THE SITUATION AND THE EVOLUTION OF FOREST MANAGEMENT BY
ABORIGINAL PEOPLE IN BRITISH COLUMBIA

by

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B.S. Toyo Eiwa Women's University, 1995

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF

MASTER OF SCIENCE
in
THE FACULTY OF GRADUATE STUDIES
(Resource Management and Environmental Studies)

We accept this thesis as conforming to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA
April 2001

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The University of British Columbia
Vancouver, Canada

Date April 27, 2001
Abstract

This thesis addresses the situation of First Nations people in forestry of British Columbia. Aboriginal people in British Columbia have been involved in the forest industry as laborers since the 1850s when the commercial logging operations began in the province, but have been politically and economically marginalized in the industry. The institutional and economic factors not only have restricted aboriginal people to control over forest resources on their traditional lands but have affected their forest management practices. For aboriginal communities, it is a critical issue that protecting old growth forests, with which they are culturally associated, without giving up economic benefit generated from harvesting these forests.

In order to suggest possible changes and approaches for shaping native forest management in the existing institutional and economic frameworks, I examined the issues of provincial forestry and analyzed how these issues effect and interact with aboriginal people. It is important but difficult for First Nations to obtain forest tenure because their resource management is related to their land rights. However, the issues of aboriginal people in forestry overlap with those of the province. Thus, perspectives and participation of aboriginal people is critical for the government and the industry. Forestry of British Columbia is in transition and has begun to consider the potential contribution of aboriginal people to sustainable forestry. Therefore, aboriginal people have a significant role to play in the future of forestry.
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<tr>
<td>---------</td>
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<td></td>
</tr>
<tr>
<td>AAC</td>
<td>Allowable Annual Cut</td>
<td></td>
</tr>
<tr>
<td>AIP</td>
<td>Agreement-in-Principle</td>
<td></td>
</tr>
<tr>
<td>CES</td>
<td>Cortes Ecoforestry Society</td>
<td></td>
</tr>
<tr>
<td>CFPP</td>
<td>Community Forest Pilot Project</td>
<td></td>
</tr>
<tr>
<td>CFS</td>
<td>Canadian Forest Service</td>
<td></td>
</tr>
<tr>
<td>CSD</td>
<td>United Nations Commission on Sustainable Development</td>
<td></td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
<td></td>
</tr>
<tr>
<td>FL</td>
<td>Forest Licence</td>
<td></td>
</tr>
<tr>
<td>FNFP</td>
<td>First Nations Forestry Program</td>
<td></td>
</tr>
<tr>
<td>FSC</td>
<td>Forest Stewardship Council</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
<td></td>
</tr>
<tr>
<td>IAIP</td>
<td>International Alliance of the Indigenous-Tribal Peoples of the Tropical Forests</td>
<td></td>
</tr>
<tr>
<td>IFABC</td>
<td>Intertribal Forestry Association of British Columbia</td>
<td></td>
</tr>
<tr>
<td>INCN</td>
<td>International Union for the Conservation of Nature and Natural Resources</td>
<td></td>
</tr>
<tr>
<td>IPF</td>
<td>Intergovernmental Panel on Forests</td>
<td></td>
</tr>
<tr>
<td>IRM</td>
<td>Integrated Resource Management</td>
<td></td>
</tr>
<tr>
<td>LUOCO</td>
<td>Land Use Coordination Office</td>
<td></td>
</tr>
<tr>
<td>MOF</td>
<td>British Columbia Ministry of Forests</td>
<td></td>
</tr>
<tr>
<td>NAFA</td>
<td>National Aboriginal Forestry Association</td>
<td></td>
</tr>
<tr>
<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
<td></td>
</tr>
<tr>
<td>NEE</td>
<td>Nisga’a Economic Enterprise Corporation</td>
<td></td>
</tr>
<tr>
<td>NFA</td>
<td>Nisga’a Final Agreement</td>
<td></td>
</tr>
<tr>
<td>PAS</td>
<td>Protected Areas Strategy</td>
<td></td>
</tr>
<tr>
<td>PSYU</td>
<td>Public Sustained Yield Unit</td>
<td></td>
</tr>
<tr>
<td>RISI</td>
<td>Resource Information System, Inc.</td>
<td></td>
</tr>
<tr>
<td>SBFEP</td>
<td>Small Business Forest Enterprise Program</td>
<td></td>
</tr>
<tr>
<td>TEK</td>
<td>Traditional Ecological Knowledge</td>
<td></td>
</tr>
<tr>
<td>TFL</td>
<td>Tree Farm Licence</td>
<td></td>
</tr>
<tr>
<td>TL</td>
<td>Timber Licence</td>
<td></td>
</tr>
<tr>
<td>TSA</td>
<td>Timber Supply Area</td>
<td></td>
</tr>
<tr>
<td>TSL</td>
<td>Timber Sale Licence</td>
<td></td>
</tr>
<tr>
<td>UNCED</td>
<td>United Nations Conference on Environment and Development</td>
<td></td>
</tr>
<tr>
<td>WRI</td>
<td>World Resources Institute</td>
<td></td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
<td></td>
</tr>
</tbody>
</table>
Acknowledgements

I am very grateful to many people who helped to clarify the ideas in this thesis and who encouraged its completion through their comments and support. I wish to thank the members of my thesis committee—Dr. Charles Menzies, Dr. Les Lavkulich, and Dr. Brian Compton for their help. I thank my friends, Ratana Chuenpagdee, Alicia Hayman, and Otoe Yoda for their support throughout the graduate program and more than that. Thanks also to my parents and brothers. Without their understanding and encouragement, I would never complete this thesis.
Introduction

Aboriginal people of British Columbia have been economically and politically marginalized in the forest industry since the first systematic commercial forestry operation began in the province in the 1850s (Cassidy and Dale, 1988: 87, Hayter and Barnes, 1997: 3). This marginalization has resulted from institutional changes in the province and economic globalization. Under such institutional and economic conditions, aboriginal people have little access to forest resources, forest leases, tenure, and employment opportunities. However, aboriginal people have, since time immemorial, lived in and have used forests, thus their perspectives of and participation in provincial forestry should have a significant influence on the environmental, economic, and institutional aspects of forestry.

For aboriginal people, understanding and living within a particular environment in a sustainable manner has been a matter of survival (Turner, 1997: 179). There is a common understanding that aboriginal people have distinctive cultural ties to nature, which is reflected in their traditional forest use. Turner (1997) emphasizes spiritual relationship of aboriginal people of British Columbia with trees, while Walkem (1994) describes the importance of old growth forests for First Nations in the province. Drengson and Tayler (1997) mention sustainability of aboriginal people of Clayoquot Sound on Vancouver Island who have cultural ties to the natural environment.

On the other hand, aboriginal people have difficulty in carrying out their conventional forest practices under the existing forest tenure system. Many native communities consider the forest sector as a means of their economic development and some of them have over-exploited forests on their lands (Menzies and Butler, n.d.; Nathan, 1997: 137). Therefore, involvement of First Nations in the contemporary economy necessary raises questions about the possibility of sustainable forestry.

One of the major factors which affect the evolution of forest management practices by aboriginal people is the forest tenure system. It is important for aboriginal people to obtain forest tenure, since the forest tenure system is the most powerful tool of forest management in British Columbia outside of the settlement of their land claims (Notzke, 1994: 83). However, the tenure system is advantageous only for large-scale forest operators and excludes aboriginal people, small business, and communities from the forest industry. Forest management of First Nations people is significant to the settlement their land claims, and
transfer of the resource management authority may cause institutional and economic complications. Thus, the provincial government is cautious in tenure reform and treaty negotiations with First Nations. The Nisga’a Treaty was ratified in April 2000 as the first modern treaty in the province, and threw light on the long neglected history of First Nations. On the other hand, most of the remaining treaty negotiations between the government and First Nations are ongoing at a slow pace. The protest logging by the band members of the Westbank Nation in 1999, for example, revealed the frustration of First Nations regarding resolving their land claims, as well as their struggles for obtaining forest tenure (Beatty and Pemberton, 1999a).

Logging of old growth forests is another controversy, since it results in environmental and socioeconomic damage and loss of cultural heritage. Deforestation is a global concern and British Columbia has great opportunity and responsibility for maintaining old growth forests in the province. However, the forest industry is one of the most important economic activities in British Columbia and vast areas of these forests have been clearcut. Aboriginal people are confronted with a similar problem because both cultural values of old growth forests and forest-based economic development are important for them. Thus, protecting old growth forests without giving up economic benefit is a critical issue for aboriginal people and the province.

Forestry of British Columbia is in transition. The fundamental idea of provincial forestry has begun to address more comprehensive, integrated resource management. In such a transition, aboriginal people play a significant role in forestry of the province, not only because their issues of forest management overlap with those for the province but because they have potential to sustainable forestry through their cooperation with other parties and through their incorporating indigenous knowledge.

The goal of this thesis is to suggest possible solutions and strategies for shaping forest management by aboriginal people of British Columbia to increase their control over forest resources on their traditional lands within the existing institutional and economic frameworks. In order to achieve this ultimate goal, this thesis has the following objectives:

1. To describe the current forestry issues and the importance of old growth forests as well as the significance of indigenous knowledge of forest ecosystems,
2. To categorize and analyze the institutional and economic factors that affect forest management by aboriginal people,
3. To examine the implications of forest tenure for aboriginal people to manage forests on their traditional lands, and

4. To suggest possible institutional and economic change in forestry of British Columbia and to examine the roles of aboriginal people in the dynamics.

These objectives are met in the following four chapters. Chapter 1 outlines the significant features of forests and forestry and the international recognition of indigenous knowledge. The issues of old growth forests, including clearcut logging, forest protection, and the environmental and cultural values of these forests, are described, as well as the implications of old growth forest depletion for aboriginal people in British Columbia. Chapter 2 focuses on the limited access of aboriginal people to forest resources. The institutional and economic factors, which affect native forest management, are related to each other, but the forest tenure system is mainly argued in this chapter. Incorporating indigenous knowledge and promoting community forestry are addressed as the effective approaches to the encouraging of native forest management within the existing frameworks. In Chapter 3, three case studies of native forest management illustrate the significance of obtaining forest tenure for aboriginal people to manage forests on their traditional lands. This chapter mentions the implications of the Delgamuukw decision of 1997 and the Nisga’a Treaty for other First Nations regarding native forest management. In Chapter 4, I review the issues of forestry of British Columbia to examine how these issues effect and interact with aboriginal people. Based on the argument, I suggest the institutional changes, socioeconomic challenges, and environmental strategies for improving the situation of aboriginal people in provincial forestry. All the data and information sources are updated as to March 2001, but the issue is evolving.
Chapter 1: Forests and Aboriginal People: Key Issues of Forestry

It is well known that forests are important as ecosystems and as home to a variety of floral and faunal species and human beings. For example, 50 to 90 percent of all organisms presently live in tropical rainforests, and many of these can live nowhere but rainforests (People & the Planet, 1996). Forests maintain environmental conditions from local hydrologic cycles to global climate with carbon storage and sequestration. These ecological functions are critical for the existence of life on the Earth. In addition, in many cultures, people live off forests and use forest products as food and medicines. Especially aboriginal people have not only distinctive cultural and spiritual connection with their land but traditional knowledge of forest ecosystems (CFS, 1997: 46).

In order to examine the potential contribution of aboriginal people to forestry, this chapter first outlines the environmental and socioeconomic aspects of forests and forestry in the world, in Canada, and in British Columbia. The following section mentions the international recognition of aboriginal people and their traditional ecological knowledge (TEK) regarding sustainable forestry. The later part of this chapter further focuses on old growth forests, since clearcutting of these forests is a critical issue of forestry in British Columbia.

1.1 The world

During the last few decades, the international community has emphasized the environmental and social aspects of forests, including conservation of biological diversity (biodiversity), conservation of soil and water, provision of employment and recreational opportunities, enhancement of agricultural production systems, and production of natural and cultural heritage (FAO, 1999). In 1995, the area of the world’s forests was estimated to be approximately 3.5 billion hectares, which is about one-fourth of the Earth’s land area (FAO, 1999).1 According to a report by the Food and Agriculture Organization of the United Nations (FAO) (1999), the global forest area declined by 2 percent or 100 million hectares during the 1980s. Between 1990 and 1995, there was a net loss of 56.3 million hectares of forests in the world (FAO, 1999).2 The major causes of change in forest cover are expansion

---

1 The area of the world’s forests includes natural forests and forest plantations (FAO, 1999).
2 This number represents a balance of deforestation of 65.1 million hectares in developing countries and an increase of 8.8 million hectares of forests in developed countries (FAO, 1999).
of subsistence agriculture in Africa and Asia, large economic development programs involving resettlement, agriculture and infrastructure in Latin America and Asia, afforestation and reforestation including natural re-growth on land abandoned by agriculture in developed countries (FAO, 1999).

Deforestation is considered as an urgent issue because it is related to multiple environmental and social problems. In 1987, the World Commission on Environment and Development of the United Nations discussed the environmental impacts of global population growth and industrialization. The Commission presented the well known Brundtland Report, which provided guidelines for global forests. The report called for a new global commitment to “sustainable development” and highlighted the potential contribution of indigenous knowledge and experience for the achievement of sustainable development (Bombay, 1996: 9). Five years later, the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, was held in Rio de Janeiro, Brazil. Sustainable development was emphasized again with discussion related to environmental protection, indigenous knowledge and forest practices at the conference (Bombay, 1996: 9).

In the post-UNCED period, the United Nations Commission on Sustainable Development (CSD) has monitored the member countries’ compliance with commitments made at the UNCED and has facilitated further international cooperation. In April 1995, the CSD established the Intergovernmental Panel on Forests (IPF) to consider forest-related issues, including traditional knowledge, biodiversity, and progress made on forest practices since the 1992 meeting in Rio de Janeiro (Bombay, 1996: 9). In 1997, the World Resources Institute (WRI) reported on the world’s dramatic decline of original forests and the status of the large remaining tracts, referred to as “frontier forests” (Bryant, et al., 1997). In the report, the WRI expressed its concern that many of the last frontier forests are threatened by human activities such as logging and clearing for agriculture. The report advocated preventing further loss of these forests by a balanced approach to forest management, one that protects biodiversity and simultaneously provides environmental functions for people.

1.2 Canada
Canada is symbolized by its abundant natural resources, particularly by vast forests, which account for approximately 10 percent of the Earth’s forest area. These forests cover
417.6 million hectares, which is about half of the Canadian landscape (CFS, 2000b). Thus, forests are a critical feature of Canada’s economy, culture, and history.

In ecological terms, there are eight forest regions in Canada, ranging from temperate rainforest in British Columbia to the slow-growing forests at the Arctic tree line (CFS, 1999b: 5). Each region comprises a unique distribution of fauna and flora, and the array of ecosystems provides diverse habitats for an estimated 140,000 species of plants, animals, and microorganisms, including about 180 tree species across the country (CFS, 1999b: 5).

The federal government owns and is responsible for a very substantial proportion of the forest lands, and most of these forests are within the Yukon and Northwest Territories. Under the Canadian Constitution the provincial governments have primary responsibility for forest management and oversee most of Canada’s forests that are owned by the public. These forests are under provincial or federal jurisdiction with some managed by or in cooperation with the territorial governments. The remaining forests are privately owned (Figure 1.1) (CFS, 2000b).

![Figure 1.1 Forest land ownership in Canada (CFS, 2000b)](image)

About 235 million hectares or over half of the total forest land are considered commercial forests. Currently, 119 million hectares of forests (28.5 percent of the total forested area) are managed primarily for timber and approximately one million hectares, which accounts for 0.4 percent of Canada’s commercial forests, are harvested each year (CFS, 1999b: 4). In 1998, the contribution of the forest industry to Canada’s Gross Domestic Product (GDP) was
$18.2 billion (21.6 percent of the national GDP) and the forest sector provided 877,000 employment (1 job in 16) (CFS, 1999b: 26; Statistics Canada, 2000). Forest-based tourism and recreation are also relatively big business, contributing $11 billion in 1996 (Canada's Forest Network, 2000). Besides timber harvesting, other forest-related activities such as hunting, fishing, trapping, berry and mushroom picking are important for cultural, spiritual and material needs of Canadians.

According to the WRI report by Bryant, Nielsen, and Tangle (1997), Canada is one of the countries that still has a large proportion of original forest cover (Table 1.1). In other words, Canada has great opportunity and responsibility for maintaining large areas of these forests, which represent unique ecological features and the opportunity to conserve biodiversity. In 1995, 7.6 percent of Canada’s forests were protected by either legislation or policy (CFS, 1999b: 5).

Table 1.1 Top twelve countries with most of the world’s remaining frontier forest, 1997 (Bryant, Nielsen, and Tangle, 1997: 21)

<table>
<thead>
<tr>
<th>Global Rank</th>
<th>Country</th>
<th>Total Frontier Forest (000 Km²)</th>
<th>Percent of The World’s Total Frontier Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Russia</td>
<td>3,488</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>Canada</td>
<td>3,429</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Brazil</td>
<td>2,284</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>Peru</td>
<td>540</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Indonesia</td>
<td>530</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Venezuela</td>
<td>391</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Colombia</td>
<td>348</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>United States</td>
<td>307</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>Zaire</td>
<td>292</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>Bolivia</td>
<td>255</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Papua New Guinea</td>
<td>172</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Chile</td>
<td>162</td>
<td>1</td>
</tr>
</tbody>
</table>

1.3 British Columbia

In British Columbia forest land covers approximately 60 million hectares, which is two-thirds or 65 percent of the province’s land area (CFS, 2000b). The province is divided into six forest regions for administrative and management purposes and into fourteen major climatic and ecological subdivision known as biogeoclimatic zones (Figure 1.2, 1.3).
Biogeoclimatic zones represent areas of broadly homogeneous macroclimate and provide a framework for considering the ecological diversity of the province. Each zone has numerous habitats, ranging from dry to wet and from forested to non-forested (MOF, 1995: 27).

In British Columbia the province’s Forest Service manages the provincial forest in cooperation with the agencies responsible for environment, tourism, and other natural resource values (MOF, 1998). Most of the forests are owned by the public under jurisdiction of the provincial Crown (Figure 1.3) (CFS, 2000b).

![Figure 1.3 Forest land ownership in British Columbia (CFS, 2000b)](image)

Forests are also important from an economic stance because the forest industry has supported the economy of the province for long time. In 1994, forestry and related industries accounted for 7.5 percent of province’s GDP, 60 percent of exports, and 15 percent of direct and indirect employment. In the same year, forest product exports contributed more than $14 billion to the province (MOF, 1996).

Large timber companies, which own most of the province’s forest tenure, have dominated the forest industry in British Columbia. By the 1970s, the corporate control of the forests has occurred, and most of the forests on Crown land have been in the hands of powerful multinational corporations, which have access to huge tracts of forest. In 1975, the largest ten companies controlled 86 percent of the allowable annual cut (AAC) on the Coast and 53 percent of the AAC in the Interior (May, 1998: 190). Currently, the dominant corporations control nearly 60 percent of the AAC in the province (Table 1.2) (WRI, 2000: 72). This is controversial because forest management by large timber companies has been mostly timber
volume-based, which is not always the best for long-term sustainability. It is also argued that the large companies’ domination excludes small business, First Nations, and communities from the forest industry. First Nations have claimed vast areas where the corporations operate their forestry enterprises.

Table 1.2 The ten largest timber companies and their allowable annual cut (AAC) in British Columbia, 2000 (WRI, 2000: 72)

<table>
<thead>
<tr>
<th>Company</th>
<th>Total AAC (m3)</th>
<th>Percent Total of B.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canfor Corp.</td>
<td>8,305,438</td>
<td>11.8</td>
</tr>
<tr>
<td>Weyerhaeuser Co.</td>
<td>7,252,374</td>
<td>10.3</td>
</tr>
<tr>
<td>Slocan Forest Products Ltd.</td>
<td>6,209,038</td>
<td>8.8</td>
</tr>
<tr>
<td>West Fraser Timber Co. Ltd.</td>
<td>4,204,134</td>
<td>6.0</td>
</tr>
<tr>
<td>Doman Industries Ltd.</td>
<td>4,080,471</td>
<td>5.8</td>
</tr>
<tr>
<td>International Forest Products Ltd.</td>
<td>3,554,877</td>
<td>5.0</td>
</tr>
<tr>
<td>Skeena Cellulose Inc.</td>
<td>2,337,550</td>
<td>3.3</td>
</tr>
<tr>
<td>Riverside Forest Products Ltd.</td>
<td>2,306,776</td>
<td>3.3</td>
</tr>
<tr>
<td>Weldwood of Canada Ltd. (Chamion</td>
<td>2,111,909</td>
<td>3.0</td>
</tr>
<tr>
<td>TimberWest Forest Corp.</td>
<td>1,492,596</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Total (All Top Ten)</strong></td>
<td><strong>41,855,163</strong></td>
<td><strong>59</strong></td>
</tr>
</tbody>
</table>

Most forest lands in British Columbia are overseen by the provincial government under a timber licensing system, which is also called the tenure system, originating in the mid-1880s (see also Chapter 2). The existing provincial Forest Act has evolved from the original Act of 1912, but the current tenure system is rooted in legislative changes made in the mid 1940s when the province recognized that provincial forests were not inexhaustible. Concerns about the increase of industrial demand for secure timber supplies and about inadequate reforestation led to the appointment of a Royal Commission to study forestry in the province that was headed by Chief Justice Gordon Sloan in 1945. In 1947, the current Forest Act was amended taking the recommendation from the Commission into consideration. The concept of “sustainable yield” was integrated into the Act, which was the beginning of forest management in British Columbia whereby forests are managed on a long-term basis for a

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3 The Sloan Royal Commission recommended tenure arrangements that would support "sustainable yield" in 1945. The recommendations closely parallel Chief Forester Orchard's earlier memo.
Based on the notion that volume-based forest management is not economically and environmentally sustainable, a more comprehensive approach has been taken in the policies and forest programs of the province recently. The approach emphasizes sustainable forest management considering protection of forest ecosystems, non-timber values of forests, long-term stability of forest-based communities, and the negotiation of treaties with First Nations, as well as increasing forest productivity. Especially during the last decade, the Ministry of Forests (MOF) has begun to integrate protection of non-timber values into forest management. Restructuring of the forest tenure system in the *Forest Act* in 1994 is an example, and its associated regulation, the *Forest Practices Code of British Columbia Act*, has promoted forest management for both timber and non-timber values. The Ministry of Forests also introduced guidelines on biodiversity, on wildlife tree management, and on riparian management for reducing environmental damage and maintaining biodiversity, as well as the Protected Areas Strategy. The Forest Renewal Plan, which is a Crown corporation established in 1994, reinvested the wealth generated by public forests and forest-based communities for sustainable forest economy.

British Columbia has been involved in the global debates on environmental sustainability since the UNCED in 1992 by participating as a part of the Canadian delegation. At the UNCED, British Columbia supported international agreements such as the Forest Principles, the Convention of Biological Diversity, the Convention on Climate Change, and Agenda 21.

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4 The royal Commissioner Gordon Sloan defined "sustainable yield" as "a perpetual yield of wood of commercially usable quality from regional areas in yearly or periodic quantities of equal or increasing volume."

5 This is one of the UNCED Agreements officially called Non-Legally Binding Authoritative Statement of Principles for Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests.
Figure 1.2 Distribution of forest regions and Timber Supply Areas (TSAs) in British Columbia (MOF, 1995: 39)

FOREST REGIONS
1 - VANCOUVER
2 - PRINCE RUPERT
3 - KAMLOOPS
4 - PRINCE GEORGE
5 - NELSON
6 - CARIBOO
1.4 Aboriginal People and Forests

Indigenous people are recognized for their strong association with their forests all over the world. Although some cultures have already lost or are losing forests, many indigenous people still have cultural and spiritual ties to nature and use forest resources in a traditional way. This is perceived to be ecologically sustainable. These indigenous people take what forests provide; food and drink, medicines, pesticides, fuels, clothing, and shelter. In addition, their full use of forests includes other social activities such as hunting, fishing, trapping, and berry picking.

For aboriginal people in Canada, forests are an essential part of their heritage and future. Some 80 percent of aboriginal people live in boreal or temperate rainforest areas where they have developed cultural and spiritual connection to their ancestral land including forests (CFS, 1997: 46).

In British Columbia, there are 197 First Nation bands representing approximately 1,650 or 72 percent of Canada’s 2,300 Indian reserves (B.C. Ministry of Aboriginal Affairs, 1996). Many of these reserves are located along the ocean or beside rivers and lakes where the soil is rich and productive. Of the total 343,741 hectares of Indian reserves, approximately 50 percent are classed as productive forest lands, which can produce commercial crops of timber within a reasonable time period, under the provincial forest ministry standards (IFABC, 1991). Forests provide both renewable and non-renewable resources; these include timber, forage, wildlife, fuel, shelter, food, employment, and stable income to First Nations, if properly managed. Thus, for many First Nations in British Columbia, their forests are not only an essential part of their culture but are a major opportunity for social and economic development. However, forests on many Indian reserves are seriously depleted due to lack of adequate forest management over the last several decades. Harvest timber volume from Indian reserves was 371,000 cubic meters in 1988 and dropped to about 313,000 cubic meters in the following year. Yet the number is still far above that compared to the annual average of harvesting for the previous five years of 151,000 cubic meters (IFABC, 1991: Attachment #7, p. 1).

Another dilemma, with which some native communities are confronted, is that their conventional forest use based on traditional knowledge is incompatible with the modern forest practices, on which they are economically dependent. There are some examples of
clearcutting by aboriginal people. Therefore, the question arises, is forest management by First Nations necessary more environmentally sustainable than forest operations by non-natives.

First Nations have their own lifestyles, which reflect their association with forest ecosystems in clan lines, kinship, and rituals. Much of their oral history and sacred stories are related to the forest landscape, especially old growth forests. These stories, that are based on the ideas of using natural resources with respect and are passed down from one generation to another, are known as traditional ecological knowledge (TEK).

Concerns about deforestation and other related environmental degradation has increased interests of international groups in indigenous people and their TEK for the last few decades. The first international awareness of the environmental issues was the United Nations Conference on the Human Environment held in Stockholm in 1972. 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 importance of TEK in dealing with ecological concerns. Two years later, the Commission on Ecology of the IUCN founded a Working Group on Traditional Ecological Knowledge.

Since then, the World Commission on Environment and Development of the United Nations has played an important role in connecting traditional ecological knowledge and sustainable development. In its Brundtland report in 1987, the Commission called for an international commitment to sustainable development referring to Aboriginal communities as “repositories of vast accumulations of traditional knowledge and experience” (CFS, 1997: 48). The Earth Summit in 1992 emphasized the linkage between sustainable development and indigenous rights and indigenous knowledge. At the UNCED, Agenda 21 and other agreements, including the Convention Biological Diversity and the Forest Principles, recognized that indigenous knowledge is useful and critically important to development and cultural survival of indigenous peoples and that use of this knowledge can contribute to the conservation of biodiversity and sustainable forest management (Bombay, 1996: 8).

The potential contribution of indigenous knowledge to the solution of environmental

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6 The forest area near Anahim Lake in the west Chilcotin has been clearcut. The Ulkatcho Indian band and the Alexis Creek Indian band has an AAC in the area (Vancouver Sun, 1999b). The Tsartlip Indian band has built a logging road on Mayne Island, and conservation groups are concerned about clearcutting on the area (Vancouver Sun, 1999c).
problems has also been recognized by the international community, especially since the Earth Summit in 1992. In terms of forest management, traditional knowledge and skills demonstrate the flexibility of resource management by indigenous people as well as their strong association with the natural environment (IAIP, 1995). Forest practices by indigenous people consist of traditional knowledge of tree species and forest ecosystems, and their vast experience in timber harvesting is considered as an example of sustainable use of forest resources (IAIP, 1995). In 1996, the National Aboriginal Forestry Association (NAFA) presented a paper on forest-related Aboriginal knowledge and practices at the Intergovernmental Panel on Forests (IPF), but the number of projects and studies on indigenous knowledge of forestry is minimal. In addition, very little indigenous knowledge, which represents an enormously valuable database of the history of interaction between communities and their changing environment including its floral and faunal resources, has been recorded (Warren, 1992).

1.5 Values of Old Growth Forests

Old growth forests are important for many reasons including timber, biological diversity, recreation, cultural and spiritual association, and aesthetic values. In an ecological sense, old growth forests are critical wildlife habitat and genetic pools because a number of floral and faunal species live and sustain a complex biodiversity in those forests. For example, the Pacific coast temperate forest is a rich habitat for more than 1,000 species of invertebrates, and the canopies support communities of those invertebrates including predator and parasitic insects and many unidentified species (Harding, 1994: 263). Also, many threatened or endangered and vulnerable wildlife species require some aspects of old growth forest habitat, and some of them cannot survive anywhere else (Harding, 1994: 254-255). The economic value is also important because the forest industry and governments are making billions of dollars by harvesting old growth forests, which are valued for their high volume of merchantable wood (Boyd, 1999).

In British Columbia, for First Nations whose traditional territories include old growth forests, these forests are culturally and spiritually important (Corsiglia and Snively, 1997; Walkem, 1994). First Nations on the Northwest Coast of the province, for example, have been associated with red cedar forests, which are considered sacred, and use trees as materials for canoes, longhouses, totem poles, baskets, clothing, foods and medicines as well
as for ceremonies and spiritual healing (Walkem, 1994: 2-3). On the other hand, First
Nations in the Interior have found that their needs may be met by the vast expanses of old
growth of ponderosa pine as a source of foods and medicines and as a place for hunting and

Therefore, the question of how much old growth forests remains in British Columbia is
highly relevant to maintaining biodiversity in forest ecosystems because continued logging
of old growth forests may threaten wildlife species and decrease genetic diversity. It is also
pertinent to retaining First Nations’ traditions and culture, since the transformation and the
depletion of the old growth forests by logging and other intrusions threaten their cultural
heritage.

There is no exact data of the area of old growth forests in British Columbia, but
MacKinnon and Vold’s (1998) inventory shows that old growth forests cover 26.8 percent of
the province (25.3 million hectares or 41.7 percent of the total forest land) (Figure 1.4) and
younger forests cover 36.1 percent of the province (34.1 million hectares or 56.3 percent of
forest land) (p. 311).\(^7\) The Land Use Coordination Office (LUCO) estimates the areas of old
growth as over 26 million hectares (LUCO, 1998a).

In British Columbia, where commercial logging started about 150 years ago, public lands
that have been logged must be reforested by law (Harding, 1994: 265). However,
reforestation has been underway for about 60 years and forests have not been replanted as
rapidly as those that have been harvested (Harding, 1994: 263). Most forests, which are
currently cut, can be considered as old growth by tree age and species composition and those
forests are results of natural regeneration, not of reforestation (Harding, 1994: 252, 265).\(^8\)
Once harvested, old growth forests cannot be replicated even by the most intense silvicultural
practices (Harding, 1994: 263).

The focal point of loss of old growth forests is the method of logging: clearcutting that
removes an entire stand or crop of trees in a single harvest, creating a fully exposed area with
a distinct microclimate is the most common method (MOF, 1995). Clearcutting and

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\(^7\) MacKinnon and Vold (1998) used the following definitions of old growth forests for
their inventory: for coastal British Columbia, 251 + years for all forest types; for
interior British Columbia, 141 + years for most forest types, and 121 + years for stands
dominated by lodge-pole pine or deciduous species (p. 309).
\(^8\) The forest inventory by MacKinnon and Vold’s (1998) estimates that old growth
forests account for about 40 percent of the total forest land of the province. This gap is
caused by the lack of simple classification or common definition of old growth forests.
reforestation have converted large areas of natural old growth forests to managed forests, which may be productive for timber and still sound for many wildlife species. However, managed forests have quite different ecosystems from naturally disturbed forests. Even if they mimic natural forests by forest management, some aspects of old growth forest ecosystems may not survive (Harding, 1994: 256). Clearcutting disrupts forest ecosystems more than partial logging (Harding, 1994: 257).

Protection of old growth forests in British Columbia has been growing for the last few decades as the public concern about biological diversity and about other ecological values of old growth forests has increased. However, both the number and the size of remaining old growth stands are decreasing. Figure 1.5 shows that most of harvested areas in British Columbia have been clearcut during the last couple of decades regardless of the total harvested volume. In 1995, 92 percent of the total cutblocks and 97 percent of the cutblocks in the coastal region in British Columbia was harvested by clearcutting (Greenpeace, 1997a).

![Figure 1.5 Area logged annually in British Columbia, 1975-1997 (Canadian Council of Forest Ministers, 2000)](image)

There is a large controversy about clearcutting. The environmental movement advocates maintaining old growth forests, while some forest scientists, ecologists, and forest industry representatives believe that clearcutting is silviculturally the best method for Canada’s forests. For example, the Canadian Institute of Forestry (1994) states that clearcutting is the safest harvesting method for those who work in the forest and has proven to be the most economical way of harvesting in many of Canada’s forests (p. 56). On the other hand, clearcutting causes problems by affecting streamflow and aquatic habitats, disturbing forest
succession and changing species composition, damaging culturally significant areas and culturally modified trees, and reducing recreational and aesthetic values (Kimmins, 1994). These problems interact with one another. For instance, the loss of biodiversity and habitat fragmentation from clearcutting of old growth forests can have economic, social, and environmental repercussions. It is also important to recognize that most First Nations have expressed their concern or dislike for clearcutting although they do not oppose it when it comes to logging for themselves (IFABC, 1991: 26). Thus, there is continued controversy about the volume and logging method of old growth forests as a critical issue not only for environmental conservation but also for economic activities and cultural identity.
Figure 1.4 Old growth forests in British Columbia (MacKinnon and Vold, 1998: 311)
1.6 Forest Protection

Protection of forests is important for maintaining forest ecosystems and cultural heritage. In British Columbia, the provincial government introduced the Protected Areas Strategy to make forestry more sustainable and committed to protect 12 percent of the landmass of the province in 1991.\(^9\) The Protected Areas Strategy has two goals; one is to protect viable, representative examples of natural diversity in the province and the other is to protect the special natural, cultural heritage and recreational features of the province (LUCO, 1998a). The program has made significant progress and the total protected area keeps increasing (Table 1.3, Figure 1.6). However, only a little over 9 percent of the forest land was protected in 1996 (MOF, 1996). According to Greenpeace (1997a), nearly 69 percent of the protected areas were non-forested, alpine forest, and rock and ice. This indicates that increasing the amount of protected areas is not necessarily protecting forest land or old growth forests. This is in spite of the recognition that protecting forest ecosystems is important because many wildlife species inhabit in forest land, particularly in old growth forests, and some of them are endangered or threatened.

Table 1.3 Total protected area in British Columbia (Gunton, 1997: 67; LUCO, 1999)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Protected Area (ha.)</th>
<th>Provincial Land Base (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>4,569,401</td>
<td>5.0</td>
</tr>
<tr>
<td>1980</td>
<td>4,592,256</td>
<td>5.0</td>
</tr>
<tr>
<td>1985</td>
<td>4,750,432</td>
<td>5.0</td>
</tr>
<tr>
<td>1990</td>
<td>6,139,070</td>
<td>6.5</td>
</tr>
<tr>
<td>1995</td>
<td>8,669,500</td>
<td>9.2</td>
</tr>
<tr>
<td>1996</td>
<td>8,682,634</td>
<td>9.2</td>
</tr>
<tr>
<td>1997</td>
<td>8,978,022</td>
<td>9.5</td>
</tr>
<tr>
<td>1998</td>
<td>10,078,712</td>
<td>10.6</td>
</tr>
<tr>
<td>1999</td>
<td>10,767,615</td>
<td>11.4</td>
</tr>
</tbody>
</table>

\(^9\) The Protected Areas Strategy was originally intended to protect 12 percent of representative ecosystems, for example, 12 percent of each forest type. However, the provincial government has changed the original goal into protecting 12 percent of the entire land base.
Figure 1.6 Growth of protected areas in British Columbia (LUCO, 2000)
Old growth forests are an important part of the Protected Areas Strategy. Total old growth forests in protected areas is at least 3.2 million hectares, which accounts for 32 percent of all protected areas and about 12 percent of over 26 million hectares of old growth forests in British Columbia (LUCO, 1998a). Considering the original intention of the program to protect 12 percent of representative ecosystems, it has achieved the task for the areas of old growth forests. However, there remains a question, is the 12 percent of old growth forests reasonable enough to be protected? In other words, what will happen to the remaining unprotected old growth forests? In fact, commercial forest lands include 18.4 million hectares of old growth forests and the rest of the unprotected old growth forests are in areas open to industrial activities such as harvesting and mining (Marchak, Aycock, and Herbert, 1999: 38). This implies that non-timber values of these forests are neglected.

Chapter Conclusion

Both Canada and British Columbia have an opportunity to contribute to the approach and process that aims to apply indigenous knowledge to the management of forests because of abundant forest resources and aboriginal people who are culturally associated with old growth forests. Accordingly, protection of these forests is environmentally, socially, and culturally important and aboriginal people in British Columbia will have great potential contribution to forestry at international and local levels.

However, there is a fact that traditional forest use by aboriginal people in the province has evolved and their forest management is questionable regarding sustainability because of clearcut logging by themselves. The economic conditions have driven aboriginal people to exploit forests on their lands and consequently to lose their cultural and spiritual ties to forests. Therefore, it is important for aboriginal people to make their stance of forest management less controversial by shaping and directing their approach to forestry.

Estimation of old growth is based on MacKinnon and Vold's data assuming that the proportion of old growth forests is equally distributed between commercial and non-commercial forests (Marchak, Aycock, and Herbert, 1999: 38).
Chapter 2: Native Forest Management in British Columbia

The first Europeans came to British Columbia in the late 1700s for the fur trade, then settlements brought agriculture, fish processing and logging in the 1800s. The first systematic commercial forestry operation began in the 1850s in the Northwest coast of the province. Since then, aboriginal people throughout the province have been involved in the forest industry as laborers, independent contractors, and small, family business owners, but have been excluded in the larger provincial economic and political realms.

During the 1920s, the forest industry became tougher for small operators, such as aboriginal people, as a result of changes in technology, marketing, and Crown land leasing (Cassidy and Dale, 1988: 87). The Depression of the 1930s hastened the demise of small native firms (Cassidy and Dale, 1988: 88). When the industry expanded rapidly in the 1950s and 1960s, the chair of the West Coast District Council of Indian Chiefs stated that they felt more isolated from resources to which they have claim, than at any time in the past (Willems-Braun, 1997: 99). Forest operations by non-natives on traditional territories of First Nations did not provide sufficient employment opportunity for aboriginal people.

Aboriginal people have also been struggling to overcome radical shifts in their way of life (Nathan, 1993: 137). Some of them have been forced to relocate to other reserves with a concomitant disruption of family and social ties and most have been faced with economic problems including unacceptably high unemployment rates (Nathan, 1993: 137). Until recently, First Nations whose communities and traditional territories were part of, or were surrounded by licensed harvesting areas, have not been consulted about forest operations or their needs. Thus, vast forests, including old growth forests, have been clearcut without reference to long-term sustainability of either forest ecosystems or native communities (NAFA, 1997b).

Despite the marginalized situation, aboriginal people have knowledge of forest practices and many native communities think of the forest sector as a means to economic self-sufficiency (Nathan, 1993: 137). However, there are institutional and economic barriers that affect and exclude aboriginal people from the forest sector. This chapter examines these barriers for further understanding the issues of native forest management in British Columbia. Two possible ways, which increase First Nations’ control over forests in their traditional lands under the current institutional and economic frameworks, are described in the last section of this chapter.
2.1 Current Issues of Native Forest Management

The relationship between First Nations and the governments or the forest industry is undergoing a process of fundamental change. For example, the federal government is promoting involvement of First Nations in forestry, based on a notion that respecting aboriginal rights is important for international initiatives (CFS, 1997: 49). The B.C. government addressed aboriginal rights in the provincial forest policy and instituted the Protection of Aboriginal Rights Policy, which requires consultation with aboriginal communities affected by resource development on Crown lands (CFS, 1997: 86).

In 1991, the B.C. government made a commitment to negotiate modern treaties with First Nations and the federal government for solving issues of land and resource management and ownership. This is a new relationship, which is based on partnership and mutual respect between the government and First Nations in the province. The treaty negotiation is open to all First Nations in British Columbia and addresses social, economic, and environmental concerns. Currently, fifty-one First Nations in the province (representing about 70 percent of the aboriginal population) are negotiating treaty terms\textsuperscript{11} with the government. Three of them are in the very early stages; ten are negotiating framework agreements; thirty-seven are negotiating agreement-in-principle (AIP); the Sechelt Nation is negotiating a final agreement; and the Nisga’a Nation has ratified a treaty (CFS, 1999b: 91).

These interim agreements have encouraged native communities and First Nations have started owning forest companies. However, First Nations are not satisfied with forest management practices in their traditional territories where outside operators carry out most logging operations. Traditional territories of First Nations are often located outside Indian reserves that are beyond their control, so that only a small portion of economic and social returns from logging on these lands goes to First Nations.

In 1991, the Intertribal Forestry Association of British Columbia (IFABC) recommended

\textsuperscript{11} As recommended by the British Columbia Claims Task Force, a six-stage process is used for negotiating treaties:

1. The Statement of Intent
2. Preparation for Negotiations
3. Negotiation of a Framework Agreement
4. Negotiation of an Agreement in Principle
5. Negotiation to Finalize a Treaty
6. Implementation of the Treaty

The process is voluntary and is open to all First Nations in British Columbia (B.C. Ministry of Aboriginal Affairs, 1996).
that the provincial government establish a First Nations Forestry Council for increasing First Nations' participation in the forest sector. The Council completed its work in 1995 and submitted a strategic plan to the province emphasizing involvement of First Nations in all aspects of the forest sector (NAFA, 1997b). The provincial government has also involved aboriginal organizations in reviewing business opportunities for aboriginal people and the policy framework in the forest industry under the National Forestry Strategy commitment. Currently, British Columbia has a specific legislative provision for access to timber on Crown land by First Nations.

The forest industry is also in transition, and First Nations have started working with non-native companies through joint ventures ranging from limited employment, to participation in forest management decision making, to full partnership. In 1995, there were more than fourteen active joint ventures; these were forest harvesting, silviculture contracting, sawmilling and manufacturing (NAFA, 1997b). Some of these joint ventures take into account First Nations' traditional ecological knowledge. A notable case is the final report of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, which emphasized the importance of First Nations' knowledge and interests about forest standards and practices for the area (NAFA, 1997b).

In addition to the relationship with the government and the industry, there have been significant positive developments and events during the last decade, such as the establishment of the First Nations Forestry Council, the development of strategic plans and studies to increase First Nations' participation in the forest sector, and involvement of aboriginal coordinators and students in universities (NAFA, 1997b). In 1996, the First Nations Forestry Program (FNFP) started to improve the economic conditions of aboriginal communities by assisting First Nations with building their capacity to manage forest resources on reserves. The program also promoted the establishment of a partnership of First Nations with both governmental and non-governmental organizations and native participation in off-reserve forestry activities.

FNFP plays an important role in promoting First Nations' business development by assisting First Nations in many stages, including silvicultural activities, business planning, business management and related workshops, seminars, and training initiatives. In the 1998-99 fiscal year, 56 projects out of 96 submitted proposals received $871,000 total funding from FNFP to implement forestry-related projects such as training program and forest
inventories (CFS, 1999a). Business development is one of the key elements of the projects approved under the FNFP, and many of these aboriginal groups that received funding have completed the initial phases of their projects and re-applying for further funding (CFS, 1999a).

For example, running a tree seedling nursery is an important business for First Nations. The Nuu-Chah-Nulth Tribal Council, which involves fourteen native bands on Vancouver Island, has concentrated on the establishment of a tree seedling nursery with seedlings that are used to reforest the bands’ own forests and sold to local forest products companies (IFABC, 1991: Attachment #7, p. 12). The five Nuu-Chah-Nulth Central Region Bands own Ma-Mook Development Corporation aiming at comprehensive community development and forestry training programs, which may increase jobs for the band members. FNFP is funding the corporation to undertake work on non-timber products from the Clayoquot Sound area (Pacific Forest Centre, 2000).

However, there are still difficulties in getting native owned business started. First Nations are usually faced with a shortage of financial support not only capital but also loans because reserve lands are held in trust by the Crown and cannot be used as collateral (IFABC, 1991). The lack of business skills and assistance programs for developing primary industry of First Nations is also a concern, as well as the shortage of native-owned silvicultural business and facilities.

2.2 Institutional and Economic Barriers

2.2.1 Timber and Non-Timber Resources

Although about half of Indian reserves are considered as productive forest lands, First Nations do not have access to larger areas for forest management, since most cutblocks of the accessible timber are already under licences to non-native corporations. It is unlikely that the ten biggest forest companies (listed in Table 1.2), holding about 60 percent of the AAC in the province, will be willing to give up licences.

In 1991, the total AAC for Forest Licences owned by First Nations was 128,374 cubic metres (IFABC, 1991: Attachment #7, p. 8). The harvest volume controlled by First Nations increased to 852,328 cubic metres in 1999 as a result of the Community Forest Pilot Project (CFPP) (WRI, 2000: 74). The increased number indicates that First Nations have more

12 This amount was calculated by averaging the amount per year from each First
access to timber resources, yet the availability of greater forest management inputs into the larger cutblocks under the current tenure system.

The Indian Act also restricts the access by First Nations to forest resources in their traditional territories, since ultimate control of Indian reserves is vested in the Ministry of Aboriginal Affairs. Another provision of the Indian Act requires First Nations to combine forest in their reserves with the licensed provincial forests in order to implement forest management.\(^\text{13}\) Therefore, timber resources, to which First Nations have access both on- and off-reserves, are limited.

The access to non-timber resources for First Nations is influenced by silvicultural practices such as clearcutting and monoculture reforestation, whereas the access to timber resources is limited by institutional factors. As mentioned earlier, clearcutting damages forest ecosystems and landscapes, and it results in degradation of wildlife habitat and loss of medicinal plants and berry picking sites. The increase of sediment of rivers, in which aboriginal people traditionally catch salmons, affects fish habitats and salmon stock and spawns.

Demands for recreational hunting and fishing opportunities by non-natives are also related to the availability of those resources for aboriginal people (NAFA, 1993: 15). In addition, mechanization of harvesting method for berries and plants replaces traditional manual practices and accelerates the loss of heritage sites related to traditional ecological knowledge. Therefore, these silvicultural changes severely affect the access to non-timber resources for aboriginal people both in environmental and social aspects.

### 2.2.2 Education and Training

Although the role of aboriginal people in forest management is important, many of their communities do not have enough entrepreneurial skills and technical knowledge to establish their own forest sector and wood processing facilities (IFABC, 1991). Very few aboriginal people have formal training in forestry, and this is one reason that excludes First Nations from direct control over forest resources. The weakness of business and the shortage of professionals give the provincial government a reason to be reluctant to issue timber licences

\(^{13}\) The lands originally designated as “forest reserves” for timber harvesting under the 1912 Forest Act.
to aboriginal people.

In 1987, when the Intertribal Forestry Association of B.C. (IFABC) reported aboriginal concerns about forestry issues, only three aboriginal individuals had university degrees in forestry although 1,200 natives were employed in the forest sector (Nathan, 1993: 139). Currently, over forty Aboriginal Forestry Advisors are working with the Ministry of Forests to implement the Provincial Protection of Aboriginal Rights Policy, but only a few of the almost 3,000 members of the Association of B.C. Professional Foresters are natives (Association of B.C. Professional Foresters, 1999; NAFA, 1997b).

The shortage of educational programs for aboriginal people in forestry is another barrier. The University of British Columbia has First Nations forestry programs in the Faculty of Forestry and expands the participation of aboriginal students in the programs. The University of Northern B.C. has an Aboriginal advisory committee and some aboriginal students are enrolled in the Environmental and Resource Management program. The Nicola Valley Institute of Technology also has the natural resource technology program and a few graduates are working in their communities and in the forest industry (NAFA, 1997b). Many aboriginal students, however, find it difficult to adjust to the environment of colleges and universities in the urban areas and the two existing native-run technical forestry schools are not sufficient to meet the needs. Some training courses fail to attract students to these integrated training programs required for a multifaceted career in the forest sector (IFABC, 1991: 32; NAFA, 1997b). Nonetheless, there will be more demand for aboriginal professionals and technicians in forestry because their will play an important role in both integrated forest management and forest resource stewardship by incorporating traditional knowledge. For example, management of large commercial forested areas will require dozens of professional foresters and many more forest technicians.

For the lack of formal education and training in forestry, aboriginal people need more years to take a significant number of management positions in the forest industry. In the interim, professional consultants, management contracts, or joint ventures can help aboriginal people to be involved in forest management and to develop local expertise to become as effective as possible. Yet, the immediate action to increase aboriginal professional foresters and technicians is necessary because they may be more acquainted with the local forest ecosystems and their knowledge is important to forestry (Michell-Banks, 1998: 123). Formal education and training programs help aboriginal people with their forest
management and their participation in the natural resource management in general.

2.2.3 Employment Opportunity

There are few statistics and records of the current employment of aboriginal people in the forest industry, but in general, aboriginal people have little employment opportunity in the forest sector both on- and off-reserves (IFABC, 1991: Attachment #4, p.4). In the early stages of the industry, aboriginal people played a much more significant role, although they were hired as loggers with (or without) low wages. According to Knight (1996), aboriginal loggers have been employed in the sawmill on Vancouver Island since the 1860s, and by the 1890s, logging became an important source of income for the coastal communities (p. 236). By the early 1910s, native men from more than fifty aboriginal bands worked in logging and sawmill operation almost throughout the province (Knight, 1996: 238). The role of aboriginal people as loggers diminished due to mechanization of forestry during the 1960s and 1970s. However, their participation in forest management began to increase in the 1980s as a result of the job creation and training programs initialled by the government and the initiatives of First Nations themselves (IFABC, 1991: Attachment #7, p. 5).

In 1991, about 10,100 aboriginal people in Canada, which is 2.2 percent of the aboriginal workforce, were employed. This number represents 9.5 percent of the total employment in the forest sector,\(^\text{14}\) and in the same year, there were about 1,200 aboriginal people employed full or part-time in the forest industry in British Columbia (IFABC, 1991: Attachment #7, p. 5). In 1994, an industry association estimated that 4 to 5 percent of the forest industry employment was aboriginal people, and the majority was engaged in harvesting, silviculture, and reforestation (The Institute on Governance, 1998). These include employment in rehabilitating and practicing of integrated resource management caused by the past mismanagement of forest resources in aboriginal traditional territories (IFABC, 1991: Attachment #7, p. 5).

In general, non-native forest corporations have no commitment to employ aboriginal people, but some major companies have been positive and have become important employers of aboriginal people. For example, Western Forest Products Ltd., whose tenures are within the traditional territories of First Nations, has initiated programs to involve First Nations in

\(^{14}\) The forestry and logging industry does not include the pulp and paper industry or forestry-related manufacturing operations.
development planning, training, economic opportunity, and job creation (Western Forest Products Limited, 1999). In April 1997, MacMillan Bloedel (now Weyerhaeuser Canada Ltd.) and five aboriginal bands agreed to form a joint venture forest company that would be owned 51 percent by First Nations and the rest by MacMillan Bloedel to operate the northern part of Clayoquot Sound, which includes MacMillan Bloedel’s TFL. The agreement addresses aspirations of First Nations by increasing certainty of an economic future in the area (CFS, 1997: 9-10). Weyerhaeuser Canada thinks First Nations are important stakeholders in its forest management. The company is trying to build mutually beneficial relationships with First Nations and proposing initiatives that may include employment, business alliances, education, and skill development (Weyerhaeuser Company, 2000).

On the other hand, there are large firms with no special employment programs directed at aboriginal people. These firms do not track the number of native employees because they hire the best person for the job, regardless of background. In such a situation, it is hard for aboriginal people to find a job because most aboriginal aspirants lack the educational background to be successful candidates (The Institute on Governance, 1998). This is true of even native owned forest companies. In the early 1990s, about 25 to 30 percent of aboriginal people employed in the forest sector were working for aboriginal controlled companies, but the lack of applicable expertise and education limited employment opportunity. Thus, 20 to 50 percent of the workers in the native owned companies were non-aboriginal (IFABC, 1991: Attachment #7, p. 4-5).

The government sponsored job creation and training programs promote the participation of aboriginal workers in the forest industry. However, those projects are initiated by non-natives and hardly provide aboriginal people with the continuity, experience, approach, training, motivation, or proper working condition for a real job. Many aboriginal workers are willing to be employed in their traditional territories, but most of their communities do not have access to sufficient forest resources to maintain even a limited employment. Therefore, only about 3 to 5 percent of the employment can be wholly attributable to forest management on Indian reserves (IFABC, 1991: Attachment #7, p. 4-5).

As mentioned earlier, having business management skills, technical knowledge, and experience in forestry is important to find a job in the forest sector. The sector is highly competitive and mechanized. In addition, despite those qualifications, working in the forest industry is not constantly stable as a result of recessions, market trends, and technological
changes that hit the economy that affects native communities. For example, the unemployment rates of B.C. First Nations in the 1970 and early 1980s were around 50 percent and ranged as high as 90 percent for some aboriginal bands, while it was 9 percent for Canada and 12 percent for British Columbia (IFABC, 1991: Attachment #7, p. 5). Especially for those living on Indian reserves, increase in the unemployment rate has been a critical issue. This problem is related to the growing number of younger aboriginal people individually entering the workforce and the higher level of skill and education required for employment in the forest sector (IFABC, 1991: Attachment #7, p. 5). Mechanization and automation of pulpmills and sawmills also affect employment, regardless of the owner and size of an operation.

The Intertribal Forestry Association of B.C. (IFABC) (1991) points out that about half of the aboriginal people in the province rely upon government transfers as their major source of personal income. This illustrates that government sponsored programs are widespread and at the same time that unemployment is serious for aboriginal people (Attachment #7, p. 5). Therefore, it is critical to increase employment for aboriginal people in the forest sector and thereby enhancing the socioeconomic stability of the aboriginal communities.

2.2.4 Market

The access to the marketplace by aboriginal people is limited as it is to other resources and opportunities, but this issue is more complicated because it is rooted in both institutional and economic frameworks. The problem of the institutional framework is represented by the provincial forest tenure system. The dominant large integrated corporations, whose AAC is far above the long-term harvest level, produced many identical market goods for the American, Japanese, and European markets, but they were not responsible for sustainable forestry until the 1990s. This is the major reason that the forest industry did not diversify its

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15 According to Smelser (1991), 0.7 percent of non-native Canadian, 2.2 percent of native in Canada, 2.4 percent of non-natives in Yukon, BC, and 6.1 percent of natives in Yukon, BC were engaged in the logging and forestry at the time of 1986 census (p. 68). Those numbers shows that natives more rely on the forest industry than non-natives.

16 Marchak, Aycock, and Herbert (1999) highlight two First Nations communities, Quesnel and Port Alberni, as the case of unemployment increase by mechanization and automation of the forest industry (Chapter 6).

17 The long-term harvest level is predictive measure of the harvest volume which might be sustainable in a given TSA or TFL. The volume considers initial harvest level, land use changes, economic forces, and Forest Practices Code (MOF, 1999b).
products by adding value or utilizing the wood in the most efficient way, until recently. Therefore, small forest companies such as aboriginal owned business have had persistent difficulty with access to sufficient timber supply for the sawmills and pulpmills (Marchak, Aycock, and Herbert, 1999: 88). With insufficient timber supply and small-scale facilities, it is difficult for aboriginal people to compete with the large integrated companies, which hold most of the AAC. Since the current AAC exceeds the sustainable harvesting level, there is almost no timber expected under new licences unless the government reallocate the AAC or aboriginal people take over the existing forest tenures.

In 1981, the B.C. government introduced the Small Business Forestry Enterprise Program (SBFEP) to give small companies and individuals access to forest resources, including 25 percent of the AAC. In 1988, the government removed 5 percent of the AAC from all major licensees without compensation to promote the SBFEP that became an important source of wood supply for forestry business of First Nations. The AAC under the SBFEP, which currently accounts for about 13.5 percent of the total and is far below the intended volume, can be increased by providing more timber for First Nations (Marchak, Aycock, and Herbert, 1999: 65). However, it is not easy to reallocate the AAC any longer because the existing Forest Act states that the government cannot remove the AAC of a Timber Supply Area (TSA) or Tree Farm Licence (TFL) by more than 5 percent without compensation even for purposes of parks, dams, or other public works (Marchak, Aycock, and Herbert, 1999: 74-75). If the provincial government reduces an AAC for reallocation, it is obliged to pay compensation in volumes of timber or cash. The government can also be legally accused if it fails to offer replacement of replaceable licences (Marchak, Aycock, and Herbert, 1999: 89).

Even if First Nations have access to sufficient timber supply, the current economic framework is the other obstacle to the marketplace, since the market trends and globalization are beyond their control. British Columbia is the world's most important exporter of softwood lumber, accounting for 9 percent of the world softwood production (MOF, 1995: 205). Because of its geographical condition, which is distant from foreign markets, the forest industry of the province has concentrated on softwood lumber that can be marketed relatively easily and transported efficiently. The lumber market is highly competitive and no individual producers can exert significant control over prices, so the provincial manufacturers must accept the internationally set prices. Although British Columbia accounts for roughly 8 percent of the forest product exports in the world, this is not large enough to control the price

The forest industry itself is faced with an unprecedented array of challenges stemming from globalization of the market economy. The global trade agreements such as World Trade Organization (WTO) and North American Free Trade Agreement (NAFTA) are advantageous for large multinational corporations that have power in the global markets. With the arrival of these agreements, even governments have decreased their economic control over the forest resources (Bombay, 1996: 19).

It is difficult for small-scale forestry operators to survive market globalization because "busts" first hit the cost highest producers. This trend has become serious over the last few decades as the market has been globalized and obsolete facilities have been pushed to be closed under modernisation and globalization forces (Forgacs, 1997: 168). M'Gonigle (1997) points out that the contemporary market globalization is and has been underwritten by the broad subsidies of environmental and social decline, including the depletion of old growth forests that results in loss of biodiversity, in the erosion of native communities, and in the displacement of forestry workers (p. 45).

In addition, market trends in demand for lumber, on which the forest industry of the province is dependent, is a critical issue. Over 80 percent of the lumber shipments of British Columbia are shared by foreign markets (Marchak, Aycock, and Herbert, 1999: 93). The United States has been the dominant market for the last two decades, but shipment to Japan has been increasing since the late 1980s especially since Japan has moved from importing logs to importing lumber (Marchak, Aycock, and Herbert, 1999: 94). Demand for lumber in those foreign markets is determined, in part, by the housing industry, which is influenced by financial market conditions (MOF, 1995: 206). The prospect of worldwide demand for lumber, however, seems not to be buoyant. Actual consumption of lumber in the world has increased in the 1980s and 1990s, but dropped to the level of 1970. The similar trend is observed for the in North and Central America market (FAO, 1997: 190) (Figure 2.1). The Food and Agriculture Organization of the United Nations (FAO) and Resource Information System, Inc. (RISI) forecast that world demand for lumber would decrease in the next few decades. This is partly because of the replacement of traditional solid lumber by engineered wood products and non-timber products such as steel, plastic, and cements (RISI, 1999: 5).
Another trend that affects the forest industry is the recent environmental movement against logging of old growth forests. Both environmentalists and First Nations have protested against old growth logging by boycotting forest products from old growth forests or by blockading the logging roads. In fact, the protest by First Nation people is not exactly the same as that of environmentalists because First Nations usually claim their traditional forests along with the rights to harvest. Thus, some environmentalism, which opposes all logging, can be an obstacle to forestry-based economic development for First Nations. Yet, it is possible for these parties to collaborate.

The future of the forest industry of British Columbia will hinge on the market trends and supply and demand of forest products. The fact that First Nations have little access to the market may not dramatically change in the near future, but it is still necessary to adapt to changes in the existing markets. Seeking out new markets is important because it can be the marketing strategy of First Nations.
2.2.5 Forest Tenure

Forest Tenure System

The provincial government oversees both Crown lands and Crown forests in British Columbia. Based on geographical and institutional characteristics, the government allocates rights to harvest or manage Crown forests to private parties through a system of licences called forest tenure. The Ministry of Forests (MOF) defines the forest tenure system as the collection of legislation, regulations, contractual agreements, and permits that define and constrain the right to harvest timber in the provincial forests (MOF, 1997). In other words, forest tenures are the provincial policy frameworks that set out the conditions for private parties to operate on Crown land by specifying what tenure holders can and cannot do (Luckert and Salkie, 1998: 5). The term “timber tenure” is commonly used for the contract, which allows harvesting a specific volume of timber from a defined area of the Crown forests, between an individual or a company and the provincial government. There are various timber tenures reflecting the diverse objectives for forest use, and those tenures have been developed over time to regulate rates of harvest and standard use, to protect forests, and to promote silvicultural practices.

The existing forest tenure system was established as a result of the 1979 Forest Act, and the Act and its associated regulations provide the structure for the system. Those regulations set out the forms of agreement for timber from Crown land and the rights, obligations, and rules of each form of tenure. The Forest Practices Code of British Columbia Act (1994), however, significantly affects the tenure system today. For example, rules about timber harvesting on Crown land, which were formerly referred to in the Forest Act, tenure contracts, or tenure policy, are now included in the code. The code also sets out a range of penalties for failure to meet the rules.

There are some lands not included in the tenure system. These are:

- non-commercial lands in parks and reserves, including about 6.9 million hectares of provincial parks and 283,000 hectares of federal parks;
- non-productive forested land and non-forested areas within the Ministry of Forests jurisdiction;
- approximately 344,000 hectares of federal land in Indian reserves; and
- private forest land not under Tree Farm Licence (Marchak, Aycock, and Herbert, 1999: 36).
History

The evolution of the forest tenure system is linked with the history of British Columbia and may be divided into four periods.

1. Before 1912

   The beginning of land ownership in British Columbia dates back to the colonial era when an application for timber to supply a mill at Port Alberni was made. The major concern of the government was attracting labour and capital to develop the timber resource in the province, so the government granted Crown land outright to railways and timber companies. Much of the 4 percent of privately owned forest land that currently exists was authorized at this time. By 1900, the provincial government granted timber leases and licences with 21-year terms, which could be renewable, and sold timber volumes, however title to the land remained with the Crown (Vance, 1990: 11).

2. The first Forest Act (1912-1947)

   In 1912, the first Forest Act was passed. This Forest Act established a system of “forest reserves” that were designated for timber harvesting; these lands are now called “provincial forests”. The Act also created a Forest Service headed by a Chief Forester to administrate the forest reserves and introduced the timber sale licence, which is a one-time right to harvest a specific forest stand. The major concern of the forest industry was timber resources, and the principle of granting rights to timber was retained until the late 1940s by provision of the various forms of leases and licences (Drushka, 1993: 5). These licences were relied on to provide access to forests on Crown land.

3. The amendment to the Forest Act (1947-1976)

   The current tenure system is rooted in legislative changes made in the mid-1940s when the concern was growing over the management of the increasing area of harvested land. During 1944-45, the Sloan Royal Commission headed by Chief Justice Gordon Sloan addressed the issue of long-term sustained yield of timber. The Forest Act was amended in 1947, and two major units of sustained yield management were introduced to organize forest lands, based on the recommendations of the Sloan Commission. One of these was Forest
Management Licences, which consisted of leases on public land. This was later changed into Tree Farm Licences (TFLs). Forest Management Licences were created to be managed by private industry and were issued to individual companies to supply the timber needs of a particular processing mill or complex. This tenure reflected the belief that the long-term agreement would provide both the incentives to practice forest management and the security of timber supply to attract investment in large mills. In the late 1960s, pulpwood harvesting area agreements were introduced as a means of assuring the secure fibre supply required to support large investments in pulp mills (Notzke, 1994: 85).

The other management unit introduced was the Public Sustained Yield Units (PSYUs), which was managed by the provincial Forest Service with the harvests shared among several operators whose timber was sold to private companies. This long-term volume-based tenure specified the right to harvest an annual volume of timber from within a PSYU, but did not specify the precise areas that could be harvested. Provisions for Woodlot Licences were also introduced at this time. Another goal of the Forest Act was to provide employment opportunities and stability in rural regions of the province.

4. 1976-the present

The 1979 Forest Act was established to simplify the old tenure system based on the recommendation from the Pearse Commission of 1976 and made substantial changes to licence agreements and new forms of agreements. Under the Act, larger Timber Supply Areas (TSAs) replaced PSYUs, and an allowable annual cut (AAC) was determined for each TSA. The AAC was apportioned to various types of new licences, including Forest Licences (FLs), Timber Sale Licences (TSLs), Woodlot Licences, and Pulpwood Agreements. Tree Farm Licences (TFLs) and Forest Licences were introduced. These retained long term security but still replaceable at shorter intervals to allow the insertion of updated contract conditions. By 1980, there were 34 TFLs and 84 PSYUs, and the PSYUs were reorganized into 33 TSAs (Notzke, 1994: 85). Although most TFLs in existence had been granted by 1966, the 1979 Forest Act established the statutory framework for the rights of the tenure system today. The Small Business Forest Enterprise Program (SBFEP) and the Forest Practices Code were introduced during the latter part of this period.
Cost of Harvesting on Crown Land

The B.C. government leases to private companies and individuals the rights to use resources on Crown land and receives revenues from the tenure holders in return. One of the major revenues is an annual rent of $20 million paid for the rights to occupy Crown land for harvesting timber. Another source of revenue is stumpage, which amounted to more than $1.7 million in 1995. Stumpage is the price paid for timber harvested on Crown land (MOF, 1996).

The Ministry of Forests (MOF) sets and collects stumpage under authority of the Forest Act. The stumpage rates are determined with the principle of being standardized and equitable considering market prices for individual species and site-specific information such as timber quality and harvesting difficulties. Thus, there are similar rates for timber stands or areas with similar attributes regardless of the potential buyer. In June 1998, average stumpage rates were reduced to $24.97 per cubic metre on the Coast and to $21.40 per cubic metre in the Interior because logging costs had risen sharply and had been borne by the forest industry (MOF, 1998). Despite the reduction, it is still costly to hold harvesting licences on Crown land, so those licensees with the small AAC are unprofitable.

Regulation of the Harvest—Allowable Annual Cut (AAC)

The allowable annual cut (AAC) is the volume of timber harvest permitted from Crown land in a given year, which is determined by the Chief Forester of British Columbia in accordance with rules set out in the Forest Act. The basic land management units, upon which an AAC is determined, are the timber supply areas (TSAs) and tree farm licence areas (TFLs). Once the AAC for a TSA is determined, the Ministry of Forests distributes the harvest volume to various licences, for example, to forest licences that share rights to harvest within the TSA. One exception is the approximately 5 percent of the AAC of most TFLs, which is available under the Small Business Forest Enterprise Program (SBFEP), that was clawed back from all major licensees in 1988 (Marchak, Aycock, and Herbert, 1999: 75).

The Chief Forester reassesses AAC for the TSAs and TFLs within B.C.’s commercial forests every five years, but in most TSAs, almost all the AAC has been committed to long-term replaceable licences. The apportionment exercise is very important when the AAC levels drop within a TSA because in such cases the Ministry of Forests must proportionately reduce all the existing long-term harvesting rights. In fact, the AAC for many areas has been
deliberately set above long-term sustainable harvest levels in order to harvest extensive primary and old growth forests that yield more timber volume (WRI, 2000: 54). Timber can also be harvested from lands that are not included in the AAC determination. This means that the actual harvest can and does exceed the AAC, and currently more than 90 percent of TSAs are being harvested above AAC (Marchak, Aycock, and Herbert, 1999: 28).

2.3 Issues of the Forest Tenure System
The forest tenure system is critical for addressing socioeconomic and environmental objectives of the province, but the existing tenure system lacks a central concept of itself (Drushka, 1993). First, the type of timber tenures is controversial. Under the 1979 Forest Act, the two dominant forms of tenure were established; they are area-based Tree Farm Licences (TFLs) and volume-based Forest Licences (FLs). Those two forms account for approximately 80 percent of the AAC, whereas many other forest tenures have a very small portion of the AAC in the province (Marchak, Aycock, and Herbert, 1999: 16). In 1991, the Royal Commission of Inquiry recommended structural reform of the forest tenure to increase community control and management of the provincial forests, but the government did not act on the recommendations until recently.

The absence of a community-based forest tenure type is related to the lack of equivalence in tenure allocation. Although the Community Forest Pilot Project (CFPP) was launched to expand community involvement in forest management in 1997, there have not been any changes in the tenure system itself (International Network of Forests and Communities, 2000). Based on the notion that Crown land is publicly owned, individuals and parties can obtain forest tenures as long as they are eligible. For example, woodlot licences may be granted to:

(a) a Canadian citizen or permanent resident of Canada who is 19 years of age or older,
(b) a band as defined in the Indian Act (Canada), or
(c) a corporation, other than a society that is controlled by persons who meet the qualifications referred to in paragraph (a) under the Forest Act, part 3, division 8-44.

18 In the absence of a community-based forest tenure type, community forests have come into existence either through private land acquisition, or as Tree Farm Licences (TFLs), Forest Licences (FLs), or Woodlot Licences. There are three communities hold TFL and ten have FLs in British Columbia (International Network of Forests and
Despite the predominant public ownership and the ostensible availability, a small number of large integrated companies\textsuperscript{19} with long-term tenures dominate forest tenures and most of the AAC. Under the current tenure system with the high stumpage rate, only large timber companies have the available finances.

Second, the unclear position of the government is arguable. The provincial government emphasises sustainable forestry in its policy, but the forest tenure system itself does not. Currently, the government allocates most forest tenures to large companies and collects the annual rent and stumpage fees from the licensees. This system neglects sustainability of forest operation and may restrict small-scale but sustainable forest operation. At the same time, there is an inconsistency where the government encourages long-term stewardship among the industry, First Nations, and itself in the situation where it is also a rent collector (Marchak, Aycock, and Herbert, 1999: 15).

Third, over-harvesting of old growth forests is a reality. The cost of liquidation of old growth forests includes the risk of loss of biological diversity, carbon storage, high quality wood, genetic resources, environmental services, and traditional cultural values, as well as potential resources for the future generations. However, under the current tenure system, vast areas of old growth forests have been harvested. The province has intended to increase the amount of protected areas, yet only a small portion of old growth forests has been protected.

\textbf{2.4 Implication of the Forest Tenure System for First Nations}

Because many First Nations in British Columbia have begun to focus their economic development on the management of their forest land and on participation in the forestry operations on Crown land, the availability of forest tenure is an important factor. The institutional and environmental issues of the forest tenure system affect First Nations and are pertinent to development of potential of their forest management.

However, with the lack of the central concept of the tenure system, the availability of new licence areas is uncertain. It is possible that existing licensees do not renew their licenses. Another option to obtain forest tenure is to purchase an existing firm that holds a harvesting licence or to be a shareholder of an existing licensee. Some First Nations have begun to

\textsuperscript{19} Integrated companies means, for example, those controlling many phases of production, manufacturing and sales (Clegg, 1999).
work with other aboriginal or non-aboriginal firms through co-management arrangements without their own forest tenure. Yet, it is still difficult for First Nations to find even smaller timber licence areas for their moderate to small-scale forest operations.

Under the current tenure system, it is usually unprofitable for small-scale forest managers to hold forest tenure, to keep paying fees, and to carry out long-term, large-scale forest management. In 1997, the provincial government launched the CFPP, then amended the Forest Act, but no forest tenures have focused on either community forestry or non-timber values of forests. Some aboriginal communities, which are acquiring harvesting licences, find it is difficult to abide by the forestry policies of the province. These First Nations think that the annual harvest volume and management requirements are strongly biased toward timber production without making sufficient provision for integration of forest management, which includes protection of wildlife habitat and traditional pursuits by First Nations.

In addition, it is a problem that the province’s forest management policies do not accord sufficient non-timber values of forests or restrict adequately licensee’s logging of old growth forests. The concern of First Nations over the policies is related to how their traditional philosophies of holistic forest use can be compatible with the provincial objectives of forestry. Their traditional land use, which is often considered as holistic or integrated, is hard to be maintained complying with the province’s political framework that focuses on timber production. Ironically, some First Nations are interested in economic development by logging rather than in conserving forests. However, the common denominator is that most of them are aiming at community stability and increase of employment in the forest industry. Therefore, the government needs to cope with the difficulties of First Nations in forestry by consulting with them on integrated forest management and considering non-timber values of forests in these policies. These changes may initiate the process of land use conflicts solutions, including re-examination of the forest tenure system.

2.5 The Roles of First Nations in Forestry

The situation surrounding aboriginal people in forestry has changed. In British Columbia, the past mismanagement by volume-based commercial logging has been reviewed and the idea of ecosystem-based integrated management has been introduced, while the major licensees emphasizes the importance of working with First Nations. The international community has recognized the linkage between indigenous knowledge and sustainable
development.

On the other hand, there are various negative factors which exclude aboriginal people from forestry of the province. In order to increase First Nations’ control over forests on their traditional lands, it is important to demonstrate their ability in and potential to sustainable forestry within the existing institutional and economic frameworks while they keep claiming their land rights and title. Considering the current situation, First Nations have two significant roles to play in forestry; these are becoming a model of community forestry and a model of integrated resource management (IRM) by incorporating their traditional ecological knowledge (TEK).

2.5.1 Community Forestry

The past few Royal Commissions of Inquiry recommended structural reforms to the forest tenure system to increase community control and management of forests in British Columbia. For example, woodlot licences resulted from the 1956 Commission and the Small Business Forest Enterprise Program was introduced based on the recommendation of the 1976 Commission. In 1991, the Forest Resource Commission addressed the growing concern over corporate concentration in the forest industry and called for more diverse and locally controlled area-based tenures. In 1997, acting on the recommendations, the B.C. government launched the Community Forest Pilot Project (CFPP) to expand community involvement in forest management (International Network of Forests and Communities, 2000).

An advisory committee of the CFPP acknowledged that most of the forest tenures were designed primarily for timber production. The dominant volume-based tenures were not suitable to community forestry, which would be area-based, long-term, and would consider both timber and non-timber values of forests (International Network of Forests and Communities, 2000).

Currently, three communities have area-based Tree Farm Licences and ten hold volume-based Forest Licences and approximately twenty-five have area-based woodlot licences. Under the CFPP, twenty-seven communities and First Nations from across the province submitted detailed forest management proposals. Six of them, including Esketemc First Nations near Alkali Lake and the Islands Community Stability Initiative on Haida Gwaii on Queen Charlotte Islands, were selected as successful projects in July 1999 (International
There are some native communities that have ecosystem-based management approaches, such as the Klahoose Nation on Cortes Island which is a unique case because of its relationship with non-native neighbours. Unlike many other First Nations of the province, which involve joint ventures and co-management to work with non-aboriginal forest corporations, the Klahoose does not include any industrial timber companies in its alliance with the neighbour community. The Klahoose Nation and its Cortes neighbours have developed their relationship over the last decade through protesting clearcut logging by MacMillan Bloedel (now taken over by Weyerhaeuser Canada Ltd.), the largest land owner on the island. The alliance also approached MacMillan Bloedel with a proposal to purchase the company’s entire private forests because the whole Crown forests on Cortes Island have been granted to Canadian Forest Products Ltd. with no consultation with either the Klahoose Nation or the non-native island community (Denman Community Forest Cooperative, 2000). The Klahoose Nation and the Cortes Ecoforestry Society (CES), which represents the non-native island community, have worked together to promote ecosystem-based forest management and ecologically sustainable forest-based economic development. These parties also intend to seek Forest Stewardship Council (FSC) certification of all Cortes Island forest products. FSC certification is the designation which certifies the entire process of forest management is internationally recognised and supported by the environmental community (International Network of Forests and Communities, 2000). Thus, forest products from the Klahoose and CES will have an economic and market advantage when the certification is applied. The entire island community has perspectives of its ecosystem-based approach, and its forest management can be a model of community forestry as well as a model of First Nations’ alliance with non-aboriginal neighbours.

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20 The Klahoose people have been in the area called the “West Coast Culture Area” including all of Toba Inlet and Cortes Island. Their treaty negotiation started in 1994 and the framework agreement was initialled in the end of 1996 (B.C. Ministry of Aboriginal Affairs, 1998).

21 FSC is an international body that accredits certification organizations. FSC Canada, founded in 1993, is working on the development of regional performance-based standards to implement and refine global principles. The FSC has certified three clients in Canada that own a total of 211,632 hectares of forests in Ontario and New Brunswick (FSC, 1996; WRI, 2000: 86).
2.5.2 Traditional Ecological Knowledge (TEK) and Holistic Approach toward Forest Management

Aboriginal people of Canada have used natural resources from their environment since time immemorial with respect, gratitude, and honour because understanding and living within a particular environment in a sustainable manner has been a matter of survival for them (Turner, 1997: 179, 181). It is well known that the cultural and spiritual ties of aboriginal people to their environment are significant because of their long and close connections to nature (Drengson and Taylor, 1997: 31). Aboriginal people respect even those things frequently regarded as useless in modern society based on the idea that everything has a purpose (Turner, 1997: 179), and this idea is reflected in their traditional forest use through TEK.

For example, red alder (*Alnus rubra*) is regarded by industrial foresters of the Pacific coastal region as a noxious plant that competes with commercially valuable trees such as Douglas-fir. Yet the species is highly valued among First Nations whose mythical traditions describe alder as formerly a woman with red skin, transformed to her present state long ago as a gift for other humans (Turner, 1997: 180). Its soft wood is an ideal fuel for smoking fish and meat and for carving bowls, masks, and rattles and its bark was a major source of dye. The edible inner bark tissues of red alder were taken in spring by the Coast Salish people as the important source of medicines for a variety of ailments from tuberculosis and internal hemorrhage to skin infections (Turner, 1997: 180). Turner (1997) implies that red alder may turn commercially important as western yew (*Taxus brevifolia*), which was once regarded as useless then became valuable by the discovery of a promising anticancer compound in its bark (p. 180).

Because of their deep understanding of faunal and floral species in the forest ecosystems, First Nations may contribute their knowledge to forest management. One of the most significant advances regarding incorporating First Nations is the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound, which involved the Nuu-Chah-Nulth Nations as its members to demonstrate the scientific validity of traditional ecological knowledge for sustainable forest practices. Clayoquot Sound region is located in the West Coast of Vancouver Island and the area contains large stands of old growth, which is culturally and ecologically important. The panel was established in 1993 to develop world-class standards for sustainable forest management and involved scientific experts, Nuu-
Chah-Nulth elders, and experts in their TEK (CFS, 1997: 54). The Panel found that TEK from the Nuu-Chah-Nulth people is essential for gathering information, for example, on culturally important areas and plant and animal habitats that are used for mapping and emphasized the importance of taking the cultural and spiritual needs of First Nations of the area into account (CFS, 1997: 55; Drengson and Taylor, 1997: 31).

The importance of indigenous people and their potential contribution with TEK to forest management have been internationally recognized, and at the same time, the respect for TEK in the academic community and among scientists has been increasing. Ironically, just as the importance of TEK is beginning to be recognized, many aboriginal people and native communities are losing that knowledge because of the change of their lifestyle and loss of traditional territories and languages (CFS, 1997: 49). Children are spending much less time on their ancestral land than previous generations, and they learn less about the environment, the traditional way of life, and consequently traditional ecological knowledge which is usually passed down by elders (CFS, 1997: 49-50).

First Nations in British Columbia have begun to regain their control and management right over their traditional lands only in the last 20 years, and incorporating TEK of forest ecology into forest management is in its early stages (CFS, 1997: 52; Michell-Banks, 1998: 12). In addition, there is uncertainty of the involvement of First Nations in the development of the forest products industry because First Nations’ opinion based on their spiritual and cultural importance of the plants influences on how far and fast the industry grows (Freed, 1997: 176). Thus, the future of the industry depends on whether the First Nations’ needs and knowledge are incorporated in forest management plans. Nonetheless, it is important to collect TEK, since the integration of TEK into forest management has potential to sustain the environment (Adamowicz and Veeman, 1998: 57). The body of data is also vital for First Nations to assert their rights over traditional territories; especially where there is conflict over land use by providing proof of their longstanding forest use and occupancy of the land (CFS, 1997: 52).

Chapter Conclusion

The current issues of native forest management are complicated and rooted in their long neglected history, the institutional framework, and the economic condition. Although the provincial government and the forest industry have begun to consider First Nations as an
important stakeholder in forestry, the involvement of First Nations in forestry of the province is still limited. In such a situation, promoting community forestry and sharing TEK can be an effective mechanism to demonstrate that aboriginal people have potential input into integrated forest management. This would make it possible for aboriginal people not only to manage forests on their traditional territories but also to have support from non-aboriginal neighbours and forest companies.

Even so, there still remains a controversy about the tenure system of the province because First Nations have almost no chance to manage forests legally on their traditional territories without forest tenure. The following chapter addresses the importance of forest tenure for First Nations through case studies.
Figure 2.2 First Nations mentioned in Chapter 2 and 3

- Esketemc
- Klahoose
- Nuu-Chah-Nulth
- Tl'azt'en
- Westbank
- Nisga'a
- Gitxsan
- Wet'suwet'en

First Nations

1. Esketemc
2. Klahoose
3. Nuu-Chah-Nulth
4. Tl'azt'en
5. Westbank
6. Nisga'a
7. Gitxsan
8. Wet'suwet'en

Scale: 100 0 100 200 Kilometers
Chapter 3: Case Studies of Forest Management by First Nations

In British Columbia, where only a few treaties have been signed with First Nations, the federal and provincial governments, and First Nations Summit established the British Columbia Treaty process in 1992 (WRI, 2000: 73). About 50 First Nation bands are involved in the treaty process that is designed to address issues related to aboriginal land rights and title, such as self-government including ownership of specific land bases, wildlife harvesting rights, and resource revenue sharing (WRI, 2000: 73). In the Delgamuukw decision of 1997, the Supreme Court of Canada affirmed unextinguished rights of First Nations in British Columbia to their traditional lands and natural resources on the lands based on native oral history. The actual decision in the Delgamuukw case was about the Gitxsan and the Wet'suwet'en Nations, but many other First Nations have a legal interest in resource development on their traditional territories and have claimed their land rights based on the court decision (Beatty and Pemberton, 1999a).

Therefore, the tenure system has unique implications for First Nations in their claim for aboriginal land rights. Despite the settlement of the Nisga'a Treaty in 2000, most of treaty talks between First Nations and the governments have made little significant progress (Boyd, 1999). The current tenure system and the forest industry work against aboriginal people from being involved actively in forest management in British Columbia, even though most forestry activities occur and have occurred on traditional territories of First Nations (Clogg, 1999). Under the current tenure system, it is difficult for First Nations to obtain forest tenure, thus the number of aboriginal groups that have forest tenure is minimal.

This chapter describes three case studies of aboriginal forest management to as examples of First Nations’ governance. The TL'aht'en Nation has a Tree Farm Licence (TFL 42) and owns a timber company which supports the local economy, while the Westbank Nation has a Woodlot Licence that is not satisfying for the band. The Nisga'a Nation has rights to control over forests on Nisga'a Lands under its own forest management laws. These examples illustrate the significance of obtaining forest tenure for First Nations to control forest resources on their traditional land.
3.1 The Tl'azt'en Nation: A Case Study of Forest Management with a Forest Licence
Tanizul Timber Limited, which is run by the Tl'azt'en Nation, is an example of small-scale, community-based forestry operation that provides incentives for stewardship and employment. The company plays an important role in the local community through initiating, developing, and implementing forest management programs. Tanizul Timber is the only aboriginal tenure holder of an area-based forest licence, which is large enough to provide long-term economic development for the local community. Thus, many other aboriginal communities have paid attention to the forest operation by the company as a potential model.

3.1.1 Description of Tree Farm Licence (TFL) Area
The Tl'azt'en territory and reserves are located in the centre of the province of British Columbia, approximately 50 kilometres northwest of Fort St. James and about 170 kilometres northwest of Prince George. In 1981, British Columbia allocated a TFL, which is one of the smallest in the province, to the Tl'azt'en Nation (formerly known as Stuart Trembleur Lake Band). The TFL covers much of the Tl'azt'en's traditional territory and is bordered by Stuart Lake, Trembleur Lake, and the Tachie River in the Fort St. James Forest District and is surrounded by the Prince George Timber Supply Area. The total land base for the TFL is 49,394 hectares, with 45,207 hectares of productive forest land or 92 percent of the total area. About 4 percent of the total area is made up of the band's reserves and "cut-off" lands, which is suitable for forestry, and the remaining area is Crown land. Forests in the area are predominately softwood species including lodgepole pine (*Pinus contorta* var. *latifolia*), white spruce (*Picea glauca*), Douglas-fir (*Pseudotsuga menziesii*) and subalpine fir (*Abies lasiocarpa*). Two biogeoclimatic zones, the Engelmann Spruce Subalpine-Fir and the Sub-Boreal Spruce, extend across the licensed area. The TFL area includes vast areas of old growth forests and over 60 percent of the area is made up of mature and over-mature coniferous forests. This storehouse of high quality timber makes it possible for the company to harvest the full productive capacity of the whole TFL, with time and money available to rehabilitate previously logged sites on the reserves and on the fringe areas where outside

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22 The Tl'azt'en Nation is a member of the Carrier-Sekani Tribal Council whose comprehensive claim was accepted by the federal government in 1983. The Council signed a Framework Agreement with the provincial government in April 1997 (B.C. Ministry of Aboriginal Affairs, 1998; Cassidy and Dale, 1988: 110).
companies had harvested during the 1950s and 1960s (Hopwood, 1988: 17; Pedersen, 1996a).

3.1.2 Background of Obtaining the TFL

The Tl’atz’en Nation had serious social problems including high suicide rates and astronomical unemployment rate. These issues urged the Tl’atz’en people to pursue economic development for their band members. Tl’atz’en people decided to focus on their abundant forest resources, which were being logged by non-native companies, as a means of enhancement of employment and social well-being (Cassidy and Dale, 1988: 109). They competed for forest tenure to create job training and employment opportunities close to home and at the same time to control forest use on their traditional territory (Nathan, 1993: 146; NAFA, 1993: 20). Under the restriction of the Indian Act, the Tl’atz’en Nation had to obtain a federal Order-in-Council and incorporate Tanizul Timber Ltd. in order to acquire a TFL for managing forest land both within and outside of their reserve. In 1981, after fifteen years of negotiations, the Tl’atz’en Nation became the first aboriginal group in the province to hold a Tree Farm License (TFL 42). The TFL is a 25-year lease of forest land with an original AAC set at 120,000 cubic metres. The AAC later increased to approximately 132,300 cubic metres, which accounted for about 0.7 percent of the AAC of TFLs in 1991 (IFABC, 1991: Attachment #5, p. 4).

3.1.3 Tanizul Timber and Community Development

Tanizul Timber Ltd. is a non-profit organization and hires aboriginal staff and seasonal silvicultural workers (Nathan, 1993: 146). The enterprise has been managing 2,500 hectares of forest on Tl’atz’en Indian reserve combined with 49,000 hectares of Crown forest under TFL 42 and has created economic opportunities for the band (NAFA, 1993: 20). A Tree Farm Licence gives the longest term of tenure available under the Forest Act, which is twenty-five years with renewal of every ten years. Thus, the licensees have some flexibility and security for their forest management. As a TFL holder the Tl’atz’en Nation is responsible for its own long-term forest management on both the licenced private forests and Crown forests. Despite its initiatives in forestry, the Tl’atz’en Nation initially employed outside professional assistance to prepare their proposal for forest management in the TFL area. This strategy was successful to acquire the necessary federal financial assistance, including that for capital equipment and training for the band members (NAFA, 1993: 20).
When the Tl’az’t’en Nation obtained the harvest licence, the band had no experience in business or natural resource management or even equity funding for forest operation and the band members did not have sufficient forestry skills. The Tl’az’t’en Nation, however, has overcome those deficiencies with training programs and has created social and economic benefits from their forest management. Over the first five years of operations of Tanizul Timber, for example, the federal sponsored job creation and training projects provided work and training in forestry for about ninety individuals of the band members. Those projects led to long-term employment on- and off- reserves and increased the income levels and economic stability of the band members. In 1982, the band members accounted for about 30 percent of the employment in Tanizul Timber, and the number increased to 40-45 percent five years later. By that time, Tanizul Timber has provided employment for between 75 and 125 people depending on the volume of logging and reforestation undertaken. Currently, more than half of the 80 jobs in operating the TFL, are held by the band members, but the President of the company hopes that Tl’az’t’en band members will eventually manage all aspects of the business (Denman Community Forest Cooperative, 2000; Hopwood, 1988: 22, 25).

A community-elected six-member board oversees forest operations by Tanizul Timber for the community. The Directors seek the authority of the Tl’az’t’en Nation on all economic, operational, cultural and social issues of management of TFL 42 (Pedersen, 1996). The revenue generated by Tanizul Timber stays in the community for supporting the local economy. It is estimated that the company has recycled $9.6 million into the local economy and that it is currently generating between $4 and $6 million annually depending on the cut volume and market conditions. The revenue from stumpage, which is set as $10 per cubic metre on average, generates approximately $1 million annually for the provincial government (Nathan 1993: 147; Office of the Auditor General of Canada, 1992).

Tanizul Timber Ltd. has aimed not only at economic development of the community but at integrated forest management. For example, the company operates Terrestrial Ecosystem Mapping, which works on wildlife, in its TFL area. The information about the mapping system is useful for the decision-making process for both wildlife and forest resource management at the operational and the strategic levels (LUCO, 1998b). The First Nations Forestry Program (FNFP) is planning to create a research forest with a fund of $20,000 for a feasibility study looking at the establishment of the Aboriginal Natural Resource Centre in
the Fort St. James area. This project supports the Tl’azt’en Nation initiative to develop a
new training program that provides First Nations with hands-on, aboriginal-based natural
resource management training (CFS, 1999a).

Since Tanizul Timber started and has been in charge of economic development, the
Tl’azt’en administration have stimulated public services such as education, public works,
health and social welfare. The band has a comprehensive drug and alcohol abuse program,
and it is reported that these social problems have decreased. However, Tanuzul Timber is the
only major economic activity for the Tl’azt’en Nation, since the biogeoclimatic conditions of
the area confines the band to a relatively small territory. It is difficult for the Tl’azt’en
Nation to find other means of community development. For example, the efforts of the band
to promote a recreational subdivision on Stuart Lake was unsuccessful because of the
limitation of the large licensed areas, which are needed for the activities and opportunities for
hunting guides and big game outfitters (Hopwood, 1988: 9, 14).

3.1.4 Dilemmas

The Tl’azt’en Nation is faced with a difficulty in reconciling its traditional values and
multiple forest uses based on the government regulations despite the success of Tanizul
Timber. The concept of the AAC and the conventional forest management practices,
including road construction and reforestation requirements, are not compatible either with the
forest use philosophies of the elders or with traditional forest-based activities such as hunting
and trapping. The AAC of TFL 42 is set at 132,000 cubic metres, but the long-term
harvesting level is estimated as approximately 74,000 cubic metres (Marchak, Aycock, and
Herbert, 1999: 29). That is, if Tanizul Timber respects the AAC, then the licenced area is
overcut and environmentally damaged.

In addition, the involvement of the band members in forestry has initiated some social
conflicts. Some of them have concerns about the high expectations for jobs and economic
prosperity anticipated from Tanizul Timber, while others do not welcome the public access to
their traditional territory (Denman Community Forest Cooperative, 2000; Hopwood, 1988:
29). Therefore, it is challenging for the Tl’azt’en people and Tanizul Timber to look for
ways of incorporating the traditional values of the community with contemporary forest
management. Nonetheless, having a TFL is still profitable for the band from a
socioeconomic point of view.
3.2 The Westbank Nation: A Case Study of Unauthorized Logging on Crown Land

Although many First Nations have claimed their traditional territories, most of their negotiations are progressing at an extremely slow pace. In September 1999, frustrated with the situation, members of the Westbank Nation, which is part of the Okanagan people,\(^{23}\) began logging near Hidden Creek after their treaty negotiations with the provincial and federal governments broke off. The protest logging by the Westbank Nation was controversial, since the band does not have forest tenure for the area where its members cut trees. The argument over the native logging demonstrates not only the feud between First Nations and the government but the implications of the forest tenure system for First Nations.

3.2.1 Description of the Timber Supply Area (TSA)

The Okanagan TSA, where the traditional territory of the Westbank Nation is located, is in the Kamloops Forest Region in the southern interior of British Columbia. The total land base of the TSA is 2,173,271 hectares, which is one of the largest and the most ecologically complex in the province. The TSA consists of seven biogeoclimatic zones, and the dominant tree species are lodgepole pine, Engelmann spruce (*Picea engelmannii*), and amabilis fir (*Abies amabilis*) (Pedersen, 1996b).

About 65 percent of the TSA are considered as productive Crown forests, and the total AAC of 1998 was 2,615,000 cubic metres. The long term harvesting level in the same year was estimated as 2,022,000 cubic metres, and the overcut rate was 29.3 percent (Marchak, Aycock, and Herbert, 1999: 28). In the TSA, Riverside Forest Products Ltd., which is one of the major forestry companies, has a Forest Licence with 767,413 cubic metres of AAC and operates a large integrated sawmill and veneer-plywood plant in Kelowna. Other large companies including Weyerhaeuser Canada Ltd. and some private firms have harvesting licences in the TSA (Beatty and Pemberton, 1999a; Economic Development Commission, 1999; Marchak, Aycock, and Herbert, 1999: 187). The timber harvested from the TSA supplies less than two-thirds of the mill capacity within the TSA. The forest industry is the major industry especially in the northern part of the TSA, although other industries including agriculture, tourism, and construction are also important in the TSA (Pedersen, 1996b).

\(^{23}\) The Westbank Nation broke away from the Okanagan Nation in 1963.
3.2.2 Background of the Protest Logging: Land Claim and Forestry in the Claimed Area

The Westbank Nation is one of the ten First Nation bands in the Okanagan TSA situated opposite to the City of Kelowna on the west shore of Okanagan Lake. The band has traditionally resided in south central B.C. and extends from an area west of Kelowna to the Slocan Valley and has a population of approximately 500 band members. Two reserves of the Westbank Nation, Tsinstikeptum 9 and 10, comprise about 970 hectares on bench lands above Okanagan Lake. These reserves are scheduled for residential development in the Okanagan Valley, particularly in the Kelowna area (Hall, Cowin, and Rowan, 1988: x; Simpson, 1997).

The Westbank Nation has a woodlot licence with 830 cubic metres of AAC (IFABC, 1991: Attachment #7, p. 8). However, according to the Westbank Chief Ron Derrickson, all the band has been offered are paltry amounts of wind-blown and burned timber that is not even within the traditional territory of the Westbank Nation (Beatty and Pemberton, 1999a). The Westbank people think that the band should be allowed to harvest timber on their traditional territory and has attempted to get forest tenure for 600,000 cubic metres of harvest volume. This volume is smaller than the AAC of Riverside Forest Products Ltd., but larger than other company’s AAC in the TSA. The most AAC in the TSA are allocated to large corporations and the total AAC of the TSA is already over the long-term harvesting level. Thus, large-scale tenure reform is needed if the Westbank Nation obtains forest tenure with its claiming harvest volume. Tenure reform, however, is institutionally difficult to be implemented, and the provincial government is not actively pursuing the reformation, since the issue of forest tenure is strongly related to aboriginal land rights and title.

In December 1993, the Westbank Nation submitted a statement of its intent to negotiate a treaty, and the B.C. Treaty Commission accepted the claim the following month. In February 1997, it was announced that a Framework Agreement had been signed, and the band members expressed their strong support in favor of working towards a treaty. The treaty negotiations included discussion on environmental management, fish and wildlife, and land use and management (B.C. Ministry of Aboriginal Affairs, 1997; Simpson, 1997). The negotiation made little progress and there was no active talks for about a year, even though the band was technically in the treaty process (Beatty and Pemberton, 1999a). In 1999, the

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24 The Westbank Nation has another distant reserve, Mission Creek Reserve 8 consists
treaty negotiations with the provincial government broke off, and the Westbank members commenced logging on Crown land without government authorization.

The area where the Westbank Nation began logging is about 20 kilometres northwest of Westbank, which is a community just across Okanagan Lake from Kelowna. More than a dozen Westbank band members cut into 19 hectares of timber in the area within a day, although provincial law forbids mills from buying and processing the wood. They soon stopped logging voluntarily, but other native bands took up the challenge and began cutting trees (Beatty and Pemberton, 1999b).

3.2.3 Interpretation of the Delgamuukw Decision

Subject to the aboriginal land rights and title, the Westbank Nation began logging on the areas of Crown land without authority under the Forest Act. In response, the Ministry of Forests issued a stop work order to the Westbank pursuant to the Forest Practices Code of British Columbia Act, and the provincial government accused the Westbank Nation of breaking the law by logging on Crown land (Davis & Company, 1999a). The Westbank Nation refused to comply with the stop work order and asserted their rights to logging based on the principle that aboriginal land rights include natural resources within the lands.

The argument of the Westbank Nation refers to the Delgamuukw decision of 1997. The Westbank Nation has asserted that the Okanagan Nation has not extinguished the rights to its traditional lands and to benefit from the resources from the land, so that the rights to natural resources on its traditional lands were never surrendered by treaty. Based on this assertion, the Westbank Nation, as part of the Okanagan Nation, has justified their rights to harvest timber within the traditional lands of the Okanagan Nation. All the Union of B.C. Chiefs and Grand Chief Phil Fontaine of the Assembly of First Nations, Okanagan bands, and Shuwap bands supported the action of the Westbank Nation (Assembly of First Nations, 1999; Beatty and Pemberton, 1999a).

In addition to the affirmation about aboriginal land rights, the Supreme Court of Canada stated that the area, location, and boundary of the claimed land to be resolved through negotiation and, if necessary, by litigation. From this point of view, aboriginal land rights include the rights to natural resources within the lands, and logging by First Nations on the land where they have ownership is not illegal (Boyd, 1999). However, the provincial

of only about 2 hectares and is uninhabited (Hall, Cowin, and Rowan, 1988: 5).
government has failed to address the ramifications and the implications of the Delgamuukw decision and has refused to negotiate an interim agreement and to give First Nations forest tenure (Boyd, 1999).

3.2.4 Implications of the Protest Logging by the Westbank Nation

The Westbank Nation is not the only First Nation band that has been frustrated with the dragging treaty negotiations and the inequality of the forest tenure system. Currently, First Nations hold licences to less than 1 percent of the AAC (Boyd, 1999). Most of First Nations have been struggling with obtaining forest tenure and with the little progress of their land claims. The fact that two other native bands decided immediately to join the Westbank band members in logging and that the representatives of more than 100 B.C. tribal groups passed a resolution supporting the Westbank action explains that the Westbank situation is the tip of an iceberg.

In addition to the protest logging, the Westbank Nation was planning to launch an international boycott of all timber cut by non-natives, although the band did not carry this out (Vancouver Sun, 1999a). The boycott, if it had occurred, might devastate the forest industry of British Columbia, which is dependent on international trade and foreign markets. The forest industry, particularly large corporations, might oppose and be concerned about the corollary of the native logging, since these corporations have been operating forests on the lands claimed by First Nations.

The dispute of the provincial government over the Westbank Nation strained the relationship between First Nations and the government and increased First Nation antagonism. Since many First Nations have resented the process of their treaty negotiations, they might begin similar or more radical protest. The Westbank action increased unrest of other aboriginal groups, but equally revealed the frustration of First Nations about their land claims as well as their struggles for obtaining forest tenure.

3.3 The Nisga’a Nation: A Case Study of Forest Management under Self-government

The Nisga’a Nation is active in and dependent on the forest industry, which is the major employment for the band members. Even so, the band members have been concerned that their employment in forestry by non-native enterprises becomes more insecure year to year. The Nisga’a people registered in the Small Business Forest Enterprise Program (SBFEP) to
secure the timber harvesting while they have been in pursuit of land claims. Their primary motivation has arisen from the fear that forests of the Nass River Valley will be damaged both by logging by the existing non-aboriginal tenure holders and by provincial forest resource management. Thus, the Nisga’a claimed total ownership and control over the remaining forest resources (Bridges, 1994: 8; Notzke, 1994: 101). The Nisga’a Treaty, the first modern treaty in British Columbia, was ratified in April 2000 albeit after a lengthy negotiation period. This is a big step to the evolution of a new approach of forest management by First Nations.

3.3.1 Description of Nisga’a Lands

The Nass River, which flows from Nass Lake through the Coast Range Mountains to Mill Bay to the Nass estuary in northwestern British Columbia, is 384 kilometres in length and has a number of tributaries that are geographically and historically important. Meziadin Lake is located about midway up the river is an important salmon spawning area, and Bowser Lake that is 233 kilometres away from the tidewater is another important salmon habitat (Sterritt, 1998: 75). The size of the watershed of the river is 21,150 square kilometres, and four tribal groups, the Tahltan, Gitksan, Gitanyow, and Nisga’a peoples, claim territory in the Nass watershed between Nass Lake, at its headwaters, and Aiyansh (Sterritt, 1998: 75) (Figure 3.1).

The Nisga’a people, who live in the Nass Valley, have always been one of the most vocal of the First Nations of the province. They are a part of the Tshimshian language group, along with the neighboring Gitksan, Coast Tsimshian and Southern Tsimshian. Like other Northwest coast aboriginal groups, the Nisga’a people carved their monumental totemic sculptures from red cedar and have a matrilineal culture that differentiates clans (Jensen, 1992: 3, 7). The traditional territory of the Nisga’a people is 14,830 square kilometres, but only 76 square kilometres (0.5 percent of the original territory) are considered as Nisga’a Lands by the Canadian authorities (Raunet, 1996: 74). The Nisga’a communities in the Nass Valley are situated approximately 145 kilometres north of Prince Rupert with the total population of about 2,500. Those communities of Kincolith and Lakalzap (Greenville) are inside the North Coast TSA and Gitwinksihlkw (Canyon City) and Gitlakdamix (New Aiyansh) are in the Kalum South TSA. Located in a remote area, the Nisga’a people were able to maintain their traditional culture and economy for a long while, unlike the many First
Nations in Canada.
Figure 3.1 Aboriginal territories in the Nass Watershed (Sterritt, 1998: 76)
3.3.2 History of Forestry in the Nass Valley

In 1858, when the colony of British Columbia was established, many Europeans lured by the Gold Rush arrived to start mining. This was followed by commercial logging and fisheries in the area, but the Nass Valley was left alone until the late 1940s due to its remoteness.

In 1948, the original Forest Management Licence (now renamed Tree Farm Licence) No.1 was granted to U.S.-based Columbia Cellulose, which was the first big timber company in the Nass River Valley, with permission of an annual timber cut of 41,000 cubic metres. The licence covered 3,350 square kilometres of the Nass Valley and industrial logging in the area started in 1950 when Columbia Cellulose began forest operation and built a pulpmill. By 1964 Columbia Cellulose built up a total holding of 7,284 square kilometres, which was more than a third on Nisga’a traditional land and clearcut the valleys and hills in the area. The timber was trucked on unpaved roads to Terrace on the Skeena River or else floated down to the harbour of Prince Rupert, then sawed or transformed into pulp to export to the U.S., Japan, and European countries. In 1958, the company extended a 105-kilometre unpaved road into the heart of Nisga’a country linking the valley for the first time to the British Columbia highway network (Raunet, 1996: 181). The AAC of Columbia Cellulose was increased to over 1 million cubic metres in 1964, and it passed 2 million cubic metres by 1970. (Raunet, 1996: 182).

Columbia Cellulose offered the new market including about three hundred jobs to the Nisga’a people, and the local economy hinged on the forest industry. However, reforestation by the company did not keep up with its logging, and the most valuable trees of the old growth forests did not grow back. The failure of the reforestation scheme was serious in the bottomlands of the Nass Valley, where the temperate rainforests used to dominate and were replaced by dense bush of less valuable species. The vast forest land in the lower Nass Valley has degraded due to the mismanagement and insufficient reforestation practices under the “relaxed” environmental standards of the BC Forest Service.

The Nisga’a people, who have seen little return from the industrial logging, were concerned about the environmental damage to forests on their land, and in 1978, they prepared a detailed forest plan by themselves. The core of the plan was to transfer the authority from the provincial government to the Nisga’a people. The proposal was convinced that it could rationalize the exploitation of forest resources by building a network
of paved roads to be financed by a levy on the timber harvest. The Nisga’a Nation considered that the logging operation in the Nass Valley was supporting the vaster regions, so the band proposed a strategy for sustained yield management that involved partnership among the existing timber companies, the province, and First Nations. In order to guarantee the mills of the region, which required the huge quantities of timber, the Nisga’a people suggested fixing the AAC in their territory to 600,000 cubic metres.\textsuperscript{25} Although the non-native operators were to be guaranteed sufficient timber supply to at least recover their investment in the region during the transition to Nisga’a management, the province rejected the proposed plan (Notzke, 1994: 101; Raunet, 1996: 186).

On the other hand, Columbia Cellulose started losing money from 1966, and its deficit had climbed to $120 million by 1973 (Raunet, 1996: 182). In 1979, the company left British Columbia and its antiquated pulpmill and forest tenure were taken over by a Crown corporation that later became Westar Timber (Marchak, Aycock, and Herbert, 1999: 116). The Nisga’a employment in Wester Timber reached a peak when the company operated TFL 1 in the Nass Valley, however more recently employment has declined.

In 1982 the Nisga’a Tribal Council commissioned a study of a technical evaluation of forest management and practices in the Nass Valley. The study found that 36,000 hectares of the lower Nass Valley had not been properly reforested and about 73 percent of the soil had become significantly degraded after logging. The final report documented severe mismanagement of TFL 1, which dates back to the first commercial logging by Columbia Cellulose in 1958. This included soil degradation, highgrading, and improper reforestation. The report also proposed a more radical approach to aboriginal community-based forestry, in which the Nisga’a Nation would take over much of TFL 1 from the licensee, Westar Timber, to carry out integrated resource management (Notzke, 1994: 101).

In 1985, while promoting its proposal, the Nisga’a Tribal Council launched a formal complaint with the provincial Ombudsman about the issues of overcut and the lack of reforestation by Westar Timber. A study commissioned by the Nisga’a Nation showed that most of the area logged by the company had not been sufficiently reforested. Soil degradation and loss of fish and game habitat had prevented the Nisga’a people from fishing

\textsuperscript{25} Currently, Repap British Columbia Inc. holds TFL 1 with the AAC of 720,000 cubic metres. The long-term harvesting level of the TFL is estimated as 655,000 cubic metres, and the level of overcut is 9.82 percent (Marchak, Aycock, and Herbert, 1999: 116).
and hunting, and the band members had very few employment opportunities in the local logging operations. Silva Ecosystems, which was employed by the Council to conduct an evaluation of TFL 1, also reported poor forest management in the Nass Valley. The evaluation reports revealed that the timber companies, which manipulated the AAC, had harvested the most accessible and high-quality timber, but had ignored the poorer-quality or less accessible timber. The investigation the Ombudsman confirmed the findings and called for a fundamental restructuring of tenure conditions to rehabilitate the poorly managed forests in the area (Cassidy and Dale, 1988: 121; Marchak, 1995: 105; Marchak, Aycock and Herbert. 1999: 117; Notzke, 1994: 101-102).

The Nisga’a people asked the Ministry of Forests to transfer TFL 1 to them regardless of the status of their comprehensive claim. At the same time, they tried to purchase the licence from Westar Timber when the company requested and was granted a reduction of its TFL. However, the Nisga’a people did not succeed. The Nisga’a Tribal Council attempted to combine the relinquished lands with higher quality areas to form a TSA, but the Ministry of Forests granted the licence instead to contractors from Terrace and Vancouver (Cassidy and Dale, 1988: 121; Notzke, 1994: 102). Rather than reducing the AAC, the provincial government expanded the AAC of the TFL to provide the industry with more tenure security in 1987, which resulted in liquidating old growth forests in the upper Nass watershed (MOF, 1995: 284). Consequently, about 200 square kilometres near Bowser and Meziadin Lake were razed. The vast forests of the region were gone, and in 1997, Repap British Columbia Inc., which owns the Skeena mill in Port Edward that the Nisga’a people sell their logs, announced its intention to close the antiquated mill (Marchak, Aycock, and Herbert, 1999: 119). Currently, timber in the North Coast Forest District is harvested under a number of tenure arrangements and the largest component makes up about 70 percent of the harvest in the Forest District. Additional harvesting within the Forest District, but outside the North Coast TSA, occurs on TFL 25, Indian reserves, and private lands (Bridges, 1994: 12).

3.3.3 Background of the Nisga’a Treaty

The comprehensive land claim process of the Nisga’a Nation dates back to the 1970s.

26 The provincial government announced major policy changes, and the TFL program was to expand from 28 percent to about 66 percent of the provincial AAC (B.C. Ministry of Forests, 1995).
Concerned about forests that had been logged at rates many times higher than those which can be sustained and would result in all remaining productive old growth to be gone, the Nisga’a entered a land claim but lost its case of 1970. Three years later the Nisga’a people appealed to the federal government to negotiate a treaty settlement, and they began negotiation with British Columbia and Canada in 1976. However, the negotiation was conducted on a bilateral basis between Canada and the Nisga’a Tribal Council. The provincial government did not join the negotiating table until 1990, and a tripartite Framework Agreement was signed in 1991 among the Nisga’a Tribal Council, British Columbia, and Canada.

In February 1996, these three parties initialled an agreement-in-principle (AIP), which was ratified by the Nisga’a Nation and signed in March in the same year in New Aiyansh. The AIP provided for a financial transfer of $190 million and the establishment of a Nisga’a Central Government with ownership of about 2,000 square kilometres of land, much of which is currently provincial forests, in the Nass Valley. It also outlined the band’s ownership of surface and subsurface resources on Nisga’a Lands and spelled out entitlements to Nass River salmon stocks and wildlife harvests in the area.

Negotiation on the Final Agreement was signed on July 1998. The Nisga’a Nation was able to secure 10 percent of the original land that they claimed and gained control over the forests and other natural resources in the upper Nass Valley. The land, which the Nisga’a Nation controls, is held in fee simple, which means that the land is be treated similarly to other private lands in British Columbia and can be used as collateral or sold off in whole or in part to any person if the band government decides. The existing Indian reserves are converted to fee simple holdings.

The Nisga’a Nation also launched the Nisga’a Economic Enterprise Corporation (NEE) to develop its economy with the forest industry. The Nisga’a people lacked the capital or management experience of forest operation, and thus they looked for the best forest companies that offered joint venture with the band (Lewis and Hatton, 1992: 23). The forest operation by the NEE went on for only two years, but it provided some logging employment and made the Nisga’a people more active in silviculture during the last decade. Yet the Nisga’a people were concerned about economic uncertainty and it was important to see an agreement that would allow the band to obtain some economic certainty in the forest industry. Thus, the band also started two silviculture operations that have provided...
employment in Lakalzap and registered it with the SBFEP (Bridges, 1994: 8).

The basic position of the federal and provincial governments in negotiating with First Nations in British Columbia is based on the principle of land selections, where each First Nation chooses a single land base, then these parties negotiate the size of the land parcel. In the case of the Nisga’a Nation, the traditional land selection model was less complicated than that of others because of the characteristics of the population composition and the approach to negotiation. The residents living in the chosen territory were mostly aboriginal people. About 2,500 people out of the nearly 6,000 Nisga’a Nation live in the Nisga’a village of Gingolx (Kincolith), Lakalzap (Greenville), Gitwinksihlkew (Canyon City) and Gitlakdamiks (New Aiyansh). Although the remaining 3,500 live elsewhere in Canada and around the world, the sizable aboriginal population, including good leaders, was effective in settlement of the Nisga’a Final Agreement (NFA).

It was also successful in that the final agreement focused on future problems rather than the past issues. Compensation to affected tenure holders would be discussed between the provincial government and the tenure holders, but not addressed in the agreement itself. In addition, the Delgamuukw decision influenced positively the settlement of the NFA. The provincial and federal governments gave the Nisga’a Nation an array of rights and benefits based on the assertion that the Nisga’a Nation had lived in the Nass Valley since time memorial. Although Nisga’a Lands overlap with the area claimed by other First Nations and the evidence of the Nisga’a ownership of the watershed is not sufficient, the Nisga’a Nation obtained the area because it is the principal First Nation who settled in the Nass River Valley (Poelzer, 1998: 100; Sterritt, 1998: 95).27

3.3.4 Forestry Implications of the Nisga’a Agreement

The Nisga’a Final Agreement (NFA) sets out the Nisga’a ownership of all the forest resources within Nisga’a Lands. The NFA establishes a transition period of five years during which the existing provincial forest licensees can continue their logging operations on Nisga’a Lands and the Nisga’a Nation can set out the rules for forestry activities for both during, and after, the transition period. Federal and provincial laws continue to apply to Nisga’a Lands except when in conflict with the NFA, but the Forest Act and the Forest

27 Sterritt (1998) shows historical evidences of land claim overlaps on the Nisga’a lands and points out the failure of the provincial and federal governments.
Practices Code of British Columbia Act are replaced with Nisga’a timber resource management laws for timber harvesting, silviculture, and road construction. The Nisga’a government also have the right to set rules and standards, which must meet or exceed provincial ones, to regulate forest practices on its lands. The following sections describe the status of the major forestry issues comparing during and after the five-year transition period.

Forest Transition Committee

During the transition period, a Forest Transition Committee, which consists of one representative of each of the province and the Nisga’a Nation, conducts and approves the forest operational plans during the transition period (Davis & Company, 1999b).

Ownership

The Nisga’a Nation owns all Nisga’a Lands, including some part of TFL 1 and lands in three TSAs (Nass, Kalum and North Coast) that are currently operated by two forest licences. After the transition period, all rights in the existing tenure holders expire, but the residual obligations for road deactivation and silviculture continue to be with the responsibility of the relevant tenure holders under the Forest Act. The province remains responsible for enforcing compliance with forest practices legislation by tenure holders of agreements under the Forest Act.

Harvesting rights on Crown lands are not transferable under the Forest Act and on Indian reserves under the Indian Act, and after the transition period the Nisga’a Nation is able to transfer the harvesting licences on Nisga’a Lands, as well as other forest resources from Nisga’a Lands (Davis & Company, 1999b).

Transition Licences

During the first three years of the transition period, the provincial government apportions the harvest rights among the existing licensees under the Forest Act. The allowable timber volume declines over years four and five, while the Nisga’a Nation gradually receives a higher proportion of the allowable volume. The province issues a new form of “licence” to the existing tenure holders in the nature of a non-replaceable forest licence or timber sale licence. These licences expires by the end of the transition period. The total allowable volume decreases after year six, but the Nisga’a Nation is authorized to the whole harvest
During the transition period, the Forest Practices Code applies to temporary licence holders and to Nisga’a operations on other provincial Crown lands, but not to the Nisga’a forestry activities on Nisga’a Lands. These are subject to the Nisga’a timber resource management laws. However, the rules and standards to regulate forest practices on the Nisga’a Lands should meet or exceed provincial standards under the Forest Practices Code of British Columbia Act for timber harvesting, silviculture, and road construction, as well as harvesting and conservation practices for non-timber resources (Davis & Company, 1999b).

After the new laws developed by the Nisga’a Nation replace the Forest Act and Forest Practices Code. The following subject areas are addressed in the new legislation:

- riparian management;
- cutblock design and distribution;
- road construction, maintenance and deactivation;
- reforestation;
- soil conservation;
- biodiversity;
- hazard abatement, fire preparedness and initial fire suppression;
- silvicultural systems and logging methods; and
- forest health.

The provisions of forest practices in the NFA is complex, but the general principle of federal and provincial laws holds in Nisga’a Lands unless inconsistent with the NFA (Davis & Company, 1999b).

Timber Cut Volume and cut control

During the transition period, the volume of timber harvested on Nisga’a Lands should be constant, then decline over the next four years (Table 3.1) (Davis & Company, 1999b). The licence holders operating on Nisga’a Lands are currently subject to the AAC under the Forest Act. For four years after the transition period the NFA limits the rate of harvest from Nisga’a Lands. Harvesting is not subject to cut control under the Forest Act after the transition, but is subject to cut control under Nisga’a timber resource management laws. The
Nisga’a Nation and the province may negotiate agreements in respect to the cut volume, but the harvest rate is determined by the Nisga’a Nation in the case of absence of agreements (Davis & Company, 1999b).

Table 3.1 Harvest volume from Nisga’a Lands other than Indian reserves (Davis & Company, 1999b)

<table>
<thead>
<tr>
<th>Year (from Effective Date)</th>
<th>Timber Cut Volume to the Existing Tenure Holders (m³)</th>
<th>Timber Cut Volume to the Nisga’a Nation (m³)</th>
<th>Total Timber Cut Volume (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>155,000</td>
<td>10,000</td>
<td>165,000</td>
</tr>
<tr>
<td>2</td>
<td>155,000</td>
<td>10,000</td>
<td>165,000</td>
</tr>
<tr>
<td>3</td>
<td>155,000</td>
<td>10,000</td>
<td>165,000</td>
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<tr>
<td>4</td>
<td>135,000</td>
<td>30,000</td>
<td>165,000</td>
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<tr>
<td>5</td>
<td>125,000</td>
<td>40,000</td>
<td>165,000</td>
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<tr>
<td>6</td>
<td></td>
<td>135,000</td>
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<td>9</td>
<td></td>
<td>130,000</td>
<td>130,000</td>
</tr>
<tr>
<td>10+</td>
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</tr>
</tbody>
</table>

**Stumpage**

The actual stumpage is paid to the province by the tenure holder, but the Nisga’a Nation earns a portion of stumpage from the province for timber harvested on Nisga’a Lands by the tenure holders during the transition period. The province determines the amount paid to the Nisga’a Nation considering the notional profit by the tenure holders who pay the actual stumpage. The notional profit is calculated as the difference between the Vancouver log market price for the timber and harvesting costs (Davis & Company, 1999b). After the transition period, the Nisga’a Nation is entitled to levy stumpage charges for any timber harvesting on Nisga’a Lands authorised under authority of the Nisga’a Nation (Davis & Company, 1999b).

**Contractors**

Licences issued to tenure holders during the transition period have to use Nisga’a contractors, if available, for a significant part of the logging by allocating 50 percent for the first year and 70 percent for years two through five of the timber harvest. This displaces
contractors currently servicing tenure holders on Nisga’a Lands (Davis & Company, 1999b). Under the Forest Act and Timber Harvesting Contract and Subcontract Regulation, contractors to tenure holders have certain prescribed rights. With the loss of land to tenure holders operating on TFL 1 and the three TSAs affected by the NFA, the AAC is reduced and may affect the employment for the Nisga’a Nation. The NFA has no control over the treatment of contractors except during the transition period (Davis & Company, 1999b).

3.3.5 Remaining Concerns for Forest Management on Nisga’a Lands

In terms of forestry legislation, the Nisga’a Nation is different from other First Nations in British Columbia because it has its own laws for forest practices on Nisga’a Lands. The NFA reflects a significant change in the regulatory framework of provincial forest standards, details of the transition of timber harvesting, and forest management from Crown control to Nisga’a control. Yet, there remain arguments over the authority of the Nisga’a Nation for its forest management.

For the settlement of NFA, the provincial government has consulted with the Nisga’a Nation on all timber harvesting and forest management on Nisga’a Lands. The Nisga’a Nation and the provincial government negotiated to decide the harvesting time and timber cut volume on Nisga’a Lands. This approach seems to give the Nisga’a all the control over its logging operations, but in fact, stringent restrictions are put on the Nisga’a Nation so that its forest operations can hardly deviate from the status quo. For example, the future harvesting rates are mandated to remain near to the current provincial levels.

The standards in the Nisga’a forest management laws must “meet or exceed” the forest standards applicable to Crown lands under forest practices legislation. However, it is not clear how and who assesses the forest operation on Nisga’a Lands and determines if Nisga’a standards are satisfactory and less intrusive on the environment than those of the province. In addition, much of the lands granted to the Nisga’a Nation have already been cut over, and the Nisga’a Nation can not establish its own primary timber-processing facility for the next decade. The Nisga’a Nation may launch joint ventures to work with the existing non-aboriginal facilities and promote the value-added timber processing (M’Gonigle, 1998 b: 169). Nonetheless, it is hard to say that the Nisga’a Nation has authority over all forest management on Nisga’a Lands.
Chapter Conclusion

For First Nations, as illustrated above, obtaining forest tenure is significant to manage forest resources on their traditional lands and is strongly related to their self-governance. However, the total AAC for aboriginal licensees is infinitesimal and their licenced areas are usually too small to support the local economy. The case studies of the Tl’azt’en, the Westbank Nations indicate that the AAC and the forest tenure type are critical for forest-based community development.

In addition, the relationship of First Nations with the government and the industry affects their forest management. The Tl’azt’en and the Nisga’a Nations worked with non-native parties in developing their forest management plans and operations, even though they have been concerned about exploitation of forest resources by non-native licensees on their traditional lands. Tanizul Timber has played an important role in economic development of the local community and becomes of an example of small-scale, community-based forestry, while the Nisga’a Nation settled treaty negotiations and has its own forest management laws on Nisga’a Lands. On the other hand, the Westbank actions isolated the band from forestry of the province by giving the government excuse for being difficult about issuing forest tenure to First Nations and by increasing concerns of the forest industry over working with the Westbank Nation in the future forestry operations.

For First Nations and the government, chronic societal problems in aboriginal communities are a big issue. Thus, one of the major expectations of native forest management is the increase of social stability and economic self-sufficiency of these communities through forest-based community development. Although the current tenure system is exclusive for First Nations, their control over forest resources can be increased by an effective approach to the government and the industry. It is also important for the existing aboriginal licensees to demonstrate that First Nations have ability to cooperate with other parties and potential to forestry of the province.
Chapter 4: Recommendations for the Future
The current major controversy in forestry may be classified under the categories of institutional, socioeconomic, and environmental, all of which are represented by the tenure system, economic uncertainty by market globalization, and depletion of old growth forests. What is interesting is that these issues overlap with the problems of First Nations in their forest management. The fact that aboriginal people have been institutionally and economically excluded in forest management is arguable as well as the fact that few of them have rights to their traditional territories and natural resources. The issues of forestry that are related to aboriginal people have just begun to be spotlighted, and it is now recognized that First Nations play a significant role in forestry of British Columbia. This chapter has two major objectives; one is to examine how these problems in forestry effect and interact with aboriginal people, and the other is to suggest possible changes and strategies for improving the current forestry situation within the institutional and economic framework by focusing on the roles of aboriginal people in forestry.

4.1 Institutional Change
4.1.1 Reallocation of Forest Tenure
The existing forest tenure system is advantageous only for large-scale forest management operators and neglects First Nations as well as other small-scale licensees and communities. Therefore, it is inevitable that it will be necessary to carry out the drastic reallocation of licences to increase the involvement of First Nations in forest management through community forestry. Under the current policy, the provincial government can take back 5 percent of the AAC from the existing licensees without compensation for various public purposes, but it might be possible to increase the AAC withdrawn from the licensees for reallocation.

The question is, will the provincial government reallocate forest tenure by taking some AAC away from the major licensees that lead the forest industry? For the provincial government, its relationship with the forest industry is important because the dominant large firms are the essential source of revenue. However, the foreign markets, on which the forest industry of British Columbia is dependent, are highly competitive. That is, even large forest companies are unstable in the marketplace, and it has resulted in insufficient stability in providing those companies with a steady or increasing timber supply to avoid the fluctuations of the industry. It is also questionable whether there is a need for sympathy
toward large corporations whose AAC might be reduced for reallocating into First Nations, communities, and small businesses.

Forestry in British Columbia is under pressure by the environmental movement as well. One of the most remarkable events in the last few decades is the local and international alliance of environmental groups and First Nations to protest against large-scale logging, particularly old growth logging, by large corporations. The protest of First Nations is rooted in their cultural values of old growth forests and their rights to the lands, while the aims of environmentalists are for old growth conservation from an ecological standpoint. Thus, First Nations may be at variance with environmental groups on logging after the settlement of their land claims. Despite the disparity, the wide range of alliances against the government and the industry can be powerful in lobbying and in getting international attention.

Considering such pressure from First Nations and environmental groups and the institutional problems, it is reasonable for the government to reform the forest tenure system. There are some positive perspectives of the reformation. For example, the reallocation of forest tenure could be an important step toward addressing the exclusion of aboriginal people from forestry in the province. First Nations may be able to increase the social stability of their community through forest management and that is what the government expects. It is advantageous for the industry to work with First Nations in integrated forest management. In addition, forest tenure itself can be more accessible for small-scale business.

4.1.2 Defining and Balancing the Roles of Each Party

The increase of control over forest tenure by First Nations encourages their land claim settlement, which may result in the complication of forest management authority. This is a big concern for both the government and the industry. Especially non-native tenure holders, whose licensed areas overlap the claimed land, are concerned about losing their access to logging, since First Nations may decide not to lease their forests to these existing licensees when their land claims are settled. Not only the continuation of forest operation but also the compensation for the past mismanagement of these non-native licensees on the claimed area will be controversial. Accordingly, the forest industry are prudent in supporting aboriginal land claims and in working with First Nations unless many of the non-native firms ascertain the secure access to logging in the new circumstances.

However, the settlement of land claims is a matter of time, although it seems almost
impossible to be solved by the slow negotiations. Regardless of the speed of progress, the province needs to be confronted with the transfer of the ownership of Crown forests. What is important is not to retard the land claim settlement, but to reduce the conflicts as much as possible, since the redistribution of forest management authority is crucial for forestry in the province.

The three major parties: the government, the forest industry, and First Nations, have a significant role to play in forestry in British Columbia. Still, power of control of each party is not balanced, since First Nations are excluded economically and politically while the others profit by the forest tenure system. Although the number of forest companies that are interested in joint ventures and co-management has increased, First Nations have rarely been involved in those projects at the decision making level. Yet, the connection of the forest industry with the government is still stronger than that with First Nations. In the redistribution of forest management authority, therefore, it is important to define the role of each party with the balance of power. For example, the annual harvest volume can be set by one authority, as it has been, but the long-term sustainable harvest levels need to be considered to avoid rapid deforestation or unsustainable forest practices. Other ecological matters such as pest and fire control may also be able to be managed by the same party, since those problems do not respect boundaries.

On the other hand, with this redistribution of authority, the economic issues such as the licence fees, will be more complicated compared with the ecological subjects. Non-native companies presently operate on Crown forests under jurisdiction of the provincial government, which imposes the fees on the licensees. However, if the interpretation of the Delgamuukw decision regarding aboriginal land rights is applied to any First Nations in the province, then First Nations own their traditional territories that are now considered as Crown land, and the position of the government as a rent collector will be disputable.

The Nisga’a Nation’s approach is a possible way to deal with the issues of stumpage. The existing licensees keep paying stumpage and other fees no matter who the landowner is, as long as they keep logging in the area, but transfer of ownership will impact on the revenue. Since the lands owned by the Nisga’a Nation will no longer be reserve lands under the Indian Act, tax exemption for Nisga’a citizens will be eliminated after the transition period and the government will levy tax on income from forest operations on Nisga’a Lands. However, there is no guideline on stumpage determination of the Nisga’a Nation, and it is possible for
non-native forest operators to be charged unreasonable fees for logging on Nisga’a Lands.

In addition, there are some concerns regarding forestry on the areas controlled by First Nations. First, it is not clear how far the existing forest tenure system will be applied to the land owned by First Nations except Indian reserves. Second, there is no precise statement about harvesting licences on the native-owned land. In fact, it is not explicit if non-native companies need to obtain licences to operate native-owned forests and who will be responsible for the licences. Third, the lack of independent authority for forestry assessment is a problem. Therefore, the responsibilities and functions of each party need to be clear and a new authority may be established if necessary. Such balanced authority will be effective not only for institutional and economic fairness but also to avoid potential dispute over forestry issued in the province. In addition, every party will have to be independent, be in cooperation with one another, and not to be isolated for the future of forestry of the province in the global scene.

4.2 Socio-economic Challenge

Many First Nations make a statement that they feel excluded from the forest industry because of their limited access to forest resources, including markets and employment. Such an environment is related to the lack of economic self-sufficiency of native communities and the resultant social problems. Therefore, in addition to the institutional change, which is the shift of the legal framework, the improvement of the forestry situation from communities is needed.

4.2.1 Educational and Training Programs

The majority of aboriginal workers in the forest industry are in positions which do not require high qualifications. In other words, they are not directly involved in the industry at a managerial level and have little control over forestry decision making in the province. These native employees are often insufficiently trained for the positions that require managerial expertise, thus educational and vocational programs in forestry are required to train professionals.

The creation of a pool of aboriginal experts in forestry has the potential to alleviate the problems of the forest tenure system and to support the process of land claims. For example, the increase of native professional foresters will give First Nations a strong voice to forest
policy on a provincial level. These foresters will play an important role in forest management on traditional lands of First Nations with respect to their conventional forest practices. The concern of the government over forest management by First Nations may also decrease, and consequently, that may turn to be advantageous to First Nations in claiming forest tenure.

In order to meet the demands of aboriginal students, more educational programs need to be offered within or near native communities. These programs should be offered to students as integrated courses to prepare them for a multifaceted career in forestry. The forest sector demands expertise with an interdisciplinary background as the field of natural resource management does in general. The critical point is that aboriginal people initiate these educational and training programs, but at the same time, the government provides sufficient incentive for them.

Additionally, these programs need to be formal for effectiveness in working with non-native firms and officials as First Nations knowledge about forest practices and their traditional knowledge is considered as holistic. Formal programs can be combined with TEK to stimulate the participation of aboriginal people in forest management. On the other hand, it is important to encourage non-natives to learn TEK of forest use from aboriginal people. This will be effective in addressing the problems of the lack of communications, respect, trust, and knowledge among First Nations, the government, and the industry.

4.2.2 Employment Opportunity
The encouragement of educational and training programs would increase the potential of aboriginal people in employment. However, major employers, who are often non-native directed companies in forestry, generally have no commitment to employ aboriginal people and are not ready to employ trained aboriginal people. On the other hand, many aboriginal workers are willing to be employed in their traditional territories, although they have limited access to forest resources under the current tenure system.

In order to cope with this problem, the government needs to encourage the existing tenure holders that operate forests on traditional lands of First Nations to offer employment to aboriginal workers. When native workers are not available, those licensees may organize their own training programs with government incentives. For the non-native tenure holders, the relationship with First Nations is critical, since all the major decision about forestry will
be left to First Nations after the settlement of their land claims. The existing licensees that are concerned about the continuation of forest operation can provide the capital, business acumen, and management skills, while First Nations can supply land, resources, labour, and economic incentives through the government programs (Nathan, 1993: 152). Accordingly, it is efficient for both First Nations and non-aboriginal tenure holders to collaborate in forestry and such cooperation may include development of joint venture or co-management.

The job creation and training programs sponsored by the government are still important to promote the participation of aboriginal people in the forest industry. However, those programs need to be initiated by First Nations, since past projects led by non-natives have often turned irrelevant to the creation of proper working condition (NAFA, 1997b). Future training programs need to consider that the short-term and less professional employment opportunities, such as reforestation, are less attractive compared to positions with a long-term possibilities or with better condition in other fields.

4.2.3 Market Cultivation

Finding a new market for forest products is a prerequisite for, but equally a hurdle to, successful forest management. The forest industry is confronted with an unprecedented array of challenges caused by globalization of the market. Thus, for small-scale forest operators, it is difficult to survive market globalization and competition with the multinational companies. A recession first hits the highest cost producers, often the small enterprises which are often labour intensive. Considering the limited access to timber supply and markets, which are beyond local control, First Nations need to target a market for their products. This will be one of the most difficult stages of native forest management, which is the result of both institutional and economic factors.

On the other hand, First Nations may take advantage of the environmental movement. Their collaboration with environmental groups will be a powerful tool to approach markets. The wide range of alliances against logging of old growth forests will ensure international attention. Under such a situation, First Nations have two potential ways to target a market; these are promoting value-added products and using eco-certification. First Nations will need to take a philosophical and practical stand on clearcut logging, since they will no longer be allowed to be ambivalent.

The term “value-added” is used to describe timber products that are more fully
manufactured and require more labour resulting in increased revenue from the original raw timber resource. The value-added sector has already been encouraged for some years in the province, since it has significant potential to expand economic activity. The major reasons why the value-added sector is suitable for development of local communities are that the existing facilities of the industry can be used to increased remanufacture and that large volumes of timber need not to be diverted away from those facilities (MOF, 1995: 221). In other words, aboriginal communities, which already have facilities with secure timber supply, need not build anew to start a business. This is critical for First Nations, since many of their communities cannot afford to build new facilities and the AAC of the province may not be increased, although it may be reallocated. Joint ventures and co-management with non-native tenure holders, which already have the large AAC, may also offer First Nations access to facilities and steady wood supply.

In addition, the market for value-added products may be large, since those products can meet the specific needs of customers all over the world. International trade agreements such as World Trade Organization (WTO) and North American Free Trade Agreement (NAFTA) promote multinational corporations in the global marketplace as a result of reducing tariff barriers in the major trades, so that it is risky for First Nations to compete with large corporations under such stipulations. For example, First Nations may find it difficult to survive in a highly competitive lumber market. On the other hand, it is possible to take advantage of conditions of these agreements. If First Nations target a number of specific small-scale markets for their value-added products, not only North America but European Union and Asian countries will be a potential market.

Timber products become more valuable in the market when certified as environmentally conscious goods. Eco-certification is an important means for the marketing and sale of timber products in the global marketplace, since it informs customers that the wood products are from sustainably-managed forests. Compared with certification of food, which affects human health and safety, certification of forest products will be difficult to be widely recognized among consumers (Hammond, 1997: 193). On the other hand, there is a growing concern over deforestation particularly as a result of logging of old growth forests. Thus, being certified is an essential factor of both survival and successful marketing in the forest industry. However, as the certified products become more in demand, certification standards may be more confusing, since some certifiers are willing to put their label on the wood
products from unsustainable forests such as areas of clearcut and areas managed with pesticides (Hammond, 1997: 193-194). Therefore, producers need to consider which certification they obtain for their timber products.

The environmental movement has prompted people to think about their impact on the natural environment. This is reflected in the market trends. Products with eco-certification have been more available, while the concept of value-added has only recently been concerned. Considering the length of the forest cycle and the forest product trends, it is expected that wood supply will not increase rapidly, while demand for timber products will do so. Therefore, First Nations could be successful in forest management through value-added products and eco-certification that meet the demands of a market.

4.3 Environmental Strategy

There is a concern that large areas of old growth forests, which have environmental, economic, and cultural values, have already been harvested and lost. The question of how much old growth forests of the province need to be protected is highly relevant to the subjects of maintaining biodiversity, the role of the logging industry, recreational values, and cultural heritage of First Nations. British Columbia has a significant role to play in maintaining the remaining old growth forests in the global society, but equally it has to keep supporting the local economy through the forest industry. First Nations of the province have a similar or more serious dilemma of whether to protect or to harvest old growth forests on their land that have both potential for economic activity as well as value as cultural heritage. Therefore, the protection of old growth forests without the decline of economic benefit is a critical issue for the province, and First Nations’ perspectives are important to cope with this issue.

4.3.1 Protection of Old Growth Forests

The current government is positive to see the province protect as much as possible to ensure a sustainable environment and old growth protection is not confined to protected areas (Hamilton, 2000b). Accordingly, areas of protected old growth will increase through incentive by the government and through other forest management plans. However, the forest industry worries that the government intends to restrict logging in the province and objects to increasing areas for protection to more than 12 percent (Sanjayan and Soul, 1997). On the other hand, environmental groups say that 12 percent is not enough and ask for a
further increase of protected areas in the province (Hamilton, 2000b). The blind spot of this argument is that there are about 5 million hectares of old growth forests included in neither protected areas nor commercial forest lands. If these non-categorized old growth forests do not overlap with the currently licenced forest land, it is possible to increase total protected old growth forests without damaging the logging industry.

However, it is still important to protect certain areas of old growth forests because almost 70 percent of old growth forests in the province are in commercial forest land and have been clearcut. It is also necessary to look for a clear vision of provincial forestry in terms of environmental conservation since there is no specific idea about what the province should do after the 12 percent target is accomplished.\textsuperscript{28}

4.3.2 Timber Harvest Volume and Logging Systems

In terms of environmental sustainability and the importance of old growth forests, both the allowable harvest volume and logging systems need to be reconsidered. To put it concretely, the annual harvest volume needs to respect long-term sustainable levels and selective logging systems can be encouraged for management of uneven-aged forests. At the same time, reforestation is important, since the severe reduction of harvest volume from old growth forests will cause social disruption in communities, which are dependent on the logging industry. This problem may be more serious for First Nations not only because of the current limited access to forest resources but because of the potential restriction of logging on their forests. In order to avoid such difficulties, the future of these communities need to be ensured by the appropriate reallocation of forest tenure as well as by sufficient incentives for community forestry. First Nations also have a question of how they shape forest management, considering that their traditional perspectives of forest use seem philosophically incompatible with modern forestry. Therefore, it is important for First Nations to make their stance about clearcut logging clear. Economic and technical factors, which constrain First Nations to use the clearcut logging system, might be reduced by the governmental incentive and programs.

\textsuperscript{28} In November 2000, the total protected area in British Columbia reached 11,609,017 hectares that represent 12.25 percent of the province (LUCO, 1999). However, in terms of the entire forest land, less than ten percent of forests in the province are in the protected areas Greenpeace, 1997a).
4.3.3 Data Collection

Looking at the past successful cases, what is crucial for First Nations to obtain forest tenure is official documents or data of forest management in the claimed areas. First Nations traditionally do not record their histories and practices of natural resources use in written form, and thus it is difficult to prove that their forest management practices have been more sustainable than those by non-natives. However, it is recommended to First Nations that they start or keep collecting any natural and social scientific data on forestry for the future. Carrying out research on forestry in cooperation with other native and non-native groups will be more efficient if they collect more interdisciplinary data for larger areas. The governments, which also lack information on subjects related to First Nations, can cooperate in the research, as well as through education and training programs and economic incentives. Documents based on reliable research are important when First Nations state their potential, not only in forestry but, in natural resource management in general.

Chapter Conclusion

The idea of forestry has begun to shift from volume-based management to a more comprehensive approach and this change has recently been reflected in the provincial forest policies and programs. Thus, all the major parties that have different standpoints of forestry need to develop a common ground. In this situation, native perspectives will be influential in the new directions in forestry of British Columbia, since the array of issues, with which provincial forestry is confronted, overlap with those of First Nations.

In order to deal with the forestry issues at the institutional level, these changes are recommended:

- To reallocate forest tenure by taking the AAC away from the major licensees to encourage First Nations’ involvement in forest management through community forestry,
- To define the roles of the provincial government, the forest industry, and First Nations in forestry considering the balance of power,
- To increase employment opportunities along with the training programs for aboriginal people in the forest sector,
- To increase the areas of protected old growth forests, and
- To reconsider timber harvest volume and logging systems to respect sustainability of forests.
At the same time, the following actions from aboriginal people are important:
- To take initiatives in educational and training programs,
- To target the markets of value-added and eco-certified forest products,
- To start or keep collecting natural and social scientific data in forestry, and
- To make their stance clear in forestry particularly about clearcut logging.

Dissatisfaction of First Nations may lead the future of forestry of the province to an impasse, since cooperation of First Nations is crucial in integrated forest management. The involvement of First Nations in forestry hence need for both themselves and the forest industry. First Nations should be powerful advocates for considering non-timber values of forests. Incorporating TEK in forestry programs will be effective for First Nations to make their cultural identity stronger. On the other hand, the traditional forest use by First Nations is different from and often incompatible with modern forestry. The common understanding about cultural ties of aboriginal people to nature is less evident in modern society. Therefore, it is important for First Nations to demonstrate that their forest management has been and will be sustainable and suitable for forestry in the province. First Nations will have a significant role in forestry through conservation of old growth forests and through incorporating their TEK, thus it is important to shape their stance in and perspectives of forestry in the 21st century.
Summary

It is recognized globally that forests are important for various reasons from ecological to socio-economic to cultural and aesthetic values. The international community has emphasized the potential contribution of indigenous knowledge and experience for the achievement of sustainable development. However, the total area of the world’s forests has been in decline for the last few decades. This is an urgent issue, since it is related to multiple environmental problems that affect many societies as a result of damaging forest ecosystems.

Canada has a large proportion of original forest cover. Thus, it has great opportunity and responsibility for maintaining large areas of forests as well as the potential to contribute to the approach that aims to apply aboriginal knowledge to forest management.

In British Columbia, cultural and economic values of forests are significant. Aboriginal people have traditionally distinctive cultural and spiritual ties to old growth forests on their traditional lands (Henley, 1989; Poelzer, 1998; Turner, 1997; Walkem, 1994). They pass down their traditional way of life and knowledge, which are rooted in the ideas of using natural resources with respect (Turner, 1997). Their cultural association with forest ecosystems is reflected in clan lines, kinship, and rituals. Much of oral history and sacred stories of First Nations are related to the forest landscape, especially old growth forests. Accordingly, protection of old growth forests is important not only for maintaining biodiversity but also for respecting cultural heritage of First Nations.

Slightly over 12 percent of all remaining old growth forests in British Columbia are currently in the protected areas under the Protected Areas Strategy (PAS). However, there remains a question if 12 percent is reasonable to protect old growth forests, which are environmentally and culturally important. In fact, almost 70 percent of old growth forests are on commercial forest land and most areas have been clearcut. The focal point of old growth logging is that most forests have been harvested by clearcutting methods, which is an environmentally devastating logging system. There has been a public concern over biodiversity and ecological values of old growth forests. For First Nations, clearcutting of old growth forests is a large controversy, since they are concerned about or dislike clearcutting, which is the most common and the less costly method of timber harvesting. However, they do not oppose to logging itself. Another dilemma is that conventional forest practices by aboriginal people based on their traditional knowledge are incompatible with modern forestry.
In addition to logging of old growth forests, First Nations in British Columbia are confronted with their limited access to forest resources. Although they have used forests for their physical and cultural needs for thousands of years, they have been marginalized in provincial forestry in institutional and economic realms. The marginalization has been serious for some decades not only for the institutional changes that have occurred in the province but also the result of the international influence and economic globalization. First Nations have rarely been involved in the decision making process or had the employment opportunity generated from forest operation on their traditional lands.

Participation of First Nations in forestry operations is an important factor, since many aboriginal communities have focused their economic development on the management of their forest lands. In 1991, the provincial government made a commitment to negotiate modern treaties with First Nations for addressing the social, economic, and environmental concerns. In 1996, First Nations Forestry Program (FNFP) started to improve the economic conditions of aboriginal communities by assisting First Nations with building their capacity of manage forest resources on reserves. The forest industry has changed and non-native forest companies have become more willing to work with First Nations through joint ventures and co-management strategies.

However, native control of forest resources is still limited by the provisions of the Indian Act and Indian Timber Regulations. First Nations have difficulties in having financial support, since their reserves are held in trust by the Crown and cannot be used as collateral. The shortage of native-owned silvicultural businesses and facilities and little involvement of First Nations in the manufacturing sectors are problems. There is also a concern that there are insufficient native workers with business skills and expertise in forestry, since aboriginal people have had little opportunity for higher education and training programs in the field. This is related to employment problems of aboriginal in the forest industry. Some non-native corporations have been positive by involving First Nations in their forest management activities, while others usually hire the best person for the job, regardless of the candidate’s background. Nonetheless, the lack of educational background and experiences is a disadvantage for aboriginal aspirants.

Market globalization, which is beyond the control of individual states, is a constraint for First Nations. British Columbia is the world’s most important exporter of softwood lumber, but in a high competitive market, no producers can control prices. The global trade
agreements such as World Trade Organization (WTO) and North American Free Trade Agreement (NAFTA) are also advantageous for large multinational corporations and decrease economic influences of governments on the forest products. The Food and Agriculture Organization of the United Nations (FAO) and Resource Information System, Inc. (RISI) forecast that world demand for lumber will decrease in the next few decades.

In addition to these negative factors that restrict forest management by First Nations, the forest tenure system is a crucial component of the marginalization of First Nations in provincial forestry. Despite the public ownership of Crown forests, a small number of integrated companies with long-term and relatively secure tenures dominate most of the allowable annual cut (AAC). On the other hand, the government collects various fees from the licensees without regulating old growth logging by tenure holders. This corporate concentration is controversial because forest management by these companies has been mostly timber volume-based, which is not always the best for long-term sustainability. It is also argued that small-scale forestry operators such as First Nations and local communities are excluded under the current tenure system.

First Nations think that the provincial forestry regulations, including the AAC and other management requirements, are strongly biased toward timber production and neglect protection of wildlife habitat and their traditional pursuits in forests. The concern of First Nations over the policies is related to how their traditional philosophies of holistic forest use can be compatible with the provincial objectives of forestry. Nonetheless, it is important for First Nations to have harvesting licences because the forest tenure system is the most powerful tool of forest management in the province today. Without forest tenure, First Nations are almost not able to use forest resources even on their traditional lands. In fact, most forestry activities in the province have occurred on traditional territories claimed by First Nations without any input from, or any consent from them, and First Nations have had little economic benefit from these activities.

On the other hand, there are positive changes in forestry of British Columbia. For example, the idea of ecosystem-based integrated forest management has been introduced and the major licensees emphasize the importance of working with First Nations in their forest operations. Considering such an environment, First Nations will increase their control over forest resources by incorporating their traditional ecological knowledge (TEK) and promoting community forestry.
The Nuu-Chah-Nulth Nations has played a significant role in the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound for demonstrating the scientific validity of TEK. The Panel found that TEK of First Nations is essential for gathering information on culturally important areas and plant and animal habitats that are used for mapping. Collecting and incorporating TEK are important not only for integrated forest management but also for First Nations, since the body of data is vital for them in their claim for their rights over their traditional territories.

In 1997, the provincial government launched the Community Forest Pilot Project (CFPP) to expand community involvement in forest management and some native communities have been involved in the project. The Klahoose Nations is a unique case, since its alliance with the neighbour community does not involve any industrial timber companies. The band and non-native local community have worked together to promote ecosystem-based forest management and ecologically sustainable forest-based economic development. The total AAC for Forest Licences owned by First Nations has increased as a result of the CFPP, but the availability of greater forested areas for management is still limited. Therefore, forest tenure is more important and effective for forest management by First Nations.

In the Delgamuukw decision of 1997, the Supreme Court of Canada affirmed unextinguished rights of First Nations in British Columbia to their traditional land including forest resources on the land. About fifty First Nations bands are negotiating their land rights and title, and they have become more assertive since the Delgamuukw decision. However, most of their treaty talks have had made little significant progress, and many First Nations have been frustrated by the attitude of government. On the other hand, the provincial government is concerned about complications of resource management authority accompanied by the transfer of the land ownership. Therefore, the tenure system has unique implications for both First Nations and provincial forestry. The three case studies of different phases of forest management by First Nations—the Tl’azt’en, the Westbank, and the Nisga’a Nation—illustrate the significance of obtaining forest tenure to control forest resources on their traditional land.

The Tl’azt’en Nation has a Tree Farm Licence and runs a timber company, Tanizul Timber, since 1981. The company is the only aboriginal tenure holder of the area-based forest licence, which is large enough to provide long-term economic development for the local community. When the Tl’azt’en people decided to focus on their forest resources as a
means of enhancement of employment and social well-being, forests in the area were being logged by non-native companies. Thus, the Tl’azt’en Nation had to compete for forest tenure. The band once worked with outside professional assistance when it prepared the proposal for forest management in the TFL area, and this strategy was effective to acquire the federal financial assistance. Tanizul Timber has provided employment for the band members and its revenue generated has supported the local economy.

The Westbank Nation holds a Woodlot Licence with 830 cubic metres of AAC, but the band has attempted to get forest tenure for 600,000 cubic metres of harvest volume from its traditional territory. The treaty negotiation had not progressed and the band had been frustrated for some years before the band members began unauthorized logging on Crown land in 1999. The Westbank Nation referred to the Delgamuukw decision to justify its protest logging, but the decision is about other First Nations and the provincial government has failed to adequately address the ramification and the implications of the decision. The controversy about the protest logging by the Westbank members revealed the frustration of First Nations about their land claims as well as their struggles for obtaining forest tenure.

The Nisga’a Nation achieved its treaty settlement in 2000 after a long negotiation and obtained the rights to the timber on Nisga’a Lands and to set its own forestry regulation. For the Nisga’a Nation, controlling natural resources on its lands is a significant change and equally is a big challenge in both economic and environmental terms. The Nisga’a forestry regulation may not distinctively different from the provincial laws, but the Nisga’a Treaty can be a model of the settlement of comprehensive land claims for the other First Nations involved in their treaty process. The Nisga’a approach that focused on future issues rather than compensation of the past mismanagement of forests by non-natives in the area and thus promoted the treaty settlement. Also, the Nisga’a Nation looked for the best forest companies that offered joint venture with the band, and this illustrated the potential of First Nations to work with non-native firms in forest management even after their land claims are settled. The settlement of the Nisga’a Treaty is not only a turning point of the long neglected history of First Nations’ territorial land claims but a cornerstone of aboriginal land claims in British Columbia.

The forest tenure system, economic uncertainty by globalization, and degradation of old growth forests represent the current major issues in forestry of British Columbia. These issues overlap with the problems of First Nations in their forest management. Thus,
improving the situation of First Nations would result in resolving these issues in forestry in the province.

In terms of the institutional framework, the government needs to carry out innovative reallocations of forest tenure, for instance by taking back some AAC from the major licensees and apportioning it to First Nations through community-based forest tenure. The reallocation can be an important step toward addressing the exclusion of First Nations from forestry in the province. First Nations may be able to increase the social stability of their community as a result of forestry-based economic development. This relieves a financial burden on governments. For the forest industry, collaborating with First Nations on integrated forest management is advantageous.

The complication of forest management authority caused by native forest management is another concern for both the government and the industry. Thus, it is important to define the role and to balance the power of the major parties. Redistributing the authority with the balance will be effective not only as an aim at institutional and economic fairness but also to avoid potential dispute over forestry in the province.

In addition to the institutional reformation, it is necessary to improve the socioeconomic condition of First Nations in forestry, since their marginalized situation is related to the reinforcing circle of the lack of economic self-sufficiency and resultant the social problems. Interdisciplinary educational and training programs can be helpful to create a pool of aboriginal experts who will be able to implement integrated forest management from the point of view of First Nations. These programs would increase employment opportunity for aboriginal people not only in the forest industry but in the field of natural resource management in general. Although the government can keep providing incentives, First Nations need to take the initiative in carrying out these programs. It is also important for the programs to focus on TEK to encourage the participation of both First Nations and non-natives. This will be effective in addressing problems of the lack of communications, respect, trust, and knowledge among First Nations, the government, and the industry.

Targeting a market for forest products is also critical for successful forest management. It would be effective for First Nations to promote value-added products rather than to join the competitive lumber market under market globalization. The environmental movement and the collaboration with environmental groups will be advantageous for First Nations in ensuring international attention. Timber products become more valuable in the market when
certified as environmentally conscious goods. Accordingly, using eco-certification for the products can also be successful in markets.

First Nations' perspectives are important for the environmental aspect of forestry because the protection of old growth forests without the decline of economic benefit is a critical issue for both First Nations and the province. Economic and technical factors, which constrain tenure holders to use the clearcut logging system, might be reduced by the governmental incentives and programs. In order to prevent further degradation of old growth forests in British Columbia, long-term sustainable levels, selective logging systems for uneven-aged forests, and reforestation on commercial forest land need to be done. At the same time, the future of communities, which are dependent on the logging industry, need to be ensured by the appropriate reallocation of forest tenure as well as by sufficient incentives for community forestry. First Nations need to take a philosophical and practical stand on clearcut logging, because their traditional forest use is philosophically incompatible with modern forestry but because they will be influential in the new directions for provincial forestry. In addition, collecting natural and social scientific data on traditional lands is important for First Nations to demonstrate their sustainable forest management practices, although it is not their tradition to record their histories and practices of natural resource use in written form.

The issues of forestry and First Nations have just begun to be spotlighted, but they have a powerful voice and potential in the resolving land and forest resource issues. Dissatisfaction of First Nations may lead the future of provincial forestry to an impasse. Therefore, their perspectives and participation are important for the future of forestry.
Appendices

Appendix A: Forest Tenures Held by First Nations in British Columbia, 1991
(IFABC, 1991: Attachment #7, P. 8)

<table>
<thead>
<tr>
<th>Licence #</th>
<th>Licenee</th>
<th>Region</th>
<th>AAC (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Ahoushat Indian Band</td>
<td>Vancouver</td>
<td>1,225</td>
</tr>
<tr>
<td>41</td>
<td>Chehalis Indian Band</td>
<td>Vancouver</td>
<td>4,300</td>
</tr>
<tr>
<td>131</td>
<td>Kispiox Band Council</td>
<td>Pr. Rupert</td>
<td>1,143</td>
</tr>
<tr>
<td>135</td>
<td>Glen Vowell Band Council</td>
<td>Pr. Rupert</td>
<td>1,000</td>
</tr>
<tr>
<td>231</td>
<td>Saulteau Indian Band</td>
<td>Pr. George</td>
<td>1,250</td>
</tr>
<tr>
<td>292</td>
<td>Stellaquo Indian Band Council</td>
<td>Pr. George</td>
<td>810</td>
</tr>
<tr>
<td>313</td>
<td>Quaaout Resouces Ltd. (Little Shuswap Indian Band Council)</td>
<td>Kamloops</td>
<td>2,010</td>
</tr>
<tr>
<td>315</td>
<td>Adams Lake Indian Band Council</td>
<td>Kamloops</td>
<td>3,077</td>
</tr>
<tr>
<td>338</td>
<td>Spallumcheen Indian Band Council</td>
<td>Kamloops</td>
<td>720</td>
</tr>
<tr>
<td>346</td>
<td>Westbank Indian Band Council</td>
<td>Kamloops</td>
<td>830</td>
</tr>
<tr>
<td>354</td>
<td>Lower Nicola Indian Band Council</td>
<td>Kamloops</td>
<td>897</td>
</tr>
<tr>
<td>355</td>
<td>Coldwater Indian Band Council</td>
<td>Kamloops</td>
<td>654</td>
</tr>
<tr>
<td>380</td>
<td>North Thompson Indian Band Council</td>
<td>Kamloops</td>
<td>760</td>
</tr>
<tr>
<td>501</td>
<td>Alkali Lake Indian Band</td>
<td>Cariboo</td>
<td>1,255</td>
</tr>
<tr>
<td>559</td>
<td>Canim Lake Indian Band</td>
<td>Cariboo</td>
<td>1,080</td>
</tr>
<tr>
<td>590</td>
<td>Toosey Indian Band</td>
<td>Cariboo</td>
<td>1,015</td>
</tr>
<tr>
<td>593</td>
<td>Soda Creek Indian Band</td>
<td>Cariboo</td>
<td>1,030</td>
</tr>
<tr>
<td>601</td>
<td>Doig River Band Council</td>
<td>Pr. George</td>
<td>872</td>
</tr>
<tr>
<td>612</td>
<td>Halfway River Band Council</td>
<td>Pr. George</td>
<td>690</td>
</tr>
<tr>
<td>635</td>
<td>Stoney Creek Indian Band Council</td>
<td>Pr. George</td>
<td>790</td>
</tr>
</tbody>
</table>

Total First Nations Woodlot Licences: 26,308
Total Provincial Woodlot Licences: 472,000

<table>
<thead>
<tr>
<th>Licence #</th>
<th>Licenee</th>
<th>Region</th>
<th>AAC (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Stuart-Trembleur Band (Tl'atz'en Nation)</td>
<td>Pr. Rupert</td>
<td>132,300</td>
</tr>
</tbody>
</table>

Total First Nations Forest Licences: 132,300
Total Provincial Forest Licences: 18,422,000

<table>
<thead>
<tr>
<th>Licence #</th>
<th>Licenee</th>
<th>Region</th>
<th>AAC (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hecate Logging Ltd. (Ehattesaht Band)</td>
<td>Vancouver</td>
<td>78,374</td>
</tr>
<tr>
<td></td>
<td>Zaul-Zap-Industries Ltd. (Canyon City Band)</td>
<td>Pr. Rupert</td>
<td>50,000</td>
</tr>
</tbody>
</table>

Total Indian Forest Licences: 128,374
Total Provincial Forest Licences: 39,876,000
Appendix B: Definition of Aboriginal Rights  
(B.C. Ministry of Aboriginal Affairs, 1996)

Aboriginal rights:

- refer to practices, traditions or customs ("activity[ies]") which are integral to the distinctive culture of an aboriginal society and were practiced prior to European contact, meaning they were rooted in the pre-contact society (the date is no longer prior to 1846, the date British sovereignty was asserted in B.C.);
- must be practiced for a substantial period of time to have formed an integral part of the particular aboriginal society's culture;
- must be an activity that is a central, defining feature which is independently significant to the aboriginal society;
- must be distinctive (not unique), meaning it must be distinguishing and characteristic of that culture;
- must be based on an actual activity related to a resource: the significance of the activity is relevant but cannot itself constitute the claim to an aboriginal right;
- must be given a priority after conservation measures (not amounting to an exclusive right);
- must meet a continuity requirement, meaning that the aboriginal society must demonstrate that the connection with the land in its customs and laws has continued to the present day;
- may be the exercise in a modern form of an activity that existed prior to European contact;
- may include the right to fish, pick berries, hunt and trap for sustenance, social and ceremonial purposes (for example, ceremonial uses of trees and wildlife locations);
- may include an aboriginal right to sell or trade commercially in a resource where there is evidence to show that the activity existed prior to European contact "on a scale best characterized as commercial" and that such activity is an integral part of the aboriginal society's distinctive culture;
- may be adapted in response to the arrival of Europeans if the activity was an integral part of the aboriginal society's culture prior to European contact;
- do not include an activity that solely exists because of the influence of European contact; and
- do not include aspects of aboriginal society that are true of every society such as eating to survive.

Aboriginal rights arise from the prior occupation of land, but they also arise from the prior social organization and distinctive cultures of aboriginal peoples on that land. Treaty negotiations will translate aboriginal rights into contemporary terms (B.C. Ministry of Aboriginal Affairs, 1996).
## Appendix C: Chronology of British Columbia Forest Tenure System
(Clogg, 1999)

<table>
<thead>
<tr>
<th>Pre-European Contact</th>
<th>First Nations governed the land and resources of British Columbia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1838</td>
<td>Crown grant to Hudson's Bay Company of exclusive trading rights in B.C.</td>
</tr>
<tr>
<td>1846</td>
<td>British sovereignty over B.C. asserted through the Oregon Boundary Treaty with USA.</td>
</tr>
<tr>
<td>1849</td>
<td>Crown colony of Vancouver Island created.</td>
</tr>
<tr>
<td>1858</td>
<td>Grant to Hudson's Bay Company revoked. Crown colony of B.C. created.</td>
</tr>
<tr>
<td>1865</td>
<td>The <em>Land Ordinance, 1865</em> provides for the earliest timber tenure, the &quot;timber lease.&quot; Any rent, terms or provisions of these leases are at the discretion of the Governor.</td>
</tr>
<tr>
<td>1883-84</td>
<td>1.9 million acres on Vancouver Island granted to the Esquimalt &amp; Nanaimo Railway Co.</td>
</tr>
<tr>
<td>1888</td>
<td>Timber licences (TLs) with a one year term are introduced. TLs are limited to 1,000 acres.</td>
</tr>
<tr>
<td>1905</td>
<td>All TLs are made fully transferable and renewable yearly. Over the next three years the number of TLs rises from 1,500 to more than 15,000 in a &quot;frenzy of timber staking..&quot;</td>
</tr>
<tr>
<td>1907</td>
<td>Granting of TLs suspended by Order in Council (607 TLs remain today).</td>
</tr>
<tr>
<td>1909</td>
<td>Royal Commission of Inquiry headed by F.J. Fulton is mandated to explore how B.C.'s forests could best be managed. The Commission's 1910 report recommends retaining Crown ownership of forest lands, and makes other recommendations that are incorporated in the 1912 Forest Act.</td>
</tr>
<tr>
<td>1912</td>
<td>B.C.'s first Forest Act is passed. It creates a Forest Branch of the Department of Lands that has jurisdiction over all matters connected to forestry, and provides for the creation of forest reserves where it is desirable to reserve lands for the perpetual growing of timber from 1912 until 1948 the Forest Act authorizes new access to timber only through the purchase of short-term licences to cut timber involving the auction of timber on a defined area of Crown land.</td>
</tr>
<tr>
<td>1943</td>
<td>Concerns about increasing industrial demand for secure timber supplies and inadequate reforestation lead to the appointment of a Royal commission headed by Chief Justice Gordon Sloan.</td>
</tr>
<tr>
<td>1945</td>
<td>The Sloan Royal Commission report recommends tenure arrangements that would support &quot;sustainable yield of wood of commercially useable quality from regional areas in yearly or periodic quantities of equal or increasing volume.&quot; Sloan's recommendations closely parallel Chief Forester Orchard's earlier memo.</td>
</tr>
<tr>
<td>1947</td>
<td>The Forest Act incorporated many of the recommendations of the Sloan Royal Commission by introducing two tools to facilitate sustainable yield management. One is Forest Management Licences (today replace by TFLs) with long-term, secure, area-based tenures to be granted to large private companies. The other one is Public Working Circles (later called Public Sustained Yield Units or PSYUs) to be managed by province, in which volume-based licences are to be granted.</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
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<tr>
<td>------</td>
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</tr>
<tr>
<td>1956</td>
<td>A second Royal Commission headed by Sloan evaluates implementation of the policy direction embodied in the 1947 legislation, and recommends its continuation and expansion.</td>
</tr>
<tr>
<td>1975</td>
<td>Royal Commission on Forest Resources is appointed. Commissioner Peter Pearse's report in 1976 recommends simplifying the existing tenure system, shifting responsibility for reforestation and silviculture to industry and increasing opportunities for small operators.</td>
</tr>
<tr>
<td>1978</td>
<td>PSYUs are converted into a third as many Timber Supply Areas. Amendments to the Forest Act retain the TFL as a primary form of tenure and a new volume-based tenure, the FL, is created for granting rights to harvest timber in the TSAs. Woodlot licences are also introduced.</td>
</tr>
<tr>
<td>1981</td>
<td>Small Business Forest Enterprises Program (SBFEP) introduced.</td>
</tr>
<tr>
<td>1988</td>
<td>SBFEP is expanded by a five percent &quot;take-back&quot; of AAC from all major tenure holders.</td>
</tr>
<tr>
<td>1989</td>
<td>Ministry of Forests proposes &quot;rolling over&quot; volume-based FLs into TFLs, but does not do so after public hearings indicate widespread public opposition.</td>
</tr>
<tr>
<td>1991</td>
<td>Report of the forest Resources Commission, the Future of Our Forests, makes recommendations for tenure reform, including reducing the AAC held under tenure by companies with manufacturing facilities by &quot;not more than 0 percent of the lesser of either their processing capacity or their present cut allocation, and that the wood freed up be used to create a greater diversity of tenures.&quot;</td>
</tr>
<tr>
<td>1998</td>
<td>Forest Act is amended to provide for granting community forest agreements and community forest pilot agreements.</td>
</tr>
</tbody>
</table>
Appendix D: Species Designated by the Committee on the Status of Endangered Wildlife in Canada Which Occur in British Columbia
(CFS, 1997: 71; Harcombe, 1994: 26)

<table>
<thead>
<tr>
<th>Status</th>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extirpated</td>
<td>Pygmy Short-horned Lizard</td>
<td>Phrynosoma douglasi</td>
</tr>
<tr>
<td></td>
<td>Southern Maidenhair Fern</td>
<td>Adiantum capillus-veneris</td>
</tr>
<tr>
<td></td>
<td>Leatherback Turtle</td>
<td>Dermochelys coriacea</td>
</tr>
<tr>
<td></td>
<td>Anatum Peregrine Falcon</td>
<td>Falco peregrinus</td>
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<tr>
<td></td>
<td>Sage Thrasher</td>
<td>Oreoscoptes montanus</td>
</tr>
<tr>
<td></td>
<td>Spotted Owl</td>
<td>Strix occidentalis</td>
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<tr>
<td></td>
<td>Salish Sucker</td>
<td>Catostomus sp.</td>
</tr>
<tr>
<td></td>
<td>Sea Otter</td>
<td>Enhydra lutris</td>
</tr>
<tr>
<td></td>
<td>Right Whale (Pacific population)</td>
<td>Belaena glacialis</td>
</tr>
<tr>
<td></td>
<td>Vancouver Island Marmot</td>
<td>Marmota vancouverensis</td>
</tr>
<tr>
<td>Threatened</td>
<td>Giant Helleborine</td>
<td>Epipactus gigantea</td>
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<tr>
<td></td>
<td>Mosquito Fern</td>
<td>Azolla mexicana</td>
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<tr>
<td></td>
<td>Western Blue Flag</td>
<td>Iris missourensis</td>
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<tr>
<td></td>
<td>Burrowing Owl</td>
<td>Speotyto cunicularia</td>
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<tr>
<td></td>
<td>Ferruginous Hawk</td>
<td>Buteo regalis</td>
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<tr>
<td></td>
<td>Loggerhead Shrike</td>
<td>Lanius ludovicianus</td>
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<tr>
<td></td>
<td>Marbled Murrelet</td>
<td>Brachyramphus marmoratus</td>
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<tr>
<td></td>
<td>White-headed Woodpecker</td>
<td>Picoides alborvatus</td>
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<tr>
<td></td>
<td>Enos Lake Stickleback</td>
<td>Gasterosteus spp.</td>
</tr>
<tr>
<td></td>
<td>Shorthead Sculpin</td>
<td>Cottus confusus</td>
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<tr>
<td></td>
<td>North Pacific Humpback Whale</td>
<td>Megaptera novaanglia</td>
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<tr>
<td></td>
<td>Wood Bison</td>
<td>Bison bison athabascae</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>Macoun's Meadowfoam</td>
<td>Limnanthes macounii</td>
</tr>
<tr>
<td></td>
<td>Phantom Orchid</td>
<td>Cephalanthera ausitinae</td>
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<tr>
<td></td>
<td>Pacific Giant Salamander</td>
<td>Dicamptodon ensatus</td>
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<tr>
<td></td>
<td>Caspian Tern</td>
<td>Sterna caspia</td>
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<tr>
<td></td>
<td>Common Barn Owl</td>
<td>Tyto alba</td>
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<tr>
<td></td>
<td>Cooper's Hawk</td>
<td>Accipiter cooperii</td>
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<tr>
<td></td>
<td>Flammulated Owl</td>
<td>Otus flammeolus</td>
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<td></td>
<td>Great Gray Owl</td>
<td>Strix nebulosa</td>
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<tr>
<td></td>
<td>Long-billed Curlew</td>
<td>Numenius americanus</td>
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<tr>
<td></td>
<td>Peale's Peregrine Falcon</td>
<td>Falco peregrinus pealei</td>
</tr>
<tr>
<td></td>
<td>Trumpeter Swan</td>
<td>Cygnus buccinator</td>
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<tr>
<td></td>
<td>Tundra Peregrine Falcon</td>
<td>Falco peregrinus tundrius</td>
</tr>
<tr>
<td></td>
<td>Charlotte Unarmored Stickleback</td>
<td>Gasterosteus aculeatus</td>
</tr>
<tr>
<td></td>
<td>Giant Stickleback</td>
<td>Gasterosteus sp.</td>
</tr>
<tr>
<td></td>
<td>Green Sturgeon</td>
<td>Acipenser medirostris</td>
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<tr>
<td></td>
<td>White Sturgeon</td>
<td>Acipenser transmontanus</td>
</tr>
<tr>
<td></td>
<td>Lake Lamprey</td>
<td>Lampetra macrostoma</td>
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<tr>
<td></td>
<td>Pacific Sardine</td>
<td>Sardinops sagax</td>
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<tr>
<td></td>
<td>Speckled Dace</td>
<td>Rhinichthys osculus</td>
</tr>
<tr>
<td></td>
<td>Umatilla Dace</td>
<td>Rhinichthys umatilla</td>
</tr>
</tbody>
</table>
Vulnerable Fringed Myotis
Keen’s Long-eared Bat
Pallid Bat
Queen Charlotte Islands Ermine
Spotted Bat
Wolverine-Western Population
Western Woodland Caribou
Grizzly Bear

Myotis thysanodes
Myotis keenii
Antrozous pallidus
Mustela erminea haidarum
Euderma maculatum
Gulo gulo
Rangifer tarandus caribou
Ursus arctos

Bolding indicates forest-dwelling species at risk.
Glossary of Terms

Aboriginal people: in Canada, aboriginal people define all indigenous people of the country, including Indians, Metis, and Inuit people (as defined in the Constitution Act of 1982).

Afforestation: the establishment of a forest or stand of trees by sowing, planting, or natural regeneration on an area not previously forested, or in areas where forests were cleared and other land-use patterns have dominated the landscape for many generations.

Allowable annual cut (AAC): the rate of timber harvesting specified for an area of land by the chief forester. The chief forester sets AACs for timber supply areas (TSAs) and tree farm licences (TFLs) in accordance with Section 7 of the Forest Act and for Certified Tree Farms in accordance with the Assessment Act.

Biological diversity (biodiversity): the diversity of plants, animals and other living organisms in all their forms and levels of organization, including genes, species, ecosystems and the evolutionary and functional processes that link them.

Clearcutting: a silvicultural system in which the entire stand of trees is cleared from an area at one time, regardless of their potential utility on or off the site. Clearcutting can be implemented in blocks, strips, or patches and results in the establishment of a new even-aged stand of trees, which can be naturally or artificially created.

Commercial forest: in Canada, commercial forest is forest land capable of producing timber and variety of other benefits, including maple products, Christmas trees and specialty craft products. The non-commercial forest land is made up of open forests comprising natural areas of small trees, shrubs, and muskeg.

Community forestry: a land use system that attempt to maximize economic productivity and sustainability by involving the local community in the management and planning process of forest based development initiatives.

Crown land: public land that is managed by the national or provincial/territorial government.

Culturally modified tree: a tree that has been marked to designated territory or communicate other information, or tree which some of bark has been removed and used for clothing.

Cutblock: an area defined on the ground and planned for harvest, usually in one season.

Deforestation: the long-term removal of trees from a forested site to permit other site uses. Cutting of trees followed by regeneration is not deforestation.

Delgamuukw decision: the oral histories of aboriginal people as an evidence of their title to land. This title includes both traditional and non-traditional activities on issues of resource management.
Endangered species: any indigenous species of fauna or flora that is threatened with imminent extinction or extirpation throughout all or a significant portion of its Canada range, owing to human action.

Even-aged: a crop or forest containing examples that are all within a narrow band of ages, or within one age class.

First Nation: an aboriginal governing body, organized and established by an aboriginal community, or the aboriginal community itself.

Forest cover: all the trees and other plants (including ground cover) occupying the forest site.

Forest land: in the timber management sense, forest land is that land designated as being capable of, and presently intended for the growth and harvest of trees and classified as productive or non-productive. In the forest management sense, forest land is land currently, or in the recent past, or intended to be in the near future, under a forest cover of some type and successional stage, regardless of the functions possible or intended.

Forest management: the practice of applying scientific, economic, philosophical, and social principles to the administration, utilization, and conservation of all aspects of all forested landscapes to meet specified goals, while maintaining the productivity of the forest.

Forestry: a profession embracing the science, business, and art of creating, maintaining, and managing forested landscapes and their many component parts to produce consumptive and/or nonconsumptive outputs for use by humans or other species in a manner that does not cause ecosystem degradation.

Gross Domestic Product (GDP): the value of production of goods and services in the economy resulting from the factors of production, in particular from capital, whether of Canadians or of non-residents.

Highgrading: taking the best quality and most accessible timber and leaving low grade trees behind.

Indian reserve: a tract of land that is defined in Section 2 of the Indian Act and has been set apart by the federal government for the use and benefit of an Indian band. The legal title to Indian reserve land is vested in the federal government.

Integrated Resource Management (IRM): the management of two or more resources in the same general area and period of time (e.g., water, soil, timber, grazing, fish, wildlife, and forests).

Logging: the felling and extraction of timber.

Major licensees: those holding major licences such as timber sale licences, tree farm licences, timber licences, forest licences and timber sale harvesting licences.
**Monoculture**: in general, even-aged, single species forest crops.

**Old growth forest**: a forest that contains live and dead trees of various sizes, species, composition, and age-class structure. Old growth forests, as part of a slowly changing but dynamic ecosystem, include climax forests. The age and structure of old growth varies significantly by forest type and from one biogeoclimatic zone to another.

**Protected areas**: areas such as federal parks, provincial parks, wilderness areas, ecological reserves and recreation areas that have protected designations according to federal and provincial statutes.

**Reforestation**: the natural or artificial restocking of an area with forest trees. Typically, refers to planting.

**Silviculture**: the art and science of controlling and manipulating the establishment, growth, composition, health and quality of forests and woodlands to meet the diverse needs and values of society on a sustained basis.

**Sustainable development**: a conceptual ideal where development meets the needs of the present generations without compromising the ability of future generations to meet their own needs.

**Sustainability**: the ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time. In the context of forestry is the concept of producing a biological resource under management practices that ensure replacement of the part harvested, by regrowth or reproduction, before another harvest occurs.

**Threatened species**: any indigenous species of fauna or flora that is likely to become endangered in Canada if the factors affecting its vulnerability do not become reversed.

**Timber harvesting**: timber harvesting includes felling, yarding, hauling, and road building.

**Timber Supply**: the quantity of timber available for harvest over time.

**Timber Supply Area (TSA)**: a geographical unit defined around existing communities and timber processing centres to provide an administrative structure for forest planning and management throughout the province. The purpose of TSA is to manage forests and allocate rights to harvest Crown timber according to a forest management strategy that is appropriate for the area.

**Traditional ecological knowledge (TEK)**: the body of knowledge or natural history built up by a group of people over generations of living in intimate contact with all aspects of local ecosystems, including plants, animals and natural phenomena. The knowledge is accumulated and passed on by generations through their experience and by word of mouth.

**Traditional territory**: the geographic area identified by a First Nation to be the area of land which they and/or their ancestors traditionally occupied or used.
**Tree Farm Licence (TFL):** a licence entered into under Part 3, Division (2) or (5). The TFL is a stewardship agreement over a sustained yield management unit. This includes the right to harvest a specified volume of timber annually and the obligation to carry out all phases of forest management on behalf of the Ministry of Forests. The licence has a term of 25 years and is replaceable every 10 years.

**Value-added:** the remanufacturing of lumber or other secondary forest products into something more valuable, such as trusses, cabinets, door and window frames and pallets.

**Wildlife tree:** a standing live or dead tree with special characteristics that provide valuable habitat for conservation or enhancement of wildlife.

**Woodlot licence:** an agreement entered into under Part 3 Division (7) of the Forest Act. Similar to a tree farm licence, except that its scale of operation is not more than 400 hectares of Crown land plus any size of private land. The licence is for 15 years, replaceable every five years.
References


The Vancouver Sun. 1999b. West Chilcotin ecotourists work with loggers to save wilderness: What the two diverse side have in common is a desire to make a living in that area. October 23, 1999. B1.

The Vancouver Sun. 1999c. Logging near Active Pass ‘foolish,’ opponent says: Conservation groups are urging Ottawa to provide $2 million in compensation for an Indian band to stop the logging on reserve land. December 22, 1999. B8.


