Four Perspectives on Ecosystem Research Priorities in Labrador

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Environment Canada Environnement Canada

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Preface

From the perspective of ecosystem science, Labrador is probably the least studied region in North America, and consequently there is less understanding about the ecosystems, bio-diversity and climate of Labrador than there is about anywhere else across the Canadian North - and likely throughout the continent. Nevertheless, over the next few years, some very significant decisions will be made regarding major projects in Labrador. It is important that the principles of sustainable development be reflected in these decisions and that the science is available to support the decision-making process. Fortunately there is a growing recognition of this problem and of the importance of building a sound knowledge base of Labrador's natural and cultural ecosystems.

For its part, Environment Canada has increased activities in Labrador over the past five years, despite an overall reduction in programming at the national and regional levels. Most visibly, by establishing a one person office in Goosebay, and additionally through program areas which include a variety of environmental science projects, migratory bird management, participation in the environmental assessment processes, Eco-Action 2000 projects, and participation in the Institute for Environmental Monitoring and Research. Nationally the department is launching a new ecosystem initiative—the Northern Ecosystem Initiative (NEI)—which has as its objective to facilitate coordinated action to identify and address common priority issues that relate to the health and sustainability of northern communities and ecosystems. The NEI will help us work in partnerships in Labrador and will facilitate linking Labrador projects and communities with others across the north.

Avant-propos

Dans le domaine des sciences des écosystèmes, le Labrador est probablement la région qui a le plus rarement fait l'objet d'études en Amérique du Nord. Par conséquent, on en connaît moins au sujet des écosystèmes, de la bio-diversité, et du climat du Labrador qu'ailleurs dans le Nord canadien – et vraisemblablement dans tout le continent. Cependant, durant les prochaines années, de très importantes décisions seront prises concernant des travaux d'envergure au Labrador. Il est important que ces décisions reflètent les principes d'un développement intégré et que la science soit en mesure d'appuyer le processus de prise de décisions. Heureusement, on reconnaît de plus en plus qu'il y a un problème au niveau scientifique et qu'il est important d'établir une base de connaissances solide en ce qui a trait aux écosystèmes du Labrador.

Au cours des cinq dernières années, malgré une réduction globale dans l'élaboration de programmes aux échelles nationale et régionale, Environnement Canada a pour sa part augmenté le niveau de ses activités au Labrador, surtout dans les programmes comprenant une variété de projets liés aux sciences de l'environnement : gestion des populations d'oiseaux migrateurs, participation à des procédures d'évaluation environnementale, projets ÉcoAction 2000, collaboration avec l'Institut pour la surveillance et la recherche environnementale, et plus visiblement l'établissement d'un bureau d'une personne à Goose Bay. À l'échelle nationale, le ministère est en train de lancer une nouvelle initiative concernant les écosystèmes – l'Initiative des écosystèmes nordiques – qui a comme objectif de faciliter les prises de mesures coordonnées visant à cerner et à traiter les questions prioritaires communes relatives à l'état et à la viabilité des communautés et des écosystèmes du Nord. L'IEN nous aidera à travailler en partenariat avec le Labrador et rapprochera les communautés du Labrador et celles qui se trouvent ailleurs dans le Nord.

To assist the department in reviewing its current activities and identifying requirements for environmental science and research in Labrador, Environment Canada asked three Labrador based organizations: the Labrador Inuit Association, the Innu Nation and the Labrador Metis Nation to prepare and present discussion papers on ecosystem research needs and priorities at the Labrador Collaborative Research Workshop on April 8 & 9, 1999. To broaden the range of perspectives, Memorial University solicited a presentation from the perspective of the Labrador Regional Economic Development Boards. These four perspectives were the highlight of the two day workshop in St. John's and the themes and issues identified formed the basis for discussions on the second day. Our intention in collecting and distributing these papers is to continue to stimulate discussion that can lead to consensus regarding priorities for ecosystem knowledge generation, capacity building and action in Labrador.

Dans le but de faire la révision des activités courantes et de cerner les besoins de faire de la recherche et de développer les sciences de l'environnement au Labrador, Environnement Canada a demandé à trois organisations établies au Labrador, l'Association des Inuits du Labrador, la nation Innu et la nation des Métis du Labrador, de préparer et de présenter à l'atelier sur la recherche concertée au Labrador, les 8 et 9 avril 1999, des documents de discussion sur les besoins et les priorités d'une recherche sur les écosystèmes. Afin d'élargir la gamme des perspectives, l'université Memorial a demandé une présentation des points de vue des conseils de développement économique régionaux du Labrador. La présentation des points de vue de ces quatres organismes a été le point saillant du colloque à St. John's, qui a duré deux jours. De plus, les questions et les thèmes qui avaient été cernés ont servi à entamer les discussions lors de la deuxième journée du colloque. Notre intention, en recueillant et en distribuant ces documents, est de continuer à stimuler des discussions qui pourraient aboutir à un consensus concernant les priorités pour l'acquisition des connaissances, le renforcement des capacités et la prise de mesures concrètes en ce qui concerne les écosystèmes au Labrador.

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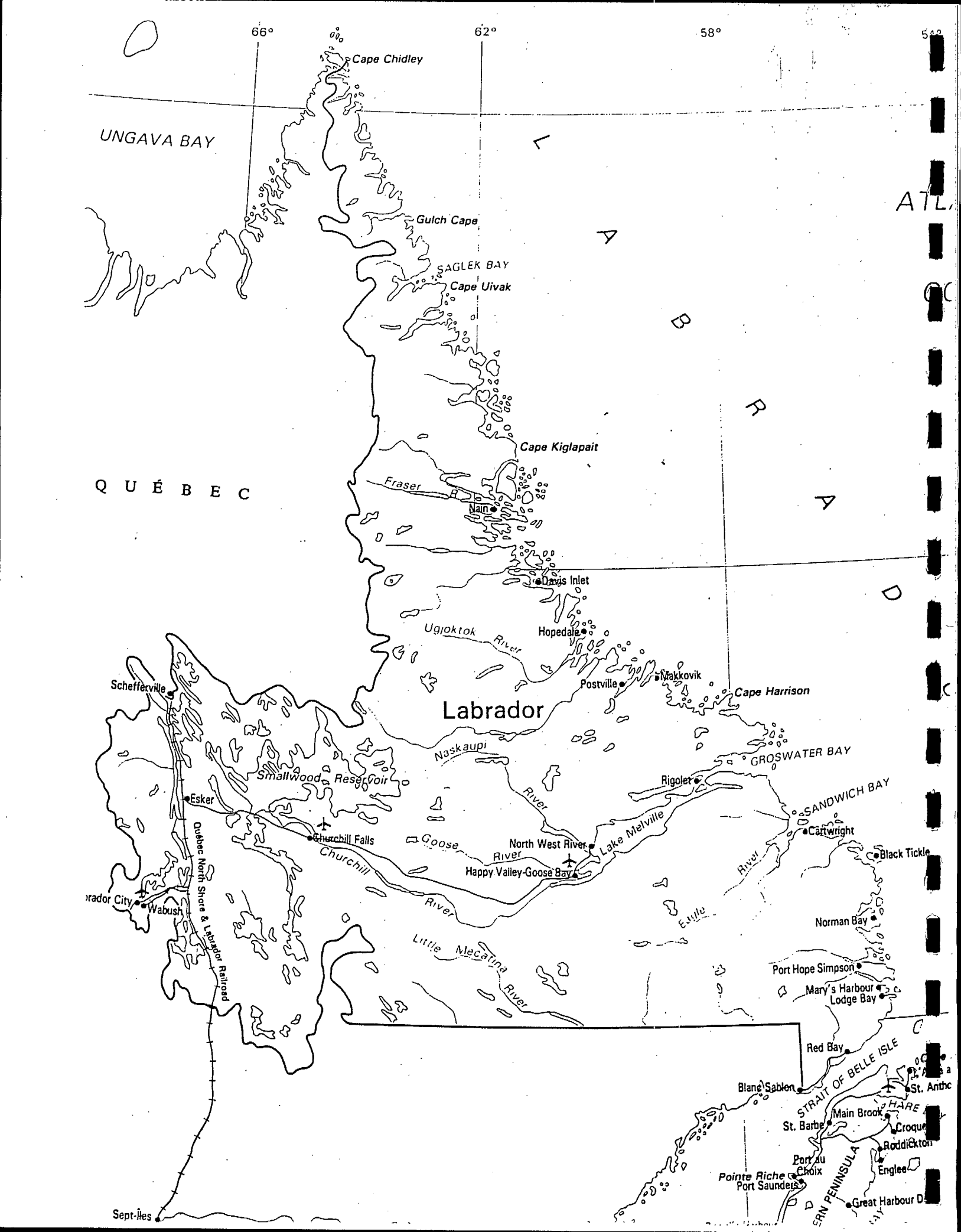
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Schefferville
Naskaupi River
GROSWATER BAY
Smallwood Reservoir
Rigolet
Esker
SANDWICH BAY
Cartwright
Churchill Falls
Goose River
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Black Tickle
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Wabush
Quebec North Shore & Labrador Railroad
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Innu Nation Discussion Paper
Research Priorities in Nitassinan

Prepared by the Innu Nation

Prepared for

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Introduction

> To put it simply, we are all interested in this ecosystem. We Innu have lived here, we have a history in this area which goes back thousands of years. But we don't understand all of it well ourselves, although we have lived in it for all this time. For us, it is always good policy to leave alone what we do not understand. Not only us humans depend on forests, but all life depends on them. We let things be, and let the forests grow naturally. This is our approach. We think it is good policy.
>
> But in your society, you try to understand things more, and the more you think you understand things, the more you take away the natural fiber of what makes up this world. How many mistakes have you made? What have you made this world? What has it become? You can continue with your sciences, but in the end, all the science will not save you if you continue to take away what is there and what keeps us here. I know that everything depends on everything... this is the best science I can give you.
>
> - Simon Michel, Innu Elder

These humble observations, made by a man who has lived most of his life on the land to a group of managers, foresters and ecologists attending a recent workshop in forestry in Sheshatshiu, are a small but important example of the many differences that exist between the Innu and many Western scientists and resource managers. This paper will attempt to identify some of these differences, in an attempt to build some bridges between the Innu and the Western scientific research community.

The Innu Nation has been engaged, either directly or indirectly, in much of the research that has been conducted in Labrador over the past 25 years, and we believe that we have made a significant and positive contribution to the understanding of *Nitassinan*, the land we call home. We have done a number of our own studies, primarily in the areas of Innu land use and occupancy and archaeology. We have also worked closely with ecologists, foresters and wildlife biologists to better understand our fragile forested ecosystems and the limits for commercial timber harvesting in our territory. We have retained leading experts to develop alternative economic perspectives on road development, hydroelectricity, and tourism.

Innu elders and other people in our communities have also collaborated with a wide variety of outside experts in our role as intervenors in numerous environmental assessment processes, including the 10-year federal review of military low-level flight training and the recently completed assessment of the proposed mine/mill at Voisey's Bay. While Innu contributions in such processes have not always been welcomed, we believe that our participation has been valuable, and occasionally, as evidenced in the recent Voisey's Bay Panel Report, we have even been listened to.

In recent years, we have also initiated or participated in the development of collaborative research partnerships with government departments, universities, corporations and other organizations. This is a new area for the Innu, and it may signal an increasing willingness and an evolving degree of confidence on the part of our communities to deal with *akeneshau*. Some of these partnerships include the Q-LInKS initiative, the *Iskui* project, and the joint-ventures between our economic development agencies and consulting companies in areas like archaeology.

In both the short and long-term, we see our role continuing to evolve, as Aboriginal people assume increasing responsibility over their lands and resources. Research in support of Innu co-management and environmental assessment responsibilities will continue following a land rights agreement, and ongoing and future collaborative partnerships with other First Nations, government agencies, universities and independent scientists are all part of the Innu vision for research in our territory.

However, to respond positively to the challenges and opportunities that face the Innu now and in the future—whether we are talking about climate change at one end of the scale or appropriate mitigation measures for stream crossings at the other—we must begin to address some of the major obstacles and barriers that exist between the Innu and the research community. We don't believe that these obstacles are insurmountable—but there is much that must be done before we can talk about real research partnerships.

One of the first things that must be addressed are the fundamental differences in goals and perspectives, the issues that Simon Michel raised in the introduction to this paper. It should come as no surprise to anyone that Innu have not been overly impressed with either the research or management decisions that have been

imposed on Innu land and the Innu way of life. In fifty years, the Innu have seen vast regions of their territory destroyed, degraded or transformed in the name of progress. Huge, wasteful and destructive megaprojects such as the Upper Churchill Falls development, or the ongoing imposition of low-level military flights, are symbolic of the arrogance with which Newfoundlanders and Canadians alike have shown towards the Innu and their environment. Many Innu see, in the demise of the cod fishery, or the current wood supply crisis on the Island, examples of *akeneshau* failures to look after their own environment, and wonder how they can be expected to believe that governments have learned from these costly mistakes when it comes to resource management decisions in Labrador.

Given that a great deal of the research done in Labrador over the past 50 years has been directly related to development projects, it again should not come as a surprise to anyone that many Innu view science—and scientists—with a great deal of suspicion. Poor management decisions have been dressed up with inadequate scientific rationales all too often, and as a result, many Innu people equate the work of scientists with the decisions that are made by governments and resource managers.

Obstacles

The Innu Nation believes this history will be with us for a long time. However, if we are serious about developing appropriate models for collaboration and cooperative research between Western scientists and Innu communities, we must first understand where we are and how we got here.

There is a great deal that could be said about Nitassinan by the people who have lived there for thousands of years. Innu men and women have learned many things about the land that they call home. Many Innu harvesters have specialist knowledge about their environment, a product of their own observations and experiences on the land and the knowledge and wisdom that Innu people have accumulated over many generations. Among the Innu, there are experts in the behaviour of animals, in the medicinal qualities of plants, and in the locations of mineral deposits, just to mention a few examples in passing. However, much of this knowledge may never be shared with the Western research community because of some fundamental differences in perspectives, values and goals that exist between the Innu and Canadian society at large.

While the Innu Nation may identify priorities for future research that are very much in line with the goals and priorities of other organizations and individuals, unless we clearly address the obstacles that exist, and develop positive and proactive working relationships that recognize these limits, we will never fulfil the promise inherent in collaborative research partnerships.

Culture, Values and the Research Enterprise

While many Innu experts support the sharing of their knowledge to further community purposes, many of them have expressed concerns about how their knowledge will be incorporated, assessed and viewed by Western scientists, and about the ways their knowledge may be used. As Georg Henriksen, an anthropologist who has worked with the Innu for 30 years recently told the Voisey's Bay Environmental Assessment Panel:

> Aboriginal knowledge is not just another kind of knowledge to be collected and harnessed for any kind of purpose. It is part of, and provides a cosmology with a very different view of the land and what happens to the land, like the present project. The Innu have vast amounts of knowledge based upon thorough observations and experience acquired through their living on the land, and transmitted across generations. A lot of this knowledge is compatible with Western scientific knowledge, and would probably fill in significant lacunas in the latter. However, the Aboriginal knowledge of the Innu is an intimate part of their religious ties to the land and the animals, which means that their ties to the land and everything living on the land is a moral relationship. Surely, the Innu can, if they so choose, deliver elements of knowledge extracted from this moral universe, but any manipulation or action on the land, be it by Innu or by non-aboriginals, cannot be detached from its moral implications. By way of implication, the Innu cannot put their knowledge of the "natural" world to any odd use. When put to use, it immediately becomes part of a moral relationship. It follows from this that they do not want to deliver their knowledge to a third party whom they do not trust. (Henriksen 1997)

As Henriksen suggests, many Innu perceive the natural world and their relationship to it quite differently than most Canadians. To better understand Innu knowledge, it is

important to know something about how Innu understand their world, because Innu knowledge about the land is organized on a different basis than that of Western science.

But before considering the Innu worldview, it is important to reflect briefly on the way Western scientific knowledge of the world is structured. Many people, laypeople and scientists alike, tend to see science as an obvious and appropriate way of obtaining and organizing objective knowledge about the world. Scientific knowledge is often characterized as value-neutral and independent, uncoloured by the bias, supposition or untested beliefs of the author.

However, like all cultural practices, science has a history and traditions which are squarely located within a cultural framework of assumptions about the world which are not themselves accessible to the methods of Western science. While a full discussion of the historical and philosophical underpinnings of Western science are a subject far beyond the scope of this paper, the overall intellectual framework for what we call 'scientific knowledge' is premised on the modern belief in a rational, ultimately knowable universe which functions like a complex but predictable machine. It is easy to generalize, and we do so here only in order to illuminate some of the key differences that appear to exist between traditional Innu and Western scientific ways of knowing.

The machine metaphor, which emerged in the seventeenth century in the work of Galileo, Descartes and Newton, characterized nature as a vast, celestial clockworks, set into operation by an omniscient, distant and rational Creator. Rooted in mathematics, physics and astronomy, the concept of a mechanically ordered universe proliferated throughout the sciences. Even fields which addressed the complex, chaotic organic realities of life, such as the study of natural history and even ecology, were also strongly influenced by the machine paradigm. Linnaeus, who developed the basic structure for modern biological taxonomy in 1749, and Charles Darwin, the author of the theory of natural selection, cast their ideas within a largely mechanistic framework. (Worster 1977)

Modern biology, ecology and related sciences are all products of our Western intellectual heritage. As a result, Western scientists tend to view the natural world as something that can be organized within hierarchical structures. The Western scientific system of biological classification generally follows a Linnaean taxonomical hierarchy structured according to evolutionary or genetic relatedness, and Western scientists tend to employ methods of investigation which assume, among other 'givens', that the universe that they are trying to understand is fundamentally mechanistic in nature. While some recent practitioners and theorists in fields like ecology have begun to challenge or at least question some of these

underlying assumptions, the Western scientific enterprise is still largely oriented towards the manipulation, management and control of natural processes.

Innu knowledge about the world is structured quite differently, but traditional Innu harvesters, particularly those with years of experience and expertise, have a deep and particular knowledge of the land. Our own experiences suggests that there are many fundamental similarities, particularly at the level of observation and prediction, between expert Innu knowledge and the that of Western-trained scientists. But there are also some fundamental differences in the ways that knowledge is obtained, organized and practiced.

Observation, classification and comparison are universal human activities. Innu and Western-trained experts both make observations about the world which are organized, through language, into a system of classification. Hypothetical models about the future state of the world (such as predictions of animal behavior) are proposed. These models are generally based on patterns or principles deduced or inferred from prior knowledge and present observations. Such models are often rigourously tested in the field, and they are refined, adapted or abandoned in light of actual observations and events. The differences between Western science and Innu environmental knowledge emerge when these universal human practices are placed in a social, historical and cultural context.

Innu experts and Western scientists often have rich and detailed understandings of the natural environment as a result of detailed observations and patient study. However, the belief system which is the basis for making observations meaningful cannot be separated from the practice which gives rise to the observations themselves (Feit 1973, 1978; Nelson 1983, Scott 1996). Just as all language relies on metaphor and lived experience, every experiment requires a model of the system before it can be designed or carried out. We do not select random events to observe out of a nearly infinite range of observable phenomena—we select the ones that appear to be meaningful and important. Scientists tend to select phenomena which can be measured, quantified or mathematically modelled, largely because of their belief in natural laws and somewhat ordered universe. Innu experts have a different set of beliefs, and therefore apprehend their world in different ways.

There are also some other fundamental cultural differences between Western science and Innu knowledge. Western scientific practice is premised on the idea of the scientist as a neutral, disengaged observer who can make observations or perform experiments on the natural world without 'getting involved' in it. In contrast, traditional Innu harvesters believe that they are intimately involved in a world where they have both physical and spiritual connections to the land and the animals that they are interacting with.

Authority and Ownership

Like any partnership, a collaborative research enterprise relies on trust, mutual respect and joint assumption of responsibility for success or failure. However, the fact of the matter is that all partnerships also exist in a social context where power, prejudice and other factors are always present. These things cannot be abstracted or removed from the research enterprise—they must be consciously addressed.

One important difference that must be acknowledged is that in Western cultures, the production of scientific knowledge is almost exclusively the domain of a professional elite. Scientific knowledge is the prerogative of experts, who are recognized and accorded status in relation to the way that their work is valued by other experts or accorded recognition by prestigious social institutions. Innu knowledge is also held by experts, but their knowledge is generated in the more communal social context of harvesting activities and life on the land. Accordingly, Innu expertise and knowledge has wide community recognition and often, more immediate practical application and value. Innu knowledge is also held to extremely high standards of reliability and proof, as there are often extremely dire consequences when such knowledge fails to result in hunting success.

The differences in power and social authority between scientists and Innu experts are expressed in many different ways. They include shocking displays of arrogance on the part of Western institutions, such as the courts, which have dismissed expert testimony from Innu elders on the grounds that these individuals dot no possess academic credentials. To this day, there is a great reluctance on the part of Innu elders to appear before courts, panels in other official forums because of the disrespect that such bodies have shown towards Innu knowledge and expertise in the not-so-distant past.

Even when Innu knowledge is recognized as being valuable, there are other forms of disrespect. Innu knowledge is a form of communal intellectual property, but the willingness of people to share what they know has been badly abused by unethical and dishonest researchers. Too often, Innu people have worked willingly with researchers, only to never hear from them again. The researcher returns to the South, publishes the paper under their own name, and takes sole credit for what was clearly a collaborative enterprise. In response, many communities have developed guidelines and procedures for respectful research, which typically require outside researchers to obtain the written permission and informed consent of both the community and any individuals involved in a project before granting access to the community. Even though such guidelines are in

place, many researchers continue to view them as obstacles, rather than steps towards building better relationships. For example, consultants for the Voisey's Bay Nickel Company, in the early days of the environmental assessment process for that project, attempted to obtain aboriginal knowledge from Innu and Inuit workers at the Voisey's Bay site without so much as informing the workers that they were being interviewed. Although VBNC abandoned this approach, the mistrust that ensued continued to cloud subsequent attempts to integrate Innu knowledge into the environmental assessment process for the Voisey's Bay project.

Another area where there are profoundly difficult obstacles to address occurs at the social and interpersonal level. Innu people are at the sharp end of many relations of power and authority in Canadian society. *Nutshimut*, or the country, is one of the few places where Innu can run their own lives and conduct their own affairs in ways that are culturally meaningful and reinforcing. Researchers interested in real partnership and collaboration will pay close attention to these issues.

It is almost inevitable that researchers will make *faux pas* in an Innu field setting. Sometimes such transgressions will be corrected, and readily dismissed, with the hapless researcher becoming targets for the Innu sense of humour, but there are many things will not be so easily ignored. Probably the most problematic issues relate to leadership and authority, which are constructed among the Innu in ways that are very different than what an outside researcher might expect, particularly if they have little prior contact with the Innu community. Being 'too utshimau' is a serious social fault among the Innu, and bossy white people will quickly find that they will not be able to work productively with Innu partners.

Finally, there is a need, on both sides, to find ways to fully involve all of the partners in the decision-making process around a research project. This may take some additional time in the beginning, but it can have huge dividends in terms of research quality, skills transfer, and community participation and support for the project. The Innu Nation has found that once people fully understand and support the goals of the project, it is much easier to actually carry it out. Innu organizations and co-researchers should not be seen as adjuncts to a science-driven agenda, but rather, they have to be central players in the development of the agenda.

We are pleased to report that Innu views of the research enterprise are starting to change, as more Innu come into contact with scientists who are willing to dispense with the imperial mantle of 'the expert with the answers' and become students,

assistants and allies of the community. This is not to suggest that scientists must forget what they know, or abandon the scientific approach, but rather, that scientists who are open to other ways of knowing, who try to share community goals and aspirations, will find that their openness is reciprocated, and this is where real collaboration can begin.

Ecological Integrity and an Ecosystem Based Approach

One important change which has made collaboration between the Innu and scientists possible is the growing recognition among scientists of what we will call an 'ecosystem-based approach'. The fundamental orientation of an ecosystem-based approach, and the values of many of the scientists who pursue this research paradigm, are a much better fit with the values and goals of the Innu than some of the mechanistic, deterministic approaches of the recent past.

A central tenet of the ecosystem-based approach is the recognition that ecosystems have limits, and that human activities must occur within those limits or they will become unsustainable. Innu society has survived for thousands of years in what many would consider a hostile and unproductive environment by paying careful attention to limits, and by a recognition that it is ultimately the health of the land, the water and the animals that in turn sustains the Innu.

One of the difficulties in articulating an ecosystem-based approach—even among scientists—is the recognition that any particular level of description or definition is a poor substitute for something like an ecosystem, which is inherently holistic and inclusive. However, it is also recognized that some reduction and classification is necessary in order to organize, analyze and begin to explain the incredible complexity of the ecosystems that we are trying to understand. Where this difficulty becomes a strength in a cross-cultural context is in the recognition that all systems are somewhat arbitrary and tentative, which can lead to a greater degree of openness to alternative points of view. For example, classifications are not 'wrong' because they fail to conform to a particular taxonomic system—they may simply be organized on the basis of a different, but equally valid logic. When such systems are seen as being complementary, we are well on our way towards real collaboration.

But collaborative research in an Innu context must also be attentive to the tensions that arise because of the different approaches to 'nature' that characterize Innu and

Western perspectives. The Innu do not make fundamental distinctions between 'nature' and 'culture', while the Western scientific tradition has approached the world as if humans were somehow apart, somehow different, than the rest of nature. One goal for collaborative research must be to re-orient analysis and descriptions of ecosystems so they explicitly include all of our relationships with the rest of the world.

Landscapes

One tool for achieving this goal is the identification of hierarchies, or levels of organization, which can help us distinguish relationships between and within ecosystems at different spatial and temporal scales. One way of doing this, and the approach that we have adapted, is to begin at the landscape scale. "Landscape" is a term that we all understand and relate to, both intuitively and experientially. In our day-to-day lives, we apprehend our world in terms of landscapes. We all recognize the patterns, the shapes, and structures which organize the flow of matter, energy and organisms in our environment. We describe them in a variety of ways, depending on our purposes and perspectives. Artists can describe landscapes for their beauty, historians in terms of their significance, and geographers for their distinctive features. Hunters talk about them in terms of the habitats they provide for animals and the ease of travel they afford. Ecologists define them as ecosystem mosaics—heterogeneous land areas composed of clusters of interacting ecosystems that are repeated in similar form.

Landscapes can be described at a variety of scales, ranging from areas of a few square kilometers to several thousand square kilometers. But no matter what perspective we take or scale we choose, landscapes can be described in terms of three fundamental characteristics: *structure*, *function* and *change*. By structure, we mean the spatial relationships that exist among the distinctive ecosystems or 'elements' present in a landscape. Function refers to the interactions among the elements, including the flow of energy, materials and species through the landscape. Change is simply the alterations in the structure and function of a landscape over time, whether these changes occur naturally or are induced by human activities.

In describing the Nitassinan landscape, we distinguish between three fundamental levels or layers of description: an ecological landscape, a cultural landscape, and an industrial landscape. These layers are not fundamentally different, in fact, they are intended to be

complementary—but they focus on different elements and processes within the environment.

The ecological landscape is a description oriented around an ecological perspective. Ecological descriptions are hierarchical, in that they begin at large enough spatial and temporal scales to capture the various physical and biological processes that are integral to the function of the landscape as sustainable ecological unit, but move down 'the scale' to distinguish and describe the various components and processes of the landscape in terms of structure, function and change. The various components of a landscape are distinguished and described not only terms of physical features and ecosystem types, but in terms of how energy and materials are transported and distributed across the landscape by biogeophysical processes, species movements, or human activities. Ecological landscapes can be described in taxonomic, genetic or ecosystemic terms, depending on the research question or purpose at hand.

An ecological landscape description could therefore include descriptions of bedrock geology, the marine environment, lakes, rivers, streams, forests, animals and their habitat requirements—but in doing so, we attempt to preserve the sense of spatial patterns and fundamental ecological relationships that make these descriptions meaningful and accessible to non-technical audiences, without losing the level of detail and description that will allow Western scientists and Innu experts to evaluate the accuracy of the information and interpretations that are being presented.

Cultural landscapes are the cultural spaces that Innu people inhabit—the places, the memories and the experiences that they have had on the land. Cultural landscapes attempt to describe human perceptions of the land that they are a part of. Cultural landscapes locate us in time and in place. They are what distinguish 'places from 'spaces'. Understanding the cultural landscape adds a new dimension to our understanding of the ecological landscape, for, as noted anthropologist Georg Henriksen tells us, cultural landscapes are fundamentally grounded in the environmental perception, attitudes and values of the people who live there:

> Labrador is not a "wilderness" but extensively cultivated by the thought systems and cosmology of the Innu and the Inuit, and by their land-use. Through their religious beliefs, myths and rituals, the Innu spin a web of meaning which makes them an integral part of nature. People of the older generation, 50 years and older, are born in the interior of Nitassinan: in tents by its rivers and lakes, or in patches of forest which provide the sticks for their tents and wood for their stoves in the Barrens. Being their home, they are thoroughly familiar with Nitassinan. Hence, to the Innu, Nitassinan is a cultural space, and their usage of the land and its resources cannot be understood apart from their cultural construction of Nitassinan. It is also on this same basis of their cultural construction of the land and everything on it that they react to all other people's activities in their territories. (Henriksen 1997)

In contrast to the ecological and cultural landscapes that have co-existed and co-evolved in Labrador for thousands of years, the industrial landscape is a relatively new feature of our environment. A description of the industrial landscape would perhaps start in 1941, with the construction of the air base at Goose Bay. We would then add the railroad and the iron mines, the roads, hydro projects and large scale forestry activities which have radically transformed—and in some areas, completely replaced the ecological and cultural landscapes that were associated with places like Meshikamu, which up until 1974, included important harvesting areas, burial sites and gathering places for Innu, breeding and nesting areas for migratory waterfowl, and a calving area for caribou. These things are now memories—obliterated by the waters of the Smallwood Reservoir.

Ecological and Cultural Integrity

Another set of important concepts for bridging the gap between Innu and Western scientific perspectives relate to ideas about integrity. Many Innu elders have stated that the Innu prefer to "let things be". Ecological integrity is a similar concept associated with the ecosystem-based approach. There are a couple of ways of defining this term, but broadly, ecological integrity refers to "a system's wholeness, including the presence of all appropriate elements and the occurrence of all processes at appropriate rates" (Angermeier and Karr 1994). An ecosystem with a high degree of integrity is self-sustaining, and supports a diversity of balanced, integrated and adaptive communities—including human communities.

The Innu see themselves as a fundamental part of a place, Nitassinan. They are at home in the various ecosystems that characterize the ecological landscape of Nitassinan. The Innu and their ancestors have co-evolved and adapted themselves to the changes in their land over the past 8000 years of the recent post-glacial period. Undoubtedly, the Innu will continue to adapt and change as a people, but continue to maintain that the integrity of their culture is intimately and inextricably tied to the integrity of their land. Accordingly, the Innu Nation is interested and supportive of research initiatives which recognize the inherent value of ecological and cultural integrity in Labrador.

Collaboration

The Innu Nation maintains that it must be involved in research conducted in Nitassinan, particularly when it concerns our history, our land or our way of life. This is not only an ethical responsibility—it also derives from rights that the courts have affirmed. Collaboration and communication is a fundamental part of consultation and consent, and we believe that consultation and the consent of our communities is required before research projects are carried out in our territory.

This requirement should not be viewed as an imposition on the research community, but as an opportunity to do better science in partnership with our communities. However, like any organization, the Innu Nation has priorities, and we will give our consent to projects which most directly address our needs.

At this time, the Innu Nation supports research that:

1. is based on Innu values and perspectives;
2. is informed by sound science and incorporates appropriate Innu knowledge;
3. is directed towards understanding ecological limits, maintaining or restoring ecological and cultural integrity, and managing human activities in order to promote healthy communities and sustainable economies;
4. is respectful of Innu rights to make decisions about their land and resources;
5. builds capacity and transfers technology and skills to our communities;

There are many potential avenues for environmental research which can meet these objectives. While research that provides insights into the potential effects of proposed developments may receive priority in the short term, the Innu Nation takes a long-term

view. Our most urgent need is to develop appropriate management frameworks and decision-support tools in order to maintain or restore the ecological and cultural integrity of Innu land in the face of ongoing environmental change. While many such changes may be due to local developments, our people also recognize that many environmental changes may be due to global factors well beyond our control.

Accordingly, we see the need for the development of an environmental research agenda which addresses environmental change at a variety of spatial and temporal scales—from the local to the global, and from the short-term to the long-term. However, we have observed that most human impacts in Nitassinan occur at the mid-to-large landscape scale, and accordingly, the processes and ecological contexts most at risk of disruption also occur at this scale. Little attention has been paid to landscape level effects in the past, so priority must be given to research which addresses this gap. Innu elders believe that the past must also be considered in order to understand the present, and their direct knowledge of what is normal or baseline will be invaluable for evaluating the extent of the environmental changes that have occurred in Nitassinan. Unfortunately, there is a degree of urgency here, as many of our most knowledgeable elders have already past away.

Iskui Project

An example of a project which meets the Innu Nation's criteria for priority research is the Iskui Project. For several years, Innu elders have been talking about the changes that they have seen on the land since developments like Churchill Falls, low-level flight training and forestry activities started on Innu territory. The elders believe that some of the changes that they observe may be directly related to the effects of such projects, but they are also concerned about the effects of things that are happening far from Nitassinan.

One important change that people have observed concerns the distribution, timing and productivity of *iskui*. Iskui, or *ashkui*—the spelling is still being debated by the linguists—are areas of open water which remain open all winter or form in the spring. *Iskui* are often located in areas where the are strong currents, such as at the mouth of lakes, on rivers, and at estuaries. Many *iskui* are important staging areas for migratory waterfowl, and they are also productive areas for harvesting fish and many other species. For these reasons, Innu tend to locate their spring camps in close proximity to *iskui*. *Iskui* are therefore is therefore important element of

ecological and cultural integrity, and Innu are concerned about the future predictability and stability of these important landscape features.

The Innu Nation is developing partnerships with the Canada Centre for Remote Sensing, Environment Canada, the Newfoundland Forest Service, the Gorsebrook Institute and other researchers from universities and government to help us understand the ecological significance of *iskui* and the changes that Innu are observing.

While we are confident that this partnership will result in a better understanding of iskui and the changing Labrador environment, what is perhaps more interesting to comment on at this early stage of the project is the nature of the partnership itself.

What makes this partnership unique is the fact that the identification of both the problem, in terms of observed environmental change, and the definition of iskui as a particular landscape element for further study, was driven largely by Innu elders. This is a reversal of the usual research agenda, where someone comes in from outside with a project already conceived, and attempts to 'sell' it to the Innu. In fact, the use of an Innu concept as a central theme for organizing a broad, multidisciplinary research partnership has ensured that the Innu themselves remain at the centre of the project, which has translated into broad community and organizational support for the research. To date, most of the work on the project has been done at the community level, through workshops, meetings, interviews and field trips with Innu elders, hunters and other experts. We believe that even when the nature of the work becomes more specialized and technical, it will be possible to maintain the full involvement, interest and support of the elders and other expert Innu informants, because they have been instrumental in defining the agenda right from the start. Satellite pictures and secci disks become a whole lot more comprehensible when you have a strong foundation in the fundamental questions that are being investigated through such esoteric means.

Communication

A final but fundamental aspect of collaborative research partnerships is communication. Communication efforts around research projects and priorities must not only take place in the present—we must also develop linkages and long-term legacies to guide future research endeavours.

One of the major barriers to research between Innu experts and scientists in the past, and to some extent, in the present as well, is the lack of a common language. Aside from the obvious differences between English and Innu-aimun, there are several other problems associated with language. Scientists conduct much of their discourse in highly technical terms, and many of them have difficulty explaining themselves to people who are not conversant with the jargon of their particular field. A similar problem exists on the Innu side of the equation. Many elders use highly specialized terms and rely on conceptual systems which younger Innu may not be familiar with. As most elders do not speak English, they rely on young Innu to translate what they are saying. A common frustration among elders is that many young people are not able to fully translate what they are saying. These problems can be addressed, but it will require both patience, perseverance and perhaps most importantly, time spent in real conversation with all parties to break down this barrier to collaboration.

As indicated in the preceding discussion on the Iskui project, communication and community acceptance of a project is facilitated by making Innu concepts central to the research. While this will require scientists to learn and apply new concepts, it may also open a door to new, and perhaps more useful ways of understanding the Nitassinan environment. Many of the current concepts in ecology and other environmental sciences were developed in other ecological contexts, and may not be well suited to describing or understanding the particular features of Nitassinan.

Another major barrier to collaborative research is the fundamental lack of communication between researchers. Although some research is written up and published in the scientific literature, much more remains in a 'raw' state and in the hands of a particular researcher. The inevitable result is that valuable data and conclusions are effectively lost—and resources are effectively wasted—because there is little or no continuity in the research effort. Studies are duplicated and additional money is spent without the benefits of collaboration. As a result, a great deal of the potential value of ongoing research is wasted.

The Innu Nation has been frustrated by this situation on numerous occasions, as have many other researchers and organizations interested in Nitassinan. As a result, we have been working with Environment Canada, the Institute for Environmental Monitoring and Research, and many other interested organizations in the development of Q-LInKS, the Quebec-Labrador Integrated Knowledge System.

Q-LInKS is not the computer-based first tool for collaboration and communication, but it is unique in that it does not require a full-time custodian. It is a network application that allows individuals and organizations to make their own decisions about what to share, and gives them full responsibility for maintaining, updating and sharing information about themselves and their research projects. The Q-LInKS system is not intended to be a 'knowledge warehouse', but rather, a 'knowledge directory' that will link individuals and organizations with common interests.

There are a number of other fundamental areas in which communication must be improved, such as better reporting of results to our communities, but the Innu Nation believes that many of these issues will be resolved through the development of real partnerships. We believe that as researchers work more closely with the Innu, we will find creative ways to resolve some of our differences and build on our successes.

Conclusions

This paper has attempted to identify both the opportunities for collaborative research, as well as the obstacles that must be overcome. The Innu Nation believes that projects which are based on Innu values, informed by sound science and Innu knowledge, and respectful of Innu rights to make decisions about their land and resources will succeed, and that the results of such research will be of significant value. The days of imperial science are over, and those researchers who are willing to adapt, and to embrace new ways of thinking about the world, will find that the Innu have much to offer.

Labrador Inuit Association
Discussion Paper on Northern Ecosystem Science Research Priorities

Prepared by the Labrador Inuit Association

Prepared for

Labrador Collaborative Research Workshop
Memorial University
St. John's, Nfld.

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Discussion Paper on Northern Ecosystem Science Research Priorities - The Labrador Inuit Association Perspective

Labrador Collaborative Research Workshop
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1. Introduction

This paper has been prepared at the request of Environment Canada as a starting point for "informed discussions on current activities and projected needs for environmental science and research in Labrador ." It has been prepared in the context of Environment Canada's new Northern Ecosystem Initiative which seeks to facilitate coordinated action to identify and address common priority issues that relate to the health and sustainability of northern communities and ecosystems.

The Northern Ecosystem Initiative is too new to know whether or not it will be helpful in achieving its objective, but, the Labrador Inuit Association (LIA) is willing to participate in initial and informal discussions to discover what possibilities exist for partnerships, collaboration and funding of research in the interests of a sustainable future in the north.

Although LIA is still very unclear about what the Northern Ecosystem Initiative might mean in practical terms and for Labrador Inuit interests, LIA has prepared

this paper as its contribution to preliminary discussions convened for purposes of advancing the Northern Ecosystem Initiative. It is important to appreciate that this paper reflects LIA's interests. This discussion paper is not intended to concretize what LIA might identify at this point as "research priorities" or make this a definitive statement of research priorities. It is intended to be an initial starting point for discussion only.

2. The Notion of Scientific Inquiry and its Legacy in Northern Labrador

There is a sense among many Labrador Inuit that they have been inundated by researchers and scientists over the years who have made careers out of studying Inuit and their environment. There has been considerable traffic of scientific teams and consultants passing through and studying various parts of the northern Labrador environment and Inuit society. In some cases, research efforts have been considered by Inuit to be intrusive and alienating.

Many Inuit interpret research as something that is "done to them" or "done to their environment". What is done in the name of scientific inquiry can be puzzling, alienating and even offensive to Inuit. Researchers arrive in northern Labrador with a research question that often isolates an incident or a species from the larger biophysical, and socio-cultural world. Many times this results in the dominant intellectual culture, which is based in western scientific methods, functioning in opposition to local and traditional knowledge.

Research that is done in support of a resource development project often results in a

flurry of consultants coming in to study the region in order to make predictions about potential impact resulting from the development. The result, in most cases, is a description of the region that is generally incomplete and inadequate as a description of a biophysical and socio-cultural world that is familiar to the Inuit. For Inuit the description may well be less than the sum of its parts. In addition, Inuit lack of familiarity of, and understanding about, western scientific methods and inquiry also influence Inuit attitudes towards research.

As a result of their experiences with researchers and consultants, many Inuit feel frustrated with the approach and methodology of western science, and angry at the way in which their knowledge and experience is continually subordinated . There is an undercurrent of distrust towards consultants and researchers that will take time and respectful collaboration to overcome.

LIA is aware of Inuit feelings and attitudes about consultants and researchers and of the unhappy juxtaposition of western scientific inquiry and traditional Inuit knowledge and experience. For many years now, LIA has been pursuing a collaboration of western scientific inquiry with Inuit knowledge and experience. It is only by having a direct role in the conduct of research, combined with an understanding about, and involvement in, its objectives, methods, results and interpretations that Inuit attitudes towards science and research will change. It is only by including and collaborating with Inuit that northern research will be able to respect and meet the needs of northern residents as well as scientific agendas.

To date, LIA's research efforts have typically been reactive and ad hoc, responding to specific situations, concerns or problems; generally involved collaboration with government agencies or scientific experts; and usually have been completed within a

relatively short time frame. The inclusion of Inuit in research issues of concern to Inuit is a positive legacy of the collaborative approach. This collaboration also offers an opportunity to infuse the research with a cross pollination of the intellectual culture of the Inuit with western scientific methods.

LIA's research efforts continue to be predominantly reactionary, moving from one bush fire to another, leaving no opportunity for determining an overall research agenda that addresses Inuit needs and interests in a comprehensive manner and in the context of the "bigger picture". This is an underlying barrier that continues to impede LIA's participation in research in northern Labrador .

3. The Need to Take Charge

LIA recognizes the importance of moving away from its traditional reactive and ad hoc approach to research by taking charge of its own research agenda. This is easier said than done. LIA is primarily focussed on getting a land claims agreement with Canada and Newfoundland that would, among other things, allow an Inuit Government to have more control over Inuit society and lands and resources in northern Labrador.

A land claims agreement will provide for institutional and organizational change that will reflect Inuit goals and aspirations. It should also allow Inuit to develop a research agenda and facilities and to fund Inuit research priorities. This will, in turn, position the Inuit to influence the role and obligations of researchers rather than having them defined solely by outside funding criteria, committees or agencies

that have agendas and values of their own.

A post land claims world will allow Inuit to have the organizations and the ability to achieve self-sufficiency in meeting their own research needs and interests within the Inuit homeland and the larger ecosystem on their own terms. Taking charge of its own research agenda at this level will allow LIA to address its technological needs.

The current trend is to analyze and interpret data on integrated computer systems which require a special way of collecting and processing data for incorporation into the data bank. While the new digitized data systems expand the technological horizons for use and application of processed data, these systems may not always be compatible with the quality and implications of all aspects of knowledge and, in particular, with Inuit knowledge which operates within a different set of parameters.

LIA has intentionally remained outside of the rush to push the technological envelope especially as it relates to information systems, because of the concern that this can also be another agent that defines research interests and priorities. LIA recognizes the importance of the technological advances in systems like GIS. However, LIA wants to define its own research agenda and needs before determining what technological tools it will invest in. Being able to take charge of information systems requires being in charge of the larger research agenda so that investments in technological tools can be made on the basis of how they meet the research needs and agenda of LIA.

However, until a land claims agreement is in place LIA will continue to initiate and collaborate on research activities that respond to concerns that relate to, or are

influenced by, the land claims agenda. LIA's focus remains on taking charge at the largest level to get the building blocks of a land claims agreement in place so as to allow the institutional and organizational forces to take charge of establishing a research agenda and capability.

4. LIA's Current Research Interests and Priorities

When initiating its own research or collaborating with outside research efforts LIA does so in the context of some fundamental objectives. Wherever possible, LIA attempts to make research efforts compatible with community and regional needs, interests and priorities. LIA is also pursuing a longer term objective of creating new scientific and research capabilities within the Labrador Inuit population.

The following are research interests that LIA has been pursuing over the past few years but has been constrained because of lack of funding. The topics are largely biophysical and relate to resource management and environmental protection issues that are cornerstones of a land claims agreement for the Labrador Inuit. In most cases the topics represent issues which are at the centre of some of the "bush fires" that continue to confront LIA .

Marine Ecosystem

Use of and dependence on the marine environment and its marine species are hallmarks of Inuit culture. For more than a decade LIA has spent a considerable amount of money, time and effort advocating protection of the marine environment

and Labrador Inuit rights to, and dependence on, the marine environment. In fact the Labrador Inuit land claims area contains 17,000 square miles of ocean area which extends from Killinek in the north to Fish Cove Point in the south and east to the extent of Canada's territorial sea.

LIA's most recent effort to pursue protection of the marine environment was during the environmental review of the proposed Voisey's Bay project. Specifically, LIA is interested in developing a quantitative and qualitative model of the marine ecosystem including Anaktalak and Voisey's Bay for purposes of pursuing a marine management plan. This has been a priority issue that LIA has pursued with governments, in various forums, for the past ten years but with little success. The two biggest barriers have been the artificial distinction of what is arctic created by the 60 degree north parallel and, until just recently, the absence of a lead federal department with a mandate for marine environmental protection. Under LIA's land claims agreement, there will be opportunities for developing marine management plans consistent with the provisions of Canada's new *Ocean Act* which finally articulates what LIA has been advocating for so long.

However, in order to develop a marine management plan we need to have a better understanding of the marine environment and its ecology. This should be done with a multi- disciplinary team that builds on a qualitative description of the marine environment based on Inuit knowledge and experience, and combines it with a quantitative description determined through more concrete western scientific methods.

Northern Ecosystem Reference Area

In spite of the level of research activity that has occurred in northern Labrador, both historical and contemporary, the existing sources of information on biophysical and socio-cultural aspects of the region remain relatively limited. Although there have been a number of activities and projects in northern Labrador that have the potential to impact, in various ways, on the environment and the resource base, we do not have an adequate understanding of the natural environment that allows us to determine or to monitor changes to the environment resulting from development . It is often difficult to find accurate details or descriptions of the biophysical or cultural environment that are necessary for understanding or addressing resource development. And in some cases, when information has been documented it is difficult to locate or to access and this results in repetition and duplication of earlier research efforts.

A constant and enduring barrier to understanding how an activity or project may affect the biophysical environment arises because we actually know very little about the environment and ecology of the environment in its natural state. Our general lack of knowledge and understanding make it difficult to understand and predict with any reliability what changes might occur as a result of an activity or project.

LIA is interested in pursuing the idea of establishing a "reference area" as an area of natural habitat that is reasonably representative of what we have in northern Labrador, that is relatively undisturbed by human or industrial activity, and that can be a candidate area for monitoring environmental change. It is important to have some understanding of how the natural environment responds to factors like natural cyclical changes, and climatic variations. It would help us distinguish what changes are associated with natural biophysical forces and would be extremely

useful in understanding cause and effect relationships that could be attributed to human activity. An integral part of this work would be identifying appropriate indicators of environmental health and environmental change.

A well researched "reference area" would be particularly useful to us now in the ongoing debate about the potential effects on the natural environment of military low level flying and a mine and mill at Voisey's Bay. The debates surrounding these developments continue to raise questions that cannot be answered in the absence of understanding the ecological processes and dynamics that create changes within the natural and undisturbed state.

LIA would be involved in the selection of the area which would need to reflect the most suitable habitat with the least human intrusion possible. The research would be multi-disciplinary and would need to be rationalized in the context of understanding and respecting ecosystem integrity.

Data Base on Contaminants

The issue of contaminants in the arctic ecosystem has been a longstanding concern for LIA. LIA has already contributed some of its own resources to understand the issue. LIA has also participated in a three year project, jointly sponsored by LIA, the Labrador Institute of Northern Studies (now known as the Labrador Institute) and Laval University, to investigate environmental contaminants and public health concerns. This project has improved the data base on contaminants in the environment and the Labrador Inuit perception of risk associated with contaminants in their environment.

However, LIA's efforts to understand the nature and scope of contaminants in the context of an arctic ecosystem, of which Labrador Inuit are a part, are continually confounded by government programs and funding criteria that restrict arctic issues to a geographic region defined by the sixty degree parallel. The most notable example of this is the Northern Contaminants Program which concentrates its research money and funding criteria north of 60 degrees and creates a disconnect with efforts to understand contaminant levels and transport mechanisms in the larger arctic ecosystem which extends to and includes northern Labrador.

There are nevertheless, various research projects involved in collecting biological samples from northern Labrador. However these projects function in an environment dominated by the lack of an overall strategy that would ensure integration of the various results. The results of the various projects are currently lodged in numerous and separate data bases including those of the Canadian Wildlife Service, Department of National Defence, Department of Indian and Northern Affairs, Department of Fisheries and Oceans and LIA - to mention a few.

LIA has been advocating a collaborative effort to assemble and collate all existing data that pertains to Labrador and to address data gaps that relate to incomplete analysis for the full spectrum of contaminants for biological specimens that have only been analyzed for specific contaminants (i.e. PCBs) but are currently "archived" and therefore accessible for further analysis. This effort must also tie directly in to the knowledge, experience and if possible, funding of the northern contaminants program. Developing a comprehensive, Labrador specific, data base on existing levels of contaminants in the environment is a fundamental prerequisite to pursuing

further scientific inquiry into the biological implications of contaminants in the environment.

LIA has been collaborating with the Department of National Defence and Environmental Sciences Group (Royal Military College) for three years in the collection of marine and terrestrial species for the analysis of PCBs in an effort to understand the implications of PCB concentrations in the food chain. LIA has been directly involved in the design, conduct and interpretation of this research and has plans to continue this collaboration as part of LIA's objective of collecting and assembling contaminant related data for northern Labrador.

Resource Management

In a post land claims world, Labrador Inuit will have, among other things, co-jurisdiction responsibilities for resource management and land use planning in the Labrador Inuit Settlement Area. In order to ensure that land use planning and resource management are efficient and responsible we will have to have the information base that will allow for effective decision making.

LIA will soon be engaging in a process to identify those lands within the Inuit land claims area that will be Inuit owned lands under a final land claims agreement. In order for this process to be meaningful and for land identification and selection to generate the best possible arrangements for Inuit, we have to have a digitized data base. With respect to land identification and selection, resource management and land use planning, LIA is currently defining its needs in terms of the technological tools and capacity it will require. As part of this effort LIA is pursuing a balance between Inuit knowledge and western scientific knowledge and is considering

technological options for controlling the way in which Inuit knowledge is compiled, interpreted, applied and released. As part of this process, LIA is also considering how technological methods can be used for verifying or 'truthing' Inuit knowledge for purposes of consolidating and interpreting it within a larger data base while recognizing the cultural and spatial constraints inherent in computing tools.

Resource management issues will also require a knowledge of harvest levels. Already LIA is being approached by federal agencies to conduct Inuit harvest studies with respect to certain species. If a harvest study is to be conducted with Inuit support and participation it has to be comprehensive and not single species. Unfortunately, governments will no longer commit to funding comprehensive harvest studies as part of land claims agreements so that leaves us with government agencies pushing for harvest data on species by species basis in a policy context that explicitly excludes funding commitments for collecting this data.

The challenge will be determining ways to address resource co-management requirements in the absence of properly funded, planned and implemented comprehensive large scale harvest studies.

Documenting, archiving and repatriation of Inuit Knowledge

An important contribution to the overall data base for northern Labrador is Inuit knowledge about land use, ecology, and culture. Valuable knowledge and experience will be lost if there is no organized and systematic effort made to document this knowledge and integrate it into the data base.

In addition to Inuit knowledge that remains to be documented, there is a

considerable amount of information about Labrador and Labrador Inuit that has been documented by outside researchers but which remains difficult to access. Much of this secondary literature has been generated by non-native researchers who have relied on information gained from Inuit. In some cases this information has been lost to Inuit because the elders who were the source of the information have died. Consequently, the information given to outside researchers by Inuit and which has been documented in written form becomes extremely valuable to Inuit as a record of their culture.

Sources like the original documents kept by the Moravian Church, some of which are stored in Moravian archives and some of which is on microfiche in the Centre for Newfoundland Studies in the Library at MUN, represent some of the information about Labrador Inuit history and culture obtained from Labrador Inuit which needs to be repatriated and incorporated into the larger data base.

5. Summary

LIA's research efforts historically and currently suffer from the lack of a comprehensive research agenda. LIA's research efforts essentially are reactive and ad hoc, responding to the crisis of the day. The research objective is generally targeted at addressing a problem that needs a "quick fix". This applies equally to research efforts that are initiated by LIA as well as to those that are collaborations with outside agencies.

The fact that LIA does not have a research agenda means that outside agencies,

government funding criteria, etc., continue to define what research actually gets done. LIA's main objective continues to be reaching a land claims agreement with Canada and Newfoundland. Consequently, LIA has directed its research efforts in areas that are largely related to land and resource issues that typically have required some kind of rear guard action on the part of LIA.

LIA will not truly be in a position to take charge of its own research agenda and priorities until it reaches a land claims agreement . Taking charge must happen at an organizational, institutional and financial level. Taking charge of a research agenda and priorities also means taking charge of research objectives and interests, and finding "user friendly" technology to develop the information systems that will build the data base. It means taking charge of the technology so that Inuit knowledge and experience can be documented in a way that is compatible with the quality and implications of this knowledge and, in particular, with things like Inuit intellectual concepts. Taking charge also means repatriating existing information on the environment, society, culture and history of northern Labrador that is contained in published or manuscript documents so that Inuit have command of all resources about their homeland.

Research efforts in northern Labrador must use Inuit knowledge and western scientific methods collaboratively to enhance information and the collective understanding of biological, geographical and socio-cultural environments. LIA's partnerships and collaborations to date are typically with researchers and institutions that have credibility within a certain field of knowledge combined with experience in northern regions and cultures.

The research priorities that have been identified in this paper do not represent a

research agenda. They are long standing issues related to environmental protection that LIA has been pursuing through a number of forums and over a number of years. These research priorities represent issues that LIA believes are fundamental to ensuring the environment of northern Labrador remains a vital and sustainable homeland for Inuit and also speak to Environment Canada's interest in addressing priority issues that relate to the health and sustainability of northern ecosystems.

Labrador Metis Nation
Discussion Paper on Northern Ecosystem Science Research Priorities

Prepared by the Labrador Metis Nation

Prepared for

Labrador Collaborative Research Workshop
Memorial University
St. John's, Nfld.

8 April 1999

Presentation to Labrador Collaborative Research Workshop -

Carter Russell, Labrador Metis Nation

We are delighted to be here amongst people who will be doing work in Labrador as university and government researchers. We are pleased that the research community recognizes the importance of meaningfully including Aboriginal people in the process. This research workshop presents an opportunity to start a process of truly collaborative work that will benefit the Northern ecosystem and the peoples of the North.

We are Canada's only Inuit- Metis society. And, with 5000 members, we are this province's largest Aboriginal group. Our people can be found all over Labrador and we have a significant population outside Labrador. This spreading out of our people reflects our being pushed off the land and the water in recent decades. The heart of our territory, however, is Labrador's rocky, island-dotted South Coast. Home to us is a collection of permanent and seasonal communities from Paradise River in the north to Lodge Bay in the south.

Traditionally, our lives consisted of a seasonal round of activities based on the cycles of nature. To simplify the Metis calendar, we moved inland in the winter to be near wood and fur-bearing animals; in the spring, we moved back to the coast to be near seals, fish, and birds' eggs.

According to our elders, our lives continued this way for a long, long time. Then about 50 years

ago, things began to change rapidly. In fact, you could say that there was an onslaught of change. It came in the form of the military base in Goose Bay; the arrival of the Department of Fisheries and Oceans with its mass of licenses and rules and regulations; the moratoria on cod and salmon, except for wealthy anglers; technological change like the introduction of freezers and fridges; the resettlement program that ripped people from their homes; and mega-projects like the Upper Churchill which flooded our trappers' tilts.

We have undergone great change, almost all of it not the choice of our people, but instead imposed by outsiders. It is a wonder our culture is as strong as it is.

And it is strong. Just look at subsistence hunting and gathering. A few years ago we did a survey of Metis land use, distributing 240 questionnaires in 13 communities. The results still give an indication of the strength of our culture and traditions. We found that over 90% of Metis hunt; 93% fish for food; 90% collect their own wood; almost everyone harvests berries; and almost 70% trap. Many of our people living in the urban setting of Happy Valley-Goose Bay regularly took part in these activities. This shows the strength of our people's attachment to the land and the activities we have always associated with it.

So far I have talked a lot about our culture and our economic adaptations to life in Labrador. You may wonder how this relates to an environmental workshop. But you cannot expect me to list off research priorities because we simply cannot separate ourselves from the land. And we can't separate our fate, as individuals and as a people, from what happens to the land in Labrador. This is something that outsiders do not understand. And that's why so many

decisions have been made that have hurt our people and Labrador itself. The flooding of the Upper Churchill 30 years ago is a stark example. Like the Innu, our people travelled to rivers and woods they had always known, only to find them under water. We were never asked whether we wanted this; in fact, we were never even told it was going to happen. It's hard to imagine a more disrespectful and disempowering thing to do to a people. And now we are threatened with it again on the Grand River, or the Lower Churchill as it's called by outside interests who see it only a way of generating electric power and profits.

Sometimes these mega-projects bring opportunities or invitations to us to involve our Indigenous Knowledge. It is progress that our Knowledge is finally getting some recognition but, given the historical experience of Aboriginal people in our interactions with the larger society, we have to ask why this is happening. One of our concerns is that Indigenous Knowledge and Western science have very different purposes. If I can quote two NisGa'a researchers: "The conceptual roots of Indigenous Knowledge relate more to the timeless mainstream of human experience than to the recent traditions of Western science, which grew up in the service of empire building". This is our worry. What will our Indigenous Knowledge or that of other Aboriginal peoples be used for? Will its inclusion be a nod in our direction to legitimize industrial developments that destroy the environment and hurt our people and our culture? There have already been situations in which the sharing of our Metis Knowledge has been to the detriment of our people and the environment. Let me give you an example involving the Department of Fisheries and Oceans. Much of what DFO knows about fish in Labrador comes from Metis Indigenous Knowledge, which our people have shared freely. Yet this same information is now used to prevent Metis from fishing in what many consider to be the appropriate time. For example, the spring trout

fishery in many parts of Labrador is too early. So the trout that is caught is small and people must catch many trout to make up a meal. If the season were later, the fish would be fat and people would not have to catch as many. It is because of situations like this that we are warned by our elders to maintain complete control of raw land use information. To reveal Indigenous Knowledge is to relinquish power. Disclosure may bring no benefits; worse, it might mean profits for others, damage by developers, and/or restrictions on Aboriginal land and resource use. Avoiding this is vital if the relationship between science and Indigenous Knowledge is to be beneficial and just.

So we have to ask what is the ultimate goal of the Northern Ecosystem Initiative? After all, baseline studies are often the first step in industrial development, providing the 'before' aspect of a 'before and after' scenario. We must be aware of development plans and proposals as we carry out the Northern Ecosystem Initiative. Aboriginal people have the most to lose and have already lost a lot. We are the ones who bear the burden of long-term impacts. Yet we do recognize the potential usefulness of having baseline data. We know that without it, accurate environmental impact assessment is impossible. We have lived through this with the military low-level flying program in Goose Bay.

We are not saying that Indigenous Knowledge and Western science can never work together. We are saying that objectives and priorities have to be crystal clear and they have to focus on what is best for the environment and the people who inherent to it. We think that resource management, for lack of a better phrase, is one area where the two systems can work together fruitfully - if the necessary respect and political will are there. For its part, Indigenous Knowledge can provide

new biological and ecological insights. It can help locate and identify endangered species of plants and animals. There are dozens of examples of Aboriginal elders and experts who have shown the way to researchers. If this Indigenous Knowledge is incorporated into resource management, it can prove beneficial for all.

Indigenous Knowledge can also make another, even more important contribution and that is to environmental education. It can help people develop real respect for and attachment to the environment of which they are part. This is starting to happen all over the world, wherever people feel "cut off from nature".

We have other concerns about science and Indigenous Knowledge. The intellectual property rights issue has not been resolved. It is now five years since the International Convention on Biological Diversity was signed, recognizing the validity of Indigenous Knowledge. But there is little evidence that Indigenous communities have received any benefit from sharing their Knowledge. The situation is further complicated because the Convention on Biological Diversity is subject to existing international treaties on intellectual property rights, such as the General Agreement on Tariffs and Trade - the GATT. One researcher has called Aboriginal peoples' generosity the "spilling of intellectual blood". We Aboriginal people have to treat these warnings as a wake-up call, a reminder to stay alert and active, rather than passive.

Because of these concerns, there was another meeting on Biological Diversity since then and signatory countries were required to "respect, preserve and maintain knowledge, innovations and practices of Indigenous communities." For us, this is getting close to the heart of the matter:

cultural and environmental integrity. Our people, and Aboriginal peoples everywhere, have to be allowed to choose to live as we wish in our own homelands. This has not happened in a long time and a lot of human suffering has been the result.

Yes, our people should be involved in gathering environmental data and doing environmental research. In fact, that is already happening. But this kind of involvement is only one tiny step and it is not enough. We must be the decision-makers in our own territory. It is not good enough to have Metis people map river valleys that are going to be flooded in the name of corporate profits. It is not good enough to offer our people a few token manual jobs and then cut our homeland to ribbons by building a resource access road for multi-national corporations. If science is to support Indigenous Knowledge, it should support the development of permanent technical and scientific capacity under the control and direction of Aboriginal people. The improvement of ecological databases, as with the Northern Ecosystem Initiative, *can* be a step in the right direction. A point worth repeating is that the use of Indigenous Knowledge should not lead to more regulations and restrictions on Aboriginal peoples' resource use.

Like hundreds of others, the Labrador Metis Nation land claim remains unsettled. It must always be our first priority. It is the key to preserving the environmental and cultural integrity that is so central to who we are. So, yes, we are concerned about specific aspects of the environment. River valley ecosystems are a priority for us, especially salmon, which is only accessible to rich anglers now and not our people. Vegetation is another priority for us, especially the forests of Southern Labrador, which are being eyed by pulp and paper companies now that the island has been clear cut. But let me reiterate that we do not see these things in isolation - for us,

everything goes back to the issue of environmental integrity.

A final concern of ours is respect from the academic community. There have been several initiatives regarding Aboriginal people at this university that we have not been part of. We usually learn about these courses, programs, and research articles in an indirect way. We understand the concept of academic independence but surely we have progressed far enough in our relationship with each other that we can be asked for input. Isn't Memorial University our university, too?

It is time once again for us to be the decisive voice in everything that affects us. This is the kind of progress that would help maintain our environmental and cultural integrity. Environmental health is directly relevant to the social, cultural, and economic future of Aboriginal people. In turn, these things depend on Aboriginal people's ability to directly manage and control the nature, scale, and type of development in our homelands. In this way, Indigenous Knowledge is the cornerstone of self-government. If cultural and environmental integrity are not maintained and protected, there will be no Indigenous Knowledge, and eventually we will lose our distinctiveness as Aboriginal people.

Thank you.

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Labrador Collaborative Research Workshop

Memorial University, St. John's
April 7-9, 1999

Report prepared by

Labrador Regional
Economic Development Boards

HYRON - Zone 2
CLEDB - Zone 3
SADC - Zone 4
Labrador Straits - Zone 5

Labrador Collaborative Research Workshop
Memorial University, St. John's
April 7-9, 1999

Research and Economic Development in Labrador

Prepared by: The Labrador Straits Development Corporation
In cooperation with Central Labrador Economic Development Corporation, Hyron Regional Economic Development Corporation, Southeastern Aurora Development Corporation

Presented by: Janice Barnes, Executive Director, Hyron Regional Economic Development Corporation
Patty Way ~~Judy Pardy~~, ~~Executive Director~~ chair, Southeastern Aurora Development Corporation

The Regional Economic Development Boards:

The role of the regional economic development boards in Labrador is planning and coordination of economic development activities in the five economic zones in Labrador. The five economic development boards are:

- Zone 1, Nanuk Development Corporation, Northern Labrador *(this board is currently inactive)*
- Zone 2, Hyron Regional Economic Development Corporation, Labrador West/Churchill Falls
- Zone 3, Central Labrador Economic Development Corporation, Central Labrador
- Zone 4, Southeastern Aurora Development Corporation, Southeastern Labrador
- Zone 5, Labrador Straits Development Corporation, Labrador Straits.

In 1997 each economic zone completed a five year strategic economic plan and the zones are now in year two of implementation of that plan. The development sectors in our plans include development initiatives in mining, fishery, tourism, business (supply and services), social, education, transportation, communications and natural resources. The plans are being implemented by community groups and businesses in the zones with assistance from the regional economic development corporation in that zone. Our role is to provide assistance to the implementing bodies in undertaking specific initiatives. This is sometimes a difficult role to fill, since other development groups have had difficulty in accessing funding to keep staff on, we are often asked to be all things to all development groups. Research is an area where there are definite needs, and for our organizations, not always sufficient time or funding to meet those needs.

How we have used research from the university in the past:
An Example from the Labrador Straits, Zone 5

Tourism development in the Labrador Straits may be traced back in time to the early 1980s. The primary impetus for this development was the discovery and archaeological excavation of 16th century Basque whaling sites at Red Bay. Recognizing the potential for tourism residents of the region created a vision for "heritage tourism" and actively pursued its development. Throughout the 1980s and 1990s a tourism infrastructure developed in the Labrador Straits. New public visitor facilities were designed and built and significant expansion and upgrading of private sector facilities occurred.

In 1979 some half-dozen hardy tourists journeyed to Red Bay, Labrador to experience the excitement surrounding one of the most important archaeological discoveries in Canada. Remnants of stone structures littered with fragments of red clay roofing tiles and, below the harbour's waters, the skeletal structure of a 16th century galleon presented fascinating evidence of Basque whaling activities in the 1500s. It would be another decade before the extent and significance of this discovery was fully understood. During that decade Red Bay was transformed from a secluded coastal Labrador fishing village to the focus of international attention. The trickle of visitors in 1979 became a flood by the 1990s as nearly 10,000 tourists called at the community.

The archaeological discoveries at Red Bay marked the beginning of a new industry for the Labrador Straits: tourism. As the numbers of visitors and the level of attention grew, the demands for local services increased proportionally. The decade of the 1980s saw the winding, pothole-ridden Labrador Straits road transformed into a paved highway; new accommodations and restaurants opened and existing ones were upgraded; new craft shops, visitor centres and museums appeared. Now, in 1999, tourism is entrenched as a significant part of the Labrador Straits economy.

Soon after the discoveries at Red Bay, residents of the Labrador Straits conceived a vision for tourism in their region. They saw their region not as a place for entertaining tourists, but rather as a place to educate people. Tourism for them was not pony rides and water slides, but history, tradition, culture and natural environment. The Labrador Straits is rich beyond compare in these kinds of resources. Residents believed that, properly managed, these resources could form the backbone of a viable and sustainable heritage tourism industry.

This vision for tourism in the Labrador Straits, including a focus on our history, heritage and environment, and a regional approach to development, has guided the growth of our heritage tourism industry during the past decade.

Another impact of the archaeology project in Red Bay has been the impact on education. Prior to the archaeology project, few high-school students went on to post

secondary education. After working as field workers on the archaeology project, the school saw the entire grade 12 class go on to post secondary institutions. Many of those students studied history or anthropology at MUN. This trend has continued over the past 10 years.

How we foresee using research in the next three years:

We have three years of implementation remaining of our existing five year strategic economic plans. We anticipate that the regional economic development boards will be developing another five year economic plan at that point, but our funding is tied to a performance contract with the federal and provincial governments and there may be changes beyond our control.

In terms of research tied to our strategic economic plan for the next three years, we can definitely identify the need for applied research for specific development projects. There are areas where we may be able to work with a business co-op student or graduate student to undertake specific research projects, there are other areas where industry and the Marine Institute may be able to partner or where the zone may be able to access funding in order to partner with MUN for scientific research. Often we are involved in research projects in cooperation with government departments and industry. Often research is undertaken which we know nothing about.

Some specific development initiatives in our plans which have research components:

Social Sector:

- Sociological work re: Changes in culture due to American military influence in the 1950's;
- Archaeological work on newly discovered historic Innu camp sites (re: Lower Churchill work);
- Research surrounding potential historical and archaeological sites in zone 4 (Wonderstrands; Dove Brook, Seal Islands, Fort York, Henley Hr., Grady, Antles Cove, Hawkes Hr;
- Trans Labrador Highway: impact and opportunities facing coastal communities with the development of the coastal highway;
- Municipal infrastructure: research initiatives to create future growth through appropriate infrastructure whereby municipal services and land resources are used most efficiently;
- Communications and Information Technology: research and development of a communications environment with an accessible, advanced network which ensures that technology resources are used effectively to link health, education and business development;
- Database of resources to support literacy initiatives;
- Research and delivery of Labrador culture, history and life skills for use in the

school curriculum;

- Research feasibility of offering education and training locally where possible. Use of new technology or cooperative strategies may be necessary to offer some courses in coastal communities, but will increase participation levels;
- Education needs assessments, especially in terms of development of business training;
- Demographics: Lower birth rates and changing needs of maturing population and the impact this will have on the region of Labrador in the next 25 years;
- Research social barriers that prevent women's participation and develop programs to build leadership skills, work skills and self esteem for women;
- Health research: there has been important work done in the past in genealogical research in Labrador. A Colon Cancer research project , funded by IGA identified individuals with a family history of colon cancer and recommended testing. There is definitely a need for this type of research to continue in Labrador.

Natural Resources:

- Bird migration paths and types of birds;
- Bio-diversity inventory and quantifying of flora in Lake Melville;
- Experimental work in aqua-culture: research and grow-out facility;
- Watershed development and stock assessments on scheduled and unscheduled rivers;
- Exploratory work on underutilised species;
- The destruction caused by ghost nets along the Labrador coast needs to be determined through research;
- Forestry: research feasibility of expansion of existing woods operations, additional operations or lumber manufacturing and marketing opportunities which may have potential;
- Determine feasibility of industrial use of seaweed;
- Research on the damage draggers are causing on spawning grounds;
- Research on lobster population in St. Michael's Bay and unique cod population in St. Gilbert's Bay;
- Research tied to agricultural projects: Using fish offal and/or seaweed to develop fertilizers; Determining feasibility of producing certain crops in Labrador; Investigation of properties of wild plants for medicinal purposes; experimental work in agriculture and cultivation of wild berries.
- Applied research related to the harvesting and processing of underutilised species;
- The development of new fishery products, processing techniques and equipment;
- Development of food products using our natural resources;
- Quality assurance training;
- Explore options in terms of increasing value added product and more effective utilization of local resources.

Industrial Development:

- Earth Sciences: Geological research has provided a basis for mineral exploration in Labrador;
- Collection of information on mining and prospecting. Prospecting training for coastal communities;
- Strategy to determine potential for oil and petroleum opportunities;
- Market research for new business and tourism opportunities;
- Study of ice conditions in the Strait of Belle Isle for use when planning new transportation links (expanded ferry service, transmission line across Straits, or possibly fixed link).
- Mentoring program to use retirees with skills tied to the job market in the school or college system.
- Research tied to industrial development: Trans Labrador Highway, Lower Churchill Developments, Labrador West, Voisey's Bay.
- Research economic forecast for Labrador West outlining the industry outlook, production, shipments, growth, employment, new mineral developments and community infrastructure.
- Research the technological needs of the manufacturing and supply/service sector. (this approach could apply to other regions of Labrador, especially Voisey's Bay).
- Research and development of new fabrication/manufacturing/construction companies to develop new technologies to meet mining needs.
- Labrador West Interactive Learning Centre - a partnership between the College of the North Atlantic, Memorial University, and the Iron Ore Company of Canada

Beyond 3 years?

How can MUN and the communities of Labrador work together to use research for community economic development. What value does scientific research have for the local community? If we look at how research has been used by communities in the past, we can see ways to use similar research in the future.

For example, the Labrador Institute has played a major role in literacy development in Labrador. Their current work with Frontier College and the development of the Labrador Literacy Information and Action Network (LLIAN) are bringing in new skills to very isolated communities. The folklore work that MUN Extension Services undertook in Coastal Labrador in the 1970's has had positive impacts to the present day in giving coastal residents a voice and empowering them make their own decisions regarding the future of their communities. In the 1970's MUN used technology to break down barriers of distance. We are still using technology to break down barriers of distance. More recently, the Labrador Institute has played a key role in setting up literacy groups around Labrador, providing training, resources and a communications network. LLIAN uses computer technology and Internet tools to link Labrador Communities and a give us a global outlook.

Our relationship with MUN is unique. Labrador has the Labrador Institute, and the Labrador Institute can be used as a communications tool between the local community and the scientific community. How can we work together to make the most of research, or even just keep informed? How can the local communities find out what is already happening in terms of research which we can use? On what basis do we want to work together? How can the scientific community and the local communities partner in terms of research needs and research funding?

The Labrador Institute can and does definitely play a communications role in bringing information to communities. This role can be expanded to include planning and identification of research and partners to access funding for research projects. The Labrador Institute can be instrumental in the development of a database of Labrador resources and in linking information sources.

We are always facing challenges in terms of funding for development groups and development projects. There certainly must be ways in which Memorial University and communities in Labrador can partner to leverage funding for mutually beneficial projects. When it comes time for the zones to develop the next five year strategic economic plan, we may be able to include new research projects, thereby facilitating access to funding and a two-way flow of communications.

If anyone here today wishes to contact any of the Regional Economic Development Boards to discuss the development initiatives we have presented, the Labrador Institute has our numbers.

Appendices:
Research needs of zones 2, 3 and 4.

HYRON Regional Economic Development Corporation
118 Humphrey Rd.
Labrador City, NF
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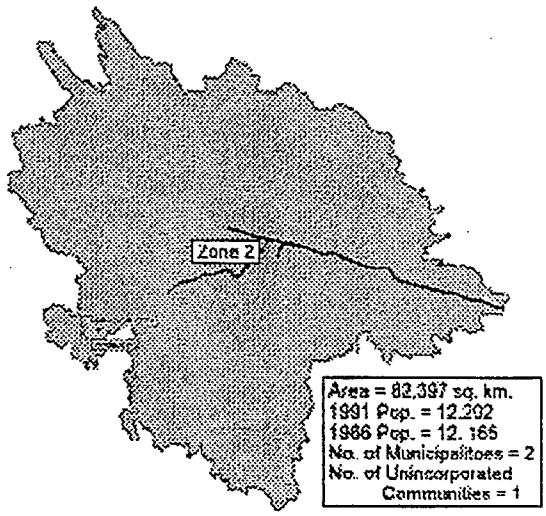
Phone (709) 944 - 6499 Fax (709) 944 - 4008



Zone 2 - Labrador City - Wabush - Churchill Falls

'AT WORK FOR YOU IN ZONE 2'

Ms. Janice Barnes - Manager
Hyron Regional Economic Development Corporation

Upon dissection of the five-year strategic economic plan, it is evident that many aspects require further research in order to determine the status and feasibility of the proposed initiatives. The necessity to examine these initiatives is imperative to the economic viability of the Hyron Region. On investigation of the outlined initiatives, we hope to determine whether the goals are pragmatic. As well, we hope to gain some knowledge on specifics towards reaching these objectives. The following outlines the aforementioned by individual sectors.

Tourism Development Strategy - Research Needs Assessment

- Research the feasibility of establishing an Elder Hostel program in Labrador West
- Research the possibility of establishing Labrador West as a Mature Traveler's Center with well integrated educational, recreational and health facilities. Include in this research the possibility of twinning with a southern United States retirement town for seasonally appropriate long term exchanges
- Research and design an all encompassing program to meet the needs of the mature traveler including roofed accommodations, food & beverage, tour operators/wholesalers, transportation as well as recreational and cultural activities.
- Research the potential to develop, package & market a well integrated winter product which allows tourists to participate in one/several activities through a seamless package
- Research & disseminate international standards for hunting, fishing, adventure travel and mature travel experiences for existing and potential operators
- If research determines that a mature traveler's market and/or center is viable, determine whether marketing materials can be developed to direct to this market.

Educational Development Strategy - Research Needs Assessment

- Research the possibility of attaching business support funding to develop business skills
- Research opportunities for jobs or entrepreneurial opportunities
- Investigate the possibility of using retirees with skills tied to the job market and the new economy and who plan to stay in the area in a mentoring capacity with in the school pr college system, depending on the level of qualifications
- Research the feasibility of the P.D. center continuing provide state-of-the-art information and equipment for use by all educational institutions
- Investigate funding possibilities for new short term programs

Mining Strategy - Research Needs Assessment

- Research the feasibility of joint training initiatives between the two mines and the business community
- Research & identify industries that can utilize resources in the area and require access to existing available hydro power
- Research recruitment and marketing activities
- Research economic forecast for the area outlining the industry outlook, production, shipments, growth, employment, new mineral developments and community infrastructure
- Research, in conjunction with the Town of Fermont, joint-marketing opportunities for promoting the entire region as a mineral center
- Explore provincial and federal funding, community capital corporations, the Edge Program, and venture capital companies for on-going mineral development
- Research possibility for at least one local fabrication/manufacturing/construction company per year to develop new technologies to meet the mining needs
- Research development and commercialization of mineral opportunities in Labrador West
- Research & Assess the mineral development potential for graphite, silica and manganese
- Research the possibility of Labrador West becoming a staging area for manufacturing and supply/services in Labrador
- Research options for assistance to companies interested in establishing operations in Labrador City/Wabush
- Research the technological needs of the manufacturing and supply/services sector in Labrador West

"Other" - Research Needs Assessment

- Research feasibility of expansion of existing woods operations or additional operations which may have potential
- Explore options in terms of increasing value added product and more effective utilization of local resources
- Research local lumber manufacturing and marketing opportunities during the next five years
- Research opportunities for local businesses to develop local fresh vegetables, active shrubs and trees , as well as flowers
- Analyze needs of the area's maturing population, particularly as they relate to two distinct populations, early retirees and senior citizens
- Determine the actual needs and viability of providing those needs
- Outline possible direction given upgrading of Route 500 and possibility of Lower Churchill development
- Research in corporation with CF(L)Co, the town's administrative structure and possible land for development and retirees

Labrador Collaborative Research Workshop
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APPENDIX

Central Labrador Economic Development Board
Zone 3

Labrador Collaborative Research Workshop - Memorial University

Background on Zone 3

The Central Labrador Zone 3 boundaries largely reflect regional watershed boundaries. The Zone incorporates approximately 70,000 km^2. Only 10,240 individuals, however, resided in the Zone when the last census was taken in 1996. The Zone represents 17.3 percent of the provincial land area but only 1.85 percent of the Provincial population. These statistics illustrate two key underlying elements of the region. On the one hand there is a low population in a large semi-wilderness. With this comes all the difficulties that distant from services and limited human resources impose on efforts to develop a vibrant and sustainable economy. On the other hand, there are enormous opportunities offered by a clean environment that has limited pressures on its present qualities. The region's resources often exist as 'to be discovered' potentials. The pristine environment, the vast open space and the opportunities for alternative lifestyles represent an attractive quality for many of the Zone's residents.

Although the Zone 3 is largely undeveloped in comparison to other regions of the Province and the Country, there has been human occupation in Labrador for thousands of years. While the community of Sheshatshiu is identified as the principle aboriginal community in the Zone, all communities in the Zone contain a significant aboriginal component.

It has been observed that there is not a comprehensive base of knowledge on the Zone's natural resources and the ecological interrelations between them.

This represents a constraint to economic development in that there is neither a clear understanding of what resources are available nor the constraints/opportunities to their sustainable use.

The resources necessary to develop this base of knowledge presents an opportunity to develop local research skills. In addition, through the research, opportunities for economic development can be identified. A close relationship between the development of an understanding of the Zone's natural resources and the economic opportunities that knowledge can create supports many of the Board's initiatives.

The Strategic Economic Plan for Zone 3 Central Labrador recommends that:

i. The Board support initiatives to promote and undertake development of a comprehensive knowledge base of the Zone's natural resources including the interrelationship between the various elements that comprise those resources.
ii. The Board support the undertaking of resource research using local resources.
iii. The Board support initiatives to raise awareness of the opportunities the natural resources of the Zone present for economic development.

CLEDB Strategic Economic Plan

Research Initiatives for Zone 3 that will lead to Sustainable Economic Development

Aqua-culture

Arctic Charr is common to clean clear Labrador waters. The only Charr facility in the province is located in Daniel's Harbour, NF. This research station was built to raise fry to be supplied to grow out to provincial facilities. However no other facilities exist in the province. Fisheries and aquaculture specialists in the province would support a grow out facility in Labrador on the basis of good, disease free ground water sources, access to cheap power and influence of brackish water. A report prepared for our board found that the ground water quality in North West River to be suitable for an Arctic Charr on-growing facility. The North West River Aqua-culture Society has applied for funding to refurbish an existing building in NWR in order to accept such a venture. The Marine Institute has offered tanks and an aerator.

Aqua-culture in the province is still experiencing growing pains and immediate success is not always on the forefront. However, aqua-culture in New Brunswick is a $660 million dollar industry and a $6.1 million dollar industry in Newfoundland. Daniel's Harbour (GNPDC), Marine Institute and Cain (Metis Nation) have expressed an interest in a small research agreement. Funding for this project must be channelled thru an incorporated company. The timing is right to transfer Aqua-culture technology to Labrador.

> The Zone possesses significant opportunities for the development of an aquaculture industry. Much of the infrastructure is in place. There is air, marine and road access to markets. Many trucks and aircraft delivering goods to the Zone leave empty. In addition, the multi-national composition of the armed forces in the Zone present an opportunity to develop and access their home markets (note the previous recommendations). The Zone has access to low cost power, has a clean environment, and significant fresh and salt water bodies. In addition, fishing is very much part of the culture of a significant segment of the region.
>
> Within the Zone there may be opportunities for both fish farms (where the stock is kept in an enclosed area) and for stock reintroduction and enhancement. There may be opportunities to employ existing stocks within Lake Melville.
>
> The most significant constraints to the industry are the lack of knowledge of the resources that are available (e.g., what is in Lake Melville and other inland water bodies), and a lack of knowledge of the markets and sources of financing and training.
>
> The Board recognizes that aboriginal rights to the resource exist. The Board also agrees that these rights do not represent a liability or any other type of constraint to development of an aquaculture industry. Plans for the aquaculture or fisheries industry must fully appreciate these rights.
>
> CLEDB Strategic Economic Plan

Agriculture and Harvesting

Thru the dedicated work of Memorial University Business Co-operative student, Kim Noseworthy, the CLEDB now has a comprehensive report offering solutions to the longstanding problems of commercial farming in the local area entitled "The Examination of Agriculture in Zone 3 and its Potential for Expansion". Thru Kim's work, local commercial farmers have given the Lake Melville Agricultural Society a new momentum in achieving the goals of increased local production. This report concluded that 99% of vegetables sold in the upper Lake Melville area and to the north and south coast, are imported. Local degree days indicate good climate for growth. The CLEDB will support the farmers in all of their efforts - soil enhancement through community composting and green manure tests, fodder tests, access or construction of an overwintering facility. The Board will be bringing in professionals from specific fields inside and outside the province to offer solutions.

Is there economic potential in the cultivation of wild berry plants? On two local farm properties that have been not been worked for several years, we found very healthy wild berry plants in abundance with extremely large berries and growing in the previously worked fields. Have the chemical properties of these plants changed from those which are wild-crafted? Can wild berries be cultivated in organic soil conditions without influencing their chemical properties?

Bio Diversification Indexing

What's out there in the Upper Lake Melville area? Biologists recommend an eco-classification study be done in the spring on the Upper Lake Melville area fauna. The Board intends to investigate the potential to develop a natural native health food (and supplement) industry. The CLEDB requires an inventory of medicinal and edible plants occurring in the upper Lake Melville Basin. No one at the present time knows what we have, what economic value is available and what quantities are actually around us.

Herbal Markets

The North American Nutra-Cutical/Herbal Market is booming in the States with many large international brokerage buying firms emerging. Labrador is home to many native species of plants and herbs that are being bargained for in the global market place. Species such as the Redberry, Raspberry, Hemlock, Cranberry and Labrador Tea all have potential markets. The scientific community has not yet documented but is talking about how the active ingredients of these plants increase when grown in cold northern climates. The problem comes from trying to compete with herbal farms in North America growing 20 to 30 acres of crop. The province as a whole must sell as bulk in order to be noticed. We need to begin studies now on hot commodities such as the Blueberry and Partridge berry which are being shown to contain anit-oxidents, which are anti-cancer phytonutrients.

Agricultural practices are both evolving and on the increase within the Zone. Private gardens are turning into commercial gardens and new agricultural businesses are being

started. It is recognized that within the Zone there are opportunities to capture either a portion or the entire market for many products now satisfied by imported goods. There is also a potential to serve a larger market within and beyond Labrador. The Zone's central location, the availability of developable sites and access (existing and potential) to other areas represents significant opportunities for further development. There is a potential for the industry to satisfy both local needs and export to other areas within Labrador and beyond.

The Board recognizes that agriculture includes traditional domestic food production, natural foods (e.g., caribou and wild berries) and secondary processing of these products. The Board recognizes the cultural importance of traditional foods and the need to protect a priority of access to such foods.

CLEDB Strategic Economic Plan

Tourism

Labrador is considered an exotic destination - isolated and pristine with centuries of aboriginal habitation and European colonization. More recently, there has been a tremendous influence on the peoples of Labrador and their culture - the influence of the American and allied military forces stationed in Goose Bay. There is potential for **sociological research** into the direct effects of this foreign influence since the 1950's. This research has potential to attract former American military and their families who were residents of Goose Bay and to assist in the development of tourism potential of the region by word of mouth promotion.

The speedy progression of the proposed Lower Churchill River Hydro Project has led to some exciting archaeological finds of historic Innu artifacts and campsites. As proven in the Labrador Straits Zone 5, **archaeological activities** have a direct and positive effect on tourism potential. Will the University become actively involved in pursuit of this type of research?

Another aspect of the tourism industry in non-consumptive eco-tourism. Presently, there are only a few operators who cater the tourists who prefer to shoot with cameras instead of artillery. There is potential to develop this lucrative market with in depth research on the **bird migration flight paths** within the Zone. The attraction of "Birders" would be a boon to the local industry.

Development of the Tourism industry represents a significant opportunity for the Zone. The Zone's high quality natural environment, its access to other areas of Labrador and the observation of limited market penetration all suggest significant opportunities for growth. It is also generally recognized that with completion of the improvements to the Trans-Labrador Highway, the region will experience significant new pressures. Particularly with

the completion of the loop road to the coastal communities. The Board supports the Tourism industry as one that can be non-consumptive and sustainable. Tourism can also be supportive of traditional cultural activities. The potential for spin-offs is significant.

It has been observed that tourism has tended to focus on single event or single interest summer activities. There needs to be a recognition of the potential for year-round tourism. An objective will be to support tourist activities that generate a fuller experience then single interest activities.

It has been observed that as the number of visitors to the region increase, the additional pressure on resources may compromise either traditional uses or the very qualities that generated the initial attraction. Increased promotion of the region must be linked to an appreciation of the need for regulatory efforts to ensure the region retains the qualities important to the residents and which attract tourists.

CLEDB Strategic Economic Plan

Labrador Collaborative Research Workshop
Memorial University, St. John's
April 7-9, 1999

South Eastern Aurora Development Corporation
Zone 4

SOUTHEASTERN AURORA DEVELOPMENT CORPORATION - ZONE 4

RESEARCH INITIATIVES FROM SEP - MARCH 31, 1999

FORESTRY

1) Research and compile data specifying which area or areas within Zone 4 would be best suited for commercial sawmill operations. Pertinent questions have to be answered regarding management and worker training, partnerships, marketing and secondary processing. This research will coincide with the completion of the Districts 20 and 21 Management Plan now that the Ecosystems Manager has been hired.

2) Research will also include a study in the St. Lewis and Mary's Harbour areas to determine if there is potential to develop harvesting operations and forest access roads in these areas.

FISHERIES

A great deal of research must be compiled on this sector in order to maximize the value of all aspects of industry activity and identify new exploitable resources through exploratory fisheries and other development activities.

1) The commercial salmon fishery was the most important fishery in Zone 4 second only to cod (it was the primary fishery in Sandwich Bay). This fishery was canceled with no scientific data to back the claim that salmon stocks were declining. The people feel that this was a political ploy backed by powerful outfitters and funding must be made available to complete stock assessments on the scheduled rivers of southeastern Labrador. Only then can we determine other economic development initiatives such as adventure tourism, outfitting camps, catch and release, trolling, etc. always considering the principal of "local adjacency".

2) Research has to be compiled on several unscheduled rivers within Zone 4 to determine whether or not they should be scheduled. Zone 4 has seven scheduled rivers and the SADC has identified six others that need to be explored. (Scheduled rivers are the Eagle, Gilbert's, Hawke, Reids Pond River, St. Mary's, and Shinney's - unscheduled rivers are North, Paradise, Alexis, St. Lewis, St. Charles, and Black Bear). This is also a tourism initiative.

3) Very little research has been done on the underutilized species along the coast. Exploratory work has proven to be very successful on some strains such as the sea urchin, whelks, and scallop but there are dozens of species that have not been considered to date. Scientists have determined that there could be tens of thousands and perhaps even tens of millions of unknown life forms in our oceans. Only thorough research will identify viable development initiatives keeping in mind that conservation is the first priority.

4) The SADC has started preliminary research into the feasibility of a seaweed industry for Zone 4. We have an abundance of several different types along the coast and funding has to be secured to hire a professional in this field to determine it's viability.

5) Horror stories are consistently being reported concerning the damage draggers are causing on spawning grounds and the abuse taking place aboard these vessels, particularly with regards to the shrimp draggers. One monitor on a vessel that operates twenty four hours a day is certainly not a guarantee that regulations are enforced. Research must be carried out to determine how to help alleviate this ongoing crisis.

6) Very little work has been done to determine the sustainability of fish farming in Zone 4. One of our targets is to research various fish species for their potential for aquaculture. For example, there is a breed of cod fish in Gilbert's Bay that is unique to that particular area. Research is ongoing and consultations will soon be taking place by DFO to determine if this should be slated as a marine protected area.

7) More research has to be conducted on the lobster population in St. Michael's Bay. They are a very healthy and aging species since transplanted but, although the females carry the eggs, they are not reproducing. It seems that the water may be too cold and they may have to be transferred to a warmer climate for reproduction.