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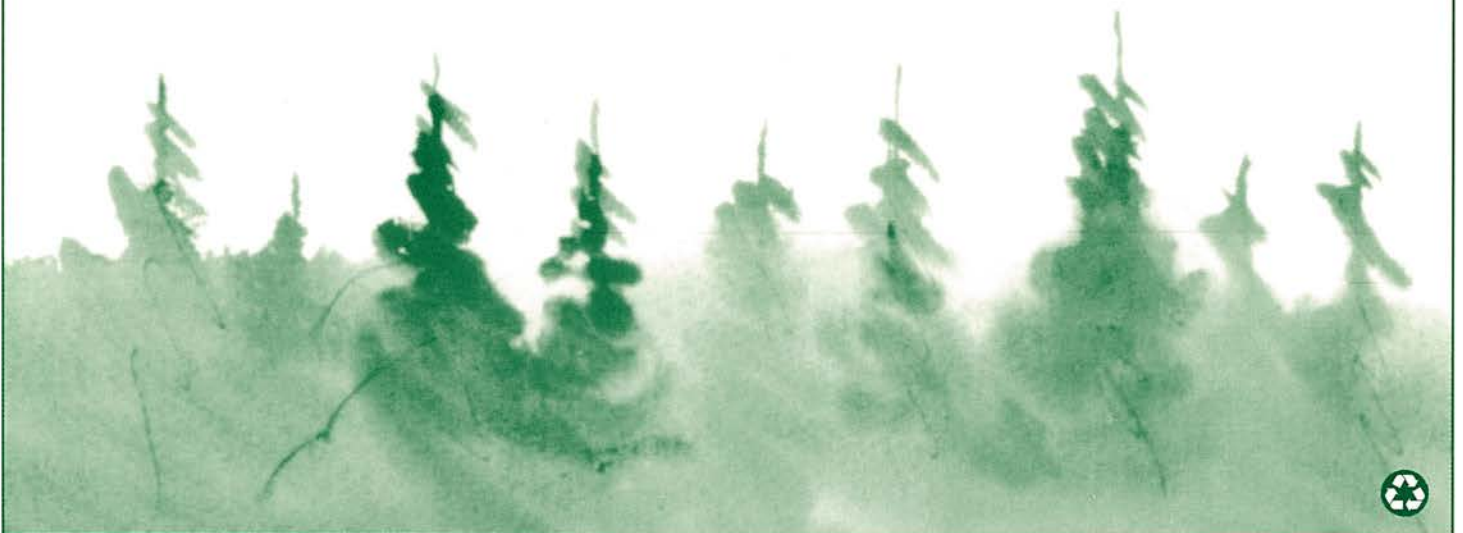
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# **Aboriginal Forest-Based Ecological Knowledge in Canada**

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## PREFACE

In February 1996, the Canadian Forest Service (CFS) approached the Assembly of First Nations (AFN: the political organization representing First Nations in Canada), the National Aboriginal Forestry Association (NAFA: a non-governmental Aboriginal-controlled organization whose goal is to promote Aboriginal participation in forestry) and the Algonquins of Barriere Lake to discuss the preparation of a paper on forest-related traditional knowledge and practices for the United Nation's Intergovernmental Panel on Forests September 1996 meeting in Geneva. The CFS stated that "*Canada's Aboriginal community must play a key role in the process by which consultations take place and how the paper to the Panel gets written.*" Following discussions among the AFN, NAFA and the Algonquin, it was agreed that NAFA would co-ordinate the development of a paper outlining the Aboriginal perspective on forest-based ecological knowledge in Canada. The CFS contracted to NAFA in May 1996 for the project.

NAFA drafted the following paper through a limited consultation process with Aboriginal peoples across Canada. The main body of the report was initially drafted by Murray Angus and then reviewed by various representatives of Aboriginal organizations and individuals (names are listed in the Acknowledgement section). A second draft was written by Peggy Smith and Harry Bombay of NAFA. Three of the case studies, the Gitksan, Cree of Northern Quebec and Algonquins of Barriere Lake, were developed by the organizations themselves. The Gitksan case study was written on their behalf by Beverly Bird; the Cree case study was written by Geoff Quaile and Jack Blacksmith of the Grand Council of the Cree; and the Algonquin case study by Russell Diabo. Doug Brubacher of New Economy Development wrote both the Clayoquot Sound case study, which was reviewed by the Nuu-chah-nulth, and the AI-Pac case study which was reviewed by both AI-Pac and several Aboriginal peoples in Alberta. The case study on the use of fire was prepared by Russel Barsh of the University of Lethbridge.

The draft paper was then reviewed by both the Canadian Forest Service and representatives of the provinces. Several factual changes were made following this input. There were also difficult discussions with the provinces on substantial changes. However, agreement was finally reached.

The process of developing the paper, in itself, illustrates the difficulties Aboriginal peoples face in voicing their perspectives to non-Aboriginal societies. Despite the obstacles we faced in developing the paper, Aboriginal peoples remain committed to working together to achieve sustainable forest management and we welcome the opportunity to present this paper.



*THE TREE OF LIFE*

*A tree images life  
It grows  
Unwell, it heals itself  
Spent, it dies.*

*A tree reflects being  
It changes  
Altered, it restores itself  
Ever to remain the same.*

*A tree gives life  
It abides  
It lends existence yet  
Endures undiminished.*

*Trees give me everything  
Serve all my needs  
To the tree I can give nothing  
Except my song of praise.*

*When I look upon a tree  
I remember that  
The apple tree can  
Allay my hunger  
The maple can  
Slake my thirst  
The pine can  
Heal my wounds and cuts  
The bark of birch can  
Form my home, can*

*Mould my canoe and vessels  
The tissue of birch can  
Keep the images that I draw  
The balsam groves can  
Shield me from the winds  
Fruit of the grape vine can  
Lend colour to my quills  
The hickory can  
Bend as my bow, while  
The cherrywood provides  
An arrow shaft.*

*The cedar ferns can  
Cushion my body in sleep  
The basswood can  
Become my daughters' doll  
The ash, as snowshoe, can  
Carry me across the snows  
The tobacco can  
Transport my prayers to God  
The sweetgrass can  
Aromate my lodge  
The roots of evergreen can  
Bind my sleigh and craft  
The stump and twig can  
Warm my lodge  
The rose and daisy can  
Move the soul of woman  
The leaves wind-blown can  
Open my spirit.*

- (Basil Johnston, 1976)

Aboriginal peoples in Canada involved in writing this paper send greetings. We hope that readers are in good spirits and that your families are well. We also hope for a spirit of co-operation among all the world's peoples in working toward sustainable forest management. We thank the Government of Canada for the opportunity to share our knowledge.

## UPDATE - MARCH 1997

At the 3<sup>rd</sup> meeting of the Intergovernmental Panel on Forests in Geneva in September 1996, the meeting for which this paper was prepared, traditional forest-related knowledge was discussed in detail by government, non-government and Indigenous representatives.

At IPF3 the Governments of Denmark and Colombia announced an intersessional meeting of "Indigenous and Other Forest-Based Peoples on the Management, Conservation and Sustainable Development of All Types of Forests", which was held December 9-13, 1996 in Leticia, Colombia on the Amazon River. The results of that meeting--the "Leticia Declaration" and proposals for action--were summarized in the "Chairpersons' Report" and presented to the final meeting of the IPF in New York in February 1997.

The IPF4 came up with options for ways to continue the international dialogue on sustainable forest management, including a high level forum or an intergovernmental negotiating committee to pursue an international forest convention. It is most likely that the Commission on Sustainable Development at its meeting in April 1997 will recommend the establishment of a high level political forum which will build on the work started by the IPF. Such a recommendation would be approved at a Special Session of the United Nations in June 1997.

Further information on the results of the Leticia meeting can be found on the web at the International Alliance of Indigenous-

Tribal Peoples of the Tropical Forests' site at: <http://www.gn.apc.org/iaip/leticia>

The final report of the Intergovernmental Panel on Forests can be found at <http://www.un.org/dpcsd/dsd/ipf.htm>

## INTRODUCTION

The National Aboriginal Forestry Association was asked by the Canadian Forest Service, Natural Resources Canada, to prepare a paper on Aboriginal forest-based ecological knowledge in Canada, in consultation with Aboriginal peoples. This paper will be a part of Canada's overall contribution to international discussions on sustainable forest management, in particular to share experiences and lessons learned about Aboriginal forest-based ecological knowledge and practices and the equitable sharing of benefits arising from their use with the Intergovernmental Panel on Forests (IPF). The IPF is addressing criteria and indicators for sustainable forest management as part of global efforts to respond to commitments made during the 1992 United Nations Conference on the Environment and Development (UNCED) held in Rio de Janeiro. The UNCED commitments include Agenda 21, the Convention on Biodiversity, the Guiding Principles on Forests and the Framework Convention on Climate Change.

Aboriginal peoples welcome the opportunity to share their knowledge about forests because we believe that this knowledge will contribute to improved forest management and practices. Aboriginal people want to make this contribution as part of their responsibility and role as stewards of the land. Aboriginal forest-based ecological

knowledge is based on sound management principles which have allowed Aboriginal peoples to survive through sustainable forest use.

There has been a history of conflict in Canada between Aboriginal peoples and governments over forest land and land use, a history that has resulted in poverty, social disruption and displacement of Aboriginal people from the lands on which they traditionally relied. However, it is now time for all peoples to work together in mutual respect to address the failures of forest management systems which have led to our current global environmental crisis. Aboriginal peoples want to take their rightful place in sustainable forest management both to share the economic benefits deriving from forest activities and to accept the responsibility for stewarding forest resources.

This paper will present an overview of Aboriginal forest-based ecological knowledge in Canada today by:

- reviewing the extent to which this knowledge is being used to influence forest management practices in Canada today;
- presenting several case studies describing examples of how Aboriginal knowledge is being applied in specific circumstances; and
- identifying outstanding issues needing to be addressed if this knowledge is to become more widely used.

## DEFINITION OF TERMS

### Aboriginal or Indigenous Peoples

Various terms have been used to describe indigenous peoples, including “first peoples,” “tribal peoples,” “Amerindians,” “aboriginal peoples,” “natives” and “First Nations.” Aboriginal peoples in Canada define themselves in their own languages. For example, the Ojibway people of the boreal forest call themselves “Anishnabe,” meaning “the people.”

The International Labour Organization in its 1989 Indigenous & Tribal Peoples Convention (People or Peoples, 1996) defined “Indigenous Peoples” as:

*(a) tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations;*

*(b) peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.*

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

In Canada, there are at least fifty distinct Aboriginal languages and eleven language families, over 600 "First Nations" (those communities classed by the federal government as "Indian Bands" living on lands set aside as "Reserves" which are under the jurisdiction of the federal government), about 30,000 Inuit from the Arctic and over 200,000 Metis, each people with its own historical culture, territory and system of governance (McMillan, 1988). At the time of European contact in the 15th century, it is estimated that there were between 500,000 and 2 million Aboriginal inhabitants in the area now called Canada; today, there are over 1 million Aboriginal peoples in Canada. The vast majority live in areas covered by boreal or temperate rain forests.

Canada's *Constitution Act, 1982* recognizes the "existing Aboriginal and treaty rights of the aboriginal peoples of Canada," stipulating that these peoples include "the Indians, Inuit and Métis." These three categories, however, cover a multitude of subgroups, based on legal distinctions, regional, linguistic and tribal affiliations. Of the two levels of government recognized by the Constitution, federal and provincial, it is the federal government that has jurisdiction for "Indians and lands reserved for Indians." The provinces, in turn, have responsibility for the management of lands and resources on Crown (public) lands, including forests. As representatives of the Crown, both levels of government have an obligation not to infringe upon the rights of Aboriginal peoples through legislative or regulatory actions.

### Aboriginal Forest-Based Ecological Knowledge

Numerous terms have been coined to describe Aboriginal forest-based ecological knowledge, including "traditional ecological knowledge," "indigenous knowledge," "indigenous science" and "naturalized knowledge systems." These terms refer to the knowledge that Aboriginal peoples have accumulated over countless generations of intimate contact with all aspects of local ecosystems, including plants, animals and other natural phenomena.

Jameson Brant, a Mohawk working with the Cree and Ojibway of the northern boreal forest in Ontario, describes this knowledge as:

*a body of information about the interconnected elements of the natural environment which traditional Indigenous people have been taught, from generation to generation, to respect and give thanks for.*

The vast majority of indigenous peoples throughout the world live in forested regions. Their accumulated knowledge of forest ecosystems is the result of their sustained use of forests for a variety of life-sustaining and cultural purposes, including: food (hunting, fishing, and gathering), clothing, shelter, construction materials, craft materials, medicine, pigments, tobacco substitutes, ceremonial products, tools and transportation.

## BACKGROUND

### INTERNATIONAL INDIGENOUS RIGHTS

Indigenous rights cover a wide spectrum of issues, generally recognizing that indigenous peoples occupy unique positions within their respective societies based on their distinctiveness and direct lineage with the earliest inhabitants of the land. These rights include addressing past injustices resulting from colonization or conquest, guaranteeing to indigenous peoples all human rights and fundamental freedoms and facilitating a continuation of indigenous peoples' distinctiveness through the right of self-determination. Self-determination with respect to natural resources carries the implication of rights to utilize, benefit from and exploit land and resources and to control the processes under which indigenous peoples' development takes place. To achieve control over their own development, indigenous peoples insist they be part of decision-making at the highest levels to ensure their interests are not overlooked or interpreted on their behalf by other parties.

Indigenous rights, as they have been declared by indigenous peoples' organizations, differ somewhat from what has been described through processes led by groups such as the United Nations International Labour Organization (ILO), the UN Working Group on Indigenous Populations (WGIP) and the Inter-American Commission on Human Rights of the Organization of American States (OAS). Though these formal UN and OAS processes have not found universal consensus from member governments or

from indigenous peoples, they have provided a focus for discussion, served to develop common understanding and, in the process, identified areas of contention. Indigenous peoples have pointed to non-recognition of their right of self-determination as the most contentious item.

ILO Convention 169 Concerning Indigenous and Tribal Peoples in Independent Countries, 1989, is the only instrument which has reached the stature of international law and is therefore legally binding on those nation states which ratified it. The Convention has been ratified in only a handful of countries and, to a great degree, is seen by most indigenous peoples and some governments as a statement of minimum rights. These rights include, among others, equal rights and opportunities under national laws, a sharing of social and economic benefits, protection of social, cultural, religious and spiritual values, participation in decision-making and due regard for customary law.

In recent years, the focus has shifted to the work of the WGIP and the UN Draft Declaration on the Rights of Indigenous Peoples (People or Peoples, 1996). The WGIP holds the promise that its mandate is comprehensive, including the participation of indigenous peoples in its deliberations and a commitment to resolving the issue of self-determination. For indigenous peoples, the international recognition of the right of self-determination is fundamental, although many countries are not prepared to recognize such a right. The Inter-American Declaration on the Rights of Indigenous Peoples draws on the UN Draft Declaration, ILO Convention 169 and key documents

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

from UNCED. This draft declaration of the OAS, except for its limited regional application, could gain acceptance by indigenous groups if it too is seen as a building block for a more universal approach. Work of the UN and the OAS have focused on the development of international instruments which would obligate nation states to comply with universal standards.

### Intellectual Property Rights

UNCED played a key role in linking indigenous rights and indigenous knowledge with sustainable development. Agenda 21, the Convention on Biological Diversity and the non-legally binding authoritative statement of forest principles all recognized that indigenous knowledge is not only useful but critically important to the development and cultural survival of indigenous peoples and that use of this knowledge can contribute to the conservation of biodiversity and sustainable forest management. Article 8(j) of the Convention on Biological Diversity is one of the more significant statements regarding indigenous knowledge, stating that signatory states must:

*Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of*

*the benefits arising from the utilization of such knowledge, innovations and practices.*

The Convention makes it clear that indigenous peoples are to benefit from the utilization of such knowledge. Though intellectual property rights—the confusing field of patenting knowledge for trade purposes (The Crucible Group, 1994)—are not explicitly referenced in the Convention on Biological Diversity, the implication is that there is a need to deal with traditional knowledge in a manner similar to that accorded industrial property and technology. The issues of who owns the knowledge, how is it used and who benefits from its use are critical issues in the use of Aboriginal ecological knowledge.

In a progress report by the Executive Secretary of the Biodiversity Convention (January 1995), the complexity of indigenous knowledge and the problems facing indigenous peoples world wide was emphasized in the conclusion:

- (a) *the language, culture and knowledge of indigenous and local communities are disappearing at alarming rates;*
- (b) *many presumed 'natural' ecosystem or 'wilderness' areas are in fact 'human or cultural landscapes' resulting from millennial interactions with forest dwellers;*
- (c) *traditional knowledge is complex, sophisticated, and critically relevant to understanding how to conserve forest ecosystems and use them sustainably.*

### INTERNATIONAL INTEREST IN ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE

International interest in Aboriginal forest-based ecological knowledge has emerged in conjunction with growing concern about deforestation and other forms of environmental degradation in the last thirty years.

Forest issues were one of the early focal points for discussions about the environment because of the increased pressure that was being placed on the world's forests, particularly in tropical regions. Population growth, increased consumer demand for wood products, alternative uses for forested lands (e.g., grazing, hydroelectric projects and urban development) and advances in timber harvesting technologies were all contributing to a rapid increase in the rate at which forests were being logged world wide. The consequences of these trends were, and remain, profound. They include a decrease in biological diversity, long-term climatic disruption and the decimation of traditional indigenous societies still dependent on forest ecosystems (The Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, 1995).

Concern about these issues was given its first international expression in the 1970's at such fora as the United Nations Conference on the Human Environment in Stockholm (1972) and the United Nations Conference on Desertification in Nairobi (1977). In 1980, the *World Conservation Strategy* developed by the International Union for the Conservation of Nature and Natural Resources (IUCN) began to call attention to

the significance of "traditional ecological knowledge" in dealing with ecological concerns. In 1982 the Commission on Ecology of the IUCN founded a Working Group on Traditional Ecological Knowledge on the idea "*that the value of TEK for natural resource management had been grossly undervalued by western (or western-trained) 'scientific' managers*" (Williams and Baines).

In 1987, the *World Commission on Environment and Development* advanced international discussions further in the *Brundtland Report* outlining the long-term environmental consequences of world-wide population growth and industrial development. The report called for a new global commitment to "sustainable development." It also highlighted the potential contribution that indigenous knowledge could make toward this goal, calling Aboriginal communities "*repositories of vast accumulations of traditional knowledge and experience*" (Report of the Traditional Knowledge Working Group, 1991).

Interest in environmental protection, sustainable development, improved forest practices and indigenous ecological knowledge converged at UNCED. Principle 22 of the *Rio Declaration*, for example, declared that:

*Indigenous people and their communities ... have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable*

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

*their effective participation in the achievement of sustainable development.*

Canada is a signatory to two Rio conventions which affirm the multiple roles and values of forests:

- The *Framework Convention on Climate Change* highlights the serious effects of deforestation on climatic change, and commits signatory countries to protect old growth forests and wetlands and to promote sustainable forest management.
- The *Convention on Biological Diversity* commits signatory countries to three broad objectives: the conservation of biological diversity, the sustainable use of biological resources and the fair and equitable sharing of the benefits of biodiversity. Sustainably-managed forests are viewed as an essential cornerstone of this strategy.

In addition to these Conventions, UNCED produced two key documents that focused specifically on forests:

- *Agenda 21*, a sweeping blueprint for action in all areas of sustainable development, contains specific chapters dealing with forest issues. Among other things, it calls for signatory countries “to develop national forest plans for sustainable forest development” and “to recognize the multiple role of forests, including the maintenance of biodiversity.”
- Finally, the UNCED Forest Principles set out 15 principles for national and

international forest-related practices. Its preamble (item c), for example, states: *Forestry issues and opportunities should be examined in a holistic and balanced manner within the overall context of environment and development, taking into consideration the multiple functions and uses of forests, including traditional uses and the likely economic and social stress when these uses are constrained or restricted, as well as the potential for development that sustained forest management can offer.*

Among the principles set out in the document are the following:

- Forest resources and forest lands should be sustainably managed to meet the social, economic ecological, cultural, and spiritual human needs of the present and future generations (2b) and
- National forest policies should recognize and duly support the identity, culture and rights of indigenous people, their communities and other communities, and other forest dwellers (5a).

In the post-UNCED period, a UN Commission on Sustainable Development (CSD) was established to monitor member countries' compliance with commitments made at Rio and to facilitate further international co-operation. To deal specifically with the forest issues in a global context, the CSD has, in turn, established the Intergovernmental Panel on Forests (IPF). The IPF has been mandated to consider eleven issues organized under five general themes. One of the issues it will address is traditional forest-related knowledge and



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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

practices and the sharing of benefits arising therefrom. The IPF will report back to the CSD in early 1997.

### THE PRINCIPLES AND PROTOCOL OF USING ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE

The integration of Aboriginal ecological knowledge into the process of forest resources management will require a change in the way resource users view the forest (“paradigm shift”), from treating the forest as a place from which to extract commodities for profit to a community-based system. Aboriginal peoples and local communities in a commodity system are viewed only as providing a ready and able workforce for extracting forest products. In the new paradigm, the community is viewed as keepers of the forest resources, with long-term commitments to keep the resources sustainable. Governments, industries and corporations are viewed as partners who can assist communities with the expertise, finances and political influences to help communities in their tasks.

The forest-based ecological knowledge systems of Aboriginal peoples may be helpful in the new way of doing things. This knowledge is dynamic and adapted to a given area or country. People gain knowledge of an area through observation, direct experience and experimentation. The longer a people live in an area, the greater their knowledge. This knowledge is part of a “system” in that information is passed from one person to another, one generation to another and one group to another. This dynamic interplay allows the system to maintain large amounts of information and

to constantly validate this information. Elders in Aboriginal communities become the holders or memory of this knowledge.

Communities which live in a given area have developed a world view which allow their people to function and live in that area. These fundamental principles or themes help the individual, group or family, community and nation understand their place in the natural order of the world and form the basis of the philosophy and culture of the people. Each local area manifests these themes in unique ways adapted to the area. Principles are universal and include:

1. The Earth is our Mother.
2. Co-operation is the only way to survive.
3. Knowledge is powerful only if shared.
4. The spiritual world is not distant from the Earth.
5. Responsibility is the best practice.
6. Everything is connected to everything.

Aboriginal peoples’ willingness to share their knowledge and to deal with the forest industry is evaluated within the framework of these themes, according to the amount of “respect,” “equity” and “empowerment” afforded by the “deal” (Henry Licker’s “zeal to deal”).

Respect is generated through understanding, communications, consensus, mediation and honour. In any exchange, understanding is the clear knowledge of both parties. Each must understand the other’s culture and philosophy. This will require a period of education in which the forest sector learns as much from the communities as the communities learn from the industry. Arrogance is the greatest enemy of respect.

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

Communication must be open and language used in such a way that both parties understand each other.

Equity is needed to fuel the “deal.” Equity in western society is usually defined as money and finances. However, Aboriginal peoples have a broader definition of equity including finances, knowledge, networks, people and social/political power. Aboriginal communities may not have much money, but their knowledge of the area, networks or organizations, their own experts and political power can add much to the “deal.” In this exchange, equity must be transparent and evaluated among the partners. Secrecy and hidden agendas become the biggest impediment to equity.

Empowerment in the “deal” is the way in which each of the parties do the work that needs to be done. The tools of empowerment are application, authorship, credibility, partnership and responsibility. Evaluation of the relationship is an essential step to help both partners see benefits and shortcomings. Empowerment generates more respect, which then generates a greater willingness to work together. In this way, the partners begin to see long-term benefits in dealing with each other.

When the process is not used or does not work well, confrontation and poor resource management planning are inevitable. In the forest sector, the concepts of “caring for the forest” (stewardship) and the forester’s creed are very similar to the Aboriginal view of the forest; however, economic realities sometimes cloud these principles. It is important that communities and forest managers develop a respectful, equitable and

empowering relationship in order to protect forests for seven generations into the future.

### THE CANADIAN CONTEXT

#### PROFILE OF CANADA’S FORESTS

Forests cover over half of Canada’s land mass and account for approximately 10% of the world’s forest cover, and 14% of its conifer volume. The largest area of the forest land base is boreal forest.

Approximately 76% of Canada’s mammal species, 60% of its breeding bird species and two-thirds of its estimated 300,000 species of animals, plants and micro-organisms are forest-dwelling (Bunnell, 1990).

There are approximately 418 million hectares of forest land in Canada, almost 56% of which are considered “commercial forests,” those forests “*capable of growing commercial trees within a reasonable length of time*” (State of Canada’s Forests, 1996). Ninety-four per cent of the forest land in Canada is publicly owned. Provincial governments manage 71% of the forests, federal and territorial governments manage 23%, and 6% is managed by private landowners (State of Canada’s Forests, 1996).

#### FOREST MANAGEMENT IN CANADA: AN OVERVIEW

While the federal government has responsibility for entering into international agreements on matters dealing with forests, including trade, it is the provincial governments that have the primary jurisdiction over the management of Canada’s forests. Each province has its own

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

set of forest legislation, policies and regulations. Two types of arrangements generally exist regarding tenure for timber harvesting:

- Long-term (20-25 years), large area-based (thousands of square kilometres) tenure arrangements, allocated to large companies with substantial planning and management responsibilities to the tenure holder in exchange for secure rights to timber (examples include Tree Farm Licenses in British Columbia, Forest Management Agreements in Alberta and Sustainable Forest Licenses in Ontario. Prince Edward Island is the only province which does not have long-term, area-based tenure arrangements). These large area-based tenures may have a number of Aboriginal tribal groups within their boundaries.
- Shorter-term, volume-based tenure, usually allocated to smaller non-integrated companies where the Crown retains planning and management responsibilities and tenure holders have less secure rights (examples include Saskatchewan's Term Cutting Agreements and Ontario's Forest Resource Licenses) (Elliott and Hackman, 1996).

### ABORIGINAL INVOLVEMENT IN FORESTRY: AN OVERVIEW

#### Aboriginal and Treaty Rights

Aboriginal and treaty rights form the historical, legal and constitutional backdrop to the assertion by Aboriginal peoples of

their right to be involved in the management of forests and other resources across Canada. Treaties were signed with Aboriginal peoples from the 18th to the early 20th centuries, and the Supreme Court of Canada has held, in the *Simon* and *Sioui* cases, that these treaties may establish priority rights to the use of living resources such as fisheries and forests on Crown lands. In the *Simon* case a Miq'maq's right to hunt was recognized and in the *Sioui* case the Hurons' right to practice their religion and customs in their traditional territory, now a provincial park, was preserved (NAFA, 1993).

In areas where treaties were not signed, the courts have affirmed that Aboriginal title to the land is unique. Such legal decisions have led federal and provincial governments to treat Aboriginal claims to resources more seriously. Cases such as *Calder* (1973), *Guerin* (1985), *Sparrow* (1990), *Delgamuukw* (1991) and *Apsassin* (1995) have all recognized that Aboriginal rights cannot be extinguished by regulation and that Aboriginal rights to hunt fish, trap and gather (for subsistence purposes, and in some cases commercially) take precedence over other uses. Furthermore, the courts have indicated that the Crown, which includes both the federal and provincial governments, has a responsibility not to infringe upon Aboriginal rights, and is liable for damages should it fail to do so adequately (Smith, 1995; NAFA, 1993). For example, in the *Sparrow* case, "involving an alleged violation of a food fishing licence by an aboriginal fisherman in British Columbia, the Court held that there was an aboriginal right to fish, that the Crown's intention must be clear and plain if it intends to extinguish an aboriginal right,

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

*and that aboriginal rights cannot be eliminated by regulation” (NAFA, 1993).*

The assertion of Aboriginal and treaty rights has been one of the factors contributing to an expansion of Aboriginal involvement in resource management throughout Canada. Other factors include the implementation of land claims agreements, the resolution of long-standing disputes over Treaty Land Entitlements, an improved technical capacity to manage forests on Reserve lands and, in some places, an increased willingness on the part of provincial governments and industry to recognize the validity of Aboriginal interests and the value of their involvement.

Generally speaking, Canada’s sustainable forest management agenda has given Aboriginal peoples more opportunity to provide input on their values into forest management decision-making. Though only British Columbia has explicitly merged Aboriginal rights with forest policy at the operational level, other provinces have adopted processes of consultation in recognition that forestry operations do impact on those rights. However, in some provinces, Aboriginal peoples fear that the provinces are using forestry legislation and regulations to abrogate existing Aboriginal and treaty rights.

### **Government Initiatives**

Canada has been in the forefront of international efforts to promote sustainable forest management practices and the use of Aboriginal forest-based ecological knowledge.

In its national strategy for the sustainable management of forests, entitled *Sustainable Forests: A Canadian Commitment*, (1992) a commitment was made in Strategic Direction Number Seven to developing an Aboriginal forestry strategy which “*respects the shared beliefs and aspirations of Aboriginal people, and addresses ... the development of models for sustainable forest management.*” The strategy consisted of a five-year plan involving five areas of action and almost one hundred commitments to move in the direction of sustainably-managed forests. It was developed and endorsed by the Canadian Council of Forest Ministers (CCFM), representatives of non-governmental organizations, including the National Aboriginal Forestry Association, and 200 other participants. The strategy also provides an ongoing mechanism for monitoring the implementation of commitments made at UNCED (Report of Canada to the UNCSO, 1995). The strategy is currently undergoing an evaluation to determine how successful it has been in meeting commitments over the past five years.

The Canadian Council of Forest Ministers, a 13-member council made up of provincial, territorial and federal representatives, has also developed national environmental, social and economic criteria and indicators of sustainability. This has involved consultations with a broad range of stakeholders, including the National Aboriginal Forestry Association. The criteria and indicators adopted by the CCFM in 1995 include the recognition by all parties that respect for Aboriginal and treaty rights, plus participation by Aboriginal

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

communities, are essential elements in sustainable forest management.

### Aboriginal Forest-Based Activities

Over 80% of Aboriginal communities are located in the productive forest areas of Canada. Aboriginal peoples' forest-based activities are based on both traditional and contemporary practices. Subsistence activities such as hunting, fishing, trapping and gathering, which in many areas are protected by treaties, still form an important part of the economic base of Aboriginal communities. Although, no precise data exists with respect to Aboriginal businesses in the industrial forest sector, Aboriginal peoples have played an integral role in the industry, as loggers, treeplanters, silvicultural workers. In the broader area of forest-based businesses, Aboriginal peoples are involved in all areas, from eco-tourism to the arts and crafts industries.

According to the Canadian Forest Service, "Indian lands" or "Reserves" total about 1.4 million hectares, less than 1% of Canada's total forest lands. Of the 603 First Nations with a Reserve land base, approximately 240 have forest areas in excess of 1,000 hectares. Timber harvesting on Reserve lands has declined in recent years due to the depletion of merchantable timber. Harvest levels for most Reserves do not usually exceed 2,400 cubic metres annually; this timber is sold by the communities and their contractors to a full range of forest companies. The value of timber coming off Reserve land is unknown, although there have been estimates of \$400-600 million per year in total. Since 1984, First Nations have developed forest management plans for their Reserve forest

lands. These plans were largely timber-oriented with allowable cuts determined on a sustained yield basis; however, many of these plans have been largely ignored with unregulated cutting and poor regeneration as a result. In 1992 the Auditor General in his report to the House of Commons concluded that problems of poor forest management on Reserve lands had arisen because the federal Dept. of Indian Affairs and Northern Development (DIAND) was "*not discharging its statutory responsibility for Indian forest management with professional and due care.*" DIAND was instructed to provide more support and guidance to Aboriginal communities in order to improve forest management practices.

The vast majority of Aboriginal forest companies operate off Reserve in areas under the tenure of forest companies and management by the provinces. Most Aboriginal companies operate under limited, short-term agreements with a forest company or the province; few Aboriginal companies hold long-term, large area-based tenures. Two exceptions in Canada are Tanizul Timber, a forest company of the Tl'azt'en First Nation in British Columbia, which holds a Tree Farm License issued by the Province of B.C., and Mistik Corporation, a joint venture company involving the Meadow Lake Tribal Council, which holds a Forest Management License Agreement in northern Saskatchewan issued by the Province of Saskatchewan (NAFA, 1995).

### Co-management

In response to the growing demand by Aboriginal peoples to be involved in the

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

management of forests on traditional lands outside of Reserve boundaries, many provinces are entering into "co-management" agreements in which Aboriginal communities are sharing limited management responsibilities over limited areas. These agreements take a multitude of forms; as Murray (1995) notes: "*not all jurisdictions have the same understanding of the term; the amount of shared decision-making power and authority varies widely; and co-management may occur between a jurisdiction and a single group of stakeholders, all of whom are aboriginal, as well as between a jurisdiction and many different stakeholders, few of whom are aboriginal.*" Some view "co-management" as a recognition of shared or co-jurisdiction and some simply as "co-operative management" in which the province maintains its jurisdiction over natural resources and the Aboriginal community is simply a "stakeholder" working under the authority of the province.

As well as differing understandings of the meaning of "co-management," results vary widely. Smith (1991) concluded in a survey of such agreements that:

*The agreements surveyed were as varied as the groups participating in them and each answered some of the needs of each of the co-signatories. However, in terms of the general goals of recognition of aboriginal title and more control over what many aboriginal peoples call their 'homeland,' all of these agreements fell short.*

The forest industry is also entering into joint ventures with Aboriginal companies. These

joint ventures vary from full partnerships to limited employment agreements. Some of these ventures are unique in that they take into account Aboriginal traditional land use and knowledge (see Al-Pac case study).

### ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA: AN OVERVIEW

The application of Aboriginal forest-based ecological knowledge in Canada is still at its beginning stage. Most experience to date has been at the level of data collection. Here, land use and occupancy studies, along with specific harvest studies, have been the principle vehicles for collecting data. These studies have documented traditional patterns of travel, wildlife harvesting and other resource uses. Recent studies have made increasing use of computerized Geographic Information Systems (GIS). The data collected has provided not only proof of long-standing use and occupancy, but also base line data for future management purposes. These studies are limited, however, in that they only catalogue "*historical data on harvest areas and amounts, rather than peoples' own conceptual models and observations of ecological processes*" (emphasis in original, Barsh, July 1996). Barsh (January 15, 1996) provides an example:

*An apprentice hunter travels the land with an experienced older hunter, learning by observation (rather than words) what cues to use in forecasting the seasonal and daily movements of wildlife so that they can be intercepted reliably and with a minimum of effort. Many factors, such as time of day,*

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

*temperature, humidity, the distribution of forage plants, and the movements of other species, are experienced directly under varying conditions, until the pupil begins to think, unconsciously, like the prey. At the same time, stories are told which explain in symbolic terms, such as kinship and alliances, the ecological relationships between the prey and other species. Eventually, the young hunter travels alone and begins to notice new connections, either because they were not observed by prior generations, or because they are the result of changes in the ecosystem.*

The actual impact of Aboriginal ecological knowledge on forest management practices is, with a few notable exceptions, almost nil (see case studies). Again, with a few exceptions, governments and industry have yet to demonstrate, on the ground, that they are prepared to let this knowledge be a determining force in the management of forests in Canada.

### **Growing Recognition of Aboriginal Forest-Based Ecological Knowledge**

The collection and application of Aboriginal ecological knowledge in Canada has accelerated in recent years largely because of the assertion of Aboriginal rights over traditional territories and conflicts with Aboriginal communities related to forest land use.

Respect for Aboriginal ecological knowledge is growing, albeit slowly, within mainstream society. In academic circles, Native Studies has become an established field of study at the university level although

few include an Aboriginal ecological component because of limited funding. One of the exceptions, the University of Lethbridge's Department of Native American Studies does offer a senior-level research seminar on "Aboriginal Peoples' Traditional Science and Ecology." In various fields of applied science (forestry, biology, health sciences), specific courses, such as ethnobotany, are beginning to emerge which focus on, or draw upon, Aboriginal ecological knowledge. Graduate work is now being done in a number of disciplines, including forestry and health sciences. Certain universities have faculty who specialize in Aboriginal ecological knowledge and Native Studies.

Within the scientific community, resistance to Aboriginal ecological knowledge is only beginning to break down, despite the fact that, as Barsh (1996) notes, this knowledge is itself highly scientific, being "*empirical, experimental, and systematic.*" This knowledge has been used by western scientists in the past, although not always acknowledged. Recent studies conducted by the Scientific Panel on Clayoquot Sound represent the cutting edge of efforts to demonstrate the "scientific" (in Western terms) validity of Aboriginal ecological knowledge (see Clayoquot case study for further details). Continued work in the academic world and in the field will continue the process of breaking down the ignorance and resistance that continues to prevail.

Aboriginal ecological knowledge has perhaps made the greatest headway in the human services. Elders with expertise in medicinal plants and other healing methods

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

are increasingly being accepted as professionals within established health-care facilities such as hospitals and clinics. So, too, are traditional healers who are sought after as counsellors in treatment centres, healing circles and other community health services.

### CASE STUDIES

Five case studies are presented at the end of this report, including:

- the Algonquins of Barriere Lake (Quebec) and their Trilateral Agreement with the Province of Quebec and the Government of Canada
- the Gitxsan (northwestern British Columbia)
- the Nuu-chah-nulth nations of Clayoquot Sound (Vancouver Island, British Columbia)
- the Cree, Dene and Metis of northeastern Alberta and Alberta-Pacific Forest Industries
- the Cree of Eeyou Astchee (northern Quebec)

All of the case studies illustrate the practice of implementing Aboriginal ecological knowledge, but, as important, in many cases is the process of implementing this knowledge and how important it is to recognize and allow Aboriginal peoples to determine how they will be involved in applying their knowledge.

The Algonquins of Barriere Lake study illustrates the quality of information and partnerships between an Aboriginal tribal group and governments that can develop

when sufficient time, funding, commitment and organizational structure is provided.

The Gitxsan study illustrates the importance of Aboriginal traditional forms of government in managing traditional territories and how the Gitxsan continue to exercise their responsibility for stewardship of their land.

Important experience has been gained on Canada's west coast around the integration of Aboriginal ecological knowledge and western scientific knowledge in the development of forest management standards. The Nuu-Chah-Nulth nations in Clayoquot Sound study illustrates how they shared their knowledge of the forest and resource management with experts from the western scientific tradition.

Considerable experience in the application of Aboriginal ecological knowledge to forest management by a major forestry company has been gained in northeastern Alberta. The Cree, Dene and Metis of northeastern Alberta study outlines an initiative of Alberta-Pacific Forest Industries Ltd. (Al-Pac) and serves to illustrate how Aboriginal communities have worked together with industry to ensure that their knowledge of the forest is taken into account in forest management planning in this region.

The Crees of Eeyou Astchee and their experience with forest-based ecological knowledge illustrates how such knowledge is family based and applied through families subsisting from the land. It also illustrates how sensitive this knowledge is to abuse and the vulnerability Aboriginal people assume by sharing their knowledge. There is also



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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

the issue of what Aboriginal people gain by sharing their knowledge. For the Crees, sharing their ecological knowledge must move beyond the identification and inventory stage toward real application to improve the condition of forest land in Eeyou Astchee. Experience has informed the Crees that their rights to the land and their ecological knowledge cannot be separated.

Also included is an important practical example of the application of Aboriginal ecological knowledge on the use of fire to modify the architecture of Canada's temperate and boreal forests.

### **FUTURE CHALLENGES FOR ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE**

While Canada's international commitments to Aboriginal forest-based ecological knowledge are helping to create a more receptive climate domestically for its application, a wide range of factors still present barriers to its widespread use. The following is a brief outline of some of those factors.

#### **THE POTENTIAL IMPACT OF TRADE AGREEMENTS**

The local recognition and application of Aboriginal knowledge may come in conflict with the application of the modern-day global trade agreements such as the Canada-U.S. Free Trade Agreement (1988), the North American Free Trade Agreement (1993) and the new World Trade Organization (WTO, formerly the General Agreement on Tariffs and Trade (GATT))-

-all of which Canada is a signatory to. These agreements promote a level playing field for corporations which operate in the global marketplace and may limit governments' abilities to exercise previous levels of local control over management of land and resources. In practical terms, this may mean that measures such as local "sourcing" for labour and materials as a condition for the granting of harvesting licences are considered illegal. Such stipulations could be open to challenge under trade laws which require that foreign companies be given "national treatment", meaning that no conditions can be put in place giving a competitive advantage to local interests. On the other hand, it has been pointed out that current debates and developments at the WTO may be used to protect indigenous knowledge. Provisions in the Agreement on Trade Related Property Rights Section (TRIPs) allows governments to exclude indigenous knowledge from patentability and to develop national laws to protect "*the rights of communities over plant varieties that, throughout the centuries, their members have discovered and developed*" (Posey, 1994; Barsh, 1996).

An expansion of Aboriginal peoples' role in forest management and the application of their ecological knowledge to forest management both implies, indeed requires, greater degrees of local involvement by Aboriginal peoples than has previously been the case. The question of whether such an increase in local involvement and protection of this knowledge is compatible with recently-signed trade agreements is a question that warrants further study.

### LOSS OF TRADITIONAL LANDS, LANGUAGES AND LIFESTYLE

While the application of Aboriginal ecological knowledge slowly moves forward in Canada, the knowledge itself is disappearing at an alarming rate. This loss can be attributed to a number of factors.

First, Aboriginal peoples have been increasingly restricted in their access to forest lands once considered their traditional territories. These territories have been settled and developed, often to the exclusion of Aboriginal traditional land uses. As a result, the number of people pursuing a traditional lifestyle is on the decline. This trend is less a matter of choice than of consequence. As industrial activities (oil, gas, mining, forestry) move further into the northern parts of the provinces, those areas where the traditional lifestyle is still being pursued are being transformed. The flooding of lands, the logging of large areas of forest land, the construction of roads allowing access by outside anglers and hunters--all combine to radically alter the landscape, reduce the resource base and change the ecosystem that Aboriginal ecological knowledge has been based on.

Industrial activities tend to drastically reduce the wildlife stocks that traditional economies are based on. As wildlife disappears, so too does the traditional lifestyle; as the lifestyle disappears, so too, with each passing elder, does the knowledge.

Another factor undermining the preservation of Aboriginal knowledge is the fact that youth are no longer spending the same amounts of time on the land as their parents

once did. While it varies by degree, the general trend is for young Aboriginals to spend more time in front of TV learning about the dominant culture than on the land with their parents or grandparents learning about the environment around them. School obligations also prohibit young people from obtaining the long-term experience on the land needed to develop intimate, all-season knowledge of the ecosystem in their traditional territories.

Another barrier to the preservation and transmission of Aboriginal ecological knowledge is the fact that young people are also losing their command of traditional languages. It has been estimated that of the 50 or so Aboriginal languages in Canada, only three (Inuktitut, Ojibway and Cree) have excellent chances of survival realistic long-term hopes of surviving as first languages (Foster, 1982, cited in McMillan). While greater Aboriginal control of education in recent years has led to a resurgence of Aboriginal language instruction within the school systems both on and off Reserves, the resulting skill levels are frequently insufficient to capture the sophisticated information associated with Aboriginal ecological knowledge. Young people may be able to speak, but they cannot always hear.

### JURISDICTIONAL ISSUES

As stated earlier, there is an inherent difficulty with the implementation of international commitments to sustainable forest management due to the fact that the Government of Canada does not have internal jurisdiction over lands and resources, including forests.

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

The question of provincial fulfillment of international agreements remains an ongoing one. Provincial interest in incorporating the views and interests of Aboriginal peoples varies widely, ranging from British Columbia and Ontario which have modified their forest management legislation to make consultation with Aboriginal peoples compulsory, to Saskatchewan and Manitoba which have introduced policy changes to facilitate Aboriginal involvement, to New Brunswick which makes no allowance for Aboriginal forestry interests on Crown lands.

### POINTS OF RESISTANCE

While some incremental progress is being made at a small number of locations across the country, Aboriginal forest-based ecological knowledge is still a long way from having a significant impact on forest practices in Canada. Provinces are content to factor in Aboriginal interests within the confines of existing legislative frameworks, frameworks which do not always recognize the reality of an Aboriginal right to participation in resource management. Co-management agreements, in their various forms, more often than not are struck for reasons of political expediency in response to conflicts. They have not been based on a recognition of an Aboriginal right to participate in resource management on traditional lands outside of Reserve boundaries (federal lands).

Even when provinces make explicit efforts to accommodate Aboriginal interests at either the legislative or policy levels, a record of strong enforcement and adherence to the new rules remains to be established.

While Ontario, for example, has introduced a new Crown Forest Sustainability Act which requires that Aboriginal peoples be “involved” in the implementation of revised licencing agreements, the measure of what constitutes “involvement” remains dangerously vague. With cutbacks to the Ministry of Natural Resources coming into effect, it becomes less and less likely that this positive change to Ontario’s legislation will bring about significant change.

For its part, industry as a whole has shown even less interest in moving forward on its own to accommodate Aboriginal interests and knowledge, especially if it threatens to increase production costs. The experience of the Algonquin of Barriere Lake is instructive in this regard. While a growing number of large companies are sub-contracting parts of their licence areas to Aboriginal enterprises, the intention is more often to share the economic benefits of conventional industrial logging than it is to modify current harvesting practices. The case study of Al-Pac working with Aboriginal communities in northern Alberta to incorporate Aboriginal values and practices in forest management planning may in time provide a good example for industry to follow.

## CONCLUSION

The use of Aboriginal forest-based ecological knowledge will contribute to the conservation of biodiversity and sustainable forest management. The integration of Aboriginal ecological knowledge in forest management planning will also contribute to the spiritual, social and economic survival of Aboriginal peoples. Aboriginal peoples are willing to accept the responsibility of sharing this knowledge if:

- Aboriginal forest-based ecological knowledge is shared in a climate of mutual respect;
- sharing of this knowledge is based on a recognition of and respect for Aboriginal and treaty rights;
- the benefits of this knowledge are shared equally with Aboriginal peoples; and
- the recognition and ownership of this knowledge belongs with Aboriginal peoples and is shared according to their principles.

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## ALGONQUINS OF BARRIERE LAKE

by Russell Diabo

### HISTORICAL ORIGINS AND CULTURAL BACKGROUND

The Algonquins of Barriere Lake are one of ten Algonquin communities in the Ottawa River watershed of Western Quebec and Eastern Ontario. Barriere Lake Algonquins take their name—*Mitchikanibikong Inik*, meaning "*the people of the stone fence or stone fish weir*"—from their former rendezvous place on the Ottawa River. Barriere Lake people speak a distinct local sub-dialect of Algonquin, the easternmost and most divergent dialect of the Ojibwa language of the Algonquian language family. The historic culture and ecology of the Barriere Lake Algonquins identify them as a Northern people, sharing many "boreal" customs with other Northern peoples.

By the second half of the 19th century, the Algonquins of Barriere Lake and their environment began to feel the impact of industrial competition for lands and resources. Logging operations were moving up the Ottawa River toward Temiscamingue by the 1850's. A log flotation dam was built at the outlet of Cabonga Lake in 1871, backing water up to Barriere Lake. O'Sullivan, the surveyor of 1892, reported that the shores of Cabonga Lake had been "virtually cleared of pine" in the 1870's. Industrial forestry has been with the Algonquins ever since.

### CONTEMPORARY HISTORY

Resource industries and businesses, imposed governments and institutions and a rapidly growing population (currently 497 people) have squeezed the Algonquins of Barriere Lake into an ever more limited world of options for adapting to change. By the late 1980's the combined effects of clear-cut logging, fluctuating water levels from the Reservoir operations and the depletion of fish and game by sports users caused the Algonquins of Barriere Lake to organize peaceful protests and blockades against logging. The governments of Canada and Quebec responded by negotiating a Trilateral Agreement which provides for the preparation of an Integrated Resource Management Plan for forests and wildlife.

### THE TRILATERAL AGREEMENT

The Barriere Lake Trilateral Agreement of Western Quebec was designed to address a particular situation: a small Aboriginal community, the Algonquins of Barriere Lake in La Verendrye Wildlife Reserve, pursuing a land-based way of life, were confronted with aggressive resource exploitation in their traditional use area--logging, recreational hunting and fishing and hydroelectric development. This situation is embedded in a political framework of non-recognition of treaty and Aboriginal rights and centralized decision-making with regard to land use planning.

The Barriere Lake Trilateral Agreement was signed on August 22, 1991 by the Algonquins of Barriere Lake, the Government of Quebec and the Government

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

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of Canada. It owes its existence exclusively to the initiative of the Algonquins whose rationale for pursuing it was not an assertion of their Aboriginal rights, but rather the realization of the need for an integrated resource management which would take the needs of their subsistence economy into account. As an integral part of the Agreement, the Algonquins proposed a model of "sustainable development," patterned after concepts of the 1987 Brundtland Report by the World Commission on Environment and Development. The Brundtland Report urges an approach to development where economic growth is "based on policies that sustain and expand the environmental resource base and acknowledges that Aboriginal peoples have a singular role to play in this process."

The Barriere Lake Trilateral Agreement is not a co-management agreement in the sense that it is concerned with the joint management of a particular species or area. Rather it is designed to lay the groundwork for the cooperative development of an integrated resource management plan for a region comprising 1 million hectares, the major portion of the traditional use area of the Algonquins of Barriere Lake. Major tasks include the design and implementation of interim protection measures for the duration of the Agreement, an analysis of existing data and information and compilation of new inventories and information on renewable resource use, potential uses, impacts and interaction of development activities within the perimeter of the Agreement territory, and, preparation of a draft integrated resource management plan for renewable resources and

recommendations for carrying out the draft plan.

For almost two years after the Agreement was signed, the Algonquins and their technical team struggled against overwhelming odds to make the trilateral process work. Most of the many problems stemmed from a basic question: Just what kind of management regime would prevail in the territory during the implementation of the Agreement? While the Province of Quebec acknowledged that the Agreement was "a process for change," it nevertheless insisted on implementing the Agreement within the rigid confines of existing laws and regulations. This created a crisis from the very beginning and resulted in Quebec's non-compliance with the terms of the Agreement, which made protection of the territory's resources impossible and created a hostile climate between Algonquins, industry and government. After futile mediation efforts on the part of Quebec Superior Court Judge Rejean Paul and unilateral suspension of the Agreement by Quebec in February 1993, the trilateral process seemed on the brink of collapse.

Spring 1993, however, featured a surprising turn of events. An effective Algonquin public relations campaign, top level political communication, intensified contacts between the Algonquins and industry and the prospect of further roadblocks led to resumed negotiations. Virtually overnight, a special interim management regime was established for the Agreement territory, creating a setting in which the Barriere Lake Trilateral Agreement could be successfully implemented.



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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

Taking stock after over three years, the Agreement has accomplished much. An effective interim management regime has been implemented allowing the Algonquins protection of their resources and a share in resource-related rights and responsibilities. They are also creating a climate and certain ground rules for the joint management of renewable resources in the future. Since 1994, the Algonquins and Quebec have focused efforts on completing baseline research and preparation of a draft integrated resource management plan for the Agreement territory.

### Technical Aspects

An interdisciplinary team developed a framework for management making explicit the inputs required, the outputs expected and the objectives and goals to be achieved and shows the relationship and integration of all programs and projects. The goals of the three programmes of the Agreement are as follows:

- 1) *Indigenous Knowledge Programme*: to document Algonquin Ecological and Social Knowledge for incorporation into the Integrated Resource Management Plan (IRMP), thereby facilitating the harmonization of the Algonquin and non-Aboriginal land-use regimes;
- 2) *Sustainable Development of Natural Resources*: to obtain and utilize the highest quality forestry and wildlife data in the development of a sustainable adaptive management strategy for the renewable resources of the Agreement territory;

- 3) *Economic/Social Development Programme*: to profile and analyze local and regional socio-economic activities and the legal frameworks which govern them, in order to facilitate the selection of sustainable resource management alternatives.

The *Indigenous Knowledge Programme* includes the following completed projects: Traditional Ecological Knowledge; Social Customs; Algonquin Toponymy; Sensitive Area Mapping; and Measures to Harmonize Forestry and Algonquin Activities.

### Traditional Ecological Knowledge (TEK) Project

The purpose of this project was to complement the social customs, toponymy and harvest studies by documenting the ecological and social knowledge employed by the Algonquins of Barriere Lake in the designation of sensitive areas and their use of natural resources in the Agreement Territory. This research contributes to the development and implementation of an integrated resource management plan under the Trilateral Agreement.

The TEK Project had the following primary objectives as contributions to the IRMP:

- 1) to develop a preliminary inventory of flora, fauna and habitats as identified and used by the Algonquins of Barriere Lake;
- 2) to develop a preliminary Algonquin classification (typology) of flora, fauna and habitats;

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- 3) to document the ecological, social criteria and logical principles used by the Algonquin of Barriere Lake in classifying flora, fauna and habitats, and in the designation and use of sensitive areas (with an emphasis on: culturally significant moose use areas, specialty wood sites, medicinal plants and sugar bushes);
- 4) to document ecological knowledge that will complement the analysis of traditional Algonquin resource management.

In order to satisfy the above primary objectives the TEK study had set secondary objectives to investigate Algonquin perspectives of four essential frames of reference:

- 1) Flora/Fauna: Documentation of the local names for flora and fauna recognized and used by the Algonquins were given special attention in this study;
- 2) Geophysical Features/Soils/Habitats: The study describes, in a preliminary way, the Algonquins' understanding of habitat, soil and geophysical features;
- 3) Temporal: Seasonal and climatic factors affect the timing of a host of significant biological events. The Algonquins' understanding of the seasonal cycle and weather conditions are outlined in a preliminary way in this study;
- 4) Ecological Relationships: An understanding of the ecological relationships of animals and plants with their natural environment is essential for

resource management planning. As hunting is one of the most important activities for the Algonquins of Barriere Lake, this study focused on one of the most significant species in this category, moose.

### TEK Study Methodology

The majority of information was collected by semi-directive interviews with open-ended questions. This open and flexible interview format avoided the rigidity of questionnaires. In this process only the general theme of the discussion was set and, apart from keeping the focus of the discussion on a particular theme, the interviewer's role was to encourage the interviewee to speak freely about those aspects that he or she felt to be most pertinent. If an unexpected opportunity for discussion on a different but pertinent topic presented itself, this lead was pursued.

Interviews were conducted singly and occasionally with small groups of a variety of ages, gender and knowledge. On those occasions where it permitted, a tape recorder was used to capture the interview event. The spontaneity of many interview opportunities, however, meant that some interviews were recorded by notes taken during the interview process.

Most Algonquins of Barriere Lake speak English or French. Still, an interpreter was used in order that complicated and unclear meanings, which often stem from subtle language differences and unfamiliarity, could be painstakingly clarified. As interpreters played a major role in the interview process, they were carefully

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selected. They were called upon, on occasion, to perform such difficult tasks as phonetically breaking down Algonquin words or groups of words to articulate their meaning as the Algonquins understand them.

The TEK study resulted in a preliminary Algonquin classification system and database for geophysical features, soils, forest types and classes of flora and fauna.

### Research Implications for Management

The following are proposed management principles for the IRMP that were assembled from the various *Indigenous Knowledge* studies and discussions in August 1995 involving researchers, advisors and several members of the community.

1. Management decisions should incorporate and promote Algonquin language and culture;
2. Management decisions should be taken in the context of history;
3. Management decisions should ensure equitable sharing of benefits;
4. Management decisions should promote human health;
5. Management decisions should be based on human needs, and needs should be limited by the requirements of conservation and ecosystem health;
6. Management decisions should be based upon the most appropriate scale of information relevant to the context of each important decision;
7. Management decisions should be based in the best immediate information, no matter the source of that information;
8. Since information is dynamic, management decisions and the processes by which decisions are made should also be dynamic;
9. Management decisions should be based on shared information;
10. Management decisions should respect, increase, or at least not limit peoples' options;
11. Management decisions concerning particular resources should be taken in the context of all resources;
12. Management decisions should conserve the cultural geography of the territory;
13. Management decisions should be shared by all parties bearing the consequences of the decision;
14. Management decisions should be timely;
15. Decision-making processes should be supported by appropriate managerial infrastructure and management technologies;
16. Management decisions should be consistent with the contents of Canada's shared constitutional law especially as set out by the Supreme Court of Canada

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

in its landmark *Sparrow* ruling.

The *Indigenous Knowledge Programme* of studies also contributed to a system of social, cultural and economic development indicators which are currently being considered in the drafting of the Integrated Resource Management Plan.

### CONCLUSION

Eventually, the Barriere Lake Trilateral Agreement will be judged in the light of its long-term accomplishments. Until implemented, no one will know whether its goal of integrated resource management and sustainable development will be realized. What can be judged today, however, is its approach to joint resource management and its vision. Not infrequently, co-management regimes are embarked on without funds, database, collective political will or the foresight necessary to make a regime work. The Trilateral Agreement provided the time, funding and organizational infrastructure to create a database, a plan and a "mindset" among all participants to make a future partnership in resource management work.

## THE GITXSAN WORLD VIEW AND FOREST RESOURCE MANAGEMENT

by Beverly Bird

### BACKGROUND

The Gitxsan traditional territory of 11,755 square miles is located in northwestern British Columbia. The land is dominated by dense coniferous forests. Alpine tundra occurs on the numerous mountain peaks with more extensive alpine plateaus in the northern part of the territory. The mid-western area lies in the transition zone between coastal and interior climates. There are 12 main watersheds with two main river systems: the Skeena and Nass Rivers.

The Gitxsan are a river-based, matrilineal culture with their own laws and language. Their population is 5,000 in 42 Wilps (matrilineal families) broken into four Pdek (clans): the Lax Gibuu (Wolf), Lax Seel (Frog), Gisga'ast (Fireweed) and Lax Skiik (Eagle). These clans are organized into biological (Wilp), economic (Wiksiwitx) and political (Wil Naa Tahl) units within "houses," each house with its own territory. The feast is an essential element of their government where all matters—social, political, economic and spiritual—are dealt with. Under this house system of governance, land and family are

inseparable. The Gitxsan claim jurisdiction and ownership of their territories and their resources are the management responsibility of the Wilp and the Wil Naa Tahl.

Fishing and forests provide the basis of the Gitxsan way of life and define who they are as a people. The Gitxsan have extracted forest resources for thousands of years in a sustainable way. They have used natural products derived from shrubs for a variety of

medicinal, food, fabrication and trade purposes. Berry-picking and medicinal plant use continue today as elements of a subsistence and barter economy in the Gitxsan Houses. Prescribed fires were also used to improve shrub growth for berry production and to attract wildlife. Oral traditions continue to describe the location of good berry grounds within House territories and

management techniques (Haeussler, 1987; MacKinnon et al., 1992). The Gitxsan also harvest timber for both subsistence and commercial use. Even though trading and commercial resource sales take place as economic activities, the Gitxsan have not forgotten their traditional teachings and practices. To protect their way of life means protecting the watersheds and the forests.

The Gitxsan have a complex system of allocating and monitoring resource

*When a tree falls by itself it is for a good cause;  
a spirit has struck it, struck it through the  
elderberry shrubs.  
Do not be afraid, if it crashes by your  
side.  
All dead trees must fall.  
Falling they yield an opening for the  
spider-like feet of the sun,  
that the pale flowers underneath may turn  
into ripe fruit.*

- from the 1888 exile lament of  
Kamaimuk ("Kitwancool Jim")

extraction through their family and clan system. Families are responsible for reporting annual resource extraction to a central inventory system. Decisions about how much resource is to be extracted and problems are dealt with during feasts. Monitoring of resource extraction and commercial sales is done by appointed wardens.

### FOREST MANAGEMENT, ABORIGINAL RIGHTS AND THE CONSULTATION REQUIREMENT

In 1991 the Province of British Columbia entered a modern day treaty-making process with the Aboriginal peoples of the province who had never given up rights or title to their lands. Forest lands and resources are important components of these treaties and until the treaties are finalized, the province has negotiated many "interim measures agreements" to cover forest management and development issues.

In 1993 the British Columbia Court of Appeal ruled in the Delgam Uukw case that Aboriginal rights of use and occupation of a "special nature" were unextinguished and exist today. The Court allowed that an infringement may be justified in order to conserve and manage a natural resource, to ensure public safety or to uphold a compelling or substantive objective. The eventual extent of these rights awaits further definition by the courts or the negotiation of treaty or land claim settlements (NAFA, 1993).

Since the Delgam Uukw decision, the Gitx̱san have attempted to set up a mutually acceptable consultation process for all five

Forest Districts on Gitx̱san territory. Previously, the Gitx̱san and the Ministry of Forests had tried to negotiate a variety of agreements but no formal agreement was reached.

In 1995 the Province established the Crown Land Activities and Aboriginal Rights Policy Framework which was to apply to all provincial ministries and officers of the Crown overseeing activities and decisions on Crown land. Shortly after, the provincial Ministry of Forests signed off its Protection of Aboriginal Rights Policy which is consistent with the Crown Land Activities and Aboriginal Rights Policy Framework. The Protection of Aboriginal Rights Policy seeks to "*prevent the unjustifiable infringement of rights by proposed forest management activities while maintaining a timely approval process.*"

In its policy statement, the province recognizes that "*First Nations' view of aboriginal rights often differ from that of the Provincial Government.*" How these differences will be reconciled is of great concern to the Gitx̱san. The limited rights of consultation outlined in the policy, which includes notification, providing information, meetings and possible traditional use studies, does not recognize the Gitx̱san's aspirations for shared decision-making. The Forest Service believes that it is in the treaty process where Gitx̱san aspirations can be explored and developed. The Gitx̱san point out that even though the province has stated that "*it is important that all reasonable efforts have been made to initiate a consultation process with the affected First Nation to obtain their meaningful participation in operational planning and*

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

*approval processes,*” a process still does not exist which requires the Ministry of Forests to act on the results of consultation. Meanwhile the province continues to issue licenses to cut timber. The Gitx̱san have warned the Ministry of Forests that they would block access to timber harvest areas. The Gitx̱san are concerned that their constitutional and Aboriginal rights have been ignored.

### CONTEMPORARY GITX̱SAN FOREST MANAGEMENT

The Gitx̱san are applying their ecological knowledge through their Statistical Watershed Analysis Team (SWAT). The SWAT mandate is to:

- to enable the provincial government to begin to fulfill its obligations to the Gitx̱san under the Delgam Uukw decision on Aboriginal rights;
- to provide a Gitx̱san model of forest management for the Minister of Forests;
- to provide an implementation plan for lands and resources management through the transition period from Pre-Treaty; and
- to provide technical support to the Wilps for capacity building and resource decision-making.

The SWAT is completing a “landscape level analysis” of the watershed which graphically illustrates the composition, structure and function of the landscape; they are inventorying Gitx̱san cultural resources with provincial funding from Forest Renewal British Columbia through the Traditional Use Study Program which is administered by the Ministry of Forests; enhancing the

resolution of existing information in forest cover base maps; and developing tools for the Wilps to participate in provincial, regional and district forest management and operational aspects of planning. They have mapped the ecosystem using their house territorial boundaries; analyzed government and industry development plans; developed foundations for ecologically responsible forest use; conducted baseline inventories and assessed renewable and non-renewable resources within Gitx̱san territory; built technical capacity using computerized mapping systems; and trained and employed Gitx̱san with technical skills based on their traditional ecological knowledge.

### CHALLENGES TO ACHIEVING CO-OPERATIVE MANAGEMENT

The Province uses a forest management system based on boundaries different than the Gitx̱san would use. The Gitx̱san approach is watershed or territory based, using the full spectrum of ecosystem values. The Gitx̱san also insist that the consequences of land use planning must take into account Aboriginal rights and values. The Forest Service bases their boundaries upon such factors as terrain, visual quality and regeneration potential of species. Cutblock boundaries must comply with the Forest Practices Code and any approved Strategic Plans. New agreements must produce a practical working arrangement to meet the Ministry’s planning and logging schedules **and** the Gitx̱san's Aboriginal rights.

## CONCLUSION

The Gitx̄san model is gradually winning acceptance with local and regional lands and resource managers and interest groups. The Gitx̄san believe that it is largely as a result of cross-cultural training conducted by the Gitx̄san and joint economic ventures. Resource management in the traditional territory of the Gitx̄san has the potential to benefit everyone. Under their model of forest management, the Gitx̄san would

maintain local management and control and would have greater authority and responsibility for the resources. The Gitx̄san have demonstrated their trust and have begun building working relationships with local non-Aboriginal people. Through economic ventures in fisheries, the Gitx̄san have been able to contribute to the local economy.

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**FOREST MANAGEMENT AT  
CLAYOQUOT SOUND**

by Doug Brubacher, New Economy  
Development Inc.

**BACKGROUND**

The coastal temperate rainforest of Clayoquot Sound, on the west coast of Vancouver Island in British Columbia, makes up one of the largest intact examples of this biome in the world. Encompassing 2600 square kilometres—of which 900 square kilometres is old-growth forest—the Clayoquot Sound region comprises the ancestral home to the Nuu-Chah-Nulth nations, who comprise 43% of the region's population. These nations have never signed treaties with non-Aboriginal governments and have been involved in ongoing negotiations with the Government of Canada over their land claim. To facilitate these negotiations, the First Nations of the region organized themselves under the umbrella of the Nuu-Chah-Nulth Tribal Council. The region is also inhabited by non-Aboriginal loggers and fishermen. Recently a significant environmental tourism industry has developed in the area around Tofino.

Clear-cut logging activities in the Clayoquot Sound area during the mid-1980s triggered energetic protests and alliances leading in 1989 to the provincial premier suspending normal planning and encouraging greater public and interagency involvement in planning. The early confrontations consisted of grass-roots protests arising within the local population at Tofino. Later momentum was generated when international environmental groups took up the cause to "save Clayoquot Sound."

Most of the forest land in British Columbia is publicly owned, with jurisdiction for the land resting with the provincial government. The government is, therefore, responsible for establishing guidelines and regulations for stewardship of the forest. In the spring of 1993, the Government of British Columbia announced its "Clayoquot Sound Land Use Decision." While logging would be allowed to proceed in the region, logging practices would be tightly regulated and would reflect the highest standards of sustainable forest management. To this end, the government established the Scientific Panel for Sustainable Forest Practices, with a mandate to develop world class standards for sustainable forest management. The panel's mandate was narrowly focused on forest management standards—it did not extend to a consideration of the social, political, spiritual or economic contexts in which these standards would be applied.

Recognizing the ongoing Aboriginal land claims that covered the region, the government noted that the Clayoquot Sound Land Use Decision should not prejudice—and would be subject to—the outcome of the comprehensive treaty negotiations. In order to begin to identify mutually acceptable solutions to land use in the region, the Scientific Panel was designed to include both scientific experts working alongside Nuu-Chah-Nulth elders and experts in Nuu-Chah-Nulth ecological knowledge.

**SCIENTIFIC PANEL**

The Scientific Panel recognized that the standards related to forest management that were currently in place at the time the panel

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was formed “*reflected only limited understanding of the nature and scope of First Nation’s traditional knowledge and interests.*” Existing standards focused primarily on timber production and the identification of the maximum allowable cut for a particular block of forest, rather than on the health of the forest ecosystem. Furthermore, these conventional standards were seen to exclude the Nuu-Chah-Nulth people from participation in resource management in the Clayoquot Sound region in that they did not reflect Nuu-Chah-Nulth forest management values or knowledge.

Considerable efforts were therefore undertaken by the Panel to integrate Nuu-chah-nulth traditional ecological and scientific knowledge related to the sustainable management of forests. Early in its working together the panel recognized that efforts would be required on two fronts. First, the process that the panel would use to make its decisions needed to be acceptable to both Aboriginal and non-Aboriginal panel members. Secondly, the actual technical standards would need to reflect both Aboriginal ecological and scientific knowledge.

The protocol that the panel established for working together was adapted from the Nuu-Chah-Nulth traditional understanding of group process. This was based on respect for each member, for different values and for data originating from both western scientific and from lived experience. All members played a role in identifying the issues and in fully discussing these issues aimed at developing consensus decisions that reflected the collective wisdom of the group.

General principles were established by the Panel to describe “*the manner in which the Panel would view the forests of Clayoquot Sound; how people relate to Clayoquot Sound; and the nature of human knowledge and values, and their application to resource management*” (Scientific Panel, Report #4, 1995). These general principles begin by envisioning what kind of forest is desirable and providing a framework from which standards that will be used to create that forest could be designed and assessed. They include the following:

- The world is interconnected at all levels; attempts to understand it entail analyzing its components and considering the whole system.
- Human activities must respect the land, the sea, and all the life and life systems they support.
- Long-term ecological and economic sustainability are essential to long-term harmony.
- The cultural, spiritual, social, and economic well-being of indigenous peoples is a necessary part of that harmony.
- Restoration of historical degradation is a necessary part of a healthy human relationship with the land.
- Standards must accommodate new information and changing social values.
- Information on the resources of Clayoquot Sound and understanding of its forest ecosystems is incomplete.
- Standards cannot be designed to meet all situations that will be encountered on the ground.
- British Columbia can and should show leadership in the management of forest ecosystems.

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Based upon these general principles, the Scientific Panel presented recommendations for the inclusion of Aboriginal interests and values in forest management (Scientific Panel, Report #3, 1995), and for specific forest management practices (Scientific Panel, Report #4, 1995). Among these are recommendations that set out a new framework for forest ecosystem management. Highlights of these recommended principles include:

- Adopt an ecosystem planning approach to planning: the flow of forest products must be consistent with the objectives for ecosystem sustainability. This will entail abandoning the use of “annual allowable cut” as a consideration in the local forest management planning process. Rather, considerations of the rate and geographical distribution of timber harvesting will replace the use of annual allowable cut in planning harvest levels.
- Use the watershed and groups of watersheds as the basic unit for planning, rather than administrative units.
- Use practices that represent the best application of scientific and traditional knowledge and local experience in the region. This will involve the collection of baseline information about biophysical and cultural forest resources and values, and the use of this information and knowledge to assess ecological responses to change.
- Engage the Nuu-Chah-Nulth and other local people in all phases of planning

and managing the land, freshwater, and marine resources of Clayoquot Sound.

- Conduct monitoring to understand the effects of plans and to guide future adjustments.

Rather than forest management planning being driven by logging companies, the Scientific Panel recognized that: “*Decisions based on ecosystem management principles should be the responsibility of those most closely affected by the decisions made*” (Scientific Panel, Report #5, 1995).

The Scientific Panel recognized that the cultural traditions of the Nuu-Chah-Nulth related to decision-making are relevant for forest management planning:

*The underlying principle for Nuu-Chah-Nulth decision-making is respect for all life and all individuals. Directly following from this principle is the recognition that everyone has a view, or a perspective, and has a right to express this view. Others, because of their respect, are obliged to try to understand the views that are presented, whether or not they agree with them. Usually, this process results in consensus-based decisions. If a consensus is not forthcoming, a majority decision is made, with full disclosure of the outcomes and of the conflicting views. Respect for the majority view allows those in dissent to accept the decision.* (Scientific Panel, Report #5, 1995)

The Scientific Panel also identified the need to gather information based on the Nuu-chah-nulth’s ecological knowledge.

Priorities include the need to map *hahuulhi* areas—areas in which Nuu-Chah-Nulth hereditary chiefs traditionally exercised authority over people, land, and resources—maps of culturally important areas and plant and animal species, and identification of areas requiring archeological investigation.

#### **INTERIM MEASURES AGREEMENT AND THE CENTRAL REGION BOARD**

At the same time that the Scientific Panel was developing its recommendations, an Interim Measures Agreement (IMA) was signed between the Nuu-Chah-Nulth and the Government of British Columbia. This 1994 agreement set out a joint resource management process through the establishment of the Central Region Board. This board is composed of both provincial and Nuu-Chah-Nulth representatives, and is responsible for making recommendations to the provincial Ministry of Forests for approval, rejection or modification of logging licenses. Recently, the IMA has been extended to the year 1999, and provides for continuation of the mandate of the Central Region Board and implementation of the Scientific Panel recommendations.

For any decision to pass the Central Region Board, there must be a majority vote of the Nuu-chah-nulth representatives. Notwithstanding this powerful decision-making role for the local Aboriginal peoples in forest management decision, board members are attempting to implement the same principles of Nuu-Chah-Nulth group process that were adopted by the Scientific Panel. So far the board has managed to find

agreement on problems and has not yet had to resolve disagreements by voting.

#### **OUTCOMES AND CHALLENGES**

The Government of British Columbia accepted all the recommendations of the Scientific Panel on July 6, 1995. Given the considerable shift in forest management practices that these recommendations imply, phase-in is acknowledged to be a lengthy process. The inventory data and Aboriginal ecological knowledge needed to implement the Scientific Panel recommendations have not yet been gathered, nor have the necessary public planning authorities been established. To address these requirements, an Implementation Team has been established within the responsible provincial ministries, headed by the Ministry of Forests. This team works closely with the Central Region Board, holding workshops and informally discussing issues and concepts related to forest management planning in Clayoquot Sound.

Using the Scientific Panel report as its guide, the Implementation Team has taken steps to gather inventory data and to set up Public Planning Teams. Inventory data for 15 different factors—ranging from soils and terrain, to medicinal plant sites and culturally modified trees, to bird and fish habitat—is being collected. Cultural inventory data is collected by Aboriginal crews headed up by professional archaeologists. It is anticipated that in the near future the Nuu-Chah-Nulth communities will gain the expertise needed to administer and lead the collection of inventory data internally.

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

The integration of Nuu-Chah-Nulth ecological knowledge is seen to be more difficult than the mapping of traditional land use sites. While a system has not yet been established to do this, the plan expressed by the Implementation Team is to involve Nuu-Chah-Nulth elders in all aspects of forest inventory (ecological/environmental as well as cultural/spiritual site data). This would ensure that both Aboriginal ecological knowledge and western scientific knowledge would contribute to forest management in Clayoquot Sound.

While considerable progress still needs to be made, a dramatic change has already been achieved in the way forest management is carried out in Clayoquot Sound. In the past, forest management plans were prepared by the forest companies and laid out for the Nuu-Chah-Nulth nations to examine. Today, each First Nation has qualified people involved on the technical side who are able to assess and explain these plans to their communities. The Central Region Board is also active in ensuring that forest management plans meet the approval of the Nuu-Chah-Nulth at a regional level.

Several challenges remain. First, while the Nuu-Chah-Nulth communities stand to benefit from their involvement in carrying out forest inventories, there is a need to prepare community members for the employment opportunities that will become available to qualified and experienced people in the logging industry itself. On the industry side, a dramatic shift in "the way things are done" is being called for by the Scientific Panel reports, the Central Region Board and by the Implementation Team. Both the administrative and the technical

side of forest management and logging activities will need to become much more flexible than the industry has traditionally been used to. Individuals within the industry who are committed to the process may be faced with an up-hill struggle for some time to come.

The environmental lobby continues to have important influence in the region. As with the logging industry, they are also being called on to change their organizational "culture." To date, the environmental groups have been slow to accept the authority of the Central Region Board and Nuu-Chah-Nulth decisions related to the management of the Clayoquot Sound forest.

The activities in Clayoquot Sound of the past few years have successfully begun to create a paradigm shift in forest management from that of "maximum allowable cut" toward that of "health of the forest." It is recognized that such a dramatic shift in perspective will require considerable time to become fully implemented. It is noted though that even the major logging companies have begun to hire people who are sympathetic to the new paradigm—including members of the Nuu-Chah-Nulth nations, for whom this paradigm is not new at all.

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The five reports of the Scientific Panel can be found on the internet at:  
<http://www.interchg.ubc.ca/cacb/panel/clayhome.html>

## ALBERTA-PACIFIC FOREST INDUSTRIES AND ABORIGINAL ECOLOGICAL KNOWLEDGE IN NORTHEASTERN ALBERTA

by Doug Brubacher, New Economy Development Inc.

### BACKGROUND

During the late 1980s, the Province of Alberta decided to open up the northern hardwood forests for logging and paper pulp production. Following a controversial study of the environmental impacts that would result from Al-Pac's proposed single line kraft pulp mill—to be the largest of its kind in the world if built—and forestry operations, the Alberta government negotiated a Forest Management Agreement (FMA) with the company that was signed in late 1991.

The FMA area encompasses some 60,000 sq. km—roughly the size of Great Britain. Apart from the city of Fort McMurray, the population of the region is predominately Aboriginal in composition—it is home to 23,000 Aboriginal people living in fifteen Aboriginal communities, comprised of Cree, Dene and Metis cultural groups. Currently there are 400 trappers who are active within the FMA.

In the face of expanding resource extraction industries such as oil and gas and forestry operations, the Athabasca Native Development Corporation (ANDC) was formed to undertake *“the economic enhancement of the Indian and Metis people and their communities in northeast Alberta by negotiating business and employment*

*opportunities.”* With the signing of the FMA between Al-Pac and the Alberta government, the ANDC became concerned about the negative impacts the company's activities might have on Aboriginal people in the area. The organization also wished to ensure that positive benefits could be derived from the forestry operations through employment opportunities and through Aboriginal business development.

### PARALLEL ABORIGINAL PROCESS

A condition of the FMA agreement signed between Al-Pac and the Government of Alberta was that the company would undertake a public involvement process related to their harvesting operations. Therefore, in 1993, Al-Pac set up a forestry management task force to bring stakeholders having an interest in their forest management plans together to find consensus. Concerned that the protests and demands being expressed by environmental groups would make it difficult for Aboriginal people to express their own unique concerns, the ANDC successfully negotiated a Parallel Aboriginal Process (PAP).

The goal of the PAP was to *“develop a productive process for Aboriginal input into the management of the timber resource in the Alberta-Pacific Forest Management Area of northeastern Alberta.”* The PAP led to an agreement that called for employment and contracting opportunities for Aboriginal communities affected by Al-Pac's forest operations, and that addressed issues related to sustainable forestry practices and compensation for trappers whose traplines were affected by logging



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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

activities. The PAP also became the forum to integrate information obtained through cultural land use studies into Al-Pac's Detailed Forest Management Plans.

When the ANDC dissolved in 1995, the PAP also came to an end as a formal process. Nonetheless, the efforts of the ANDC in working with Al-Pac to initiate cultural land use studies and to integrate the findings of these studies into the company's forest management planning has led to ongoing activities in these areas.

### CULTURAL LAND USE STUDIES

Early on, Al-Pac hired an Aboriginal Affairs Manager to help the company establish good relations with Aboriginal people living in the FMA. The consistent message provided was that Aboriginal people were interested in development and in the employment and business opportunities that could be derived from forestry operations. However, they were also concerned about the impacts that such development might have on the forest. The Aboriginal Affairs Manager stressed that in order to gain the support of Aboriginal people, the company needed to establish relationships built on recognition and respect for the Aboriginal presence and history in the region of the FMA. Furthermore, Aboriginal concerns related to the well-being of the forest also needed to be addressed.

A key outcome of Al-Pac's willingness to work with Aboriginal people has been the initiation of cultural land use studies. These have aimed to identify sites of significant importance to Aboriginal people in the region, so that planning for forestry

operations can take these sites into account. The objective is to ensure that subsequent logging activities are carried out in a manner appropriate—in the eyes of Aboriginal people living in the region—to the presence of these sites. Al-Pac has attempted to take a pro-active approach to identify such areas, recognizing that many problems can be avoided by identifying important sites before it is too late.

The method used to undertake these studies is comprised of three main steps. First, a participatory action research method is used to collect the data. This involves training local people from the communities located in the area where data is being collected. This training is provided by the Arctic Institute of North America (housed at the University of Calgary, Alberta). Local people gather information on the location of trails, cabins, historical sites, family grave sites, sacred places, medicinal and food plants and areas of special significance for animals, fish and birds (salt licks for example). In many cases, data is collected by walking through an area with an older member of the community and recording their recollections.

The second step is to precisely identify the location of these sites using satellite-based Global Positioning System (GPS) equipment. This data is then integrated into detailed maps using Geographical Information Systems (GIS) software. Finally, a cultural land use report, including maps, is prepared and becomes part of the planning resource materials.

To date, two cultural land use studies have been carried out in the eastern part of the

FMA, and one—the largest to date—is currently underway in the western region. During the early studies, significant sites were located by the researchers, however, GPS data was not collected. The resulting maps were not sufficiently precise to meet the needs of forest management planning, and researchers had to go back to obtain the GPS data.

### OUTCOMES AND CHALLENGES

The cultural land use studies have led to positive outcomes at several levels. First, they have provided the data needed by forest management planners to avoid inappropriate forestry operations at sensitive areas such as ancestral grave sites. It is anticipated that this data will be made available to other industries working in the area, such as oil and gas companies.

Secondly, the studies have provided an opportunity to bring knowledge that has formerly been held only by the older generation forward to the next generation, before it is lost. This knowledge is also being transferred from elders to youth in conjunction with formal education. For example, Aboriginal forest technicians who learn the principles of western science are, at the same time, learning to value elements of Aboriginal wisdom and how it applies to their work.

A third level at which these initiatives may have important impacts relates to the integration of Aboriginal values into the science of natural resource management. Information that is generated through the cultural land use studies is being used by the Sustainable Forest Management Network of

Centres of Excellence, a network of universities and scientists doing innovative research in sustainable forest management. It is anticipated that this exchange will contribute to the adoption of a world view within the scientific community based on aspects of Aboriginal wisdom. Finally, the increasing sensitivity toward Aboriginal ways that is developing amongst Al-Pac management and staff is helping Aboriginal communities to fit forestry more comfortably into their economic lives.

An important challenge that is currently being worked out is the issue of intellectual property. Much of the data that is gathered is considered to be sensitive information. Location of salt licks is information that could be abused if it fell into the hands of recreational hunters, for example. While ownership of the information is agreed to lie with the Aboriginal communities where it was generated, details about how it can best be shared with the broad range of industry operating in the region—oil and gas companies are undertaking considerable operations in the region as well as Al-Pac—and how it can be managed are still being discussed.

A final assessment of the success of this initiative will depend on how effectively data derived from the cultural land use studies are actually used during logging operations, and how the wisdom of Aboriginal peoples is integrated into sustainable forest management practices. Al-Pac has not yet developed a monitoring program to ensure that sensitive sites are protected in an appropriate manner. Nonetheless, the first major step—that of identifying these areas—has been taken.

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## THE CREES OF EYYOU ASTCHEE (northern Quebec)

by Geoffrey Quaile and Jack Blacksmith, for  
the Grand Council of the Crees of Northern  
Quebec

### CONTEXT

Despite the rapid pace of change that the Crees of Eeyou Astchee ("people of the land") have had to adapt to in the last 30 years, they still consider themselves hunters (Tanner, 1979; Feit, 1978; Scott, 1983). Many Crees continue to live primarily from what the land provides. For the majority of remaining Crees, the plants and animals of Eeyou Astchee still make up a vital source of food, medicine and spiritual inspiration. This Eeyou way of life is at the heart of Cree tradition and forms the Cree sense of self and community. The Eeyou way of life is of such importance that it makes up part of the school curriculum.

In 1975, the Crees and the Inuit, the Government of Canada and the Province of Quebec signed the *James Bay Northern Quebec Agreement*. In this Agreement, under section 22, there are a number of provisions dedicated to protecting the Eeyou way of life, the Cree communities and the lands on the Cree territory. The Agreement recognizes three categories of lands on which the Cree have differing levels of authority. Category I lands are under exclusive Cree control and on Category II lands the Cree have exclusive hunting, trapping and fishing rights, while the province retains general control plus the right to use the lands for developmental purposes (Notzke, 1994) with a commitment to replace land that may be removed from

Cree use. On Category III lands, the Cree have first rights to hunt, fish and trap. Unfortunately where forestry is concerned, the Agreement and its provisions has failed to protect the land, the Crees and their way of life (Namagoose, 1994).

### CREE ECOLOGICAL KNOWLEDGE AND FAMILY LAND STEWARDSHIP

The Crees have lived in balance with nature for thousands of years. Achieving this balance has been made possible through an elaborate system of resource management that divides wildlife harvesting (including hunting and trapping) lands into family territories (Feit, 1978). Although many families may share a wildlife harvesting territory, each territory is under the stewardship of a single tallyman and his family. It is the tallyman's responsibility to manage the resources of the wildlife harvesting territory by ensuring that it is harvested in a cyclical manner such that no one area of the territory is exhausted of its resources (Berkes, 1988).

In addition to the tallyman's own knowledge, success in managing the wildlife harvesting territories also depends upon the knowledge of other families who use these territories. By communicating directly with those families who are using the land, the tallyman is able to develop a profile of the condition of his territory and act accordingly. For instance, if a family reported that a local spawning site was flooded out, the tallyman would share this knowledge with other families so that the site was left to rest in the following year.

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

Since there are over 1200 families that regularly use the 300 wildlife harvesting territories in Eeyou Astchee, the tallyman's administrative/communicative role is crucial. Given this ratio, the tallyman's accumulated knowledge of the wildlife harvesting territory—including local seasonal climatic patterns, movement of animals, location of plants, ages of trees, drainage patterns and wildlife habitat preferences—is vital to maintaining its optimal yield of resources.

The Crees believe Quebec government wildlife and timber managers could improve the condition of Eeyou Astchee if they approached the land in a way similar to the talleyman. Cree family wildlife harvesting territories divide Eeyou Astchee into small zones more or less along natural drainage patterns. Each tallyman approaches his zone in an integrated manner with the realization that all its resources are connected.

In contrast to the Cree's integrated approach, which is similar to an ecosystem approach, the province's management areas do not follow natural boundaries. Timber and wildlife management zones are separated, managed by different departments and are at a much larger scale than the Cree wildlife harvesting territories. In most cases large-area management zones eliminate the possibility of advance recognition of potential problems at the local level. The separation of management responsibilities between wildlife and timber managers results in different objectives and different, sometimes conflicting practices.

### THE RESOURCE DEVELOPMENT IMPACT PROGRAM: LEARNING FROM PAST EFFORTS

In the mid 1980's Cree tallymen from Mistissini, Waswanipi and Ouje-Bougoumou were asked to participate in the Resource Development Impact Program (RDIP). Funded by the federal government, the program was to be an information-sharing exercise such that Cree tallymen and provincial resource planners could work together in formulating management plans (mainly forestry) for these three areas. Cree tallymen were asked to identify significant areas, including moose wintering areas (moose yards), bear dens, spawning beds, Cree camp locations, beaver lodges and spiritual sites. In turn, the province was supposed to use this information when planning where and when forestry development would take place.

Unfortunately, much of the information gathered by the Cree tallymen was never incorporated into forest management plans. Maps were developed based on the knowledge that the tallymen shared, but forestry planners in the regional offices had great difficulty incorporating this knowledge into their management plans. For instance, many of the moose wintering yards that the tallymen identified were large in area and comprised of valuable timber stands that had been allocated for cutting. Because the moose yards were special habitats used by moose continuously over time, the tallymen recommended that these yards be protected from logging. Despite changes to provincial regulations since then, the tallymen still find them to be inadequate for protecting the moose.

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

The RDIP experience is useful because it illustrates several problems with using Aboriginal ecological knowledge. First is the question of jurisdiction. The federal government instituted this program without involving the province in the initial discussions. While the federal government developed the RDIP with hopes of creating a process by which Aboriginal people could be more involved in resource management, jurisdiction over natural resources rests with provincial authorities. Leaving the province out of the initial discussions led to problems later on.

The RDIP also reveals a wider problem. It is not enough for Aboriginal people to passively provide information for maps and inventories in the hope that this knowledge will be used for mutual benefit. The RDIP offered no concrete process to incorporate this information into planning. As a result very little of the knowledge was used and benefits to the tallymen were cursory at best. In fact, when this knowledge was used, it sometimes harmed the Crees who had no control over who had access to the information.

### **ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE AND A RECOGNITION OF CREE RIGHTS**

Eeyou Astchee knowledge and the family wildlife harvesting territories on which it is based must be incorporated into Quebec's land management to protect the way of life of the Cree of Eeyou Astchee. Under Quebec's existing system of forest land administration, large-scale management units are used in determining the amount of wood that companies can cut. One of these

management units often encompasses more than three Cree wildlife harvesting territories. This has led to situations where companies have logged more than 80% of a wildlife harvesting territory, while still falling within provincially-prescribed cutting levels for that particular management unit. Using provincial projections, the Cree have estimated that the levels of logging in their territory in the next five years will be over one half of the amount logged in the last 20 years. If this rate of timber harvesting continues, the Cree believe that the land and the Cree way of life will be threatened.

At present, Cree wildlife harvesting territories are not indicated on Quebec forestry maps, despite being recognized and provided for under the *James Bay Northern Quebec Agreement (JBNQA)*. Cree ecological knowledge and family wildlife harvesting territories form the basis of the Cree way of life and therefore cannot be separated from their treaty rights recognized in the JBNQA and their human rights under international law. If the Cree wildlife harvesting territories and management systems are to survive, their knowledge and management systems must be respected and taken into account by the province in forest management planning.

Although the Cree understanding of the land is specific to their experience, it is by no means unique. The accumulated knowledge that Aboriginal people possess is too valuable to be shared without firm guarantees of benefit or simply to enhance existing forest management practices. Compiling inventories and maps is the easy part of using ecological knowledge; putting this knowledge into practice to improve the

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state of the forest is the difficult part. The Crees are offering their forest-based ecological knowledge to provincial forest managers with the goal of improving forest management practices.

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## USE OF FIRE IN MODIFYING THE ARCHITECTURE OF CANADA'S TEMPERATE AND BOREAL FORESTS

by Russel Barsh, Associate Professor, Dept. of Native American Studies, University of Lethbridge

An important example of Aboriginal forest-based ecological knowledge was the use of fire by Aboriginal people to modify the architecture of Canada's temperate and boreal forests. Controlled firing was used to open the forest canopy and create islands of grasses and shrubs. This attracted game animals and increased the supply of fruits, roots, berries and medicines for direct human consumption as well. Controlled firing also reduced the severity of natural fires by preventing an accumulation of fuel, while anthropogenic meadows and prairies created functional firebreaks (Brody, 1981; Lewis, 1982; White, 1975; Williams, 1989). In boreal forests, fires are also crucial for recycling nutrients locked in leaf litter and dead timber (O'Neill and DeAngelis, 1980).

Considerable research has been conducted on the Aboriginal firing of Canada's north-central boreal forests (Lewis and Ferguson, 1988). There is also evidence that Acadian forests were routinely fired to clear gardens, create browsing areas for moose (the principal target of Wabanaki hunters) and remove fast-growing conifers from hardwood stands valued for their materials. In the 17th century, large tracts of Acadian forests were dominated by hardwoods such as red maple, sugar maple, birch, ashes and oak, which were needed for housing, canoes, baskets, tools and medicines (Clark, 1968);

spruce and firs are dominant today. This change in forest structure reflects the replacement of Wabanaki fire management by commercial logging and farm clearing.

There is also evidence that Canada's prairies were anthropogenic, created by periodic firing of savannah in order to increase the forage available for bison and other ungulates. What appeared to early explorers such as Captain John Palliser to be a lush natural grassland was, in actuality, the result of centuries of human management (Abrams, 1922; Axelrod, 1985; Collins and Wallace, 1992; Pyne, 1983; Wright and Bailey, 1982).

Firing is an extremely complex forest management technology. The seasonal timing of fires determines their effect on soil chemistry and the species composition of regrowth. Settlers sometimes continued firing, but at the wrong season, with unfortunate ecological results (Brown, Manders and Bands, 1991). The intensity of fires, which a skilled manager controls by attention to the "fire regime" (how often a tract is burned), and the temperature and humidity of the tract when burned, affects which species are consumed, and which are most likely to regenerate (Boerner, 1983; Kilgore and Taylor, 1979).

A consensus is evolving among foresters on the benefits of either tolerating natural fires, or setting smaller controlled fires as a way of building more diversified and fire-resistant forests (McNabb, Gaweda and Froehlich, 1989; Nelson, 1979; Ryan and Reinhardt, 1988). Rediscovery of effective fire technology would be hastened by collaboration with Aboriginal elders who



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recall traditional models for determining where, when and how to set fires—and who may also recall the actual history of firing particular forests.

Fire was only one of many forest management tools widely employed by

Aboriginal peoples in North America. Sacred sites often functioned as refuges for vulnerable species, for instance, while customary land-use laws helped disperse and limit the impacts of human harvesting on particular sites and species (Barsh, 1992; Feit, 1988; Nelson, 1982 and Suttles).

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**UNIVERSAL THANKSGIVING  
ADDRESS**

*THE PEOPLE:* Today we have gathered and we see that the cycles of life continue. We, the People, have been given the duty to live in balance and harmony with each other and all living things. Let us bring our minds together as one as we give greetings and thanks to each other as people.

*MOTHER EARTH:* We are all thankful to our Mother, the Earth, for she gives us all that we need for life. She supports our feet as we walk about upon her. It gives us great joy that she continues to care for us as she has from the beginning of time. To our Mother, we send greetings and thanks.

*THE WATERS:* We give thanks to all the waters of the world for quenching our thirst and providing us with strength. Water is life. We know its powers in many forms: waterfalls, rain, mist, streams, rivers, lakes and oceans. With one mind, we send greetings and thanks to the spirit of the waters of the world.

*THE FISH:* We turn our minds to all the fish life in the water. They were instructed to cleanse and purify the water. They also give themselves as food in order that we may gain their strength to carry out our duties in their cycle of life. We are grateful that we still have clean water so, with one mind, we send our greetings and thanks to the fish life of the world.

*THE PLANTS:* Now we turn towards the vast fields of Plant life. As far as the eye can see, the plants grow, working many wonders. They sustain many life forms.

*With one mind, we send greetings and thanks and look forward to seeing Plant life for many generations to come.*

*THE FOOD PLANTS:* With one mind, we turn to honour and thank the Food Plants we harvest from the many forms of gardens. We are grateful that they still carry their original instructions from our Creator. Since the beginning of time the grains, vegetables, beans and berries have helped the people survive. Many other living things draw strength from them too. We gather all the Food Plants together and, with one mind, we send them greetings and thanks.

*THE MEDICINE HERBS:* Now we turn to the Medicine Herbs of the world. From the beginning of time, they have been instructed to take away our sickness. They are always waiting and ready to heal us. We are grateful that they too still carry out their original instructions as given to them by the Creator. We are also happy to see that there are among us people who have the wisdom to use these plants as the original instructions for our health. With one mind, we send greetings and thanks to the Medicine Herbs and to the Keepers of these.

*THE ANIMALS:* We gather our minds together and send greetings and thanks to all the Animal life in the world. They have many things to teach us as people. We see them near our homes and in the forests. We are happy that they still carry out their original instructions and hope that they will always do so. It is with one mind that we send out our greetings and thanks to the Animals of the world.

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## ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

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*THE TREES: We now turn our thoughts to the trees. The Earth has many families of Trees who have their own instructions and uses. Some provide us shelter and shade, others with fruits, nuts, beauty and other useful things. Many peoples of the world use a tree as a symbol of peace and strength. With one mind, we send greetings and thanks to the Trees of the world.*

*THE BIRDS: We now turn our hearts and minds to the Birds of the world who fly about over our heads. They fill our ears with a beautiful song every morning. They fill our minds with wonder and teach us to appreciate life. The Eagle has been chosen to be their leader. To all the Birds of the world, we send our joyful greetings and thanks.*

*THE FOUR WINDS: We are thankful to the powers we know as the Four Winds. We hear their voices in the moving air as they refresh and purify the air we breathe. They help to bring the changes in the seasons. From the four directions they come, bringing us messages and strength. With one mind, we send greetings and thanks to the Four winds.*

*THE THUNDERERS: We now turn to the west where our Grandfathers, the Thunder Beings live. With lightning and thundering voices, they bring us the water that renews life. We bring our minds together and send greetings and thanks to the Thunderers.*

*THE SUN: We now turn our hearts and minds to our eldest brother, the Sun. Each day he travels the sky from east to west bringing the light of each new day. He is the source of all the fires of life. With one*

*mind, we send greetings and thanks to the Sun.*

*GRANDMOTHER MOON: We put our minds together and send greetings and thanks to our Grandmother, the Moon, who lights the night time sky. She is the leader of women all over the world. She governs the ocean's tides. By her changing face we measure time. It is our Grandmother that watches over the arrival of children here on Earth. It is with one mind that we send greetings and thanks to our Grandmother, the Moon.*

*THE STARS: Let us now turn our hearts and minds to the Stars who spread their beauty across the sky like the finest jewellery. They help the moon light up the night time sky and bring the dew to the gardens and other plants. They fill us with wonder of the vastness our Creator has laid before us. They help us in our travels as they guide us home. With one mind, we send greetings and thanks to the Stars of the world.*

*THE ENLIGHTENED TEACHERS: Let us now turn to our Enlightened Teachers who have come with their help and knowledge throughout the ages. Whenever we are out of harmony and balance, they remind us of our original instructions. They remind us of how we are supposed to live as people. It is because of their teachings that we are able to stand here today and pass on these greetings and thanks. It is with one mind that we send our greetings and thanks to our Enlightened Teachers.*

*THE CREATOR: We now turn our attention to our Creator. We send greetings and thanks for all of the gifts of Creation. Our*

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ABORIGINAL FOREST-BASED ECOLOGICAL KNOWLEDGE IN CANADA

*Creator has provided everything we need to live a good life here on Mother Earth. For all the love that is still around us, we send our greetings and thanks to the Creator.*

*CLOSING WORDS FOR THE OPENING:  
We have now arrived at this place where we end our words of thanksgiving. Of all the things we have named, it was not our intention to leave anything out. If something has been forgotten or if you would like to send out special greetings and thanks, we leave that up to each individual to do so in*

*their own way. We ask today that all decisions made at this council keep in mind the next Seven Generations.*

*CLOSING WORDS FOR THE CLOSING:  
We have now come to the place where we will go our separate ways. We ask that our paths home not be impeded in any way. We ask that our loved ones be there waiting for our return. We ask that no harm come their way during our absence. May you travel in peace, my friends.*





