MINING, INUIT TRADITIONAL ACTIVITIES AND SUSTAINABLE DEVELOPMENT: A STUDY OF THE EFFECTS OF WINTER SHIPPING AT THE VOISEY'S BAY NICKEL MINE

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Mining, Inuit Traditional Activities and Sustainable Development: A study of the effects of winter shipping at the Voisey's Bay Nickel Mine

by

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Abstract

The need to incorporate the idea of sustainable development has become a component of any large-scale industrial project in recent times. The Voisey's Bay Nickel Mine (VBNM) Project, which began production in August 2005 and which currently has an operational life expectancy of 14 years, provided a case study example of how the costs and benefits of mining on communities can be anticipated and managed in the context of sustainable development. The specific focus of this research was to study the potential effects of the VBNM winter shipping route on the traditional activities of the Labrador Inuit. The study involved the compilation of background information from secondary sources and informal interviews with a number of key informants residing in three communities in Newfoundland and Labrador. The project determined that in the context of the sustainable development of VBNM winter shipping, Labrador Inuit traditional activities have been adequately addressed.

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List of Acronyms/Abbreviations

EA.....Environmental Assessment
EIA.....Environmental Impact Assessment
EIS.....Environmental Impact Statement
IBAs.....Impact and Benefits Agreements
IIED.....International Institute for Environment and Development
IISD.....International Institute for Sustainable Development
LIA.....Labrador Inuit Association
MAC.....Mining Association of Canada
MMSD.....Mining Minerals and Sustainable Development
MMSD-NA.....Mining Minerals and Sustainable Development, North America
NGOs.....Non-Government Organizations
7QS.....Seven Questions to Sustainability
TEK.....Traditional Environmental Knowledge
VBEAPR.....Voisey's Bay Environmental Assessment Panel Report
VBEMB.....Voisey's Bay Environmental Management Board
VBNC.....Voisey's Bay Nickel Company
VBNM.....Voisey's Bay Nickel Mine
WBCSD.....World Business Council for Sustainable Development

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1. Introduction

1.1 Background/Rationale

The need to incorporate the idea of sustainability or sustainable development as a component of any large-scale industrial project has gained importance in recent times. The Brundtland Commission, in its report *Our Common Future* (1987), was perhaps the first to give sustainable development a definition, suggesting that it is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." More recently the International Institute for Environment and Development (IIED) discussed the idea of mining contributing to sustainability. Significantly, mining is an industry that by its very practice of non-renewable resource extraction cannot itself be sustainable (IIED and WBCSD 2002a). In a project commissioned by the World Business Council for Sustainable Development (WBCSD), a coalition of a number of the world's major mining companies, the Institute argues that mining can move towards more environmental and socially acceptable practices (IIED and WBCSD 2002a).

The project, entitled *Mining, Minerals and Sustainable Development* (MMSD), focused on significant global mining regions in outlining the most appropriate methods to contribute to sustainability in mineral development (IIED and WBCSD 2002a). In North America, for example, the International Institute for Sustainable Development (IISD) profiled the North American mining industry and created a list of indicators and recommendations for sustainable practices (MacDonald 2002). One of the major outcomes of the North American project was a Report entitled, *Seven Questions to Sustainability: How to Assess the Contribution of Mining and Mineral Activities*, which highlights the long-term implications of achieving sustainability, including making a positive contribution to the communities affected by the development (Task 2 Work Group, MMSD North America 2002). By emphasizing outcomes, this approach differs from the more traditional approach taken in environmental, social and economic assessments which focuses on the "mitigation of adverse affects" (Hodge 2004).

The inclusion of those affected by mineral development projects in the *Seven Questions to Sustainability* (7QS) Report was particularly relevant to Aboriginal groups in Canada, as many Aboriginal peoples live in areas adjacent to major mineral development projects (Steckley and Cummins 2001; Whiteman and Mamen 2002; Ali 2003). In the past Aboriginal peoples have been marginalized and sometimes even completely left out of participating in proposed resource development projects that are on or adjacent to their traditional territories (Wismer 1996; Whiteman and Mamen 2002). These negative experiences have been attributed to their relationship with government and developers. For example, in the past, government often negotiated the potential impacts and benefits of development with the developers on behalf of Aboriginal peoples (Kennett 1999). Aboriginal groups were rarely involved. In some instances where Aboriginal peoples were involved, negative experiences have sometimes been attributed to corporate promises failing to materialize (Sloan and Hill 1995).

In recent years, much has changed in respect to increased Aboriginal participation in projects that have a direct impact on Aboriginal groups. For instance, the increasing recognition of Aboriginal rights in Canada has made Aboriginal groups significant stakeholders in the development that affects their communities (Mulvihill and Baker 2001; Natcher 2001). In addition, the relationship between Aboriginal groups, governments and developers has changed. Changes in bargaining power, for example, have led to direct negotiations between Aboriginal groups and developers. Aboriginal peoples engaged in negotiations with mineral developers often use Impact and Benefits Agreements (IBAs) and other specific project-related agreements to ensure their active participation in sustainably developing a resource (Kennett 1999). IBAs and other specific agreements are a method of ensuring their participation and a means to acquire some of the potential benefits from development.

1.2 Research Objectives

The general objective of this thesis is to explore how the potential impacts of mining operations on traditional and non-market activities, (for brevity referred to as 'traditional activities' in this thesis), are addressed as a part of any attempt to ensure sustainable

development. The Voisey's Bay Nickel Company (VBNC) Mine Project, which came on stream in August 2005 and has a current operational life expectancy of 14 years, provides a case study example of how the costs and benefits of mining on Aboriginal communities can be anticipated and managed in the context of sustainable development. In order to keep the mine operating year-round VBNC negotiated a Shipping Agreement with the Labrador Inuit, signed March 2005 (VBNC 2005b). The Shipping Agreement allows for the unhindered shipping of ore and supplies in the open water months, and a set number of shipments, solely of ore along a designated route, at certain times during the winter months. The 'winter shipping route', as it has been designated, provides the basis for a focused examination of what effects the shipping component of the Voisey's Bay Project might have on the traditional activities of the Labrador Inuit; one of the groups that have been particularly affected by the project.

To understand the role of traditional activities to the Labrador Inuit and how this fits into the broader concept of sustainable development, what is meant by 'traditional activities' is first defined. These activities cannot be adequately defined without first understanding the context in which they have been formed and how they have changed over time. It is important that they are not viewed as static or cultural relics. They have evolved over time, both in their nature and perceived value to the group. Active participation *is* important, but the actualization and transmission of the values that are associated with traditional activities is fundamental to the future of Aboriginal peoples generally, and in this specific case, to the Labrador Inuit.

Traditional activities can, in one sense, be viewed as the practical component of Traditional Environmental Knowledge (TEK). They represent the activities practiced by Aboriginal peoples to fulfill economic or subsistence, as well as spiritual, cultural, and communal needs (Nuttall 1998; Sherry and the Vuntut Gwitchin First Nation 1999). For the Labrador Inuit, as for many northern Aboriginal populations, these activities have been fundamental to community sustainability and growth, contributing, for example, to the social network

through food sharing as well as the economic well-being of many households (Williamson 1997).

The activities and associated knowledge have also been instrumental in the negotiation of specific agreements related to the VBNM project. Inuit TEK was incorporated into the environmental assessment process for the VBNM project, through submissions to the Environmental Assessment (EA) Panel, and in the Impact and Benefits Agreement (IBA) negotiated between the VBNC and the Labrador Inuit. Occurring concurrently, the Land Claim Agreement negotiated between the Labrador Inuit and the Province of Newfoundland and Labrador and the Federal government of Canada, further incorporated TEK and concerns about Labrador Inuit traditional activities. More specifically, each agreement included reference to or provisions for harvesting compensation. Of particular note is the provision in the IBA that allows for the issue of harvesting compensation to be brought back to the table if the impact of the project is greater than what was predicted by VBNC in its Environmental Impact Statement (EIS).

The specific focus of this research, the proposed winter shipping route, is an issue that has great significance for the Labrador Inuit (VBNC 1997a; VBNC 1997b; LIA 1998b; LIA 1998c; LIA 1998d; LIA 1998e; LIA 1998f; VBEAPR 1999b; VBEAPR 1999c; VBEAPR 1999d; LIA 2005a; VBNC 2005b; VBNC 2005c). Sea-ice is vital to the Labrador Inuit as a transportation corridor in travelling along the north coast of Labrador. They use the ice to access cabins and resources on both sides of the shipping route. The Voisey's Bay winter shipping route has the potential to disrupt these activities. Labrador Inuit concern for this potential impact is evident in the negotiation of the Shipping Agreement itself and in a number of sections of the Environmental Assessment, IBA and Land Claim Agreement which address these particular project impacts.

The winter shipping route provides the basis for a focused examination of the effects of the Voisey's Bay Project on the participation of Labrador Inuit in traditional activities and whether they feel that their concerns have been adequately taken in to account. More

generally, it will provide a case study of how mining can contribute to or hinder sustainable development, and, more generally, whether the MMSD framework for the role of mining in sustainable development addresses Aboriginal traditional activities effectively.

1.3 Studying Aboriginal Peoples and Natural Resource Development

There are many different approaches to studying the relationship between Aboriginal Peoples and natural resource development (Nuttall 1998; Sillitoe 1998; Sherry and Vuntut Gwitchin First Nation 1999; Smith 1999). The social sciences and geography in particular, have long employed a variety of qualitative and quantitative methods to study the relationship between Aboriginal peoples and the development of natural resources.

However, users of the methods employed to gather a range of information, have encountered problems in design, application, and delivery. For example, use of the methods can prove problematic for a number of reasons, including cross-culture miscommunication, bias, or misinterpretation of results. The presentation of research results also has to be useful to and incorporate the range in potential audiences.

However, there are solutions to the problems encountered in studying social issues, including developing new methods or using a mixture of methods. New approaches are typically designed for specific research issues, while a mixture of methods may enable a research group to study various aspects of a particular issue using more than one approach and method (Human Resources Development Canada 1998).

1.4 Research Strategy

In order to explore how the potential impacts of mining operations on Aboriginal traditional activities are addressed in terms of their contribution to sustainable development, a framework developed in the 7QS Report provided the foundation for this thesis. While this thesis explores the concept of sustainability as it relates to mining in general, the focus was on the fifth question posed in the Report, which asks whether "traditional and non-market activities in the community and surrounding area (are) accounted for in a way that is acceptable to the local people?" (Task 2 Work Group, MMSD North America 2002).

To explore this question, the role of traditional activities in the lives of the Labrador Inuit was first examined. This was followed with a discussion of how the traditional activities of Labrador Inuit were anticipated to be affected by the VBNM winter shipping route. The agreements negotiated between the Labrador Inuit and VBNC, as well as between the Labrador Inuit and the Federal and Provincial governments concerning traditional activities were then examined. Based on these, interview questions were drafted and a number of individuals were interviewed. Results from the interviews were then analyzed, using both qualitative and quantitative methods. The case study results were used to give a specific example of the role of traditional activities in mining projects and how this fit into the larger concept of sustainable development. This allowed a specific focus for discussing the 7QS framework and the fifth question in greater detail.

In this study, key informants were divided into three groups: 'A', 'B' and 'C'. Key informants and group designations were based on information from other key informants (individuals who have worked closely with the Labrador Inuit), and the knowledge and experience of the researcher.

Group A consisted of individuals who had only general knowledge of the Labrador Inuit and VBNM winter shipping, but offered knowledge and experience on a variety of topics related to the thesis, such as studying the relationship between Aboriginal people and natural resource development, mining, and sustainable development. This group included government officials, consultants, past employees of VBNC, and residents of Nain, Happy-Valley/Goose-Bay and St. John's.

Group B included individuals who had specific knowledge or experience in working with the Labrador Inuit and/or on VBNM winter shipping. This Group also included a variety of individuals that work in various capacities in the three communities chosen for interviews.

Group C was comprised of those individuals who would be most significantly affected by the proposed winter shipping route, including resource harvesters and other individuals primarily from Nain, who actively use the area.

Three-quarters of all key-informants interviewed had some Labrador Inuit heritage. Approximately the same number participated in harvesting traditional resources, yet all respondents shared in the consumption of those resources.

Interview questions concerning VBNM winter shipping, the effects of shipping on Labrador Inuit traditional activities, and related agreements and processes were designed based on information gained from secondary sources and from those who have worked with the Labrador Inuit. An informal-structure interview format was used in all key-informant interviews. This included a mixture of specific and more general questions, used to prompt further discussion. Note-taking was chosen as the technique for data collection, based upon the past experience of the researcher. Interview content was verified by individual respondents following transcription of the interview.

Based on the Voisey's Bay case study and information from a number of secondary sources, the more general relationship between mining, Aboriginal traditional activities, and sustainable development was explored. The 7QS framework and the fifth question in particular, were used to develop a practical model for discussing these general relationships.

1.5 Potential Outcomes

In working towards sustainability, traditional activities can make an important contribution, not only in terms of supporting local households, but also in the maintenance of community economic, social, cultural development and spiritual values. The Voisey's Bay mine has a fourteen year life expectancy, so planning for longer-term sustainability during the mining project and afterwards, is of great importance. Community involvement and the integration of local knowledge into the negotiation of agreements and the EIA process, is a key element in planning for sustainability. However, without a clear understanding of the issues of

significant public concern there can be no long-term sustainability. By examining the role of community involvement in this particular management issue, the study may contribute to future resource-related decision-making by the Labrador Inuit and in so doing contribute to sustainable development. This project illustrates the importance of community involvement and local knowledge in the process of defining the impact of resource development projects on affected communities. It will provide the Labrador Inuit with an outline of winter shipping in a contemporary context, detailing its development as an issue important to all stakeholders.

1.6 Thesis Outline

The thesis begins with an examination of sustainability, with a specific focus on the role of the mining industry and Aboriginal peoples. Chapter 2 also introduces the Mining, Minerals and Sustainable Development project and the 7QS, the framework of this thesis.

Chapter 3 focuses on Aboriginal involvement in non-renewable resource development. The chapter looks at the relationship between Aboriginal peoples and non-renewable resource development, with a particular focus on mining, and outlines the progression of this relationship, from pre-European contact until present day. The chapter then returns to the idea of Aboriginal peoples and sustainability.

This focus becomes more specific in Chapter 4, which concentrates on Labrador Inuit Traditional activities and the case study for this thesis, the VBNM winter shipping route. In particular, the chapter moves from background information on Labrador Inuit traditional activities, to a discussion on how these activities may be affected by winter shipping and how this has been addressed.

Chapter 5 begins with a discussion on the choice of an appropriate methodology to study the relationship between Aboriginal peoples and non-renewable resource development, outlining the problems and potential solutions to this issue. The chapter then focuses on how this particular thesis project was undertaken, including a description of the study, study area, and methods used. The final section of Chapter 5 includes a discussion of the results and any

issues related to determining results, including cultural miscommunication, bias, and problems with research design, and the ways in which these were addressed.

In the final chapter, I revisit the idea of sustainable development in the context of this thesis; the focus being on the role of Aboriginal traditional activities in mining and mineral development in contributing to sustainability.

2. Mining and Sustainable Development

2.1 Sustainable Development: an International Movement

Policies for the sustainable development of natural resources have become integral to the philosophies and actions of many governments, industries, and non-governmental organizations throughout the world (IIED and WBCSD 2002a; IFC 2003). The Brundtland Commission definition of sustainable development, "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (1987: 43), has become the general guideline that most applications of sustainability adhere to. In this, the concept carries with it pressure to address the past mistakes of irresponsible stewards, and looks optimistically to a prosperous future and the security of a resource base for the use of generations to come.

The concept of sustainability, however, has been developed to incorporate a wide range of users. Many users had to adapt the general idea of sustainability to work within their particular application (MacDonald 2002; Roseland 2005). As such, the concept has become somewhat complex. Yet, perhaps the greatest strength of sustainable development is in this complexity. In theory it does, for example, take a multidisciplinary approach in assessing the impact of human activities on all components of an ecosystem (Hodge 1997; Dies 2002). Furthermore, the concept integrates values that include care and respect for the environment and human impacts, while attempting to move beyond knowledge to practical approaches to sustainability (Hodge 2004). This has become increasingly important in non-renewable resources developments, which are now beginning to move towards more sustainable practices (MacDonald 2002; IISD 2004).

In recent years mining industry leaders have attempted to change the industry's long time negative reputation by developing sustainable mining practices (IFC 2003; MAC 2004). Initially, the international mining community was slow to realize the importance of sustainability (Hodge 2004), yet, it has become increasingly difficult to operate and receive financing without meeting basic sustainable development requirements (MacDonald 2002). A major initiative in this regard was taken by the World Business Council for Sustainable

Development (WBCSD), a coalition of the world's major mining companies, which initiated a project entitled Mining, Minerals and Sustainable Development (MMSD) to be undertaken by the International Institute for Environment and Development (IIED) (IIED and WBCSD 2002a). The main objectives of the project were to create a profile of the international mining community and develop a list of criteria for determining mining's contribution to sustainable development, while focusing on specific regions (Task 2 Work Group, MMSD North America 2002; Danielson 2003; WBCSD 2005). In North America, for instance, the International Institute for Sustainable Development (IISD) profiled the North American mining industry and created a list of recommendations for and indicators of mining's contribution to sustainable development. One of the major outcomes of the North American project was the 7QS Report, which outlined the important questions in determining mining's role in sustainability (Task 2 Work Group, MMSD North America 2002).

However, there are still those who feel that the MMSD project was incomplete (Ali and Behrendt 2001; Kennedy and Corpuz 2001). The project has been criticized for its reliance on industry funding and the view that participation of those who are most affected by development was, at best, tokenistic (Kennedy and Corpuz 2001). In addition, some individuals argue that sustainable development assessments often place the greatest weight on economic signals in determining societal progress, excluding human costs, such as the impact of development on health and culture (Hodge 1997).

One of the greatest benefits of the MMSD project has been its attempt to create a comprehensive view of sustainability. The issue of mining's contribution to sustainability is complex, involving a range of variables and stakeholders. As such, MMSD project proponents have made every effort to include as many individuals and groups as possible, given financial and scheduling limitations. The project also wisely incorporates human costs into its measure of sustainability, making it the most inclusive analysis of mining's role in sustainability to date.

The following section begins with a discussion of the concept of sustainable development. This includes a working definition of the concept, as well as indicators of sustainability. The second section examines the movement towards more inclusive mining practices, the role of industry in sustainable development, and any relevant criticisms. Here the focus is on the MMSD project and MMSD North America, specifically.

2.1.1 Defining Sustainability/Sustainable Development

Sustainable Development is a concept that draws on a list of common themes in describing a set of values that pertain to a general respect for the environment and people's place in it (Hodge 1997). Although, the concept has been defined and redefined to suit a variety of needs, the Brundtland Commission's concept of sustainable development is generally consistent in all variations. The Brundtland definition further highlights the importance of the "integrating" capacity of sustainability (Gallopin 1997; Hodge 2004). In other words, the concept retains its value while allowing for a range in interpretation. In a report for *Northern Perspectives* Fenge (1997) interprets the concept of sustainability, by outlining the central themes continually discussed in various studies of sustainability (Gallopin 1997; Hodge 1997; IIED and WBCSD 2002a; Roseland 2005). In his report Fenge defines sustainable development as having five core themes: "(1) respect for ecological integrity; (2) efficient use of natural, manufactured and social capital; (3) promotion of equity; (4) participation of stakeholders; and (5) environmental stewardship".

The first theme noted by Fenge (1997), *respect for ecological integrity* involves maintenance of the environment and the use of technology to determine carrying capacity, which is simply the amount of use that an environment can possibly sustain. The focus of this theme is predominantly biotic. Hodge (1997) also refers to the necessity of respect for the environment as fundamental to sustainable development. This is the first step in attempting to understand the complex relationship between ecological integrity and human activities.

The second theme deals specifically with the efficient use of natural, manufactured, and social capital. This theme includes four main components. The first, "sustainable resource use"

emphasizes that no irreversible harm to the economic or the biological integrity of an ecosystem should result (Fenge 1997; IIED and WBCSD 2002a). The second component involves "waste management" in the prevention of pollution. This is related to the next component which defines the "role of the polluter" in full-cost accounting and the polluter pays principle (Moody 1992). In other words, environmental externalities, such as pollution are internalized by those who cause them (MVEIRB 2002). The final component highlights the benefits of "good stewardship" in stressing the importance of proper mitigation and management (Fenge 1997).

The *promotion of equity* draws upon the potential benefit of resource development contributing to sustainability. In this, Fenge (1997) states that the costs and benefits of development should be shared equitably to allow for full stakeholder participation (Whiteman and Mamen 2002; MAC 2004). The participation of stakeholders is essential to self-empowerment and self-actualization (Task 2 Work Group, MMSD North America 2002). Participation by all levels of decision makers is also relevant in environmental stewardship, the final theme mentioned in Fenge's report (1997).

In summarizing Fenge's five core themes, sustainable development can be referred to as an "*expression of interdependence*", that has been developed to incorporate the cost of increased human activities on the environment and future generations' ability to utilize the environment and resources (Hodge 1997). In his paper "*Toward a Conceptual Framework for Assessing Progress toward Sustainability*", Hodge describes sustainability as "the concept of sustainability has at its core a value set that is best described as a parallel care and respect for the ecosystem and people within – not one or the other, not one more than the other but both together as one" (1997: 8). In this it is important to recognize the sustainability is a process, not an end result.

Within the last half century there has been growing recognition of a more holistic ecosystem approach that takes into account human activities (MacDonald 2002; Hodge 2004). More recently the shift in defining sustainable development has been from the optimization of ideal

systems with well-defined objectives to more systemic, administrative processes (MacDonald 2002; INAC 2004). Again, Hodge (1997) describes the commitment to a whole system approach as being characterized by more integrated studies with hierarchical structures of systems within systems, and increasingly, communication, feedback and control that allow adjustment. This approach enables a positive transition from concept into a working design for sustainability.

2.1.2 Criticisms of Sustainable Development

Although sustainable development has been paraded throughout the world in global initiatives and conferences there are a number of significant criticisms of the concept. One of the most discerning criticisms of sustainable development is in regards to its ambiguity (Gallopin 1997). In attempting to apply the concept, users often develop different approaches to sustainability, defining the concept to suit their specific needs. Compounding the conceptual vagueness of sustainable development is the cultural dependence, particularly evident in its application. Since the 1970s, Western cultures have been promoting sustainability, placing pressure on industry to act as better stewards (MacDonald 2002). In fact, there are those who question the intent of sustainable development (Kennedy and Corpuz 2001). If there is no clear definition of the concept or an indication of *who* sustainable development is for, the concept may not be useful in application.

It is inaccurate to simply say that sustainability can not be defined, as the concept is continually evolving (MacDonald 2002). However, there is a concern that this ambiguity could detract from the promotion of sustainable practices. For example, if sustainability is open to interpretation, any group can modify or manipulate a working concept to suit their particular needs, without considering the needs of others who may be involved in the same project. Oran Young highlighted this concern at a 1997 Conference on "*Sustainable Development in the Circumpolar North*":

> Sustainable Development is a generative concept that is extremely difficult to turn into an operational paradigm or, in other words, to translate into practical guidelines in a manner that is acceptable to a variety of constituencies. There is a danger, therefore, that the idea of sustainable development, evocative as it is,

> will ultimately prove to be a dead end in a sense that it fails to provide a workable criterion for making decisions about human/environmental relations (Fenge 1997).

This danger is further compounded by the various interpretations of sustainable development. Two of the most prominent interpretations of the concept include the mainstream and the radical or biocentric approaches (Fenge 1997). The mainstream approach focuses on the application of various tools and techniques that increase the efficiency of developing and using natural resources (MacDonald 2002). The radical approach, by comparison, focuses on the maintenance and restoration of the natural environment (Fenge 1997). The two approaches share some things, but are fundamentally different in terms of vision and in defining humanity's place in the natural environment.

Moreover, the general definition of sustainable development as defined by the Brundtland Commission is very culture dependent. Before defining or designing a pragmatic approach to sustainable development we must ask who it is for. Essentially, it incorporates the power, values, and knowledge of decision-makers to determine the scale, pace, and timing of development and the priority given to competing resources (Fenge 1997). Sustainability is typically the outlook of the developed world, which typically views the ecosystem as a separate component from human needs (Task 2 Work Group, MMSD North America 2002). In contrast, the developing world often has to deal with hunger, poverty and health concerns foremost and therefore has few resources to dedicate to sustainable development protocols (Todaro 2000). Therefore the focus of sustainable development must be re-evaluated. In this, the marginalization of certain stakeholders and interest groups in the name of development must be overturned. All stakeholders are important to sustainability, including industry, governments, NGOs and local peoples (IIED and WBCSD 2002a; MVEIRB 2002). Stakeholder involvement is particularly relevant in assessing the contribution of mineral development to sustainability, as there is no way to measure mining's role in sustainability without incorporating benefits to local, regional, and national groups (Whiteman and Mamen 2002).

On the other hand, while there are criticisms of sustainable development, it remains a valid concept that needs to be further developed. Although, the concept of sustainable development has been criticized for its ambiguity, it relies upon this apparent vagueness in moving beyond a general definition. Sustainable development, as a concept, now encompasses a range of users and uses in attempting to find a balance between the impacts of human activities on the environment. However, it has become apparent that to further develop the concept of sustainability we must move beyond theory and design measures of progress towards sustainability. This can begin with a conceptual vision that includes all major themes of sustainable development, as found, for example, in Fenge's report, and move beyond in the development of a more practical approach.

In attempting to create a conceptual framework for assessing progress toward sustainability, there also needs to be complete stakeholder participation (IIED and WBCSD 2002a; Whiteman and Mamen 2002). According to Hodge (1997), an understanding of four domains is necessary to develop a manageable system for sustainability, including: the ecosystem, people, the interaction between people and the ecosystem, and a synthesis of all components (Hodge 1997). This incorporates all stakeholders in a particular project and defines their role in working towards sustainability.

2.1.3 Developing Measures of Sustainability

The concept of sustainable development can be particularly useful in bridging the gap between knowledge and practice (Gallopin 1997; Hodge 1997; IIED and WBCSD 2002a). The question then is what enables sustainable development to move from theory to application, and how can progress towards sustainability be measured? The discussion can begin by highlighting the range of users in measuring contributions towards sustainability in resource development. However, application of the concept must go further. In measuring progress towards sustainable development, both qualitative and quantitative indicators need to be used.

The basic requirements for an effective template in measuring sustainability are clarity, simplicity, readability, and reflecting the value set inherent in the system (Hodge 1997; Dies 2002). Users have to maintain focus while drawing from other bodies of knowledge, as sustainability is a multidisciplinary concept.

Applying a template for measuring sustainability involves the choice of indicators and the development of the story, including factors, such as time, space, the entire system, stressors, values, equity, uncertainty and anticipation (Hodge 1997). Indicators are particularly difficult to choose as various groups define indicators in different ways. In the most general sense, an indicator is a "sign", referring to "something which stands for something to somebody in some respect or capacity" (Gallopin 1997: 3). The aim of an indicator in measuring sustainability is to make the concept more operational (Gallopin 1997; Dies 2002). Desirable indicators include variables that summarize information relevant to determining sustainability, such as the effect of development on culture, economies and environments (Gallopin 1997; MVEIRB 2002). In addition, indicators may either be qualitative or quantitative, depending on what information is sought and whether quantitative information is available.

2.2 Mining and Sustainability?

2.2.1 Mining, Minerals and Sustainable Development

Mining itself is, by definition not a sustainable activity. However, after meeting in 1999 to discuss the current view of mining in today's society many of the world's large mining companies decided to attempt to contribute to sustainability (Task 2 Work Group, MMSD North America 2002). The result was the MMSD project, initiated by the IIED on behalf of the WBCSD (Task 2 Work Group, MMSD North America 2002). The project was global in scale, but concentrated specifically on four regions: North America, South America, Australia and Southern Africa (Danielson 2003). These regions were chosen to encapsulate the varied political, corporate, and geographical backgrounds inherent in the history of international mining (Danielson 2003). The project produced over 100 background papers and research projects, as well as 20 reports, including individual reports from each region, and, in 2002, a

final project report entitled "Breaking New Ground". In general, the report is based on the research and consultation from the regional projects, including regional priorities, issues and actions (IIED and WBCSD 2002a).

2.2.2 The Role of Industry

The international mining community has been slow to recognize the importance of sustainable development. Initiatives and protocols for assessing the contribution of mining and mineral development in working towards sustainability were not created until the mid-1990s, in an attempt to change the negative public perception of mining (MacDonald 2002). Mining companies were also finding it increasingly difficult to obtain financing from reputable lenders without having sustainable development policies in place that addressed environmental, economic, and social concerns (MacDonald 2002; IFC 2003).

There are, however, notable differences in how the international mining community and the general public view sustainable development. Most mining firms define sustainable development in terms of the "Triple Bottom Line", which has evolved from a concern for economic growth, and has come to include considerations for the protection of the environment and social acceptance (Dies 2002; IIED and WBCSD 2002a). More recently, corporate accountability has been added by some firms as a fourth bottom line element (MAC 2004). However, most mining companies feel that economic viability is often unfairly left out of sustainable development. Moreover, they typically view sustainability as a maturation process (MacDonald 2002; IFC 2003). In other words, once the economic component of a project is secure, environmental, social, and cultural concerns can be addressed (MAC 2004). To industry leaders economic growth is essential to the life of the company and they cannot develop sustainably without it (MacDonald 2002).

By comparison, the general public may view the protection of the environment as the focal point of sustainable development (Wismer 1996; Hodge 1997; IUCN 1997). Most individuals and organizations do however recognize that other concerns, such as the social and cultural impact of development on a region, community or specific groups also need to be addressed

in sustainable development (IIED and WBCSD 2002a; IISD and the Tahltan Nation 2003). Unlike mining companies, a project's economic viability is not necessarily high on the list of concerns for the general public (IIED and WBCSD 2002b).

In North America mining companies approach the role of mineral development in sustainability by promoting technological advancements (Task 2 Work Group, MMSD North America 2002). Mining companies believe that mineral development can approach sustainability by becoming less intrusive on the environment through use of more sophisticated equipment and procedures (IIED and WBCSD 2002b; MacDonald 2002). In addition, there is a general consensus that objectives such as the health and safety of mine employees and local peoples should be given the top priority. The policies to achieve these objectives are primarily within control of mining companies.

However, one area in which the North American mining sector has lagged behind and over which mining companies have considerably less control, is in respect to the participation of "local people in reference to their socio-cultural values and expectations from mining projects" (MacDonald 2002: 102). The socio-cultural concerns of groups and communities affected by development need to be recognized in the process of sustainable development (IIED and WBCSD 2002b; Whiteman and Mamen 2002). The Mining Association of Canada (MAC), representing mining companies in Canada, is pressing all of its members to involve communities affected by development by being as transparent as possible (MAC 2004). The Association stresses the importance of feedback between individual companies and the people affected by their actions. Above all they seek to minimize the impact of mining and facilitate their members becoming leaders in their field and in the communities they live and work. Yet, the mining industry, including industry representatives, must go further to allow for the full participation of affected groups (Dies 2002; IIED and WBCSD 2002b; Whiteman and Mamen 2002). It is necessary for industry to recognize the importance of public participation in order to adequately address social and cultural concerns and contribute to sustainable development.

2.2.3 "Seven Questions to Sustainability"

Significantly, in recent years, the international mining community has become particularly vocal about its role in sustainable development. In contributing to sustainability the role of industry is of the utmost importance (IIED and WBCSD 2002b). As such, industry transparency and cooperation in sustainable development represent one focus area of the MMSD project. In particular, the project was created to achieve four main objectives:

> (1) Assess global mining and minerals in terms of transition to sustainable development; (2) Identify if and how services provided in the mineral system can be delivered in accordance with sustainable development in the future; (3) Propose key elements of an action plan for improvement in the mineral system; (4) Build a platform of analysis and engagement for ongoing cooperation and networking between all communities of interest (Task 2 Work Group, MMSD North America 2002: vii).

The objectives of the MMSD project were further scrutinized through the project's focus on global regions. For instance, the Task 2 Work Group, MMSD North America, worked to achieve the MMSD goals by pursuing five tasks (Danielson 2003). The first was to develop a profile of the mining industry in North America from the perspective of both mining companies and affected communities (Task 2 Work Group, MMSD North America 2002). The second task was to develop a test or guideline for sustainability using practical principles, criteria and indicators to suggest approaches. The third was the creation of an agenda for change, which involved actions and timelines for the mining industry and communities to contribute to sustainable development (Task 2 Work Group, MMSD North America 2002). The fourth task involved developing scenarios which were then used to discuss a range of issues, risks, opportunities, challenges, areas of potential consensus and disagreement and possible solutions. The final task, the completion of the "Seven Questions to Sustainability (7QS)" report, emphasized the important role that senior, mid-size, and junior mining companies share in mineral development (MacDonald 2002).

Moreover, the 7QS utilizes a framework for measuring mineral development's contribution to sustainability that considers a project's value base, goals, and contribution (Hodge 2004). Sustainability, according to the Task 2 Work Group (2002), includes both respect and

maintenance for an ecosystem and the people within it. A mining project must achieve an overall positive contribution to the area affected by development in order to play a positive role in sustainability (MacDonald 2002; Danielson 2003). This approach differs from the more traditional approach taken in environmental, social and economic assessments, which focuses on the "mitigation of adverse affects" (Hodge 2004). This further enables a project to move away from the perspective that people and the environment are not linked and only large-scale trade-offs can result from developing a mining project (Task 2 Work Group, MMSD North America 2002). Hodge (2004) argues that mining should be designed as a "bridging" activity. This author outlines the relevant issues in any project as being a distribution of costs, benefits and risks, trade-offs, need and alternatives, adaptive management, and the need for a whole system approach to deal with cumulative impacts (Hodge 2004). The 7QS, for example, adopts the whole-system approach through the emphasis of seven main areas of interest including: engagement, people, environment, economy, traditional and non-market activities, institutional arrangements and governance, and synthesis (Task 2 Work Group, MMSD North America 2002). The report also introduces a number of less significant issues which relate to an overall measure of mining's contribution to sustainability.

In working towards the ultimate goal of sustainability these seven areas cannot be addressed without incorporating a range of interests (McShane and Danielson 2001). In the past fifteen years, for instance, the North American mining industry has been in a period of transition, attempting to integrate a range of stakeholder perspectives. The Task 2 Work Group highlights this concern:

> A broad array of interrelated technical, environmental, and social issues face the mining/minerals community. Legal and financial implications have multiplied as investors, indigenous people, communities, non-governmental organizations and other interests apply increasing scrutiny to mining operations. With the immediacy of worldwide communications, local incidents become global news overnight (Task 2 Work Group, MMSD North America 2002).

While the general principles of 7QS model are a good starting point, the only way to determine their utility is by applying the principles on a case-by-case basis (IISD and the Tahltan Nation 2003). Those using the approach must be sensitive to various cultural and social perspectives in each case, respecting differences and adapting to the needs of the various interested parties (INAC 2004). Moreover, all stakeholders, including industry, governments, NGOs, and local peoples and communities, should have a voice in applying the 7QS principles, as well as being made aware of the resources available and what the possible outcomes of development are (Wismer 1996; Whiteman and Mamen 2002). In this way all interests and expectations for the MMSD project are known.

2.2.4 Aboriginal peoples and MMSD

The MMSD project has made significant efforts to include the participation of all stakeholders, with particular emphasis on Aboriginal peoples and communities (Task 2 Work Group, MMSD North America 2002; Danielson 2003). This has been essential given that many of the world's current major mining initiatives are in areas where Aboriginal peoples form a significant part of the population (McMahon and Remy 2001; Danielson 2003). Aboriginal interests must therefore be taken into account when developing mineral resources if progress is to be made in contributing to sustainability. The IIED recognize the important linkages between mining, Aboriginal peoples and sustainability:

> MMSD cannot speak for indigenous groups, but must seek guidance on how it can best contribute to debates involving indigenous peoples and the mining and metals industries. The challenge is to integrate these unique perspectives with other visionary approaches to sustainability in order to move us away from business as usual (McShane and Danielson 2001:3).

One conclusion of The MMSD project was that Aboriginal peoples need to be consulted and participate freely in the development of mineral resources in order for mining to positively contribute to sustainability (Ali and Behrendt 2001). In the past, there have been many obstacles to sustainability that were the result of the impacts of development on Aboriginal peoples (Wismer 1996; Whiteman and Mamen 2002).

McShane and Danielson (2001: 46) highlight the past impacts and the possibilities inherent in positive affects:

> They (*indigenous peoples*) may share through one or another means in the revenues generated by mineral production on their lands. In other cases, indigenous communities have not benefited from mineral development, which has led to a large scale influx of population into their territories, erosion of traditional livelihoods, cultural conflict, loss of territory, environmental damage, forced displacement, violence, and other problems.

Despite the efforts to include all stakeholders there have been some notable criticisms of the MMSD project in regards to the role of Aboriginal peoples and communities in mining in contributing to overall sustainable development that could offset any potential benefits. Opposition to the MMSD approach argues that mining places a substantial strain on Aboriginal people and the resources they utilize (Kennedy and Corpuz 2001). Critics further argue that the mining industry deliberately targets Aboriginal populations with title to or interest in land that has mining potential because they are generally perceived as "economically marginal and politically weak" (Kennedy and Corpuz 2001; Ritter 2001).

Additional criticisms of the MMSD approach and mining in general, are associated with the globalization of mineral development. Globalization, critics point out, may make it less likely that corporations will respect the rights of Aboriginal people and conflicts will increase because of economic nationalism and the increased freedom of trade (Ali and Behrendt 2001). In this, mining companies will continue to have incredible leverage over Aboriginal stakeholders, often acting as a surrogate government, providing employment, training, and capital for social programs and infrastructure (IIED and WBCSD 2002a; Ali 2003).

Still, Aboriginal peoples face a particularly difficult decision in mineral development even when they are involved. They can welcome change and choose to work with a developer and/or government(s) to maximize the potential benefits for their group, or they can try and preserve their traditional lifestyles by opposing development (Ali and Behrendt 2001; IIED and WBCSD 2002b). Ali and Behrendt (2001) believe that there should be greater emphasis

placed on studying people's lives before a project to see how it could be improved with and without development. Ideal as this may be, it is often difficult enough to consult with all groups affected by a mining project after development has begun, let alone before.

The inability of the MMSD project to properly consult with affected groups was recognized by the IIED:

> The sheer diversity of Indigenous peoples and organizations with an interest in mining-related issues is enormous and there is no effective way in which the project can consult with every Indigenous constituency in the world in a meaningful way (McShane and Danielson 2001:47).

The issue of mining and mineral development's contribution to sustainability is a very complex issue that needs to deal with a range of conflicting values. Authors such as Kennedy and Corpuz (2001) conclude that mining can never contribute to sustainable development due to the lack of integration amongst stakeholders. However, if Aboriginal and other local peoples gain a more central role in mineral development, a contribution to sustainability may be possible.

2.2.5 The Fifth question: Aboriginal peoples and the 7QS

The Task 2 Work Group, MMSD North America attempted to address the issue of Aboriginal involvement in the MMSD project and mineral development in general, through the 7QS report. They included, for instance, reference to affected groups and communities in the second question, which focused on the impact of mining on "people" (Task 2 Work Group, MMSD North America 2002). Yet, perhaps the most significant inclusion of Aboriginal peoples' values in the 7QS was in the fifth question which sought to determine whether "traditional and non-market activities in the community and surrounding area (are) accounted for in a way that is acceptable to the local people?" (Task 2 Work Group, MMSD North America 2002).

The fifth question was included by the Work Group as a way to account for a group of activities which are typically left out of economic studies (IIED and WBCSD 2002b; Task 2

Work Group, MMSD North America 2002). Further, the question highlights the effect of mineral development on traditional/non-market activity use and traditional cultural attributes. The goal is to determine whether a mining project will contribute to the viability of traditional and non-market activities in the long-term. One important point to emphasize is that while the focus of this thesis is on exploring the impact of mineral development on Aboriginal traditional and non-market activities, the Task 2 Work Group's fifth question was not limited to Aboriginal people. It includes all individuals and groups who participate in some form of non-market activity, including: "hunting, bartering, volunteer activities, housework and many recreational and spiritual pursuits." (Task 2 Work Group, MMSD North America 2002: 45).

The Fifth question is a significant inclusion in the 7QS. Traditional and non-market activities, which will be looked at in greater detail in the following chapters, are particularly important to many Aboriginal and non-Aboriginal communities near or adjacent to significant mineral development and mineral reserves. The following chapter looks at Aboriginal involvement in non-renewable resource development in general and mineral development, specifically. Traditional activities are then explored in detail in Chapter 4.

3. Aboriginal involvement in non-renewable resource development

3.1 An introduction to non-renewable resource development and Aboriginal peoples in Canada

Aboriginal populations in some regions of Canada have been utilising natural resources for thousands of years (Crowe 1974; Bone 1992; Ali 2003). Prior to contact with European cultures a range of renewable natural resources, including both flora and fauna were used in managing Aboriginal communities (Wismer 1996; Gwich'in Renewable Resource Board 1997). Since contact, the pace of natural resource development in Canada has been growing at an increasing rate, particularly in non-renewable resource development, such as mining and mineral development (Bone 1992; Wismer 1996). Such development has, in turn, led many to contest ownership of the land and resources between Aboriginal governments and the Crown (Ali 2003).

However, ownership of the land and resources has been particularly difficult to manage as there are various groups that have a stake in resource development in Canada including, federal and provincial governments, Aboriginal groups, and as it relates specifically to development regional groups, communities and developers (INAC 2004). In the past, the federal government attempted to protect Aboriginal groups from development, while promoting development on or adjacent to Aboriginal traditional areas (Nikiforuk 1997; Brody 2000). Aboriginal groups often felt that their traditional land and resources were exploited and that they had not had adequate opportunity for consultation and participation in development (Whiteman and Mamen 2001). This has led to resistance on a number of occasions by Aboriginal groups to the development of natural resources that are on or adjacent to their traditional areas, and as a result the creation of a number of approaches to more fully integrate Aboriginal groups in the development of natural resources, including Supreme Court of Canada rulings on proper consultation with Aboriginal groups, more holistic Environmental Assessment, Land Claims Agreements, socio-economic agreements and Impact and Benefits Agreements (IBAs) (Wismer 1996).

In addition, Aboriginal stewardship of land and resources has been recognized as an important component of sustainable development (Fenge 1997). Governments, International Non-Government Organizations and mining companies have recognized the role that Aboriginal peoples play in mineral development. They view Aboriginal stewardship, traditional activities, and TEK as critical to sustainable development (Whiteman and Mamen 2001; INAC 2004). In this chapter the role of Aboriginal peoples in natural resource development is explored, with a particular focus on Aboriginal peoples and mining in Canada.

3.1.1 Aboriginal Peoples and non-renewable resources

The resources that Aboriginal people utilize within their immediate environment, such as subsistence food sources, have typically been renewable (Wismer 1996; Freeman 1998). Parts of these food sources have also been used for clothing articles, tools, and building and transportation materials (Steckley and Cummins 2001).

It has always been in the Aboriginal group's best interest to find a balance in the harvesting of natural resources (Berkes 1999; Steckley and Cummins 2001). If a balance could be found, considering natural cycles and meteorological or geological events, and over-harvesting did not occur, the potential survival rate within the Aboriginal group was higher (Sherry and Vuntut Gwitchin First Nation 1999). Many Aboriginal groups thrived in their selected locations because of their ability to live sustainably.

In addition, there is evidence of Aboriginal involvement in non-renewable natural resource development that predates European contact by thousands of years (Crowe 1974; Ali 2003; IISD 2002). For example, the Tahltan of northwest British Columbia traditionally mined obsidian, jade and copper for trade with other Aboriginal groups in the area (Hodge 2003). Minerals and compounds were also collected for ornamental purposes. The key here is that the scale of development was local and small scale (Ali 2003).

3.1.2 The cost of marginalization

When Europeans began to arrive, Aboriginal groups continued to organize their communities around renewable natural resources for some time. In fact, in many parts of Canada they remained relatively unchanged by European contact for centuries after the initial arrival of European settlers. However, with the arrival of Europeans came increased development of land and natural resources across Canada (Ali 2003). Aboriginal peoples who traditionally occupied the land under development were increasingly marginalized, as their lands and resources were subjected to changing ownership and further exploitation as political jurisdictions were established (Steckley and Cummins 2001; Whiteman and Mamen 2002). The changing political boundaries had a significant impact on the future of government/aboriginal relations, as the process neglected the input of Aboriginal people. Aboriginal groups were left out of this process and frequently considered "wards of the state", typically to the benefit of the newcomers and to the detriment of Aboriginal peoples (Bone 1992; Ali 2003).

The marginalization of Aboriginal peoples in resource development has had many social and economic ramifications. Typically, the federal government negotiated the terms of the development directly with the developer on behalf of affected Aboriginal groups. By not allowing Aboriginal peoples to participate in development the Canadian federal government has minimized the economic opportunities of Aboriginal peoples (Gorman 1987; Wismer 1996). As a result, the continued dependence on government assistance has left many Aboriginal peoples with feelings of helplessness and a lack of control over their own destiny (Steckley and Cummins 2001). In addition, the minimal level of Aboriginal involvement in the planning and decision-making of resource development has hindered the empowerment of Aboriginal political groups.

The exclusion of Aboriginal peoples in resource development projects across Canada has also had immediate social impacts. For instance, the influx of imported, transient employees of resource developers has changed the social make-up of many Aboriginal communities. The

communities have suffered the loss of certain social and cultural characteristics and experienced devastating social problems (McMahon and Remy 2001). As a specific example, Gorman (1987) illustrates the impact that the Norman Wells Project had on Dene communities in the Northwest Territories. The social problems, which included the modification of cultural values, teen pregnancy, substance abuse, and spousal abuse, were such that it took many years after the project for community leaders to regain control over their communities (Gorman 1987). The example however, is not an isolated phenomenon, but one that has been repeated with varying detail in many Aboriginal communities following the introduction of resource development in general.

In addition, the marginalization of Aboriginal groups affected by development has often meant inadequate community planning for those communities most affected by development (Ritter 2001). Lack of adequate housing and infrastructure and the growth of bars, prostitution, illegal activity and an increase in the crime rate are noted as potential costs (Shrimpton and Storey 1992). Finally, a lack of Aboriginal input has directly affected Aboriginal land use in some instances. By relying on western science and not incorporating Aboriginal TEK, development has, in the past, hindered the ability of Aboriginal groups to harvest renewable resources (Mohawk Council of Akwesasne 1994; Freeman 1998).

The costs associated with marginalization have been impossible for Aboriginal peoples in Canada to ignore. As a result, Aboriginal groups have sought greater control of their traditional lands and resources (Brody 2000; Whiteman and Mamen 2002). This has meant becoming more involved in resource development, so that they could participate in the planning and decisions associated with resource development projects (O'Reilly and Eacott 1999). This has become particularly evident in the development of mineral resources in Canada.

3.2 Mining and Aboriginal Peoples

In Canada, Aboriginal peoples now typically engage in negotiations directly with mineral developers to ensure their active participation in the development. Much has changed to

herald the requirement of increased Aboriginal participation in projects that have direct impact on Aboriginal groups. For instance, various agreements and participation regimes, such as Community Impact Agreements (Hardy 1983), have been important to the development of modern impact agreements, such as Impact and Benefits Agreements (IBAs) (Kennett 1999). Moreover, the increasing recognition of Aboriginal rights in Canada has made Aboriginal groups significant stakeholders in development that affects their communities. The following sections outline the development of IBAs and the involvement of Aboriginal peoples in such agreements.

3.2.1 Promises and Early Agreements

Corporate promises, such as the infusion of funds into local community programs and infrastructure were perhaps the first method used by developers to disperse the benefits of resource development (Sloan and Hill 1995). It was important for a proponent to illustrate the potential local benefits that would occur as a result of the development in order to ensure compliance. Yet, the company was rarely held to its promises, which in some cases went unmet (O'Reilly and Eacott 1999; Ali 2003). As a result, local groups affected by development grew increasingly wary of corporate rhetoric which included "promises" or "commitments" and began to seek more substantial agreements.

One mechanism that enabled affected communities to achieve more significant involvement in resource development was Community Impact Agreements. Such agreements, a precursor to modern IBAs, were being negotiated as early as the 1970s by Ontario Hydro (Hardy 1983). One particular agreement, signed by the community of Atikokan in northern Ontario and Ontario Hydro, began with an initial assessment in 1976. The assessment described the community prior to the project and predicted how it would change because of the project. Issues negotiated in the agreement included employment, housing and competing land use issues. Perhaps, more importantly, the agreement moved beyond corporate promises in that it was a legal document negotiated between the community of Atikokan and the proponent (Hardy 1983).

Sloan and Hill (1995) have examined a variety of agreements that have been significant in forming closer relationships between project proponents and Aboriginal communities specifically. The authors discuss a variety of projects including those negotiated between Aboriginal groups and Hydro-Quebec, Ontario Hydro, and Falconbridge. Although, there are some similarities in the range of items covered by the agreements, what is perhaps most intriguing are the lengths that proponents were willing to go to in order to change the negative outlook that Aboriginal peoples had towards development as a result of past experiences. For example, "Ontario Hydro's Approach to Resolving Grievances with Aboriginal Communities" can be seen as a formal apology for practices that in the past have unfairly excluded Aboriginal interests and participation (Sloan and Hill 1995: 229).

Hydro-Quebec favoured an 'integrated' approach that incorporated remedial measures for community, economic and cultural development while supporting traditional activities and mitigating adverse environmental impacts (Sloan and Hill 1995). The goal of such agreements was to move towards self-sufficiency, with aboriginal communities benefiting from the economic spin-offs of development.

Falconbridge, formerly a subsidiary of Noranda Metals, also developed an approach to community relations at the Raglan Project, in northern Quebec. For the project to be successful the company felt that it would be in their best interest to obtain community support, so they adopted a continuous community consultation process, hired an Inuit advisor to act as a liaison between Aboriginal groups and the company, and attempted to integrate the concerns of affected Aboriginal people into the mining project (Sloan and Hill 1995). Based on local inputs, the company's efforts focused on employment opportunities and environmental impacts. Falconbridge found that many Inuit affected by the project were particularly interested in protecting their traditional way-of-life, as well as developing their wage-based economy in order to decrease their reliance on government support (Sloan and Hill 1995). One of the means adopted to address these concerns was that the company and the Inuit negotiated a two week work rotation rather than four, so that the Inuit could continue their traditional lifestyle (Sloan and Hill 1995).

3.2.2 Aboriginal Empowerment

Prior to the 1970s Aboriginal empowerment was largely unheard of in Canada (Wismer 1996). Throughout that decade Aboriginal peoples became more prominent in mineral development as a result of modern Land Claims Agreements. Moreover, as the mining industry is most active in northern or rural and remote regions where Aboriginal people form a significant percentage of the population, addressing their concerns became increasingly important (Kennett 1999). Perhaps the most important rallying point for increased Aboriginal participation came as a result of the Berger Inquiry in the late 1970s. The Inquiry, a contemporaneous of the Environmental Assessment and Review Process (EARP) and modern Environmental Assessment (EA), detailed the potential impacts of the proposed Mackenzie Valley Pipeline on affected Aboriginal groups (Mulvihill and Baker 2001). After compiling input from approximately 1000 individuals, the Inquiry recommended a ten year moratorium on the project. This, it was said, would allow sufficient time to address Aboriginal concerns and facilitate the development of Aboriginal social and technical capacity in potentially affected communities. The Inquiry not only defined the importance of Aboriginal participation in resource development in northern Canada, but also set a benchmark for future EIA consultation procedures (Mulvihill and Baker 2001).

Aboriginal participation in resource development was further reinforced with the first comprehensive Land Claims Agreement, the James Bay and Northern Quebec Agreement (JBNQ) in 1975 (Mulvihill and Baker 2001). While the Aboriginal groups involved in the JBNQ agreement had to relinquish any additional land claims for funds, they did acquire settlement land, which included a tiered range of title to surface/subsurface lands and exclusive hunting grounds (Campbell *et al.* 2001). This set a precedent for future comprehensive Land Claims negotiations and meant that Aboriginal groups with completed modern, comprehensive Land Claims now had the power to develop sections of their traditional lands with out interference from federal, provincial or territorial governments.

Legal action has also been taken recently to further establish the rights of Aboriginal groups. The *Sparrow* case of 1990 established the framework by which the infringement of

Aboriginal rights could be assessed (Natcher 2001). The *Van der Peet* decision in 1996 furthered the debate on Aboriginal traditional rights by stating that an Aboriginal practice could only be a right if it was practiced prior to contact with Europeans. With *Delgamuukw* in 1997, a range of Aboriginal rights in relation to land use were outlined. However, the right of Aboriginal peoples to decide land use could still be infringed upon by government for land settlement, economic development and environmental protection with compensation (Natcher 2001).

The movement to greater Aboriginal control in effect enabled the development of private agreements between Aboriginal groups and project proponents to flourish. For example, with the signing of the Inuvialuit Final Agreement in 1984, the Inuvialuit took on the decision-making role for development that crossed their lands. They now require an IBA if the development in question crosses their land, yet they also have the power to issue a temporary "Right-of-way Agreement" where impact is not significant, or a "Participation Agreement" where the right-of-way is permanent (Campbell *et al.* 2001). A Participation Agreement may include specific terms and conditions, including costs, compensation, restoration and mitigation, employment, education and training, equity and participation, all of which are similar to provisions outlined in IBAs (Campbell *et al.* 2001).

The changing role of government in Aboriginal affairs has also allowed for an increase in the private sector negotiating agreements directly with affected Aboriginal groups and communities (Whiteman and Mamen 2002). While this is partially a result of Aboriginal groups being unwilling to leave it to government to protect their interests as they had in the past, modern IBAs now require little to no government involvement (Kennett 1999).

3.2.3 The Growth of Modern IBAs

As modern IBAs developed over the past two decades, the role of the federal government with regard to mineral development involving Aboriginal peoples continued to change. Although, the federal government relinquished a great deal of control over negotiating costs and benefits in the 1990s, it continued to be involved in a variety of ways. For instance, the

government still found itself involved in requiring and/or promoting IBA negotiations, and providing information about the area and Aboriginal groups to the company involved during the bargaining process. Further, IBAs also typically include government involvement in the design and implementation of programs, as well as providing potential benefits in the form of regional and/or non-Aboriginal community development. For example, government still aids in the development and delivery of training programs through local colleges and institutions, the provision of health services, and, in some instances, such as in the development of the VBNM, intergovernmental management boards (Kennett 1999; Bonnell 2005).
Equally important to the changing role of government in the development of IBAs was a growing awareness of the issues facing Aboriginal peoples. To set the context for IBAs, an annual report produced by the Intergovernmental Working Group on the Mineral Industry compared the demographic relationship between the mineral industry and Aboriginal peoples in Canada (INAC 1995). The report found that Aboriginal people had significantly higher unemployment, lower education, lower average income and higher percentage of youth than the rest of Canada. The mining industry, by comparison, had one of the highest average weekly earnings among industrial employers (INAC 1995). Simply put, the report emphasised the need for increased involvement of Aboriginal people in mining-related activities.

In recent years, as IBAs developed as the standard process for a good working relationship between project proponents and affected Aboriginal groups, the range of elements in the agreements increased. For instance, opportunities for employment, increased skills and experience in the mining industry, as well as higher levels of income, attracted many Aboriginal people to the mining industry (Dreyer and Myers 2004). Yet, Aboriginal communities also recognized the potential to acquire improved infrastructure, community programs and business development through the agreements (O'Reilly and Eacott 1999). Additional benefits, such as social and cultural protection, including compensation for the loss of traditional harvested resources have also increasingly become items for consideration in the negotiation of IBAs (Kennett 1999; O'Reilly and Eacott 1999).

Also important to the development of the IBA process was the recognition of the need to develop measures to avoid, or at least mitigate, adverse effects. There is a need to address commonly occurring issues that include the effect of mineral development on Aboriginal social structures and cultural identity (Wismer 1996; Dreyer and Myers 2004). While it should be recognized that these problems are not solely the result of mining activities, such development often seems to accelerate these negative processes (Kennett 1999).

3.3 Aboriginal Peoples and Sustainability

> The road to sustainability is not some unknown course into a cavernous future – it is rather the recognition and empowerment of indigenous, traditional and local communities many of whom are already practicing the fundamental principles of managing their own land and resources for the spiritual heath of the Earth and for the future generations of all its species (IUCN 1997: 159).

The recognition that Aboriginal stewardship of land and resources is important to sustainable development has also been significant to the inclusion of Aboriginal groups in resource development projects (Whiteman and Mamen 2001; INAC 2004). International and national protocols, declarations, agreements and workshops have helped outline the role of Aboriginal peoples in working towards sustainability (Fenge 1997; Hodge 1997; Task 2 Work Group, MMSD North America 2002). In particular, there is a strong push for the protection of Aboriginal traditional activities and the continued integration of TEK in land use planning and resource management. This section explores the increased integration of Aboriginal peoples in mineral development and as a result of this integration looks at their potential role in mining's contribution to sustainability.

3.3.1 Aboriginal land and resource management and Traditional Environmental Knowledge (TEK)

Thousands of years have fostered Aboriginal stewardship of the land and resources and the development of TEK in Canada (Crowe 1974). TEK can be defined as a "system of experimental knowledge gained by continual observation and transmitted among members of a community" (Huntington 1998: 237). Moreover, it is a holistic approach to Aboriginal renewable resource management that places humans within natural systems rather than

separating the two (Nuttall 1998; Sherry and the Vuntut Gwitchin First Nation 1999). Resources in this example refer to fish, wildlife and plant resources used in the fulfillment of subsistence needs.

It is important to realize that TEK is not static; it changes as new technology is made available, or social, economic, or environmental forces work to change it (Gwich'in Renewable Resources Board 1997; Sherry and Vuntut Gwitchin First Nation 1999). That is not to say that it does not retain its original truths. As knowledge is passed through generations by oral tradition, teaching and experience, the presentation of knowledge may change but still remain true to the vast depth of information concerning the land from whence it came (Crowe 1974).

TEK and Aboriginal resource management systems are formed based on the integration between knowledge and religious ideology (Mohawk Council of Akwesasne 1994). Cultural values help to reinforce observed information, drawn upon a moral position that views humans in balance with nature (Collings 1997). Potentially detrimental consequences of disrespecting or mistreating food or other resources help retain this balance (Booth and Jacobs 1990). For example, some Inuit believe that if you disrespect an animal by speaking of it before it is hunted, it may not allow itself to be killed or even to be seen (Brody 2000).

Equally, many Aboriginal groups believe that it is disrespectful to engage in improper or unethical harvesting (Berkes 1999; Booth and Jacobs 1990). This may include hunting without permission on someone else's traditional territory or taking more than you or your community needs. Waste, for example, is generally a practice that is frowned upon (Collings 1997).

In modern use, TEK acknowledges contemporary scientific values including "taxonomy, animal behaviour, population dynamics, physical environments, habitats, and the interconnections among ecosystem components" (Sherry and Vuntut Gwitchin First Nation 1999: 36). Examples of how TEK and Aboriginal stewardship help to conserve and

successfully manage wildlife populations include size restrictions, freeing of surplus, use of non-destructive harvesting techniques, practice of closed seasons or restricted area access (Dieser *et al.* 1998). Aboriginal peoples have readily employed many of these measures as a means to keep stocks at sufficient levels, or to rehabilitate certain species that were declining (Legat 1991; Fast and Berkes 1994). The management of wildlife among Aboriginal people can be seen as a way of life, dictated by learned social choices, rather than administrative decisions (Usher 1986).

3.3.2 The importance of TEK in Sustainable Development

> MMSD cannot speak for indigenous groups, but must seek guidance on how it can best contribute to debates involving indigenous peoples and the mining and metals industries. The challenge is to integrate these unique perspectives with other visionary approaches to sustainability in order to move us away from business as usual (McShane and Danielson 2001: 47).

TEK encompasses the knowledge of many Aboriginal peoples, and provides vital information on land use and resources, enabling the participation in traditional activities to continue (Usher 1986; Collings 1997). Social concerns, such as the promotion, and in some cases revitalization, of cultural attributes for the continuation of future generations, are significant to developing sustainable communities. By respecting and incorporating traditional ways into modern life, Aboriginal groups contribute to the balance of nature and maintenance of cultural values (Bone 1992).

Moreover, the use of Aboriginal TEK in resource management and land use planning can be translated into the modern definitions of sustainable development. The Task 2 Work Group, MMSD North America, for example, defines sustainability as a balance between satisfying human and ecosystem needs (Task 2 Work Group, MMSD North America 2002). If a mining project is to contribute to sustainable development it must achieve net positive results in an affected community. In an Aboriginal community this may include the protection and promotion of traditional activities. The dilemma for industry, government and Aboriginal peoples and communities is in finding this balance. Industry is eager to develop resources, but in recent years has become more socially responsible and attuned to minimizing the affects of

development on local communities (Task 2 Work Group, MMSD North America 2002; MAC 2004; ICMM 2005). The Canadian and provincial governments have also developed mandates for achieving sustainable development which consider social issues (Whiteman and Mamen 2001; INAC 2004). Aboriginal peoples and communities must also find a balance between the threat to their traditional lifestyles and cultural values and the economic self-sufficiency that development may bring (Ali and Behrendt 2001).

However, whether an Aboriginal group is opposed to development, seeking partnership, or attempting to redress the past violation of rights and traditional lands, it all points to self-determination (Ali and Behrendt 2001). Aboriginal groups in Canada have gained significant control over their traditional land and resources, and in effect have become empowered to more clearly define their own directions.

The continued trend towards increased self-determination is recognized in the inclusion of Aboriginal traditional activities in the 7QS (2002). By asking whether traditional activities have been accounted for in a manner that is acceptable to affected Aboriginal groups, the Task 2 Work Group acknowledges the importance of mining operations contributing to sustainable development.

The VBNM Project is one example of how the costs and benefits of mining on Aboriginal peoples can be anticipated and managed in the context of sustainable development. More specifically, the effects of the Voisey's Bay Project on the participation of Labrador Inuit in traditional activities can be assessed through an examination of the proposed VBNC winter shipping route. By focusing on whether the Labrador Inuit feel that their activities have been reasonably accounted for, the fifth question in the 7QS can be explored. The following chapter further outlines the history of Inuit in Labrador and the effect of the Voisey's Bay Nickel Mine winter shipping route on Labrador Inuit traditional activities.

4. Labrador Inuit Traditional Activities and the Voisey's Bay Nickel Mine Winter Shipping Route

4.1 General introduction to the Labrador Inuit and Labrador Inuit traditional activities

> Every culture experiences both continuity and change: over the longest term, these changes may be so radical that they amount to a new cultural or socio-economic form, but in the shorter term they are more often a change of content, not of form (Brody 1977: 311).

Inuit are relative new-comers to Labrador compared to other Aboriginal peoples in Labrador (Ali 2003). Contemporary Labrador Inuit have inhabited areas along the coast of Labrador for the past 700 years (Creery 1994). However, Aboriginal groups have been a significant component of the Labradorean landscape for over 6000 years (Steckley and Cummins 2001). Inuit history in the area and their northern marine lifestyle began with the pre-Dorset, a paleo-Eskimo group in the area, 4000 years ago (*Them Days* 1997). The Dorset came next, followed by the Thule 1000 years ago, and finally contemporary Labrador Inuit (Steckley and Cummins 2001). The Labrador Inuit are the focus of this thesis and to set the context for the present system of traditional activities, a description of what is included in such activities, as well as the history of the development of these activities is explored.

4.1.1 A definition of Labrador Inuit traditional activities

Aboriginal traditional activities are important in fulfilling economic or subsistence needs, as well as in maintaining spiritual, social, and cultural values (Nuttall 1998; Sherry and the Vuntut Gwitchin First Nation 1999). The activities are managed based on the integration between knowledge and spiritual ideology (Mohawk Council of Akwesasne 1994; Booth and Jacobs 1990). Cultural values help to reinforce observed information, drawn upon a moral position that views humans in balance with nature (Collings 1997). This is particularly evident as the underlying principles of Traditional Environmental Knowledge (TEK) are integral to the Aboriginal philosophy of life (Booth and Jacobs 1990). Generally, everything in nature is animate and entangled with spirit, so therefore humans must play an ethical role in maintaining their part in nature. Aboriginal TEK stresses that humans must never place themselves above nature, for it diminishes the balance of life (Dieser *et al.* 1998).

The Labrador Inuit regard their active participation in traditional activities as essential to the promotion and continuation of their culture. In addition, the activities are significant to the Labrador Inuit for spiritual, social, cultural, and economic reasons. The activities have been continued sustainably for centuries based on their integration into every aspect of the lives of the Labrador Inuit. For example, prior to the arrival of Moravian missions the Labrador Inuit viewed the

> ....environment to be populated by a host of spirits with whom people had to appeal, conciliate and defend themselves against harm in order to survive. It was a closely interactive system governing all aspects of Inuit life from success in capturing game to personal safety, good health, procreation and amiable relations between individuals (Brice-Bennett 1977: 3).

The system was essential to providing the Inuit with a code of social and environmental conduct.

However, it is important to acknowledge that the activities, like the culture, are evolving. The Labrador Inuit still regard the environment as essential to the survival of their culture, yet the spiritual values associated with the traditional activities have changed. These changes have come about as a result of influences from the Moravian missions in the 19^{th}-20^{th} centuries (Brice-Bennett 1977). However, one thing that has remained unchanged for the Labrador Inuit is their close connection to their environment and traditionally harvested resources (LIA 2005a). This includes the spiritual and emotional renewal of 'going out on the land'.

In the context of this thesis Labrador Inuit traditional activities will be discussed including those aspects of the Labrador Inuit culture of which they are a part. However, as this thesis focuses on the effects of winter shipping on Labrador traditional activities, only those activities which may be directly affected are considered. This includes primary activities such as the harvesting of fish, terrestrial, and marine wildlife, and wood resources, but also involves an examination of other affected activities, such as accessing cabins and areas near the route and the disruption of travel for social interaction and community recreational events.

4.1.2 Early History

Contemporary Inuit participate in many of the same traditional activities and have adapted much of their technology and lifestyle from the Thule, the predecessors of modern Inuit (LIA 2005a). The Thule were well adapted to hunt larger marine mammals, such as bowhead and white whales, walruses, and seals. Their homes also incorporated components of their landscape, including sod, wood, stone and whale bone (Woollett 2003). In addition, technologies such as dog sleds, umiaks, and kayaks allowed the Thule to carry large amounts of goods long distances quickly and efficiently (Kaplan 1985; Steckley and Cummins 2001).

At one point the Thule had been the dominant group along the north-coast of Labrador. However, after the initial Thule migrations had run their course in the 16th Century, contemporary Inuit culture began to take over. This was due in large part to a Thule migration south, following migrating marine resources, and Inuit specialization in harvesting techniques for northern marine resources such as, whales, walruses, and seals, making them more efficient and better adapted to their northern environment than the Thule (Kaplan 1985). The success of the Inuit in the region was largely tied to the forces and effects of timing. They were able to exploit the regions resources more effectively.

The Inuit also eventually began to push south along the coast of Labrador following the southern migrations of sea mammals, yet there was little competition for their northern marine resources (Woollett 2003).

4.1.3 Contact with Europeans

> Individuals use and occupy their lands, but they do so as representatives of particular cultures. They work according to the conventions of a particular social system, it is a system that they regard as valuable and necessary, and it is a system that, under pressure, they wish to defend (Brody 1977: 314).

Early European visitors to the region included Basque whalers who hunted bowhead whales for oil around Newfoundland and off the coast of Labrador (Creery 1994). The Basque whaling industry eventually collapsed in the early part of the 17th century, but not before other

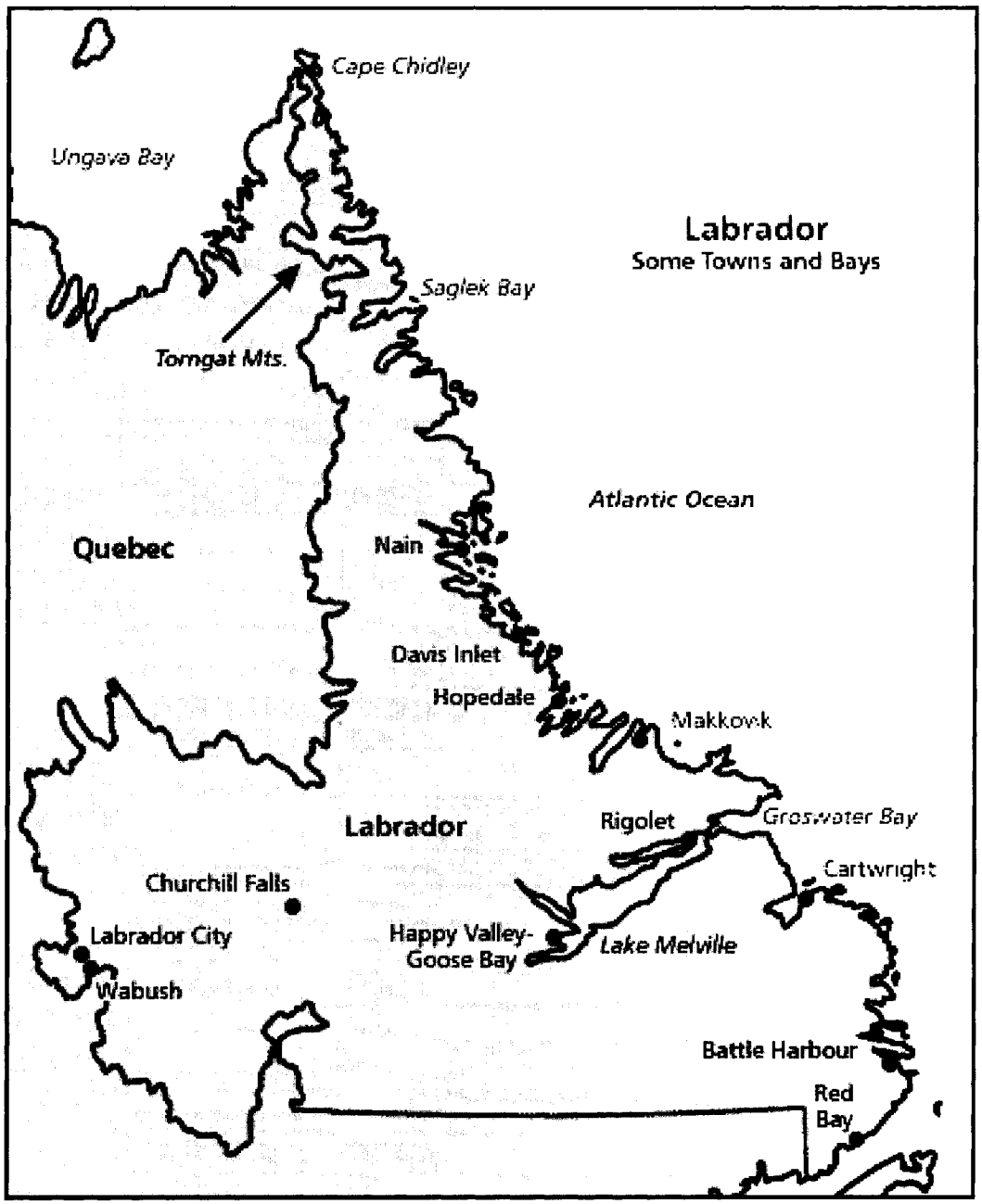
Europeans, including Dutch and French traders, entered the region (Kaplan 1985; Stopp 2002). The French immediately began to establish themselves in Labrador, becoming the most prominent trade partner to the Inuit for a century.

The immediate impact of Early European movement in the region was minimal. In the 17th Century Inuit settlements stretched from Killiniq (in modern Quebec, near Cape Chidley and the northern Quebec-Labrador border) to Groswater Bay in the south (Kaplan 1985). (Figure 1, illustrates the extent of Inuit settlement (Wijayawardhana 1999) and the main area of subsequent, 18th century Moravian missionary activity [see section 4.1.4, below]). Inuit traditional activities included the hunting of bowhead whales, seals, polar bears and other marine mammals, fishing and collecting wood throughout the year, hunting specific bird species and collecting eggs at select times, and hunting various terrestrial mammals, such as caribou.

The emphasis on spirituality in traditional activities also remained somewhat unchanged among the Labrador Inuit. One example of traditional Inuit spiritual practices can be seen in their 18th century whaling practices (Taylor 1985). Labrador Inuit spiritual ceremonies including traditional songs were performed to ask for assistance in the hunt and give power to hunting equipment. This also included restrictions or taboos on certain activities during the hunt including, for instance, chopping wood or the consumption of berries (Taylor 1985).

Europeans, at this time however, were solely concerned with exploiting the natural resources of the region, particularly the fishery along the south coast and establishing trade with the Inuit (Williamson 1980; Kaplan 1985; Creery 1994). They were not deliberately concerned with altering the Inuit way of life. In fact, the effects of contact did not become substantial until the 18th Century (Williamson 1980).

Significant alterations to Inuit culture began to occur in the late 17th Century as a result of an increased European presence along the coast of Labrador. One such adaptation at this time was the Inuit abandonment of smaller houses on the outer islands for larger, communal,



(Source: Wijayawardhana 1999)

Figure 1 Map of Labrador

multi-family residences in the inner coastal region (Kaplan 1985; Woollett 2003). As a result, Inuit traditional activities began to change. The Inuit, at this point, began to increase the amount of terrestrial resources they consumed, while still maintaining a marine lifestyle, since the settled areas included more diverse marine and terrestrial environments (Woollett 2003).

Leadership roles were also extended as a result of the change in living arrangements. The nuclear family remained the basic social unit, with the father or husband being the authority figure in the house based on kinship status and ability (Woollett 2003). Yet not all households were equal. The greater the number of people in a house and the accumulation of European goods were both signs of a household's relative power (Kaplan 1985).

The Inuit also continued to expand their settlement area south of Nain in the 18th century (Creery 1984). With a growing population, they pushed as far south as the northernmost tip of Newfoundland, and possibly even the north shore of the Gulf of St. Lawrence (Figure 2) (Woollett 2003). As a result, interregional trade routes began to open up. The further north a good went, the rarer, and thus more coveted, it would become (Kaplan 1985). Traders built their wealth on such systems.

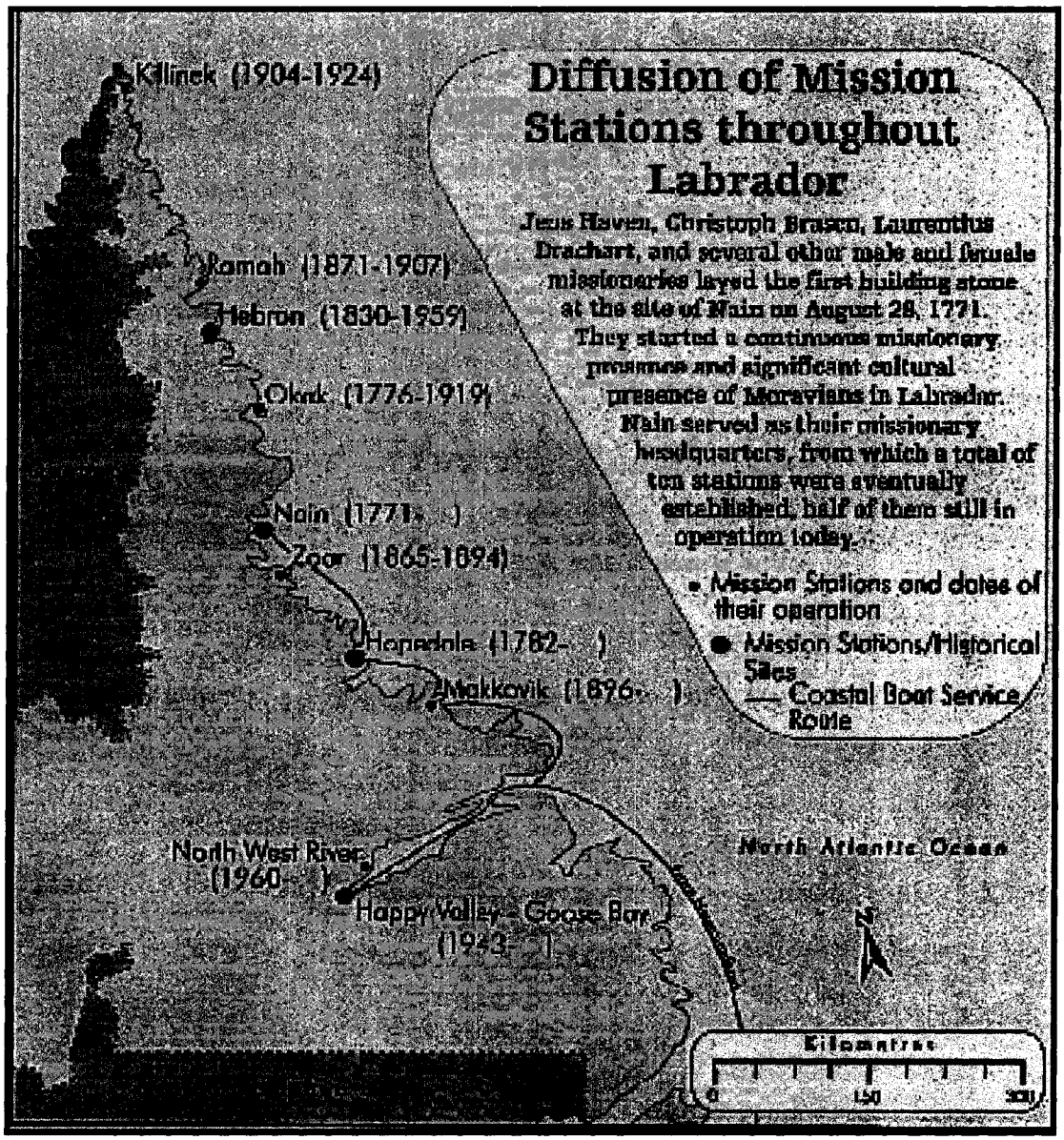
Seasonally the Inuit also changed their migration patterns, moving from their summer residences at the inland ends of bays so that they could more easily access the interior to hunt caribou and fish until the fall when they returned to their winter settlements, to concentrate on harvesting marine mammals that stayed the winter, such as walruses and seals (Woollett 2003).

4.1.4 Moravian Missionaries

In 1763, as the British took control of Canada from the French, they also began to move the French out of Labrador (LIA 2005a). The British were particularly concerned with Inuit interference with the fishery in southern Labrador, so they allowed the Moravians, who had experience with Greenlandic Inuit, to establish missions (Kaplan 1985; Creery 1994). The Moravians agreed to keep the Inuit in the north, and in exchange the English allowed the

Moravians to try to convert the Inuit to Christianity. In this they were permitted to establish trading posts to attract Inuit and discourage Inuit trade with Europeans in southern Labrador (Kaplan 1985).

The establishment of the mission in Nain in 1771 heralded a new era of European-Inuit relations. The Moravians originally sought to undermine the Inuit traditional lifestyle and trade networks, but soon realized that in order for the mission to survive it was necessary for the Inuit to retain their traditional activities in a seasonal, semi-nomadic way (Creery 1994). The Moravian missions not only survived, they prospered. By the end of the 19th Century there were eight Moravian missions along the coast of Labrador (Figure 2) (Williamson 1997).



(Source: Loveman 2006)

Figure 2 Diffusion of Moravian missions throughout Labrador

4.2 Major changes in the level of participation in traditional activities by the Labrador Inuit

> In spite of these disruptive changes, Labrador Inuit have had a remarkable history of resilience and success manifest in a more diverse settlement pattern, use of resources, and scale of occupation than any other ethnic group that has occupied Labrador (Woollett 2003: 1).

4.2.1 "Pre-settlement" and "Post-settlement" Periods

The Labrador Inuit continued their participation in traditional activities in the 20th Century. However, as time progressed and the world around them began to change, so too did the Labrador Inuit. Much of this had to do with their settlement and relocation to settlements in communities along the coast of Labrador (Williamson 1997). Many Labrador Inuit had already begun to settle around the Moravian mission sites and trading posts owned by the Hudson's Bay Company and others. Yet, it was not until after confederation with Canada, that the Inuit communities that are in Labrador today began to form (LIA 2005a). Between 1955 and 1965 the Newfoundland provincial government, for administrative purposes, suspended services, such as health, transportation and supply shipments to Hebron and Nutak, and began resettling Inuit in Nain, Hopedale, Makovik, and Northwest River (Creery 1994; LIA 2005a). Inuit were often resettled in communities where residents had already established fishing and hunting rights. As a result, some Inuit experienced a dislocation to the land and their traditional activities.

As times changed and the communities continued to expand, opportunities for more wage-based employment increased. Imported food, clothing and supplies from southern Canada were also more readily available in the growing settlements. As a result, Inuit reliance on traditional activities for the provision of subsistence foods and other materials began to change. However, for the majority of Labrador Inuit their relationship with the land remained strong and they continued, much as they do today, to return to the land whenever possible to participate in traditional activities. Labrador Inuit land and resource use was aptly described in "Our Footprints are Everywhere":

> these activities are ongoing and continuous; the way animals were hunted or the core hunting areas may have changed over time, but the need for fresh meat from the land and the sea has always existed...areas exploited have expanded or contracted with the demand for and the value of certain species as items of trade and for subsistence, or as a result of changes in the movement and distribution of wildlife. These factors in combination have produced trends that can be described as patterns of resource use (Brice-Bennett 1977: 97).

In a 1997 document prepared for the then Labrador Inuit Association (LIA) (now the Nunatsiavut Government), entitled "*From Sina to Kikujâluk: Our Footprint*", Tony Williamson, divides major changes in Inuit participation in traditional activities between, what he defines as the "Pre-settlement Period", prior to permanent Inuit settlement beginning with the relocation of Inuit beginning in 1955, and the "Post-Settlement Period", after settlement in the 1960s. For the purposes of this thesis, Labrador Inuit traditional activities will be discussed utilizing Williamson's classification, beginning with the period prior to settlement which begins following contact with Europeans.

4.2.2 Major changes prior to settlement (pre-1955)

During the period prior to settlement traditional resource harvesting patterns persisted much in the same way they had prior to contact with Europeans, with a few notable changes. At that time, Inuit traditional activities had included the hunting of a variety of marine mammals, birds and caribou, fishing, collecting wood, and to a lesser degree collecting eggs and hunting various terrestrial mammals, aside from caribou. One major change to this predominantly marine lifestyle occurred in the 1830s when the harvesting of bowhead whales, a resource the Inuit had become dependent upon was discontinued due to overexploitation by Scottish whalers (Kaplan 1985). The results would have been disastrous if not for the introduction of seal nets by the Moravians, which increased the seal harvest and so offset the loss of other resources (Williamson 1997).

Prior to the arrival of the Moravians, hunting in interior Labrador began for the Inuit in the late summer when the caribou were fat with good pelts, and arctic char was readily accessible (Williamson 1997; Woollett 2003). This changed as the Moravians encouraged summer

fishing and the drying of cod for winter food, and fur clothing was replaced with imported cotton and woolen cloth (Them Days 1997).

The Moravians, along with the Hudson's Bay Company, also introduced trapping of small fur-bearing mammals for trade for European goods (Kaplan 1985; Williamson 1997). Trapping was thus one of the first commercial activities introduced to the Labrador Inuit. Up to this point, trade with Europeans had been for traditionally harvested goods. For the Inuit, the trapping of small fur-bearing mammals began their transition into a mixed economy, which included both traditional activities, utilizing traditionally harvested resources, and non-traditional activities, accessing resources for commercial or monetary purposes. Prior to their use in trade, small fur-bearers, with the exception of hares and porcupines, were rarely harvested by the Inuit for traditional/non-market purposes, except when food was scarce and for use in the production of a few articles of clothing (Williamson 1997). Trapping was particularly difficult for the Inuit, as it took men away for long periods and required the use of large dog teams to cover extensive trap-lines (Williamson 1997; Woollett 2003).

Other major changes following the arrival of the Moravian missions included a focus on fish as the major staple in the Inuit diet (Woollett 2003). In the summer Inuit began to fish arctic char, cod or salmon near the missions, with other food taken to augment the fish diet, which included seals, black bear, caribou, and occasionally, molting or young birds at the end of summer (Williamson 1997).

The introduction of new technologies by Europeans also contributed to modifying the seasonal harvesting patterns of the Labrador Inuit. Firearms, for instance, made some forms of hunting, such as the caribou hunt, more productive (Kaplan 1985; Woollett 2003). In addition, fish nets and European wooden boats increased fish catch and the ability to haul cargo (Williamson 1997).

In the 19th Century winter settlement and residences continued to change due to a range of economic, ecological and social factors related to contact. In particular, settlements began to

emerge around the missions and trade-posts (Woollett 2003). Maritime subsistence activities were focused primarily on fishing and seal hunting, while terrestrial resources, such as caribou became increasingly important (Williamson 1997). At this time the Inuit increased their trade of traditionally and non-traditionally harvested resources, such as small fur-bearers, for European goods obtained at the mission stores and trade-posts. Such trade had a significant impact on the Inuit culture (Creery 1994). As a result of their increased trade, the Labrador Inuit furthered their integration into the cash economy, which promoted business relationships with traders, increased the need for new technologies, and encouraged cooperation at a family rather than a community level (Woollett 2003).

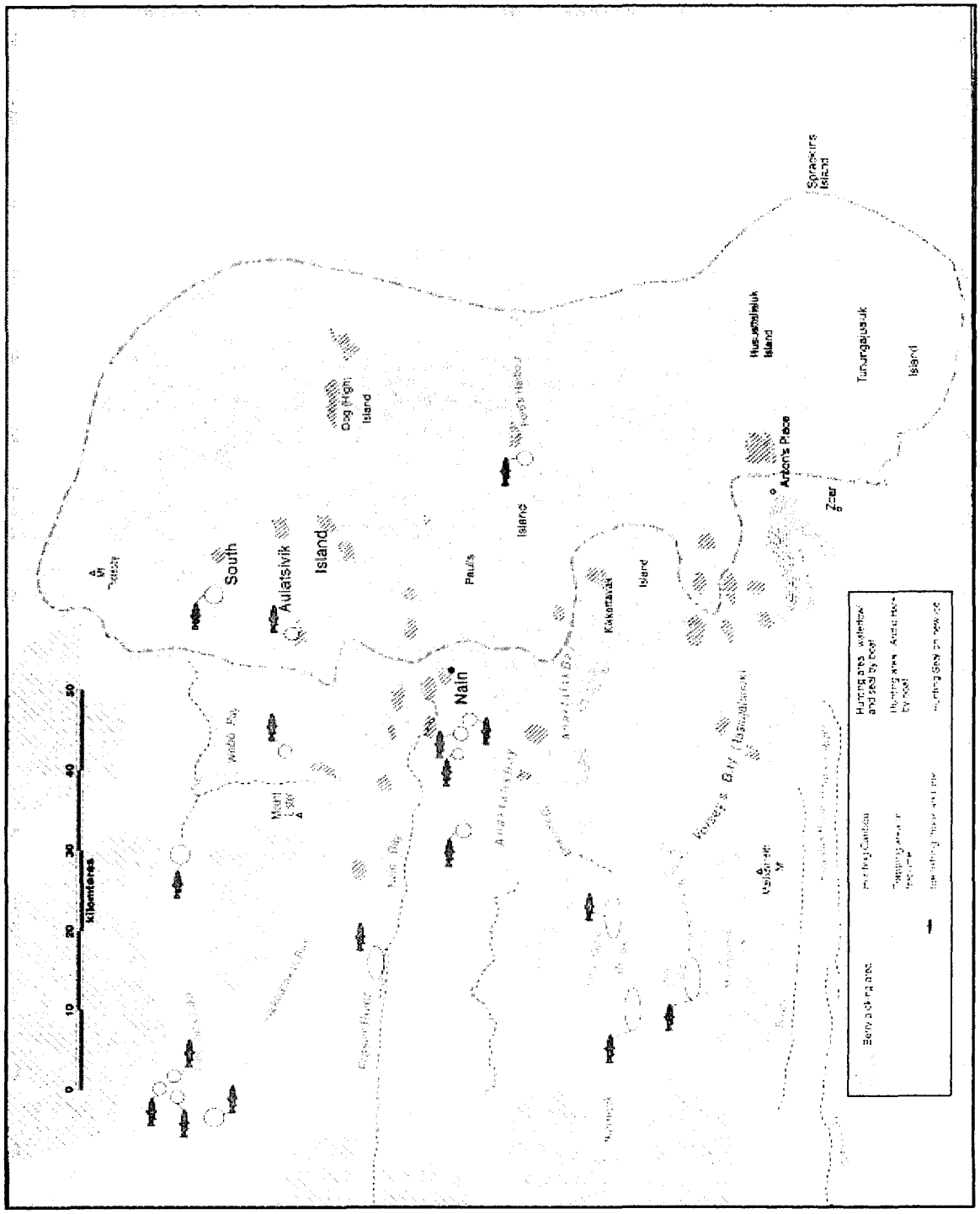
4.2.3 Major changes following settlement (1965-present)

There have been a number of significant changes to Labrador Inuit traditional activities following permanent settlement in the 1960s (Creery 1994; Williamson 1997; LIA 1998e; LIA 2005a). Technological advances and the growth of industrial development in particular have accelerated this modification. Change is particularly evident in the continued transition into a mixed economy, with a growing focus on non-traditional/market activities. This can be seen in all areas of traditional activities including the fishery, sealing, hunting and trapping, as well as in the use of new techniques and equipment. There is an extensive set of factors which have influenced change, including, for example, participation in the wage-based economy, increased travel opportunities, the growth of the social safety net, changing demographics, broader social changes, including access to television and southern culture, and increasing political awareness (Creery 1994).

Fish and the fishery continued to gain in importance for the Labrador Inuit after settlement. Individuals continued their traditional harvest of fish, but by the 1960s the commercial fishery had become a major source of revenue for the coastal communities of Labrador. The wage-based fishery attracted both those who continued to traditionally harvest fish resources during their time off and those who had discontinued the traditional practice (Williamson 1980). When the cod fishery closed in the 1960s as a result of over-fishing, the focus turned to arctic char and salmon, in particular. The establishment of a frozen fish processing plant in Nain in 1971 changed both traditional and commercial resource production and resource use in the

area (Williamson 1997). The storage of fish using a brine solution was abandoned, and as fresh fish brought a higher price, the areas nearest the plant were extensively fished, leaving few resources for traditional and non-traditional harvesters. In addition, before the establishment of the plant women had traditionally participated in the fishery with the men, yet even though some continued this traditional activity afterward, many did not and instead found employment at the plant (Williamson 1997).

Following the closing of the commercial cod fishery there had been no major resource-related setbacks until the 1980s when Nain fisherman agreed to voluntarily close the arctic char fishery because of the small size and low numbers of fish (Williamson 1997). Salmon numbers also decreased and the plant began to experience losses due to low market prices. A government buyback initiative resulted in many fishermen relinquishing their licenses (LIA 1998e). Fish, however, remain an important component of the Labrador Inuit diet. Many Labrador Inuit still continue to fish non-commercially as a traditional activity for various species in select areas throughout the year (Figure 3). The commercial or market fishery also still exists to this day off the north-coast of Labrador even though there have been significant modifications since the 1960s. For instance, producers, such as the Torngat Fish Producers Cooperative plant in Nain continue to produce on an annual basis. In addition, potential ventures, including the harvest and production of shrimp, as well as the development of fisheries in snowshoe and porcupine crabs, turbot, sea urchins and periwinkles continue to generate interest (LIA 1998e).



(Adapted from: Williamson 1997)

Figure 3 Inuit resource harvesting activities in northern Labrador

Sealing is another traditional activity that has seen a great deal of change since the 1960s, primarily due to the rise and fall of the commercial market for seal skins. Seals, including Harp, ringed, harbour and bearded are an important resource to the Labrador Inuit because of their many uses (LIA 1998e). Aside from personal use, however, non-traditional/commercial sealing became important to the Inuit in the early 1970s when sealskin prices rose. This changed in 1977 when animal welfare groups were successful in causing the collapse of the sealskin market by lobbying against the hunting of whitecoat seals (Brody 2000). As a side note, following the collapse of the market, many Inuit hunters observed a marked increase in the number of seals in northern Labrador (Williamson 1997). They believed that the seals were having a significant impact on the remaining food sources, including lance and mollusks (Williamson 1997).

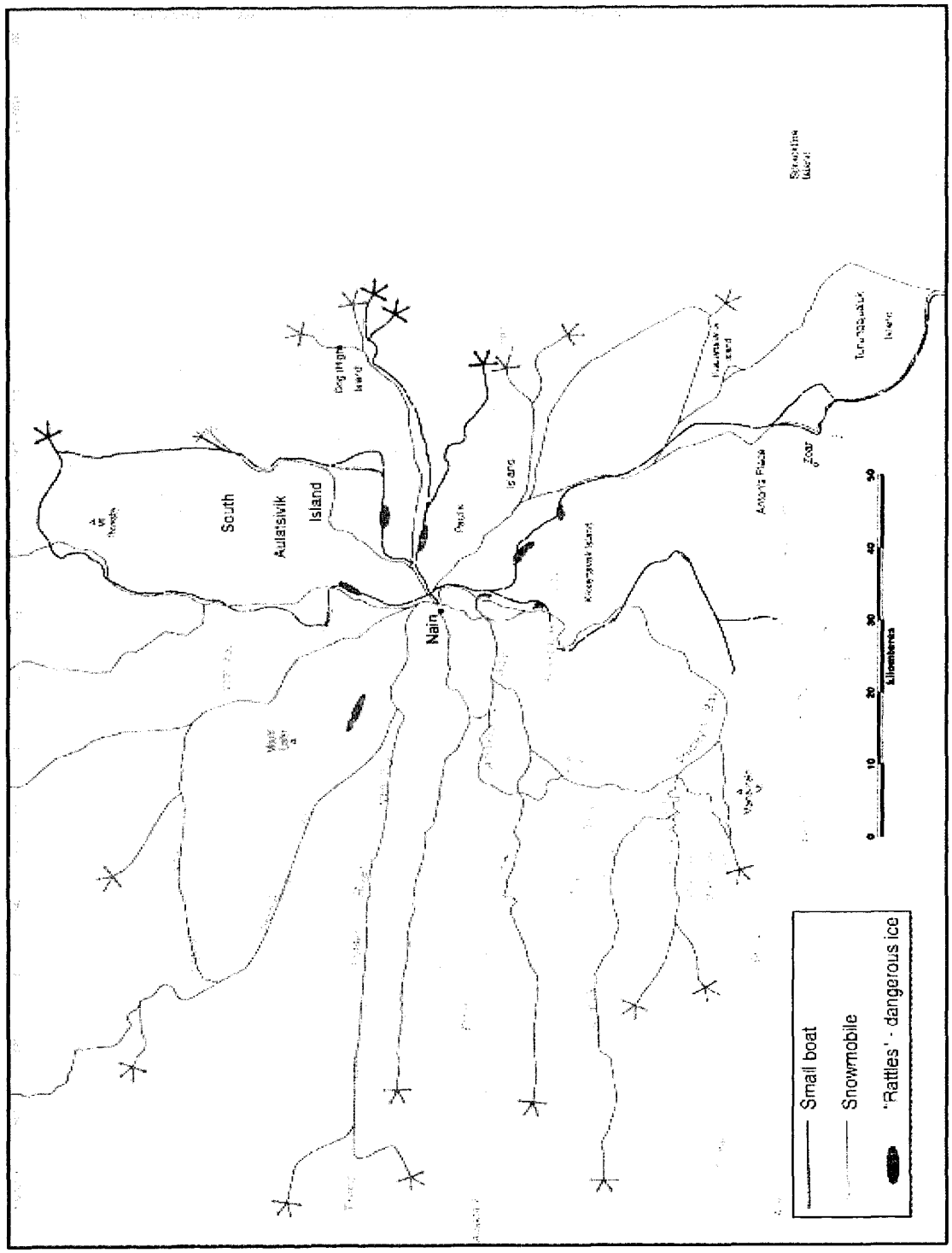
Although no longer as important to the Labrador Inuit as a revenue source as it once was, the commercial seal hunt once again became controversial with the decision by the federal government to re-open the seal harvest off the northeast coast of Newfoundland in 1997 (CBC 2005). Today, the Labrador Inuit continue to traditionally harvest seals in northern Labrador for personal consumption and may consider a commercial seal fishery when it becomes economically viable (LIA 2005b). The Nunatsiavut government found that in 2005 prices for seal pelts in Labrador could not match prices offered to harvesters on the island and so deferred investment for another year (LIA 2005b).

The trapping of small fur-bearing mammals, while not a traditional activity related to subsistence, has been important to the Inuit for trade since the establishment of the Moravian stores (Woollett 2003; LIA 2005a). The importance of trapping peaked in the late 1920s when the Hudson Bay Company took over the stores, and continued when the Newfoundland provincial government gained control of the stores in 1942 (Williamson 1997). The main furs were foxes and arctic foxes, with wolf, otter, lynx, mink, weasel, and muskrat, of lesser importance (Williamson 1997). Today, however, there are very few Inuit who actively trap, as many Inuit fear the fluctuating price of fur on the open market.

Caribou is a resource that has grown considerably in importance to the Inuit over time. Particularly since the 1960s, both the population and patterns of movement of the animals has changed. For example, in the early 1960s the *George River* herd was an estimated at 10-20,000 animals (Williamson 1997). Hunters from Nain, at this time reported having to travel far inland to access caribou (LIA 1998e). By the 1970s the population had increased and moved sporadically towards the coastal areas. By the mid-1990s the population had grown to an estimated 650-750,000. While it has been noted that caribou populations may increase and decline rapidly, there is still no indication of the George River herd declining (Community of Hopedale 2005).

In addition, the technology used by the Labrador Inuit to harvest traditional resources has altered their pattern of resource use and travel (Williamson 1997; Woollett 2003). For instance, snowmobiles, which have replaced dogsleds, now allow harvesters to travel greater distances at greater speeds (Condon et al. 1995; Brody 2000). This has meant increased access to places and resources as seen in Figure 4 (Williamson 1997).

However, snowmobiles are not without their limitations. There are problems related to both the use of and access to the new technology. For instance, dog teams can negotiate deep snow and steep climbs better than snowmobiles (Williamson 1997). Adoption of the new technology has required both changes in technical knowledge and understanding of the environment in which the hunter or traveler operates. Inuit Traditional Environmental Knowledge (TEK) has had to adapt to the new technologies as a matter of survival, not just convenience (Sherry and Vuntut Gwitchin First Nation 1999; Wenzel 1999).



(Adapted from: Williamson 1997)

Figure 4 Popular snowmobile and small boat routes in northern Labrador originating from Nain

Finally, access to these new technologies has also changed participation in traditional activities. Snowmobiles are expensive to purchase, require constant maintenance, have a relatively short life and use a large amount of fuel. Those without enough money from employment or transfer payments may not be able to afford the new technology (Wenzel 1999). Consequently, there are some Inuit who cannot travel as far or as often to harvest. Plus the high cost of the new technologies means that some Inuit might be less willing to participate in traditional activities than was previously the case (Williamson 1997). To meet their needs, some Inuit have opted to trade for or purchase traditionally harvested foods from those who actively participate. As a result, those who continue to actively harvest traditional resources can purchase the necessary equipment and materials.

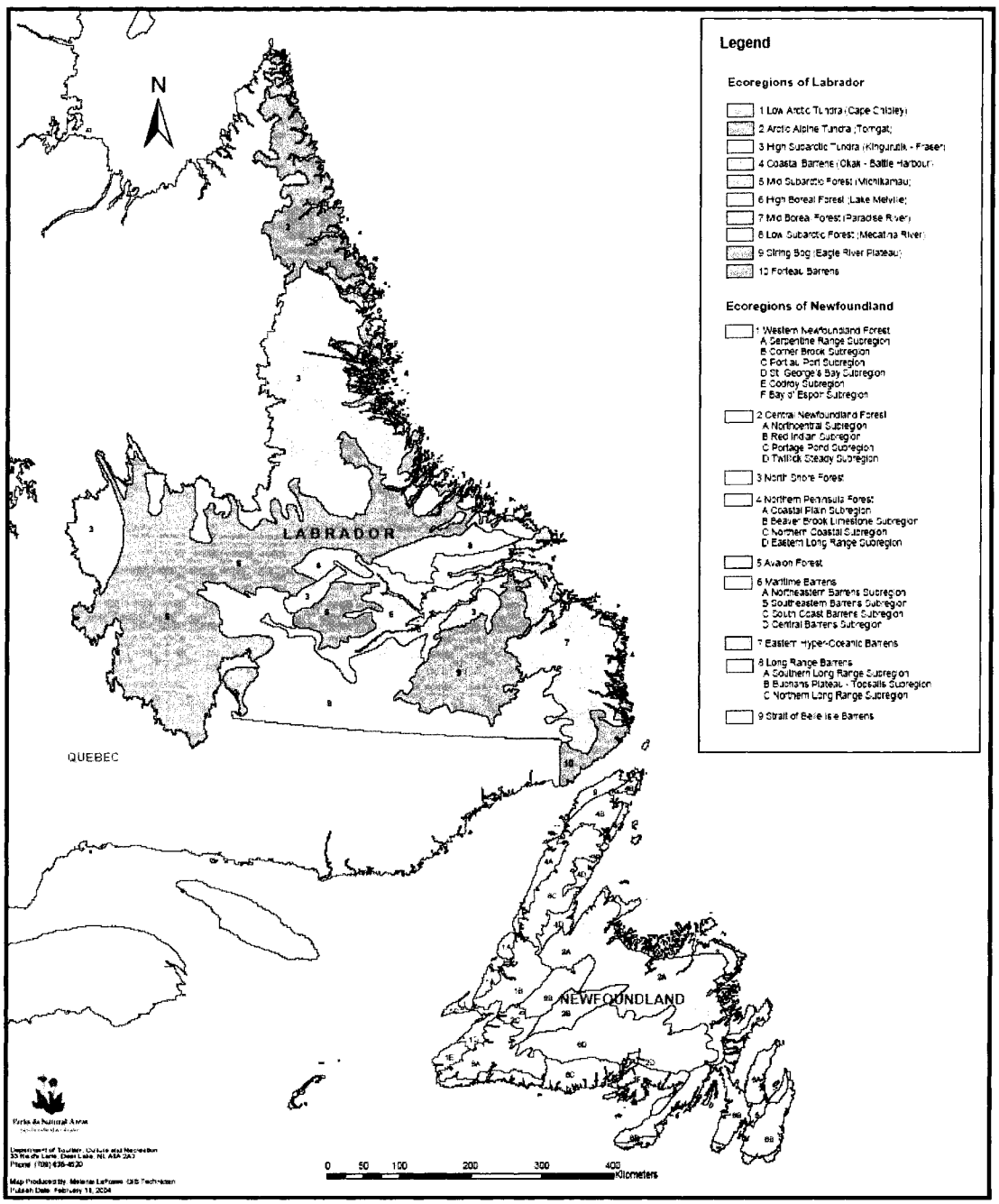
4.3 Labrador Inuit traditional activities in the contemporary social, political and cultural context

> We are Inuit of Labrador. We are sustained by the birds, animals and fish of the land and sea, and by a set of values and beliefs that have defined our relationship to the land, sea and their resources. The land, sea, ice and all of the wildlife are cornerstones of our culture and a reason we remain in our homeland (LIA 1996).

4.3.1 The Study Area

To the Labrador Inuit their traditional land, which includes the many islands, coastal regions, and land-fast sea-ice, is the definition of their culture. Their participation in traditional activities is intimately tied to the land, known to them as *Nunatsiavut.* Nunatsiavut represents nourishment, growth, and spiritual renewal. It is the lifeblood of the Labrador Inuit. It defines them as a people.

Nunatsiavut features four arctic to sub-arctic ecoregions. As illustrated in Figure 5, from north to south this includes the arctic alpine tundra (dark grey), high subarctic tundra (white), mid subarctic forest (light grey) and coastal barrens (light grey - coast). There is an abundance of wildlife throughout each zone, including black bears, polar bears, a number of smaller mammals, birds and inland fish species, the George River caribou herd (which is the largest caribou herd in the world), and a variety of fish and marine mammals on the coastal regions.



(Source: Government of Newfoundland and Labrador 2004)

Figure 5 Ecoregions of Newfoundland and Labrador

Today, the land is utilized extensively by the Labrador Inuit for traditional activities. For the purpose of this thesis these include harvesting fish, wildlife and wood resources throughout the year. However, seasonal resource harvesting is divided based on two distinct breaks in the year. They are freeze-up, typically from mid-December to mid-January and break-up, usually in the middle of June, depending on environmental conditions (Williamson 1997). Beginning in the winter, after the ice has frozen, an Inuit hunter will use a snowmobile to collect wood in the bays and on the islands, harvest seals on the ice and at an area of open water or *sina*, harvest caribou and partridge, and travel along the coast and inland to fish. In addition, the land and land-fast ice along the coast is also used in the winter by the Labrador Inuit in travel to other areas and communities, to visit friends and family and participate in recreational activities and events, such as Easter festivities, dog-sled races, and sports tournaments. These events are important to maintaining social ties between members of different communities.

In the spring, Inuit travel and diet begin to change in northern Labrador. Before the ice is broken-up migratory birds become a significant part of the Inuit diet, although the Inuit will continue to fish and hunt seals.

In the summer, after the ice has broken, boats replace snowmobiles and Inuit will continue to fish inland and along the coast, but many non-traditional activities, such as the commercial fishery, guiding, and non-renewable resource harvesting, become increasingly important. Finally, in autumn before the water begins to freeze the Inuit enjoy their busiest season, picking berries, hunting caribou, seals, migratory birds, hares, preparing fish and collecting wood for the winter.

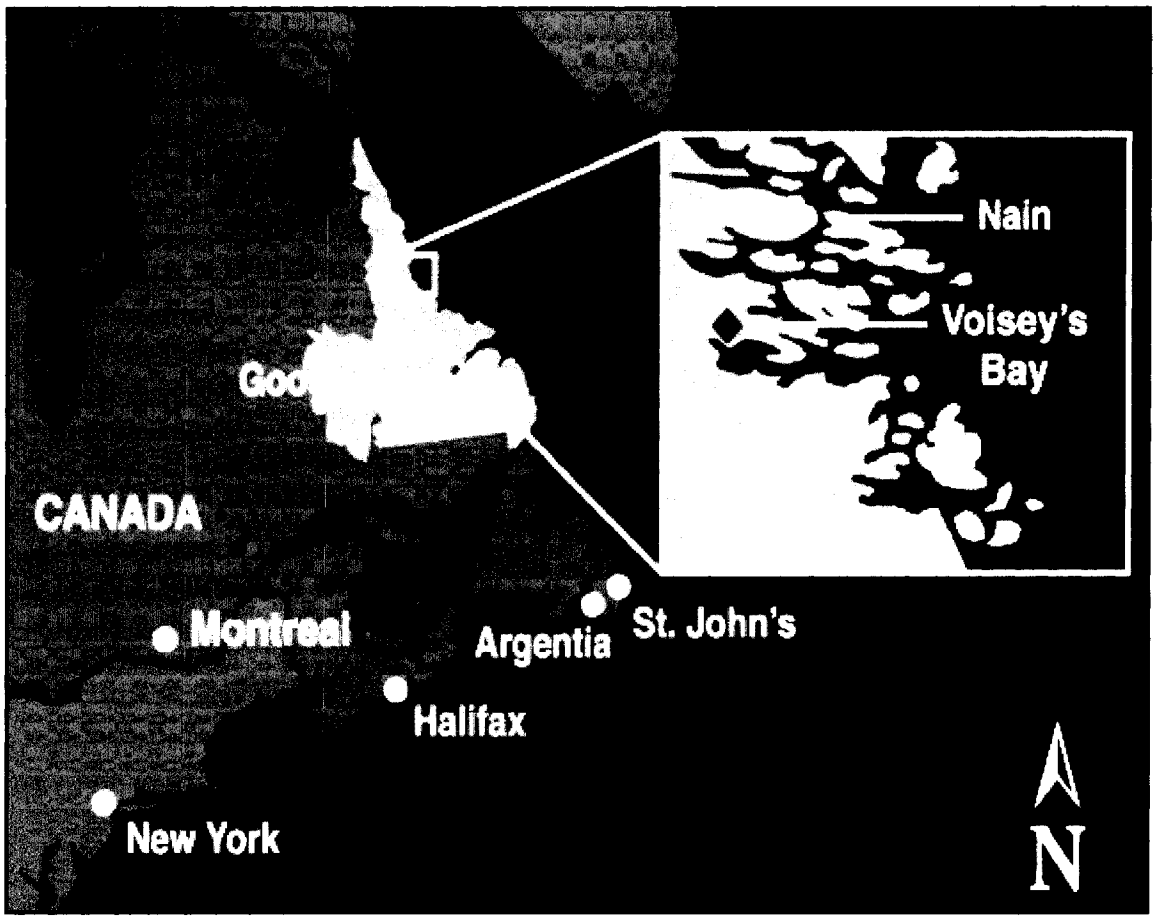
The north coast of Labrador is accessible only by boat or airplane. In the winter the majority of travel in the area is by snowmobile or all-terrain vehicle, and by motorized and non-motorized boat and other vehicles during the summer months and the periods of open-water. Air transport, with facilities in Nain harbour, operates year round, but is heavily dependent on the weather.

In the winter months, from December to May, the coast of northern Labrador is closed to normal shipping by land-fast ice. The VBNM winter shipping route cuts through this ice and as such has the potential to disturb the movement of animals and people along and across this "winter highway".

Nain is the closest community or settlement to the winter shipping route and is also the closest community or settlement to the VBNM project area (Figure 6). Nain is approximately 35 kilometers northwest of the VBNM and 370 kilometers northwest of Happy Valley-Goose Bay, an important transportation hub in Labrador (Figure 6).

Census data indicate that the population of Nain in 2001 was 1160, with 80% of the population under the age of 44. Since 1996 there has been a 16.4% (163 people) increase in population. Ninety percent of the inhabitants residing in Nain are Labrador Inuit. The remaining ten percent are either Métis, North American Indigenous or claim no Aboriginal heritage (Statistics Canada 2002). The Labrador Inuit, as well as other individuals living in Nain have voiced their concern over the potential impact of the shipping route on the people of Nain and along the north coast of Labrador.

Until recently, major development in Labrador had remained outside Labrador Inuit traditional territories (Williamson 1996). The Voisey's Bay Project brought with it the opportunity for major change in northern Labrador for all people in the region, especially the Labrador Inuit. Many relatively high paying jobs and skills training were made available to the Inuit. In addition, there were indirect benefits for the Inuit, such as funding for social programs and compensation for harvesting opportunities lost as a result of the project. Some people welcomed the new development for the jobs and opportunities it offered, yet the general climate or feeling was one of hesitancy, as was evident in a Nunatsiavut government pamphlet entitled "Mineral development in Northern Labrador" (1996):



(Source: VBNC 2005)

Figure 6 Voisey's Bay Nickel Mine in relation to Nain, Labrador

> Some themes of our history are being repeated today in the midst of a mineral claim staking rush that has, in two years, brought more foreigners to the Labrador Inuit homeland than during the first 200 years of the Moravian Mission to Labrador. As modern day Inuit, we continue to strive according to the values that spring from our traditions and history. Many of us continue to live close to the land and it is this relationship, expressed in Inuktitut that is fundamental to being Inuit. Today, as in the past, we live in a world where resource industries, governments and other interest groups work to have their beliefs become our rules, their values our way of life and our resource their wealth. But unlike the past, we may not be able to adopt what we find good and reject what is a threat because now it is our land that is being devoured.

Local and regional organizations that represent the interests of the Labrador Inuit, such as the Nunatsiavut government, have worked to protect the rights of Inuit to participate in traditional activities (LIA 2005a). The promotion and protection of Inuit culture and traditions was a focal point in the negotiation of the comprehensive land claim (LIA 2003). Traditional activities, a component of Inuit culture, had been incorporated into the Land Claim Agreement in a number of sections of the document, which range from those focusing on resource harvesting and environmental management, to language and culture (LIA 2003).

While the protection of the rights of the Labrador Inuit to participate in traditional activities may have gained important ground recently, the continued participation of the Labrador Inuit remains somewhat less certain. Significant changes, such as the growth of commercial and industrial resource development and increased wage employment opportunities, have had an impact on individual participation in traditional activities. Some Inuit have managed to balance wage-based employment and traditional activities, while others have stopped participating or have significantly reduced their participation, only going out on the weekends and holidays (Creery 1994).

The Nunatsiavut government recognizes that with a significant proportion of the Labrador Inuit population under the age of 25 (40% - Statistics Canada 2002), the youth have become the cornerstone to the continuation of traditional activities. The Nunatsiavut government, local organizers and many Inuit youth themselves understand how significant the youth are in

retaining Inuit traditional activities and as a consequence groups and organizations have been formed to enable their continued participation in such activities (Condon *et al.* 1995; LIA 2005a).

4.3.2 The Labrador Inuit Land Claim Agreement

The Newfoundland provincial government has been reluctant to consider aboriginal rights that would give Aboriginal peoples special status (LIA 2005a). This reluctance prompted the formation of the LIA in 1973, with an aim to "promote Inuit culture, improve the health and well-being of Inuit, protect constitutional, democratic and human rights and advance Labrador Inuit land and self-government claims." (LIA 2005a).

After its formation, the LIA wasted no time in submitting a comprehensive land claim proposal to the Federal government in 1977 (LIA 1998g). The land claim process was held up until 1990, but began to move forward beginning with an Agreement-in-Principle signed in 2001, which included recognition of Inuit self-government, and was followed by a Final Labrador Inuit Land Claim Agreement ratified by the Labrador Inuit in May 2004. This Agreement was subsequently passed by the Newfoundland and Labrador House of Assembly, and given Royal Assent in December, 2004 (LIA 2005a).

With the passage of the Land Claim Agreement the Labrador Inuit are one step closer to Nunatsiavut, a Labrador Inuit self-governing body (LIA 2005a). Nunatsiavut was established as a means to "protect and preserve land, culture and language" (LIA 2005a). It is a regional government with the power to make laws relating to cultural affairs, education, health and social services, as well as requiring environmental assessments for development and archaeological activities (LIA 2003; LIA 2005a).

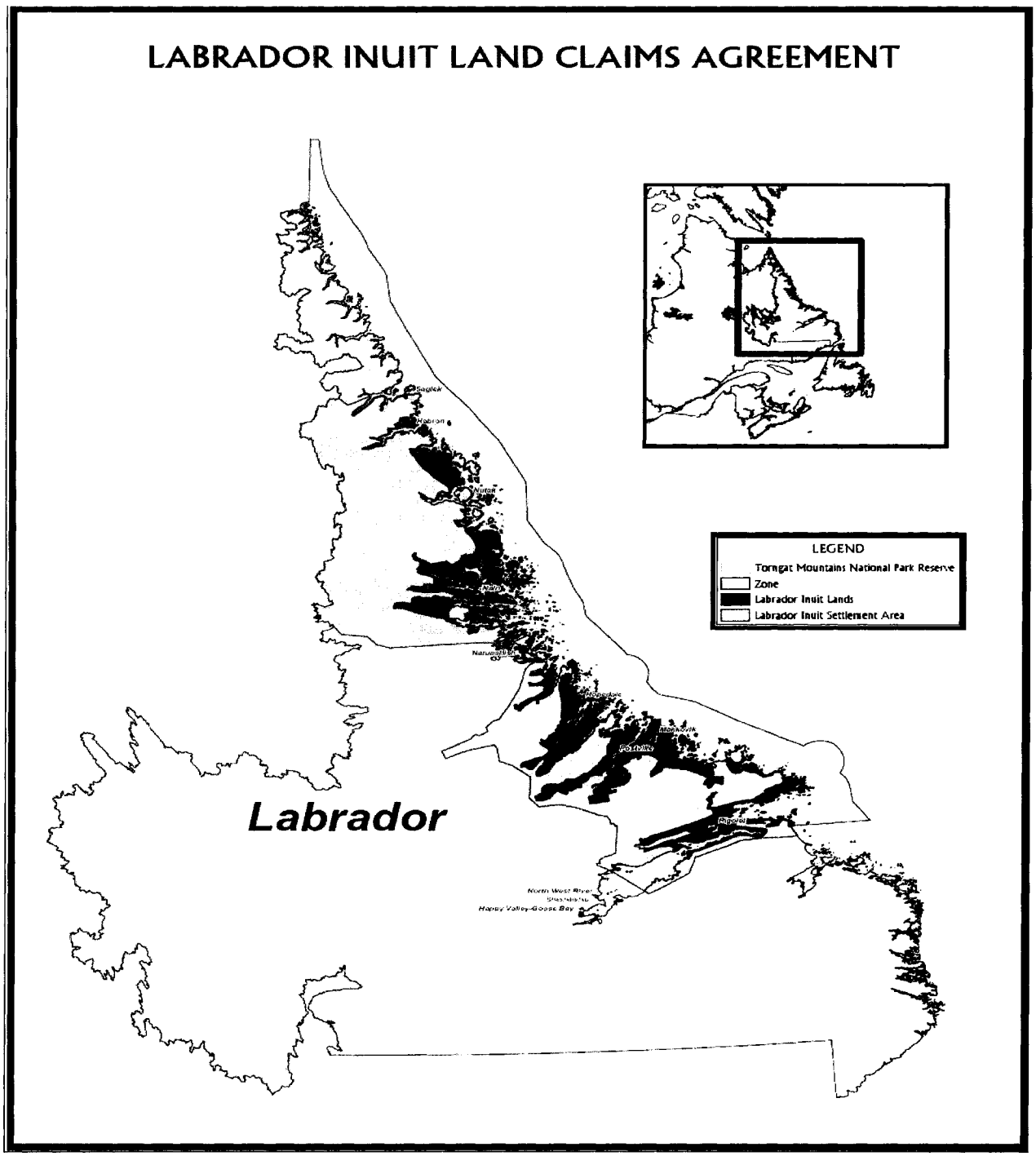
Although the Final Land Claim Agreement has only recently been settled and the LIA is in transition to becoming Nunatsiavut, there are certain issues that are of particular relevance to this thesis. The focus of the remainder of this section will be on how traditional activities have been integrated into the Land Claim, and in particular, Chapter 4 of the Agreement, which

discusses *Land and Non-renewable Resources*, Chapter 8, which deals with the *Voisey's Bay Area*, and Chapter 12 which considers *Wildlife and Plants*.

The chapter on *Land and Non-renewable Resources* outlines the boundaries of the Labrador Inuit Settlement Area illustrated in Figure 7, and describes the powers of the Nunatsiavut government with respect to the lands (LIA 2003). Under the Agreement, the Labrador Inuit will have special rights related to land use throughout the Labrador Inuit Settlement Area (LISA), which covers approximately 72,500 km^2 of land and 48,690 km^2 of sea (LIA 2005a). The Labrador Inuit will not own the entire Settlement Area, but they will own approximately 15,800 km^2 of land within the Settlement Area, designated as Labrador Inuit Lands (LIA 2005a). The chapter also sets out Inuit rights with respect to resources, including non-renewable resources and their development.

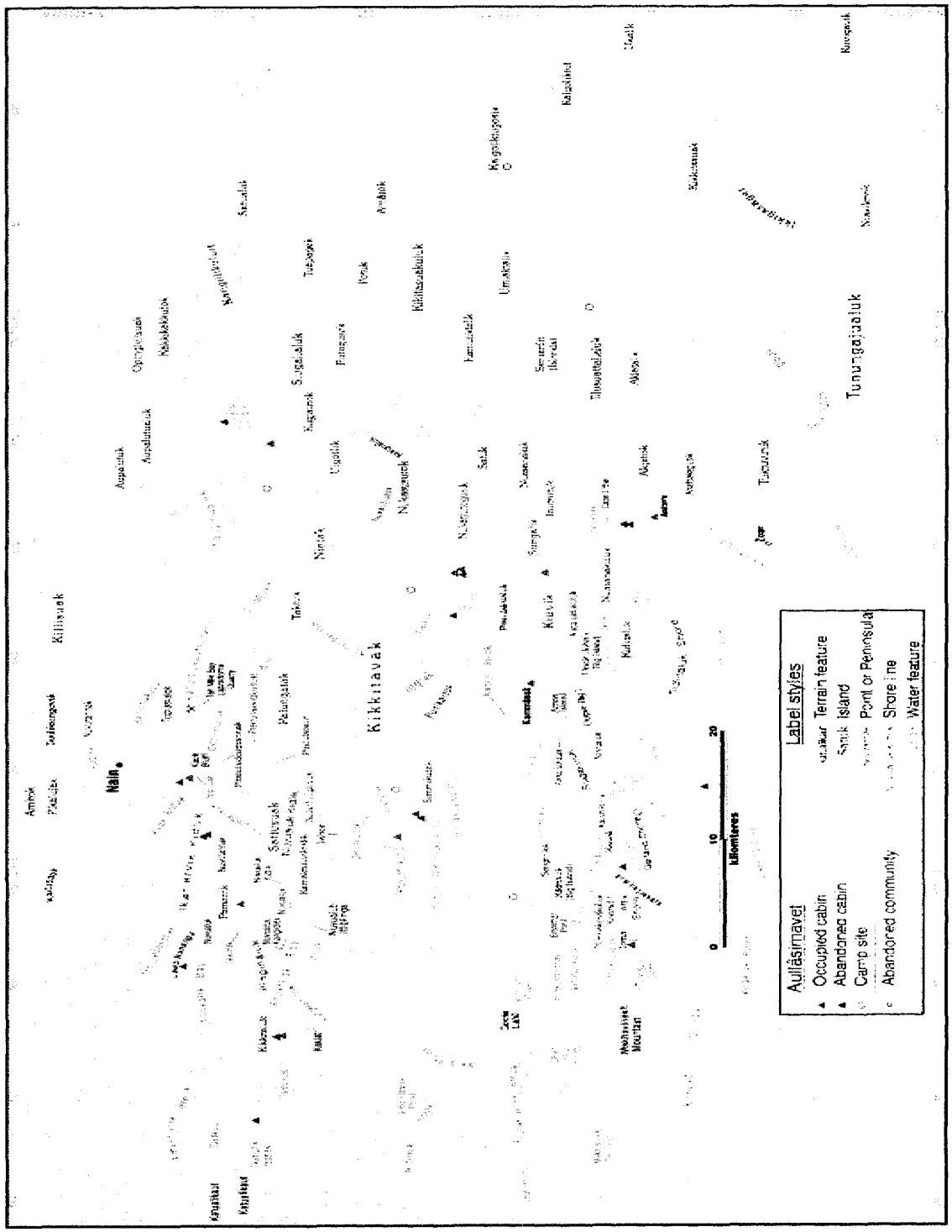
Under the Agreement the Nunatsiavut government has the powers to make laws about the administration and control of Labrador Inuit Lands. This includes access to the Lands, which is further outlined in this chapter and in Chapter 12, *Wildlife and Plants*. Access to *Allâsimavet*, which are settlements, camps or places other than communities that are occupied seasonally, permanently or semi-permanently by Inuit, for the purpose of participating in traditional activities, continue to be granted to Inuit under the Agreement. The locations of existing Allâsimavet in northern Labrador are represented in Figure 8 (Adapted from: Williamson 1997). The establishment of any new Allâsimavet within Labrador Inuit Lands will need to be given careful consideration due to competing land use issues (LIA 2003).

Chapter 12, *Wildlife and Plants*, further outlines Inuit rights to non-renewable resources and their participation in the management of such resources (LIA 2003). Under the Land Claims Agreement, Labrador Inuit have the right to harvest renewable resources throughout the Labrador Inuit settlement area, at all times of year, to meet their needs for food, social and cultural purposes. For the purpose of conservation, there are, however, restrictions on the amount of resources harvested, as well as seasonal and area activity limitations. Resources harvested cannot be sold, but can be given or bartered with other Inuit and other Aboriginal



(Source: LIA 2005a)

Figure 7 Labrador Inuit Land Claim Settlement Area



(Adapted from: Williamson 1997)

Figure 8 Locations of existing Allâsimavet in northern Labrador

individuals. Labrador Inuit harvesting of renewable resources outside of Labrador Inuit Lands will have to adhere to regulations stipulated by the federal and provincial governments (LIA 2003).

The management of renewable resources will ultimately remain the responsibility of the provincial and federal governments, but they will have to follow the requirements outlined in the Labrador Inuit Land Claims Agreement, including consideration of the advice of the Torngat Wildlife and Plants Co-management Board (LIA 2003).

Finally, Chapter 8 describes how the *Voisey's Bay Area* fits into the Land Claims Agreement. In negotiating a Land Claims Agreement the LIA and provincial and federal governments agreed to set aside the Voisey's Bay Area, giving it a "special area" designation (LIA 2003). However, Inuit continue to have rights to renewable resources within the Voisey's Bay area for domestic use, as outlined in the section on Inuit harvesting rights outside of the Labrador Inuit Lands in the chapter on *Wildlife and Plants.*

To facilitate the management of renewable resources within the Voisey's Bay Area, the Voisey's Bay Environmental Management Agreement was signed in July, 2002 by the Innu Nation, the LIA and the federal and provincial governments (Bonnell 2005). The Agreement called for ongoing and appropriate monitoring of the region and resources, as well as communication between all parties involved. In addition, monitoring and compensation related to Labrador Inuit harvesting loss as a result of the development are outlined in the IBA signed by the LIA and VBNC in 2002.

4.3.3 Tradition and Recreation

Aside from putting the commitments and regulations of the Land Claim into practice, perhaps the most significant challenge in protecting Labrador Inuit traditional activities is finding a place for traditional activities in the wage-based economy. For example, seasonal and shift work employment have had an effect on Labrador Inuit traditional activities. While it may not be true for all, some Labrador Inuit have managed to balance seasonal employment on fishing

boats and the local fish plant with traditional activities, intensifying their participation when they are not working. This balance has enabled the individuals to continue to afford to participate in seasonal traditional activities throughout the year. In addition, some shift workers, such as those at the VBNM, have managed to schedule their resource harvesting activities around their work rotation, again intensifying their participation when not working. Arguably this places very little strain on resources, as the activities are spread over entire seasons or during off-work rotations, which are usually one to three weeks, depending on the employment position and the employer.

On the other hand, it has been noted that weekend and holiday harvesting places increased pressure on resources over short-time periods rather than being spaced over somewhat longer time periods (Williamson 1997). Participation in traditional activities on the weekend requires that harvesters leave and return at a particular time, rather than coming and going when weather and/or harvesting conditions are optimal.

Typically it has been permanent wage employees who pursue traditional activities solely on weekends and holidays, in recent times (Williamson 1997). This is a result of work scheduling, as individuals would work Monday to Friday and participate in traditional and non-market activities on the weekend. This is significant as there has been substantial growth in full-time, year-round employment in and near Nain (Statistics Canada 2002) and permanent wage employees are the people most able to afford the latest technology (Condon *et al.* 1995). As a result some have built cabins and camps in areas where they or their families have traditionally harvested resources, or they utilize existing family cabins/camps to retreat from the settled communities and pursue traditional activities.

Still, one benefit of weekend harvesting, according to a study of Inuit youth, is that some families with younger children still in school have found that participation in the activities on the weekend is the best way to transmit knowledge to younger generations (Condon *et al.* 1995).

4.3.4 Culture and Youth

With over 40% of Labrador Inuit being under the age of 25, youth play a crucial role in the transmission of Inuit traditional activities (Williamson 1997; Statistics Canada 2002). Without the younger generations consistently reaffirming the importance of Labrador Inuit traditional activities by going out on the land, the activities become less important in defining a culture present as they do in preserving a culture past. As such, a number of groups and events have been created to relay the importance of traditional activities to today's youth. However, it is important to note that most groups and events have been developed to reaffirm or celebrate Inuit culture and traditional activities and not directly teach Inuit youth how to participate in the activities. For example, the Rising Youth Council, a regional youth group with 13 representatives, is geared towards increasing understanding of and participation in Labrador Inuit political issues, such as protecting the rights of the Labrador Inuit to participate in traditional activities (LIA 2005a).

In addition, in an attempt to preserve Inuit language and culture, spring and summer language and culture camps have been established. At these camps up to fourteen Inuit youth from all communities live and work in a traditional Inuit setting with a team of language instructors, elders, supervisors and guides (LIA 2005a). Similarly, elder and youth gatherings are organized to allow the direct interaction between Inuit elders and youth with the aim of conserving Inuit culture in Labrador (LIA 2005a).

In the past, groups and organizations to help maintain traditional culture and the knowledge necessary to enable participation in traditional activities would not have been necessary. In the contemporary context, however, they have become increasingly important to maintaining the Inuit culture and relaying TEK, and still more are needed to transmit the skills necessary to harvest traditional resources. Much has changed to herald the necessity of such groups. With cultural and social change occurring in many Inuit families and communities, not all Inuit youth have access to traditional resources or the knowledge necessary to participate in traditional activities. In fact, some Inuit youth see their future as participating in the wage-

based economy, such as working at the VBNM, and are not interested in harvesting traditional resources.

4.4 The Voisey's Bay Project and the Labrador Inuit

> The new awakening of cultural identity, the struggle for control of local economies and lifestyles (partly through the vehicle of the Land Claims process supported by the federal government) and the history of dependence all contribute to a resistance toward change and a fear of new activities, be they national parks or gas and oil exploration (Williamson 1980: 17).

4.4.1 The Voisey's Bay Mine and Labrador Inuit traditional activities

Labrador Inuit culture and society has changed in many ways over the last 40-50 years. The Inuit now have greater control over their traditional lands and resources. In addition, they have become quite vocal in their concern about the potential development of non-renewable resources on or adjacent to their traditional lands. Concern over the potential effects of the VBNM was expressed by the Labrador Inuit in regards to a number of areas, such as the environment, employment, and social impacts. (Williamson 1996; LIA 1998e; LIA 1998f; LIA 1998g; LIA 2005a). However, the Labrador Inuit are particularly concerned with the potential effects of resource development on their traditional activities (Williamson 1996). The potential impact of the VBNM project on their traditional activities has been a very significant issue for the Labrador Inuit since the project was announced. For example, in an EA scoping exercise many Inuit felt that the development could seriously disrupt their traditional way of life (Williamson 1996). Most Inuit understood that their culture had changed and will change, but they wanted to be in control of any processes and decisions that may result in any further modifications (Williamson 1996).

Throughout the EA and in the negotiation of the Land Claim and the IBA, the LIA never conceded their stance on the importance of traditional activities (LIA 2005a). Inuit traditional activities were recognized in the EA process through submissions to the Voisey's Bay EA Panel, including reports on Inuit TEK, technical aspects of the project and in LIA adequacy statements on the Environmental Impact Statement (EIS) (LIA 1998a; LIA 1998b; LIA 1998c;

LIA 1998d; LIA 1998e; LIA 1998f; LIA 1998g). If not for the effort of the Labrador Inuit to include traditional activities, the importance of the activities might have been understated.

Inuit traditional activities were also addressed in the IBA negotiated between VBNC and the Labrador Inuit (LIA 1998f). Specifically, it includes provisions for compensation due to adverse impacts on the harvesting of renewable resources that cannot be mitigated (LIA 1998f). This specific provision allows for the renegotiation of harvesting compensation offered to the Labrador Inuit if the loss is greater than that predicted by VBNC in the VBNM EIS (LIA 1998f). In addition, the IBA includes funding for traditional activities related to cultural protection and promotion (LIA 1998f). While this may not directly relate to the harvesting of renewable resources, it does reflect the importance of traditional activities generally to the Labrador Inuit.

The Shipping Agreement also contains broad measures related to continued participation in traditional activities. For example, to allow for safe, relatively convenient access to areas on both sides of the route, VBNC has posted detailed information in a number of distinct formats and designated safe crossing areas. This, they believe, will foster the integration of the winter shipping route into the landscape used by the Labrador Inuit.

The following sections explore the VBNM winter shipping route issue in greater detail, including specific references to the various agreements negotiated between the LIA and the VBNC, and the LIA, and Provincial and Federal governments to illustrate the importance of this issue.

4.4.2 The Voisey's Bay Mine and Shipping

Nickel was discovered at Voisey's Bay in September 1993, by two freelance prospectors working for Diamond Field Resources (O'Malley 2002). The prospectors staked as many claims as they could, for the nickel deposit they had discovered is currently the highest grade in the world. The Canadian based mining company, Inco, bought Diamond Field Resources in 1996 and then quickly moved to begin the process of constructing a mine at Voisey's Bay.

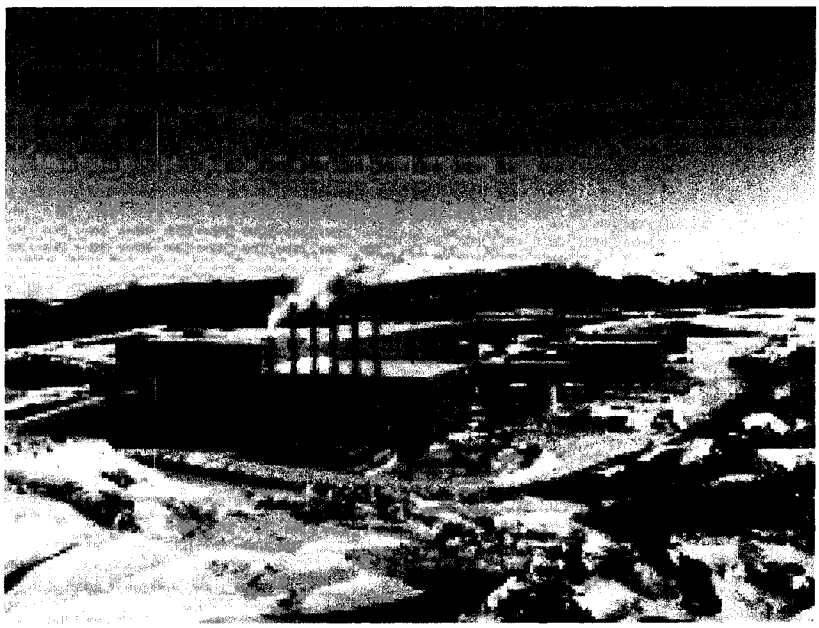
The Voisey's Bay Nickel Company (VBNC) was created by Inco to manage all of the affairs of the Voisey's Bay mine and mill and associated processing activity in the province.

The deposit at Voisey's Bay includes nickel, cobalt, and copper in both surface and underground resources. The company estimates that there are 150 million tonnes of mineral resource (VBNC 1997a). Open pit mining began in August 2005, and once near depletion underground mining will commence, according to the company (VBNC 1997a).

The mining process at Voisey's Bay includes blasting the mineral bearing rock and then hauling the ore by truck to a central concentrator (Figure 9), which produces a nickel-cobalt and copper concentrate through crushing, grinding, flotation, thickening, filtration, and drying processes (Figure 10) (VBNC 1997a). The concentrates are then fed into a central loading area and hauled to the port facility at Edward's Cove (Figure 11).

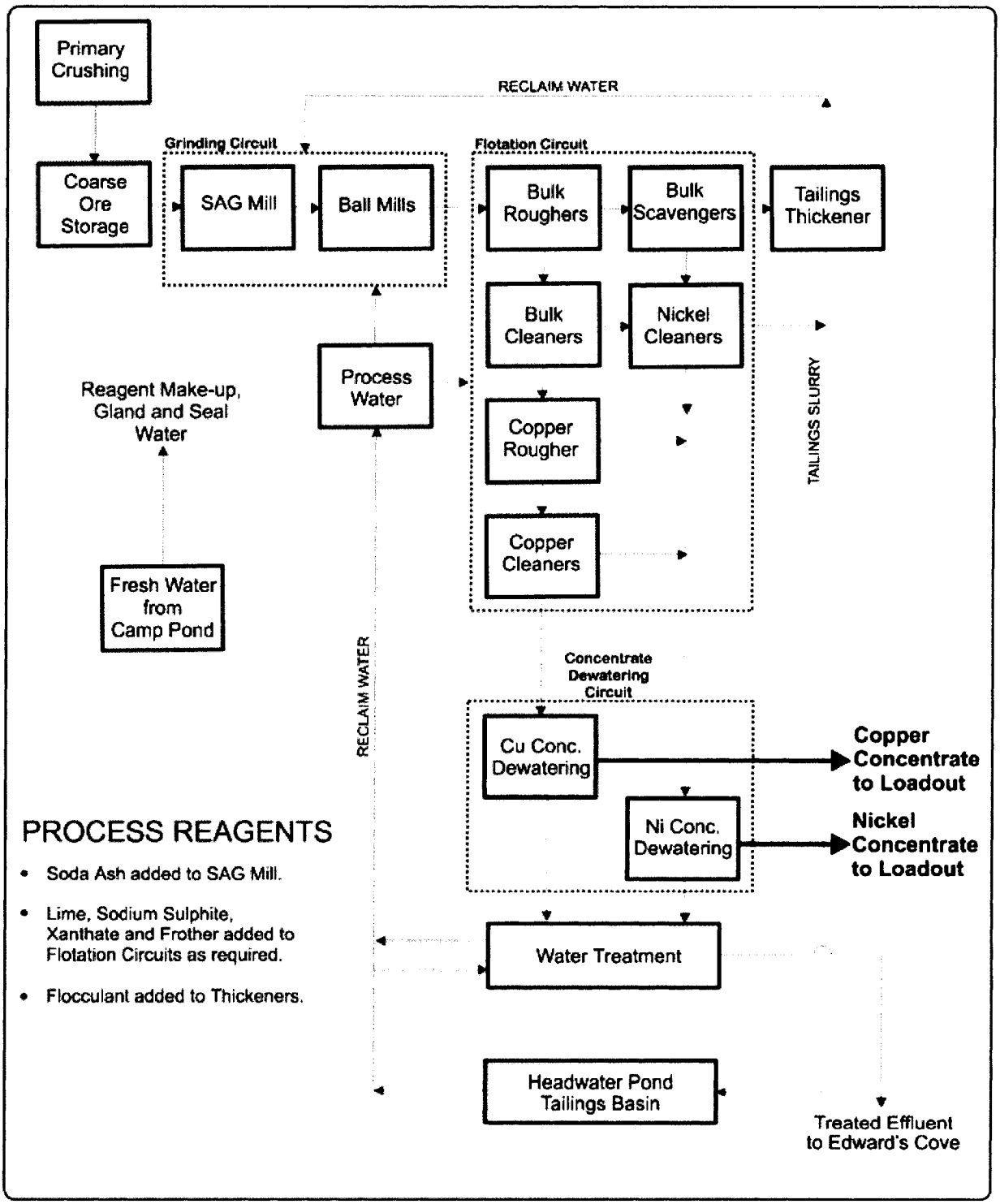
At the port facility, the ore is transferred into a concentrate storage container where the separate mineral concentrates are stored to await transportation to a mill to be refined.

The concentrate is then loaded into a concentrate carrier for marine shipping. Shipping in the winter months requires a concentrate carrier with ice-breaking capabilities. In the first season of winter shipping in 2006, the MV Arctic, a Canadian ice-breaker that also ships concentrate from the Raglan mine in northern Quebec, was used to transport concentrate from Edward's Cove. However, VBNC began using their Japanese custom built concentrate carrier with ice-breaking capabilities in June 2006. The Umiak, as it was named, will also be used in the 2007 winter shipping season (Figure 12).



(Source: VBNC 2004a)

Figure 9 Voisey's Bay mine concentrator

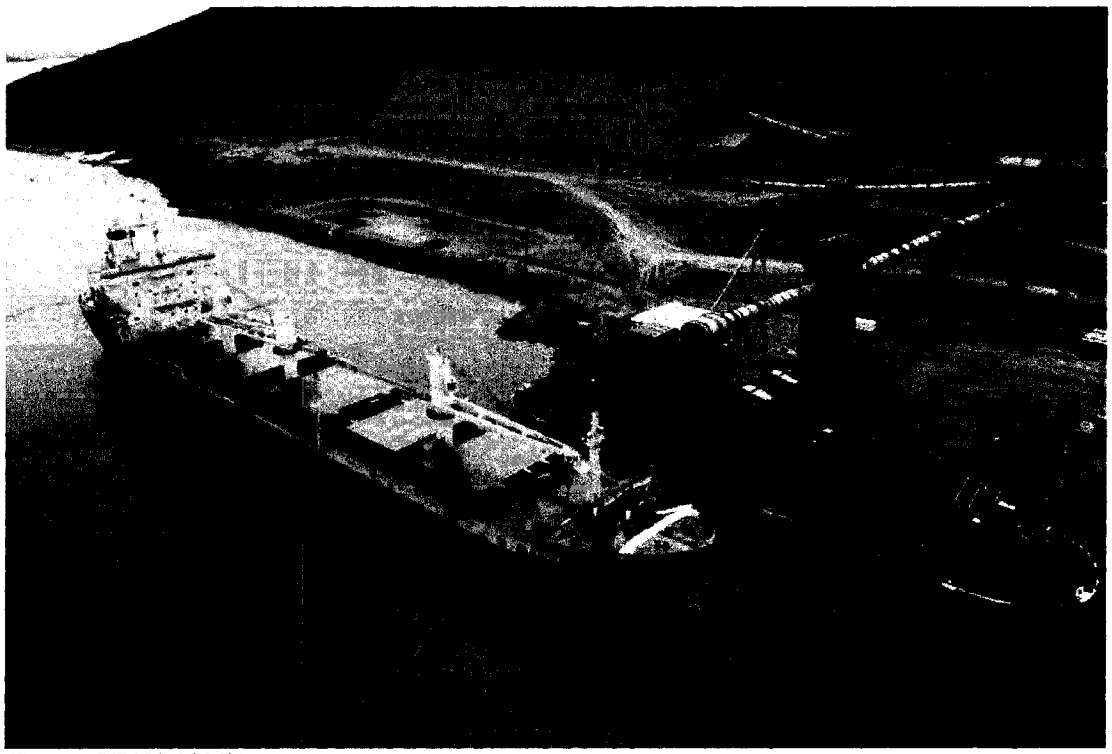


(Source: VBNC 1997a)

Figure 10 Conceptual Process Flow sheet

(Source: VBNC 2004a)

Figure 11 Concentrate storage facility at Edward's Cove port site



(Source: VBNC 2004b)

Figure 12 Umiak at the port facility in Edward's Cove

4.4.3 The Voisey's Bay winter shipping route

> Very few issues raised more concern than VBNC's proposal to ship during the winter through land-fast ice (VBEAPR 1999b: 10.2.2).

The first season of winter shipping began in January 2006. There were two shipments or four ship movements in the 2006 winter shipping season, between January and April (Table 1). Since year-round shipping was announced, winter shipping has been, and following the first season, will surely continue to be an issue of great significance to the Labrador Inuit (LIA 1998b).

Sea-ice is vital to the Labrador Inuit as a transportation corridor and in the pursuit of traditional activities (Creery 1994; Williamson 1997). The Labrador Inuit made their concern for the resolution of the issue evident in the need to negotiate a Shipping Agreement and in overlapping sections of the Environmental Assessment, IBA and Land Claims Agreement.

The need for winter shipping was first recognized by VBNC in the EIS, and later announced in a series of public information workshops (LIA 1998b). Occurring concurrently, Tony Williamson discussed the potential effects of winter shipping on the local people and environment in a report prepared for the LIA (1996). Inuit from all over Labrador then began to voice their dissent (LIA 1998b). The concerns of the Labrador Inuit were expressed in the EA public review process.

4.5 Environmental Assessment

Winter shipping became a contentious issue when VBNC first announced their intention to ship in the winter months and the Labrador Inuit began to resist the Company's plans. The Inuit were particularly concerned with the lack of information given in regard to marine transportation and the potential effects of shipping in the winter (Williamson 1996; LIA 1998b). They rely on their knowledge of the environment in order to actively participate in traditional activities and any significant modification to that environment must be taken into consideration. The winter shipping route had the potential to significantly alter the environment in which the Labrador Inuit pursue their traditional activities.

Table 1 Vessel traffic schedule for winter 2006

Vessel Name	Arrival		Departure		Status
	Date	Time	Date	Time	
MV Arctic	Monday, February 13, 2006	1:00 pm	Friday, February 17, 2006	10:00 am	Departed Edwards Cove
MV Arctic	Thursday, January 26, 2006	1:00pm	Wednesday, February 01, 2006	1:00am	Departed Edwards Cove

(Source: VBNC 2005c)

The Nunatsiavut government expressed their concern over the potential impacts of winter shipping in a number of different submissions to the EA Panel. A report on "Marine Transportation" submitted in September 1998, signified the uncertainty with which Labrador Inuit approached winter shipping in the early stages of the EA. At this stage it was critical to clear any misunderstanding, as the Nunatsiavut government felt that VBNC had failed to adequately address Inuit issues in relation to breaking sea-ice. Moreover, the Nunatsiavut government did not understand the necessity to ship in the winter, and argued that the EIS failed to adequately address alternatives, and to outline an appropriate assessment and regulatory regime for shipping (LIA 1998a; LIA 1998b). Finally, the Nunatsiavut government indicated the lack of consideration of compensation by VBNC of potential impacts on Inuit traditional activities due to winter shipping (LIA 1998b; LIA 1998f).

4.5.1 Land-fast Sea-ice

The Labrador Inuit identified a broad range of potential short-term and long-term impacts of the Voisey's Bay winter shipping route on Inuit traditional activities (Williamson 1996; LIA 1998b; LIA 1998e). Specifically, they indicated concern for personal safety and limitations on accessing areas, cabins and resources in the vicinity of the shipping route (LIA 1998b; LIA 1998e). These concerns may be further exacerbated by environmental conditions including "unpredictable places (along the ship's route) radiating from or even distant from the track, resulting from the action of winds and currents on the adjacent ice" (VBEAPR 1999b).

Knowledge of sea-ice conditions is very rich among the Labrador Inuit. During the public review process, the Labrador Inuit, including Inuit families such as the Webb family of Nain, presented their knowledge to the EA Panel (CEAA 1998; VBEAPR 1999b). The Labrador

Inuit are typically reluctant to speak out in public, so from a community perspective going beyond the local government with family submissions to the EA Panel was significant in having their concern recognized. In fact, it was the momentum that was needed to solidify the importance of traditional activities to the Labrador Inuit. They explained that if local environmental conditions are not as predicted with, for example, milder than normal temperatures during periods of winter thawing, the ice might not refreeze as fast as predicted after the ship had passed and that it might take several days to be safe (VBEAPR 1999b).

The Webb family were particularly concerned that the concentrate carrier might cross large pressure cracks that form in the sea ice and loosen large sections of ice (Figure 13) (CEAA 1998; VBEAPR 1999b). It was feared that the cracks from the shipping route could extend for long distances and potentially reach land.

It was also noted in the EA review process that "the closing of the track could create open water at the shoreline, particularly around the narrows at Paul's Island, or around natural cracks and rattles." (VBEAPR 1999b). Areas of open water, such as rattles, whose size is subject to climatic conditions, including temperature and wind, may be particularly affected by irregular ice movement, causing expansion and contraction when the ship passes (VBEAPR 1999b). This, it was further explained, would be the course of ice movement away from the shore, causing potential hazards for travelers.

Most concern for winter shipping was expressed by residents of Nain. In the community, local presenters described their experiences to the EA Panel at the public review hearings which took place September 14-17, 1998 (CEAA 1998; VBEAPR 1999b). In particular, they discussed how, in the past, when icebreakers extended the shipping season to bring supplies to Nain, travel across the route became unpredictable. In Rigolet, a community south of Nain, presenters described an icebreaker's trial voyage into Lake Melville and how traditional travel routes were disrupted due to unpredictable sea-ice conditions which resulted (VBEAPR 1999b).

(Source: Author)

Figure 13 Example of a Pressure crack near the winter shipping route

Moreover, the Labrador Inuit are concerned with the impact of marine shipping, in general, and the winter shipping route, specifically, on fish and wildlife resources. They contend that the noise created by the icebreaking of the transport vessel will disturb marine mammals, particularly whelping seals (VBEAPR 1999b).

To address these concerns the EA Panel focused its assessment of the potential impact of marine shipping on the marine mammals that it identified as Valued Ecosystem Components (VECs). The VECs identified by the Panel included seals, minke and beluga whales and polar bears (VBEAPR 1999c). Part 11 of the EA Panel Report included reference to the potential impact of ice disturbance, indicating that it did not believe that there would be a significant impact on marine mammals. However, the Panel did recommend additional studies and the ongoing monitoring of the effects of shipping, stating that,

> The Panel does not consider that this Project would significantly affect marine mammal populations, but the effects of increased shipping for several purposes over the long term could be significant (VBEAPR 1999c: Recommendation 47).

Finally, there is a general concern for the potential for concentrate and fuel spills and the impact these might have on fish and wildlife resources (C-CORE 1998; LIA 1998b; LIA 1998c; LIA 1998d).

4.5.2 Requirement for winter shipping

The issue of winter shipping began to escalate during the EA process in April 1998 when at a collaborative EIS workshop between VBNC and LIA, VBNC stated there was no alternative to winter shipping (LIA 1998b). Many Labrador Inuit have never been convinced as to the need to ship in the winter. They questioned whether winter shipping is the result of technical problems associated with concentrate storage or whether the main issue is economics. VBNC has conceded that there are "economic implications (associated with) increased storage time, including financial implications of delays in processing the concentrates, capital costs of increased storage facilities, and additional costs for containers and storage facilities for operational supplies." (VBEAPR 1999b).

However, the Company has always asserted that there are significant technical problems with storing concentrates over a prolonged period of time. In laboratory tests, sample concentrate piles completely oxidized in two weeks. In a large storage pile, in, for example, a storage shed, VBNC contends that oxidation would form a cemented mass around a loose core, causing significant handling and loading problems (VBEAPR 1999b).

In addition, the company argues that the concentrate could become compacted during storage as a result of a reaction between the concentrate and calcium carbonate, which is used to control pH levels during concentration (VBEAPR 1999b).

The Raglan mine in northern Quebec, which contains a similar composition of mineral resources offered a clear example of how prolonged storage could be accomplished at VBNM. However, when questioned as to why they did not dry their concentrate, as is done at the Raglan mine, VBNC insisted that their concentrate characteristics favoured the 5-percent moisture content approach (VBEAPR 1999b). The EA Panel noted that the process at Raglan has had problems with rapid oxidation causing handling problems, and concentrate spills during loading (VBEAPR 1999b). VBNM hopes to prevent both of these types of incidents by employing a moisture content approach.

However, on the recommendation of the EA Panel, VBNC committed to solve any problems associated with concentrate storage of up to two months.

4.5.3 Alternatives to winter shipping

VBNC did not choose to go into details as to why there were no feasible alternatives to winter shipping, simply stating that the potential alternatives were not economic or technically feasible. Many alternatives were considered during the collaborative EIS workshop held in Nain in April, 1998. Some of the alternatives mentioned included creating a road from the VBNM to Nain, a railway linking southern Labrador and Quebec to the VBNM, an offshore island trans-shipment port that would store concentrate for transportation, or skidding the concentrate out on the ice so that the boat would not have to come in as far. Yet, to the

Company marine shipping was the most appropriate method, as it seemed the most technically feasible and least expensive.

4.6 Agreeing to year-round shipping

The need to resolve the issue of winter shipping grew as a result of Inuit pressure. The Labrador Inuit stated their concern over winter shipping and the breaking of sea-ice on numerous occasions. It is obvious from the momentum that the issue gained and in the negotiation of a Shipping Agreement, that Labrador Inuit concerns were heard by a variety of stake-holders, including VBNC and the provincial and federal governments. The following section explores how the project stake-holders dealt with the issue of winter shipping.

4.6.1 Voisey's Bay Nickel Company

The VBNC EIS was drafted from issues identified in the public scoping sessions held in the spring of 1997 and from data drawn from approximately 45 background studies (VBNC 1997a). The EIS and accompanying *Additional Information* documents, prepared at the request of the EA Panel, incorporated a range of biophysical and socioeconomic components, including material related to marine transportation, and in particular, to winter shipping (VBNC 1997b).

However, VBNC had to go much further than they had originally intended in order to accommodate Inuit concerns over the breaking of the ice. This included, for example, a technical site visit to the Raglan mine in Northern Quebec in January of 2002, and later the completion of the Shipping Agreement. The technical visit included Nunatsiavut government members Gus A. Dicker and Ron Webb, Tony Andersen, representing VBNC, and Bevin LeDrew, a St John's-based consultant hired to provide technical support to the group. The group traveled to the Raglan mine and port site in northern Quebec to observe the MV Arctic in transit (Dicker *et al.* 2002).

The following year, the captain of the MV Arctic, which is the ice-breaker class concentrate carrier to be used initially by VBNC, as well as VBNC and Nunatsiavut government

members, went on a tour of the VBNM winter shipping route. Then on February 20, 2005 the MV Arctic made a test probe about eight kilometres into the land fast ice along the shipping route (VBNC 2005a). The probe allowed Sikumiut Environmental Management, a locally operated environmental management company hired by VBNC, to construct an 'ice bridge' along the broken track. The environmental conditions were ideal for refreeze with an average temperature of -34.7°C with wind-chill over a four day period from February 20-23 (Environment Canada 2006). The plan was for ice bridges to be created along the ship's track to provide designated areas of safe crossing for snowmobiles. Ice bridges or designated 'areas of safe crossing' are discussed in detail in section 4.6.3.

While the technical site visit to Raglan, the captain's tour and the test probe did much to alleviate some of the more significant concerns of the Labrador Inuit, the Nunatsiavut government was still very reluctant to agree to allow shipping in the winter. However, in the negotiation of the IBA it became apparent to the Nunatsiavut government that the VBNC had no viable alternative to winter shipping (LIA 1998b). The Company had argued that that they could not stockpile concentrate for more than a few months and that alternatives, such as the building of roads or railways linking the mine to the south, would cause far greater environmental damage and be prohibitively expensive. The importance of winter shipping to VBNC was made evident as the Company made the signing of the IBA subject to Nunatsiavut government consent to year-round marine shipping (LIA 1998f). The Nunatsiavut government did, however, attempt to gain some level of control by setting a time-limit for the completion of a Shipping Agreement within one year after the signing of the IBA. In addition, the Nunatsiavut government made inclusion of some of the recommendations of the EA Panel mandatory as provisions and matters to be attended to in the IBA (J. Rowell pers. comm. February 15, 2005).

4.6.2 The Shipping Agreement

The Shipping Agreement, negotiated by the Nunatsiavut government and VBNC and signed in March 2005, was designed to regulate marine transportation associated with the Voisey's Bay development (LIA 1998b), and allows for unhindered marine transportation during the

open water months and transportation during select periods when the ice refreezes until it breaks-up again in the spring(VBNC 2005b).

Shipping in the winter months may not begin before January 22nd, to allow the winter ice to become thick enough (approximately 20cm), for travel by snowmobile. In the average year sea ice typically begins to form in late November to mid-December and freeze-up is usually complete by the first few weeks of January. Break-up begins anywhere from the middle to the end of May with open water access by mid-June (Williamson 1997). The final shipment must leave port at Edward's Cove by April 7th (VBNC 2005c). The Shipping Agreement allows for four shipments of nickel ore, or eight vessel movements in total, between January and April. Shipping of ore and supplies may resume on May 22nd when it is no longer possible to travel on the ice (VBNC 2005c).

Inuit participation in traditional activities is most intense during the winter months when the ice is thick (Williamson 1997; LIA 1998b). However, families and individuals who do not get out in the winter, often travel in the spring (March-May) when the days are longer and the weather is warmer (Williamson 1997; LIA 1998b). During these months, there is an abundance of harvesting opportunities, particularly in the Anaktalak Bay region and along (north and south) the proposed shipping route (LIA 1998e). For these reasons it is vital to the Labrador Inuit that no shipping occurs after April 7th and before the ice is completely broken-up by natural processes.

VBNC has acknowledged the importance of winter shipping and introduced a variety of measures to minimize any potential safety matters. To the Company the issue of safety in relation to winter shipping cannot be overstated (VBNC 1997a). VBNC has made safety a priority at the Voisey's Bay mine site and throughout the foot-print area. However, they do not control what happens beyond the foot-print boundaries, including along the shipping route. This concern has led to the creation of a set of very detailed safety regulations. The regulations include, for example, the construction of designated areas of safe crossing along the ship's winter track (VBEAPR 1999b; VBNC 2005c).

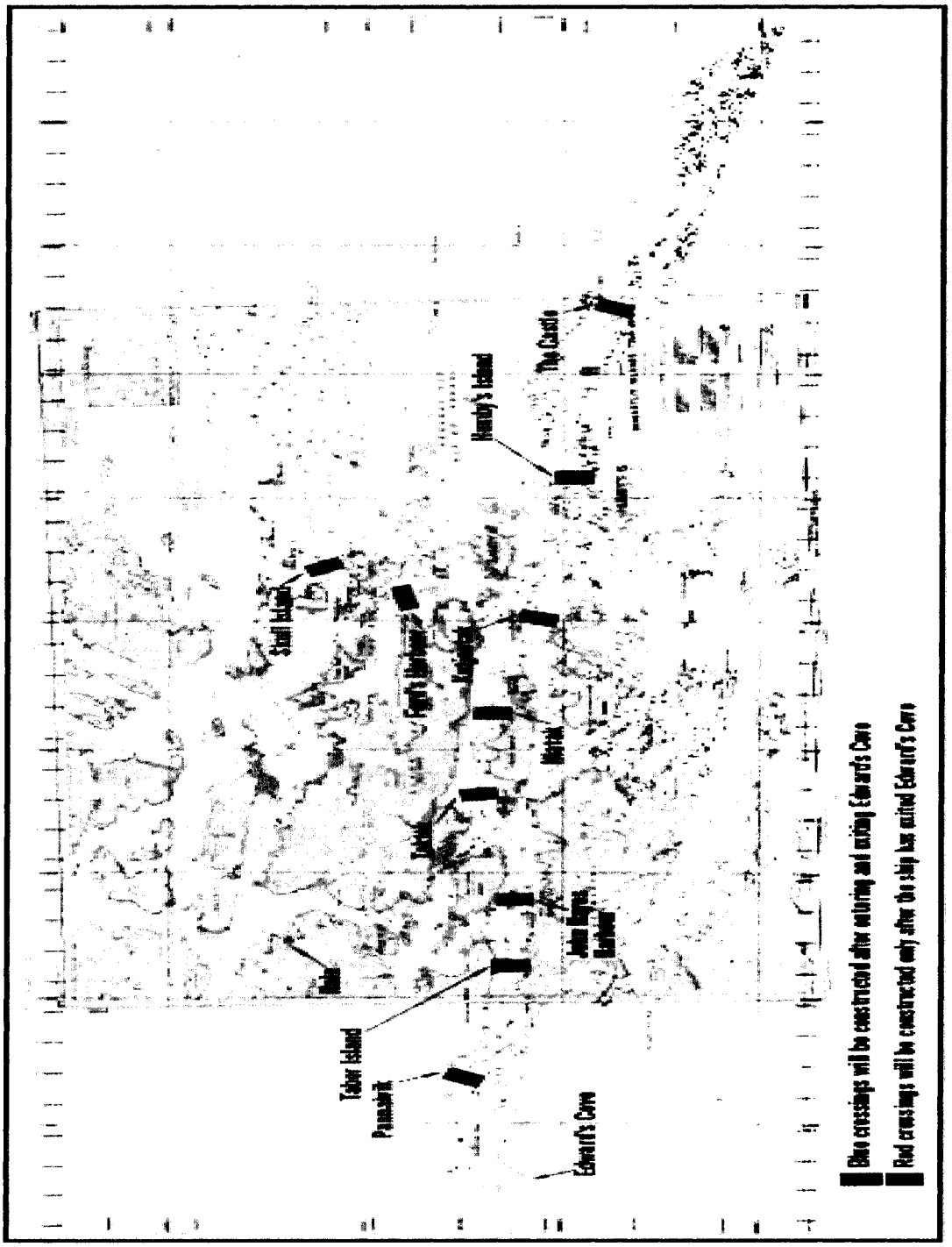
4.6.3 Areas of safe crossing

VBNC has committed to providing the Labrador Inuit and other users with designated areas of safe crossing along the shipping route. To begin, the Company will use reflectors every 250 meters to mark the entire ship's track. By using backwash, the icebreaking vessel could aid in the process of reforming the broken ice across the ships track, a procedure that the MV Arctic used when entering through land-fast sea-ice at the loading areas for the Nanisivik (now closed) and Raglan mines (VBEAPR 1999b). After the boat passes, the areas of safe crossing or locations for ice bridges will then be designated, and the bridges designed, and monitored by Sikumiut Environmental Management, a Newfoundland and Labrador-based consulting company, under contract to VBNC. Sikumiut creates the crossings with a variety of tools used to level out the ice and remove any large chunks. Areas of safe crossing, such as those designated in Figure 14, will be marked with a sign and lights (VBNC 2005c). The sign will indicate whether or not it is safe to cross. As indicated in Figure 9, the crossings indicated by darker shading will be constructed after the ship has gone into port at Edward's Cove. However, all crossings will again be constructed following the ship's passage to open waters (VBNC 2005c).

The Shipping Agreement allows for variation between a northern and southern route. The southern route is represented in Figure 14, while the northern route will include a slight deviation around the northern islands just inside the area of land fast ice and then continue along the route indicated in Figure 14. The ship's route will be chosen for the initial shipment of each winter shipping season and will be used for the remainder of that season (VBNC 2005c).

VBNC has taken a number of important measures in order to insure that information about the ship's route, shipping times, and designated safe crossing areas is communicated effectively. For example, the Company has provided VHF pagers, which when turned on provide up-to-date information on the ship's activities (VBNC 2005c). The pagers along with instructions on how to use them can be obtained in Nain at the office of the VBNC-Labrador Inuit liaison, Isabella Pain, or from Gus Dicker or Ron Webb, at Sikumiut Environmental Management. In addition, the Company has created a toll-free number (1-877-922-4437) with a recorded

message that details the ship's current activities in both English and Inuktitut, or if the caller would rather speak to a person they can phone the VBNM site at 1-709-922-4437. The VBNC website also lists current and past shipping times and information on the general area of designated safe crossing areas. Finally, the local radio station, OK Society radio, will provide regular updates on all ship traffic (VBNC 2005c).



(Source: VBNC 2005c)

Figure 14 Locations of safe crossings or ice-bridges along the VBNM winter shipping route

5. Studying Aboriginal Peoples and Natural Resource Development

5.1 Choosing the appropriate methodology

5.1.1 Aboriginal/cultural research

The study of Aboriginal populations by non-Aboriginal academics has been a source of debate and frustration, particularly on the part of Aboriginal peoples (Posey and Dutfield 1996; Brody 2000; Little Bear 2000). Historically non-Aboriginal or "western" academics have imposed their own cultural values through their choices of methodology and the associated interpretation of Aboriginal peoples and cultures (Sillitoe 1998; Sherry and Vuntut Gwitchin First Nation 1999; Smith 1999). It is arguable whether this has changed, notwithstanding that studies of Aboriginal issues have grown to include a variety of academic disciplines including, history, geography, anthropology, political science, and the medical and health sciences, and evolving interdisciplinary areas such as resource management, environmental studies, and First Nations studies (Tremblay and Lévsque 1997; Smith 1999; Little Bear 2000).

In contemporary academic studies that focus on Aboriginal peoples most concerns have arisen as a result of cultural differences between the researcher and the study population. For example, noted cultural difficulties have been related to cross-culture communication, values differences, interpretation and response bias or unwillingness on the part of Aboriginal people to cooperate in a study because of negative past research experiences (Sherry and the Vuntut Gwitchin First Nation 1999; Smith 1999; Wenzel 1999; Little Bear 2000; Tobias 2000). Further, poor research design may also lead to problems which include research bias, language, and cultural issues.

Due to the difficulties that may arise in Aboriginal studies, social scientists use a variety of approaches to study the relationship between Aboriginal peoples and the development of natural resources. As such many researchers employ research techniques designed to involve the community in some aspect of the research (Tobias 2000). Specific methods include, for example, participatory action, case study interviews, focus groups, surveys, workshops, community/public meetings and ethnographies (Sherry and the Vuntut Gwitchin First Nation

1999). Each method offers a unique perspective on the gathering of information and is used depending on the particular Aboriginal group, including their interests and desire for useful results. Yet, if no one method is suitable, a mixture of methods might be the best choice (Human Resources Development Canada 1998). For example, the collection of statistics has been used to validate information gathered in key informant interviews (Ervin 1997).

On the other hand, new approaches, such as an "ethnoscientific" approach to studying the use of TEK may prove to be more useful in studying Aboriginal populations, as TEK is contextually based and the researcher runs the risk of providing a misinterpretation of information if they attempt to present it in a fashion that promotes generalized Aboriginal knowledge (Wenzel 1999).

New or less problematic research approaches can evolve through a better understanding of Aboriginal people and the relationship between Aboriginal peoples and natural resource development in academic research. However, difficulties arise even with the most careful planning. Potential problems in the design and use of approaches and methods in studying the impact of resource development on Aboriginal peoples will be discussed in the following section. After which potential solutions to these difficulties will be explored. Finally, the approach and methods used in this particular study will be discussed, including results and any difficulties that were encountered throughout the course of the study.

5.2 Potential problems in design, application, and delivery

5.2.1 Cross-cultural communication

Cross-cultural communication is one particular concern in the study of Aboriginal peoples and resource development. For example, in attempting to record TEK using semi-directed interviews Huntington (1998) found that cross-cultural communication and understanding of ecological processes was particularly difficult as the Aboriginal group studied had no basis for relating their knowledge and often described anthropogenic influences that are rarely found in western science. In addition, Huntington found that it was difficult to anticipate or easily access the scope of knowledge in TEK using traditional methods. This sentiment is

reiterated by a number of Aboriginal peoples and researchers (Merculieff 1994; Smith 1999; Nuttall 1998). Often the person conducting the research has been educated in a culture and raised in a society removed from the Aboriginal experience and values (Mohawk Council of Akwesasne and IREE 1994; Nuttall 1998). This can prove problematic, as certain information may be excluded, included, emphasized or downplayed. As the researcher may not understand or recognize uncertainty, this issue can become overwhelming.

However, researchers such as Huntington take important steps towards recording the relationship between TEK and western science. For example, Huntington, among others, notes that it is difficult to access the scope of knowledge in TEK, because it is circular or holistic in nature (Fast and Berkes 1994; Gwich'in Renewable Resource Board 1997; Huntington 1998; Wenzel 1999). By comparison, researchers, such as Sherry and Vuntut Gwitchin First Nation (1999) believe that information in western science is somewhat easier to access as it is both hierarchical and linear. In understanding the fundamental differences between these two types of knowledge, it becomes evident that the methods chosen to study Aboriginal-natural resource development issues, most notably TEK, need to be developed in conjunction with Aboriginal knowledge systems.

5.2.2 Choosing an approach for particular audiences

Choosing the appropriate methodology for a particular audience can be equally contentious. While the methods chosen may reflect the needs of the audience it may have no practical use for those who are the subject of the study (Tobias 2000). For example, quantitative results are often used for administrative purposes, such as in wildlife management or the delivery of social programs. Quantification of results is important to the presentation of measurable quantities, or, for example, in the development of priorities. However, quantitative analysis may overlook important dimensions of a study including, for example, social behaviour. To cite one example, in the 1970s the Northwest Territories (NWT) Game Management Service designed a resource management plan for the once threatened musk-ox that relied solely on quantitative analysis, and did not take into account local Inuit TEK (Freeman 1989). The plan was to make concessions to hunters, by allowing a fixed quota of old, inactive, solitary males

as trophies. The Inuit, however, were strongly opposed to this plan. They argued that the old bulls were important to the social organization of the herd and played dominant roles in the defense and maintenance of the group's integrity (Freeman 1989). This was particularly important in the survival and reproduction of small herds. The Inuit argued that it would be more viable to offer a fixed quota of prime bulls to trophy hunters, due to the relative importance of old bulls (Freeman 1989). This example, speaks not only to the need for more in-depth research, but also addresses the issue of TEK in resource management.

5.2.3 Research cooperation and the protection of individual and group data

One very specific research problem can stem from the lack of access to certain information due to the protection of individual and group data. This can be particularly problematic in studying Aboriginal resource harvesting. Individuals or groups interested in protecting certain information from the general public may, at times, override use of data in a research project. Reasons for protecting resource harvesting information may be due to competing interests, use in comprehensive land claim or land use negotiations or other agreements related to land or resource use. Some researchers have also cited resource harvesters' fear of government-imposed regulations as a reason for not providing researchers with resource harvesting data (Usher and Wenzel 1987).

5.2.4 Research design

Many issues associated with research design are equally applicable to studies of non-Aboriginal groups, but may be exacerbated when researchers are dealing with ethnic and cultural groups other than their own. For example, samples often may not be technically random as respondents are typically those in town when research is conducted and those at home when the researcher arrives (Usher and Wenzel 1987).

Research potential, as in other research, can also be diminished due to a poorly constructed questionnaire or set of questions. Questions can be misleading or leading, while the questionnaire itself can be unclear, ambiguous, with poor wording and/or the incorrect choice of language. This means not only using terminology which is understood by all, but also respecting language choices and employing interpreters when available (Wismer 1996). In

addition a questionnaire, while developed by academics, may include all of the necessary information, but prove to be too lengthy and laden with detailed technical language. These potential problems with design may place excessive burden on the respondent, perhaps resulting in insufficient information collected.

Bias can be another problem inherent in the design and application of research techniques. Non-response bias can be particularly troublesome, as those who choose not to participate may be important in a way that is different from those who do participate. For example, those who chose not to respond could be the most active members of a community (Wenzel 1999).

Response bias is equally important to watch for. It arises as the difference between an honest answer and the respondent's answer (Usher and Wenzel 1987). This could be due to strategizing or the insertion of personal interest. For example, in the case of TEK an Aboriginal person may not let a researcher know the location of a particular plant for fear of it being dangerously over-harvested (Posey and Dutfield 1996).

Another type of bias found in social science research is interviewer-introduced bias. It may be injected to elicit a response or lead a respondent (Usher and Wenzel 1996). Consequently, any type of bias can be problematic and must be addressed. Researchers must be aware that they may influence the data collected and may need to check that this does not happen inadvertently by, for example, using a mixture of methods to test interview results against those from a variety of other data sources.

5.3 Potential Solutions

There have been some real advances and solutions developed to address the problems associated with studying the relationship between Aboriginal peoples and industrial natural resource development. The solutions to specific problems, such as response bias are relatively uncomplicated. For example, improving a questionnaire by clarifying or simplifying questions through pre-testing is one method (Weller 1998). Another would be to provide recording aids, such as diaries to make recall easier. Creating a situation of trust where there

is no motivation to misrepresent data can also be helpful. Other solutions could include careful selection and training of interviewers or use of mail-in surveys to reduce bias due to personal contact (Usher and Wenzel 1987). However, these solutions may be far more difficult and time consuming to conduct, rendering there use ineffective.

While solutions to specific research issues may be straightforward, determining the most appropriate course of action for research issues related to overall design and application, given the researcher's knowledge and experience and the resources available, can be trickier. The researcher must choose a methodology that he or she is comfortable using and is appropriate to the study. In some cases this has allowed for the mixture of methods. Increasingly mixed methods approaches are being employed to alleviate the concerns arising, for example, of focusing solely on a qualitative or a quantitative approach (Babbie 1998; Human Resources Development Canada1998; Roe 1998; Tobias 2000). However, mixed methods may not always be appropriate for certain areas of Aboriginal studies (Nuttall 1998; Wenzel 1999). In fact, some researchers believe that emerging fields of study, such as TEK, may require the creation of new methods (Wenzel 1999).

5.3.1 Mixed methods approaches

Mixed methods approaches involve the use of multiple methods, theories, data sources and/or investigators to study the same phenomenon, object or event (Human Resources Development Canada1998; Roe 1998). There is an appeal to the use of mixed methods among social scientists studying complex issues, such as community development, and situations where uncertainty is high, such as in exploring the use of TEK in wildlife management (Human Resources Development Canada 1998; Roe 1986). This appeal stems from a desire to more clearly understand the relationships between different variables, events or phenomena. It is also a way to identify and manage the biases and limitations of a single instrument, method or technique (Roe 1998). Mixed methods approaches can be "quantitative and qualitative, holistic and reductionistic" (Roe: 86), there are no limitations on the type of approaches and techniques that can be used, and when used appropriately mixed methods can offer a better opportunity to validate results. For example, data may not always be generalizable, such as

with TEK, but mixed methods can help to validate this by utilizing different approaches to the same research question. For these reasons a mixed methods approach offers a significant advantage to studying complex relationships.

The mixed methods approach is not without its shortcomings, however. It can, for instance, be very time-consuming and expensive (Ervin 1997; Human Resources Development Canada 1998). The use of multiple observers, methods, and information sources can prove overwhelming even for a team of trained investigators, both in time commitment and funding. Ironically, bias is another concern. Regardless of the technique or instruments used, the interviewer can still introduce bias through many means, including the language and mannerisms (Roe 1998). For this reason the techniques used should be as radically different from each other as possible. Finally, the researchers may be tempted to compare and evaluate the various techniques used. This could limit the researchers to using only the best from each technique, and not considering how the various methods and techniques work in conjunction with each other.

5.3.2 Tailor-made methods

Due to the complexity of Aboriginal research, investigators have also begun to search for new methods. While it is often possible to use a mix of methods, where one method does not suffice, for the purpose of efficiency or greater depth, new approaches have been proposed. In attempting to alleviate many of the concerns of studying TEK, Wenzel (1999) discusses the opportunity to develop a new "ethnoscientific" approach, which would work to collect TEK information using an ethnographic approach to be presented in a western scientific format. The author argues that TEK requires a unique approach because it has often been misused and misrepresented due to cultural decontextualization (Wenzel 1999). One specific use for TEK research is in designing new resource management policies in areas with predominantly Aboriginal populations. Yet, For TEK to be used in designing management policies; it would need to incorporate specific Aboriginal community values while maintaining a "western" resource management emphasis on scientific methods. The creation of a new method could

offer a solution to the specific problem of understanding TEK in western resource management.

5.4 Case Study Methods

In developing the following study, this researcher has attempted to take into consideration the difficulties associated with Aboriginal studies by non-Aboriginal researchers and tried to avoid, mitigate or manage any potential problems that could be anticipated or which arose during the course of the study. The following sections outline the research strategy, study area, and research design adopted in this research. Results from the study, including problems and the attempts to address them are discussed in the final sections of the chapter.

5.4.1 Research Mitigation Strategies

The study was designed to mitigate the problems noted in previous sections. Through the university-mandated ethical review and approval, as well as peer review and pre-testing the researcher attempted to avoid the difficulties associated with studying a specific Aboriginal group. For example, problems related to cross-culture communication, value differences, and research design were addressed through the careful selection of wording and the arrangement of questions and review of the research instrument by local people. In review it was also decided that the line of questioning would be somewhat open to allow for value differences among respondents and knowledge differentiation between groups A, B and C. To insure accuracy, interviews were returned to participants following transcription of each interview.

An informal interview style was employed to mitigate the problems associated with research design and cross-culture communication. Both Huntington (1998) and Tobias (2000) recommend the use of informal semi-directed interviews in similar studies conducted in Aboriginal communities, as it enabled them to gather a range of information from groups who were reluctant to participate in structured interviews. The researchers also suggest the use of a variety of data collection techniques, including note-taking, map drawing, and research diaries as many interview participants find it unobtrusive and less distracting than when confronted with most electronic recording equipment.

To alleviate the problem of miscommunication the research was designed to be appropriate and flexible so that the interview questions could be asked of all key informants. As all participants understood and spoke English the study was explained to participants in English prior to the interview. Participants were also made aware of the use of the information they would be providing. In the first field work component interviews were conducted in spaces familiar to participants, including workplaces, their homes and the homes of friends and/or relatives. Follow-up interviews were conducted in the homes of key informants, by telephone or e-mail. A range of very specific questions, augmented with broader, open-ended questions were asked in all interviews. This technique allowed for a greater degree of comfort in the interview process allowing respondents to answer some questions with a simple 'yes' or 'no' response or to elaborate on topics when they felt that it was necessary.

The presentation of research results was also intended to be flexible. The presentation here is for an academic audience, but the results will also be presented differently for research participants and the Nunatsiavut government.

Interview data collected were verified by the individual respondents following transcription of each interview to insure accuracy and give respondents an opportunity to provide feed-back. This was accomplished by sending a copy of the interview transcript to the respondent, along with a post paid return envelope. Corrections indicated were then made and the completed transcriptions were sent back to the individual respondents.

5.4.2 Research strategy

The framework developed in the MMSD-NA report, 7QS, provided the foundation for the thesis with a focus on the fifth question posed in the Report, which asks whether "traditional and non-market activities in the community and surrounding area (are) accounted for in a way that is acceptable to the local people?" (Task 2 Work Group, MMSD North America 2002). The specific focus of this thesis was on exploring the effect of the VBNM winter shipping route on Labrador Inuit traditional activities.

As the earlier chapters of this thesis have outlined, exploration of this question involved a review of background information from secondary sources on historical and contemporary Aboriginal traditional activities and the relationship between Aboriginal peoples and non-renewable resource development, as well as specific information on Labrador Inuit and Labrador Inuit traditional activities. This involved a determination of what constitutes as a 'traditional activity' and then examining the characteristics, trends, attitudes and other dimensions of these activities as they apply specifically to the Labrador Inuit.

To explore how the question related to the specific focus on Labrador Inuit traditional activities which may be affected by the proposed winter shipping route, key informant interviews were undertaken. Specific data were collected on Labrador Inuit traditional activity patterns and harvesting specifics, including duration, date, time, and location of the activity or activities. Respondents were also asked to elaborate on the processes and agreements related to winter shipping. This included their perceptions of the processes and agreements and whether the informants felt that the concerns of the Labrador Inuit in relation to traditional activities were adequately addressed.

The question of how Labrador Inuit traditional activities may be affected by the Voisey's Bay winter shipping route was also explored. This included a review of agreements negotiated between the Labrador Inuit and the VBNC, as well as the Labrador Inuit and the Federal and Provincial governments concerning Labrador Inuit traditional activities. In particular, concerns that were highlighted by the Labrador Inuit and VBNC during the assessment process and what the outcomes have been to date were considered. Again, key informant interviews supplemented what was gained from secondary sources. Specific interview questions asked participants to elaborate on how Labrador Inuit traditional activities might be affected by winter shipping, including the individual participant's perceptions on how it might affect themselves, others, and the local environment and wildlife.

The particular focus on how the components of traditional activities and mining fit into the larger concept of sustainable development was examined largely through secondary sources, including academic articles and practitioner reports. The 7QS framework and the fifth question in particular, were used to illustrate a practical model for discussing these general relationships. This general relationship was further explored through the Voisey's Bay case study.

5.4.3 Study Area

The population of Nain, the main community in the 'study area' outlined in 4.3.1, was 1160 in 2001 (Statistics Canada 2002). In 1996, Williamson interviewed 47 Labrador Inuit resource harvesters which he calculated to represent 15% of the total male resource harvesting population over the age of 15. The population of Nain in 1996 was 996. From 1996 to 2001 there was a 16.4% increase in the population. By using a combination of Williamson's and Canadian federal statistics there were 313 male resource harvesters over the age of 15 in Nain and surrounding area in 1996. In this particular study 14 resource harvesters were interviewed, representing 5% of the population over 15 years of age. Employing Williamson's calculations and assuming no significant change in the percentage of resource harvesters in Nain, the fourteen respondents from group C of this research study can be said to represent 7.5% of the total 2001 male resource harvesting population over the age of 15.

However, these estimates do not include women and children who also participate in traditional resource harvesting. If the number of Labrador Inuit resource harvesters in Nain were to include this population then the total number would be significantly larger. In discussion with resource harvesters, it was noted that many male resource harvesters travel with spouses and children, including immediate and often extended family on more than one occasion in the winter harvesting season. Therefore, a more accurate estimate, including all resource harvesters, might be closer to 500 individuals, nearly half of the total population of Nain. However, it is important to realize that the study focused on those individuals in the community who were recognized as being frequent harvesters due to insufficient resources to undertake a statistically significant sample of all harvesters. I chose a sample of individuals

who were identified as frequent harvesters for Group C, but recognize that the conclusions drawn from this sample are indicative but not statistically supportable. The estimate of 500 individuals is based on the total number of resource harvesters interviewed by Williamson in 1996, and, more recently, as part of this research study and reflects all individuals in the community who may harvest rarely, occasionally or frequently.

Moreover, there are at least 10 Allâsimavet near the winter shipping route that are accessed on a regular basis throughout the year by Labrador Inuit traditional resource harvesters. Other resource harvesters travelling in the area, and travellers travelling to places along the coast of northern Labrador, may also on occasion access the cabins to wait out poor weather conditions or stop for a break. The activities of both resource harvesters and travellers may be disrupted by winter shipping throughout the winter season, due to long delays in the refreezing of the ice track or for other various reasons.

On the other hand, those who travel across the winter shipping route to access traditional areas and resources on a regular basis will be considerably fewer than those who do so infrequently. Therefore, using the number of Allâsimavet (10) near the winter shipping route and statistics from Statistics Canada (2002), Williamson (1996), and this study, an estimate of the Labrador Inuit traditional resource harvesting population who frequently travel across the route would be approximately one fifth of the total resource harvesting population, or 100 individuals.

More complete statistics including the number of Labrador Inuit in the 'study area' who may be affected by the winter shipping route are currently being collected for the Nunatsiavut government.

5.5 Research Outline

The study involved the compilation of background information from secondary sources and data from key informant interviews. In April-May, 2005, during the first field work component, thirty-three key informants residing in three communities in Newfoundland and

Labrador: Nain, Happy Valley/Goose Bay and St. John's, were interviewed. Follow-up research in May-June 2006 consisted of seven key informant interviews, five of which had also been interviewed in the first fieldwork component. The majority of fieldwork was conducted in Nain, including 30 interviews in the first field season and five in the second field season.

5.5.1 Choosing Respondents

A total of thirty-five individuals were interviewed for this research project. Of this number nearly three-quarters of the respondents had some Labrador Inuit heritage. Some local social classifications differentiate between pure Inuit families, including an Inuit mother and Inuit father, families which include one Inuit parent and one parent with other ancestry, and those of foreign ancestry. However, regardless of these classifications, approximately three quarters of the key informants participated in the harvesting of traditional resources from the study area, ranging from rarely to frequently, and all respondents shared in the consumption of those resources.

In the first phase of the field work thirty-three individuals were interviewed. These were initially selected based on their connection to the Voisey's Bay project and the Labrador Inuit. Others were then selected based on the recommendations made by others who had been interviewed previously. All key informants were then divided into three groups to differentiate between the variety of knowledge and experience of research participants and the consequent range of topics explored in the interviews with the members of each of these groups. The three groups were designated A, B and C.

Group A comprised individuals who had only general knowledge of the Labrador Inuit and VBNM winter shipping, but offered knowledge and experience on a variety of topics, including the study of aboriginal peoples and natural resource development, or had access to specific scientific information. There were a total of eight people in Group A. The Group included a municipal government official, a language coordinator, a research advisor, two consultants, a wildlife recreation guide, a high school student, who related knowledge of how

youth generally view the mine and its activities, and a retired grandmother, with specific knowledge of the community and its political atmosphere, having lived in the area for over thirty years.

Group A, however, does not include a VBNC representative. This is because, upon contacting the company to gain their perspective on various matters related to this thesis, the researcher was directed to an employee of the company whose knowledge of the mine project far exceeded that of other key informants included in Group A. Therefore the key informant is included in Group B rather than Group A.

Group B, comprised eleven respondents who had specific knowledge and experience in working with the Labrador Inuit and/or on the development of VBNM winter shipping. This group had the greatest range of professional interests, and included a number of environmental consultants, former and current employees of the Nunatsiavut government and VBNC, municipal and provincial government officials, an employee at a local radio station, a local store owner, a park manager and a retired resident of Nain. The majority of participants in this group were able to respond to interview questions based on experience gained from current and previous employment and volunteer positions, while many still held multiple roles in the community.

Group A and B were an important to illustrate a cross-section of community interests and while they may not be identified in this project by other key informants as regular traditional resource harvesters, they have been impacted by the Voisey's Bay mine project and its activities, including winter shipping.

Group C was the largest of the key informant groups and comprised those individuals who would be most significantly affected by the proposed winter shipping route. This group of fourteen respondents included resource harvesters and other individuals who actively utilize the area around the winter shipping route. Many key informants in Group C had Allâsimavet north or south of the winter shipping route, but accessed resources on either side throughout

the year. Some participants in this group were also employed either full time or seasonally in wage-based positions. For example, the group included seven retired or underemployed Nain residents, two seasonal employees at a local fish production plant, two employees of the Nunatsiavut government, an employee at a local Labradorite quarry, an employee at a local radio station, and an employee of Newfoundland and Labrador Hydro.

Follow-up interviews, conducted after the first season of winter shipping, included two of the original key informants from Group B and five from Group C. The range of individuals included members of three families with cabins near the shipping route, employees of a private consulting company, local government employees and VBNC employees.

The number of key informants interviewed in the second fieldwork component of the study was much smaller than in the first, primarily because of the availability of potential key informants. Many key informants who were interviewed in the first component were not interested or felt they had nothing more to add to the study in the second fieldwork component. This was partially a result of a milder than usual winter season and the fact that many individuals had difficulty accessing traditional harvesting areas and therefore did not get out on the land as often as they would have liked. They consequently felt that they had little additional information to add to the information provided in the first round of interviews.

The second fieldwork component also did not include key informants from Group A. This was due to a limited study population available to interview, who could add further insight into the research questions. In addition, most Group A participants were not directly involved and/or affected by winter shipping and therefore would have offered very little specific experience. The group was chosen in the first field work component for their general knowledge, which was not essential to follow-up. Group B and C participants were more available and interested in adding to the research in the second field work component, typically because of their connection to winter shipping, be it professional or first hand experience with the areas of safe crossing.

5.5.2 Interview Design

Secondary sources were used to support the formation of interview questions. The questions were designed by the researcher. The development of the questions incorporated issues raised during a review of the questions by individuals with knowledge of social science research project design, officials of the Nunatsiavut government, those who have worked with the Labrador Inuit, and VBNC. In addition, question development included pre-testing of the questions with specific key informants chosen by the researcher for their experience in working with the Labrador Inuit.

In addition, through review the researcher determined that all interviews would be voluntary and that this would be explained to participants prior to the interview. This meant that participants could end the interview at any time if they were not comfortable answering the questions.

In the initial field work component general questions with regards to the Voisey's Bay project and winter shipping were asked of all respondents. Questions relating to specific knowledge and experience varied between the three groups. For example, Group A key informants were asked about their general experience with Aboriginal peoples and resource development issues. Group B key informants were asked questions of their involvement in the Voisey's Bay project and the associated processes and agreements. Finally, Group C key informants were asked specific questions about their participation in traditional activities and their opinion of resource development, but were not asked other questions, such as those asked of Group A concerning Aboriginal peoples and resource development issues in general.

Questions in the second field work component required description of specific aspects of the first season of winter shipping. Questions varied in Group B and Group C key informant interviews. Both Group B and C key informants were asked to give a general description of the first season of winter shipping, as well as questions related to access, communication, safety, and environmental conditions. However, Group C key informants were asked questions related to the past season of traditional/non-market resource harvesting.

An informal interview style was used in all key informant interviews. The questions were divided into specific theme categories, but the interview method allowed for flexibility. For example, if part way through the interview it became apparent that an informant did not want to discuss certain topics, and then those topics were avoided. On the other hand, if it became apparent that the respondent wanted to discuss certain topics, that because of the groupings they would not necessarily have been specifically asked about, then those questions were introduced. The questions asked of each group can be further examined in Appendix A.

All key informant interviews were conducted by this researcher. Note-taking was the technique for recording information, based upon the experience of other researchers (e.g. Huntington 1998; Tobias 2000).

5.6 Research Results

The following sections summarize responses to the questions asked of Groups A, B and C, with differences in responses between groups noted as necessary.

5.7 First Field Work Component Research Results

5.7.1 General questions

The general questions for each respondent group were the same. Each key informant was asked at the onset of the interview if they were aware of the Voisey's Bay Nickel Mine project and winter shipping. All key informants stated that they were aware of the mine, but one individual was not familiar with winter shipping as indicated in Table 2. The 'No' response can be attributed to the respondent's extended leave from the community during the mine development, and not feeling comfortable commenting based on a limited knowledge of the project.

Table 2 General Questions – Summary for Group A, B and C

Summary – Group A, B and C (n=33)	Yes	No
Are you aware of the Voisey's Bay Nickel Mine Project?	33	0
If so, are you aware of the issue of winter shipping in relation to the Voisey's Bay Project?	32	1

Table 3 highlights the level of understanding among the three groups in relation to winter shipping before shipping had commenced. The question was asked to determine the participants' level of familiarity with winter shipping ranging from general to specific details. There were four response types. 'Everything', indicates the greatest level of understanding and represents those who were or are involved in some aspect of winter shipping. 'A lot', represents those who had a good idea of what was involved in winter shipping including some specific details, such as knowledge of the shipping schedule. The third category, 'some' represents those who recognized the importance of winter shipping, including some of the concerns, but had no specific details, while the fourth group may have heard of the winter shipping issue, but these respondents were aware of very little else.

A third of respondents had some basic knowledge of the route and an idea of other issues, such as safety and limiting access. However, only ten individuals indicated knowledge of specific details, such as shipping frequency and the company's reason for shipping. Of this, half were closely involved in the issue in a decision-making capacity and could relate information not available to the general public. Group B indicated the greatest level of understanding, while only a third of Group C respondents, those most likely to be directly affected by the shipping program, had a basic understanding of the issue, with the remainder understanding very little. However, this might be more a reflection of Inuit humility than a response to their level of understanding.

Table 3 General Questions – Level of understanding

What can you tell me about winter shipping?	**Everything**	**A lot**	**Some**	**Very little**
Group A (n=8)	**0**	**3**	**2**	**3**
Group B (n=11)	**5**	**2**	**4**	**0**
Group C (n=14)	**0**	**0**	**5**	**9**
Total (n=33)	**5**	**5**	**11**	**12**

Respondents were also asked why they thought winter shipping was so important. Most indicated that they thought the issue of winter shipping was important to local people because it had the potential to disrupt travel and participation in traditional activities. In addition, a third of the key informants indicated that local people's attempt to adapt to winter shipping and unwillingness to use areas of safe crossing may pose the most significant problem. According to a Group C respondent this may be a generational problem, as older residents may exercise more caution as they may not be able to predict ice conditions along the shipping route as accurately and, in turn, younger people who rely on this knowledge and who may not have this knowledge and experience may take unnecessary risks,

> A lot of young people don't understand travel on ice as well, because of the use of skidoos. We used to use huskies. Dog teams could pass over thin ice and you could get over cracks. With skidoos you can't. Young people may try to get over in areas where the ice isn't safe. Some people don't know anything about ice.

Other respondents saw the economic costs and benefits associated with winter shipping as being the reasons why the issue became important. To local people there is an economic cost associated with not being able to harvest as freely, and in having to substitute store bought food for resources they may not be able to harvest as a result of the shipping route. To the VBNC, aside from the act of shipping itself, there is a potential economic cost associated with attempting to control safety along the route which is outside of the VBNM footprint area. As well, according to two Group B respondents it is not technically feasible to stock-pile ore

from the mine. So shipping was the only alternative, and year round marine shipping was the only viable alternative.

> Although the Raglan mine was a similar development, the ore body at Voisey's Bay is different. At Raglan the concentrate is dried and kept insulated from oxygen (air), because it may spontaneously combust. We have to be cautious when making any comparisons between the Voisey's Bay Project and other locations.

5.7.2 Involvement in Resource Development – General

This question was introduced to gauge the key informant's involvement in resource development and help to further understand the issue of winter shipping in the context of northern Labrador. The question listed in Table 4 is a summary statement of the original question which asked respondents whether prior to the Voisey's Bay project they had worked in some capacity for a company that developed a natural resource or for those who were affected by natural resource development. Two-thirds of the respondents indicated that they had been involved in a resource development project prior to Voisey's Bay (Table 4). In addition, four respondents did not answer the question as they felt uncomfortable commenting on the topic due to an uncertainty of their knowledge.

Table 4 Summary of general involvement in resource development in Group A, B and C

Group A, B and C (n=33)	Yes	No	No response
Have you ever been involved in a resource development project?	22	7	4

Key informants were then asked to elaborate on their involvement. Of those who had been involved in resource development, the majority indicated that they were involved as concerned citizens attending open houses, information sessions, and community meetings, while others were either a member of or headed an organization, committee, or group that looked at resource development issues (Table 5). This included social and scientific research. Nine respondents of the 22 acted in professional capacity, employed by the public or private

sector in the area of resource development. In addition, some participants helped compile land use research for the Nunatsiavut government and/or were technical experts to an EA Panel. One respondent was even a witness in a court case involving a resource development project.

The range of involvement among individuals was evident in each interview, as certain individuals were able to draw on lengthy experience, while others were hesitant to answer specific questions related to resource development. One group C respondent commenting on their level of involvement stated, *"I wanted to go to the meetings, but never got around to it. Other people are probably more interested - I just don't have a lot of experience with meetings."*

Table 5 Summary of involvement in resource development

If yes, in what capacity were you involved? (n=33)	**Number of Responses**
Attended open houses, information sessions, public meetings	16
Head/member of organization/committee/group that looked at resource development issues	10
In resource development projects in professional capacity (managing, consulting, etc.)	9
Compile land use research for the Nunatsiavut government	6
Technical expert (witness) to an EA Panel	3
Witness in court cases	1

Group A and B key informants were then asked to postulate on the role of public involvement in decision-making related to resource development projects in general (Table 6). The responses to this question varied significantly. Of the nineteen respondents included in Group A and B only three respondents felt that public involvement played a significant role in decision-making, while 7 respondents felt that they did not have enough experience with public involvement and decision-making processes to offer an opinion. A greater number of Group A and B participants, approximately half, felt that, for one reason or another, the public did not have a voice in the decisions made in resource development. A number of these

respondents thought that the developer and government often failed to recognize public concern, and that they could not understand how it would be possible for those voicing the concern to be heard. In addition, two respondents indicated that they believed that the Company responsible for development failed to recognize public concern due to the importance of the Company's development schedule.

Table 6 Summary of Group A and B responses to question on the role of public involvement in the decision-making process

Group A and B (n=19)	Yes	No	No response
Do you think the Public plays a significant role in the decision-making process?	3	9	7

What is not reflected in this table, but which was relayed by a number of A and B Group respondents, based on their personal experience in the community of Nain, concerns the hesitancy of the Labrador Inuit to voice their concerns publicly. The reasons for this reluctance were seen as both historical and contemporary. A few participants argued that there is historical precedent for Labrador Inuit failing to voice their concerns, which dates back to the settlement of Moravian missionaries. They felt that, at that specific time in history, the Labrador Inuit let outsiders begin to make their decisions for them – a trend which may have continued to this day. At least six other participants felt that there were more contemporary reasons for the lack of involvement by the Labrador Inuit, which are due to the overwhelmingly technical language of resource development. One Group A respondent stated that the processes related to the Voisey's Bay project were particularly problematic because, "*I don't think the locals stood up for themselves. We had to be on someone else's timeline, agenda, and language.*"

As a side note, the majority of Group A and B participants felt that the public was defined, in this case, as being local community members. However, three respondents felt that the general definition of the 'public' changed throughout the development of a resource development project. In the opinion of these respondents there are subsets of the 'public' that

are potentially affected in different ways by any given project. First, there is the general public which includes all individuals who are in some way affected by development. Next, there are those who are more directly affected, such as local community members. Finally there are those individuals, such as the Labrador Inuit in this case, whose traditional rights may be affected by development.

5.7.3 Involvement in Resource Development – Specific to Aboriginal People

Following the general questions concerning their involvement in resource development, Group A and B respondents were asked specific questions relating to Aboriginal people and resource development. Group C respondents were also asked specific questions on this topic related to their previous involvement in resource development that is included in Table 8. The division between the three groups for this particular line of questioning was due to differentiation in specific experience and knowledge with resource development. Group C respondents were asked questions which relate to their personal experience as renewable resource harvesters, while group A and B respondents were asked questions which relate to their past professional experience or as members of an organization, committee, group or general public.

When asked whether they thought that Aboriginal issues are effectively addressed in resource development projects, three respondents answered in the negative, while sixteen participants were undecided (Table 7). Some of the undecided respondents felt that each resource development project was unique in its approach to Aboriginal concerns and so they did not feel that they could give a general answer.

Table 7 Summary of Group A and B responses to specific questions on the involvement of Aboriginal people in resource development

Group A and B (n=19)	Yes	No	Undecided
Do you think Aboriginal issues (e.g. resource harvesting) are effectively addressed in resource development projects?	0	3	16
Do you think Aboriginal people play a significant role in decision-making in regards to resource development projects?	1	4	14

The participants who did answer this question indicated that, in their experience, Aboriginal people find development companies "foreign". The respondents explained that they felt that there was often a language and technical gap between Aboriginal people and developers. One Group A respondent explained that, in their experience,

> A company considers local issues minimal [in] their hierarchy of concerns. Not everyone benefits from development and governments and the general public typically fail to recognize that.

The respondent further stated that people, including Aboriginal peoples still participating in traditional activities and resource developing companies, visualize spaces differently and that important "*social, cultural and economic issues may vary from person to person and group to group*". The participant indicated that if a common vision of space is not found conflict over the use of land and resources may result.

The second question in this section inquired as to whether Group A and B respondents thought that Aboriginal people played a significant role in decision-making in regards to resource development projects. Again the majority of participants were undecided (Table 8). However, of the five participants who answered either 'yes' or 'no', one participant believed Aboriginal people played a significant role in decision-making while four participants believed that Aboriginal people did not. Those that answered in the negative explained that,

based primarily on their own experiences, they felt that Aboriginal people were often neglected in the decisions that affect them including those dealing with resource development.

Group C key informants were also asked specific questions in addition to the general questions of their involvement in resource development. Group C, comprised of those individuals who would be most greatly affected by winter shipping, were asked whether they felt that it was important to be involved in resource development. Responses were split, with six respondents indicating that yes it was important, three saying that they did not think it was important, and the remainder undecided (Table 8).

Table 8 Group C responses to specific questions on their involvement in resource development

Group C (n=14)	Yes	No	Undecided
Do you feel that it was important to be involved?	6	3	5
Do you feel that your concerns were addressed?	2	3	9

When asked whether they felt that their concerns were addressed or ignored, the majority were undecided, while two felt that their concerns were addressed and three respondents indicated that they did not feel that their concerns were addressed. Those who were undecided believed that it was too early to say whether or not their concerns would be addressed. Respondent's comments were based largely on past involvement in resource development projects. Those who indicated that their concerns were addressed felt that the company developing the resource or the body protecting their interests did a good job in addressing their concerns, which varied from environmental to health issues, for example. The three respondents who felt that their concerns had been ignored thought that more could be done to address issues raised by those affected by resource development.

5.7.4 Overlapping processes – General

Only the eleven Group B respondents were asked questions pertaining to overlapping processes. Processes in this research project include all agreements, negotiations and reviews which are typically included in resource development projects that involve an Aboriginal population. The responses outlined a number of problems associated with multiple processes occurring either concurrently or in rapid sequence. There were, for example, problems associated with negotiating an IBA during the EA process. Some respondents, not necessarily directly involved in the negotiations or review, found the processes overwhelming and, at times, felt intimidated by the number of experts and range of complex information presented during the public review process. In addition, some respondents felt that while the separate processes may not have slowed the project significantly, they still made it awkward to understand.

5.7.5 Overlapping processes – Specific to winter shipping

Specific processes in this study included the Labrador Inuit Land Claim, the VBNC-LIA IBA, the Shipping Agreement, and the Voisey's Bay EA. Seven of the eleven Group B respondents were, in some way, involved in the processes related to the Voisey's Bay project (Table 9). Of this, all were involved in the EA process; two in negotiating the IBA; four in the land claim; and two respondents were directly involved in the Shipping Agreement. However, the issue of winter shipping, according to these seven respondents, was a common theme throughout the processes.

Table 9 Group B responses to questions on the overlapping processes related to winter shipping

Group B (n=11)	Yes	No
Were you involved in any of the negotiations or processes that were concerned with the shipping route?	7	4
If so, what? In what capacity?		
EA	7	
IBA	2	
Land Claim	4	
Shipping Agreement	2	

VBNM winter shipping was first raised in the EA and gained in importance throughout the negotiation of the IBA and land claim, finally culminating in the Shipping Agreement. Four Group B respondents were not asked the question because they acknowledged that they were not involved in the negotiations or processes related to winter shipping. However, four respondents did indicate that there was a conflict due to the relationship between the processes, while two were undecided and a sole respondent did not believe there was a conflict (Table 10). The conflict, according to the four respondents, was primarily a result of overlap and the lack of capacity among the Labrador Inuit to work on the related processes and agreements. Three respondents indicated that there were simply not enough individuals with expertise in negotiating agreements in northern Labrador.

Table 10 Group B responses to questions on the overlapping processes related to winter shipping

Group B (n=11)	Yes	No	Undecided	No response
Did you notice any conflict(s) that was due to this relationship between processes?	4	1	2	4
Do you believe that the processes can be mutually reinforcing?	4	1	2	4

For those involved in the processes related to shipping the most difficult aspects were, for the LIA, having to consent to winter shipping in the IBA in order to ratify the IBA and, for all parties, coming to an agreement that would not significantly disrupt the lives of the Labrador Inuit. In addition, one Group B key informant indicated that,

> Some LIA members felt that there should be a double vote: one for the IBA that included all LIA members and one for voters in Nain on winter shipping because they would be the greatest impacted. It was a desperate attempt to account for the fact that benefits are shared, but impacts are not.

There was a similar division among Group B key informants when they were asked whether they felt that the processes could be mutually reinforcing (Table 10). The four respondents that believed the processes could be mutually reinforcing, owed this to their experience in watching the processes and agreements develop. While conflict due to the relationship between the processes was indicated, the four respondents believed that in the case of winter shipping the processes may have in fact reinforced the importance of the issue. As the issue was first introduced community members and LIA negotiators were mainly concerned with letting VBNC know how important the issue was and requesting that the company look for alternatives. The company, in turn, stood by its original claim that there were no economically viable alternatives and moved forward in preparation for winter shipping. According to the three Group B respondents who were involved in the related processes, at this point the issue of 'how' to safely ship in the winter became the primary concern for VBNC and winter shipping became the single most important issue for the Labrador Inuit.

5.7.6 Voisey's Bay Nickel Mine, winter shipping and the Labrador Inuit

The questions in this section, pertaining mainly to the processes involved in the development of the Voisey's Bay project, were asked of all respondents. Interview participants in all three groups were asked if they thought that the concerns of the Labrador Inuit were addressed effectively in the processes related to Voisey's Bay winter shipping. For example, eight respondents felt that the EA was sufficient, if not an excellent example of how to conduct a public review process, while two-thirds of respondents were either undecided or failed to answer the question (Table 11). At the same time, three respondents felt that Labrador Inuit

concerns were not addressed effectively in the EA. Of the respondents who were either undecided or unsatisfied with the EA, some felt that there could have been more local input and local submissions to the EA Panel, while others were skeptical as to how the government was to implement the recommendations of the Panel, or if they would be implemented at all. One Group A key informant stated that:

> I think there were a lot of opportunities to express your opinion, but I wouldn't say that all of the issues were dealt with. At the time, the Panel couldn't really grasp how big of an issue breaking the ice was to the Inuit. It was acknowledged, but wasn't really addressed.

Table 11 Summary of key informant response to questions concerning the processes and agreements related to winter shipping

Group A, B and C (n=33)	Yes	No	Undecided	No response
Do you think that the concerns of the Labrador Inuit were effectively addressed in the...Environmental Assessment?	8	3	5	17
...Impact and Benefits Agreement?	8	2	7	16
...Land Claims Agreement?	6	4	7	15
...Shipping Agreement?	5	0	3	25

Due to the confidential nature of the IBA, the majority of respondents could not or declined to comment on whether they felt that the concerns of the Labrador Inuit were effectively addressed in the IBA. For the respondents who did answer the question there was a general feeling that there was a lack of connection between negotiators and LIA members. Others, with skepticism similar to their comments on the EA, felt that the agreement itself was sufficient, but that there may be significant problems in monitoring the agreement. One Group B key informant indicated that,

> Check-up is self-evaluation. There is a checklist of commitments, but there should be a way of auditing objectives and how they have been met. There are provisions for meeting every year to see if the company is meeting the employment requirements and environmental monitoring requirements, but not for other *development-related* issues.

Respondents were somewhat more divided when asked about the Land Claim Agreement. There were six respondents in total who felt that the Agreement was adequate (Table 11). Four respondents felt that local concerns were not addressed at all, citing the removal of the VBNM footprint area by the Federal government during the Land Claim negotiations as an example of how not everyone was satisfied with the Agreement. A Group B key informant made the following statement,

> One thing never mentioned in the (land claim) process was that the VBNM land was originally covered by the land claim. The deal given to LIA at that time was not agreed upon for other reasons. All things were lumped together and had to be voted on all together. It was voted down and before LIA could get another Agreement-in-Principle into negotiation the VBNM land had been withdrawn. Access to the land is a problem for the average person. For a private company with support of the government and [the] LIA to take the mine site land out of the land claims is a concern for people who do not consider the land private.

While some key informants still feel that winter shipping is not necessary, five respondents argued that the negotiators did an excellent job of negotiating the Shipping Agreement, based on the information that had been made public since the signing of the Agreement in March 2005. However, the majority of respondents were either undecided or did not answer the question. 'Undecided' respondents indicated that they did not know enough to give an informed response, while those who did not provide a response did not provide a reason.

5.7.7 Labrador Inuit traditional activities

Questions related to traditional activities varied significantly between the three groups. Group A, B and C respondents were asked general questions, while only Group C participants were asked specific questions, due to their knowledge and experience with traditional activities. For example, all participants (n=33), were asked whether they could comment on the importance of traditional activities to the Labrador Inuit. Participants unanimously felt that traditional activities were of the utmost importance to the Labrador Inuit. Many respondents commented on how such activities are important to the Labrador Inuit, for reasons which include nutrition, cultural and spiritual maintenance and mental health. When asked whether, in their opinion, they thought that winter shipping will have an impact on the ability of the Labrador Inuit to participate in traditional activities; the majority of respondents felt that it would (Table 12). Most felt that there would be significant disruption to travel, access to resources and cabins, and freedom. In addition, many respondents pointed to the issue of safety and raised the question of whether everyone would willingly adapt to the new development or whether they would ignore the established safe crossing areas along the shipping route and the shipping times posted by the VBNC.

Table 12 Summary of responses to questions concerning Labrador Inuit traditional activities and winter shipping

Group A, B and C (n=33)	Yes	No	Undecided
In your opinion, will the winter shipping route greatly impact the ability of the Labrador Inuit to participate in traditional activities?	22	2	9
Do you think that anything more can be done to address these concerns?	11	3	19

There was a sense among respondents that not all potential hazards had been considered. The Labrador Inuit have a specific knowledge of the environment in which they live and function in, and they are concerned that their knowledge may have been overlooked. For example, one Group C key informant shared their knowledge of ice conditions,

> I heard DFO talking about Arctic ice conditions, but they don't know how the ice is different in different areas. It may refreeze further out, but not close to the bays. In the 1970s it didn't refreeze well because it was so warm out. Young ice on a calm night, for instance, will freeze over. I learned a lot growing up setting seal nets. Pack-ice is the strongest ice. If you break it up and then it refreezes, it is still strong.
>
> When the boat goes through on the shipping route, it will go through a mixture of young ice and pack-ice. It will take 2-3 nights to refreeze properly when it packs together. The ice may freeze on top, but be soft underneath. There are two layers of ice, water, ice, water, and ice. Once the frost goes the ice becomes softer. Snow ice doesn't harden at all. At the time of the last proposed run in April it may not refreeze at all.

When asked whether they felt anything more could be done to address concerns with winter shipping, most respondents (19) were undecided (Table 12). However, approximately a third of key informants did indicate that they felt that there could have been more done to address their concerns, including more consultation into shipping times with the individuals who actively use the area on either side of the shipping route, including cabin owners and other local hunters and travelers, and that more, easy to understand, information could have been provided.

A third of all key informants, regardless of their response, indicated that they, and most people that they spoke with, were uneasy with the date for the last day of shipping in April prior to spring break-up, as they felt that it would not allow sufficient time for the ice to refreeze properly. This concern is particularly significant as the greatest level of activity occurs in the spring months, because of the mild weather, longer days and greater abundance of traditional resource harvesting opportunities. For a few older respondents it is the only time they get out the land, because that is when it is easier for them to travel. In addition, one respondent indicated that spring is the most suitable time for their entire family to travel out on the land as a single unit, and was concerned for their safe, undisturbed access to their cabin.

> April and May is when our family comes out - our children and grandkids. We may lose being able to teach them if we can't get out to our cabin....the cabin is our second home. We use it as a base to go hunting and fishing. We are not bothered by anyone out there.

As a side note, the respondents who believed that more could be done to address concerns with winter shipping did not always believe it to be the responsibility of VBNC. In fact, one Group A respondent indicated a need for more accountable decision-making at the local political level, stating that more could be done, but that it...

> Depends on who is in power and what their agenda is, or what family member influences the process. People rely so heavily on their decision-makers (LIA). The public needs to become more involved, but we need to address some of the more pertinent social issues before the public has the capacity to be involved in any real way. Influences and leadership has changed. It used to be elders, but now people rely on other things to guide them. The whole process has become disconnected.

One Group B respondent pointed to a need to develop the relationship between the shipping company and the community of Nain.

> They did a good thing last year by bringing the captain of the MV Arctic and VBNC members on a trip of the shipping route with local Inuit. It allowed them to see how important the area and land-fast ice is to the Inuit, and allowed the Inuit to put a face on the ice-breaker. This type of relationship is vital. It would be beneficial if the MV Arctic did other things like bring supplies in the summer, because if all they do is break the ice then the relationship is weak. They have to understand what the local people know in order to react respectively.

Finally, of the fourteen respondents who did answer either yes or no, three felt that everything that could be done was done to address the concerns of the Labrador Inuit including safety and freedom of access, aside from not shipping in the winter at all.

Following the general set of questions, Group C respondents were then asked specific questions pertaining to the potential effect of winter shipping on their traditional activities. The majority of Group C respondents felt that their participation in traditional activities would

be affected by the route of broken ice created by the MV Arctic in winter shipping, in the same ways indicated by Group A and B respondents. These included concerns for safety, as well as disruption to travel, access, and freedom (Table 13).

Table 13 Group C response to questions concerning Labrador Inuit traditional activities and winter shipping

Group C (n=14)	Yes	No	Don't know
Do you think the winter shipping route will affect you?	9	2	3
Do you think the winter shipping route will affect members of your family?	9	2	3
Do you think the winter shipping route will affect anyone else?	10	1	3
Do you think the winter shipping route will affect wildlife in the area?	10	0	4

Further, Group C respondents felt that their family's ability to participate in traditional activities would be affected by the winter shipping route. All Group C respondents had other active family members or were concerned for the knowledge and skills that they themselves wished to pass on to their children and grandchildren. Some viewed winter shipping as a serious obstacle to safely accessing cabins and resources.

Aside from family, the majority of Group C respondents felt that winter shipping would disrupt travel and travelers in general along the north coast of Labrador. Participants indicated that participation in any traditional activity in the area of the shipping route would be constrained by disrupted travel. One Group C key informant stated that those who may be affected by the shipping route included,

> The entire community of Nain, as well as hunters from other communities along the north coast. They come up north to hunt caribou and partridge. Plus individuals won't be able to visit friends and relatives in the south as freely.

In addition, respondents indicated that the shipping route could potentially disrupt community interaction, including travel along the coast to visit friends and relatives and participate in community and recreational events, as relayed by one Group C key informant, "*People come up north hunting caribou and for recreational events like the annual dog-team race and Easter events. Plus it is just good for community interaction.*"

There was some indication that wildlife could also be affected by the winter shipping route. Group C respondents felt that there has already been a negative impact on fish and wildlife within and surrounding the Voisey's Bay Mine footprint area. One Group C respondent spoke of his own experience in the area:

> Wildlife has moved out of VB, and geese, in particular, have moved out of VB to the outer islands. I used to hunt in the area for caribou and geese throughout year, and seals in the summer. Now there is nothing.

Potential impacts due primarily to winter shipping, as indicated by Group C respondents, include alterations to bird and caribou migration routes, seal calving grounds and bird nesting areas. There was a great deal of information on the potential impact of shipping on marine mammals presented during the EA public review process (see VBEAPR 1999b and VBEAPR 1999c). The Panel, as indicated in their report, did not believe that shipping would have significant impact on marine mammals, but recommended continual monitoring of the route throughout the life of the mine. Local concern, however, was somewhat more immediate. When asked what local wildlife would be affected one Group C key informant responded, *"Mainly caribou, because they won't be able to get across. Also seals, especially the younger ones."*

5.7.8 The Voisey's Bay Nickel Mine project

Overall, respondents were divided as to whether VBNC addressed the issue of winter shipping effectively. Nine respondents felt that VBNC had done everything that they could to address the concerns of the Labrador Inuit in relation to winter shipping, while nine did not and fifteen were undecided (Table 14). This question was similar to a question in the previous section which asked whether participants felt anything more could be done to address

concerns with winter shipping; however respondents were asked in this question to voice their opinion of the Company's handling of the issue. Most respondents recognized that the issue of winter shipping was not clearly defined initially and VBNC did not consider it to be particularly important. Respondents in all groups felt that the VBNC had a set agenda from the start and was hesitant to stray from their course. Approximately a fifth of all respondents did not believe that winter shipping is necessary, but recognized the costs of alternatives, both in impacts to the environment and people and the economic cost to the company. In addition, a number of respondents did not feel that they knew enough to give an informed response. In total, 15 respondents did not provide an answer to the question.

Table 14 Group A, B and C responses to questions regarding VBNC and winter shipping

Do you think VBNC addressed winter shipping effectively?	**Yes**	**No**	**No response**
Group A (n=8)	1	1	6
Group B (n=11)	6	3	2
Group C (n=14)	2	5	7
Total (n=33)	9	9	15

On the other hand, there were nine individuals who felt that the company handled the issue to the best of their ability. One Group B key informant stated that,

> VBNC identified with LIA areas of highest use. There will be safe crossings established at these places. Safety is a priority of VBNC as seen in the Shipping Agreement and IBA. No one wants to witness the loss of life or equipment. The safe crossing areas will be flagged and certain coloured lights will be used. Yet this will all have to be learned by the people who use the area.

5.7.9 Additional Comments

Many respondents also went on to provide additional comments on their experience with the recent development at Voisey's Bay. There were comments on employment at the Voisey's Bay mine site, economic spin-offs, community and social issues due to the development,

harvesting compensation, and how the area has changed. For example, in discussing the issue of development, one Group A respondent indicated concern over harvesting compensation given to hunters whose harvesting areas were included in the VBNM footprint area.

> Harvesting compensation is another issue that is difficult to understand. I don't think it was distributed evenly. There is good fishing in the footprint area, but you can't fish there anymore. They could never pay enough for a lifetime of harvesting. The compensation was poorly planned and was not really discussed or negotiated.

5.8 Second Field Work Component Research Results

5.8.1 General Questions

To begin each interview key informants were asked to describe their impression of the first season of winter shipping. Of the Group C respondents interviewed three respondents were not affected by shipping, while two respondents, representing two families were affected. For example, these respondents indicated that they were unable to cross at a certain time due to the 'unsafe' designation at the crossing areas. One respondent was particularly upset with VBNC's scheduling of shipments and the lack of timely information regarding the final shipment of the season. The respondents who were not negatively affected by the winter shipping route indicated that they crossed the route when it was safe to do so, and they did not have to significantly alter their schedule to do so. All Group C respondents interviewed in the second field season crossed the designated areas of safe-crossing along the shipping route at least once, and in some cases, multiple times.

Group B respondents felt that the first season of winter shipping had gone well. One respondent felt that a shorter first season was a good opportunity to address any of the problems that arose. However, Group B respondents interviewed in the second field work component did not cross the winter shipping route or use the area to participate in traditional activities.

5.8.2 Safety

Key informants were then asked questions related to safety along the shipping route. Group C respondents found the designated crossing areas safe and well marked. Safety was the key issue for the Nunatsiavut government and VBNC. VBNC was obligated under the Shipping Agreement to hold an open house prior to the winter shipping season. In November 2005 VBNC held an open house in Nain to discuss any of the safety issues people may have and generate ideas of how these issues could be addressed. This, according to a Group B respondent was followed by a debriefing meeting which included representatives from VBNC, the Nunatsiavut government and Sikumiut Environmental Management. At the meeting a plan of how to address the issues that had arisen during the open house was formulated.

5.8.3 Access

When asked questions related to whether accessibility to cabins and traditional resources have changed as a result of the shipping route, Group C respondents felt that the shipping route did not have a significant affect on their access and participation in traditional activities. However, one Group C respondent felt that it could potentially have an effect over the long-term, stating that, "*It will always affect us because we can't avoid it. We have to cross it to get to our cabin.*" Group B respondents did not actively use the area and so declined from responding to questions concerning accessibility to Inuit traditional areas and resources.

5.8.4 Communication of Information

Next, key informants were asked questions related to the communication of information related to winter shipping. Most Group C respondents interviewed were satisfied with the communication of information related to shipping times and the location and condition of safe-crossing areas. A few Group C respondents felt that updates on the condition of safe-crossing areas were inadequate, and one respondent was unsatisfied with the timing of the second shipment: "*There was a problem, this year with letting people know in advance. Even the people who were supposed to know didn't know until a few days before. Then it is hard to let everyone know.*"

Group C respondents said they were notified of shipping times and areas of safe crossing by the maps and notices left in the mailbox of every householder in Nain prior to the first shipment, word of mouth, local radio, posters on signs leaving Nain Bay, and signs out by route. Maps and information pamphlets were sent to every household in Inuit communities on the coast of Labrador and the Innu community of Natuashish. The information sent to Inuit communities was in English and Inuktitut and the information sent to Natuashish was in English and Innu-aimun.

5.8.5 VBNM winter shipping route

Key informants were then asked specific questions about the shipping route, including the conditions along the route, and, in particular, at the designated crossing areas and rates of refreeze. Two Group C respondents felt that it took a long time for the ice to refreeze properly along the route. They felt that this was primarily related to mild winter temperatures. Group B respondents also found that the ice refroze a lot slower than originally projected and that this may pose future problems for travelers

5.8.6 Environmental Conditions

Group B and C respondents felt that the season's environmental conditions were the single most significant factor in their participation in traditional activities. The winter was unseasonably mild. One Group C respondent explained that,

> There was no ice this year. There was lots of snow before the ice froze, that is why it was no good. If ice freezes without snow then it is good. It didn't this year. The ice melted early and when it started raining, the rain spoiled it after that. The ice started to melt in April.

When asked whether the season's environmental conditions were significantly different than those of previous years' one Group C respondent stated that,

> Yes, it was milder. Last year we still went out to the cabin on the ice in May. One year we actually went out on June 21st. There used to be good ice until the middle of June. Young people that lost skidoos don't know what the ice is like. The young people don't listen to older people. They think the skidoos can do anything.

5.8.7 Traditional activities questions for harvesters

Group C respondents were asked questions related specifically to their past, present, and future participation in traditional activities. Key informants were first asked whether they got out on the land this winter season as often as they had anticipated. All five respondents replied that they did not. This, again, was due to the mild winter conditions as one Group C respondent relates that it was:

> ...because of the ice. It looked good on top, but didn't freeze underneath. It went first from the bottom and then you just didn't know. The rain didn't help. There was no wildlife this year. My husband got two geese, but I think he was just lucky. There were no caribou. We couldn't even get to the pond where we go fishing because the ice wasn't good enough.

However, a Group C and a Group B respondent felt that people, aside from Nain residents, were also affected by the winter shipping route. They stated that there were various reasons for this including, problems with how the signs at the areas of safe-crossing were written and lack of information for travelers from the south headed north. Concerns related to the provision of information were also raised in an OK Society radio interview with Theresa Hollett, IBA coordinator for Nunatsiavut government and Isabella Pain, Inuit Affairs Officer, VBNC, on February 10, 2006. Innu speaking travelers are concerned that safe-crossing signs, telephone messages, and notices were not translated into Innu-aimun and Innu travelers, specifically those heading north from Natuashish, would not be able to safely cross the route when they needed to.

In addition, there were problems with the signs themselves. A Group B respondent, relaying first-hand information, stated that some travelers only glanced at the print at the top of the sign, which read: 'Safe Crossing' in big bold lettering (Figure 15). While below the sign stated whether it was truly "safe" or "unsafe" with dates and times indicating as to when it was safe/unsafe to cross and giving details of the ship's movement.

(Source: Sikumiut Environmental Management 2006)

Figure 15 Sign at area of safe-crossing

Group C respondents were then asked whether they could think of anything that may need to be addressed with winter shipping in the future. One Group C key informant felt that the shipping schedule should be worked out a lot earlier. In addition, one Group C key informant, as in the first field work component, felt that the last shipment of the season will be particularly troublesome, stating that:

> April is not a good month because it is too hot. The ice won't refreeze the same way. I don't think they (VBNC) should ship in March. Just until February. Maybe like January and February and then stop from March to May.

5.8.8 Research Conclusions

The first season of winter shipping, though shorter than originally intended, was a useful test trial for the Labrador Inuit and VBNC for a number of reasons. For example, the company was able to address many of the problems as they arose, especially those related to Labrador Inuit traditional resource harvesting. In this, the Nunatsiavut government worked in conjunction with the company on improving key issues, such as access to available information, scheduling, and signage. In addition, the company, Nunatsiavut and Sikumiut Environmental Management met in the fall of 2006 to work out any final details prior to the second season of winter shipping.

The findings of this thesis demonstrate the importance of VBNM winter shipping to those most affected by shipping, the Labrador Inuit. The Labrador Inuit believe that participation in traditional activities continues to be essential in defining them as a distinct people. As such, winter shipping should not be allowed to act as a barrier to accessing traditional areas and resources. Rather, this component of the larger mining project should work to incorporate the concerns of the Labrador Inuit, to develop in a sustainable fashion through proper management and mitigation. As the findings suggest the company *has* demonstrated a commitment to addressing Labrador Inuit concerns in this regard. However, there is not enough conclusive data to say whether Inuit concerns have been completely overcome. In the years to come the findings in this thesis can be used by the Nunatsiavut government and

VBNC alongside regular follow-up, to help manage the winter shipping route. This is important as conditions may change from year to year.

As Labrador Inuit traditional activities are largely dependent on the weather, how to adapt these activities to changing environmental conditions will also have to be given more thought. Inuit must learn to adapt to the effect of environmental conditions on participation in traditional activities, as was noted by key informants following the first season of winter shipping. However, it is possible to manage winter shipping so that it is not a catalyst for further disruption of the activities. The company and government should work together to find solutions to problems along the route that are attributed to changing environmental conditions, including fluctuating rates of refreezing of the ship's track and the scheduling of the first and last shipment of the season. The environmental conditions of each season will be somewhat different; therefore it will be important to monitor these issues on a season-to-season basis, managing changes as appropriate. In this way, the company will continue to recognize the Labrador Inuit's place in this mining project, and as a result, can incorporate the Inuit's contribution towards sustainability as they assess their own role in sustainable development.

5.9 Research Issues

The study was designed to incorporate the knowledge, experience and opinions of a range of individuals. By using categorization and an informal interview style, the researcher was able to capture information from three specific groups of people, without significantly varying the design and delivery of interview questions. However, there were research issues related to design, specifically involving the choice of interview style, question design, analysis, and in the presentation of results. The following sections discuss these research issues in some detail.

5.9.1 Cross-cultural communication

Cross-culture communication issues were not particularly problematic in this study. However, there were difficulties in reaching potential interview participants which could be attributed to cross-cultural differences. For example, some Inuit resource harvesters may have been

hesitant or reluctant to talk to a southern academic researcher or even simply a student from Memorial University, and therefore did not participate in this study. There may also have been those who did not participate because they were exhausted from participating in studies, given the number of surveys, information sessions, and research projects community residents have been subject to in recent years, as a result of the mining development and land claims.

The potential for miscommunication and misinterpretation is constant; however with careful planning and patient explanation this can be minimized. Research support granted by Sikumiut Environmental Management prior to the first field work component helped expose the researcher to the social climate of northern Labrador and make connections with decision-makers and residents that might have otherwise not been made; having already been introduced to a number of interview participants prior to the first field work component, participants felt comfortable to elaborate on a variety of topics.

In order to alleviate potential miscommunication a topic that was current and significant to the Inuit was chosen. Winter shipping had yet to begin when the first field work component was undertaken and the first trial season had just ended when the second field work component was conducted. Therefore many of the technical aspects of winter shipping had already been discussed among community members.

5.9.2 Confidentiality

The fifth question in the 7QS could not be fully explored in key informant interviews due to confidential resource harvesting data collection commissioned by the Nunatsiavut government. For example, specific resource harvesting questions that were originally asked in key informant interviews for this study could not be included in this thesis at the request of the Nunatsiavut government. An agreement was made with the Nunatsiavut government to include harvesting questions prior to the onset of interviews, but changed as interviews progressed and questions were finalized. This work does, however, retain the general knowledge of those individuals who utilize the area of the proposed shipping route.

5.9.3 Choosing an approach for particular audiences

The project was designed to study the theoretical concept of the contribution of mineral resource development to sustainability. More specifically, the objective of this study was to capture the knowledge of key informants who are employed in the development of mineral resources or are employed by those who have been affected by mineral development, and/or have been affected themselves in order to generally assess the way in which traditional activities were accounted for as part of the understanding of how mining and mineral activities contribute to sustainable development. To facilitate the gathering of this information the interviews included both open and closed questions on a variety of topics. Key informants were comfortable with this format, relaying a range of responses on all topics related this thesis.

5.9.4 Research design

The categorization of individuals can be problematic for a number of reasons. In this case study, categorization was not an issue, as the purpose was to gather a wide range of information on a variety of topics related to this thesis. From the three groups of respondents different knowledge and experience was accessed. For example, a Group B key informant relaying their experience in working on a resource development project in a professional capacity had a different opinion to offer compared with a traditional resource harvester in Group C.

Due to the small number of individuals with leadership and professional experience, there are only a few people to act in leadership capacities in the community. This overlap was problematic as certain participants were unable to answer questions because of their previous or current employment or associations. The restructuring of the Nunatsiavut government played a role in compounding this issue. Such overlap enabled further discussion on how 'conflict of interest' is understood in small communities, yet detracted from the specific data gathering purposes of those particular interviews. As a result, the information gathered from some of the respondents with significant, direct experience with the winter shipping was limited.

In addition, some key informants felt that the information from those filling multiple roles in the community was inaccurate due to their overlapping commitments. This led to a certain degree of tension when discussing winter shipping and related background information during specific interviews with those key informants, as they felt certain individuals involved in community/company politics played a significant role in determining the direction that the community should follow and hence the decisions that were made in relation to the mine and its activities.

On the other hand, such overlap can also be beneficial as some key informants who filled multiple roles in Nain also had the ability to understand things from more than one perspective and could comment accordingly.

Moreover, given the range of key informants and topics covered in the interviews, a lack of information provided by certain respondents due to 'conflict of interest' was compensated by the information provided by other respondents on most topics.

Aside from research issues related to the choice of key informants, the form of recording responses, note-taking, was also problematic. Without the aid of recording devices, such as a tape-recorder, it was difficult to verify the accuracy of interviews. In this study accuracy was determined by returning interview transcripts to respondents for verification. However, the memory is not always completely reliable and responses can never be guaranteed to be completely accurate. That said a benefit of using this style was in allowing respondents to add comments following the interview after they had had time to further process the questions and their initial responses.

Finally, while it is not possible to know whether non-response bias was a problem, the study did have the potential for it. Many suitable participants were not used in the study for reasons related to time and resources. Either the researcher did not have enough time or the resources to interview all potential participants, or participants were not available at the time when research was being conducted. Lack of availability may have also been due to a number of

factors, including participating in traditional activities, employment, personal obligations or a reluctance to participate in the study for various reasons. For example, the most popular reason for not participating in the second fieldwork component for key informants who participated in the first was a feeling that they had nothing more to add to the study. In some cases, this feeling was related to a lack of direct experience with the winter shipping route, which is the result of not being able to participate in traditional activities due to environmental conditions *i.e.* a milder than usual winter.

6. Mining, Traditional Activities and Sustainability

6.1 Sustainability and Mining

The movement to assess the role of non-renewable resource development, including mining and mineral development, in sustainability has gained momentum in recent years. The working concept focuses on how humanity can find a balance in development, taking into consideration the positive and negative effects of development. For example, the positive contributions of development to individuals, groups, and communities, including benefits such as monetary compensation, investment in infrastructure, employment, education, and training are being incorporated into measures of sustainability. In attempting to measure sustainability MMSD-NA focused on finding harmony between human and ecosystem requirements; the 7QS Report was developed to offer clear and practical guidelines to apply sustainability at the project or operational level (IIISD 2002).

However, a variety of issues remain in moving from theory to practice in assessing the contribution of mining in sustainable development. The process of implementing the 7QS has been debated, but not fully developed (IISD 2002). The IISD recommends more pilot tests of the 7QS framework to aid in the design and implementation of a practical 7QS approach. This includes more a detailed examination of the role of Aboriginal peoples and Aboriginal traditional activities in mining and mineral development, especially where there have been no previous agreements with affected or potentially affected Aboriginal groups.

Moreover, the seven questions were developed to measure seven different components of the contribution of mining to sustainability over the long-term of a mine project. This includes the entire life cycle of a mine or mineral development, with each question designed to take a certain component of the cycle into consideration. This thesis, for instance, focused on how traditional and non-market activities in the community and surrounding area are accounted for in a way that is acceptable to the local people. This included measuring levels of activity, dependency on traditional activities and resources, and the importance of continuing or discontinuing participation so that potential variations in participation will become clearer as the project proceeds (IISD 2002). It was not within the scope of this research to consider the

effect of the overall project on the Labrador Inuit, though in order to more accurately measure the contribution to sustainability of the project the net positive and negative affects of the entire life cycle of the mine would need to be considered.

The following sections examine how sustainability in one component of the 7QS can be measured through a study of the effects of the VBNM winter shipping route on the Labrador Inuit. This includes a more general discussion of the role of mining in working towards sustainability, focusing on the 7QS framework and, in particular, on how Aboriginal traditional activities are accounted for in mining and mineral development. The final section of this chapter explores future research considerations highlighted through this thesis and the MMSD project.

6.2 Voisey's Bay winter shipping and the Labrador Inuit

The specific focus of this thesis was to examine whether the effects of the VBNM winter shipping route on the traditional activities of the Labrador Inuit were accounted for in a way that was acceptable to the Labrador Inuit. In this particular case study, an open dialogue between VBNC and the Nunatsiavut government, which evolved as both parties realized the importance of the issue, enabled the Labrador Inuit to voice their concerns in regards to winter shipping. Through the hard work and determination of a number of individuals and Inuit families at the grass-root level the importance of breaking the ice and how it relates to traditional activities has been acknowledged by VBNC to begin to incorporate Inuit concerns into the decision-making and management of winter shipping. The company has introduced mitigative measures to address particular issues related to the route including, first and foremost, safety and access.

Instituting mitigative measures that are designed to address issues that affect traditional activities are essential to the sustainable economic, social, and cultural development of the Labrador Inuit. This was emphasized in key informant interviews for this study, by the importance given to the potential impact of winter shipping on Inuit traditional activities. The majority of key informants felt that traditional activities were essential to the Labrador Inuit,

for reasons such as maintaining the culture, as well as mental, physical, and spiritual health. It was important that the Nunatsiavut government and VBNC gain the trust of the Inuit in order to contribute positively to sustainable development. For example, the Labrador Inuit have been able to express their opinions and offer input, which, at times, has been useful in decision-making and developing management policies.

If concerns that the winter shipping route would make travel on sea-ice in the area potentially unsafe and would limit access to areas and resources had been ignored or not comprehensively addressed, then the criteria of one of the 7QS would not have been met. As there are few roads on and around Nain, the main method of winter transportation for all local people is snowmobile; thus a section of open or broken ice across a major travel route raises significant concerns for the safety of travelers, as well as for the disruption of travel, and access to resources and cabins.

Specific concerns indicated by the Labrador Inuit, that needed to be addressed closer to the shipping season as part of the detailed arrangements, related to communication of shipping times and areas of safe crossing. Key informants believed that there should be more, easily understood, information available and additional consultation into appropriate shipping times with the people who would be most greatly affected, including those with cabins near the shipping route and those who frequently travel across the route. As noted previously there are approximately 500 individuals in Nain who travel throughout the land in winter. However, those who travel across the winter shipping route to access traditional areas and resources on a regular basis will be considerably fewer than those who do so infrequently. Given that there are only 10 Allâsimavet near the winter shipping route that are accessed on a regular basis in the winter, and that there are many other traditional harvesting areas that can be accessed without crossing the route, an estimate of the Labrador Inuit traditional resource harvesting population who frequently travel across the route would be approximately 100 individuals. These levels indicate that participation in traditional activities remains high and an important part of the local economy and culture.

Key informants were also greatly concerned about the date for final shipments of the winter season, believing that the ice would not refreeze properly at the end of March-beginning of April. This, respondents feared, would significantly limit their traditional activities as March-April is a busy time for resource harvesting.

The most significant problem for the Inuit, however, was that they were left with very little alternative but to agree to winter shipping. The issue acted as a deal breaker in negotiating the IBA *i.e.* no winter shipping, no IBA. Once the Inuit had accepted the terms of the IBA, then the question was whether their concerns were addressed in an acceptable way. Following the first season of winter shipping, respondents were divided in response to whether they felt that their concerns had been reasonably addressed. For this reason, it will become increasingly important to continue to measure the levels of participation in traditional activities to note any variation over the lifetime of the mine. To determine whether the fifth question has been properly addressed, example indicators of variations that could be attributed to winter shipping include discontinued or decreased participation in traditional activities, travelling to different areas or accessing different resources. However, it is important to recognize, especially for those collecting and analyzing information on traditional activities, that these changes in the activities could also be attributed to a variety of other reasons, including changes in traditionally harvested resource populations, changing weather patterns, and warmer average temperatures. Changes in traditional activity patterns are thus likely to be the result of a complex set of factors, the contribution of each of which may be difficult to determine.

It became evident following the first season of winter shipping in 2006 that VBNC has shown a commitment to addressing the concerns of the Labrador Inuit in relation to winter shipping, with particular emphasis on issues related to safety. The company has not only honoured the Shipping Agreement, by addressing winter shipping concerns, such as a lack of access to information, inappropriate information, and scheduling problems, but has also gone beyond to include the concerns of the Innu, as well. These include, for example, communication of the shipping schedule to Innu who live in proximity to the shipping route, such as residents of

Davis Inlet, and the modification of signs and notices provided by the company that will have Innu-aimun translations of all information prior to the second season of winter shipping. In addition, the company has begun to address the other issues by, for example, posting their 2007 shipping schedule, redesigning signs with more easily read information at the areas of safe crossing for the 2007 season, and providing greater access to information by increasing the amount of detail provided on the phone message and internet.

In the second year of winter shipping, in 2007 it will be important to see whether VBNC remedies all problems raised in the first year. It will also be important to assess the effects of a full season of shipping on Labrador Inuit traditional activities. For example, a significant concern of the Labrador Inuit, and one which will require ongoing monitoring was the impact of shipping in March-April on traditional activities. The final shipment of winter, 2006, left port at Edward's Cove on February 20th, six and half weeks before the negotiated end of the shipping season on April 7th. If the final shipment had been closer to the end of the shipping season the ice might not have completely refrozen. It will be critical to monitor any variations in traditional activities during these months on an annual basis. This information is currently being collected for the Nunatsiavut government by a private consulting group. This is significant, for as mentioned earlier these months are perhaps the most important to traditional resource harvesting in terms of the transmission of knowledge and skills, and the social evolution of the Inuit people by including the participation of all family members and elderly individuals. Any changes in participation may influence future participation overall and thus affect the contribution of the mining process to overall sustainability.

However, 2006 was an unseasonably mild winter and the ice began to break-up naturally well before it has in past years. As a result of these cumulative effects, traditional resource harvesters were unable to travel safely on the ice in the spring months of 2006, limiting their participation in traditional activities. In fact, changing environmental conditions may have more significant impact on the level of participation in traditional activities than the winter shipping route. Although not explicitly written into the Shipping Agreement, environmental

conditions may have an effect on the route's refreeze rate and must be taken into consideration.

Additional confounding variables, such as changing cultural practices, must also be addressed when considering the continued role of traditional activities. For example, Labrador Inuit youth are essential to the continuation of traditional activities; however, the youth are becoming less interested in the participation in the activities, and more drawn towards wage-based employment. If maintenance of traditional activities is already vulnerable because of changes in other exogenous factors, then the shipping route issue, if not carefully addressed through appropriate mitigative measures, will add to the difficulty in isolating particular causal factors which have an impact on the long-term viability of traditional activities in the area.

6.3 Continuing Sustainably

In order to accurately gauge the effect of mining and mineral development on Aboriginal traditional activities, ongoing follow-up will be necessary. Periodic monitoring and evaluation should be made to measure change now that shipping has begun. It will be important to continually address change in the type, amount, and participation in traditional activities with the Labrador Inuit, as their perception of this change may be different from actual changes that occur in these areas. For example, as a culture, they may not be willing to recognize the social variables that could significantly change traditional resource harvesting. Instead, some individuals may be more willing to blame negative changes on development, including the VBNM and winter shipping route. For these reasons ongoing follow-up coupled with regular communication is essential to assessing the Voisey's Bay mine's contribution to sustainability.

As mining progresses and the issue of compensation for impacts of the mine on Labrador Inuit traditional activities is legally finalized, then more detailed baseline information may be made available from the Nunatsiavut government, which is currently collecting the information. These data can be used to measure the level of participation and indicate any

variations in participation prior to the first season of winter shipping and all seasons thereafter. The data could also be useful in determining the characteristics of those involved, including age, gender, and employment. In addition, the data could be used, in conjunction with this study, to discuss the issue of mining's contribution to long term sustainability.

6.4 Future Research Considerations

This research provides the Labrador Inuit with an initial explorative study of the effects of the VBNM winter shipping route on Labrador Inuit traditional activities. The project can be beneficial to the Labrador Inuit in a number of areas. For example, as resource development has now begun to move into northern Labrador the study can aid the Inuit in planning for long-term sustainability in the region, included as part of their comprehensive land claim and now managed by the Nunatsiavut government. By using the study as an illustration of the region's current capacity for dealing with the development of non-renewable resources and how development is perceived by individuals in the region, the local government can better plan for the management of future non-renewable resource projects.

In addition, the data collected from individuals in this study, in general, and traditional resource harvesters, specifically, can be valuable in giving direction to the Nunatsiavut government in managing traditional resource harvesting issues. For example, the government can explore the significant issues of band and community members, noted in the interviews and make an effort to address them now and in the future. This could include immediate issues, such as compensation for disruptions to traditional resource harvesting, including limited access to areas and resources due to the Voisey's Bay project. It could also include long term issues, such as beginning to prepare for the impact of climate change on traditional harvesting.

The research, including the discussion of traditional activities over the long term can also be relevant to the promotion of the Labrador Inuit culture, which is intimately tied to the land and participation in traditional activities. The study outlines the evolution of Labrador Inuit traditional activities and focuses, in particular, on contemporary changes in traditional

activities. Local government and the VBNC can work together to highlight and celebrate the importance of traditional activities to the Labrador Inuit as detailed by this research.

In assessing the contribution of the mine to sustainable development, the project can aid VBNC in playing a significant role in the long-term sustainability of the area, which incorporates the environmental and social concerns of local people. The findings, specifically comments made by interview respondents, can help direct VBNC policies. However, the company must continue to incorporate the concerns of the Labrador Inuit into their decision-making over the course of the mining project. In doing so the company will recognize the importance of local people affected by resource development and gain a better understanding of how public participation in a mining project can contribute to sustainability.

The study also determined multiple avenues of research that require further development. First, assessing the contribution of mining to sustainable development needs to be further explored. This includes conducting additional pilot tests of the 7QS framework at various intervals of a resource project's development. In particular, there should be a continued focus on the effect of development on Aboriginal and non-Aboriginal traditional and non-market activities and what is done to address these effects.

Next, an area of research that needs immediate attention is examining the relationship between Aboriginal people and natural resource development. This would involve an increase in the number of specific case studies exploring the issue and a comparison of issues relevant in each study to form a compendium of best practices. This, in turn, could be used in defining clear management policies for companies developing on or adjacent to Aboriginal traditional lands and Aboriginal groups addressing development. This is particularly relevant as many non-renewable resource projects in the north and throughout the world affect Aboriginal people. While this project has focused on northern Canada, similar examples of the effects of mining and mineral development on traditional activities can be found elsewhere.

Further, it is important to continue to study the social impacts of development, as social science researchers are attempting to understand development in its entirety, including how the impacts of development may have long-term repercussions on local peoples. Although Aboriginal and local peoples, in many areas of the world, have become integral to the resource development process it is important to understand how they use their voice in the assessment and decision-making processes, and how this contributes to sustainable development.

It is also important to recognize that every Aboriginal population is unique and while studying similarities would be highly beneficial, a 'cookie-cutter,' 'one size fits all' approach to studying the relationship between Aboriginal people and natural resource development would not be effective for each group.

Aside from Aboriginal peoples being part of the resource development process, another topic that needs a great deal of attention, as was noted in this study, is that there are other stronger forces that work to discourage participation in traditional activities. For example, the level of participation by the Labrador Inuit in traditional activities is largely dependent on environmental conditions. Mild winter weather as seen in the first season of winter shipping had a greater effect on participation than the winter shipping route. Additional factors, such as increasing employment opportunities, changes in daily routines, and greater access to a wider variety of food types can also impact levels of participation in traditional activities.

For their part, the Nunatsiavut government must work hard to continue to protect the rights of the Labrador Inuit to participate in traditional activities. VBNC must also continue to minimize their impact on traditional resource harvesting. Yet perhaps the most important lesson gained in this study is that it is not solely up to the government or resource developer to support traditional activities. It is the role of each individual to determine whether they want to continue to harvest traditional resources and access traditional areas. If the Labrador Inuit do want to continue to practice a traditional lifestyle then it is vital that they let the local

government and VBNC know, for if they have no desire to continue then the local government and VBNC have no reason to support traditional activities.

This research focused on how Aboriginal traditional activities, and essentially how Aboriginal culture, are addressed in non-renewable resource development. In discussing the relationship between development and the conservation of cultural attributes, this thesis employed a progressive model of assessing the contribution of mining to sustainability and determined that there are other factors that discourage participation in traditional activities that are not included in discussion of mining's role in sustainable development. These factors, including weather conditions and cultural change may have a significant impact on traditional activities and should be included in future models of assessing mining's contribution to sustainability.

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Appendix A – Sample Interview Questions

Interviews were semi-formal, but structured using the following questions as the basis for further discussion. The questions listed, delineating between Groups and field work components where applicable, represent the essence of what was asked of participants, yet the resulting interviews were conversational in context rather than in the formal question and answer context.

A.1 – First field season

General questions – Contextual (Group A, B and C)

1. Are you aware of the Voisey's Bay Nickel Mine Project?
2. If so, are you aware of the issue of winter shipping in relation to the Voisey's Bay Project?
3. What can you tell me about winter shipping?

Involvement in resource development – General (Group A and B)

1. Have you ever been involved in a resource development project?
2. In what capacity? (e.g. member of the public, company representative, negotiator, environmental assessment panel member, etc.)
3. In your opinion, what role does the public play in the decision-making process?

Involvement in resource development – Specific to Aboriginal People (Group A, B and C)

1. Do you think Aboriginal issues (e.g. resource harvesting) are accurately addressed in resource development projects?
2. Do you think Aboriginal people play a significant role in decision-making in regards to resource development projects?

VBNM, winter shipping, and the Labrador Inuit (Group A, B and C)

1. Do you think that the concerns of the Labrador Inuit were reasonably addressed in the...Environmental Assessment?
2. ...Impact and Benefits Agreement?
3. ...Land Claims Agreement?
4. ...Shipping Agreement?

Traditional activities (Group A and B)

1. Of what importance are Traditional Activities to the Labrador Inuit?
2. In your opinion, will the winter shipping route greatly impact the ability for the Labrador Inuit to participate in traditional activities?
3. If so, how?
4. Do you think that anything more can be done to address these concerns?
5. If so, what?

Voisey's Bay Nickel Mine Project (Group A, B and C)

1. Do you think VBNC addressed winter shipping effectively?
2. Why is winter shipping so important?
3. What are the advantages and disadvantages to winter shipping?

Overlapping Processes – General (Group B)

1. There is a potential for conflict between processes concerned with resource development, due to a number factors (e.g. timing and confidentiality). Did you notice any overlap between the content negotiated in the separate agreements or processes?
2. Did you notice any conflict(s) that was due to this relationship between processes?
3. What was your opinion of the processes? Do you believe that they can be "mutually reinforcing"?
4. In your opinion, what was the most difficult aspect of negotiating agreements or in the case of EIA, review?

Overlapping Processes – specific to winter shipping route (Group B)

1. Were you involved in any of the negotiations or processes that were concerned with the shipping route, such as the environmental assessment?
2. If so, what?
3. Did you notice any conflict(s) that was due to this relationship between processes?

Involvement in Resource Development (Group C)

1. Have you ever been involved in a resource development project?
2. In what capacity?
3. Do you feel that it was important to be involved?
4. Do you feel that your concerns were addressed or ignored?

Traditional activities (Group C)

1. Do you, yourself actively participate in any traditional activities?
2. Do you think the winter shipping route will affect you?
3. If so, how?
4. Do you think the winter shipping route will affect members of your family?
5. If so, how?
6. Do you think the winter shipping route will affect anyone else?
7. If so, how?
8. Do you think the winter shipping route will affect wildlife in the area?
9. If so, how?
10. Do you think that anything more can be done to address these concerns?
11. If so, what?
12. Who should address these issues?

Voisey's Bay Nickel Mine Project (Group C)

1. Are you aware of any alternatives to shipping in the winter?

A.2 – Second field season

General Questions – Contextual (Group B andC)

1. Now that the first season of shipping is finished can you tell me, in your experience, what happened?
2. Did everything go as you expected?
3. If not.....
4. Did you yourself cross the shipping route in the winter after the ship had passed? (how many times)
5. Did you use the designated crossing areas? (each time, some of the times, never)

Safety (Group B andC)

1. Did people have trouble finding the designated crossing areas?
2. How were they "signposted"?
3. Did people feel safe using the designated crossing areas?
4. Were there any accidents/incidents, occasions when people couldn't/wouldn't cross, other disruptions to usual movement?
5. Was there any difference between generations concerning in:
   (a) Who used the designated crossing sites and
   (b) Who felt safe using the designated crossings?

Access (Group B andC)

1. Has the land and resource use of the area around the shipping route changed?
2. If so, how?
3. Do you think the shipping route will have any long-term effects?

Communication of Information (Group B andC)

1. Were shipping times communicated to you?
2. Were ice conditions communicated to you?
3. Were the locations of crossing sites communicated to you?
4. If so, how was this information communicated to you? (internet, radio, telephone, tv, word of mouth?)
5. Was the information appropriate?
6. Were able to access the information when you needed to?

VBNM winter shipping route (Group B andC)

1. Is the Shipping Agreement fixed or is there room for modification?
2. If, for example, environmental conditions such as times of freeze-up and break-up change?
3. Given what you have seen in the past few years do you think there will ever be a need for modification of the Agreement?
4. Did the ice refreeze along the route this season as suggested?

5. How were the conditions along the route, and, in particular, at the designated crossing areas?
6. Were the designated crossing areas effective to you? Did they work well?
7. Were the designated crossing areas put in the right places at the right times?
8. Were the designated crossing areas the same every time the boat went through?
9. (If different) why were they different?
10. What were the implications if there were any differences?

Environmental Conditions (Group B andC)

1. What was the weather like in northern Labrador this winter/spring?
2. Was it different than in previous years?
3. What was the snow cover like?
4. Did the ice freeze-up at the same time as previous years?
5. Did the ice break-up at the same time as previous years?
6. Can you describe what this winter's ice was like?
7. Do you think the environmental conditions will be any different next year?

Alternative traditional activities questions for harvesters (Group C)

Last Year

1. Did you get out on the land this winter season as often as you anticipated? (This might be the first question which could lead into a discussion of why things were different
2. If not, were there any reasons why you did not go out on the land as often as in previous years? (Environmental conditions, VBNM winter shipping route, i.e. safety, access?)
3. On the basis of this year's experience can you think of anything that needs to be addressed with the winter shipping?
4. Were there any positive affects of the winter shipping route? (eg. seals more readily available, area of open water – which acts like a rattle)
5. Did the winter shipping route affect members of your family?
6. If so, how?
7. Did the winter shipping route affect anyone else?
8. If so, how?
9. Did the winter shipping route affect wildlife in the area?
10. If so, how?
11. Was there any compensation offered to those particularly affected by the winter shipping route?
12. Did anybody have to relocate their cabin because of the route?

Future

1. Can you think of anything that may need to be addressed with winter shipping in the future?
2. Do you think you will continue to access both sides of the winter shipping route?

Past

1. Have your resource harvesting patterns changed in the last 20 years?
2. Do you still access the same areas?
3. Do you still access the same resources?
4. Do you take your children out on the land as often as you went out when you were a kid?
5. If not, why not?
6. Do you think this is general of all people?
7. Is traditional resource harvesting still informal or is it becoming more formally organized with planned hunting camps/groups going out on the land?