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**VUNTUT GWITCHIN TRADITIONAL KNOWLEDGE
AND SUSTAINABLE USE PRACTICES ASSOCIATED
WITH THEIR SUBSISTENCE HARVEST OF THE
PORCUPINE CARIBOU HERD**

by

VESNA MADJARIC , M.Sc., B.Sc.

**A thesis submitted to the faculty of Graduate Studies and
Research in partial fulfillment of the requirements for the
degree of**

Masters of Arts

Department of Geography

**Carleton University
Ottawa, Ontario
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VUNTUT GWITCHIN TRADITIONAL KNOWLEDGE AND SUSTAINABLE USE PRACTICES ASSOCIATED WITH THEIR SUBSISTENCE HARVEST OF THE PORCUPINE CARIBOU HERD

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ii

Abstract

The most remote areas of the Yukon have long been recognized as unparalleled places of natural beauty and ecological importance. They are among the last repositories of ancient ecological associations.

This valuable ecosystem is home of First Nations Vuntut Gwitchin people who are and have been dependent on these natural resources and as such managed to survive without creating an imbalance in the ecosystem for thousands of years. They have traditionally relied on the Porcupine caribou herd and they even refer to themselves as “caribou people”. Opening up this magnificent country to large scale industrial development will have lasting effects on the environment and the Aboriginal people who live there.

The objective of this Thesis is to define traditional and present day values and knowledge of Vuntut Gwitchin people of Old Crow, how this knowledge is applied to their subsistence harvesting of renewable resources and the protection of the natural environment in which they have lived from time immemorial.

**This Thesis is dedicated to Aboriginal People of
CANADA**

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Table of Contents

Abstract	ii
Dedication	iii
Acknowledgments	iv
Table of contents	vi
List of Illustrations	viii
Chapter I: Introduction	1
Chapter II: Sustainable Development	6
2. 1. The International and Canadian developments on the issues of sustainable development	10
2. 2. Theoretical framework	17
2. 3. The meaning of traditional knowledge	34
Chapter III: Aboriginal peoples' of Canada	54
3. 1. Land claims and self-government	70

3. 2. Co-management	75
3. 3. Recent developments in Economic development of Yukon and Arctic National Wildlife Refuge in Alaska	79
Chapter IV: Geography of Old Crow settlement	82
4. 1. Porcupine caribou herd	85
4. 2. History of Vuntut Gwitchin people	93
Chapter V: Research methodology and findings	104
Chapter VI: Conclusions	144
REFERENCES	147

List of Illustrations

Figure 1.1 Distribution of the Porcupine Caribou Herd	103
Figure 2.1 Old Crow, Yukon, 1997	136
Figure 2.2 Porcupine River, Yukon, 1997	136
Figure 2.3 and Figure 2.4 Porcupine River, Yukon, 1997	137
Figure 2.5 and Figure 2.6 Smoking of king salmon ,Yukon	138
Figure 2.7 House belonging to Joe and Glenna Tetlich,1997	139
Figure 2.8 Mr. Joe Tetlich and his son Jamie, 1997	139
Figure 2.9 Birthday party for Jamie Tetlich, 1997	140
Figure 2.10 Youth camp, Porcupine River. Yukon, 1997	140
Figure 2.11 Ms. Edith Josie, Old Crow, Yukon, 1997	141
Figure 2.12 Traditional arts and crafts, Old Crow, Yukon	141
Figure 2.13 Feast of dried caribou meat at the home of Mrs.	142
Elisabeth Kaye	
Figure 2. 14 Traditional dress made by Mrs. Elisabeth Kay	142
Figure 2.15 and 2. 16 Land disturbances near Whitehorse	143

Introduction

The most remote areas of the Yukon have long been recognized as unparalleled places of natural beauty and ecological importance. They are among the last repositories of ancient ecological associations. Human disturbances could do tremendous harm to this delicately balanced ecosystem.

The harsh climate leaves little flexibility for survival since its flora and fauna and the short growing season limit the time for regeneration. The relatively short food chain means that the loss or introduction of one component can have a drastic effect on many other species. For instance, for lichens to grow a few inches takes several decades. In the food chain they are an important source of food for caribou.

This valuable ecosystem is home of First Nations Vuntut Gwitchin people who are and have been dependent on these natural resources and as such managed to survive without creating an imbalance in the ecosystem for thousands of years. They have traditionally relied on the Porcupine caribou herd and they even refer to themselves as “caribou people”. The continuation

of subsistence harvesting of caribou is for them a matter of cultural survival for following generations.

Aboriginal people had and still have great riches in cultural and spiritual resources, yet many of these have been swept aside and destroyed by mainstream western civilization, which is out of balance precisely because it has lost those spiritual values.

As quoted by D. Suzuki (1997), A. Leopold (1949: 78) stated :

“ Conservation is a state of harmony between man and land. By land is meant all the things on, over or in the Earth. Harmony with land is like harmony with a friend: you can not cherish his right hand and chop off his left. That is to say, you can not love game and hate predators: you can not conserve the waters and waste the ranges: you can not build the forest and mine the farm. The land is one organism.”

In Aboriginal people's world view, all animate and inanimate objects have divine origins and a genealogy dating back to the Creator who was a source of all life and existence. This holistic view holds that all things are linked together by genealogy through mutual descent. Therefore, any act which changes or degrades the essence of one life form will impact on the integrity of all life. (Stephen Augustine 1998, personal communication)

As D. Suzuki, (1997: 6), stated:

“ Behind the silence - and partly because of the silence the eco destruction continues, compromising the future for all the coming generations. That is our true challenge today, not debts and deficits or global competition, but the need to find a way to live rich fulfilling lives without destroying the planet biosphere which supports all life. Humanity has never before found such a threat: the collapse of the very elements that keep us alive.”

For Aboriginal peoples it is becoming of crucial importance to rediscover and reaffirm their own heritage and for the rest of society to acknowledge and accept the important role the Aboriginal peoples and their system of knowledge have in working towards sustainable development.

“Sustainable development is a new conscience for mainstream society: for Aboriginal peoples it has been a way of life”.(Augustine 1999, personal communication)

The objective of this thesis is to define traditional and present day values and knowledge of Vuntut Gwitchin people of Old Crow, how this knowledge is applied to their subsistence harvesting of renewable resources and the protection of the natural environment in which they have lived from time immemorial, and what they consider to constitute sustainable development.

This thesis also attempts to define to what extent their world views differ from mainstream world views and how can we, with better understanding and respect for their culture and values, achieve what every developed society aspires to, the sustainable development and high quality of life for all its citizens.

I certainly never even contemplated that one day I would be privileged to study culture and traditions of Aboriginal people of Canada. I lived until 1991 in Croatia. I studied agriculture and later I finished a Master of Science degree in Biotechnology, which I thought would be my occupation for the rest of my life. I lived a peaceful, middle class life, built my own house, and occasionally traveled to the distant shores. I thought that this is how the rest of my life would look. But I was wrong, in the spring of 1991 Croatia was attacked brutally by Serbian armed forces and in less than a few days I lost almost everything that meant something to me. I took refuge for a year in Austria and then in 1992 I immigrated to Canada in the hope that this will be the country in which I will settle for good. Now I am a Canadian citizen and I love Canada as I always have loved the country of my cultural background

Croatia. I hope that this will be a country of everlasting peace, democracy and understanding for all its citizens.

Sustainable development

In recent years concerns over damage to the Arctic environment have been growing dramatically. The Circumpolar North has become a major depository for organic pollutants and heavy metals. An increase in ultra violet radiation is expected to affect biological organisms in the region.(Beckerman 1992) According to the Royal Commission on Aboriginal People there is continual pressure of mineral exploitation, decreased habitat for many species and social consequences to Aboriginal people.

In the face of the many environmental problems of global society, it may seem futile to worry about unspoiled habitats and their preservation. But environmental issues are all interrelated, and protecting ancient ecological associations 'in situ' is in some ways the most significant challenge of them all. Everything around us has its ultimate origins in nature. The first domesticated plants and animals came from the wild. The rare plants and animals that live in the last wilderness areas may hold genetic combinations which can be useful for new medicines or foods. But beyond this scientific

and practical worth, the most appealing value of the wilderness regions is spiritual. Our civilization confined only to the world of its own making suffers from an ultimate loss of attachment. Wilderness gives us an opportunity to understand things from a very tactile perspective.

Berger (1977) said that for some people, the notion of preserving a wilderness area inviolate from industry is anathema - as though we were on the brink of starvation and could not survive without exploiting the resources of every last piece of ground in our country. They would argue, states Berger, that the urge to develop, to build, to consume, is fundamental to human nature. But this argument might apply to northern wilderness only if there were no other way in which, and where, this urge could be satisfied.

Lysyk, Bohmer and Phelps (1977) claimed in the Alaska Highway Pipeline Inquiry that Yukoners take special pride in the knowledge that most of the Yukon north of Dawson is still virtually untouched wilderness. Distance and inaccessibility have been the main protection for this area which was threatened in 1977 with various proposals for construction and development. They claim that the philosophy that "regardless of how hauntingly beautiful a

wilderness area may be, it serves little purpose in the overall scheme of things unless it is enjoyed by people”(1977) should be balanced by an intelligent sensitivity to the problems that roads and other developments cause in wilderness areas. Caribou, wolf, and grizzly bear need large areas of wilderness to survive and some endangered species, such as the peregrine falcon, live only in the special isolated habitats. They said that protection of this species should be an important objective, even if their protection denies access by road or restricts industrial development.

Sustainable development should be perceived as an analytical framework intended to provide structure and coherence in thinking about relationships between humans and environment. Some people emphasize sustainability of ecosystems in discussions about sustainable development, others emphasize development as the major issue. When the accent is on “Development” then the discourse of sustainable development is set apart from environmental protection or obligations of humans to act as stewards of physical and biological systems. On the other hand when the accent is on “Sustainable”, that places critical limitations on the pursuit of human objectives. Therefore

“Sustainable development” is a condition which enhances activities for human welfare, without destroying or degrading existing biophysical or cultural systems. Some development strategies could lead to serious problems in human health and welfare if they destroy the resource base on which certain societies depend. In the case of the Arctic, the distinctive circumstances could be grouped into several categories including the ecological, cultural and social. In these very specific environmental conditions, it is particularly important to minimize footprints of large scale industrial development and at the same time to adopt an ecosystem perspective in managing and harvesting renewable resources. It is also important to find a balance between social and cultural welfare on the one side and material welfare on the other.

Aboriginal peoples’ communities in the High North are very vulnerable to decisions over which they might have little or no influence and control, and which may disturb or change permanently a way of life they have followed for thousands of years.

International and Canadian developments on the issues of sustainable development and Aboriginal peoples' rights

On several occasions Canada has made commitments to the conservation and sustainable use of biodiversity. The most important among the recent ones are the Convention on Biological Diversity (or Biodiversity Convention) and the Canadian Biodiversity Strategy (CBS). These are the most recent accomplishments in a long tradition of environmental law and policy development. Canada also has participated in and agreed to a number of international treaties, conventions and declarations over the years, which support biodiversity conservation and sustainable use. This includes the 1971 (Ramsar) Convention on Wetlands of International Importance (especially as Waterfowl Habitat), which came into force in Canada on May 15, 1981; the 1972 UNESCO Convention for the Protection of World Cultural and Natural Heritage, which came into force in Canada on October 23, 1976; the 1973 Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), in force in Canada since July 9, 1995.

Canada has also entered, with several nations, into regional and bilateral treaties such as 1916 Migratory Birds Convention, the 1980 Convention on the Conservation of Antarctic Marine Living Resources, and the 1991 and 1996 pronouncements concerning the Program for the Conservation of Arctic Flora and Fauna which was established by declaration of Ministers of the Environment in 1991, and the “Inuvik Declaration on Protection and Sustainable Development of the Arctic Environment” as approved by Arctic Nation Ministers in March 1996.

These demonstrate that environmental issues affecting biodiversity have been of long-standing concern in Canada.

The Convention on Biological Diversity reflects an attempt for a more holistic approach, with recognition of the interplay of many related factors and activities. It gives a clear recognition to integrating environment and development issues, the inclusion of “traditional knowledge” (TK) and the human rights of Aboriginal people within the same framework. The Agenda 21, which resulted from the United Nations Conference on Environment and Development (UNCED) has been adopted by 174 governments that attended

UNCED in Rio de Janeiro in June 1992. It was further endorsed without a vote by the United Nations General Assembly. It provides an environmental work program for the twenty - first century and involves a vast array of actions such as: conservation and management of resources for development, strengthening the role of major groups and means of implementation. It has been described as one of greatest examples of international “soft law” ever attempted. Some authors argue that there is a sound basis for the statement that Agenda 21 is becoming customary international law, which could be explained by the virtual unanimity of inter government support and by its ongoing role as the basic operating program of the UN Commission on Sustainable Development. (Barsh 1996) The Earth Summit not only recognized genetic resources and the traditional knowledge of Aboriginal people as “the bonanzas of the future” but also attempted to provoke a new, more socially just and ecologically sound paradigm of wealth that included Aboriginal people in the equitable sharing of the benefits of resource acquisition and manipulation. (Madjaric 1998)

The International Labor Organization Convention 107, concerning the “Protection and Integration of Indigenous and other Tribal and Semi Tribal Populations in Independent Countries”, also makes reference to the rights of the Aboriginal people. Revised in 1989 as Convention 169, it states that:

- Indigenous peoples have the right to decide their own development priorities and the control their own economic, social and cultural development (Article 7); and
- Governments shall respect the special importance of the cultures and spiritual values of the people concerned, their relationship with the lands or territories they occupy or otherwise use and, in particular, the collective aspects of the relationship (Article 13).

Article 1 of the International Covenant on Economic, Social and Cultural Rights (1966) established the right of Aboriginal peoples to dispose of natural wealth and resources, and to protect and conserve resources, including traditional knowledge. It clearly stated that Aboriginal people have fundamental freedoms of personal integrity and action, and political, social, economic and cultural rights.

In 1992, the Technical Conference on Indigenous Peoples and the Environment recommended that the United Nations take effective measures to protect the property rights of indigenous peoples, including intellectual and cultural property, genetic resources, biotechnology and biodiversity.

In 1982, the United Nations Economic and Social Council (ECOSOC) created the Working Group on Indigenous Populations. In Resolution 1990/27, the group called for the UNCED Convention to “provide explicitly for the role of Indigenous peoples as resource users and managers and for the protection of Indigenous peoples’ rights to control their own traditional knowledge and ecosystems”.

Among the Aboriginal peoples’ Declarations could be mentioned the statements and basic points of agreement from the COICA/UNDP Regional Meeting on Intellectual Property Rights and Biodiversity, 1994:

- Biodiversity and Aboriginal peoples’ knowledge are inherent in the concept of Indigenous territoriality, therefore issues relating to access to resources have to be viewed from this standpoint (Article 4),

- For members of Indigenous peoples, knowledge and determination of the use of resources are collective and intergenerational. No Indigenous population, whether an individual or a community, or government can sell or transfer ownership of resources belonging to the people, and which each generation has an obligation to safeguard for the next (Article 7).

The Draft Declaration on the Rights of Indigenous Peoples, developed in 1993 at the 45th Session of the Sub-Commission on the Prevention of Discrimination and Protection of Minorities (Commission on Human Rights) states that:

- Indigenous people have the right of self determination and by virtue of that right, may freely determine their political status and freely pursue their economic, social and cultural development (Article 3)

- Indigenous peoples have the right to determine and develop priorities and strategies for development or use of their lands, territories and other resources, including the right to require that states obtain their free and informed consent prior to the approval of any project affecting their lands,

territories and other resources, particularly in connection with mineral, water or other resources (Article 30)

- Indigenous peoples, as a specific means of exercising their right to self determination, have the right to autonomy or self government in matters relating to their international and local affairs, including culture, religion, education, information, media, health, housing, employment, social welfare, economic activities, land and resource management, environment and entry by non members, as well as ways and means for financing these autonomous functions (Article 31).

It is obvious that there is a will in the international arena to improve environmental or social conditions, but if the world community is truly committed to protect environments on the global level, for the future generations who are not yet born, and therefore do not have a say, much more has to be done. Otherwise they will inherit a biologically and culturally impoverished world, which will be poorer, more polluted and environmentally degraded.

Theoretical framework

The Brundtland Commission acknowledged the contribution which Indigenous peoples are able to make on the issues of sustainable development:

“These communities (so called Indigenous or tribal people) are repositories of vast accumulations of traditional knowledge and experience that links humanity with its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems. It is a terrible irony that as formal development reaches more deeply into rain forests, deserts and other isolated environments, it tends to destroy the only cultures that have proved able to thrive in these environments. The starting point for a just and humane policy for such groups is the recognition and protection of their traditional rights to land and the other resources that sustain their way of life - rights they may define in terms that do not fit into standard legal systems. These groups’ own institutions to regulate rights and obligations are crucial for maintaining the harmony with nature and the environmental awareness characteristic of the traditional way of life. Hence the recognition of traditional rights must go hand in hand with measures to protect the local institutions that enforce responsibility in resource use. And this recognition must also give local communities a decisive voice in the decisions about resource use in their area.”

(Bruntland, H. 1987, in Our Common Future)

As Suzuki (1997) questioned, can we combine the descriptive knowledge of modern science with the wisdom of the traditional ancient cultures to create a new world view, a story that includes us all?

Friesen (1995) stated that persisting twentieth century problems of ecology and the environment have global implications and will require attention of all parties concerned. Indeed the very existence of the Earth which we occupy, and on the resources of which we depend for subsistence, are at stake.

If renewable resource conservation is to be achieved, conservationists and planners should take into account the very large reservoirs of traditional conservation knowledge and experience within local cultures that provide a significant basis for sound management policies and environmental planning actions. Also, the means should be provided for local people who maintain ecologically sound practices to play a primary role in all stages of development in the area with which they identify, so that they can participate and benefit directly, in a manner which is consistent with their values, time frames and decision making processes.

Wallace and Knight (1995) stated:

“If humanity consists of communities of people within their biophysical setting in their ‘place’ then the identification of value in a regional environment must be accompanied by recognition of values in the lives of those who inhabit it”.

At the time that the whole world is supportive of the new rhetoric of “sustainable development”, “cultural diversity” and “natural biodiversity”, some industrial developments are complicit in the destruction of the only remaining sustainable production systems on the planet. For the pure environmental sciences, nature is an external biological realm which lies beyond the sphere of human activities and relationships. In the understanding of Aboriginal people, however, nature is personal and responsive. Knowledge of the environment is gained through experience which alone can reveal its relevant properties and powers and the goal is wisdom rather than the abstract, theoretical knowledge.

Jorgensen (1995 as quoted in Capp and Jorgensen 1997) stated that for many socioeconomic issues involving natural resources, there is a need for Traditional Knowledge to be combined with Western Science.

**“We must extend a hand to each other and join forces. Our land ethics and hearts are in the same place. When we value TK it empowers indigenous people resulting in a better environment.”
(Jorgensen 1995)**

It is essential that we learn from traditional societies, especially those whose livelihood depends on the harvest of the wild environment:

“These people have accumulated bodies of knowledge much like our own science and this gives us vital insights about responsible membership in the community of life, insights founded on a wisdom we have long forgotten and now are beginning to rediscover.”

(Nelson 1993 as quoted in Capp and Jorgensen 1997)

There is a good reason to believe that the ethics of truly sustainable development will need to borrow much from the world views of some traditional societies. If TK(traditional knowledge) was not scientific, Aboriginal people would not have preserved the ecosystem for thousands of years. (Capp and Jorgensen 1997)

Borgstrom (1967) stated that one of the great delusions of man throughout the centuries has been the belief that the resources of the Earth are inexhaustible. The enormous riches which have overflowed particularly in the

western countries, especially after the exploitation of the New World under European dominance, seemingly confirmed the correctness of this belief.

We have to strike a balance and recognize the basic distinction between renewable and non renewable resources. We need to recognize the ultimate limits to human existence. The worst calamity, states Borgstrom (1967), is that we are being robbed of our biological environment. The artificial, super technical world into which we are now moving, which once seemed to give us such generous promises of human happiness and still, if wisely used could bring just that, is instead threatening to stifle our pursuit of happiness and the fulfillment of humanity.

The most recent invocation of developmental philosophy as expressed by the Brundtland Commission's popular report "Our Common Future" (1987) is that humanity has the ability to make development sustainable - to ensure that people meet their own needs and the needs of future generations. According to that philosophy, the concept of sustainable development does not define limits, but rather implies limitations imposed by the present state of

technology and social organization on the use of environmental resources, and by the ability of the biosphere to absorb the effects of human activities.

Many contemporary environmentalists do not believe that the integrity of the ecosphere can be restored merely by employing better technology and adopting better legislation. They believe that there must be sweeping changes in lifestyles and social structures. (Milbrath 1989) The deep ecologist, social ecologist and geocentrist call for a fundamental paradigm shift. On the other hand contemporary conservationists believe that their environmental goals can be achieved by developing better technology, and better legislation, better enforced. They want to reform society rather than fundamentally change it. (Naess A.1973, Devaill B. 1980, Milbrath L.W.1989)

In the “Project on the Predicament of Mankind” report for the Club of Rome (Meadows, et al.1972: 18), it is stated that:

“A person’s time and space perspectives depend on his culture, his past experience, and the immediacy of the problems confronting him on each level. Most people must have successfully solved the problems in a smaller area before they move their concerns to a larger one. In general, the larger the space and the longer the time associated with a problem, the smaller the number of people who are actually concerned with its situation.”

The intent of the Club of Rome group was to examine the complex of problems troubling people of all nations: poverty in the midst of plenty, degradation of the environment, rejection of traditional values, inflation and other monetary disruptions etc. One of their conclusions was that when the food supplies of the group diminish, inequalities in intake are accentuated, and the children are statistically the most likely to be affected.

Milbrath (1989) states that environmental values resonate so strongly with something fundamental in human nature that one almost never encounters a person who claims to be against environmental protection. Clearly Milbrath overstates his case, as frequently people and policies appear to turn against positive environmental practices because other values, such as economic growth or social development, are placed above the needs to preserve the environment.

Modern urban society has an abstract and distant relationship with nature. Although human impacts on environment can be traced back thousands of years, the most serious ones have come in the past several decades. Marginal

environments, that were beyond the bounds of significant settlement are becoming subject to more erratic changes and disturbances. We continue to depend on fossil fuels as energy sources although they could in many cases be replaced by alternative sources of energy (like wind or solar energy). In particular, consumption of fossil fuels is pushing the oil industry to develop potential resources even in marginal environments, although it is a well known fact that oil reserves will be depleted eventually, and will leave behind a destroyed ecosystem, which, especially in the Arctic North, needs a very long time to recover. In the meantime many valuable species of flora and fauna could be lost for ever. These are short terms gains for the sake of long term losses.

Johnson, Taylor and Watts (1996) argue that the spatial drive to the ecological and political peripheries of the world is bringing some of the last remaining wilderness in to the global economy. In the Arctic removal of vegetation, wholesale stripping of surface material, spillage of oil and particle deposition, all have the potential to increase surface heat absorption and thus locally melt the permafrost. Practical solutions to this problem have involved

the construction of all the facilities on gravel insulating pads, which has greatly modified northern ecosystems and their ability to maintain wild population of waterfowls and large mammals.

Rolston (1985) states:

“Extinction shuts down the generative process. The wrong that humans are doing or allowing to happen through carelessness, is stopping the historical flow in which the vitality of life is laid. Every extinction is an incremental decay in stopping life process - no small thing.”

The Gaia hypothesis by James Lovelock in 1979 has generated vigorous discussions. Agreements are slowly emerging that the Earth is not a living being with intelligence and disease-fighting powers, but the metaphor opened our eyes to new ways of perceiving the planet and to new lines of research. We now more readily perceive and study planetwide biospheric processes. Common sense and prudence dictate the wise use of resources; people may use them but not use them up.

Clement (1995) states that more and more industrial projects are being developed in fragile environments, and in parallel there is a growing worldwide concern for negative impacts on the people and the land affected.

Aboriginal people have systems of empirical knowledge of the environment, be it botanical, zoological, astronomical, geographical, mineralogical etc. which has been documented for so long and for so many people that it is surprising to hear arguments that this knowledge is vague and imprecise. He further states that Aboriginal people observe, classify and compare biological entities with which they have interacted and still interact in their daily lives. Those three methodological aspects, plus the presence of specific concepts correspond in fact to the modern definition of either botany or zoology in Western academic circles. Clement further states that the very word “science” comes from the Latin “scientia” which means knowledge. For these reasons alone TEK (traditional ecological knowledge) can be also qualified as science. This body of knowledge is also linked to other ideological aspects, such as code of ethics, value systems, spiritual beliefs etc.

The strictly empirical body of TEK can be understood by any contemporary biologist, inasmuch as the biologist is ready to put aside his own framework, but very few of them are able to do so. Even

anthropologists, who theoretically would be the first capable of doing so, often do not have the willingness to do it, states Clement.

How Aboriginal ecological knowledge should be used and evaluated with respect to environmental impact assessment is another sensitive issue, because TEK is often called upon in negotiating land claims. So, for this reason, and the possibility of interpreting this knowledge out of context by scientist or government officials, it seems that the best reasonable conduct would be to leave the people who have the knowledge, to decide whatever they wish to become public or contribute to any proponent of an industrial project on their territory.

According to Clement, Vuntut Gwichin in Old Crow, while discussing the integration of Aboriginal knowledge in impact assessment or other forms of resource management, noted that integration meant too often applying only the dominant culture's perspective on data and consequently interpreting the same data according to its goals and not to the community's objectives and values.

The reason for the gap between the two ways of mental deliberation (Euro-American and Aboriginal) is that European thinking relies on the presupposition that the universe can be understood and controlled through atomism. The intellectual tendency in western science has been the acquisition and synthesis of total human knowledge from the perspective of the world-view that seeks to understand every entity from the immediate to those in outer space. (Ermine, 1995, as quoted by Friesen, 1997)

However, we should in the same time be aware that population numbers and pressures on resources were significantly smaller a few centuries ago and that what really motivates industry to develop marginal territories in the Arctic is over consumption by the mainstream. So to a certain extent the whole society must take responsibility, because we are the ones who require cheap and plentiful energy in a highly intensive form which is presently supplied in fossil fuel.

Previously uneconomic deposits of oil have been made available by technical improvements. Over time the average grade of reserves declines, which increases disruption to progressively larger areas which increases the

amount of environmental disturbance. Greenhouse gases are emitted when any fossil fuel is burned. They are emitted during the stages of exploration, extraction, transport, refinement and distribution. As well negative environmental impacts could be mentioned: oil spills, fires, land disturbances and potentially hazardous transport of hazardous substances.

Yet alternatives can be ecologically and socially devastating as well. For example, take the James Bay Project of Hydro Quebec and its social effect on Cree and Inuit people. The damming of the rivers caused the flooding of homes and settlement areas as well as traditional hunting territories with about 10,000 caribou. Feit (1998) wrote that the government announced plans for development of James Bay region in April 1971, but failed to involve Cree people in the decision process. Cree people opposed the project because of the severe damage it would cause to the land, the animals, and to the people. At the same time government spokesmen stated that the project was to be built on the provincial lands and would benefit Native people. After attempts to approach the federal government and remind them of its trust responsibility for Aboriginal people, the Cree decided to use legal means to

force Quebec into discussions. Together with the Inuit from northern Quebec they initiated one of the longest temporary hearings in Canadian history.

The court hearing provided a detailed description of the project, in which it was obvious that serious damage would be done by flooding 8,722 square kilometers of land, and that the construction of power transmission lines would require the cutting of three or four corridors 960 kilometers long through the forest. And all of this was envisaged as the first of the three phases.

In the view of the Cree people, according to Feit, many of the forms of damage were like those they had already encountered from previous developments, just on the much larger area. They were particularly concerned with flooding of wetlands and destroying important habitats for beaver and larger game. They said that the vegetation would be destroyed; the forest would need 50 to 100 years to become mature again; fish numbers would decline; and the animals, particularly beaver, would be significantly affected. They argued that the hunters would suffer serious and permanent loss of subsistence resources and a major threat to the continuity of their culture and

society. The government lawyers, according to Feit, argued that the project would affect only a small percentage of the land directly, that it would improve its productivity in many respects and that damages would be temporary or remediable. The lawyers also claimed that the Cree people no longer lived primarily off the land, catching only up to 25% of their food. They claimed that the Cree now mainly ate purchased foods, lived in settlements, had houses and used manufactured clothes and equipment, so they argued that the Cree culture had been substantially transformed and replaced by Canadian culture. The lawyers also claimed that the Cree people were dependent on government financial assistance and support for their settlement and that the majority of the Cree now derived their incomes from employment. In November 1973, Mr Justice Malouf ruled that the Cree and Inuit people do have the title to the land that they had been occupying and using to a full extent; that hunting was still of great importance, constituted a way of life and provided portions of their diet and incomes. It was also said that the Cree and Inuit people wished to continue their way of life, that they have a unique concept of the land, that any interference with their use

compromised their very existence as a people; and that the project already was causing too much interference. Mr. Justice Malouf ruled that the province was trespassing, which was a strong affirmation of Cree people's rights. That initiated negotiations with the Cree and it was an important recognition of their way of life and values. It also spoke about the dangers inherent in development conducted without Aboriginal peoples' consent and involvement.

Findings of the Royal Commission on Aboriginal people (1996) were that Aboriginal people have economic goals that they want to achieve through economic development. The themes that emerged were:

1. The need to respect the treaties, the comprehensive claims and other agreements made with representatives of the Crown, including their economic provisions, and to remedy past injustices concerning lands and resources.

This includes the need to secure a land and resource base for all Aboriginal people.

2. The need for jobs that provide decent income, that do not necessarily require moving from Aboriginal communities, and that provide meaning to

people's lives, contributing to the development of self-esteem and Aboriginal identity. Economies should be capable of supporting those who wish to continue traditional pursuits (hunting, fishing, trapping) while enabling those who wish to participate in a wage and market economy to do so.

3. Economic development is expected to contribute to the development of Aboriginal peoples as distinct peoples within Canada and to permit them to exercise, in a significant and substantial manner, governance in their communities and stewardship of lands and resources.

4. Aboriginal people would like their economies to be structured in accordance with Aboriginal values, principles and customs, contributing to the development and affirmation of Aboriginal culture and identity. This includes having the freedom to develop economies in accordance with Aboriginal visions of the goals and process of development.

As noted in the Report of the Royal Commission on Aboriginal people, it is about maintaining and developing culture and identity, supporting self-governing institutions, and sustaining traditional ways of making a living. It is

about giving people choice in their lives and maintaining appropriate forms of relationship with their own and with other societies.

As Gregory (1994) suggests, we need to free ourselves from universalizing our own parochialisms, we need to learn how to reach beyond particularities, and to speak to larger questions without diminishing the significance of the places and the people who are accountable.

Therefore, we should explore deeper the epistemology, conceptual structure and customary law of Aboriginal peoples' traditional knowledge.

The meaning of traditional knowledge

Traditional knowledge is a body of knowledge that is intergenerational and acquired in close interaction and contact with nature. It poses a specific system of ecological classifications, system of self management that governs the resource use and a number of empirical and spiritual observations about the environment. TEK (traditional ecological knowledge) describes those aspects of the Aboriginal peoples knowledge system that is related closely to

conservation and management of the environment, while TK (traditional knowledge) in general represents all kinds of knowledge which is deeply imbedded in oral tradition and does not necessarily need to be related to environmental knowledge. The sum of centuries of innovative wisdom, it is well tested and stored in the collective memory of the Aboriginal communities, expressed in cultural and spiritual terms, and provides description and reverence for natural resources. It poses a system of ethical behavior for sustaining ecosystems for present and future generations. This cooperative, innovative knowledge system continues to offer humankind a hope for sustainable development and to ignore it would deprive the world of an important source of innovation and diversity. The concept of sustainable development could be used as an ideological bridge between the traditional and non-traditional knowledge systems, recognizing the significance of aboriginal holistic knowledge of the environment and the mainstream's attempt at management of natural resources.

For thousands of years Aboriginal people have succeeded in keeping a balance between population and the resources they depended upon for subsistence harvesting.

Since TK is generated primarily by observation and experience over many generations, it is practical and shaped by the needs and values of specific communities. In aboriginal culture the message that an Elder relays to the listener is to a large extent unstated, leaving it to the listener to place the meaning within a context of shared understanding. An enlightened grasp of the oral traditions is usually thought to require a lifetime. Today, some Elders are openly pointing to the prophecy that states “ the time has come to share the secrets”.

For Gwitchin people, knowledge of the local resources is a matter of self preservation, as their life is tied to the natural abundance of the land and its resources. Therefore, they have a long-term view of the protection of natural resources because their subsistence harvesting depends on it. Every development project should take into consideration these cultural patterns that have been proven to provide environmentally sustainable outcomes.

Aboriginal peoples' environmental knowledge has stood the test of time in environments where margins for error are extremely narrow and the price to pay for failure is extremely high. Their encyclopedic understanding of the rhythm of the land is more specialized and sophisticated than some scientists are ready to credit. These conclusions are the result of many personal communications between the author and Aboriginal peoples' of Canada and information obtained from Report of Royal Commission on Aboriginal People (1996).

Today we come across many different views about Aboriginal peoples' traditional knowledge. The positions differ significantly if they are coming, say from an industrially minded scientist, and less if they are coming from an environmentalist, but even among environmentalists there are different views. Therefore, in order to learn something from it, I have tried to present at least some of these positions in the wide range from anthropologists, ecologists, conservationists to industrially minded scientists, and views and positions of Aboriginal people themselves.

From an anthropologists point of view Friesen (1997) stated:

“ Indian legends are living phenomena; they are narratives of human experience, including all aspects of life, physical, social, psychological, spiritual, etc. Though legends may appear to be illogical in plot to the western mind, their genius is in portraying aboriginal culture with a compelling message unique to that context. When they are told, they are never embellished to please or ease the hearer, therefore they do not always tell of beautiful things.”

For intercultural contact to be enlightening or even mind changing, one should approach these circumstances with an open mind and with recognition that cultures, like people, are no better or worse than others, only different. These differences can serve to enrich, expand and enhance one’s outlook on life.

According to Friesen (1995), our understanding of Aboriginal culture can vary from outright opposition to tolerance and finally to endorsement. Tolerance, he says, is a dead end street and does not even deserve a passing grade in terms of developing improved human communications. Endorsement on the other hand is the ultimate challenge of a multicultural society like Canada. In such a society one could conceivably endorse, encourage and even celebrate the fruits of true cultural diversity. The people would be

motivated to live out their particular values with more intensity and a higher degree of authenticity and pride.

Some industrially minded scientists like Howard and Widowson (1996) argue that the ancient ways of the First peoples have virtually no relevance and that TK, because of its spiritual component, is a threat to environmental assessment whenever it is applied. According to the authors, incorporation of spiritually based knowledge into public policy, results in the adoption of incorrect assumptions, since spiritual beliefs cannot be challenged or verified. They also argued that the acceptance of spiritual beliefs by governments is dangerous since spiritual beliefs can be used to justify any activity, including the over-exploitation of resources.

This position prompted two critical responses, one from Berkes and Henley (1997) and the other by Stevenson (1997). Berkes and Henley stated that all environmental assessments, as currently practiced in Canada, have a scientific component and a value component. That is, environmental assessment reports are obliged to take into account not only the technical considerations and what the scientist indicates as the relevant facts, but also

what the local people indicate as their values and preferences. For the statement of Howard and Widowson that anyone can casually become a practitioner of either science or traditional knowledge, Berkes and Henly comment that it shows a lack of understanding of both. They further state that respect and use of TK is consistent with democratic values and good decision making, while disrespect toward Aboriginal peoples' values as demonstrated in the Howard and Widowson report, has been costly to Canadian society and is at the root of our northern crisis.

Stevenson's comment (1997) about Howard and Widowson's report is that the authors are ignorant of the fact that different cultures have different ways of experiencing, understanding and, in sum, defining reality. Aboriginal people have greater contact with the resources upon which they depend, and the most to lose should these resources be adversely affected by mining and other industrial developments, so they should be placed in a position of regulating natural resources, precisely because of these reasons.

Stevenson argues that native groups are not about to share their knowledge, which they consider to be vital for maintaining their culture and

identity, on someone else's terms and conditions. Aboriginal people are right to be concerned about how their knowledge is collected, interpreted and used, and by whom, in EIA (Environmental Impact Assessment) as well as in co-management. Stevenson also states that government and environmental review panels can continue to direct proponents to give "full and equal consideration" to TK in assessing impacts, but they can not force those who have this knowledge to share it.

Sadler and Boothroyd (1994) state that the holism of TK can be an antidote to the excess of modern specialization and can be used to balance western science.

According to Norgard (1984), TK has been viewed as part of a romantic past, as a major obstacle to development, as a necessary starting point, and as a critical component of a cultural alternative to modernization. Only very rarely, however is TK treated as knowledge "per se" in the mainstream of agricultural and development and environmental management literature, as knowledge that contributes to our understanding of agricultural production and the maintenance and use of environmental systems. These knowledge

systems may appear simple to outsiders, but they represent mechanisms to ensure minimal livelihoods for local people. Aboriginal knowledge systems are often elaborate and they are adapted to local cultural and environmental conditions.

Haverkort (1993) states that aboriginal knowledge is the actual knowledge of the given population that reflects the experiences based on traditions, while Pretty and Sandbrook (1991) state that Aboriginal knowledge systems are tuned to the needs of local people and the quality and quantity of local resources.

Capra (1982) stated that ecosystems sustain themselves in a dynamic balance based on cycles and fluctuations, which are nonlinear processes. Ecological awareness then, will arise only when we combine our rational knowledge with an intuition for the nonlinear nature of our environment. Such intuitive wisdom is characteristic of traditional culture, especially of American Indian cultures, in which life was organized around a highly refined awareness of the environment.

Stevenson (1995) states that for many Aboriginal people the requests to access their traditional knowledge represent just another form of exploitation, because this knowledge can easily be taken out of context and misrepresented. Viewing that knowledge as essentially traditional invites denial of the relevance and efficacy of applying it to present day issues and problems. While traditional Aboriginal philosophies emphasize extensive knowledge of, and codes for, living in harmony with nature, the western philosophical tradition lacks such consideration.

Sadler and Bortroyd (1994) state that traditionally Aboriginal peoples' knowledge has been effectively applied to what we now call environmental assessment in all aspects of resource management and that this knowledge now has the potential to contribute significantly to contemporary management practices. Their study exemplifies that both in traditional and modern contexts, the strength of Aboriginal perspectives on environmental assessment lies in their holism. Traditionally, the Aboriginal perspective is holistic because environmental assessment was an integral part of daily life. It was a feedback loop by which people observed the consequences of past and

present action and considered the likely impacts of the future actions. In contrast, in mainstream society, research, planning, decision making, regulation, management etc., tend to be seen as mutually exclusive roles. The holism of TK can be an antidote to the excess of modern specialization and thereby balance western science. For too long there has been a wide, seemingly unbridgeable gulf, between western science and Aboriginal knowledge. With few exceptions institutionalized systems of resource and environmental management have been founded on technical and professional disciplines that strive for rigor, objectivity and value neutrality. There is nothing wrong with that, provided the approach is tempered by a recognition of its limitations and is surrounded by ethics, including respect for other knowledge and value systems, which is not necessarily the case.

The Dene Cultural Institute (DCI), 1995 defines TEK as:

“Traditional environmental knowledge is a body of knowledge and beliefs transmitted through oral tradition and first hand observation. It includes a system of classification, a set of empirical observations about the local environment and a system of self management that governs resource use. Ecological aspects are closely tied to social and spiritual aspects of the knowledge system. The quantity and quality of TEK varies among community members, depending upon gender, age, social status, intellectual capability and profession

(hunter, spiritual leader, healer etc.). With its roots firmly in the past, TEK is both accumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socioeconomic changes of the present.”

In the words of Dene First Nation (1995), as quoted by Stevenson (1995), the misrepresentation of TEK is the concern that lies behind many Aboriginal people’s reluctance to share their knowledge:

“Since (we) Indigenous peoples have our own world view we feel that no industrial developer should be expected to collect, interpret and present the views and concerns, the knowledge or the understanding of Indigenous peoples. Instead, Indigenous peoples should be given the opportunity to document and present our circumstances and our own evaluation of potential impacts from major developments on our people, culture and lands. When western scientists include the knowledge of selected local people in their studies, our people are passive contributors, and our knowledge, removed from our people’s world view, is subjected to interpretation through the western world view.”

In the International Workshop on Indigenous Knowledge and Community based Resource Management keynote address, in 1993, Chief Robert Wavey stated that academics and scientific researchers have recently discovered that the knowledge which Aboriginal people hold of the earth, its ecosystems, the wildlife, fisheries forests and other integrated living systems is extensive and extremely accurate.

He said that the laws and customs of Aboriginal people guided the sharing and management of resources. These laws are based on generations of observation and knowledge, and they form the binding foundation of Aboriginal nations and systems of governance. Aboriginal people often notice very minor changes in quality, odor and vitality in the environment, long before it becomes obvious to government enforcement agencies, scientists or other observers of ecological systems. According to Chief Wavey Governments have begun to view Aboriginal people and their knowledge of the land as an early warning system for environmental change.

“Science has never been neutral in relation to Indigenous peoples, lands, and resources and development. The struggle to control lands and resources to facilitate development is the principal feature of the relationship between Indigenous peoples and governments worldwide. As Chief Wavey stated: “Traditional ecological knowledge is not another frontier for science to discover. When you contemplate the linking of traditional ecological knowledge and science in order to support the healing of Mother Earth, I ask you to resist seeking to discover. I urge you instead to accept what is obvious. Traditional ecological knowledge is based on mutual well being and sharing. In our severely disrupted global environments, traditional ecological knowledge can be shared when there is respect ,understanding, and the recognition of existing indigenous stewardship of many regions of the Earth.”(Chief Robert Wavey, 1993)

Augustine, (1997) (Stephen Augustine, is the Hereditary Chief of Mi-Kmaq and holds a position of researcher in the Canadian Museum of Civilization) argues that TK exists in its own right, and its intrinsic validity stems directly from survival techniques used by generations of Aboriginal Americans. These techniques were carried out in harmony with the land and other living entities and have avoided creating serious ecological damage. Augustine further states that there seems to be considerable confusion in mainstream society over the link between spirituality and TK, which are often viewed as the same thing. Spirituality is a part of every activity of daily life for Aboriginal peoples, and it does not, in itself, constitute TK. He claims that Aboriginal beliefs arise from Creation stories, dreams and visions, while Aboriginal knowledge is based on observation, direct experience, testing, teaching, and recording in the collective memory through oral tradition, story telling, ceremonies and songs. According to Augustine:

“This knowledge is exercised within context of the social values and philosophies of the tribe, that the Earth and every animal, plant and rock is sacred and should be treated with respect. The fact that Native Science is not fragmented into specialized compartments does not mean it is not based on rational thinking but that it is based on the

belief that all things are connected and must be considered within the context of that interrelationship. In order to maintain harmony and balance, this holistic approach gives the same importance to rational thinking as it does to spiritual beliefs and social values.”

Deloria (1995) stated that in the old days religious ceremonies generally involved the recitation of the origin and migration stories, and most of the accumulated wisdom of the tribe was familiar to everyone. Special knowledge regarding other forms of life, if revealed in vision or dreams, was made available to the larger community on a need-to-know basis, since it was generally regarded as personal knowledge.

Colorado, (1991)(Pam Colorado Ph.D. is a Wisconsin Oneida of the Iroqua Six Nations Confederacy) said that she realized that she was coming from a different culture and a different language, and that pleased her because when she grew up, the practice of native culture and spirituality was against the law. Now she saw the possibility for two different cultures to come together in the process of exploring Aboriginal peoples' knowledge.

“Now some say that the way in which Indigenous people come to knowledge is much broader than the normal way of western science....”

“We looked at the word ‘science’ as a bridge between two cultures, because up to this time there was no way for the highest forms of indigenous knowledge to be communicated to the highest forms of western science.

Alcrose (1992) (Dr. Thom Alcrose a Cherokee, is a biologist and currently director of the Division of Native Education at Northern Arizona State University) states that from a native perspective, the world operates as a whole. The world does not operate at one moment at a biochemical level and the next minute at a microbiological level, and a next at the geological level etc. He claims it is a simultaneous happening, so it is a whole. Alcrose says:

“We must explain our existence somehow. I’m not convinced that it matters whether the answer is the ‘truth’ but it is important to people that the answer fit their cultural cosmology, their theology.”

Argumedo (1997) (Dr. Alejandro Argumedo is a K’echua from Peru), states that growing international awareness of the erosion of Aboriginal peoples’ knowledge and its importance for biodiversity conservation and development makes it crucial that continuous and complex issues related to conservation and promotion be addressed. Aboriginal peoples and their knowledge and practices have been recognized as responsible for the

maintenance and nurturing of most of the world's biological diversity.

Aboriginal innovation systems have provided the world with numerous medicines, food crops etc. More importantly Aboriginal knowledge is crucial for the livelihood and survival of aboriginal cultures as distinct people.

Stevenson (1995) states that exclusive control by either party of the TK research agenda in the context of EIA serves no one's interests. If the agenda is set by the developer many of the fears expressed by Aboriginal people about the decontextualization and misuse of their knowledge will undoubtedly come to pass. On the other hand, if the Aboriginal community maintains exclusive control over the TEK research agenda, dictating to developers what knowledge they may have, the latter may not be able to meet federal requirements or access that knowledge most useful for EIA.

So the author suggests letting Aboriginal people assume responsibility for identifying, assessing and monitoring effects on their lands and lifestyles.

Natural or social scientists, trained for gathering of data could be on hand to assist Aboriginal people, upon their request and by their choice .

Both TK and Western scientific knowledge are difficult to separate from their cultural context and they differ in a number of substantive ways.

According to Berkes (1993) and Stevenson (1995), traditional knowledge, in comparison to scientific knowledge, is:

- 1) intuitive and holistic, as opposed to analytical
- 2) qualitative, as opposed to quantitative
- 3) moral, as opposed to supposedly value free
- 4) experiential, as opposed to positivist
- 5) inconclusive and internally differentiating as opposed to conclusive and externally differentiating
- 6) slow to create as opposed to fast and selective
- 7) broad in time and narrow in geographic focus, as opposed to narrow in time and broad in geographic focus
- 8) open to spiritual explanation, as opposed to mechanistic explanation

Brockman (1991) claims that lack of common understanding about the meaning of traditional knowledge is frustrating for those who advocate or attempt in practical ways to recognize and use it. For some, traditional

knowledge is simply information which Aboriginal peoples have about the land and animals with which they have a special relationship. But for Aboriginal people, traditional knowledge is much more; as one Elder put it, it is “a common understanding of what life is about.”

According to Emery (1997) temptation to compare scientific and traditional knowledge comes from collecting TK without the contextual element. While scientific practice generally excludes the humanistic perspective, traditional understanding assumes a holistic view, including language, culture, practice, spirituality, customs, and even the social organization of the local communities.

Capp and Jorgensen (1977) state that traditional knowledge is, an understanding and reverence that Indigenous people have concerning ecosystems. This is an astute and strategic orientation based on observations and interactions with the natural world. This knowledge is empirical, closely based on interactions and systematic feedback while incorporating spirituality. It is often expressed in spiritual and cultural terms and rules, providing not only description and reverence for natural resources but an

ethical system for human behavior for sustaining ecosystems, including humans, for future generations. It is community based and culturally centered wisdom and understanding of long term ecosystem fluctuations across the cultural landscape.

Doubleday (1994) reinforces this point, arguing that we have begun to critically reexamine the prejudices of the past, and to look beyond them to a new appreciation of the wisdom and beauty of other cultures and their traditions, including those of Third World and of Indigenous peoples. But it would be a mistake, she says, to expect to erase our collective histories, and begin afresh without reconciling the past.

Doubleday also states that we have within us the capacity to change our views and our frameworks. Thus we have the opportunity to develop those practices of mind and politics which will enable us to respect nature and each other. More pointedly to look beyond the instrumental value of traditional ecological knowledge to the value systems within which it is situated, and to listen to that wisdom with our minds as well as with our hearts.

Aboriginal peoples' of Canada

Over thousands of years, Aboriginal peoples' have developed unique and distinct philosophies and lifestyles which are still identifiable today. Although there are distinctions among First Nation tribes of North America, they are usually viewed as "Indians" by non - Aboriginal people. The first European settlers of North America did not recognize the validity and legitimacy of Aboriginal peoples' cultures, but rather tried to superimpose their (European) way of life and thinking and eventually to assimilate them.

Today, in the midst of plenty, many Aboriginal societies live in poverty and with limited socio-economic power. In 1998 the Canadian Department of Indian Affairs and Northern Development applied native specific statistics to the Human Development Index created by the UN (United Nations) to compare the world's countries. Although Canada has topped the list of 173 countries for several years for the highest quality of life in the world, the Aboriginal Canadians, according to this study were ranking worse than developing countries, off-reserve Aboriginal people ranked in 35th place, and on-reserve in 63rd place. On-reserve income per capita for 1991 was \$6,542

and off-reserve income for Aboriginal people was \$ 9,905. The lowest rating for on-reserve income was registered in Yukon and NWT.

(Source of information United Nations Human Development Report)

As Boldt (1993) said:

“Most Canadians are fugitives or descendants of fugitives who came to Canada to escape political oppression, religious persecution, or economic deprivation. In many instances they or their forebears have fled injustice to this haven. Yet, these very Canadians continue to subject Indians to the same (or worse) persecution, oppression, and deprivation from which they or their forebears escaped. Seemingly without a meaningful twinge of conscience, Canadians are destroying the very peoples whose lands have given them a chance for freedom and well-being. It must be taken as an adverse measure of the spiritual and moral state of Canadians that they chose to enrich themselves beyond measure rather than act justly and morally towards Indians.”

The Constitution Act of 1982 recognized three main groups of Aboriginal peoples in Canada and reaffirmed their unique rights: Indians, now known as the First Nations, the Inuit, and the Metis, descendants of settlers who merged with Aboriginal people from the beginning of settlement of Canada.

Although some languages have been lost, today there are approximately 50 distinct languages spoken by Aboriginal peoples in Canada, which they try to protect and preserve together with their richness of cultures and traditions.

An enlightened justice towards Aboriginal people in Canada would hold that the original occupants of this land should have enough land and participation in management of renewable resources to enable them to feed themselves.

As Boldt states, there is nothing in Canadian law or the Constitution that prohibits governments from acting justly or fairly towards Aboriginal people. All that is needed is political will to conceptualize and articulate a just and fair response to Aboriginal rights and claims and to honor the moral and historical rights of Aboriginal people.

According to Boldt the Canadian public supports just dealings with Aboriginal people in their rights and claims but very few understand the political implications and the monetary cost of rendering justice in regard to Indian rights and claims and are willing to make sacrifices to honor it.

All that is needed is for all Canadian people to recognize Aboriginal people as people with whom they share a common humanity and to honor their wish for partnership. It has been said in Report of the Royal Commission on Aboriginal People (1996) that we need to remember that the Canadian identity is by no means uniform. Canada is a partnership among different peoples, each with its distinct history and culture. Respect for

diversity is a vital aspect of our joint identity as Canadians, the essential basis for an enduring association and a shared life. It has also been said that it is paramount to eliminate the barriers created by the Indian Act that prevents nations from coming together. Membership in these nations should be governed by criteria related to heritage, association and acceptance that are defensible by international human rights standards.

The history of North America is a history of the development of frontiers, where pushing back the wilderness and populating the land built an industrial way of life. An unparalleled economy, industry and agriculture was developed. Abundance of land and resources raised the conviction that the continent's resources were inexhaustible and could be developed for ever. These attitudes toward the environment were closely linked with attitudes towards Aboriginal people. Although the development of the frontiers and wilderness was carried out under the banners of 'enlightened progress', it was nonetheless an assault on the way of life that Aboriginal people had led for thousands of years.

When the first European settlers came to North America to the region that incorporates a broad band of land from Saskatchewan and Alberta in the north to the Gulf of Mexico in the south, the size of the buffalo herds was

estimated to be about 75 million, from the 16th century to the 1880s the herds were decimated to numbers of just a few hundreds.

We are now facing the development of one of the last frontiers and wilderness areas of the world in Northern Yukon. It is an area which is slow to recover from environmental degradation, with some wildlife species that can be found only there, and with one of the great herds of caribou (Porcupine caribou herd).

Mainstream society is driven mainly by economic and social values that are different from those that motivate Aboriginal peoples. While people from mainstream society think about the technological conquest of the northern frontier, aboriginal people see it as a land with the ability to fulfill their deepest needs, hopes and dreams. They see large herds of caribou freely wondering through the tundra, and rivers and lakes teeming with the fish. They see it as the storehouse from which they can take whatever and whenever they need. While mainstream society sees the northern environment in terms of gas wells, roads and mines and as the land with other desirable commodities like diamonds, gold etc., the resident Aboriginal people see it as their homeland to which they are deeply, spiritually and culturally connected. (Berger 1977)

Although they have adopted from mainstream society the English language, the southern way of dress, and modern equipment for hunting, like snowmobiles, modern rifles and other recent technologies that might be useful for them, they still retain their own ways of thinking about the environment and about their destiny and future in the North.

The High North is the homeland for the Vuntut Gwitchin people, and their lifestyle, which has survived with minor changes for approximately 30,000 years. They have always been hunters and gatherers and have taken from nature only what they needed for their survival without altering the environment itself. Many non Aboriginal people find it hard to believe that anyone would wish to live as Aboriginal people do in their communities, but they persist in their struggle today to survive as a distinct society. Many people tend to idealize only those aspects of Aboriginal culture that they are able to understand like arts and crafts or dance and music, which are so visible and obvious, but there is much more to it. Only when we learn what values Aboriginal people still regard as vital today will we be able to understand how they see their society developing in the future .

Their lifestyle is now again being threatened by the possibility of industrial development in Northern Yukon. This is nothing new for the

Yukon, it has experienced large scale short- term developments in the past, notably the Klondike Gold Rush in 1898. At that point in the region's history, 100,000 men and women sought gold, and almost overnight Dawson City became the largest city in Canada west of Winnipeg. With the construction of the Alaska Highway during World War II, the Yukon again witnessed the effect of an in- migration of more than 30,000 people, primarily American soldiers and civilians. After they were gone, the population of Yukon fell to around 5000. It is obvious from history that short term booms brought few lasting benefits. (Lysyk, et.al., 1977)

Then in 1974 there was a proposal from Arctic Gas for the Mackenzie Valley pipeline, the greatest construction project, in terms of capital expenditure, that private enterprise had ever proposed, anywhere. The pipelines were supposed to cross permafrost areas. Arctic Gas and Foothills Pipeline proposed to refrigerate their buried pipeline by chilling the gas to the temperature below freezing. That would create other problems in parts of unfrozen ground. The creation of artificial permafrost around the refrigerated pipe could cause upward movement of the ground by a process called frost heave, which would damage the pipe. They also proposed building hundreds of miles of snow roads. This led to criticisms about their potential usefulness,

particularly in tundra areas. The majority of the Yukon labor force at the time did not have the experience or skills to meet the demand for labor of large scale industrial development, so the majority of the labor force would have to come from outside of the Yukon. (Lysyk et. al., 1977)

Mr. Justice Thomas Berger, in his letter to the Minister of Indian Affairs and Northern Development (Berger1977), said, concerning the Northern Yukon, that “ we are now at our last frontier where profound issues await us, touching our deepest concerns as a nation”. The North, he said, is a frontier, but it is a homeland too, the homeland of Dene, Inuit and Metis. It is our heritage, a unique environment that we are called upon to preserve for all Canadians. Berger stated that the North is a region of conflicting goals, preferences and aspirations, but that he proceeded with the Inquiry on the assumption that we intend to protect and preserve Canada’s northern environment and that, above all else, we intend to honor the legitimate claims and aspirations of Native people.

It is often thought that because of the immense geographic area of the North, construction of a gas pipeline or the establishment of an energy corridor could not cause major damage to the land, the water or the wildlife. But within this vast area are tracts of land and water of limited size that are

vital to the survival of whole populations of certain species of mammals, birds, and fish at certain times of the year. Disturbances of such areas by industrial development can have adverse biological effects that go far beyond the areas of impact. Berger suggested withdrawal of land from any industrial use north of the Porcupine River, as necessary to preserve wilderness, wildlife species and critical habitats. He recognized the importance of the Yukon coastal plains and the Old Crow Flats, not just for their incredible beauty, but as the essential habitats for the Porcupine caribou herd and for hundreds of thousands of migratory waterfowl each summer and fall. These unique ecosystems - the caribou, the birds, other wildlife and the wilderness itself have survived until now because of the inaccessibility of the area. But it is vulnerable to the kind of disturbances that industrial development would bring. Therefore, he had concluded that there are sound environmental reasons for not building the pipeline or establishing an energy corridor along the Coastal Route and the Interior Route.

Berger said that the Coastal Route would pass through the restricted calving range of the Porcupine caribou herd and would have highly adverse effects on the animals during the critical calving and post-calving phases of their life cycle. Along the Interior Route, gas pipeline and energy corridor

development would open up the winter range of the caribou herd, and the impact of this development combined with that of the Dempster Highway, could substantially reduce the herd's numbers and undermine the caribou-based economy of the Old Crow people.

One of the very important Berger findings was that the possibility of oil spills from offshore petroleum development by all the circumpolar powers could diminish the albedo (the reflective capacity of ice), causing a decrease in the sea ice cover and hence changes in climate. We should keep in mind that the Berger Report was published in 1977 and that many of its findings have already been borne out. The future of the North ought not to be determined only by southern ideas of frontier development but should reflect the ideas of the people who call it their homeland.

The findings of the Berger Inquiry were that extraction of non-renewable resources should not be the sole basis for northern economy in the future, and that absolute faith should not be placed in any model of development that would require large-scale technology. He emphasized the development of the whole renewable resource sector which would enable Aboriginal people to enter the industrial system without becoming completely dependent on it. He suggested an economy based on the modernization of hunting, fishing and

trapping, on efficient fish and game management, and on small-scale enterprise. Opportunities for native employment exist in management of renewable resources, maintenance and equipment for the harvesting and processing of these resources. These issues had previously never been given any serious thought. An economic sector based on renewable resources, which encompasses industries like fur tanning, garment manufacture, food processing, marine oil processing, sawmilling, log and lumber construction, handicrafts and similar cottage industries and tourism, involves much more than just subsistence activity that relies solely on traditional skills. The development of these industries would require scientific, technical, clerical, administrative, managerial and business skills. It would need abilities and ambitions of younger people and would provide an opportunity for them to receive schooling and stay in their communities. The oil and gas industry does not offer these advantages. A healthy economy based on renewable resources offers employment and opportunities for secondary employment far beyond primary production, and it is the type of employment that Aboriginal people want. Berger suggested that orderly development of gas and oil resources over a period of years would be a rational program for northern development based on the ideas and aspirations of Aboriginal

peoples together with the development of a diversified economy. Berger

reached these conclusions after hearing evidence from numerous Aboriginal

people and he considered them the only development that makes sense.

During the Berger Inquiry, a great number of Aboriginal people testified how

they see their future in the light of oil development. Some of these testimonies

were:

“It is very clear to me that it is an important and special thing to be an Indian. Being an Indian means being able to understand and live with this world in a very special way. It means living with the land, with the animals, with the birds and the fish, as though they were your sisters and brothers. It means saying the land is an old friend, an old friend your father knew, indeed your people always have known. We see our land as much, much more than the white man sees it. To the Indian people our land really is our life. Without our land we cannot -we could no longer exist as people. If our land is destroyed, we too are destroyed. If your people ever take our land you will be taking our life.”(Richard Nerysoo of Fort McPherson 1977)

“Do the white people have the right to ask us to give up this beautiful land of ours? Do they have the right to spoil our land and destroy our wild game for their benefit? Do they have any right to ask us to change our way of life, that we have lived for centuries? Do they have any right to decide our future? We live peacefully in harmony with nature, here in Old Crow. You won't find very many places like this left in this world”.(Alice Frost Old Crow 1977)

“Our backs are turned to the corners. This is our last stand. I ask each and every one in this room what would you do if you were in our shoes? How would you feel if you had this conditions on you? I ask you one more time, let us negotiate, there’s still time, but don’t force us, because this time we have nothing to lose. When I ask for the lives of my people, am I asking you for too much?” (Raymond Yakaleya, speaking at Norman Wells 1977)

A great number of witnesses cited examples where promises had been broken in the past. When the winter road was built into Old Crow, the people of the settlement were assured that it would not cut through the archeological site of Klo-Kut (traditional gathering and heritage cite). The foreman of the road construction was made aware of the site’s existence and its importance. Charlie Peter Charlie said: “They didn’t listen”, the road was dug through the site and did a great deal of damage.

Another example was when people of Old Crow were asked where they wanted the new airstrip built. They suggested the land part way up Crow Mountain. The airstrip was instead built right behind the settlement. It is now more difficult to find good berry patches within walking distance. The old women can no longer snare rabbits and ptarmigan near town because increased noise and activity have frightened them away.

The Old Crow people were most concerned about the future of their young people. They wanted future generations to live off the land if they chose to and the young people when speaking for themselves would say that they want to develop in their own way. In their words, problems arising from industrial construction would be the following: heavy equipment would damage the land, as it did when the seismic crews were working. There would be more air and winter road traffic in to Old Crow, extra customs officials, police and game branch officials would be needed to handle the increased population and traffic, garbage and sewage disposal would pollute the lakes, creeks and rivers, animals would be affected by the garbage smell. The caribou would be further diverted by increased activity and noise. All animals would be frightened away by the activity. Large holes or ditches during construction could act as animal traps. The archeological sites would be damaged, and it would be harder to get meat because the migration patterns of the caribou would be upset. Polluted waters would be unfit for drinking, and would kill the fish, muskrats, beaver, and water animals. Old Crow people were also not optimistic that the local men would be hired for jobs and felt that their term of employment would be short if they would be hired. (Source of the information Yukon News, July 1975)

As reported in the Whitehorse Star, November 14 1983, speaker after speaker said that they don't want development ever on the North Slope. At the first Yukon hearing of the Beaufort Panel in 1983, which was studying the environmental, social and economic effects of proposed oil and gas production in the Beaufort Sea, the 37 speakers from the community of 250 made it crystal clear to the panel and the oil companies that they valued the Porcupine caribou herd far more than any development. Chief Johnny Abel said : "What we are trying to do is protect our people. To protect our people we have to protect the caribou and their habitat." Councilor Elizabeth Kaye said: "This is our land by birth and by choice. Please don't take that away." The people of Old Crow stated that if the calving grounds or migrating pattern of the caribou were disrupted, the community would be a social basket case. There would be no wild food, so much more expensive "White man's food" would have to be flown in, and welfare would become the only source of income for the community.

The social impacts of industrial development of the High North could be even more devastating. The leisure activities of large numbers of male laborers, together with the ready availability of alcohol, could be the background for sexual exploitation and family breakdown. The large

companies, aware of this concern of Aboriginal people, told the Inquiry that they will minimize undesired communication between construction camps and the villages and that they would make native villages off limits to the workers, also that the construction camps would be in remote locations without easy access to the villages. But, as was noted by the Inquiry, the companies' legal rights to prevent access of their employees to the native villages are questionable and there is always the possibility present of an influx of other workers looking for jobs generated by industrial development.

Berger noted that the process of rebuilding a strong, self-confident Aboriginal peoples' society has begun and that major industrial development can have disastrous effects on that process. He said that the rate of alcohol consumption could worsen, that one should expect erosion of native culture, further demoralization and degradation and violence beyond anything previously seen. The problems that Vuntut Gwitchin faced 23 years ago are still unchanged and their positions concerning the problems are also the same. (personal communications with Vuntut Gwitchin people in Old Crow, 1997)

Over the longer period of time there was a significant cultural impact of mainstream society on Aboriginal people. Their Aboriginal spirituality was replaced with mainstream religions, there was a significant loss of their

languages, their customs were rejected and their uses of the land were considered socially unimportant and economically insignificant.

Boldt (1993) argues that if First Nations are to survive as First Nations, their cultures must be more than a mere correlate of their traditional means of subsistence. They must be flexible, evolving designs for living and surviving in an industrialized world. For Gwitchin people that would translate into the development of crafts and industries such as, snowshoe, tanning, bed and breakfast accommodation, and tourism.

Land Claims and Self-government

All of these changes in the Yukon occurred without reference to the land rights of Yukon First Nation, despite their persistent objections. In 1968 Chief Elijah Smith said to the Minister of the Indian Affairs:

“We the Indians of the Yukon, object to the treatment of being treated like squatters in our own country. We accepted the white man in this country, fed him, looked after him when he was sick, showed him the way of the North, helped him to find the gold; helped him build and respected him in his own rights. For this we have received very little in return. We feel the people of the North owe us a great deal and we would like the Government of Canada to see that we get a fair settlement for the use of the land. There was no treaty signed in this country and they tell me the land still belongs to the Indians. There

were no battles fought between the white and the Indians for this land.”

(Published in the Report of the Royal
Commission on Aboriginal People, 1996)

In 1973 the Council for Yukon Indians was formed, with the intention to represent everyone with “Indian Ancestry” in the Yukon. CYI advanced its claim on the basis of Aboriginal rights to lands that had never been surrendered. For the Aboriginal people that raised the possibility of closing the economic, social and communication gap between Aboriginal and non Aboriginal people in the Yukon. While the claim of the Council of the Yukon Indians was about the land, much of the public debate was about the self-government of Aboriginal people. According to the Report of Royal Commission on Aboriginal People (1996) there were two alternative arrangements proposed for the Yukon: under a one-government system First Nation communities would share most institutions, services and programs with non-Aboriginal people; by contrast, a two-government system would involve co-operation and shared institutions, First Nations communities would establish their own school boards, health systems and local self government institutions. These two alternatives were discussed over a decade, until finally in 1988, an agreement in principle was reached that led to the signing of the

Umbrella Final Agreement (UFA) in 1992. The UFA broke new ground, providing constitutional protection for wildlife, creating a constitutional obligation to negotiate self-government agreements, and finding language for the agreement that avoided complete extinguishment of Aboriginal title. Among its other provisions are title to 44,000 square kilometers of land, compensation of \$260 million to be divided among the First Nations communities, the creation of the Yukon-wide land-use planning council and regional planning commissions and joint wildlife management boards. Under the terms of the UFA, First Nations communities will negotiate their own final agreements. Enabling legislation for these as well as for the Umbrella Final Agreement and Model self-government Agreement (which provide a framework for individual self-government agreements) was passed by Parliament in 1994. While the Yukon government's jurisdiction and authority are expanding through a process of devolution from the federal government, the comprehensive claims agreements ensure that Aboriginal people will have a major influence on the political evolution of the territory. Under the terms of the agreements, Yukon Aboriginal peoples are guaranteed participation in public bodies dealing with everything from land use and development

assessment to the management of wildlife and other resources. (Source of information Report of Royal Commission on Aboriginal People 1996).

According to the Report of Royal Commission on Aboriginal People the way that the Yukon government decision-making and policy-development process operate owe very little to Aboriginal political traditions. It also has been said that the creation of First Nations Governments carries out its responsibilities, and that might be an opportunity for institutional change to harmonize public decision making with Aboriginal traditions.

According to the Highlights of Final Agreement for Vuntut Gwitchin First Nation they have a land title on 7744.06 square kilometers approximately (2990 square miles) of land with surface and subsurface title; 7.16 square kilometers (2.74 square miles) of land set aside or reserve.

According to the agreement for the wildlife they have:

1. Specific moose harvest for subsistence needs
2. Basic needs allocation of salmon in the Porcupine River drainage basin
3. Rights to subsistence level and harvesting in the Vuntut Gwitchin First Nation traditional territory.

According to the agreement to the Legislative Powers:

The Federal laws of general application not inconsistent with settlement agreements will apply to the Yukon First Nations, their citizens and settlement land. There will be instances where it will be desirable that Yukon First Nations laws take precedence over federal law. The SGAs (Self - Government Agreements) require that Canada and each of the Yukon First Nations negotiate a separate agreement or an amendment to the SGA to identify areas in which Yukon First Nations' laws will prevail over federal laws of general application. Territorial laws of general application will continue to apply to the Yukon First Nations, their citizens and settlement lands until they are replaced with Yukon First Nations Laws. Pending the outcome of the national Aboriginal Justice Policy review, the four Yukon First Nations have agreed not to exercise law-making powers with respect to the administration of justice prior to December 31, 1999 or unless an agreement is reached by the parties at an earlier date. In the interim, the Yukon courts will rule in respect of Yukon First Nations laws. (Source of the information Vuntut Gwitchin First Nation Final Agreement 1993, and Highlights of the Final Agreement website www.inac.gc.ca/pubs/claims/vunthigh.html, 24 July, 1997)

Co-management

Co-management represents a variety of institutional arrangements encompassing consultation with members of the public on matters of land and resource allocation and management; the devolution of administrative, if not legislative, authority; and multi party decision making. Co-management is thus essentially a form of power sharing although a relative balance among the parties, and the specifics of the implementation structures, can vary a great deal. What exists today, therefore, represents a compromise between the Aboriginal objective of self determination and governments' objective of retaining management authority. Aboriginal people regard co-managemet as an evolving process. (From the Report of Royal Commission on Aboriginal People 1996)

Campbell (1996) states that conflict related to natural resource management in development situations seems to be a common occurrence. This is not a new phenomenon; on the contrary, conflict has always been present in varying degrees since the beginning of mainstream resource exploitation in Canada. However, in today's context of finite natural

resources, the intensity of the conflict appears to be rising exponentially, as more interests than ever before are competing for use of and access to both renewable and nonrenewable resources. But Campbell argues that the area of natural resource management and development seems to have an unusually high incidence of conflict, where natural resource management affects Aboriginal people.

There are several reasons for the presence of conflict when mainstream natural resource development, particularly forestry and oil and gas development, collide with Aboriginal peoples. First, relatively large scale hinterland resource projects take place in areas, usually northern, where there are small, isolated Aboriginal communities. Second, resource development is occurring in territories where traditional hunting, trapping, fishing and gathering activities still play a vital role in subsistence lifestyles practiced by Aboriginal people, especially in the North. Third, and perhaps most important, the rights of Aboriginal people to traditional territories and the natural resources therein are ill-defined by both the Canadian governments and the judiciary, states Campbell. The special rights of Aboriginal people as guaranteed by treaty are not generally considered when resource development projects are proposed or resource management plans are prepared.

Consequently, resources located on Aboriginal traditional territory often become the focus for conflict between government, natural resource industries , and Aboriginal peoples, according to Campbell.

The beginnings of co-management practices can be mentioned in the 1980 s when co-management first appeared in literature as a means to describe initiatives in negotiating resource management .

Co-management arrangements can be grouped into three broad categories:

1. claims-based co-management, consisting of the land and environment regimes established under comprehensive land claims agreements;
2. crisis based co-management, which is an ad hoc, and possibly temporary policy response to the crisis; and
3. community-based resource management, which has the least Aboriginal involvement. It consists of government initiatives to involve the inhabitants of resource-based communities in resource management planning.

Aboriginal people prefer the first two co-management regimes, since they are the only structures that offer them some equality in membership and decision making. (Report of Royal Commission on Aboriginal People 1996)

On the general level, the interaction between Aboriginal and non Aboriginal knowledge is expected to take place primarily in the development

of management parameters, principles and objectives, as well as in ongoing monitoring of efforts to achieve these objectives for sustainable development and, in the case of Porcupine caribou, sustainable use of the herd for subsistence harvesting. Joint harvest studies are appropriate mechanisms for monitoring resource use.

Co-management practices and agreements differ substantially one from another, but at first glance they appear to be an important breakthrough, as long as they imply “equal” partnership between industry, government and Aboriginal people.

The long term importance and significance of these mechanisms and the constitutionally protected provisions respecting sustainable use of biological resources remain to be proven, however the new environmental regimes included within the land claims agreements across the North can contribute to the assurance that sustainable use of renewable resources remains a central issue in the management and use of biological resources.

Recent developments in Economic development of Yukon and Arctic National Wildlife Refuge in Alaska

Until recently the Government of Canada owned and managed oil and gas in the Yukon. In the fall of 1998, the Yukon government assumed province-like responsibility for its oil and gas resources and is presently in the process of establishing a competitive oil and gas regime. This transfer is the result of the federal government's Canada-Yukon Oil and Gas Accord Implementation Act (Bill c-8), which received Royal Assent in May 1998, providing new legislative powers to the Yukon, and the territorial government's Yukon Oil and Gas Confirmation Act, which was enacted on November 2, 1998. Starting from January, 1999, the Yukon Government planned to begin dispensing petroleum rights through land sales and licensing rounds. According to the website of the Yukon Department for Economic Development, the Yukon contains eight distinct sedimentary basins with potential to host oil development. Seventy-one wells have been drilled in the Yukon and they are mainly located in the Liard Plateau, Peel Plateau and Eagle Plain Basins. The remaining five basins virtually unexplored are:

Plume, Kandik, Old Crow, Whitehorse Trough and Coastal Plain. Current interests for oil development are mainly focused on Liard Plateau, Eagle Plateau and Peel Plateau. The Minister for Yukon Economic Development said that the timing is right for a new boom, 100 years after the Klondike gold rush of 1898. It has been said that everyone will benefit from new job creation and business opportunities and additional resource revenue for enhanced government services. The Yukon Oil and Gas Act provides clear regulations on Crown and First Nations land and sets out the structures of the management bodies. It also ensures that Yukon and First Nations governments will be able to control the pace of development. So far Liard First Nation expressed interest in negotiating socio-economic agreements and welcomed the opportunity to work closely with the petroleum industry. The Yukon signed an oil and gas accord with Ottawa in 1993, but as it states in news from Yukon Economic Development dated January 20, 1999, that arrangement was gridlocked and then derailed mainly because First Nations residents felt they hadn't been consulted properly.

Opening of the Arctic National Wildlife Refuge in Alaska for oil development so far has been unsuccessful. In 1987 the Interior Department recommended development and the issue was presented to the Congress of

United States. In 1996 Congress agreed and sent legislation to President Clinton, as part of the Balanced Budget Act. President Clinton vetoed the bill. United States environmental groups have long opposed opening of the Arctic National Wildlife Refuge and are expecting to persuade the U. S. Congress to permanently ban exploitation of the coastal plain for oil and gas.

Geography of Old Crow Settlement

The settlement of Old Crow is situated in the ecozone that covers most of the northern half of the Yukon. It has a steep, mountainous topography, consisting of repetitive, sharply etched ridges and narrow valleys, which predominate with foothills and basins. The bedrock is largely sedimentary in origin with minor igneous bodies. The area is mantled with colluvial debris with frequent bedrock exposures and minor glacial deposits. Brunisols, Regosols, and Cryosols are the predominant types of soil. Wetlands are underlain with permafrost. Vegetation ranges from arctic tundra (dwarf or low shrubs, mosses, lichens and cotton grass) in the north, alpine tundra (dwarf or low shrubs, lichens, saxifragas, and mountain avens) in higher elevations, and taiga or open woodland in the south (white spruce and white birch), mixed with medium to low shrubs (dwarf birches and willows), mosses, and lichens. Winters are long and cold with very short daylight hours. Weather patterns from the Arctic and Alaskan coast have a marked influence on this ecozone. Annual precipitation ranges from less than 300 mm in the north to over 700 mm in the southeast. Wildlife is diverse and includes woodland and barren ground caribou, moose, black and grizzly bear, wolf, lynx, arctic ground

squirrel, wolverine, and Dall's sheep. Important birds in the area are gyrfalcon, willow and rock ptarmigan and waterfowl. Chum and Chinook salmon spawn in the Porcupine River and its tributaries.

Land uses are subsistence activities of the people of Old Crow and include hunting, fishing and trapping. Tourism and recreation are becoming increasingly important since the establishment of Vuntut National Park in the northern portion of the ecoregion. The Yukon's Old Crow Flats, the lowest portion of the Old Crow Basin, is a large wetlands complex that lies on an alluvial plain, with mountains in the far distance on all sides. In 1982 it was designated as a wetland of international importance under the Ramsar Convention. The international recognition was received for its value to swans, Canada Geese, and other waterfowl species that nest or stage there in thousands. Under the terms of the Vuntut Gwitchin final agreement, proclaimed by the Canadian government in 1995, the northern portion of Old Crow flats become the Vuntut National Park. From the rest of the land, a part is Settlement Land belonging to the Vuntut Gwichin First Nation and the rest remains Federal government land until the anticipated completion of the transfer of land ownership to the Territory of Yukon. This will be completed

by July 1, 1999, when a federal bill is expected to receive royal assent that gives the Yukon control over its lands. Despite different land tenures, the Land Claim Agreement designates the entire area as Old Crow Flats Special Management Area and stipulates the management as of one ecological unit, with protection of the current and traditional use of the area, its wildlife and their habitats by the Vuntut Gwitchin, as guiding principles. (Figure 1.1)

Eagle Plains encompasses the Eagle Plain, Bell Basin, and part of the Porcupine Plateau and is almost an entirely unglaciated rolling plateau.

Lichen and moss are predominant, in this important wintering grounds for the Porcupine caribou herd. Permafrost is continuous, with high ice content in the form of ice wedges in basin areas. Characteristic wetlands covering 25 to 50 percent of the land area consist of peat plateau bogs, palsa bogs, ribbed and horizontal fens.

The Mackenzie Mountains span the Yukon-Northwest Territories border from the Beaufort Sea to the 60th Parallel. They include the Ogilvie and Wernecke mountains in its westernmost section, the Backbone Ranges in its interior, and the Canyon Ranges to the east. The eastern ranges of the Mackenzie Mountains are also included in the area. These ranges support

various forms of hunting and trapping, and contain considerable mineral potential, but for the most part the ecoregion is an isolated wilderness.

(Data obtained from National Ecological Framework for Canada, Environmental Conservation Service, Environment Canada, 1996, web site of the Yukon Economic Development Department, Sep. 1998 and Vuntut Gwitchin Land Claims Final Agreement 1995)

Porcupine caribou herd

Caribou (*Rangifer Tarandus*) belong to the deer family (*Cervidae*) in the order Artodactyla. The Porcupine caribou, named for their range in the Porcupine River area of the Yukon, is the one of the last great caribou herds, accounting for about 10 percent of the caribou in North America. It has a population of about 129,000 animals and ranges from northeastern Alaska across the northern Yukon to the Mackenzie delta in the North West Territories. The herd migrates northward to the Beaufort Sea coast in late

winter and early spring. The pregnant cows congregate on the Arctic coastal plain, on the tundra near the Beaufort Sea in Northwestern Yukon and Northeast Alaska.

Caribou need to move freely over vast areas to forage, avoid predators, escape from harassing insects and reach favorable seasonal ranges. They do not migrate the same distance each year but rather use different portions of their winter range from year to year. The effects that development of their habitats can have on movement of herd can be devastating. It depends on location of the development in relation to migration patterns, the density of buildings, roads, as well as the time of the year.

Jakimchuk as quoted by Berger (1977) said that the migratory periods are the most vital elements in the life cycle of the barren ground caribou, the weakest link in the chain. Displacement of caribou from preferred habitats prevents them from getting the most nutritious food, which leads to poor nutrition of cows and calves. If caribou enter the winter without the fat reserves they need for survival, females may not be able to produce calves the following spring. This contributes to reduced productivity and increased mortality, which ultimately results in a decline of the caribou population.

(Mauer and Curby 1997)

Each year, movement of the herd is unique, with the exception of the calving area, which they move to unfailingly, unless snow conditions are so bad that they need to move somewhere else. The calving and post calving grounds for the Porcupine caribou herd are “1002” grounds, a section of the Arctic Wildlife Refuge. The food there is nourishing and plentiful, which is extremely important for nursing cows. This is also an area where the wolves and grizzlies are relatively scarce and it offers some sanctuary from biting flies. Caribou calves are precocial and able to follow cows within one hour of birth. Mobility is an important adaptation which reduces mortality, since calves are highly vulnerable to predation at birth on exposed tundra. The first few weeks are the most important ones for the survival of calves. Usually 50 percent of calves die before one month of age. The productivity of caribou is very low, twinning is almost unknown and puberty in females is normally not reached until 29-41 months of age.

The open habitat plus presence of wolves has most likely fostered caribou herding behavior. Grouping reduced predation but is not compatible with a sedentary mode of life because of the slow growing flora and the variability

of food supplies due to snow and wind. Caribou are nomadic denizens of the Arctic prairies. In June females give birth to the calves and then they spend the rest of the summer in search of relief from mosquitoes and biting flies and other parasitic insects. The herd usually moves in aggregations of 70,000 to 80,000 animals to find windswept and cool areas.

The migration back to the boreal forest in autumn brings the caribou close to several communities of Aboriginal people who traditionally for centuries have relied on caribou for food and clothing. One of these communities is the community of the Vuntut Gwitchin people of Old Crow.

Mating time starts from the middle of October. Bulls at that time urinate all over their skin to become more attractive to the females. Contests among the bulls to establish dominance can be violent but this earns them the right to breed. At that specific period when mating starts male caribou meat and skin smell of urine and is less appealing to the hunters (personal communication with hunters from Old Crow).

Winter storms in the fall stimulate the caribou to migrate towards their winter range. That gives them enough time to find food and shelter during the winter months. Most of the Porcupine caribou herd spends nine months of the

year in the interior of the Yukon and Alaska. This offers them both open habitat and forest and the possibility to locate favorable plant or snow conditions. (Figure 1.1)

Russell, Nixon and Martell (1993) stated that winter is the crucial period in the ecology of caribou. During this extended period species must cope with low temperatures and continuous snow cover, often crusted or iced-over, that can further limit already reduced food resources. The caribou migrate south to the sheltered taiga woodlands that are rich in terrestrial lichens. In the Yukon the Porcupine caribou herd occupies an expansive winter range, varying annually from the north flank of the Ogilvie Mountains, near Dawson city in the south, to the northern flanks of the Richardson Mountains in the north. (Figure 1. 1)

Russell, Martell and Nixon (1993) state that wintering grounds are classically described as one of the most critical habitats in the ecology of large migratory caribou herds. But considering the diversity of the range, the availability of large expanses of the range with abundant availability of high quality forage, and the behavioral repertoire available to the species to cope with adverse winter conditions, the winter range for the Porcupine caribou

herd, although important, is not one that requires strong legislative protection. The authors further state that in years of shallow snow the Porcupine caribou herd will occupy the vast Whitestone/Eagle plains, while in years of normal to deep snow the caribou will exploit the Oglivie/Hart Basins and Richardson Mountains (Figure 1. 1). Cameron et. al. (1993), state that calving date and early calf survival are influenced by maternal condition during late pregnancy. In a study of prenatal mortality, stillborn calves found dead shortly after birth and calves which have died of malnutrition are conditions determined primarily by maternal conditions during gestation and early lactation.

The causes of death for adults also include starvation during the winter, as well as death caused by predators (wolves and grizzlies) or by diseases. The latest update of the Porcupine Caribou Management Board (PCMB), the census count of the herd for 1997, puts the figure of the herd at 129,000 animals down from 152,000 counted in the previous census, in 1994. That represents a decline of 4% annually. According to the PCMB biologists, it is within the normal range for barren ground herds. The harvest levels of the PCH are not of concern and so far there is no indication that the habitats of

the herd are declining, so the biologist said that they have no reason to be overly concerned. However, to keep better track of this decline, the next complete census will take place in 2000, rather than in usual 3 year cycles. In the latest data from the PCMB one can also see that data received from the satellite collared cows show that the animals are staying in their winter ranges and not moving very much.

In the Berger Report (1977), Dr. Frank Banfield said that caribou are more vulnerable on their wintering range, when they are widely dispersed foraging for food in snow. Some other biologists said that the calving grounds are the most important for the survival of the herd. So the crux of the dispute among experts centers on the question, which is more important to the caribou, their limited calving grounds or their vast winter range? The calving grounds cover about 4,000 square miles on the coastal plane and the winter range covers about 60,000 square miles in the interior of the Yukon and Alaska. And while it is obvious that the calving grounds are absolutely vital for the caribou, it is also obvious that large scale industrial development of wintering grounds would be equally detrimental to the herd. Dr. George Calef presented to the Berger Inquiry changes in the size of the various caribou herds during their

contact with industrial development. The Fortymile herd that in the 1920s had 568,000 animals, was in 1977 about 6,000 animals. The Nelchina herd of south east Alaska consisted of 70,000 animals in 1962, but by 1973 it had been reduced to only 8,000 animals. The Kaminariak herd used to winter in Northern Manitoba. In 1920, the Hudson Bay Railway crossed their winter range. By the early 1960s the caribou had stopped crossing the railway and they no longer foraged south of the Churchill River. The herd stood at 149,000 in 1955 and at 63,000 in 1967. Presently the Kaminariak herd is at 350,000.

Industrial development in the wintering range of caribou would have an impact on the herd caused by the presence of people, the operation of machinery, aircraft noise and destruction of the habitat. Caribou would be deflected from their normal migration routes by construction or other activities. These departures from normal migration patterns could have adverse effects on the herd and on the Aboriginal people who hunt the caribou for their subsistence according to the caribou's traditional migration patterns.

And while before there was little or no industrial development in the

wintering grounds of the caribou, there is presently a wide range of proposed oil developments for these grounds, which would require strong legislative protection of the wildlife in the area.

Preservation of the wilderness and of the caribou herd is plainly in keeping with the desires of the Aboriginal people that they should have the right to hunt, trap and fish within the boundaries of their traditional hunting grounds.

History of Vuntut Gwitchin People

Some archeological evidence suggests that people first lived in the Old Crow Flats area 30,000 years ago, which makes it one of the oldest human habitation sites in North America (Irving 1976). The traditional territory of the Vuntut Gwitchin extends over a large territory in the northern part of the Yukon. According to Belikci (1963), it is westwards to the middle course of Bell and Eagle Rivers (137°W) near the foothills of Richardson Mountains, south to the headwaters of Eagle and Porcupine Rivers (66°N), north to the

end of the marshing Crow Flats (68°N) and west to the Alaskan border (141°W). It is an area of 10,000 square miles that lies on the northern end of the Cordilleran region's interior system (Kimble and Good 1995, Balikci 1963). It is separated from the Arctic Ocean to the north by the British and Barn Mountains. The settlement area of Old Crow extends on the northwest to the hills of Old Crow Range. Lone Mountain ($64^{\circ}23'\text{N}$ $139^{\circ}00'\text{W}$) is an important landmark in the area, especially for the winter travelers and hunters. Crow Flats are very important for subsistence activity of Vuntut Gwitchin people. A similar area is located immediately south of Old Crow. According to Balikci (1963), one of the preferred hunting grounds for the Gwitchin People is a lower course of the Eagle River. It has numerous lakes and marshes and the most important is Whitefish Lake.

The history of Old Crow is linked with trading posts on the Porcupine River. Fort Yukon was built at the mouth of the Porcupine River in 1840, but when it became American territory in 1867, the Hudson Bay company moved it upriver and named it Rampart House. This became the major trading post for the Vuntut Gwitchin people. By 1909, interest was shifting from Rampart House to Old Crow. In 1911, a smallpox epidemic at Rampart House spread

up the Porcupine River and seriously reduced the population. The survivors moved to Old Crow, which became the major trading center. The buildings at Rampart House were burned to prevent further spread of the epidemic. Old Crow had long been a focal point for gatherings. It was a good area for fishing, a major spring caribou crossing place and Kloo-Kut was near by (old settlement and traditional gathering place).

Father Emile Petitot was one of the first people who recorded (in 1876) his observations about the traditions, beliefs, legends and daily practices of Gwitchin People. In his time they were known as Loucheux (named by French fur traders), Idha Kutchin and Kutchin (name changed by Richardson), while today they are known as Vuntut Gwitchin what is the real name of the people who lived and still live in the Vuntut Gwitchin territory.

They had a great number of seasons which they characterized by the different conditions of snow or soil. They divided the year into twelve months or moons, each with a distinctive name. Several had the names of animals. Gwitchin people said for January that it is the Month of Longer Days, for February they said is the Month of Wind, March they said was the Month of the Eagles, April was the Month of the Hawk, May was the Month of Snow

Crust, June was the Eggs Laying Month, July was the Birds Molting Month, August was the Month Birds Start Flying , September was the Month of the Moose, October was the Month of the Caribou, November was the Month of the Sheep and December was the Month of the Darkness.

(Source of information Lydia Thomas and Roy Moses, 1999)

At the time of Petitot the clothing consisted of tunics that had no hood. The only headgear was a wide band of blue and white bead work, with little stripes of it floating down over the shoulders. Only the Chiefs were privileged to wear it. The summer clothing was made of caribou skins, and their winter garments of white hare and caribou skins with the hare skin facing out on tunics and in on leggings or trousers. The warmest garment was made up of woven strips of white hare skin. Tunics had fringed tailpieces and trousers sewn to the foot gear and decorated with porcupine embroidery, beadwork and leather fringe. The inevitable accessories to the costume were the wampum beads or shells (estsuzi, nakay or etsay). The most appreciated were blue beads produced in Russian factories and white shells from the Pacific. These represented Gwitchin peoples' greatest wealth. Women's dresses were short and decorated with wool pompoms and glass beads. During the winter

the hides of caribou, beaver and Arctic hare provided clothing that was warm, yet light and comfortable.

They built spherical tents with thick layer of fir tree covered with caribou, buffalo or white bear skins. In the middle of the skin lodges was the fireplace, from which the smoke escaped through the opening, at the top of the tent. In the winter the bases of those dwellings were banked up with snow, inside as well as outside, to make them warmer.

During the long and cold winters Gwitchin people occupied their time with story telling. Stories were told mainly in the evening, and sometimes continued till the morning. They were largely about the animals or fish, with unusual and comic actions of animals, and with the traditional history of the heroes of the past, or different stories about the Creation of the Universe.

The period of change for Gwitchin people started with the first fur traders and first missionaries who were the most intrusive agents determining socio-cultural change. But while the fur traders were factors of undirected change, the missionaries imposed not only a new religion, but a whole new code of behavior. They failed to recognize that First Nation people had a fully developed schema of educating their children in which the community and

natural environment were the classroom and the land was perceived as a mother. “Students received training that fitted them to their society; when they graduated they knew who they were, and how they related to the world and the people about them.” (Cardinal, 1969 as quoted by Friesen 1997)

Since the first explorers and missionaries were propelled with strong ethnocentrism they considered native culture inferior, they never gave it a thought that it could be just different. As Friesen (1997) said :

“What a tragedy that the depth and the magnitude of First Nations spirituality was not perceived, studied and appreciated by those who laid the revised foundations for this country. Perhaps is not yet too late to rectify this shortcoming. Imagine the potential insights to be gleaned by any student of First Nation history.”

In 1834 Captain Bonneville said (as quoted by Friesen 1997):

“Simply to call this people religious would convey but a faint idea of the deep hue of piety and devotion which pervades their whole conduct. Their honesty is immaculate, and their purity of purpose and their observance of the rites of their religion are most uniform and remarkable.”

I think that Captain Bonneville was referring to the spirituality of Aboriginal people not the religion “per se”.

The objective of missionaries was to change the lifestyle of the Aboriginal people and this was to be accomplished through whatever means were

available, be it economic, religious or ideological.

Friesen (1997) notes that there were indeed many significant cultural differences between Aboriginal and non Aboriginal people, but that it was not geography that bred these differences, rather it was the people's concepts of, and adjustments to, the working of the nature that brought them about.

Fur traders on the other hand, motivated by economic desire used any means to accumulate their fortunes including using alcohol in their trading with Aboriginal people, a commodity that they were not accustomed to, not to mention that the fur trade was not always fair (personal information from people of Old Crow). On the other hand many of the products introduced to the Aboriginal peoples greatly benefited their lifestyle, particularly steel products, like steel traps, guns, axes, knives, pots, etc.

They have been quite curious and willing to open up to new experiences, to try out new ideas and objects borrowed from others. In old days (according to people of Old Crow) people hunted caribou by driving them into huge corrals. They were made of poles lashed together with willow roots to form a fence. Some of the fences were from each side up to three miles long, and up to one half mile deep in their inner pocket. Once inside the fences, the caribou

were caught with snares and speared. This vividly illustrates the technological ingenuity of Aboriginal people. At the turn of the century, when people began to obtain rifles, the caribou fences were abandoned. The Aboriginal people welcomed that change, but at the same time, they retained their traditional values and knowledge. People thought of their knowledge as their wealth, that should be taken care of and kept in family lines. There was a certain knowledge that could be bought by anybody, for a price, or knowledge shared with others for some specific purposes. People were highly interdependent and bound together by ties of kinship, intermarriage, friendship, generosity and mutual reliance. But with the coming of the first fur traders and missionaries and afterwards other settlers accompanied by a European shipment of what are now termed “household diseases” the health and welfare, indeed the very life of the First Nations, was threatened by a peril unmatched in their history. (Friesen 1997).

Gender roles before the contact were quite specific. Men took care of the hunting and fishing and women prepared the food, tanned the skins and sewed animal hides for garments. Women also gathered berries and other food from the land and were responsible for raising the children. But after

the contact, the long term effects of alcohol, diseases imported by Europeans, and welfare sent the very structure of the tribal life into disarray. I have included these historical data mainly because I think that to build the future we have to look at the past, especially when referring to Aboriginal communities.

Berger (1977) said that if the economic future of the Aboriginal people in the Yukon is to correspond with their declared preferences, the native economy of the bush and the barrens must be fortified. Small-scale harvesting of renewable resources must cease to be economically uncertain and insecure. He said that close links between primary production and the collective well being of the Aboriginal people should find a prominent place in planning for northern development. In the past Berger said policies for the North have been influenced if not determined, by the belief that the available renewable resources cannot support Aboriginal people. After the decline of the fur industry, the suggestion was that economic development of North ought to consist of mines, roads, oil and gas, and pipelines. With activity concentrated on the non-renewable sector, the vulnerability of the traditional native economy and the renewable sector of economy was greatly increased. It was

obvious during the Berger Inquiry that Aboriginal people wanted to entrench their rights to the land, not only to preserve the native economy, but also to enable them to achieve a measure of control over alternative uses of land, particularly the development of non-renewable resources. They thought that with such control they would be able to influence the rate of advance of industrial development in the North.

Dr. Andrew Thompson, a Professor of Law at the University of British Columbia, (Berger Report 1977) said that ownership of the surface of the land, without ownership of subsurface rights, is often of little value. Ownership of mineral rights usually carries with it a right of access, the surface owner by law has to give the right of the way when the owner of subsurface resources wants to exploit them. The subservience of the surface owner is often economic as well as legal said Berger, particularly in the North, because the short term value in dollars of oil, gas and minerals lying beneath a tract of land usually exceeds its short term value for hunting, fishing and trapping.

Distribution of the Porcupine Caribou Herd

Figure 1.1 Distribution of the Porcupine Caribou Herd
Adapted from Management Plan for the Porcupine Caribou Herd 1995/96

Research methodology and findings

I went to Old Crow in August 1997 after a lengthy process of obtaining all the necessary approvals and licenses to do research in an Aboriginal community, from provincial and local authorities. I also obtained approval for the research from Carleton University. Ethical considerations of research, the proposed methodology and Informed Consent Form were reviewed and approved by the Faculty of Graduate Studies Ethics Committee, prior to my departure to Old Crow.

The only way to reach the community is by air, or by river in the summer months: there are no roads going to Old Crow.

On my arrival in the community, Mr. Roy Moses, a member of the Porcupine Caribou Management Board, helped me to settle into the trailer of the Canadian Wildlife Service, where I stayed for the first two weeks. After that I moved to the Medicine center in Old Crow thanks to Mrs. Barbara Paul, a local nurse. Later during my first day I met with Mr. Joe Tetlich, who is the Chair of the Porcupine Caribou Management Board.

I waited for one week to obtain the Band Council support for the research, although I had received written approval in principle, from the Band. At the time of my arrival in the community the Deputy Chief and majority of the

time of my arrival in the community the Deputy Chief and majority of the residents were at the traditional gathering in Klo-Kut.

Since Deputy Chief Marvin Frost expressed his wish to talk with me before my research began, and I wanted to have community support, I didn't want to start interviewing without speaking with him and the Council. Although I was very eager to start my work, I thought that this was a way of showing my respect for community values and expectations. I used the time for personal observation and to present myself to the members of the community who stayed in Old Crow. When I met with the Deputy Chief and Council I explained to them how I intended to conduct my research, what kind of questions I would ask, and I showed them the questionnaire. They approved my research and asked that my questionnaire be checked out by Mr. Grafton Njootli, former member of the Yukon legislature. After getting Mr. Njootli's advice on the content of the questionnaire, I started interviewing people. I used the method of open-ended interviews.

To establish good communication with people in community I have followed suggestions of Mr. Stephen Augustine, studies written by Scott and Receveur about ethical conduct when working in an Aboriginal community (1994), and my personal judgment. With implementation of self-government

Aboriginal people are increasingly taking control over their own affairs. The relationships between community members and outside researchers are being redefined. It is no longer acceptable to conduct research in an Aboriginal community without paying attention to the needs of the local people. The methods being used, and questions being asked are changing accordingly, focused more on the ethical content of the relationship. The same principle applies for analyzing of data. These principles are being followed to promote cooperation and mutual respect.

Mr. Joe Tetlichy helped me with arrangements for my interviews. Both he and his wife Glenna helped me to feel welcome in the community. Equally good to me were Roy and Rae Moses, with whom I occasionally shared coffee and conversation. Joe and Glenna invited me on several occasions to visit and have supper with them. I was even invited for the birthday party of their son Jamie. Each time when I would see Jamie or his little cousins, I was thinking how happy these children appear and I would understand the concerns of their parents and of all Old Crow people for the future of their children and community. Family ties appeared to be very strong in Old Crow: people share food or goods as a family tradition. In general, it appears to be very emotionally satisfying and a rich social system, but it also can be very demanding on people as well, though not in a negative way. It involves

enormous personal responsibility and time. It seems that everybody is participating or being informed about the time of happy or unhappy events, or anything else that is currently happening in Old Crow. It is a very close knit community.

My first interview was with community Elder Mr. Nukon. After that I had two interviews per day. All together I collected 21 interviews in a relatively short period of time (one month). One of the most memorable interviews was with Ms. Edith Josie, a resident of Old Crow who kept the outside world informed about the daily goings on for 31 years, through her monthly columns for the Whitehorse Star. Ms. Josie chronicled a way of life in Old Crow centered on the annual migration of caribou, and low prices paid for fur. She registered visits of scientists and bureaucrats, commented about local social problems, and registered dates when the men would head into the bush to set snares or cut wood, as well as when women would go picking berries. She also registered when the community decided to ban alcohol for the well-being of the future generations. Since 1962, Ms. Josie's observations on day to day life have been published in the newspapers exactly as written. Over the years her work has been translated into many languages all over the world and as a result Old Crow and Ms. Josie become very familiar to many people world wide. The first few years Ms. Josie chronicled, were the years

when Old Crow didn't have electricity, wood was used for heating and cooking, kerosene for lamps and melted ice for water. Ms. Josie at the time lived with her mother who was blind and two children in the one room log house. When I first met Ms. Josie she gave me her book "Here are the News" to read while I was in Old Crow. Later when I was searching through articles in Whitehorse Archives I have found more articles that she had published in the Whitehorse Star. While I was in Old Crow I spoke with and visited Ms. Josie several times. She gave me a great insight about old times and about her life.

In the beginning of all of my interviews, I would introduce myself to the persons I wished to speak with and I would tell them what my research was about. I would read to them the letter of consent and I would ask them to sign it before the interviews would start. The duration of interviews was from 30 minutes to 3 hours depending on the people being interviewed. They were always given the opportunity to exclude anything they felt to be unsuitable or to include questions of their own design. Although I had prepared a questionnaire, the people had freedom to decide which subjects were important to them to talk about and they spoke as long as they wished. Most of the information collected was focused on the practices of hunting Porcupine caribou and about hunting or trapping of other animals like moose,

marten, muskrat, goose, ptarmigan etc. or fishing king salmon or whitefish.

From Elders and hunters in their 40s and 50s, I mainly obtained information on the difference in hunting practices now and 20-30 years ago, as well as fluctuations in caribou and other animal populations, which wild resources are used, seasons for hunting and fishing, methods of harvesting and processing, harvest levels, sharing of subsistence foods, cultural values attached to subsistence foods and types of groups that work and share together. Although I didn't ask specific questions about birds, some incidental references were made about them. For me that was a great learning experience, because the people I interviewed are experts in hunting or fishing. I also think that I was very privileged to hear one of the stories from Elder Mr. Donald Frost. The stories differ from family to family and are very important part of family tradition.

To get enough food throughout the year depends mostly on keen hunting and fishing skills. The hunters have to know the best places and time to catch the caribou, they have to know how to make use of different weapons and how to use traps. The proper butchering of the game or fish is also an essential knowledge . And finally they have to know how to preserve the food. Their hunting techniques were passed from generation to generation, usually at a very early age.

The twelve hunters I interviewed were in the age group from 40 to 80 years old and here is what they had to say to the questions I asked.

1. On the question of the ways of hunting now and 20-30 years ago, all of the hunters interviewed said that now they have four wheelers and boats, whereas before hunting was done with canoes and tracking with the snowshoes and dog sleds. According to two Elders it is very difficult to catch the caribou when it is very cold weather, so that requires exceptional skills in hunting.
2. On the question at what age did they start hunting, the answer was always at very young age, sometimes at 8-10 years old.
3. On the question, who taught you, the answers of the hunters were that they were mostly taught by their grandfathers or fathers, or other close members of the family.
4. On the question what kind of camp do they make while hunting, the answer was that they nowadays use tents and most of them have cabins as well.
5. On the question, what did they hunt before and what do they still hunt today, the answer was that they hunt caribou as the major source of food, the moose, rabbits, mink and marten, fox, muskrat, ptarmigan, ducks and geese, porcupine, and as one hunter put it, they hunted just about everything before

when it was the only source of food. Two hunters said that they do not hunt grizzly or brown bear.

6. On the question at what time of the year they hunt caribou, the answers were in the fall when caribou are migrating to the wintering grounds and in the spring when caribou are going north. One hunter said that meat is better in the fall after caribou had eaten the tree or the green grass. Some hunters said that they hunt in fall from the end of August till late September, others said that they hunt caribou in September until the middle of October and one hunter said that he hunts again around Christmas, if there are any caribou close to the Old Crow.

7. On the question do they hunt alone or with the other people, the answers were that nowadays they hunt alone or with one partner, but before they hunted in groups of several people, and the best hunters went first.

8. On the question for how many people did they and still do hunt, the answers of all the hunters were that they hunted and still do the same, for the members of their close family, members of their extended family, and elderly people or the widows in the settlement who are not able to hunt for themselves.

9. On the question what did they do with the meat, and how did they preserve it, the answers were that before they dried a lot of the meat of caribou or king

salmon, today most of the meat is cut and packed in a freezer. But some of the hunters said that they still dry quite a bit of meat and fish in the traditional way and one of them showed me how and where they dry the meat.

10. On the question, do they use maps, all hunters answered that they don't because if they use maps they get lost, and that they travel great distances only by observing scenery and memorizing it.

11. On the question, what kind of traps and guns they use, the answers were that they exchanged their foot hold traps for new conibear traps and concerning the guns the answers were differing from hunter to hunter but it seems that they mainly use 30-30 caliber for caribou and smaller game, larger caliber of guns for moose, and shotgun for ducks and geese.

I considered it important to include information from women of different age groups as well. They appeared very knowledgeable about traditional activities, because that is still part of their everyday life. Beside that, they have heard the same stories and legends and have listened to the Elders throughout their lives. Women also have some specific knowledge about gathering of edible plants, medicine plants, hunting of small game, and arts and crafts. They would describe and show with great pleasure and pride the Gwitchin cultural art products they made during the long winters. The

age of the 6 women interviewed was from 25 to 75, and here is what they said.

1. On the question, what edible plants do they gather around the settlement all women answered that they gather blueberries, cranberries, high bush cranberries, blackberries, and Labrador tea.
2. On the question, how is caribou used, the answers were that every part of the caribou is used including bones. The meat is either prepared for freezer or dried, the skin is used for sewing clothing (mainly moccasins, jackets, and mitts), and the head of the caribou is considered a delicacy. All women also said that they know what to do with the meat, bones, and the hide and that they know what is edible and what is not on caribou and all other animals.
3. On the question, do they sew traditional clothing, 4 women answered that they do sew traditional clothing and decorate it with beads and two women said that they are learning how to do it. They also said that they know how to tan the hide and the fur and some of them are still doing it: others said that they sent hides to Whitehorse for tanning.

As a third research group I have included young people in their twenties to get the information about their future plans and hopes as well as about the traditional knowledge they possess and how they apply it. They

were mainly educated in mainstream society. The information I received from three people interviewed showed that they still practice their traditional way of life, in which they have successfully incorporated some elements of contemporary life. This included use of snowmobiles, motor boats, and modern rifles.

Since TEK is based on oral tradition and primarily concerned with observations, the gathering of information could be best accomplished through participating in local activities (like picking cranberries or participating in hunting), but that would require much more time than was available to me, although I did participate in picking cranberries and Labrador tea with Mrs. Martha Benjamin and her grandchildren, and local nurse Mrs. Barbara Paul. From that event what impressed me the most was the advice of Mrs. Benjamin to her grandchildren to always leave some berries on the bush for birds and animals.

Another interesting event happened one evening when I was walking near the river. I was approached by two local women and advised to go back to my shelter, because earlier that day, and a few days before, children had spotted a grizzly or big brown bear coming close to the community. The bear was in search for food before winter, so they said it could be dangerous. I asked them why they don't kill the animal if they are concerned for the

community well-being. They answered : “But we don’t eat the bear meat”, as that is the only possible reason for them to kill the animal. I think that this quite graphically illustrates that they never kill the animals unless they can use them somehow.

I was well accepted in the community, and the reason for it was probably the fact that I tried to be exposed to the philosophy, knowledge and world views of Aboriginal people through many hours of long conversations with Mr. Stephen Augustine, Mi’Kmaq Hereditary Chief and researcher in the Museum of Civilization, prior my visit to Old Crow. I also learned a great deal from my conversations with Mr. Brad Henry, a resident of Ottawa, who on his mother’s side, is of Gwitchin cultural background. But the most important the reason might be in my deep respect and love for their culture, as well as my curiosity about their lifestyle, which I have had since I was a child. My father, who was an agricultural scientist and University professor, encouraged greatly my interest in different, distant and old cultures by introducing me to the books about the topics he noticed that I was interested in. It was then that I first learned about different tribes of North and South America and how they relate to nature, their hunting practices, and their sophisticated knowledge of agriculture and astronomy.

In my view TK and TEK for the Gwitchin people is at the heart of their cultural identity and remains a viable aspect of their way of life. I think that it must be very difficult for them to share their knowledge and transfer their ideas to those of us who do not share their tradition, life experience and expectations, but I tried to do my best in terms of understanding how they feel and what are their plans and expectations for the future of the community. How much they really care for the community well being is probably best described in the words of the new Chief of Old Crow, Mr. Joe Linklater:

“I could die tomorrow but I would die on my ancestor’s homeland and I would be happy. These are very strong feelings. Your parents and grandparents lived here, you can’t take it with you, but it is always part of you, no matter where you go. You can’t measure it, but it certainly gives me the confidence to stand up for what I believe in. It made me a better representative of the First Nations. When I travel on First Nation business I deal with the power, and I fight a little bit harder because of this experience that I have.”

“People use land to heal themselves, we had alcohol problems. Dependence on land made us stronger. The spirituality is what makes you a stronger person.”

“This is who I am and where I come from, 250 beneficiaries in Old Crow feel the same way as I do.”

“Values can’t be measured, it is very important to hold on to it. People from outside the Old Crow and outside of Yukon, they don’t know that. We are the only ones who know that. So it is easier for them to harm that land, and for us it would be to harm ourselves, if we harm that land. That’s why it is so important to us to have a say on it and to protect it.”

Since I think that the presentation of world views, values, knowledge and expectations of Aboriginal people is best accomplished in their own words I

made a little collage from my interviews by using their explanations. Within that context I tried to convey my message as well. I think that the role of social scientist working on research of TEK in Aboriginal community is best accomplished by allowing people to speak for themselves. The contents of the interviews should be, in my view analyzed only by the scientist who collected them, and with advice of Aboriginal people, otherwise the meaning of the message that people want to convey to the listener could be misinterpreted or misused. And besides it also represents respect for their knowledge and traditions. Therefore I think it is so important to let people speak for themselves and not analyze and reanalyze every word they say.

I also think that interviews I had collected are the property of individuals I had interviewed and myself, and the results of these interviews are the results of a collective effort between me and Vuntut Gvitchin people for which I am very grateful . During the writing of my Thesis I was frequently in contact with people of Old Crow, asking for advice. I intend to send a copy of my Thesis to the people of Old Crow as previously agreed with the Chief and the Council and as the sign of my respect and gratitude for their participation.

Traditional knowledge and other things of value for Vuntut**Gwitchin people-(inserts from interviews)**

Elder, Mr. Donald Frost, born in 1929:

When I was young we used to hunt together..., to feed women and kids at home. So the old people tell us how to hunt and we surround the caribou in the cold weather. You can't go close to the caribou when it is cold weather, so you got to know how to do that...by listening to old people you learn from them...You surround the caribou and move in together. You send the best hunters after the caribou and somebody is going to get this caribou...

From this interview with Mr. Frost we can learn that hunters learned from their Elders which hunting practices to apply when hunting in cold weather and which when hunting in normal circumstances and that they usually hunted together in old times.

I never used maps I never did... I was raised up there since I was kid. I don't need maps, I know where I am going in that country there...

Gwitchin people usually don't use maps, they prefer to memorize the landscape when going out of the settlement to hunt and use that as the only information.

When we used to hunt in January we leave women and kids and maybe 10 days we are gone. We left here and walked all the way to Hart mountain.

We would go five or six of us, and dogs would go behind us, and old people behind us. We look after them, we young fellows we go ahead.

They called it hard time, and of course it's hard time when there is no food, and lots of time you walk all the day and you come back with nothing. But we thought nothing of it, we try again tomorrow...but there is always caribou, always something in that mountain I just keep walking five, six days,but I always thought about after it, what if there was nothing in it, dogs just barely made it...There we were eating our little flour bannock, we had hard time to buy food, but we had to share everything. When we got there lots of time it was 50-60 below, cold you know, but there was few caribou in that Hart mountain. Charlie Peter and Moses Tizya there were young man and good hunters, we got caribou and feed everybody and we still had to feed the dogs. We did feed them up for a week. And then you have to turn around to Old Crow. And we made it back in three days. We brought a big load of meat and we walked all way back again. We thought nothing of it. It's hard sometimes, not all the time. I thought I will live like that for the rest of

my life, not just like a king, like today. Now you have snowmachines and you go by the plane...

The life in Old Crow has changed in last 20-30 years, it is not as hard as it was, people have settled, they have homes, but the lifestyle itself is still the same.

-We used leg hold traps but we trade it for conibear traps. I trade two of my traps for two conibear traps.

-I had nothing but 30-30 [rifle] when I was young. Then again people hunt different, now they told me some people use big guns. When you shoot bear or moose you can use 30-30 but you have to hit them in right place, now everybody is using big guns... I always use 30-30 for caribou. For moose I use bigger gun.

-I would hunt for my mother, her brother, other family. I would get caribou for lots of people and I still do it. People say, share with old people, it brings a good luck. It made me feel good about myself. I always felt lucky, so it may have sense... We were so lucky, we had meat whole winter.

This speaks quite vividly about traditional sharing of resources and about teachings that guide the community in interactions with each other and the resources of the environment.

-We get up early. I was going for couple of hours, dogs were going fast and I saw dead caribou on my route, and I look at it and I saw big stomach out and I thought only man can do that, and I thought somebody was here and shot the caribou. Only I could see the wolf track. The legs were frozen, I thought somebody left it there, then I saw the wolf done it. He cut the stomach, and the way he did it...And that bothered me, I always had on my mind, why he did it, this little hole what he made. People told me you are lucky to see it, many people say the story, but not many to see it. The big gray wolf take the liver, and then the other wolf come and eat. The wolf is same like people, he will hunt the best caribou, like people. Of course he will hunt crippled as well if he can't hunt. But he will go and hunt fat caribou. In most of the time we will leave the best hunters to tell us, to leave the land mark, and then we would go to hunt. The wolf do the same thing, just like man. They need a long time to learn to act like hunter...

I felt very privileged to hear this story from Mr. Frost. Stories like that are different from family to family and in my opinion rarely told to people outside of the community. In his story the wolf closely resembles and acts as a human being, gifted with the same powers and attributes and therefore is tripartite, possessing soul, body and image.

Grizzly, we see them, but we never shoot them. I don't eat bear meat .

Few times I have seen bear carrying a big caribou, but he don't hunt by land, he hunt by water in lake. Wolf is just like man, they hunt for family, for old one. I never bothered of shooting wolves.

Relationship between humans and animals is powerful, ancient, sacred and inextricably linked in Old Crow.

-I used to get moose, between me and my sons... then we hunt geese for soup and rabbits. Few years, maybe 5-6 years they were gone [rabbits], they go in cycle, and everybody had hard time. Now they come again.

When there are lots of them, then it's lots of them. They are back and I am happy. When you go in store to buy food, you can't eat steak every day, when you live out of country, you like to have different meat as well.

And I go fishing as well.

People of Old Crow, observe animal appearance and disappearance cycles very closely, because their subsistence harvesting depends on it.

Mr. Joe Tetlich, Chair of the Porcupine Caribou Management Board:

-We came home everyday if we were lucky and have meat, and if we didn't get meat and it was a shortage of meat then we camp.

-When was a scarcity for caribou, we would go for moose. Caribou we hunt in early September, before mating season starts, which is October 10th, and in spring when they are going back to calving grounds.

-When I hunt I hunt for my family, for my relatives or Elders

-When you hunt moose or caribou you always leave a little bit of that meat on the tree, for bears to come... I know personally when I kill something I always leave something for the animals, it is the way of giving thanks and sharing.

Concluding from traditions of Vuntut Gwitchin people, it is obvious that for them everything is connected as an integrated entity and that continuation of their traditional ways is essential for their cultural survival.

Mrs. Glenna Tetlich:

Question: How and when do you pass traditional knowledge to young people?

Glenna: I think it starts with parents and grandparents from very young age. From the time the child is born, they watch you and how do you do things... some of it is passed in the school, by cultural camp teachers.

However the best teaching is done right in the home. We have youth camp, they teach them a lot of the land skills, but also to prepare children to live in this society today, and Elders also told us that it is important to have the education today to. And I think it is really confusing, on one hand they are telling them it is important to have the education, on the other hand they are telling them to go back to the land. ...I believe that is really important both, to have the traditional skills and to have white society ways.

Question: What do you intend to do with your son?

Glenna: Right now I chose not to work, I want to spend time with him. So I do lot of contract work. I just want to spend time with him. His dad knows a lot about traditional skills, so his father will teach him a lot...

Question: When do you think his father will start to teach him hunting?

Glenna: Probably at age five.

Question: When do you expect for him to be skillful in hunting?

Glenna: If he has a good teacher I would say at age eleven or twelve.

Question: Do you think that it would be good to have a high school here?

Glenna: People in Old Crow, they have to leave at early age to go to high school, to go to Whitehorse at age 15, and myself I never came to Old Crow for years...

Yes I think that it would be better the only thing I question is the quality of the education, would it be the same, as out there. But for me it worked okay, I learned to be independent at very young age...however many students just don't make it, because of loneliness, they just can't adapt to another culture.....so when they are not able to adapt they drop out of the school and come back home and nothing for them to do.

According to personal information from Chief Joe Linklater the educational system in Old Crow is not satisfactory. As Mr. Linklater said :

"It puts kids in the school in September and leaves them in school until June. The part of Gwitchin tradition is fall hunt and the spring hunt. During this time the kids are in school, how they can learn who they are and where they come from when in school they are taught English. Our Self government agreement allows us for devolution of programs for negotiating education, and for me this is the prime area to change the curriculum."

In my understanding this obviously means that children in elementary school are not prepared enough for traditional living of hunting and fishing, and subsequently when they leave high school for the reason of loneliness or for lack of preparation for mainstream curriculum, they return to the community and they might find themselves unfit in skills necessary for living in the traditional way, what may result in social problems and even in desperate actions such as suicides.

Mrs. Brenda Frost

Question: Why is the caribou so important for the Gwitchin people ?

Brenda :It's important because it's our life, it's been with us like probably as long as we've been here and that's like ever since Gwitchin people exist... it's our main source of food and without it...we will be lost.

Question: Do you pick berries?

Brenda: Oh yes, I did lot of berry picking this summer just back from my yard and this is just the last month and then cranberry is almost right ... pretty soon, maybe another week, so I am gonna pick a lot of cranberry for keep for the winter, I have a lot of blueberry in my freezer

now...And tea, yes, actually I went berry picking just back here by the lake, I mean my cousin and I. Now I realize how fortunate we are I will always be thankful for that because...in a small patch there's blueberry, cranberry, high bush cranberries, blackberries....and it's all there and we are so rich, we just have to go in the back yard and pick all that. People down south got to go to the market and buy it, so I know how we are quite fortunate.

Question: How is caribou used (for meat, for crafts)?

Brenda: ...I think we try to use all the parts of the caribou, we ground the meat for hamburger, we keep certain parts just to fry or to boil, we dry a lot of it, then we make just like meat balls...that is a delicacy, ...we use every part, like the head is a delicacy, everything is used even the hides... I know that the skin is used, then even the caribou bones I know from the guys .. they can use it to make arts and crafts, so I know that and even the geese, the leg on the geese if they keep it and dry, then they boiled it and they become white...they use it for baby belt.

Mrs. Sharon Benjamin

I was raised in Old Crow...our life ...culture.. .will always be with me, for the rest of my life, the Gwitchin culture. We were raised with wild meat, games and most of everything off the land...We left Old Crow when we were young ... at the age of 15. We have to go to a residential school, so most of my culture was left here. And then I also learned about culture living away from Old Crow. So I left here for 13 years and then come back, because I was losing my culture. You know I didn't speak my language, I didn't eat my food...When you are in Old Crow you can go out and hunt caribou, you can put that in your freezer. You can pick berries. You can do all kinds of things. You don't need money to do that. You just get it on the back door. It's changing! Elders are saying young people should get more education, but we have education now and we are here so we're trying to mix two cultures together....I still dry meat, I still pick berries.... Right now, I'm just doing my canning so I got all my fish canned and then caribou is coming soon,so we will be working with caribou. You have to get ready for winter, you have to dry meat and we already picked berries. Caribou in another month should be here, so we will be able to do that next month.....We gonna be doing cranberries, ..we already picked our blueberries. Cranberries, we gonna be picking

our cranberries pretty soon. The kids will be involved in that they love berries.....Our tea is the Labrador tea and we pick that too, it's called Le Te Muskeg, its Labrador proper name for it.....and you just boiled it up with butter. ..It's very nice especially at the end of the day,...It's wonderful.

Question: Do you put meat in the freezer or you dry it?

Sharon: Yes, most of the meat is frozen, most of it.

Question: Do you know how it was done in old times?

Sharon: Oh yes, I was taught how to hunt caribou, I was taught how to prepare my meat. It's never changed, it so much the same...we know what to do with the meat, we know what to do with the hide, we know what to do with the bones. Its just always been with us...When you go to the big city like Whitehorse it's different. People don't eat the caribou head, they don't pickle out some parts of the caribou, they just leave it. Caribou is...gourmet food for us, especially head. Our wildlife laws has determined what is edible and what is not edible on the caribou or a moose. So we know what we can throw away or we can't throw away.

Question: Do you keep dogs for dog teams any more?

Sharon: Yes , lot's of people in Old Crow have dogs.... I've noticed in the

last two years that people are getting more in dogs team, now again. It's coming back.

Question: Is it for hunting or for championships?

Sharon: I think for both, and getting wood. ... You can survive in Old Crow without any income.. That is good part of it. Your heat is in the bush. Your shelter is in the bush. Your food is in the bush. Most people are not employed. They just live on the land. That's why I like the .. Old Crow. You know, you can always be fed up here.... When you live outside of Old Crow, you have so much stress. You teach your kids a different culture when you leave Old Crow.

Question: Do you know how to sew?

Sharon: Yes, I know how to sew beads. ..fancy type...When we were growing up, we were taught how to do necklace...and sleepers. We were taught to tan hides and to tan the fur.

Question: But most people tan hides in Whitehorse now. Do you think that it would be a good business to do that here in Old Crow?

Sharon: Yes, it is very expensive... We could have our own business .

Question: You have your own business and many people are opening their own business here. Maybe you can tell me how you see your own future?

Sharon: My brother and I decided to go in to business together, I have a house, and we sort of combined together for bed and breakfast, five rooms with meal. ...It is important for community like Old Crow to have small businesses.

Mr. Roy Moses

Question: I would like to ask you about the difference in hunting caribou now and maybe 20-30 years ago?

Roy: The method is about the same. There are more motor boats and skidoos coming in the community and that made traveling much easier, but today the hunting methods are the same. But people do not take as many caribou as they used to, I grow up with my grandparents and in the winter we would use about 30 caribou's... that was 30-40 years ago. Last year I only got three caribou's for me. Although I like chicken and beef, caribou and moose are my main source of meat. That's how it is for everybody in the Old Crow.

Some people from mainstream society, are viewing the adoption of modern hunting equipment as a severing of cultural continuity, but although Aboriginal people adopted new equipment or methods of hunting, which only

points out their fast adaptability, this is not an indication that they are less “traditional”. They are still following the same pattern of activities and have the same set of values which they had in the old times, meaning that traditional values are the same.

Question: At what age did you start hunting?

Roy: Ten years old.

Question: Who taught you how to hunt?

Roy: My great grandfather late Peter Moses. I grow up in his house. He taught me when to go out hunting, and when not and what to take from caribou. In spring we took mostly bulls, the cows were ready to have their young, and in the fall we take same cows and bulls. Cows provided very good skins for clothing, because the fur is not very thick yet, ... and it is after the summer, there is no bugs in it, its very good skin in August, September.

Question: Where did you go to hunt caribou?

Roy: That depends on what time of the year. The time of the year is very important. In the spring the caribou is always migrating north to the coast, and we never had to go very far, because we just stay on the route, and they always come. And some in the fall when they return, they

usually come through the mountain range. And you go to the mountain range...Sometimes today we travel on the river...and find places where caribou are crossing quite regularly and...we get what we need.

Today we don't take as many caribou as we did in the past ...caribou or moose are the main source of food for us, along with ducks and goose and fish and other small game. I think a regular Indian person would prefer ptarmigan and rabbits over chicken.

The preparation was smoke drying meat and fish and just about any game that people got, in the past, before our community was kind of modernized. But today our practices are little different. I package a lot of things in plastic and freeze it and I have fresh meat all year long. We get caribou in the spring and fall, just like now, it works quite well.

Women, sometimes they have to hunt, in order to live. But when they have a family the man of the house does most of the hunting. But women was very instrumental in preserving the food, preparing it, preparing skins for clothing, that sort of thing, and a lot of times they are the ones who preserved certain bones for tools. That worked pretty well.

Question: Are the skins still used for clothing?

Roy: Fur coat is good for only one winter, because fur wears away

pretty fast and nylon jacket last longer ...But tanned caribou skin is used a lot for sewing moccasins, jackets. It's not that much sewing that happens today because we have access to winter boots or hiking boots. Mostly the moccasins that are made today are used for dances or at home.

Lot of companies made a lot of money out of this country with fur. Now they tell us about anti fur, anti trapping....Not that I am discrediting anybody for loving the animals, we lived in this country all our lives and never mess up any species. From the caribou all way down to the mice, and everything in between. We have never allowed animals to suffer, it is against our law. It is against our personal law, to allow animal to suffer. We never allow that, because all you have to do is to hurt yourself and to know how the pain is like. You never inflict pain on the animal, but kill it as humanely as possible.

I think that the best picture about the values, practices and experiences of Vuntut Gwitchin people, is the one they paint by themselves, so in that context this shows quite accurately their value systems, their traditional knowledge and their hunting practices.

Sure we used leg hold traps, but that was the only method we had.

Maybe today the conibears are much better, but there are lot of people

who would tell you that animals carry conibear traps away too, and these are very good trappers. I never lost an animal when I was using a leg hold traps, but I lost a few since I got conibears now. When you got a leg hold trap and animal get caught in it you pull it out and that's it, but if you catch say a marten in a conibear, it freezes. Now you have to bring a trap home. There are different things that we have to live with.

Eventually people will come to the good senses I hope.

I don't understand people who will actually destroy a store with furs, just because they don't like animals being killed. Why they don't do the same in the supermarket where is the pile of meat. It's crazy. Hopefully we'll get these people to understand that we are not out here to destroy anything needlessly. We don't go out and blast away and shoot out the countryside. We always take everything from our kill. We can't leave anything behind.

I think that these interviews are the best proof that the Vuntut Gwitchin people hold onto traditional values, that they treasure their lifestyle and they want to protect the environment in which they live. From all of my interviews it was obvious that they still practice their traditional knowledge in hunting or gathering edible plants, and that the main source of food for them is wildlife that could be found around their settlement, most particularly caribou.

Figure 2.1 Old Crow, Yukon, 1997 Photo orig.

Figure 2.2 Porcupine River, Yukon, 1997 Photo orig.

Figure 2.3 and Figure 2.4 Porcupine River, Yukon, 1997

Photo orig.

Figure 2.5 and Figure 2.6

Smoking of king salmon ,Yukon

Photo orig.

Figure 2.7 House belonging to Joe and Glenna Tetlich, 1997

Photo orig.

Figure 2.8 Mr. Joe Tetlich and his son Jamie, 1997

Photo orig.

Figure 2.9 Birthday party

for Jamie Tetlich, 1997

Photo orig.

Figure 2.10 Youth camp, Porcupine River. Yukon, 1997

Photo orig.

Figure 2.11 Ms. Edith Josie,
Old Crow, Yukon, 1997

Photo orig.

Figure 2.12 Traditional arts and crafts,
Photo orig.

Figure 2.13 Feast of dried caribou meat
at the home of Mrs. Elisabeth Kaye

Photo orig.

Figure 2. 14 Traditional dress
made by Mrs. Elisabeth Kay

Photo orig.

Figure 2.15 and 2. 16

Land disturbances near Whitehorse

Photo orig.

Conclusion

There is no doubt in my mind that legally industrial development of the High North will be justifiable, but the question is will it be morally justifiable as well, having in mind not just the cultural survival of Aboriginal people whose subsistence activities depend on the wildlife, and the unpolluted ecosystem of the north, but also the good of all the humanity and the protection of one of the last repositories of ancient ecological associations, where the consequences of human disturbances could do tremendous harm. This is a place of beauty equaled by few other places on earth. It always has been protected by its inaccessibility. Opening up this magnificent country to large scale industrial development will have lasting effects on the environment and the Aboriginal people who live there.

There is no overall accepted strategy to sustain the global ecosystem. Almost every territory of the globe is already affected by human activities. Natural habitats and countless species are already being lost. Solutions will require more than just technological solutions. It is obvious that more environmentally friendly development will be required that firmly protects biological and cultural diversity.

Aboriginal people have from time immemorial lived in harmony with nature and harvested only as much wildlife as they needed for survival. They never had much in the terms of the mainstream concept of property, but a minimum of material possessions never corresponded with poverty in mental or spiritual achievements.

As Saint Bernard said:

“What I know of the divine sciences and Holy Scripture, I learned in woods and fields. I have had no other masters than the beeches and the oaks. Listen to a man of experience: thou wilt learn more in woods than in books. Trees and stones will teach thee more than thou canst acquire from the mouth of a magister.”

The Aboriginal peoples' culture and traditions represent an important and rich part of our human inheritance, and remind us in our ever more technological and hectic world what it really means to have a unified understanding of nature and a profound multidimensional cosmology, where every plant, animal, bird, star or stone has a spiritual significance. For them nature and landscape are metaphysically transparent, and the cultural traditions are all interwoven and an inseparable part of an integrated spiritual way of life.

Therefore we should find the way in common ground and extend hands one to another to jointly protect the valuable ecosystems that human hands have

not yet destroyed. I finish my conclusion with the words of Ovide Mercredi,
from his book "In the rapids : navigating the future of the First Nation"
(1993):

"When I was with the Elders at Morley, a spiritual gathering place for our peoples, one of the Elders, Sandy Beardy, came to me and said he had a vision that all of us in Canada, including the First Nations, were entering a great rapids - a rapids no one has ever traveled before. No one knows the magic route to take. No one knows all the danger spots ahead, and there could be many. This is the journey I was told we must be part of. We must make the voyage together because we need each other. The Elder said our skills and knowledge will be needed in the turbulent waters ahead because we are experienced, having navigated many rapids in the past."

Bibliographic Research

Alcose, Thom, 1992. Science, is not just a white man's thing, in Winds of Change, Spring,

Argumedo, A., 1997. [Http://ucjeps. Berkley.edu/ Endangered-Lang-Conf/Argumedo.html](http://ucjeps.berkeley.edu/Endangered-Lang-Conf/Argumedo.html)

Assembly of First Nations, 1993. Reclaiming Our Nationhood Strengthening Our

Heritage: Report to the Royal Commission on Aboriginal Peoples, AFN Ottawa
/Akwesasne

Augustine, Stephen, 1997. Traditional Aboriginal Knowledge and Science Versus

Occidental Science, Prepared for the Biodiversity Convention Office of
Environment Canada

Balikci, Asen, 1963. A Study of the People of Old Crow, Yukon Territory, Published by
Department of Northern Affairs and National Resources, Ottawa

Barsh, Russel, and James Y. Henderson, 1996. Biodiversity and Aboriginal peoples,
Toronto: Native Law Centre of Canada (founded by CIDA and Environment
Canada)

Beckerman, Wilfred ,1992. Economic Growth and the Environment: Whose Growth?
Whose Environment ? World Development, Vol.20, No.4, pp. 481-496

Berger, R. Thomas,1977. Northern Frontier Northern Homeland, The Report of the
Mackenzie Valley Pipeline Inquiry :Volume One and Volume Two, Published by
Supply and Services Canada

Berkes, Fikret., George P.Preston ,R.J., 1991. Co-management; The Evolution in Theory and Practice of the Joint Administration of Living Resources, Alternatives no18

Berkes, F.,1993. Traditional Ecological Knowledge in Perspective, International Program on Traditional Ecological Knowledge, Published by IDRC

Berkes, F. 1994, Co-management: Bridging the Two Solitude's, Northern Perspectives 22 (2-3), Ottawa, Canadian Arctic Resources Committee

Berkes, Fikret and Thomas Henley, 1997. CO-Management and Traditional Knowledge: Threat or Opportunity? In Policy Options March 1997, Institute for Research on Public Policy, Montreal

Boldt, Menno, 1993. Surviving as Indians, U of T press Toronto

Borgstrom, G., 1967. The Hungry Planet, The Modern World at the Edge of Famine, Published by Collier Books, New York

Brockman, Aggie, 1991. Report of the Traditional Knowledge working Group, Department of Culture and Communications, Government of NTW, Yellowknife.

Brody, H., 1981. Maps and Dreams; Indians and the British Columbia Frontier, Douglas and McIntyre, Toronto

Brown E. Joseph, 1953. The Spiritual Legacy of the American Indian, Pendle Hill Pamphlet

Brunttland, H., 1987. Our Common Future, Oxford University Press, Oxford, for the

World Commission on Environment and Development

Buber, M., 1937. I and Thou, Published by Scribner, New York

Butler, L. and J. Wand, 1990. Strengthening Extension Through the Concepts of Farming Systems Research and Extension (FSR/E) and Sustainability, Journal of Farming Systems Research Extension

Calef, George, 1995. Caribou and the Barren Lands, CARC, Ottawa

Cameron et. al., 1993. Calving Success of Female Caribou in Relation to Body Weight, Can. Journal., Vol.71,

Campbell, T., 1996. Co-management of Aboriginal Resources, Information North, Vol .22, No .1 , March 1996, Arctic Institute of North America

Capp J., C. Jorgensen, 1997. Traditional Knowledge; Don't Leave the Future Without It, American Wildlife and Natural Resources Conference

Capra, F., 1982. The Turning Point; Science, Society and The Rising Culture, Bantam Books, Toronto

Cardinal, H., 1969. The Unjust Society: The Tragedy of Canada's Indians, Edmonton, Hurtig

Cardinal, H., 1977. The Rebirth of Canada's Indians, Edmonton, Hurtig

Carson, Rachel., 1962. Silent Spring, , Boston: Houghton Mifflin

CIDA., 1997. Guidelines for Including Indigenous Peoples and Indigenous Knowledge in Environmental Assessments and Development Planning, Canadian International Development Agency

Clement, Daniel, 1995. La zoologie des montagnais, Ethnoscience; 10, Peters, Paris.

Colorado, Pam, 1991. Indigenous Science, In Edges, 4: 1, 1991

Colorado, Pam, 1988. Bridging Western and Native Science, Convergence 21 (2/3)

Comeay, P. ,A Santin, 1995. The First Canadians; A Profile of Canada's Native People Today, Second edition, Published by James Lorimer &Co. Toronto

Cordova ,Viola F., 1996. Doing Native American Philosophy, In From Our Eyes: Learning from Indigenous Peoples, eds. Sylvia O'Meara and Douglas A. West, Garamond Press, Toronto

Cordinator de Organizaciones de la Pueblos Indigenas de la Cuenca Amazona (COICA), 1990. Manifesto Publico. Peru: COICA

Couture, Joseph E., 1991. The role of native elders: Emergent Issues, in The Cultural Maze, eds. J. W. Friesen Detselig Enterprises Ltd. Calgary, 201-217.

Cronon,W., 1995. Uncommon Ground Toward Reinventing Nature, Published by W.W. Norton & Co. Inc., New York

Deloria, Vine, 1992. God is Red: a native view of religion, 2nd ed., North American Press

Deloria, Vine, 1995. Red Earth, white lies: Native Americans and the myth of scientific

fact, Scribner, New York

Dene Cultural Institute (DCI) & M. Johnson, 1995. Traditional Environmental Knowledge of the Dene, A Pilot Project, Published by IDRC and Dene Cultural Institute

Department for Economic Development Yukon, 1999. [Http://www.economicdevelopment.gov.yk.ca/resource-investment-opportuni.../Oil-and Gas](http://www.economicdevelopment.gov.yk.ca/resource-investment-opportuni.../Oil-and Gas). as 1/20/99

Department of Renewable Resources, Environment Canada, 1996. Yukon State of the Environment Report, Published by Environment Canada

Devall, B., 1980. The Deep Ecology Movement, Natural Resources Journal, Vol. 20

Doubleday, C. Nancy, 1994. Finding Common Ground: Natural Law and Collective Wisdom, Traditional Ecological Knowledge- Concepts and Cases, eds. Inglis T.. Julian, International program on Traditional Ecological Knowledge, International Development Research Centre , Ottawa

Emery, R.A. et. al., 1997. Background to the Preparation of the Guidelines, Draft Report Centre for Traditional Knowledge, Museum of Nature, Ottawa

Environment Canada, 1995. Understanding Atmospheric Change, A Survey of the Background Science and Implications of Climate Change and Ozone Depletion, Second Edition, SOE Report, No. 95-2, July

Environment Canada, 1995. A National Ecological Framework for Canada, Centre for Land and Biological Resources Research, Ottawa

- Feit A. H., 1988. Self-management and State-management: Forms of Knowing and Managing Northern Wildlife; Traditional Knowledge and Renewable Resources Management, IUCN commission on Ecology and the Canadian Circumpolar Institute**
- Feit, H., 1998. [http://arcticcircle.uconn.edu/Arctic Circle/History Culture/Cree / Feit I / feit2. html](http://arcticcircle.uconn.edu/Arctic%20Circle/History%20Culture/Cree%20-%20Feit%20I%20-%20Feit2.html)**
- Friesen, W.John.,1995. You Can't Get There From Here, The Mystique of North American Plains Indians, Culture & Philosophy, Kendal /Hunt Publishing Company**
- Friesen, J.,1997. Rediscovering the First Nations of Canada, Published by Detselig Enterprises Ltd., Calgary**
- Gregory, D.,1994. Geographic Imaginations, Oxford, Blackwell**
- Haverkort, B., 1993. Agricultural Development With a Focus on Local Resources : ILEIA's View of Indigenous Knowledge, In D.M. Warren, D. Brokenska and L.J. Slikkerveer (Eds.) Indigenous Knowledge Systems: The Cultural Dimension of Development, London, Kegan Paul International**
- Howard, Albert and Frances Widdowson, 1997. Traditional Knowledge Advocates Weave a Tangled Web, Options politiques**
- Howard, Albert and Frances, Widdowson, 1997. Traditional Knowledge Threatens Environmental Assessment, Options politiques**

Irving, W.N. and C.R. Harrington, 1976. Upper Pleistocene Radiocarbon Dated Artifacts in the Northern Yukon, *Science*, Vol. 179, pp335-40

IUCN, 1986. Tradition, Conservation and Development, Occasional Newsletter of the Commission on the Ecology's Working Group on Traditional Ecological Knowledge, No 4, Gland, Switzerland

IUCN /UNEP /WWF, 1991. Caring for the Earth. A Strategy for Sustainable Living, Gland, Switzerland

Johnston, R.J., P.J. Taylor, M.J. Watts, 1995. Geography's of Global Change; Blackwell Publishers, USA

Jorgensen, C., 1995. How Native Americans as an Indigenous Culture Consciously Maintained a Balance Between Themselves and Their Natural Resources, Keynote address at the Second International Congress of Arctic Social Sciences, Rovaniemi, Finland

Lavelock, J.E., 1979. Gaia; Anew Look at the Life on Earth, Oxford University Press, London

Leopold, A., 1949. A Sand County Almanac, New York: Oxford University Press

Lewis, E.J., E.C. Wood, 1996: A Physical Scientists' Perspective of the Human Dimension of Global Change; Unity and Diversity in Arctic Societies, Published by the International Arctic Social Sciences Association

Lysyk M. Keneth, E.D. Bohmer, W.L Phelps, 1977. Alaska Highway Pipeline Inquiry,

Published by Supply and Services Canada

Madjaric Vesna, 1998. Major Gaps in Intellectual Property Laws Related to Aboriginal People, Submitted to Biodiversity Convention Office, Environment Canada and the Working Group on Art. 8(J) of the Biodiversity Convention

McCarthy Thomas, 1994. The Critical Theory of Jurgen Habermas, The MIT Press, Cambridge, Massachusetts, and London, England

MacPherson, Nancy and Gladys Netro, 1994." Community Impact Assessment and Crow Yukon", in Barry Sadler and Peter Boothroyd (eds.), Traditional Ecological Knowledge and Environmental Impact Assessment, Hull, Canadian Environmental Assessment Agency, pp. 31-40.

McDowell, L., 1994 : The Transformation Of Cultural Geography; Human Geography, Edited by Gregory, Martin and Smith, The University of Minnesota Press

McDowell, L., 1992. Understanding Diversity, Geography of Global Change; Remapping the World in the Late Twentieth Century 1995, Edited by Johnston, Taylor and Watts, Blackwell Publishers, USA

McMillan, A. D., 1987. Native Peoples and Cultures of Canada, Douglas & McIntyre, Vancouver/Toronto

Meadows, D.H., D.L. Meadows, J.Randers, W.Wbehrens III, 1972.The Limits To Growth, A Report for the Club of Rome's Project on the Predicament of Mankind, Universe Books, New York

Mercredi, Ovide, 1993. In the Rapids: Navigating the Future of First Nations, Published

by Penguin Group, Toronto

Milbrath, L.W., 1984. *Environmentalists; A Vanguard for a New Society*, Sunny Press,
Albany

Milbrath, L.W., 1989. *Envisioning a Sustainable Society, Learning Our Way Out*,
State University of New York Press

Naess, A., 1973. *The Shallow and Deep, Long Range Ecology Movements*, Inquiry,
Vol.16

Norgaard, R.B., 1984. *Traditional Agricultural Knowledge: Past Performance,
Future Prospects and Institutional Implications*, American
Journal of Agricultural Economics 66

Notzke, Claudia, 1994. *Aboriginal Peoples and Natural Resources in Canada-Chapter 1:
Native Perspectives on Natural Resource Management*, Centre for
Aboriginal Management Education and Training (CAMET)

Osgood, Cornelius, 1936. *Contribution to the Ethnography of the Kutchin*, No 14,
Published 1970 by Yale University Publications in Anthropology

-----, *The Amerindians of the Canadian North-West I in the 19th Century,
as seen by Emile Petitot 1876. Volume II: The Lacheoux Indians*
Department for Indian Affairs and Northern Development , Ottawa

Posey, A. Darel, 1996. *Toward Traditional Resource Rights for Indigenous Peoples
and Local Communities*, Published by IDRC, Ottawa

Pretty, J. and R. Sanbrook, 1991. Operationalising Sustainable Development at the Community Level; Primary Environmental Care, Presented at the Working Party on Development Assistance and the Environment, London

Pringle, Heather, 1990. Spiritual healing-Searching for Salvation, The Blackfoot Resurrect,

The Sun Dance and the Rich Faith of Their Forefathers, Equinox- The Magazine of Canadian Discovery

Report of the Royal Commission on Aboriginal people, 1996. Looking Forward, Looking Back, Vol.1, Canada Communication Group-Publishing, Ottawa

Report of the Royal Commission on Aboriginal people, 1996. Restructuring the Relationship, Vol.2, Canada Communication Group-Publishing, Ottawa

Rolston, H.III, 1985. Duties to Endangered Species, Bioscience, Vol.35, No. 11

Ross, Rupert, 1992. Dancing With the Ghost, Octopus Publishing Group

Ross, Rupert, 1996. Returning to the Teachings, Exploring Aboriginal Justice, Penguin Books

Ruddle, Kenneth, 1993. The Transmission of Traditional Ecological Knowledge, In Traditional Ecological Knowledge :Concepts and Cases, International Program on Traditional Ecological Knowledge, IDRC

Russell, D., M. Martell, W.A.C. Nixon, 1993.Rangifer, Research Management and

**Husbandry of Reindeer and Other Northern Ungulates, Special
Issue No8,**

**Sadler, Barry , P. Boothroyd, 1994. Back to the Future: Traditional Ecological Knowledge
and modern Environmental Assessment, Edited. By Barry Sadler and Peter
Boothroyd, Published in Traditional Ecological Knowledge and
Environmental Impact Assessment**

**Scott, K. and O. Receveur, 1995. Ethics for Working With Communities of Indigenous
Peoples, Can. J. Physiol. Pharmacol. 73:751-753**

**Stevenson, G.M., 1996. Indigenous Knowledge, In Environmental Assessment, Vol. 49,
No 3, Sept, p 278-291**

**Stevenson, G. M., 1997. Ignorance and Prejudice Threatens Environmental Assessment,
In Policy Options, Institute for Research on Public Policy,
Montreal.**

Suzuki, D., 1997. The Sacred Balance, Greystone Books, Vancouver

**United Nations, 1993. Earth summit and Agenda 21. Declaration of the Rio Summit,
Rio DeJaneiro. 393 pp.**

**United Nations, 1995. A Call to Action: Decision and Ministerial Statement from the
Second Meeting of the Conference of the Parties to the Convention on
Biological Diversity in Jakarta, Indonesia. N.P.:UNESCO**

**United Nations, 1996 The Biodiversity Agenda: Decisions From the Third Meeting of the
Conference of the Parties to the Convention on Biological Diversity
N.P.:UNESCO**

United Nations Economic and Social Council (ECOSOC), 1986. Study of the Problem of Discrimination Against Indigenous Populations. E/CN 4/sub. 2/1986/7, paragraph 625, Geneva, Switzerland: ECOSOC

United Nations Economic and Social Council (ECOSOC), 1993. Commission on Human Rights, Discrimination Against Indigenous Peoples, Agenda Item 14. USA: ECOSOC

United Nations Education, Scientific and Cultural Organization (UNESCO), 1990. Recommendations on Safeguarding of Traditional Culture and Folklore, Adopted by Geneva Conference of UNESCO at its 25th Session in Paris, France N.P.:UNESCO

Usher, Peter J., 1993. The Beverly -Kaminuriak Caribou Management Board: An Experience in Co-management, In Traditional Ecological Knowledge Concepts and Cases, IDRC

Vuntut Gwitchin First Nation Final Agreement Implementation Plan, 1993. Published under authority of the Minister of Indian Affairs and Northern Development, Ottawa

Wallace, I., B .D. Knight, 1995. Societies in Space and Place, Published in Earthy Goods

Warren, D.M.,1991. Using Indigenous Knowledge in Agricultural Development, World Bank Discussion Paper No 127, Washington D.C.; The World Bank

Wavey, Robert, Chief, 1993. International Workshop on Indigenous Knowledge and
and Community -based Resource Management: Keynote Address from:
Traditional Ecological Knowledge Concepts and Cases, International
Program on Traditional Ecological Knowledge, IDRC

Welsh, Ann, 1970. Community Pattern and Settlement Pattern in the Development of Old
Crow village, Yukon Territory, Western Canadian Journal of
Anthropology, Vol. I

Wenzel, George, 1992. Animal Rights, Human Rights Ecology, Economy and Ideology
in the Canadian Arctic, University of Toronto Press

Wisner, Susan, 1996. How Environmental Assessment is Failing Aboriginal Communities
in Canada's North: The Nasty Game, in Alternatives Journal 22:4,
October/November

World Bank, 1995. Mainstreaming the environment, World Bank, Washington, D.C.
301 pp.

World Intellectual Property Organization (WIPO), 1985. Model Provisions for National
Laws on the Protection of Expressions of Folklore Against Illicit
Exploitation and Other Prejudicial Actions, Geneva, Switzerland: WIPO
and UNESCO

World Resources Institute, World Conservation Union, United Nations Environmental
Program, 1992. Global Biodiversity Strategy, United Nations Food
and Agriculture Organization, New York 244 pp.

**Young, Elspeth, 1995. Third World in the First: Development and Indigenous Peoples,
Rouledge**

**Zerner, Charles, 1996. Telling Stories About Biological Diversity, Valuing Local
Knowledge-Indigenous People and Intellectual Property Rights.**

**-----1995 . Traditional Methods Used by the Dogrib to Redirect Caribou, a
report for Dogrib Renewable Resources Committee, Council and the
Department of Renewable Resources Government of the NWT**