WORKING PAPER 1999-17

sustainable forest management network

réseau sur la gestion durable des forêts

Strengthening the Role of Indigenous People and their Communities in the Context of Sustainable Development

Mike Robinson

A Network of Centres of Excellence
Un réseau de centres d'excellence

For copies of this or other SFM publications contact:

Sustainable Forest Management Network
G208 Biological Sciences Building
University of Alberta
Edmonton, Alberta, T6G 2E9
Ph: (780) 492 6659
Fax: (780) 492 8160
http://www.biology.ualberta.ca/sfm

This Working Paper is published by the Sustainable Forest Management Network. All Network Researchers are invited to present ideas and research results in this forum to accelerate their application and to foster interdisciplinary discussion on knowledge, strategies and tools leading to sustainable management of Canada's boreal forest. Working Papers are published without peer review.

STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Mike Robinson

Arctic Institute
University of Calgary

May 1999

Contents

Summary

Canadian indigenous people and their First Nations communities have played an important role in the development of unique co-management regimes that promote regional natural resource sustainability. Co-Management regimes are now a common component of comprehensive land claims settlements. They enable tribal experts and scientists to confer together on decisions regarding the allocation of natural resources, and the review of resource development projects. Further assistance to the co-management process is provided by traditional land use and occupancy studies (TLUOS), which provide graphic, map-based, data for a variety of educational and review purposes. Recently the community use of geographic information system (GIS) and global positioning system (GPS) technology has further enhanced the utility of TLUOS.

Keywords

Canadian First Nations and community sustainability, co-management of natural resources, traditional land use and occupancy studies (TLUOS), geographic information system (GIS) and global positioning system (GPS) technology.

STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Canada played an important role in the creation of "Our Common Future," the 1987 report of the World Commission on Environment and Development. Its member on the Commission, Maurice Strong, and the Commission's ex officio Secretary General, Jim MacNeill, were both well aware of the situation of Canada's indigenous peoples, and the problems they face as the land-based economy is increasingly encroached upon by concrete industrial development, and the often virtual post-industrial forces of globalization. The first chapter of "Our Common Future," "From Our Earth to Our World," lays out the dilemmas well (1987:12):

> Tribal and indigenous peoples will need special attention as the forces of economic development disrupt their traditional life-styles -- life-styles that can offer modern societies many lessons in the management of resources in complex forest, mountain and dry land ecosystems. Some are threatened with virtual extinction by insensitive development over which they have no control. Their traditional rights should be recognized and they should be given a decisive voice in formulating policies about resource development in their areas.

Clearly the objective of sustainability has much to gain from the wisdom of indigenous people, and the traditional environmental knowledge (TEK) they possess. The challenge is to create systems of knowledge sharing at many levels to enable wisdom and TEK to be applied to resource planning, development and stewardship decisions. It is in the development of co-management regimes in the context of negotiated comprehensive land claims settlements that Canada has made its strongest institutional contribution to strengthening the role of indigenous people and their communities in the context of sustainable development. Before we can discuss these new institutions, it is necessary to briefly review the geography of Canada and the historical record which has contributed to their creation.

1. Some Necessary Geography and History

The geography of Canada remarkably provided little hindrance to the spread of indigenous peoples across the landscape over the past 15,000 years. From the high arctic to the southern prairie provinces; from the west coast rainforests to the eastern maritime coasts; and from the coastal ranges and Rocky Mountains east to the Canadian Shield country, people established a foothold in the diverse geography of what is now Canada. The relationship of people to the natural environment has been a major theme of many writers discussing indigenous peoples. The unique adaptations of hunting and gathering peoples to the northern landscape has been especially well documented. The northern Inuit of the true Arctic and the Athapaskans of the belt of coniferous boreal forest immediately to the south, shared both high mountain ranges and stretches of treeless tundra. Here in a climate characterized by long, cold winters and short, warm summers they evolved complex cultures characterized by marine and terrestrial mammal hunting; plant, berry and root gathering, salmon, whitefish, grayling, northern pike, lake trout, and char fishing; and the harvesting of feathers, meat and eggs from a large number of seasonally available ducks and geese.

To the south in more temperate climes, the seasonal availability of spawning salmon and resident big game animals on the west coast, huge populations of migratory buffalo on the prairies, and agricultural surpluses achieved by the societies in the eastern woodlands enabled larger populations to form into confederacies and even proto-states, transcending the social and political limits of chiefdom society. As all of these indigenous populations evolved prior to European contact, the scheduling of seasonal procurement activities because central to their success, and key individuals (scheduling and procurement specialists) developed and orally transmitted complex systems of endogenous knowledge about the land and its resources. Maintenance of this body of knowledge over succeeding generations has been key to cultural and physical survival in a challenging natural landscape.

In 1996 the Canadian census revealed an aboriginal population of 811,400 people, a strong surgence from a nadir in the 1870s when 102,358 were enumerated (see Figure 1).

A population of about 500,000 was assumed to have existed at the time of first cultural contact in the period circa 1500 A.D. These statistics reveal the horrific toll of introduced diseases and poverty, amongst the Canadian First Nations[1] (see Figure 2), as they struggled to maintain a land-based economy in the face of swelling immigration by outsiders from Europe, with an agricultural and

increasingly industrial economic orientation. Time after time advantage was taken by the newcomers, with the impacts of near species extinction (e.g. the buffalo of the great plains), and persistent subtraction from the indigenous land base to permit the creation of railways, ranches, and industrial forest and fishery tenures for mixed-species harvest.

Sustainability, so prized by the First Nations, was restated by the Euro-Canadians in terms of maximizing short-term profits and transferring resource ownership from the public to the private domain. This process was advanced legally by the creation of territories and provinces in the late 1800s and early 1900s, and the passage via the various natural resources transfer agreements of resource ownership to the new provinces by the federal government. The provinces, in their turn, created forest and mineral acts that provided for the allocation of natural resource harvesting rights to industry. Thus possessed of the rights to harvest, industry began the process for the benefit of shareholders. Indigenous resource users were shut out of this wealth transfer, as they were not corporate shareholders, but rather stewards of the commons.

As their hunting and gathering commons were diminished by Euro-Canadian agricultural settlement, the First Nations faced increasing social pathologies linked to their marginal economic opportunities. In addition, their children were subjected to residential schooling by various Christian religious sects, which served to weaken cultural links to their communities and to stigmatize the use of aboriginal languages. Linguistically, culturally and economically weakened, many people found little reason for hope or enterprise, and fell into cycles of poverty and despair. This despair was matched with social welfare programs of the state, and soon created a pernicious cycle of economic and social dependency on government programs that continues for many to this day.

Further problems resulted when resource harvesting took place on treaty lands. Canada has negotiated over 500 treaties with First Nations, to set the stage in many cases for railway, agricultural, oil and gas, and gold rush development. Typically a treaty would be negotiated to extinguish aboriginal title to traditional lands in return for a defined package of money, a greatly reduced land base, and continuing (albeit ill defined) rights to hunt, fish and trap. Many treaties also included promises of medical care, provision of farming implements, and sundry supplies (e.g. guns and bullets, twine and seed), and commitments to educate the young. Implicit in all of the above was maintenance of a way of

life in perpetuity from an indigenous perspective, and the doctrine of assimilation from a Euro-Canadian perspective. The not too subtle provision of ploughs and rakes belied a desire to make farmers of hunter-gatherers, and ultimately profit-oriented small business folk out of stewards of the lands and waters. Underlying this agenda was the notion that indigenous people were inferior to Euro-Canadians, that the Canadian authorities knew best how to protect their children and general well-being, that treaties were not really about sharing resources once they were signed, and that the Euro-Canadian concept of modernity and progress was the right way for all peoples, irrespective of cultural values and legal rights to the contrary.

It is interesting to note that in the case of the western prairie provinces (Alberta, Saskatchewan and Manitoba), the natural resources transfer agreements negotiated in 1929 and 1930 (which transferred control and ownership of natural resources and Crown lands to the provinces) are basically silent on the treaties, but contain a paragraph which was likely included to protect treaty rights to hunt, trap and fish for food:

> In order to secure to the Indians of the Province the continuance of the supply of game and fish for their support and subsistence, Canada agrees that the laws respecting game in force in the Province from time to time shall apply to the Indians within the boundaries thereof, provided, however, that the said Indians shall have the right, which the Province hereby assures to them, of hunting, trapping and fishing for food at all seasons of the year on all unoccupied Crown lands and on any other lands to which the said Indians may have a right of access.

Even with this delegation of responsibility from Canada to the provinces to protect Aboriginal livelihoods, the provinces have not in turn legislated similar protection in their various forests and oil and gas acts. Their application imposes no obligations on provincial ministers to affirm and protect treaty rights. It is as if they did not exist. Consequently resource harvesting rights are allocated to industry without reference to treaties, and forest cut blocks, tar sand mines, and pipeline rights-of-way are created in traditional hunting and gathering areas. The impacts in combination of these developments collectively disrupt animal migrations, increase access for non-indigenous hunters, increase pressure on local fish stocks, and generally make a mockery of treaty promises about the

continued right to earn a livelihood from the land.

In spite of the above, Canada and the First Nations have continued to negotiate new treaties (now called comprehensive land claim settlements), including most recently:

- the James Bay and Northern Quebec Agreement in 1975 (and later expanded in 1978) with the Inuit, Cree, and Naskapi;
- the Inuvialuit Final Agreement (or the Western Arctic Claim) in 1984;
- the Yukon First Nations Agreements in 1993;
- the Nunavut Final Agreement in 1995; and
- the Nisga'a Agreement-in-Principle in 1996.

What is significant about these new generation treaties is their explicit recognition of the importance of natural resources, cultural linkages and sustainability. The policy mechanism they utilize to promote sustainability is called co-management.

In its most basic form co-management involves combining TEK about wildlife (fish, birds, ungulates, whales, etc.) with scientific knowledge in the cause of taking a management decision about proposed government, industrial or community development(s) that may impact land, water, wildlife and ultimately people. The process, at its most basic level, involves placing holders of TEK in the same room as scientists, and then convening a meeting to hear submissions by project proponents about potential impacts. It assumes shared decision-making power and requires governments to relinquish some of their power to indigenous communities.

2. The Concept of Co-management

The concept of co-management is Canadian by history and application. It has been described by the late Jim Bourque, a long-serving senior government official of the Northwest Territories, as arising in the 1940s in the Western Arctic prior to the comprehensive land claim settlements of the modern era. In 1942 local Gwich'in and Inuvialuit hunters and trappers in the community of Aklavik asked to meet with government representatives to discuss the management of fur stocks, fish, birds and ungulates. The idea behind this first meeting was that local knowledge was too valuable to ignore, and should be factored into decision making about hunting and fishing regulations, which at the time were set by government fish and game officers. In 1946 the first formal hunters and trappers' committee was

formed in Fort Smith, Northwest Territories, and it became the model for the growth of such committees across Canada's North in the 1950s and 1960s. Typically, these community-based committees gave hunters and trappers a collective voice when dealing with the Territorial and Federal government departments, and created the idea of local input to regulatory program design, delivery and evaluation.

It is perhaps not surprising that these hunters and trappers' committees arose in the Northwest Territories. Here indigenous people were and still are the majority of the population. Because of their remoteness from the centres of bureaucratic and industrial power, they remained strongly connected to the land-based economy, retained their indigenous languages, and ensured the passage of TEK from one generation to the next. It was only in the late 1960s that southern oil and gas companies began to look North with a view to finding product for export south to urban Canadian and American energy markets.

The origins of the Inuvialuit land claims can be traced back to the formation of the Committee for Original Peoples Entitlement (COPE), created in 1970 to articulate and communicate the concern of native people in the Northwest Territories over the style and pace of planned resource development projects. A single historic incident on Banks Island highlighted the need for COPE's creation: a resource exploration firm undertook exploration on the island without any consultation with the Bankslanders. An eventual confrontation led to a threat to file an injunction against the resource company, but:

> the government lied to both them and the Canadian public about what was happening, and successfully manoeuvred the Bankslanders into dropping the injunction when it was clearly against their interests to do so. In a situation where there was neither the scientific basis for predicting the impact of exploration on the Banks Island environment, nor any attempt to establish this basis, industry and government blandly denied the possibility of any adverse consequences. Indeed, those officials who knew the least about environmental matters were the quickest to make these denials.
>
> In a situation of conflict between native people and resource developers over land use, what became evident was that the government offered inadequate research, inadequate

regulations, inadequate enforcement, inadequate contingency plans, inadequate consultation and inadequate compensation. In short, native people were threatened with the loss of their land, their livelihood and their way of life with no assurance of any reasonable alternative.

The Banks Island incident was not isolated; it was only the most dramatic. Such conflicts over land use have probably been the single most important factor in mobilizing native people to seek a land claims settlement.[2]

The next major impetus to the process of comprehensive claims settlement came from the 1973 Supreme Court of Canada split decision in the so-called Nishga[3] case in British Columbia, and the eventual political decision by the federal government to negotiate and settle comprehensive land claims. But the critical turning point, from a northerner's point of view, came with the forum provided by the "Berger Hearings", the Mackenzie Valley Pipeline Inquiry in 1973-75. In these community hearings, native northerners discovered the power of vocal, coordinated effort. Joint management of northern resources may be seen to have begun at that time.

The Inuvialuit finally completed their negotiations with the federal government in 1984, when their comprehensive land claim was settled. The Western Arctic Claim is a modern-day treaty that created a constitutionally entrenched Inuvialuit land base, and an associated program of co-management, that while not the oldest[4] in the country, is widely acknowledged to be the best example of the applied concept. Over the past 15 years, the Inuvialuit co-management structures have been fully implemented, and the public record of their decisions demonstrates their utility in the cause of sustaining local wildlife populations at the same time as permitting well-reasoned development initiatives to proceed.

3. The Inuvialuit Practice of Co-management

The following figures 3 and 4 graphically portray the Inuvialuit settlement region and the Inuvialuit co-management structures. In basic terms each of the six Inuvialuit communities (Aklavik, Inuvik, Tuktoyaktuk, Sachs Harbour, Paulatuk and Holman) send a representative from their community hunters and trappers' committee to sit on the Inuvialuit Game Council (IGC). The IGC, in

turn, appoints the Inuvialuit members for all of the joint government/Inuvialuit bodies having an interest in wildlife. The IGC represents the collective Inuvialuit interest in wildlife, and as such advises government on policy, legislation, regulation, and administration dealing with wildlife conservation, research, management, and enforcement. It performs these functions through the different advisory councils, or directly. It also advises the government on the Canadian position with respect to wildlife for international purposes.

In addition to the IGC, the Inuvialuit Final Agreement established five co-management boards and committees: the Fisheries Joint Management Committee, the Wildlife Management Advisory Council (Northwest Territories), the Wildlife Management Advisory Council (Yukon North Slope), the Environmental Impact Screening Committee, and the Environmental Impact Review Board. The Inuvialuit representation on each of these committees is 50%, with federal and territorial government representation comprising the other half. In each case the chair is appointed by government but approved by the Inuvialuit. The only exception is the Fisheries Joint Management Committee, the chair of which is appointed by the members.

3.1 **Wildlife Management Advisory Council (Northwest Territories)**

The Wildlife Management Advisory Council (Northwest Territories) (WMAC [NWT]) has responsibility for all wildlife issues, and advises both the territorial and federal governments with respect to wildlife harvest quotas. The total allowable harvests for game species are determined by the WMAC [NWT] according to conservation criteria and other factors it considers appropriate. All WMAC [NWT] recommendations are to appropriate ministers, and they may, if they differ in opinion, give their reasons, and afford the WMAC [NWT] a further consideration of the contentious issue. In setting the total allowable harvest conservation is to be the only consideration, and where pursuant to the Western Arctic Claim the Inuvialuit have the exclusive right to harvest, they shall be entitled to harvest the total allowable harvest.

3.2 **Wildlife Management Advisory Council (North Slope)**

This Council (or WMAC [NS]), is the Yukon counterpart to the WMAC [NWT]. The Inuvialuit and other indigenous harvesting groups (e.g. the Vuntut Gwitchin) form one-half of the management membership. Two parks lie within the Yukon North Slope region, and Northern Yukon

National Park and the Herschel Island Territorial Park. Both were created by the Western Arctic Claim. The WMAC [NS] is involved in their management, and the Inuvialuit retain rights of harvest in both parks.

An annual conference is held to promote discussion amongst the indigenous people, governments and the private sector with respect to co-management initiatives in the North Slope. This conference serves a very useful function as a forum for clarifying issues and interests of the different parties concerned with the region.

3.3 Fisheries Joint Management Committee

The Fisheries Joint Management Committee (FJMC) is comprised equally of members of the federal and Inuvialuit governments, and its chairperson is appointed by the four committee members. Its job is to recommend subsistence and harvestable quotas for various mammals, and for sports and commercial fisheries to the federal Minister of Fisheries and Oceans. Any variations or rejections of these recommendations by the Minister must be communicated to the FJMC within 30 days, for its further review and recommendation. Research assessment and monitoring projects are also sponsored by the FJMC, using both scientific and TEK expertise. It is interesting to note that section 14(5) of the Western Arctic Claim states:

> the relevant knowledge and experience of both the Inuvialuit and the scientific communities should be employed in order to achieve conservation.

This is the clearest mandate in the Final Agreement for co-management in action.

Recently the FJMC has developed a Beaufort Sea Beluga Management Plan with the hunters and trappers' committees of Aklavik, Inuvik, and Tuktoyaktuk, and the Inupiat of Alaska. A Polar Bear Management Agreement was finalized in 1988 to protect and maintain their population, allowing for a sustainable hunt on an annual basis. Both the IGC and the Alaska North Slope Borough Fish and Game Management Committee were commended for this work with an award from the U.S. Fish and Wildlife Service.

3.4 Environment Impact Screening Committee and the Environmental Impact Review Board

The Western Arctic Claim established a two-stage process for the assessment and review of

non-renewable resource development projects in the Inuvialuit Settlement Region (which includes the North Slope of the Yukon). The Environmental Screening Committee (EISC) determines if a proposed development would have a significant negative environmental impact, and recommends one of the following: that it may proceed, that it has deficiencies that warrant a termination of its consideration, or that it be assessed and reviewed. Projects may also be referenced to the EISC to determine whether there may be significant impacts to wildlife. The Inuvialuit may also, on their own, request environmental impact screening.

If the EISC process indicates that further assessment is necessary, projects are referred to the Environmental Impact Review Board (EIRB). The EIRB recommends whether or not the proposed development should or can proceed, and with what constraints. While all of the foregoing indicates the legislative strength and thoroughness of the Inuvialuit co-management regime, the final authority to implement recommendations which stem from it always rests with the federal Minister of the Department of Indian Affairs and Northern Development (DIAND) or the federal cabinet.

4. The Kulluk Drilling Program Case Study: Presenting a Challenge to the Minister of DIAND

On paper and in legislation the best ideas of reformers often appear clear and obtainable. In practice reality intrudes. Nevertheless, application and evaluation of co-management's effectiveness is underway in the Western Arctic, and is guiding regime development elsewhere. The first major test of the Inuvialuit system occurred in 1990, when the EIRB received a referral from the EISC regarding the Gulf Canada Limited Kulluk Drilling Program Application. The Kulluk proposal contemplated a series of wells over a three-year period in the Amauligak oil and gas prone structure in the offshore Beaufort Sea. The proposed well sites were located in the shear zone between the land-fast ice and floating pack-ice, where the potential danger from a blowout is great. The EIRB noted that Kulluk proposal presented a first opportunity to assess risks in a case where larger quantities of oil might enter open water and eventually reach shorelines. It is also worth noting that the Kulluk review occurred just after the Exxon Valdez spill in Prince William Sound, Alaska, and a public bias existed at the time against the claims of oil companies for the safety of offshore drilling projects and the containment of blowouts.

The EIRB panel that reviewed Kulluk included two IGC appointees, both competent guides

and hunters; the Government of Canada appointed a long-time public servant who had once been an oil company vice-president; and the Government of Yukon appointed a vice-chairman of the Yukon Territory Water Board. The chair of the Kulluk panel was the president of a Calgary-based oil industry service company, who for 12 years had been an employee of Gulf Canada Limited, Kulluk's proponent. The hearings were lengthy, expensive and often fraught with anger. Much of the proceedings focused on cash, cost and replacement value of country food. Over it all towered the ongoing clean-up of the Exxon Valdez oil in the Gulf of Alaska. The Kulluk panel saw no need to retain outside TEK experts to examine Gulf's environmental impact assessment and oil spill contingency planning, and instead relied heavily on the process services of lawyers from Vancouver.

The panel's decision was in many respects shocking to established interests. It decided that it had no reasonable option but to recommend strongly against approval of the Gulf proposal, and stated that there were two principal reasons for its decision:

> Firstly, it is the conclusion of the Board, based on all the evidence and information it has heard and received, that there is a startling lack of preparedness evident on the part of government and on the part of Gulf to deal effectively with a major oil well blowout in the Beaufort Sea during the open water season.
>
> Secondly, nothing that the Board has heard enables it to make any sensible recommendation dealing substantively with Gulf's potential liability in the event of a worst case blowout, one of the obligations mandatorily imposed on the Board by the IFA.
>
> That such a situation exists after years of drilling in the Beaufort Sea is a sad reflection of a complacency which seems to have developed on the part of Gulf and the government authorities, driven by an ultimate belief that a blowout is so unlikely to occur that preparing to meet it is largely an academic exercise.[5]

In retrospect the decision should not have been a surprise. Advance notice to Gulf and government should have arisen from the presentation of Nelson Green (himself an EIRB board member) to the EIRB on the topic of biological effects, delivered as vice-chair of the Inuvialuit Game Council:

> On the impacts of the project on wildlife, Mr. Chairman, the Inuvialuit depend on the whales, seals, fish, caribou and the migratory birds for their food. The existence of our traditional culture depends on the continuation of this subsistence economy. Short term employment opportunities or financial compensation as a result of a major oil spill or a blowout shouldn't be viewed as a means of offsetting the loss or declined of our wildlife food sources.[6]

Roger Gruben, chair of the Inuvialuit Regional Corporation, also provided evidence to the board based on a fact-finding tour of Valdez by the Inuvialuit Petroleum Corporation:

> The role of the scientific community has been negative. Most of the scientists worked either for Exxon or for the U.S. Government. Both parties have prohibited their scientists to release scientific data. Most of the scientific work is primarily done to protect Exxon and the U.S. Government from lawsuits, instead of constructively trying to contribute to the best and most active restoration of wildlife and environment.
>
> The collection of scientific data was badly organized. Essentially one needs three types of data:
>
> - base-line data prior to the spill
> - intensive data collection during the spill
> - systematic data with respect to the longer term impacts of the spill.
>
> Essentially the scientific data collection during the spill started generally too late to be of use. Prior base-line data were largely non-existent. As a result most of the scientific work done on the oil spill is questionable.[7]

Both Green and Gruben gave ample warning of a new standard emerging in co-management decision-making, signalling that money and short-term industrial economy jobs are no substitute for a healthy Inuvialuit resource base. In this decision we can see the teeth of co-management in practice. However, the Minister of DIAND had not yet spoken.

Following the routines prescribed in the Western Arctic claim, the Minister must advise the EIRB via the Canadian Oil and Gas Lands Administration (COGLA), within 30 days of the receipt of recommendations, if unwilling or unable to accept them, or if modifications to them are sought. In the

Kulluk case COGLA had not announced a decision almost a year later. Then the Minister announced the creation of a Beaufort Sea Steering Committee to review the recommendations. This committee was not authorized under any legislation, and had no statutory or regulatory authority. Its mandate was to review the Kulluk recommendations and to integrate them with six other recommendations on wildlife compensation that resulted from a workshop held in response to an earlier EIRB report. Further irksome to the EIRB was the fact that the Beaufort Sea Steering Committee was not indicative of the 50/50 participation split of typical co-management committees in its composition. It had only two Inuvialuit representatives, one each from the oil and gas sector, one each from the governments of the Yukon and Northwest Territories, two from the federal government (COGLA and DIAND), and a chair nominated by the Minister of DIAND. Here the Inuvialuit membership fell to 25%. However, a responsible outcome was arrived at when the Steering Committee eventually concurred (several months later) with the EIRB's findings, and the Kulluk project was shelved. From this test experience the growing number of Canadian co-management regimes can take heart. Legislated co-management has been demonstrated to work in practice in the Inuvialuit homelands, where the balance of Inuvialuit and government scientific representation has led to Ministerial support of thoughtful recommendations in the cause of sustainability.

The Kulluk report can now be held up as a useful precedent. It names the complacent, provides rigorous reasons for its decision, and provides practical recommendations for future project proponents. Industry and government learned from the Kulluk project review that in the future all prospective proponents should not be expected to forecast broad impacts-in-combination for their industrial sector. Kulluk placed the burden of demonstrating the safety and workability of offshore drilling systems in the transition ice zone upon the proponent of a relatively modest exploration program. In retrospect it would have been fairer to place this responsibility upon a consortium of proponents given the severity of potential impacts. We can expect future proponents of such potentially dangerous projects to ask for this benefit. And we can expect indigenous communities to aspire to legislated co-management regimes, and the injection of traditional environmental knowledge into debates that have too often defined sustainability in terms common only to lawyers and southern scientists.

5. Co-management Evolution in the 1990s

Since the stormy days of the Kulluk hearing, co-management has begun to move south in Canada, due not only to the settlement of comprehensive land claims (e.g. implementation of the James Bay and Northern Quebec Agreement and the Nishga'a Agreement-in-Principle), but also due to a growing variety of co-management agreements in the provinces. Local resource users, conservation groups and government managers are increasingly forming alliances to co-manage renewable resources. Some of these alliances are contractual, some are based on memoranda of understanding (MOUs), one utilizes legislation, and some are very informal. In the absence of settled comprehensive land claims, indigenous people in the provincial south are often in the situation of trying to negotiate co-management agreements after resource allocation has occurred. As previously discussed, the existing provincial mechanisms for allocating tree farm licences, forest management agreements, mineral, oil and gas tenures do not contemplate a co-management role for First Nations. As a result indigenous communities are having to pursue diverse options for inclusion, including the courts, negotiations and moral suasion through the media.

Progress has been made in British Columbia as a result of federal government willingness to experiment with co-management in the development of the Gwaii Haanas National Park Reserve in Haida Gwaii (once call the Queen Charlotte Islands). Parks Canada and the Haida First Nation have in accordance with the Gwaii Haanas Agreement created an Archipelago Management Board to cooperatively manage all actions relating to the planning, operations and management of the Gwaii Haanas National Park Reserve. Under this Agreement, Haida Watchmen are hired to reside at traditional village sites in the Park Reserve, where they carry out diverse roles as cultural interpreters, park wardens, and emergency shelter providers. At the senior management level Haida delegates to the Archipelago Management Board contribute to such issues as the creation of visitor policy, the permissable number of visitor nights per year, and the licensing of park businesses.

Similar progress has been made in the British Columbia fishing industry, where threatened salmon species extinction and job losses have compelled the creation of new multi-sectoral regional round tables to decide on common property resource allocations. The tables feature broad stakeholder involvement, and promote research, education and information sharing. They also attempt to address

individual and collective interests. Fikret Berkes, a leading Canadian academic reviewer of co-management, notes (of such efforts) that the success of co-management regime development seems to be linked to the living resources management life cycle. Governments are never more happy to pass authority and responsibility to First Nations (especially), than when all the marketable resources have been harvested at the end of the sequential exploitation phase of the cycle. It seems clear that the time to develop practical co-management regimes is when there are still significant wildlife populations and forests to manage for sustainability.

Further progress in the provincial South is evident in Saskatchewan. Between 1994 and 1996 the Saskatchewan government published a series of policy documents on public involvement in the management of environmental and natural resources. Saskatchewan seeks to engage the public and stakeholders in the decision-making processes used in government planning, policy making and progress development. Support for these principles is contained in the province's Forest Resources Management Act which makes specific provisions for consultation in forest management. Section 11 of the above Act states:

The minister, pursuant to the regulations:

(a) shall establish a Provincial Forest Policy Advisory Committee to advise the minister on matters relating to the management of forest resources, including the preparation, approval, implementation, amendment, revision or audit of any plan or Saskatchewan Forest Accord prepared pursuant to this Act; and

(b) may establish forest management committees for those areas that are designated by the minister to facilitate local involvement in the management of forest resources.

Section 94 of the Act provides for the decentralization of certain decision-making powers and authority from the provincial to the local management level.

(1) The minister may delegate to any officer or employee of the department the exercise of any of the minister's powers, or the carrying out of any of the minister's responsibilities, pursuant to this Act or the regulations, including, without limitation, those powers or responsibilities set out in section, 53, 61 to 63, 78, 93, 96 and 97.

(2) The minister may delegate the exercise of any of the minister's powers, or the carrying out of

any of the minister's responsibilities, pursuant to this Act or the regulations that are prescribed in the regulations for the purposes of this section to:

(a) any forest management committee; or

(b) any person or category of persons other than an officer or employee of the department.

(3) The exercise by an officer or employee of the department, forest management committee, person or category of persons of any of the minister''s powers, or the carrying out of any of the minister's responsibilities, delegated pursuant to this section is deemed to be the exercise or the carrying out, as the case may be, by the minister.

Here we find the first evidence of clear delegation of ministerial decision making in a provincial context. While bold in word, we can imagine that section 94 will be carefully, and rarely used. For indigenous residents of Saskatchewan, however, there are now statutory powers available for the promotion of co-management of forest lands. As we have seen elsewhere, the legislative steps taken in Saskatchewan stem from a growing number of resource-use conflicts, land claims and treaty pressures, and growing general public requests for better local stewardship of public property resources.

Practical application of forest co-management is now underway in northwestern Saskatchewan, including both indigenous and local farming communities in nine forestry co-management and advisory boards in what is known as the NorSask Forest Management Licence Area (FMLA). NorSask Forest Products Inc. holds the timber harvest rights in this FMLA, and it has formed a management company, Mistik Management Ltd., with Millar Western, an Alberta-based forest company that owns the pulpmill which is supplied with fibre from the FMLA. Mistik is the Cree word for 'wood', and its use reflects the fact that NorSask is fully owned by the Meadow Lake Tribal Council, an economic joint venture of nine local First Nations. Here indigenous communities are investing locally with strong commitments to stewardship of natural and human resources. The mandate of Mistik Management Ltd. is to "serve people, manage the land, and supply the mills."[8] It was this corporate policy rather than legislation that resulted in the formation of the NorSask FLMA co-management committees. The committees themselves are based upon pre-existing Fur Conservation Area boundaries with the FMLA (see Figure 5), which once again shows the historic importance of fur trappers and trapping to the evolution of co-management regimes.

Mistik defines co-management as:

> the process by which the companies which hold the NorSask FMLA share in the decision-making of the forestry operations of the FMLA with First Nations and other northern communities that have a stake in it.

As currently organized the nine community-based co-management boards can review and approve cutting plans, decide the size and location of cutblocks, harvest techniques, and reforestation plans. All of the above is meant to enable local knowledge and land use values to be joined with modern science and technology in the cause of forest stewardship. Mistik also expects the process to contribute to the protection of traditional forest uses, the decision to employ buffer strips, the methods of harvesting and reforestation, as well as such seemingly unrelated matters as future development of oil and gas resources and game ranching. Clearly it would be necessary to change and modify existing committee structures and jurisdictions if their mandate were altered to deal with non-renewable resources. What is apparent from this broad vision of co-management is Mistik's desire to let each board customize its mandate to meet local needs. As currently operating, each of the nine co-management boards draws their representation from such groups as First Nations and Métis people, locally active companies, environmental NGOs, government, hunters and trappers, guide-outfitters, and recreational cabin owners.

The legal format of the NorSask FMLA co-management process utilizes a similar degree of variety. Mistik and NorSask have utilized a Memorandum of Understanding (MOU), the Saskatchewan Forest Act and Operational Terms of Reference to outline the rights and responsibilities of co-management boards. Nothing in the enabling agreements detracts from NorSask Forest Products responsibilities to the province as the FMLA holder with respect to timber resources and their management. Mistik's altruistic desire to expand co-management board domains in the future to non-timber resource planning is without any current legal foundation. At present the nine Saskatchewan boards are solely mandated to co-management activities related to the forest resources that Mistik is harvesting or seeks to harvest. The key MOU between NorSask and the Ministry of Saskatchewan Environment and Resources Management commits the government to involvement in co-management at the community level, but does not devolve decision-making authority to the nine local boards. Here

we have the provincial parallel to co-management in the Western Arctic and final decisions in Ottawa that we reviewed in the Kulluk case study.

This survey of provincial initiatives in the realm of co-management will be obsolete as soon as it is published. Across the country the concept and process options are being debated, discussed and applied in increasingly varied formats and industrial sectors. Many of these new co-management regimes are based upon the foundation of traditional land use and occupancy studies (TLUOS), which employ an unique methodology called participatory action research (or PAR).

6. Traditional Land Use and Occupancy Studies

In the cause of strengthening the role of indigenous people and their communities in the context of sustainability, Canada has also contributed the concept of mapping traditional and current land use to illustrate the geographic reach of bush economy communities in their seasonal round of resource extraction activities. These studies are now popularly referred to as TLUOS, and lay the groundwork for comparing projected industrial land uses with the indigenous base of natural resources harvest and stewardship. The first TLUOS were undertaken as part of the preparation for the first generation of northern comprehensive land claim settlements, and they focused on the Inuit knowledge of the littoral zone of the eastern high Arctic. Subsequent TLUOS were undertaken in Labrador, the western Arctic, the Yukon, James Bay, and northeastern British Columbia, and gradually the focus shifted to illustrating how pipeline mega projects (e.g. the proposed but never built Mackenzie Valley and Alaska Highway Natural Gas Pipelines of the late 1970s) would impact on First Nations' life styles and subsistence activities. Books such as Hugh Brody's "Maps and Dreams" (1981), which described a TLUOS presented at community hearings along the proposed right-of-way of the Alaska Highway Gas Pipeline, played a definitive role in the early 1980s . Since then the focus of TLUOS projects has moved to smaller oil and gas projects in the provincial mid-north, and forestry mega projects in Canada's boreal forest.

6.1 The Growing Call for Participatory Methodology

The methodology of choice for TLUOS today is participatory action research, but this methodological evolution has taken some 25 years of experimentation and honing. The first generation of TLUOS (approximately 1970-1980) relied heavily on academic social science expertise, and drew

TEK from indigenous informants using qualitative and quantitative interview techniques. Text was prepared to peer reviewed academic standards, and maps were made manually for publication. Lines on maps encircled individual hunters' harvest areas by species, and numbers on map locations keyed to text were used for verbal explanations. Seasonality and scheduling data for individual species were often portrayed on circle diagrams. Harvest surveys were occasionally carried out to determine per capita annual harvest and consumption of country food, by species, portion and poundage. Store bought protein equivalencies were sometimes determined to demonstrate the replacement cost of substituting domestic meat cuts for their country food equivalents. An interesting picture emerged; it was one of extremely poor people eating large portions of extremely high value meat. Using similar techniques of comparison, dollar values were attributed to cords of firewood cut, log buildings constructed of locally harvested trees, quarts of berries picked, and bush medicine prepared for village use. In this way village gross domestic "country" products were generated for comparison with gross domestic "cash" products, comprised of guiding salaries, fur sales receipts, industrial employment income, and government transfer payments. Once again an interesting pattern emerged; it was one of surprisingly high cash value attributed to the country harvest.

Generation two of TLUOS (approximately 1980-1990) methodology was built upon the growing availability of computer-mapping technology, and the growing call for local participation in the work. Geographic information system (GIS) software and global positioning system (GPS) technology began to be used to create traditional land use maps in this era, and the computerization of cultural knowledge proved fascinating and practical to scores of First Nation communities in Canada. At the same time a rebellion began against the domination of academic expertise in TLUOS. Local people wanted to be trained in their home communities to undertake their own research of their own choosing. Rather than the pursuit of knowledge for its own sake, indigenous communities sought to conduct research to cause fundamental social change. They wanted empowerment, control of research methods and products (and copyrights), and teachers who were willing to live in their communities to pass on research skills and appropriate technologies. No longer would academic authors be able to retain copyright for TLUOS books in this environment, and the community itself would determine what information was to be made public, to whom, and in what medium. In generation two the old

academic research model was turned on its head.

TLUOS products of this era feature a higher standard of graphic presentation and design. Icons for plants, animals, birds, fish, berries, spiritual sites, cabins, trails and burials were developed for placement on working maps during elder interviews. The interviews themselves were increasingly carried out by community researchers who had been trained in social science methodology by a PAR trainer. Once the working maps were complete, community validation sessions were held so that all of the interviewees could assemble socially to pass judgement on their collective work. Mistakes were immediately corrected, new locations were derived from friendly story telling, and the final products were given sanction by consensus of the elders.

Completed working maps gave the PAR trainer and a select group of community trainees the opportunity to look for regional and community use patterns, and to take the maps out to the bush to validate them on-site with a GPS instrument. Quite often riparian use patterns emerged from maps made in the provincial norths, illustrating the great significance of rivers, creeks and lakeshores to Dene, Cree and Métis hunting and trapping communities. Once on-site with GPS instruments, the trainees and the PAR trainer made precision location records of fixed sites, and visually inspected their condition. Photographs and video records of old communities and fixtures were also made in the bush.

Generation two products included TLUOS atlases, often designed for school, community, government and industry uses; in-house community GIS with trained operators; and recommendations for the creation of regional co-management regimes. The legacy of this work is mixed. With the exception of the Nishga'a Agreement-in-Principle in British Columbia, the noted legislation in Saskatchewan, and the James Bay and Northern Quebec Agreement in Quebec, the concept of co-management has had weak encouragement in the provinces. In the regions of intense oil and gas exploration and pulp harvesting in British Columbia and Alberta, official use of these studies has been minor, and generally only for educational purposes.

Generation three of TLUOS (approximately 1990 to present), has seen the work of the previous two generations coupled with a growing sense of advocacy. Participatory action research approaches have broadened, and many indigenous communities are using previously published TLUOS to create their own methodology. Increasingly PAR trainers are retained for shorter periods of time,

typically in workshop format, to guide the community work. Icon placement on working maps is still a favoured methodological tool, and arguments for and against the use of GIS technology are raging. Some communities are now recording their TEK by age cohort, mapping the current state of its retention and use by children, adolescents, young adults, adults and elders. In such studies, the diminution of TEK held by the younger cohorts is generally pronounced.

In some communities TLUOS data are now being mapped very selectively for public distribution (and potential abuse), and animal, fish and bird species icons are being replaced by oblique shapes or arrows indicating migratory routes. Similarly, medicinal plant harvest sites are being deliberately obscured with more generalized indication of their locations. This is being done because of a growing awareness of pharmaceutical corporate interest in TEK, and attempts to copyright genetic materials for profit. Whereas generations one and two favoured open disclosure of TEK to make wide-ranging use patterns evident, generation three is becoming increasingly suspicious of sharing with outsiders. This suspicion does not auger well for the future of co-management, which depends upon the sharing and recombination of knowledge to take decisions. Similarly, the declining cohort of TEK experts (or elders), is beginning to worry those elders and scientists who currently comprise the membership of the existing co-management committees. Co-management obviously depends on the symbiotic relationship of TEK and science. The origins of these problems are evident however, and means to address them are becoming apparent.

The GIS capability of many communities allows certain TEK data sets to be archived securely, and restricted access to co-managers only. It is no longer necessary to place all of the data on all of the maps. Copyright law is being investigated by many First Nations to provide maximum legal protection for TEK in the public domain. Communities are much more aware now about the pitfalls associated with sharing traditional medicine wisdom with pharmaceutical companies. Many questions are routinely asked before any discussion of potential sharing or sale of knowledge is undertaken. There is also a growing awareness that the young have to be mentored by their parents and their elders in the ways of the bush economy. The lessons of the hunt and the trapline are not easily transferred to the classroom, but there are programs in renewable resources technology being taught in northern community colleges (e.g. Aurora College, Thebacha Campus, Fort Smith, NWT) that get students out

on the land with very competent instructors. The use of TLUOS materials in grade school classrooms is also growing, and the existing Canadian co-management committees are creating new materials for educational purposes. Canadian universities are also getting involved with new programs such as the Northern Planning and Development Studies Theme School at the Arctic Institute of North America, University of Calgary. This Theme School offers eight courses for potential co-managers, focusing on such topics as interdisciplinary research, the role of traditional environmental knowledge and its significance to northern development, participatory research methodologies, the use of GIS, gender analysis, strategic planning, non-adversarial conflict resolution, community planning, and self-directed research projects. While classroom instruction alone will not guarantee the passage of TEK to succeeding generations, the process is certainly assisted by courses such as those offered by the Arctic Institute's Theme School.

7. The Role of Computers in the Promotion of Indigenous Community Sustainable Development

The onset of generation two of TLUOS (approximately 1980-1990), saw the advent of computer technology, specifically GIS and GPS, and its application to community mapping studies. At first this technology was expensive and cumbersome. Experts were required to interpret and apply it, and local people could basically only watch from the sidelines. As the decade progressed GPS instruments fell in value to below $1,000 (Cdn), and their use was greatly simplified. Similarly, computer software packages for GIS also fell in price, and many communities invested in packages ranging in cost from $1,000 (Cdn) to $8,000 (e.g. Idrisi, Map Info and ARC/INFO), which could be installed on Pentium personal computers with between 500 MByte to 1 GByte hard drives. As the transition from home-made paper maps to GIS continued, the focus of TLUOS training moved increasingly from social science interview methodology to technology transfer, and trainees generally became younger people with some existing degree of computer literacy. A series of new training problems accompanied this transition. In some communities trained staff in accounting and finance departments opted to become GIS operators, and left their old departments scrambling to find suitably trained replacements. In others the community GIS trainee was hired externally as soon as the training was completed. Some GIS graduates started their own businesses with the skills, and did not apply

them in their home community. Still other communities never saw their trainees graduate, and as a result they remain to this day dependent on continual outside consulting assistance. In such situations, the consultants increasingly earn their money by accessing data held in comparatively ancient GIS software packages that no one else knows how to activate.

All of the foregoing is pretty bleak, but may be better understood in the context of developing technological skills in remote, isolated communities. It should also be read in the context of the rapid evolution of software and hardware for the task at hand. Just as TLUOS were taking off at the community level, so were the computer applications. Community need melded with available technology as best as possible. Today the proliferation of GIS and GPS short courses at colleges and universities, and the user friendly technology, augers well for a more coherent future of applications.

One interesting problem remains. In many bush communities the pleasure of a handmade map with glued-on icons, coloured pencil shading, and careful printing of place names occupies a special place in the hearts of elders. The transition to GIS product is often jarringly mechanistic, and too industrial or government-like for local taste. In such places the handmade map is treasured, and often displayed under glass or sealed in protective sheets of plastic wrapping. One must be careful in deciding just what format is best for the display of TLUOS data. The mere availability of computer technology should not be the deciding factor. Local people, PAR trainees especially, are best placed to take these kinds of decisions.

8. Standing at the Crossroads: Success and Failure in the Practice of Co-Management

Today as Canadians look back on the practice of co-management and its development in the past 30 years, we are struck by its fluorescence north of 60° latitude, and its struggle south of 60°. The 60° latitude is the national division between the northern Canadian Territories, still heavily financed and regulated by the federal state, and the southern provinces, much more independent of the federal centre, and in control of their resources and resource royalties courtesy of the aforementioned natural resources transfer agreements. First Nations north of 60° have been able to negotiate and settle nearly all of their comprehensive land claims with the federal state; south of 60° it is a very different story. With notable exceptions in northern Quebec and Labrador, Saskatchewan and hopefully soon in northern British Columbia, co-management is only an idea in the provincial south. It is a threatening

idea to most provincial legislatures because it contains the seed of shared resource management, and therefore a share in provincial resource royalties. It all comes down to money eventually, and provincial desires to retain all resource revenues. North of 60° First Nations have received large cash settlements (in the hundreds of millions of dollars), legislated co-management rights, and significantly large land bases upon which to evolve culturally and economically.

Over the next decade, however, increasing resource development pressures in the provinces will pit First Nations against governments in the cause of sustainability. The Canadian courts are becoming increasingly activist in the cause of the government's duty to consult prior to development with First Nations, and it is now clear that some proposed developments may not proceed without First Nations' endorsement. As fossil fuels deplete, existing old growth rain and pulp forests are harvested, and salmon and cod populations are exhausted, it is clear that a better way has to be found to ensure sustainability and biodiversity in a fragile world. Canadian First Nations are convinced that co-management is one tool in their possession that has great potential for broader application in this cause. Increasingly co-management's utility is finding expression elsewhere, too. Via the mechanism of international workshops, conferences, websites, peer reviewed and popular literature the word is getting out, and the Canadian experience is finding favour in Russia, sub-Saharan Africa, Australia, New Zealand and the United States.

9. The Importance of Understanding Media: Some Conclusions on the Evolution of Co-management and its Practice in Canada

If the Canadian professor of English and "oracle of the electronic age" Marshall McLuhan were alive today, he would see interesting aspects of his pronouncements and theories in the practice of electronically aided co-management. McLuhan was an early advocate of the split-brain hypothesis, wherein scientists and scientism were associated with "left brain behaviour," and humanists and humanism were associated with "right brain behaviour." This distinction was further sharpened with McLuhan's association of left brain behaviour with visual, linear, Cartesian logic processes, and right brain behaviour with acoustic, tribal and verbal processes. To McLuhan the right hemisphere specialized in the perception of spatial relationships (where one was), and the left hemisphere specialized in what one thought (or was doing). While the hypothesis was by no means broadly

accepted in his time, it did give a convenient explanation to the whole complex of ideas he had worked on since the 1950s. He foresaw the value of combining a scientific approach with a wisdom approach in the process of decision making on complex matters. He also predicted that tribal cultures would more easily adapt to computer-based communications systems (and this before the advent of e-mail and the world wide web) because they were less visual and more acoustic, that is more attuned to the nuances of oral communications networks, than to books. In this insight McLuhan unknowingly predicted a future for electronic mapping, GIS and the synthesis of right and left brain processes in decision making. McLuhan was articulating in his general communications theory a role for co-management.

More recently nuances of this idea have been articulated by the Canadian citizen philosopher John Ralston Saul, who in his books (see especially Voltaire's Bastards: The Dictatorship of Reason in the West (1992)) has argued for the humanities critique of reason to be ever present to balance the tyranny of Cartesian thought in Western public policy formation. Saul points to the importance of doubt, imagination, creativity, a social view, moral balance and common sense. In essence Saul champions wisdom and its role in leavening science-based decision making. Once again we see a philosophical, humanities-based argument for the promotion of co-management. Both McLuhan and Saul have found their critiques of applied reason as Canadians, and both have read broadly and written about the contributions of indigenous peoples to the fabric of Canada. One could argue that they have jointly discovered in scholarship what the Gwich'in and Inuvialuit hunters and trappers discovered on the trapline near Aklavik back in 1942: namely that local knowledge and indigenous wisdom are too valuable to ignore in the process of taking decisions about sustaining the environment.

Notes

[1] An Aboriginal Nation should be defined as a sizeable body of Aboriginal people that possesses a shared sense of national identify and constitutes the predominant population in a certain territory or collection of territories.

Thus, the Mi'kmaq, the Innu, the Anishnabe, the Blood, the Haida, the Inuvialuit, the western Métis Nation and other peoples whose bonds have stayed at least partly intact, despite government interference, are nations. There are about 1000 reserve and settlement communities in Canada, but there are 60 to 80 Aboriginal nations. (People to People, Nation to Nation, 1996:25).

[2] Peter J. Usher and G. Noble, New Directions in Northern Policy Making: Reality of Myth? (Inuvik, N.W.T.: COPE, 1975).

[3] Calder V.A.G. of B.C., (1973) S.C.R. 313.

[4] The James Bay and Northern Quebec Agreement signed 11 November 1975 contains the first.

[5] EIRB, Public Review of the Gulf Canada Resources Limited Kulluk Drilling Program (Inuvik, N.W.T., 1990). Pg.16.

[6] Nelson Green, Biological effects (presentation to Environmental Impact Review Board, 1990). (Inuvik, N.W.T.: Inuvialuit Game Council, 1990) at 30-40.

[7] EIRB, Public Review of the Gulf Canada Resources Limited Kulluk Drilling Program (Inuvik, N.W.T., 1990). Pg.40.

[8] Barry Opekokew, Mistik Management, paraphrased in Aboriginal Forestry: Lessons in the Making: Selected Conference Proceedings of the National Aboriginal Forestry Association, October 23-25, Ottawa, Canada. (Ottawa, Ontario: The National Aboriginal Forestry Association, 1995. p.14.

Bibliography

Berkes, F. 1985. The common property resource problem and the creation of limited property rights. Human Ecology 13(2): 189-208.

Berkes, F. 1994. Co-management: Bridging the two solitudes. Northern Perspectives, Volume 22, Number 2-3, Summer/Fall. Canadian Arctic Resources Committee, Ottawa, ON.

Brice-Bennett, C. (Editor). 1977. Our footprints are everywhere: Inuit land use and occupancy in Labrador, Labrador Inuit Association, Nain, NF.

Brody, H. 1981. Maps and dreams. Douglas and McIntyre, Vancouver, BC.

Chambers, F.G. 1998. Co-management of forest resources in the NorSask forest management licence area, Saskatchewan: A case study. Unpublished Masters Design Project, Faculty of Environmental Design, The University of Calgary.

Department of Indian Affairs and Northern Development. 1984. The Inuvialuit final agreement. Department of Indian Affairs and Northern Development, Ottawa, ON.

Department of Indian Affairs and Northern Development. 1992. The Gwich'in final agreement. Department of Indian Affairs and Northern Development, Ottawa, ON.

Department of Indian Affairs and Northern Development. 1994. The Sahtu final agreement. Department of Indian Affairs and Northern Development, Ottawa, ON.

Department of Indian Affairs and Northern Development. 1995. The Nunavut final agreement. Department of Indian Affairs and Northern Development, Ottawa, ON.

Freeman Research Ltd. 1976. Report: Inuit land use and occupancy project. Canada. Dept. of Indian Affairs and Northern Development (sponsor). Supply and Services Canada, Ottawa, ON.

Glavin, T. 1996. Dead reckoning: Confronting the crisis in Pacific fisheries. Grey Stone Books, Vancouver, BC.

Government of Canada and Council of the Haida Nation. 1993. Gwaii Haanas agreement. Haida Gwaii; Ottawa, ON.

Joint Secretariat -- Arctic Institute of North America. 1996. Circumpolar aboriginal people and co-management practice. AINA, Calgary, AB.

Marchand, P. 1989. Marshall McLuhan: The Medium and the Messenger. Random House of Canada Limited, Toronto, ON.

Mistik Management Ltd. 1995. The NorSask Forest Management Project. Vol.: Twenty-Year Forest Management Plan. Submitted to SERM, Regina.

National Aboriginal Forestry Association. 1996. Aboriginal forest-based ecological knowledge in Canada, prepared for the Canadian Forest Service, Natural Resources Canada. Ottawa, ON.

Robinson, M. et al. 1994. Mapping how we use our land using participatory action research. Arctic Institute of North America, Calgary, AB.

Robinson, M. and E. Ghostkeeper. 1987. Native and local economics: A consideration of economic evolution and the next economy. Arctic (40)2:138-144.

Robinson, M. and L. Binder. 1992. The Inuvialuit final agreement and resource use conflicts: Co-management in the western Arctic and final decisions in Ottawa. In Growing demands on a shrinking heritage: Managing resource use conflicts. Canadian Institute of Resources Law, Calgary, AB.

Robinson, M.P. and Karim-Aly S. Kassam. 1998. Sami Potatoes: Living With Reindeer and Perestroika. Bayeux Arts Inc., Calgary, AB.

Robinson, M. and M. Ross. 1997. Traditional land use and occupancy studies and their impact on forest planning and management in Alberta. The Forestry Chronicle, September/October 1997, Vol. 73, No. 5:596-605.

Ross, Monique M. and Cheryl Y. Sharvit. 1998. Forest Management in Alberta and Rights to Hunt, Trap and Fish Under Treaty 8. Alberta Law Review, Vol. 36(3).

Royal Commission on Aboriginal Peoples. 1996. Report of the Royal Commission on Aboriginal Peoples. Supply and Services Canada, Ottawa, ON.

Royal Commission on Aboriginal Peoples. 1996. People to People, Nation to Nation: Highlights from the Report of the Royal Commission on Aboriginal Peoples. Supply and Services Canada, Ottawa, ON.

Saul, J.R. 1992. Voltaire's Bastards: The Dictatorship of Reason in the West. Penguin Books, Toronto, ON.

Saul, J.R. 1994. The Doubter's Companion: A Dictionary of Aggressive Common Sense. Penguin Books, Toronto, ON.

Usher, P.J. and G. Noble. 1975. New directions in northern policy making: Reality or myth? COPE, Inuvik, NWT.

Graphics

Figure 1 - Aboriginal Population Decline and Resurgence

Royal Commission on Aboriginal Peoples. 1996. Report of the Royal Commission on Aboriginal Peoples. Supply and Services Canada, Ottawa, ON. Pg. 11.

Figure 2 - Tribal and Linguistic Groups at Time of Contact

Royal Commission on Aboriginal Peoples. 1996. People to People, Nation to Nation: Highlights from the Report of the Royal Commission on Aboriginal Peoples. Supply and Services Canada, Ottawa, ON. Pg. 7.

Figure 3 - The Inuvialuit Settlement Region

Robinson, M. and L. Binder. 1992. The Inuvialuit final agreement and resource use conflicts: Co-management in the western Arctic and final decisions in Ottawa. In Growing demands on a shrinking heritage: Managing resource use conflicts. Canadian Institute of Resources Law, Calgary, AB. Pg. 157.

Figure 4 - Inuvialuit Co-management Structures

Robinson, M. and L. Binder. 1992. The Inuvialuit final agreement and resource use conflicts: Co-management in the western Arctic and final decisions in Ottawa. In Growing demands on a shrinking heritage: Managing resource use conflicts. Canadian Institute of Resources Law, Calgary, AB. Pg. 159.

Figure 5 - NorSask Forest Management Licence Area Formed Co-Management Boards

Mistik Management Ltd. 1995. The NorSask Forest Management Project. Vol.: Twenty-Year Forest Management Plan. Submitted to SERM, Regina. (No page #).