proud to go there and catch something to eat for us. After they start poisoning our animals it is going to different. People will turn to alcohol and get drinking and drugs and all that. When they cannot hunt anymore that is going to be bad for us. How can they propose* [to start building the infrastructure] *while they have not finish with the studies (ibid. p38)*

Perhaps the difficulty that some people had in expressing their thoughts about the nature and meaning of environmental change, cause and effect, was in part because the effects of change extend into the centre of culture. We would suggest that it is people who are made inimical to themselves when the land is made alien to them.

The knowledge required to pursue these land use activities is well disseminated within the community. Additionally, hunting efficiency has been augmented by incorporating new technologies into harvesting activities. The insertion of the Inuit into Canadian and global political and economic realms has opened new avenues of expression to them as well as increasing their awareness of events outside of their immediate territories. Of particular relevance to the Inuit is the status of the wildlife populations on which they depend and, as a consequence, the state of the environment both locally and globally. The growing realization that the north is subject to pollution from various parts of the globe, as well as from development in the region, is of great concern. People in this community are acutely aware that the animal species which they harvest are subjected to changes originating far from their place of capture. The Great Whale project presents a new order of risk to this community by situating the source of contaminants directly within their territory.

4.0 COMMUNITY PERCEPTIONS OF SOURCES OF RISK

In this chapter we explore community perceptions of risks through a series of tables which describe some of the results from the survey. This section addresses three interrelated aspects of risk perception: 1) risks associated with land use activities; 2) risks associated with hydro-electric development; 3) risks associated with everyday activities. This analysis is complimented by an summary of local knowledge process and sources of information about risks posed by hydro-electric development. Together these elements point to a community ethos of risk.

PERCEPTION OF DANGER IN LAND USE

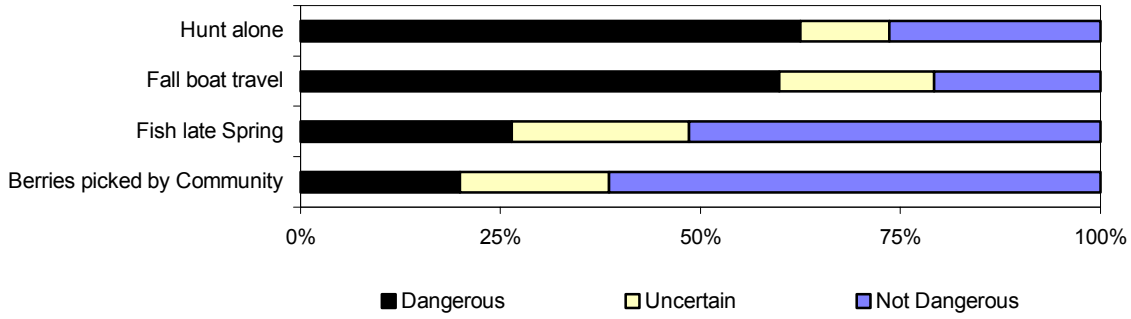
The outward appearance of urbanity in the northern communities is bellied by less frequently viewed hunting activities in the territory around them. The importance of subsistence activities remains paramount in the north as does the knowledge and comprehension of the land, animals and climate. While most families frequent particular portions of the coast, where they regularly camp, all people are free to hunt, fish and trap where they please. As most people in the community over the age of thirty were born on the land, a person's birthplace is often of particular significance to him or her. In this respect life in the community is somewhat artificial in comparison to the milieu in which many people grew up and where they continue to spend a considerable amount of time each year. People returning to camps each spring with their families talk about the relief they feel in being away from the town and its concentration of people, noise and so on. Rather than seeing camping as a special event, different from the rest of daily life, for some people it is a return to the normal and an escape from the artificial confines of the community. It is safe to say that for the Inuit health, in its socially constituted sense, is drawn from the action of being on the land and consuming the animals which result from land use activities. Going out on the land is synonymous with being healthy. It is in relation to land use issues, and more specifically the quality of the animals taken on the land, that people are most concerned about the effects of hydro-electric development on their health. In this section we investigate some of those perceptions.

The decisions on when and where to hunt are contingent on a number of criteria. External factors such as weather conditions, migratory movement of animals and seasonal availability will play significant roles in the itinerary of hunters. Social factors like the availability of hunting partners, the condition and accessibility of equipment, the amount of time the individual has to hunt, and the shared knowledge about game location will also influence decisions around land use activities. According to several respondents experience is perhaps the most important factor which bears on the evaluation of risk in land use activities. An experienced hunter will hunt during any season provided the conditions are adequate, and will have little difficulty facing extremes in temperature or breakdowns in equipment. On the other hand families generally spend time on the land together in the spring and summer when the climate is the most forgiving and will frequently establish a semi-permanent camp which they will visit each year. In the winter extended hunting trips are generally only undertaken by the most experienced hunters, day trips for fishing and caribou hunting will be made by less experienced hunters and families if the conditions are good. We would then expect that the risks of associated with land use activities would be influenced by individual experience, season and the type of activity.

When we look at the results in the following table we see a general pattern which reflects the accumulated experience of many generations of land use by people in the region. Hunting alone was considered a dangerous activity by 62% of those surveyed and only 11% were uncertain about it. The answers concerning the risk of fall boat travel were quite similar with a

slightly larger portion uncertain. These questions access strongly promoted norms of land use practice within the community which explicitly underline the danger of hunting alone, something which is rarely done. Several respondents stressed the importance of not hunting alone and said that they had never done so. Similarly fall boat travel was described as risky because of falling temperatures and less predictable weather in general. In some cases where people responded that hunting alone or fall boating were not dangerous the answers were qualified by describing specific conditions, locations or regularly traveled routes where one would meet other hunters regularly. In these cases, the not dangerous responses were effectively linking danger with the predictive capacity which comes with experience.

Table 3: Kuujjuarapik Land Use Perceptions (n=72)



When asking about the perception of land use dangers we were often asked to contextualize the questions. In some cases people found it difficult to abstract a generalized “spring” for example. They tended to ask questions like When in the spring?, Where?, What’s the weather like?, etc. We added the qualifier “when the ice is starting to go” to give some context and to examine responses to a situation which would likely be considered dangerous, regardless of individual experience and ability. Others people responded that everything “depends” on, among other things, your knowledge base, age, number of traveling companions and preparedness. Thus some proportion of the uncertain responses may indicate the lack of precision in the questions. The consistency with which people had resisted responding to abstracted notions of both danger and spring also suggests that this question may reflect southern Canadian notions of probabilistic generalizations of experience which do not translate well cross-culturally.

Even the risks associated with berry picking near the community need some contextualization. While 62.5% of people said that it was not a dangerous activity others cited cases where seemingly innocuous activities had turned dangerous because the people involved did not anticipate a change in the weather or because equipment failed. Additionally, some people felt that berry picking, or more precisely the consumption of berries from near the community, posed some risk as they may have been exposed to dust from the roads, be contaminated by garbage from the dump or sewage from the lagoon. The sense that context is critical in making judgments about danger points to the importance of individual experience in the social construction of risk in Kuujjuarapik.

The pattern of responses to the land use danger questions suggest two things: the first is that it is difficult to offer a universal assessment of risk for a given situation when numerous factors must be taken into consideration. The second is that risk is assessed within the context of the land use practice in question.

Where someone is going and what they are going for is determinant in the perception of the risk and their response to it. Subtle differences in objectives and itinerary can produce significantly different evaluations of risk and responses to it. For example, while in another community one of us was invited to join a large party of hunters of various ages, including some young boys, who were going to a small polynia to hunt seals. The weather was relatively warm with some wind, the snow was fresh and quite soft. Less than five miles from the community on a high bluff the entire entourage stopped. From this vantage point we could see roughly 40 miles over the land and ice covered sea. The sky in the distance was quite gray. The lead hunters discussed the appearance of the sky and quickly decided that we would turn back as the changing conditions indicated by the colour of the sky, coupled with the snow conditions, were likely to make the ice around the edge of the polynia unstable and seal hunting that day too risky. Other hunters arrived on their way to two other camps, one on the coast about 30 miles south of the polynia and the other inland near a lake. All the hunters discussed the conditions and agreed the polynia was not usable that day, we turned back the others continued on.

In this case we see how different groups of hunters make different decisions when faced with the same climatic conditions. In this case risk was evaluated based on location. It is also possible that different decisions would have been made if the hunting party was exclusively made up of experienced hunters, if an alternate resource was available nearby, and so on.

Three questions in table 5 deal with the consumption of country foods and indicate perceptions of risk associated with products rather than processes of land use. The question concerning food high in fat deals with an area where cultural norms are in direct conflict with popular dietary information. Fat from seals, beluga and caribou has always been the mainstay of the country food diet. One that is particularly important given the rigors of land use activities and the caloric intake necessary to maintain body heat and energy. Additionally, fat reserves in animals are seasonal variable and animals tend to be hunted preferentially when they are the fattest. Caribou in the spring and summer are at their leanest and least palatable according to respondents. Seals killed in the winter will float because of their fat content while those shot in the summer tend to sink. Numerous techniques are used to conserve and store fat that is consumed throughout the year. The importance of animal fat in the local dietary repertoire differ from popularized medical information concerning the role of fat in a number of diseases and with media promoted norms of ideal body conditions. The possibility of health risks associated with fat consumption are discussed within the community and seem to have some effect on the responses to this question. Only 27.8% of respondents felt that fat consumption was not dangerous while 40.3% said that it was. Almost one third of the people were uncertain. In discussing this contrast with people it was suggested that there are two kinds of fat; fat from store bought foods and fat from country foods. The former is acknowledged to pose a risk to health while the latter provides benefits in the form of richer blood, warmth and satiety. Indeed, some of the respondents suggested that all store bought foods pose a considerable health risk because the consumer has no control over processing and because southern farms are located close to sources of industrial pollutants. Older people also pointed to what they saw as the weakness of some young people today as evidence that store bought foods are poor replacements for country foods.

Seal liver is one of the most appreciated country foods and one which almost 80% of respondents considered not dangerous to eat. The importance of this organ in the country food diet reflects a culturally constituted sense of bodily function and vitality. The seal liver is normally eaten during the butchering of the animal and is particularly liked by elders because of its restorative capacity. We were told that a person feels energized and healthy after eating this organ, without it the blood becomes weakened and the individual lethargic. Only two respondents suggested that there was any health risk associated with eating seal liver. Experienced hunters have a detailed knowledge of the different qualities of seal liver in the

different seasons. Sometimes the liver will have white spots on it or will have lumps which can be felt below the surface, in which cases it is not eaten. In the spring, when the seals begin basking, the liver tends to change in size because of the animals are fasting. Again the organ is rejected in these circumstances. In these cases it is the local knowledge about the animal's condition which informs people about the risk of consuming it. The possibility that mercury and other contaminants can accumulate undetected in the most important food species and in individual organs of those animals is of considerable concern to people in the community. This is a reality which the challenges the traditional knowledge base, a social impact of development with important repercussions. Some elder hunters declared they would continue to consume seal liver based on their own criteria of acceptability regardless of what southern experts said.

The risk is associated with eating caribou kidney was also very low in the survey although the majority of respondents were uncertain about the risk of eating this organ. In Kuujjuarapik, caribou kidney is normally thrown out with the offal during the butchering process.

In summary, there are three distinct patterns associated with risk perception in land use activities. The first is that risk is present in all activities in life but that it can be largely anticipated and mitigated through the judicious application of local knowledge. The second is that risk is highly context dependent and blanket assessments of risk are not normative approaches to disseminating information about them. The third is that external sources of information about health risks are incorporated into community level perceptions of risk. In some cases, when information generated outside of the community conflicts with cultural norms an explanatory model is invoked which differentiates between inside and outside sources of risk. A general principle arising from this is that internal processes maintain their integrity and external sources are seen as risk bearing. Alternatively, conflictual information leads people to not commit themselves to an opinion about the risk associated with the activity. In essence waiting for clarification before committing to an about the risk involved. When external information is not in conflict with the local, people will consider it and it can influence perception of health risks.

PERCEPTION OF RISK FROM HYDRO-ELECTRIC DEVELOPMENT

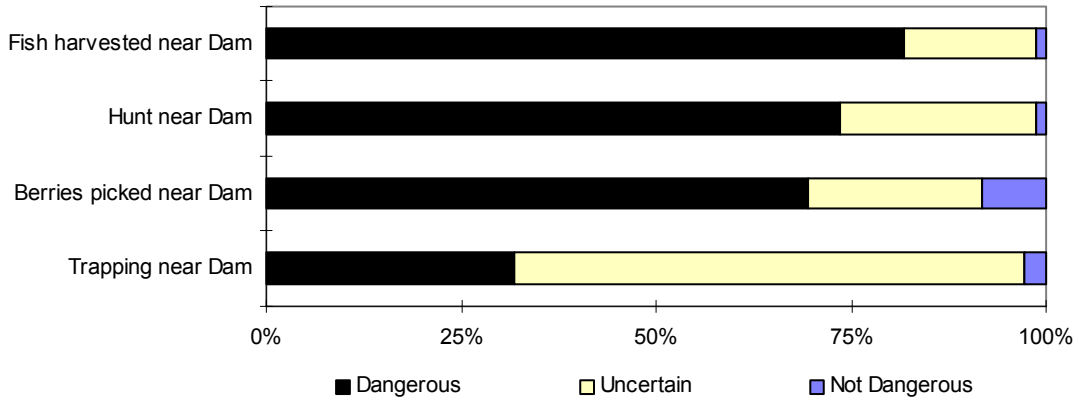
The construction of the military base in the 1950s was frequently indicated as having had an effect on the distribution of migratory birds around Kuujjuarapik. According to older informants the immediate coast around the mouth of the Great Whale River was blanketed white with snow geese during their migrations and now the concentrated presence of people since the construction of the base has reduced the numbers to a fraction of what they once were.

Likewise, the construction of the James Bay complex in the 1970s is linked to a number of environmental changes by people in Kuujjuarapik. Experienced hunters state that the geese migration route has been altered and the flock now bifurcates in the area of the reservoirs, one portion flying north-east to the Ungava coast the other portion favouring a route along the islands in Hudson Bay. The potential effects of the Great Whale project to the wildlife are not new concepts to people in the region, but follow a long thread of experience and shared knowledge coupled with an extremely fine awareness of the natural environment and animal behaviour. The perception of environmental impacts introduced by non-native presence in the north is informed by knowledge embedded in a historical framework. These perceptions are based on analogical situations and reflect the extent of information sharing networks which effectively link all the Inuit communities. To investigate the diffusion of information about potential impacts of hydro-electric development within the community, and the consistency of local perceptions about them, we posed a series of scenarios to which people indicated the danger associated with them and two series of statements to which respondents indicated their level of agreement. The first table addressed the perception of danger inherent in land use activities close to hydro-electric installations. The second series investigated hunter reactions to

impacts on animal species, the third series inquired about perceptions of the subsequent impacts on community health.

When we compare the perception of risk in land use activities with those associated with the establishment of a hydro-electric dam and reservoir we see a strikingly different pattern. In Table 4 four categories of land use activities are shown with the perceived risk they present when they are associated with development. Answers to these questions are prospective and would likely be derived from current awareness about the project and its repercussions.

Table 4: Kuujjuarapik Development Impact Perceptions (n=72)



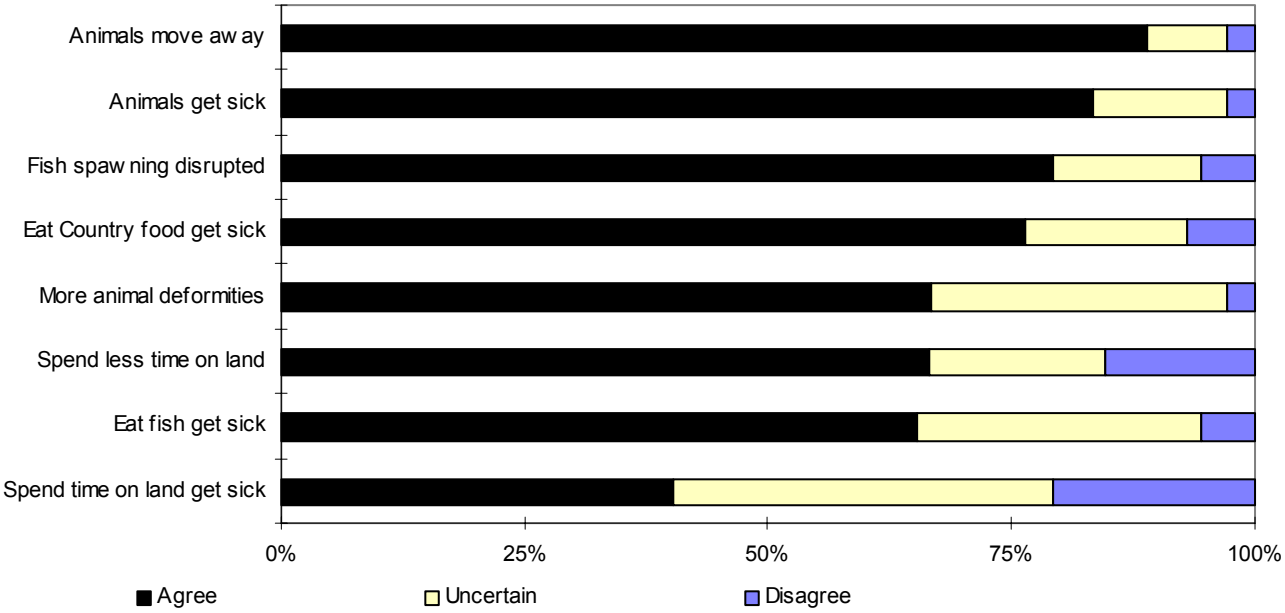
Nearly everyone in Kuujjuarapik has some knowledge of the mercury issue. It is pervasive in community level discussions about the impacts of the La Grande Project which is understood to be analogical to what can be expected in the case of the Great Whale project (an expectation shared by Hydro-Québec (1993: 261)). Discussions about the effects of mercury are also persistent in the various media. The discourse around mercury is the principal factor in the association of danger with the Great Whale project. Eating fish caught near a dam was considered to be dangerous by more than 80% of respondents.

Similar response rates were given to both the hunting and berry picking near the dam questions as well. In one instance a respondent stated that hunting near a dam was not dangerous because he would do so regardless of whether it was or not as a form of protest against the project in its entirety. In this case at least “not dangerous” is a protest response which in fact signals the overall danger of the project. In the case of trapping near the dam we see a different response entirely with more than 65% of respondents uncertain. This likely reflects two co-related factors. The first is that fur bearing mammals that are trapped are not normally eaten (Inuit hunters trap mainly fox) and hence the vector for risk to the individual - consumption of contaminated meat - is avoided. It is also likely that some proportion of the uncertain segment is reflecting a no experience category. Trapping land mammals has not been systematically undertaken in some time and even when they were, was almost exclusively done by experienced male hunters who are now in the older age cohorts. Seal skins, which are a byproduct of hunting, were more valuable for Inuit hunters until the plunge in fur values which resulted from European anti-sealing movements (Wenzel 1991). Relatively few people in Kuujjuarapik have a lot of experience with trapping and virtually none have experience trapping near hydro dams.

In Table 5, the level of concurrence with statements concerning Hydro dam development impact on land use activities are presented. Only 2.8% of respondents disagreed that animals

near the dam would move away from it or get sick as a result of being close to the dam, while 88.9% agreed with the statement. Slightly more people were uncertain about the possibility of animal sickness resulting from their proximity to the project than about the likelihood of their changing territory (13.9% and 8.3% respectively). Similarly, 79.2% of respondents agreed that fish spawning would be disrupted by the project with 15.3% uncertain. Each of these questions addresses the perception of broad ecological conditions and accesses widely held understandings of animal behaviours and responses to human influences on natural conditions. To paraphrase respondents observations on these effects; animals always move in response to people we can therefore expect them to avoid high activity areas around the dams. Those that don't move will undoubtedly be influenced by the changes, in some cases producing sickness. Fish have less overall mobility than land animals and will have no choice but to have spawning disrupted by the damming.

Table 5: Kuujjuarapik Agreement with perceptions concerning Development Impacts on Land Use related Activities (n=72)



The statement regarding frequency of birth defects in animals, fish and birds addresses a specific type of effect on animal populations which can result from industrialization. Responses to this statement show a higher degree of uncertainty (30.6%) than the more general behavioural questions, perhaps because of the relatively infrequent appearance of birth deformities and subsequent lack of direct knowledge people have of them. Additionally some frequency of deformity occurs naturally which can occasionally be seen in animals living in natural conditions as some people pointed out.

Three statements inquired about the possibility of human sickness as a result of eating animals caught near the site of development. A general trend in the responses to these statements is the level of uncertainty is variable while the proportion of people disagreeing with the statement stays consistently low. The statement concerning people who eat a lot of country food getting sick was agreed to by more than three quarters of respondents while the one concerning sickness from eating fish was agreed to by 65.3%. This would seem at odds with the presence of a wealth of scientific information disseminated within the community on

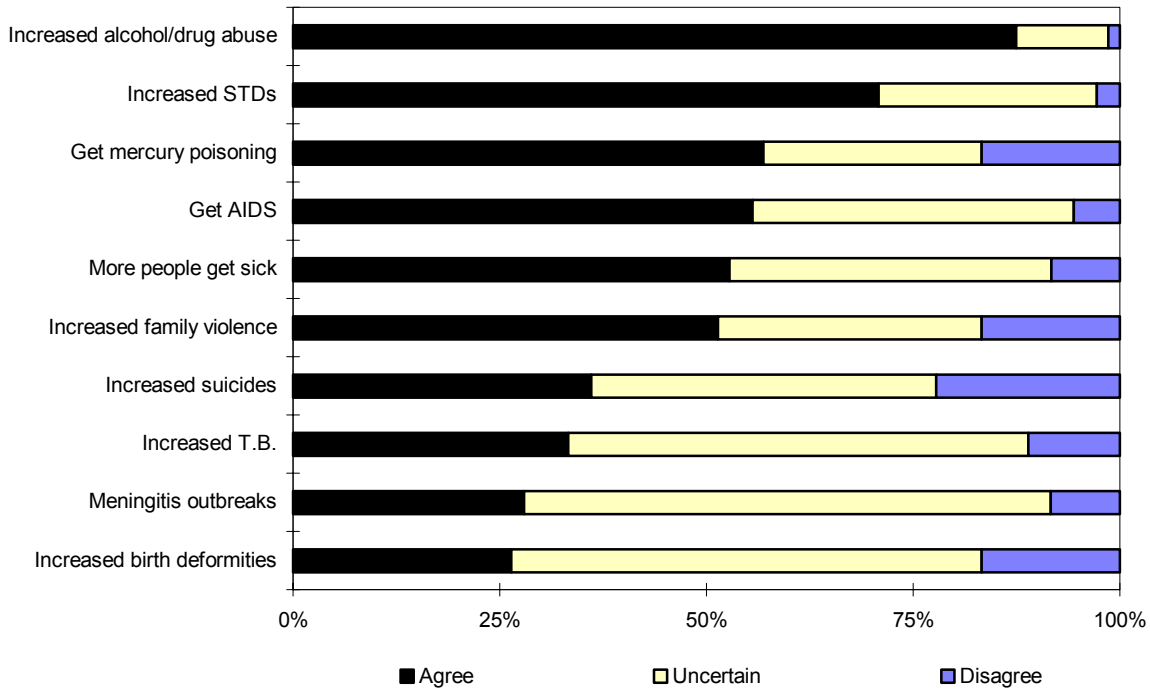
mercury contamination in fish populations. The scientific information is supplemented by an awareness of the human mercury monitoring program in Chisasibi where fish in the La Grande complex reservoirs have elevated mercury levels.

Why is it that fish as a source of sickness is less frequently agreed to than the more general country food category? We offer two interpretations to this question. The first is that a the less specific category of “country food” may address a generalized framework of resistance to the development within the community. The specific forms of impacts being less well acknowledged within the community than a conceptual understanding of country food as a source of health which is endangered by hydro-electric development. The second is that the nature of scientific information is at odds with local ways of understanding risk. The scientific information is predictive and odds based, and may not offer a clear understanding of the relationship between mercury, fish and people. Mercury contamination became one of the key issues of the debate around the suitability of the project and one which received considerable media attention. Perhaps the presence of so much information which is at times contradictory and quite often difficult to assimilate leads people away from a concrete opinion about the effect and towards a “wait and see” contingency which is reflected in the responses to the uncertain category. This interpretation does not account for the high rate of dangerous responses associated with eating fish in the previous table, however. Results to these questions, while highly concordant, retain some ambiguity.

The final sickness statement, “people who spend time on the land will get sick”, provoked a different pattern of response than the others. Here less than half of the people agreed with the statement, an almost equally large proportion were uncertain and slightly more than 20% of people disagreed. Responses to this statement point to the understanding in the community that the health risks posed by hydro-electric development are largely associated with the consumption of affected animals. Regardless 40.3% still agreed that health could be affected by travel on the land if the project were undertaken. The response to this question is probably closely linked to the high proportion of people who agreed that fewer people will want to spend time on the land as a result of hydro development (66.6%). This last question may address a general sense of rupture between people and the land base which could result from development.

We investigated the perceptions people held about the effect of environmental impacts on community health. These results are presented in Table 6. Here we see considerably more variability in response rates and in particular higher degrees of uncertainty. Most people agreed that alcohol and drug abuse in the community would increase as a result of development (87.5%). Here people frequently made links between the increased income from jobs, the presence of more people from outside the community and the increased availability of drugs and alcohol. Drug and alcohol use were consistently highlighted as the most serious health problem facing the community today. While these issues are very serious problems in the north today the degree of affirmative of response to this question may have been influenced by a particularly painful episode of alcohol and drug related violence which happened shortly before the research began in the community.

Table 6: Kuujjuarapik Agreement with perceptions concerning Development Impacts on Community Health (n=72)



The second most frequently agreed to statement (70.8%) concerned the likelihood of increased rates of STDs as a result of hydro development. Here people made reference to experiences with other construction projects where STDs seem to have been introduced to the community by workers from the south. The question of STDs is one that provokes some concern for many people. Elders have said that before there were very regular contacts with white people there were no STDs. They are a health risk associated with contact with non-Inuit and a result of the opening of the north. Again we see that people in the community place disease and risk into a historical context which focuses on interactions between Inuit and southerners. Presently, the issue of AIDS is receiving a lot of attention in the north and condoms are widely available in public places. While fewer people agreed that the project could influence AIDs rates in the community than those who agreed that it could influence STD rates they were still a majority (55.6%) and almost all of the remainder were uncertain (38.8%). The difference between STDs and AIDs response rates may reflect the lower direct knowledge people have with the latter illness.

Three other statements in this table were agreed to by a majority of respondents. 55.6% agreed that people who work at the project would get mercury poisoning, 52.8% felt that more people in the community would get sick and 51.4% felt that family violence would increase as a result of the project. This last statement represents a different order of experience by linking decreased social harmony to development. In several cases people underlined the association between powerlessness to stop development with an increase in family violence. When we look at the responses to the statement concerning increases in suicide we see the most divergence in responses. Roughly one third of people responded affirmatively, 41.7% were uncertain and 22.2% disagreed. Suicide is perhaps the most painful issue for northern communities to deal with and one that is difficult to resolve. The divergence in responses to this statement may reflect the overall uncertainty that people have in comprehending and stopping this most serious of problems.

The final three statements in this table are marked by a majority in the uncertain response category. The relationship between TB, Meningitis, birth deformities and industrial development are not commonly discussed in the community although the local experience with epidemic disease is considerable. Clearly people have not considered links between these diseases and hydro-electric development to the same extent that they have formed opinions around the effects on the natural environment and mercury poisoning for example.

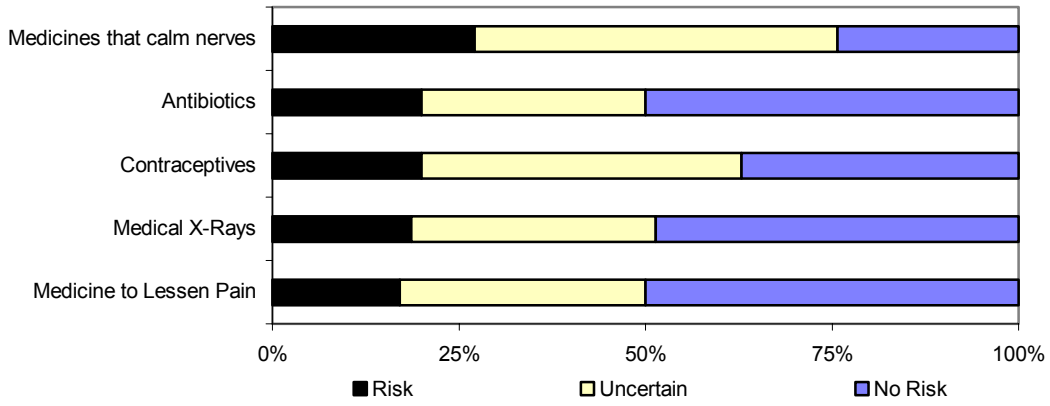
Overall the findings of this section of the survey suggest that there is a high degree on concordance in the community about the effects of hydro electric development on the natural environment and on the possible health effects to people who consume animals from the land. Less consistent are the responses to statements concerning social problems and disease issues within the community. In these questions there is substantially more variability of response and much higher rates of uncertainty.

PERCEPTION OF RISK IN EVERYDAY EVENTS

In order to contextualize the perception of risk associated with hydro-electric development with other technological innovations common in the north we posed two series of questions which address risk in everyday living. Here we have attempted to isolate patterns of risk perception with regard to the presence of non-traditional medical technologies and behaviours which are represented as risky in current medical discourse. Taken together tables 4 and 3 draw a portrait of a diverse range of opinion and perceptions among respondents with respect to a variety of health influencing behaviours and with common medical products or technologies.

Table 7 investigates the perceptions people have of five commonly available medical treatments and procedures. Responses are quite consistent to each with roughly 20% of respondents feeling that the procedure or treatment posed some risk. The exception is medicine to calm nerves which slightly more than 27% of respondents felt posed a health risk. Nearly half of respondents were uncertain as to the risk posed by this type of medicine and one quarter felt there was no risk. The finding of relatively high risk associated with medication for nerves is consistent with work exploring the cultural dynamics of mental health in Nunavik where prescription medication for behavioural abnormalities was viewed as ineffective or counterproductive in many cases (Kirmayer, et al. 1994) . Talking cures were the preferred method for dealing with low intensity nervous conditions. One interpretation suggested by these results is that risk is associated to some degree with intervention which counters indigenous healing models. Also, it is highly likely that most people in Kuujjuarapik have more direct experience with the other items in the table. This would suggest that individuals who have direct knowledge of medical products and treatments in question to be more likely to state an opinion regarding the health risk. This is similar to response trends in the preceding sections as well.

Table 7: Kuujjuarapik Perceptions of medical Treatment (n=72)

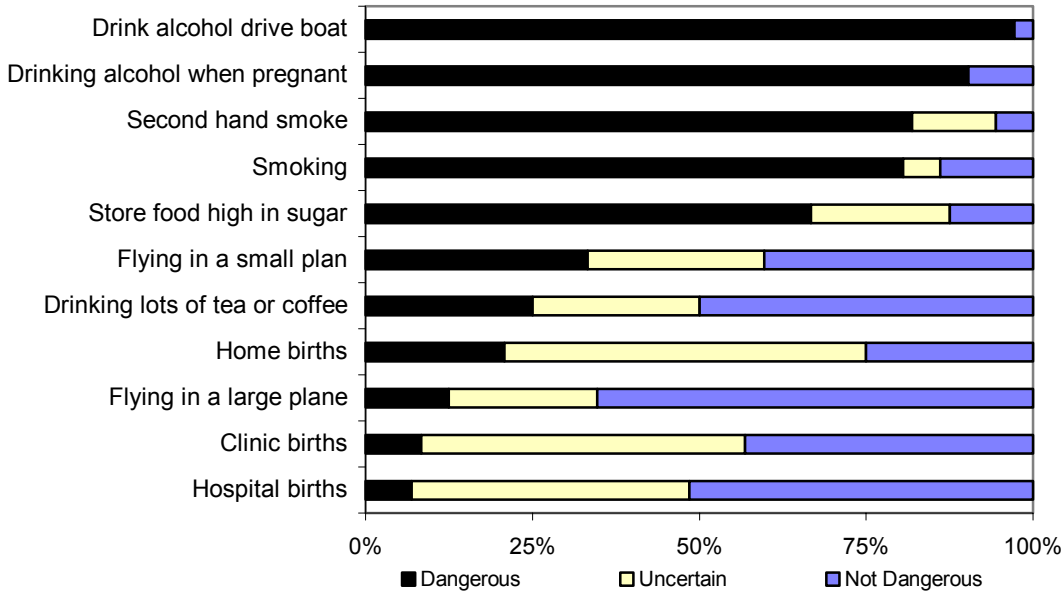


Uncertain responses were almost also prevalent with regard to the health risk posed by contraceptives (42.9%) as they were with calming medicine. In this case however more than one third of respondents felt they posed no risk. Questions about the use of contraceptives may be evoking responses formed in cultural and religious frameworks which tend to disfavour contraception. Also, for many of the older respondents medically provided contraception were not available to them. The remaining three categories have very similar response proportions. About one in three people are uncertain about the risk of antibiotics, medical x-rays and pain medication. Half of respondents stated that there was no health risk associated with these forms of medical intervention. The consistency in responses to these categories is interesting as it reflects an entrenched diversity within the community to things which nearly everyone has some exposure.

Together the results in this table demonstrate that diversity of opinion within the community is normal. They also underscore the importance of the high degree of concordance which we have found in many of the questions regarding the risks of Hydro-electric development. Risks are perceived in different ways by different people. Indications of more homogenous perceptions point to social processes which are strongly shaping risk perception within the community.

Table 8 explores the community perceptions of risk in everyday living particularly with items incorporated into the national and global discourses of risk (airplane travel, coffee consumption). Alcohol use is nearly universally understood to be dangerous both when operating a boat and when pregnant. While most people are aware of accidents which have occurred as a result of alcohol the situation regarding alcohol during pregnancy is not born out by considerable direct evidence. As Québec Inuit communities have a very low rate of alcohol related birth effects one would expect that in the absence of direct knowledge the rates of uncertainty would be higher, as has been the case in the perception of other risks. However, alcohol use is in another order and it is quite easy for people to extend the knowledge they have about the negative effects of drinking into other spheres.

Table 8: Kuujjuarpik Perceptions of Everydayl Risks (n=72)



Smoking has been the subject of considerable media attention in the south for decades and it is doubtful that anyone in the North has missed the message in these campaigns. Despite this smoking remains a part of many people's lifestyles, 67.7% of people in Nunavik are regular smokers (Santé Québec 1994: 115). Recently the high smoking rates in Nunavik are being addressed by regional health authorities using a variety of media in Inuktitut. In some cases people have integrated information on the effects of second hand smoke on young children into new behaviours which see families designating smoking rooms in their houses away from the children. In our survey more than 90% of respondents felt that smoking and second hand smoke posed a health risk.

Two questions addressed another commonly discussed source of risk in the south, air travel. Travel in a large plane is perceived as risky (12.5%) to a small minority of people in the community. Almost three times as many people thought that travel in a small plane was risky however. The risk of small plane travel must be put into a context where small planes travel north form Kuujjuarapik daily to the other communities and frequently face difficult weather conditions, hit caribou on the runways and have other mishaps. Fatalities are thankfully quite rare. Also, a popular place for people to go for a short ski-doo ride near town is to the site of an Austin Air plane crashed which happened a number of years ago. The carcass of the plane is well inscribed with bullet holes and graffiti and is incongruous with the forest it now sits in. The potential risk of small plane travel is well known to people in Kuujjuarapik and expressed in the survey results.

The danger associated with the consumption of imported food staples do not follow a consistent pattern. Sugar consumption is considered to pose a danger to health by two thirds of the respondents while only one quarter thought that coffee and tea consumption did. The consumption of sugar by children is well understood by people in the community to be responsible for the high rates of dental carries. Coffee and tea are consumed most often by adults and pose no evident danger to health for half of the respondents.

Some people made an explicit link between health and southern foods as part of continuum of the introduction of cigarettes and other foreign elements which are slowly destroying the health and stamina of people in general and changing the very shape of children.

And the Inuit people were strong before there was cigarettes and pollutants and they were developing with good progress. They were very strong and could work faster, longer. But right now with southern diet coming in the people are growing faster but weaker because of their unnatural growth. The food from southern diet has effect and they are much weaker. At that time there was no sickness. When we started eating white man's food the diseases started; measles, tuberculosis. They start growing very unnatural but weak. All the Inuit people had very active life up to the day they died of old age.(p.84)

In this respect individual elements of southern origin, be it sugar, coffee or cigarettes, are part of a historical shift in what people put in their bodies which pose incremental risks.

The danger associated with birthing were investigated largely because of the unique Inuit midwifery program in the regional hospital in Povungnituk. The birthing issue was one of the first local efforts to shape biomedical practice to community priorities and was therefore likely to be a highly resonant issue for people in Kuujjuarapik. What is striking about these responses is that nearly half of respondents were uncertain about the risks posed by home, clinic and hospital births. While twenty percent of people felt that home births posed some danger less than 10% felt that clinic and hospital births did. In the results to these questions we see that a high degree of trust is placed in non-indigenous technology and biomedical practice in some instances. This would indicate that community perceptions of risk are not systematically biased against elements which come from outside of the region.

To summarize these findings we see a pattern of diversity within the perceptions of the risks faced in everyday life. This diversity is a normal part of the understandings people have within the community and reflect the variety of personal experiences people have.

LOCAL KNOWLEDGE AND RISK PERCEPTION

We have identified on variety of patterns of risk perception in Kuujjuarapik. In this portion of the report we described local knowledge processes and contrast them scientific depictions of environmental impacts. Additionally, we review the role of locally available sources of information about environmental change in shaping risk perception by people in the community.

There is a growing appreciation in the scientific community for what was once considered folk knowledge as a number of traditional ecological knowledge projects in Aboriginal communities around the country demonstrate (Kuhn and Duerden 1996). In many cases Inuit hunters have easily been able to clarify points of animal behaviour, ecology and status on which biologists and others have incomplete information. While it is important to understand the status of animal populations, it is equally important to consider the relationship between the animal and the human. In contrast to the reductionist approach of science people in Kuujjuarapik did not tend to see an animal or species as a conceptual isolate but rather as a series of interactions between other animals and people. In this sense the scientific discourse on environmental impacts, which centres on the definition of territory into discrete units, of ecosystems, marine environments or drainage basins, species and so on, runs against the Inuit comprehension of the nature of nature. In this view all ecosystems are linked as are all animals. Terrestrial mammals will walk on the ice surface, drink from lakes and will be eaten by other animals which cover equally large territories. Rain falls on the land and the water without respect to boundaries and marine mammals will move at their own will anywhere in the ocean environment. It is from this perspective that people feel that local source contaminants will be transported far from origin causing the flora and the fauna to be affected.

It is a standard cliché that native people are somehow more attached to the land and more sensitive to the environment in general than are non-natives. While this idea serves to romanticize life in non-industrialized societies, like many stereotypes there is an element of

truth to it. The Inuit certainly do have a keen awareness of and appreciation for the land and wildlife which supports them. They frequently refer to their own participation in subsistence activities as being that of a caretaker relationship. One in which people must maintain a vigilance over the natural resources that they depend on. When looking at the scale of the Great Whale project it is so out of proportion that it cannot help but to destroy the relationship that people have with the land, if not the land itself. One person stated this idea in the following citation:

> *The land is going to suffer, not just the animals, the land. Without talking about the animals, the land will suffer, the soil, the rocks, the tundra, the trees, the bushes, all these are going to suffer. Just for that it is not good. The animals will have a great effect upon. The land will bear heaviness on the land. The place will no longer have innocence, innocence of the pure wilderness, the innocence will be totally gone and somehow the land will have man made destruction. (Roy & Fletcher 1992:69)*

For some people at least the extent of destruction of the territory is irrelevant as the impact is at the symbolic level.

The southern perspective of maintaining viable populations of species, with an exploitable surplus is not shared by the Inuit. Their sense of population dynamics, which is based on direct observations and accumulated knowledge of many generations of hunters, is that the land is always full or becoming full again. When one species is rare others are taking its place in abundance. In removing animals from the population the hunter is freeing up space for another animal to occupy. This creates a healthy population by allowing other animals to grow and live. The hunter occupies his place in this chain of existence by creating potential for growth in other species thus assuring the continued survival of both the hunter and the hunted. It is a perspective typical of hunting populations that killing animals is ultimately a reciprocal act of kindness allowing both humans and animal species to survive.

People in the north do not come to this comprehension of population dynamics without empirical evidence to support it. For example, the validity of the knowledge passed on from previous generations is often shown to be correct through the experience of the present. For nearly 100 years caribou in all of northern Québec had been decreasing in number, to the point where until the 1950s people were reported to be starving to death. The various trader and government accounts drew the correlation between the widespread availability of repeating rifles and the population decline and foresaw an inevitable elimination of the caribou. In the 1970s Inuit and Cree from Kuujjuarapik would together charter aircraft at great expense to fly inland to hunt caribou for the community. However, in the early 1990s there were literally thousands of caribou in the immediate vicinity of the community. Flying from Kuujjuarapik to Umiujaq one could see a near continuous line of the animals along the entire coast, and many more inland. When interviewing hunters they frequently made mention of the return of the caribou as a proof of the validity of what they had been told for many years by their elders; eventually the caribou will return. In an interview with one of the oldest men in the village he said he has never seen this many caribou but was not surprised because he had been told by his father that it had been like this before and that it would be again. That the caribou returned in such immense numbers, despite a consistent hunting pressure, demonstrates that the hunt cannot kill off the species in entirety and in fact caused it to recover. The warnings of non-Inuit, from HBC managers to Provincial biologists, that the caribou would be wiped out were shown to be false, as everyone can see, and the predictions of the parents of today's elders shown to be true. The legitimacy of the cultural rationality is confirmed by empirical observation.

From this perspective there is little doubt as to why many people view scientific assessment of impacts on animal populations from development with skepticism. For many Inuit the imposition of quotas and other restrictions on their harvesting of wildlife are, at best, misguided acts of badly informed administrators and, at worst, blatant attempts to control and change the

Inuit lifestyle through the assessment of wildlife populations for purely political purposes. Risks to wildlife come not from natural phenomena like hunting but from the irrevocable unnatural destruction of habitat. In contesting the development of hydro-electricity people in Kuujjuarapik are also questioning the legitimacy of southern understandings of the dynamics of the natural world.

SOURCES OF INFORMATION ABOUT RISK

There are numerous paths through which the people of Kuujjuarapik are informed about environmental issues in their community. The television and radio are certainly important, radio likely more so than TV. The various Inuit environmental and political organizations hold meetings and inform the public through the radio. However, the most important source of information on environmental status is likely conversation with others who share their own experiences, in particular knowledgeable hunters. The dynamics of communication about risks hinge on the role of elders as mediators of knowledge within the community.

When one speaks about elders in the community in Inuktitut the word used is *attaatait* which literally means the fathers. It also seems that being an "elder" is equated to being *Isumataq* – literally the one who thinks/knows. A person can be considered Isumataq relatively young in life if they show great skill and proficiency in hunting and have a strong ecological knowledge base. These people tend to be an informal leadership within the community who shape opinion through their own acts and experience. People who are generally acknowledged this way tend to be self-reliant and giving towards others. They respect cultural norms of interpersonal interaction and participation in community life. They are consulted on a wide variety of issues, from good locations for game, to weather forecasting, to where to build the new arena. They are seen as neutral in most debates and sources of sensible, well reasoned information. When we began asking questions about risk perception in Kuujjuarapik people frequently referred us to one of a few elders in town (they can be men and women). An indication of their key role in shaping community perceptions about risk and danger associated with hydro development. The role of the elders in circulating knowledge and influencing opinion is considerable.

THE ROLE OF THE MEDIA

The presence of southern media in the north has increased dramatically with the introduction of satellite technology. Virtually all houses have televisions and radios. Numerous stations in French and English, from Canada and the US are available. TVNC (CBC North) which has majority programming in Native languages is also widely watched. In the survey 94.6% of survey respondents watch Aboriginal language programming, the same proportion also watch English language television. The increasing mediatization of the north demonstrates to people in northern communities southern lifestyles and urban realities. It places the north into a global context, shrinks the size of the region and enhances inter-community communication. The media also allow the Inuit to see the representations of their lives made in the south compare that their own self image. Through the various media, particularly television, people are exposed to programming which would inform them about environmental contaminants and change. Perhaps more importantly the media would also serve to politicize the issues around industrial development for the Inuit by showing southern responses and solidarity with the other native causes.

Nature shows which are very frequently broadcast also demonstrate, to some people, the southern perspective on the natural environment and to judge that according to their own norms. For example there is a tendency to see the southern practice of exhibiting animals in zoos as an unnecessary form of brutality. Others are aware through the media that habitat destruction is widespread in the south and of great concern to people who care about the state of the environment. One elderly informant used the analogy of the Saint Lawrence River beluga

population to the destruction to be caused by the Great Whale project. In particular he saw this as evidence that southerners do not have the credibility to live up to promises of environmental protection while proceeding with development projects. Similarly, one young man said that he did not like the fishing shows that were frequently shown on the TVNC because of the catch and release technique used. He felt that it was cruel to catch a fish if you did not intend to eat it. At the heart of this is the idea that hunting is not a game, it is existence.

Radio is a direct forum for information exchange in Inuktitut within and between the communities in the north. The community stations are centres of a large variety of activities through which all important and relevant information passes. More than 95% of people who answered the survey reported listening to the radio in Inuktitut regularly. In Kuujjuarapik the Inuit Working Group on the Great Whale Project, a local information and review body, read through the EIS over the radio during the conformity review. Many other meetings around the Great Whale project were discussed in this forum as well. People from communities across the Arctic will call up the regional CBC office in Iqaluit or in Kuujjuaq and provide information about their area which is broadcast across the north when the local station is not transmitting. Through the media people can accumulate information about events, conditions and attitudes in other Arctic communities far from their own.

Television and other media have had a profound impact in a variety of ways on the internalization of the risk presented by the Great Whale project. The various media have provided some information on the state of the environment which is limited by the perspective of the culture which created the programming, the language of the show, and the attention actually paid to the program. They have also provided a perspective through which Inuit can view life in the south and compare that life with their own value system. While this information does influence people's comprehensions of risks, information which is generated internally is given considered more valid.

THE LA GRANDE COMPLEX ANALOGY

There are some Inuit in Kuujjuarapik who have family links in Chisasibi and further south arising from the historic occupation of islands in James Bay. There is currently a small Inuit population in Chisasibi who have relatives in Kuujjuarapik and other Hudson Bay communities. These family connections have been important in disseminating information about impacts from hydro-electric development. For example, in the survey we asked whether land use activities in Kuujjuarapik had been affected by the La Grande Project. A number of people answered that their land use activities had not influenced but that was not the case for others they knew and talked to from Chisasibi. Similarly, questions about the potential impacts of the Great Whale project were often answered by providing information about what the individual had been told by others living in Chisasibi. There have also been several trips organized by the regional authorities for the Kuujjuarapik Inuit to visit the LG2 hydro site near Chisasibi. In our inquiries, people consistently made references to the experiences of others in Chisasibi as analogous to the likely impacts to be felt by the Inuit in Kuujjuarapik. These have been reported elsewhere:

> *[...] two persons that I met* [from Mailasikkut] *said that white people were saying that fish was no good then Inuit people started to worry about the seal. Soon we are going to get the same story from Great Whale (Roy & Fletcher 1992: 66)*
>
> *I have spoken with one particular Cree himself. Those days he used to receive compensation. But now his hunting grounds are destroyed he is unable to receive any money. I know it will be the same for us.(ibid. p.67)*

The analogical situation of the La Grande pervades local perceptions of the Great Whale project and may have served to amplify the dangers of it. The rhetoric surrounding the project,

positive and negative, is unprecedented in the north both for its intensity and for its widespread dissemination.

SUMMARY OF PERCEPTIONS OF RISK

The perception of risk by people in Kuujjuarapik incorporates elements of local and southern perspectives. Contemporary lifestyles are typically a hybrid of land based and community based activities which together form identity and provide an ideological core for social structure. Risk, whether it is interpersonal violence related to alcohol or poisoning from mercury, is assessed according to a complex series of factors which are informed by cultural precepts, historical precedents, political positions and economic necessity. Some trends can be isolated.

Perceptions of risk in land use activities are highly context specific. Generalizations about specific activities and times of year are not particularly relevant means to communicate risk to many people in Kuujjuarapik. Similarly, definitive judgments about the risk posed by a given situation are more likely when the individual has a direct experience with it.

The knowledge of elders is the most valid source of information about risk for many people. Elders subsequently shape community impressions about the inherent danger posed by a number of different things. Local knowledge processes are seen as more valid and are more strongly adhered to by people than southern “expert” knowledge. The latter are sometimes seen as politicized or self-deceptive. However, this does not mean that community understandings of risk are not informed by southern scientific and media sources. Often they are. In cases were this information conflicts with strongly held local comprehensions it is viewed skeptically. In cases were it is in concordance with local understandings it is preferentially adopted as valid.

Expressions of uncertainty about risk are associated with several factors. 1) A lack of direct experience with a given risk producing situation; 2) Conflict between strongly held local models of health and biomedical information; 3) Overabundant or conflictual technical information; 4) Information that is based on probabilistic logic; 5) Information which contradicts local models of ecological processes.

Local perceptions of risk favour a cultural model of human health which is intrinsically related to the consumption of country foods. Local networks, centered around the experiences of elder hunters, disseminate information about environmental change and impacts on anumals widely and as such inform risk assessment significantly. Risks to the food species concern people the most and reflect the importance of the relationship between the people and the land in this community. For some people development presents a generalized risk to country foods which may not be reflected in risks associated with single species, such as scientific risk discourse would favour.

Perceptions of risk in everyday life are variable within this community and reflect differences in people’s life experiences. This variability is a normal part of the diversity within any community. Cultural models of risk do not reproduce unanimity but provide schemas for comprehension into which individuals read their own experiences and understandings. Compared to the risks of everyday life, the perception of risks associated with hydro-electric development are relatively homogenous within the community. Together they reflect an overall high degree of concern about the effects of environmental change on community health, community solidarity and cultural integrity. They may also reflect the overall consensus within the community that the Great Whale project is an unwanted imposition form outside - one which removes more than it adds to community life. The relative homogeneity also reflects the degree to which the issue of environmental impacts from the project have been discussed within the community in the years prior to this study. In other words, consensus about the risks posed by

development may derive from the importance they are vested with at a given time. Despite their unified resistance to the project people in the community did not show a systematic positive or negative bias in their assessment of risks presented by imported technology, biomedical treatments and other innovations.

5.0 CONCLUSIONS: THE CONTEXT OF RISKS

In this report we have tried to situate a discussion about health risk perception and environmental change into a framework which reflects the way that people in Kuujjuarapik think and talk about these issues. As such, the discussion ranges into areas which would seemingly be extraneous to the field of environmental health risk. However, by maintaining too strict of a focus we would have had to make methodological distinctions between culture and environment which would be artificial to the people we spoke with. As such this report describes the cultural context of risk perception in a contemporary muti-ethnic community.

There is little doubt that Inuit today are have substantively different lives than in the past. Since the turn of the century, the most significant factors influencinng lifespan have changed from subsistence related accidents and periodic starvation to include epidemic disease, cancers, suicide, and diseases associated with old age. However, trauma resulting from accidents is still the single largest cause of death in Nunavik although the nature of the trauma has changed from accidents related to subsistence activities towards alcohol related motor vehicle self inflicted violence. The major causes of death present elements of lifestyles of an earlier time combined with those of the present. The perception of health risk from hydro-electric development near Kuujjuarapik also draws from elements of the past and the present, local and outside information and knowledge. The presence of risk today is integrated into a cultural dynamic in which past and present conditions are not qualitatively different fields but together form contemporary life.

The Grande Baleine Project is the first case in Arctic Québec where the effects of a large scale project on the Inuit population are being genuinely considered and studied prior to construction (despite political efforts in the south to build without assessment). As such, it is also the first time that many people are being asked to form and state opinions about the nature of change in public forums, in hearings, in the media and among themselves. The magnitude of the studies and the intensive political machinations around the project is out of proportion to anything else that has previously occurred. This may have the effect of heightening community tensions around development and influencing risk perceptions. However, this should not be taken to suggest that people are simply misguided in their opposition to the development or in their understanding of how it can effect them and their families. The risks people in Kuujjuarapik perceive to the environment and to themselves are situated in a historical and ideological framework, just as the risks associated with not going ahead with the project are in the south. The question underlying the study of health risk perception in relation to development is the subjectivity of perceptions and their degree of concordance with some objective measure of reality. We would argue that both scientific renderings and culture specific assessments of risk operate in a context where knowledge is imbued with significance according to the values of the people making those assessments. In the summary report on the Great Whale project it is stated that:

> *The Grande Baleine complex would be one of many factors influencing the rapid social transformations taking place in Native societies.*
>
> *The mitigative or enhancement measures should ensure that negative perceptions, which are usually very strong when a project is being planned, would fade as the project is completed and perceptions adjust to realities. As they become familiar with the impacts and develop a certain familiarity with the mitigative measures, at least part of the population concerned would come to terms with this project. This would allow study-area residents to take advantage of the new environmental conditions and opportunities for economic development. (Hydro-Québec 1993: 266).*

This citation suggests several things. The first is that there is an absolute means of assessing risk which is not shared by people in Native communities. The second is that without this rational framework people are not competent to judge the reality of change until they have been exposed to it, and lastly, mitigative measures act to shape perception to objective reality.

This study challenges the notion that there is some rational measure of risk which will prevail in the community given time. Further we disagree that southern based risk assessments are value free while those made by the Inuit are biased by their culture. The political context of development clouds an objective sense of risk in the south in the same way that a hunting heritage forms opinion about the effects of development in the north. In Kuujjuarapik, the fundamental criteria for understanding change and evaluating risk is through the impact of environmental change on relationships between people, and between people and the land and animals on it. The cultural rationality of risk in this case is one which favours comprehension based on the dynamic interactions of people and the environment rather than on the cause and effect associations typical of a scientific methodology. The different frameworks for understanding are not mutually exclusive and in fact both are used in Kuujjuarapik to situate the comprehension of change and the significance of it to people there. It is however incumbent on those who reject local means of understanding to examine their own constructions of reality with the same critical eye that they examine those of people who's lives are most directly influenced by environmental change. On balance we would side with those who have the most direct experience with the local environment as their opinions are situated in a knowledge base which stretches back a long way.

This perception of the nature and breadth of impacts on health in Kuujjuarapik is influenced by numerous factors. Foremost among them are the importance of the traditional diet in culturally defined notions of health, the purity and sanctity of the human - animal relationship versus the impurity and profane organization of contemporary life, an identity formation process inherent in contrasting an Inuit way of doing things versus a white way and, finally, risk is mediated by the political context of development in which local communities are neither initiators nor benefactors of development but rather a management issue for the proponents. The deeply held concerns that people in Aboriginal communities have about the effects of development on their lives are not simply political tools to lever greater compensation packages form government. or anachronistic, unenlightened ways of thinking as they are sometimes portrayed. They are opinions informed by conceptual foundations which reflect the development and dissemination of knowledge within this community. They are no less subjective than the understandings about risk generated in the south.

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APPENDIX 1: THE POLITICAL EVOLUTION OF THE GREAT WHALE EIA PROCESS

The following is a chronological summary detailing the evolution of the Environmental Impact Assessment process for the Great Whale project.

- By January 15, 1988 Hydro-Québec has signed $40 billion worth of energy export contracts with US states and $650 million with New Brunswick, in the preceding 15 months. While the Great Whale project has yet to be officially announced, the energy sales have received significant press coverage and it is obvious that sales to the US require building more dams.

- March 8, 1988, Premier Bourassa announces second phase of James Bay project – the Great Whale project – at a cost of 7.5 billion. The project is justified based on the export contracts.

- March 10, 1988, Matthew Coon-Come Grand Chief of the Grand Council of the Crees of Québec is reported in the Montreal Gazette as admitting there is little that can be done about the second phase of James Bay project because of signing of the JBNQA. John Ciaccia, Provincial energy minister, has said that no public hearings will be held on the project. Coon-Come says there are provisions in the Agreement which give the Cree the right to ask for hearings, which they will do. The New York State Audobon Society is 'disappointed' that Premier Bourassa has said nothing about impact assessment of the project particularly cumulative studies on migratory birds which pass through the US.

- On March 12, 1988 the economic benefits of the project are beginning to be presented in the press. The Montreal Gazette reports that an estimated 40,000 person years of employment will be created by 1995 from the project. This however will be incurred through the accumulation of more debt by the province.

- March 15, 1989, The Cree position begins to harden and Matthew Coon-Come says that the Cree believe the Federal government is imposing a settlement in funding disputes they have over sections of the JBNQA as a way of breaking the Agreement. The Cree position is that any new project requires Cree consent as stipulated in the Agreement, although where in it is not discussed.

- March 16, 1989, The Cree say they will use all legal means to stop the project and are not interested in compensation.

- January 5, 1990, a coalition of environmental groups called the James Bay Committee calls for hearings into the economics of the Great Whale project to slow the government's unplanned rush into the project. They also call for an EIA on forests, caribou, weather, birds, and wildlife habitats and on the "Health, welfare, lifestyle and livelihood" of the region's Cree and Inuit populations.

- During this time the Federal and Provincial governments begin jurisdictional disputes. Québec says that no hearings are necessary around the project while Ottawa say they will hold their own if Québec does not.

- The Cree and Inuit of Kuujjuarapik/Whapmagoostui begin their own public relations campaign against the project by building the "Odeyak", a half canoe half kayak, which they plan to paddle from the community to Québec City, Ottawa and New York arriving on Earth Day (April 22). Their first attempt at ethno-drama which ultimately becomes a very successful tool in forming public opinion.

- In April 1990 the Federal and Provincial governments are still having jurisdictional squabbles over environmental protection and assessment. The Federal Green Plan is delayed by then Federal environment minister, Lucien Bouchard. Pierre Paradis the Provincial environment minister and Bouchard are openly fighting in the press the over jurisdiction of hearings into Great Whale.

- April 4, 1990 Québec decides to hold hearings into Great Whale "with or without" Federal participation. A major issue is the number of representatives from Federal, Provincial and native groups on the panels. Under terms accepted by the Provincial cabinet, hearings will be held in the north, Québec City and Montreal. Two panels are to be struck one to review project above 55th parallel and another below following sections 22 and 23 of Agreement. The project however straddles the line with transmission corridors and roads on both sides. Simultaneously in New York the legislature is debating a bill requiring an EIS before purchasing power from Québec.

- On April 6, 1990 Bouchard rejects Quebec's panel format on Great Whale saying they won't stand up in court. He says he will not accept anything less than what is called for in the Federal environmental review process which calls for independent commissions to study impacts.

  The debate around the review process for the Great Whale project occurred at the same time as the Meech Lake Accord was being debated. Bouchard's position during this time was critical and he had an alternative political vision for Québec if constitutional reform failed. Even at this time it was known that Bouchard was pro-sovereignty and was considered a likely leader in the separatist movement in Québec. His insistence on the primacy of the Federal environmental review process should be seen in the light of someone who was very likely going to be trying to lead Québec out of confederation and, hence, any inflammation of nationalist passions against Ottawa was a good thing. Also the idea that the Federal government could deny Québec the right to develop its own territory in the way it saw fit was sure to move the Province towards self determination. Meanwhile, the province was treating the project infrastructure (roads, airports) as separate from the project itself which the Federal government (and everyone else) opposed strongly. It was felt by some people at Hydro-Québec that if Ottawa could deny the province's right to build roads on its own territory then separation was a certainty.

- June 1, 1990 Federal and Provincial governments reach agreement in principle on a joint review of project with separate committees and commissions working together to produce a consensus report.

- September 16, 1990 National Energy Board approves export contracts to Vermont and New York with the proviso that any new construction or modification of existing structures be subject to Federal environmental standards. Québec appeals the decision on the grounds that the energy board does not have the legal power to impose conditions on the Provincial government.

- October 5, 1990 Pressure to avoid an environmental review increases. Richard Drouin (HQ Chairman) says Québec could run out of electricity without the Great Whale Project. Further, he says that a two part review process was always envisioned and provided for under JBNQA.

- October 11, 1990 Provincial Environment Minister, Pierre Paradis and Energy Minister Lise Bacon are openly fighting in the press over the review process. Bacon wants immediate start to road construction and says Québec will face power shortages unless project built soon.

- October 25, 1990 In an effort to speed the process and start construction Bacon (supported by premier Bourassa) pushes through cabinet a motion to have the Provincial Environment Department evaluate the existing 400 Hydro-Québec reports in lieu of an impact statement and hearings. If the review is satisfactory the infrastructure development is to begin in January 1992. The environment minister, Pierre Paradis, is opposed and has been pushing for hearings. Throughout the process Bacon and Bourassa have been treating the EIA process as a mere formality before beginning construction on the project. Paradis has maintained that a negative EIA would cancel the project.

- October 26, 1990 The Cree seek a court injunction to block road construction before EIA hearings are held and statement is completed. Their position is that a split review process is illegal under the JBNQA and the Québec Environmental Quality Act.

- October 26, 1990 Federal insistence on full review is portrayed by Bacon as a power grab by the Federal government to weaken Quebec's powers. Invoking Federal - Provincial power relations has an impact on Ottawa politicians. Shortly thereafter, new Federal environment minister Robert de Cotret reverses the department's position and says Federal government. has no objections to a split review process.

- In the same week Bacon implies that the Cree can be bought and that their opposition to the project is based on a strategy of holding out for more money. She hints at offering a billion dollars in compensation to the Cree.

- November 21, 1990 FEARO board under Raymond Robinson reverse its opinion on project jurisdiction with regards to roads. In the same week Robert de Cotret says Ottawa have no jurisdiction over roads in the province. Newspaper editorials interpret this as evidence that the Federal government was scared off by Bacon's allusions to Provincial sovereignty.

- November 22, 1990 de Cotret returns saying the project cannot go ahead without assurances of its environmental safety. The Federal government has the power to deny building permits and licenses for bridges over rivers which underlines the jurisdictional irony that while roads are Provincial jurisdiction, bridges are Federal.

- November 24, 1990 Throughout this period the Provincial and Federal governments have been attempting to work out a formula for joint review with public hearings (see June 1, 1990). David Cliche, who is employed by the Federal environment ministry, is assigned to negotiate this agreement. A 1984 cabinet order allowing for the joint review is at risk of not being ratified because of jurisdictional issues. The Cree and Inuit are opposed to the formula in the cabinet order because it was formed outside of the JBNQA. Cliche says that the Québec government will do their own review if Ottawa and Québec can't get it together.

  The son of Judge Cliche of the Cliche commission which helped launch Brian Mulroney's career, he is a strong separatist reported to aspire to the premiership. He helped negotiate the JBNQA in the 1970s and has credibility among the aboriginal, Federal and Provincial governments. Since the Parti Québecois election in 1994 he has held a cabinet portfolio for Native Affairs.

  In an ironic twist the original Cliche commission was launched by Robert Bourassa in response to the rampage by construction workers at the LG2 site of the James Bay Project in 1974 which caused over thirty million dollars in damages and delayed construction by a year (Bourassa 1985).

- November 27, 1990 R. de Cotret says Ottawa will do its own study if a joint process with Québec cannot be agreed on.

- November 28, 1990 Québec signs agreement on joint review with public hearings, although Paradis says that there could be separate hearings on the infrastructure and the rest of the project but at the same time. how this could take place is not indicated.

- November 30, 1990 review process is officially split in two. The Cree say it is illegal under the JBNQA. On the same day the Federal government says that it does not yet have agreement on the joint review process. An indication of the level of rhetoric around the project comes from the NDP energy critic, Jim Fulton, who calls the James Bay II impacts tantamount to an “ecological Auschwitz”.

- December 10, 1990 Le Devoir reports that the Inuit have been negotiating directly with the Bacon’s Energy Ministry over compensation. The Provincial Environment ministry is apparently unaware of this.

- Dec.11. 1990 The Provincial government starts an add campaign to counter what it considers disinformation regarding Great Whale and impacts. The Cree call it propaganda.

- Dec. 15, 1990 Hydro Québec presents its assessment of the infrastructure to the ministry beginning the review process. The review process requires conformity review with guidelines presented to HQ by the environment ministry and public hearings.

- Jan. 5, 1991 The Gazette caries an interview with Peter Jacobs, Kativik Environmental Quality Commission Chairman, who says it will take at least six months to review the report on the roads and infrastructure, not three as Hydro believes. The integrity of the process is at stake because the environment ministry is under extreme pressure from the other ministries, the government insists in too brief a time table, and says that the project will proceed even before the review process has officially begun. He also suggests that the Inuit will withdraw from the process if there is no change in the approach taken by the government. He feels that under the spilt process the proponent will have a hard time justifying the roads and airports without a project to get to. Also says “Since when is Hydro-Québec responsible for developing the territory of Northern Québec and building a road network” which points out weaknesses in the approach to the review process due to the haste of the government’s moves on the project

- Jan. 5, 1991 In New York there is a public rally outside the Canadian consulate against Hydro-Québec. Public events like this are becoming more numerous, a Ban the Dam concert attracts many people who protest but have no idea where James Bay is much less Québec (CBC radio documentary). While silly these events do embarrass the governments.

- Feb. 14, 1991 At a conference Romeo Saganash, Vice-Chairman of the Cree Regional Authority says that Indian people do not feel the same since the Oka crisis, implying potential violence, and that the government is provoking native people in order to cause a confrontation.

- Feb. 14, 1991 The Review Committee says the infrastructure report is flawed. Among the weaknesses are scant attention paid to social impacts, no justification for the infrastructure, biophysical lacunae, road site choice is too close to the coast against land user wishes and the airport location is not demonstrated to be environmentally acceptable.

- Feb. 20, 1991 Hydro-Québec issues tenders on road infrastructure into the Great Whale region to begin in April.

- March 15, 1991 The Federal court rules that the JBNQA is Federal law and not a contract as contended by Hydro-Québec, the Federal and Québec governments. This has been a

key point in the Cree have used to force the issue of a full hearing according to the Agreement and to force the Federal government to apply Federal environmental review law in the project assessment. It has also aggravated the jurisdictional disputes between Québec and Ottawa.

- March 22, 1991 Charlie Watt is reelected as president of the Makivik Corporation which represents Inuit political and economic interest and was established after the signing of the JBNQA by the Northern Québec Inuit Association. During the campaign he had been criticized for being too close to HQ and negotiating with them. He says the project is inevitable and the Inuit will get better environmental protection, more jobs and compensation than through stonewalling. His election provokes some criticism from other Inuit leaders in Northern Québec particularly those from the Hudson Bay coast communities.

- March 26, 1991 Hydro-Québec delays the beginning of infrastructure development of the Great Whale project by three months. Legal challenges and uncertain review process are the cause. COMEX chairman Gaston Moisan and KEQC chairman Peter Jacobs have requested social impact assessments of the project. With regards to the infrastructure and road access to Kuujjuarapik and Whapmagoostui they have demanded that the effects on hunting and fishing areas and resultant health and social impacts on the population be estimated.

- April 25, 1991 David Cliche, leading the Forum Grande Baleine, says that this coalition group will lead impartial review and hearings into the project. The group does put on a series of meetings although it never has a formal mandate nor any real power. In the meetings in Québec City a surprisingly large number of people from New York and other US states and organizations show up. It appears to be largely a showcase atmosphere giving a semblance of debate, although in a vacuum.

- June 25 and 26 1991 the Cree (and a good number of Inuit from the same community) block access of the village to the Kativik Environmental Quality Commission members, and Hydro-Québec personnel who have come to testify before the commission, by showing up in large numbers with pickets at the airport in Great Whale. The Cree are protesting against the split review process which is ongoing even while it is being contested in the courts. The hearings are called off for the time being. The idea that the Provincial government could conduct two reviews of the project, one of the roads and airport infrastructure another for the project itself ends with this event. A cynical move by the province, splitting the review and presumably using the cost of developing the infrastructure to justify the rest of the project, contravenes all accepted measures of Impact assessment. Peter Jacobs, Chairman of the Kativik Environmental Quality Commission is verbally abused by Cree in the community which shows some tension between the Cree and the Inuit as Jacobs is an Inuit appointee.

The move on the part of the Cree was seen by many in the south as potentially very dangerous. The Globe and Mail (June 27, 1991:A1) uses the phrase "... in a scene reminiscent of the native standoff at Oka last summer..." The province, still reeling from the aftermath of the Oka crisis and blockade of a major bridge leading into Montreal for several months, has little else to judge the actions by the Cree than the Mohawk summer. The historical and cultural differences between the two peoples notwithstanding. From descriptions of that day I have heard by members of the community it seems that the people involved found the event a lot of fun. Few had ever held a placard in their lives and were participating in a drama for both the news and for the people on the plane from the government. One Hydro-Québec vice-president with experience in the north spent some time talking and laughing with friends and acquaintances from the Cree community while most of the HQ people not used to the north were genuinely frightened. Regardless of

attitudes and intentions, the Provincial government was forced to realize that only a genuine review process would be acceptable.

- Also on the 26th of June Inuit leaders sign an agreement providing the framework for negotiating self government within the structure of an autonomous regional government.

- At the end of June 1991 the Kativik Regional Government passes a resolution opposing the split process and asking the KEQC to stop the assessment until a united review process is in place.

- July 1991, The Federal court of appeal agrees with Québec that the Energy Board has no jurisdiction to force environmental conditions on export contracts of energy by Hydro-Québec.

- July 10, 1991 Jean Charest orders FEARO to hold hearings and review the project. Pierre Paradis objects strongly saying Charest has no right to push into Provincial jurisdiction. The Cree are unhappy because there is no moratorium on construction during the predicted two year study period.

- August 1991 Jean Charest names three Montreal area academics to EARP to review environmental and social impacts of project. Neither the Grand Council of the Crees nor the Kativik Regional Government accept the committee's mandate and the Provincial government is unimpressed. Predictably the province sees the exploitation of its territory as an exclusively Provincial matter.

- October - November 1991 Energy Minister Lise Bacon is repeatedly quoted as saying that if Québec does not build the Great Whale project the province will have no choice but to build nuclear power stations to fill the needs of the province. She is obviously trying to play the devil you know against the one you don't and perhaps frighten off US based environmental groups.

- October 1991 Hydro-Québec gives in to a single review process for the project including roads and infrastructure. Cree and Inuit pressure are seen to be effective although Hydro says that New York's extension of final deadline for withdrawing from the contract has given them time to conduct the study differently.

- Sept. 11, 1991 The Federal Court of Canada upholds the JBNQA provision of a parallel Federal review of the project. this and ends the 1990 agreement between the Province and Ottawa that sought a weaker form of review negotiated without Inuit or Cree approval.

- Jan. 6, 1992 After pressure from the Cree who have been lobbying increasingly in Europe, and from U.S. based environmental groups, International Water Tribunal in the Netherlands asks Hydro-Québec to present its case for the Great Whale project. The tribunal has no power in Québec but has an important role in public opinion and international prestige for the Province.

- Jan. 25, 1992 A unified assessment process is finally agreed on by the Cree, Inuit, Federal and Provincial governments. Five million in funding is provided through this agreement to finance studies and expert testimony by the Cree and Inuit ($2.2 mil each) and environment groups ($600k). The process ensures a single report and recommendation regarding the project. It also comprises scoping hearings followed by guidelines, EIS, conformity to guidelines, public hearings and final recommendation. A full and genuine review process.

- January 27, 1992 scoping hearing on the assessment guidelines begin in the Whapmagoostui, Kuujjuarapik and subsequently in Inukjuak, Umiujaq, Sanikiluaq, Chisasibi, Val d'Or and Montreal. Hearings last 23 days with 90 submissions, 250 oral presentations. In Kuujjuarapik there are 2 days of hearings for each of the Cree and Inuit communities.

- Feb. 21, 1992 The International Water Tribunal judges unfavourably the Great Whale project but does not condemn it outright.

- March 18, 1992 Hydro-Québec announces a four year delay in development of the NBR project because of reduced energy demands. The NBR phase is much larger than the Great Whale project and likely to be more environmentally damaging from a variety of perspectives. Hearings on the Great Whale project continue in Montreal.

- March 28, 1992 New York State cancels its contract for $17 billion worth of hydro power. Hydro-Québec says that there will be no change in the timing or construction of the project. New York is reported to be willing to resign immediately for a 30% discount on the original price. The Cree take this as a victory of their public relations campaign and feel that the project is dead.

- First week of April 1992 Québec energy minister Lise Bacon comes out swinging against the Cree and is visibly disturbed by the cancellation of the New York contract. She is quoted as asking whether the Cree are Quebeckers or not, bringing the nationalist perspective back into play once again.

- April 30, 1992 The draft guidelines to the EIS are submitted to review by academics, various political and environmental organizations and released in July 1992. The Guidelines require that Hydro-Québec justify the need for the project as well as estimating the impacts to the biophysical and social environments. The need for justification is important because of the absence of debate on Provincial energy needs and policy prior to the announcement of the project.

- May 19, 1992 Peter Kattuk of Sanikiluaq is quoted in the Globe and Mail as saying that Paul Lacoste, review panel chairman, is contemptuous of the Inuit of Sanikiluaq and their concerns over the review process and impacts of the Great Whale Project. The TFN and Baffin Regional Inuit Association asked Environment Minister Jean Charest for $500,000 for studies in the Sanikiluaq region.

- Sept. 12, 1992 Final guidelines for the proponent to assess impacts of the Great Whale Project are to be made public. They were arrived at with the input of scoping hearings.

- Jan. 11, 1993 Whapmagoostui Cree decide to participate in the EIA process and hearings ending their withdrawal six months earlier.

- August 1993 EIS is received from the proponent by the Federal and Provincial environment ministers and transmitted to the committees and commission. This began the process of determining the conformity of the EIS with the guidelines begins. In Kuujjuarapik the statement is translated and read over the community radio at lunch hour by a group of young and elder people. Phone in programs are common and make up much of the public dissemination of the statement.

- Aug. 31, 1993 EIS is released to public.

- April 14, 1994 Inuit, H.Q. and the province sign an agreement through which the Inuit will not engage in legal proceedings or other means to prevent, delay or modify the project. In return they are to receive a compensation package of 500 million over 50 years (equivalent to 100 million in current dollars). The compensation is to be roughly 50% applied in the Inuit communities within the Great Whale study area. It also includes provisions for a training program, mitigation fund, priority Inuit hiring, and priority Inuit company contracting. The Cree are not pleased with the agreement and suggest that Inuit appointees on the review committees will not be impartial. They suggest that the Cree will again withdraw from the process.

- June 15, 1994 is the date the committees are supposed to submit the evaluation of quality and conformity. The Great Whale Public Review Support office in Montreal which acts to harmonize the process of the evaluation between the committees submits an unfavourable evaluation to the Administrators from the Federal and Provincial governments. This begins the process of rewriting the EIS and filling the gaps in it, as determined by the committees and commissions. Only after the EIS receives a favourable evaluation can the project itself be evaluated on its merits and subjected to public review.

- June 16, 1994 Matthew Coon-Come calls the EIS a glorified engineering report which is full of holes.

- November 18, 1994 New premier of Québec Jacques Parizeau declares the Great Whale project to not be part of his government's priorities and not worth pursuing. He is faced with a political dilemma over territorial rights and succession which he proposes to do from Canada but declares as impossible for native groups to do from the rest of Québec. By dropping the project he obviously hopes to defuse the Crees campaign against it which caused a great deal of embarrassment to the province in the US and in Europe. Grand Chief Coon Come had been increasingly using the channels opened during the campaign against the project to discuss the Crees right to succeed from the province in the case of separation. the EIA process looses its relevance and is wound down.