HOUSE OF COMMONS
CANADA

FOREST RESOURCES AND INDUSTRIES IN EASTERN CANADA

FIRST REPORT

STANDING COMMITTEE ON ENVIRONMENT AND FORESTRY

LORNE GREENAWAY, M.P., CHAIRMAN

June 1986

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Fascicule nº 7

Le mercredi 18 juin 1986
Le jeudi 19 juin 1986
Le mercredi 25 juin 1986

Président: Lorne Greenaway

Minutes of Proceedings and Evidence of the Standing Committee on

ENVIRONMENT AND FORESTRY

Procès-verbaux et témoignages du Comité permanent de

L'ENVIRONNEMENT ET DES FORÊTS

RESPECTING:

Consideration of a draft report on the East Coast forestry industry.

CONCERNANT:

Étude du projet de rapport portant sur l'industrie des forêts de la Côte est.

First Session of the
Thirty-Third Parliament,
1984-85-86

Première session de la
trente-troisième législature,
1984-1985-1986

STANDING COMMITTEE ON ENVIRONMENT AND FORESTRY

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The Standing Committee on Environment and Forestry has the honour to present its

FIRST REPORT

On Thursday, June 27, 1985, the Standing Committee on Fisheries and Forestry received an Order of Reference, that in relation to its Order of Reference concerning the Reports of the Department of Fisheries and Oceans and the Department of the Environment for the fiscal year ended March 31, 1983, it be empowered to travel to the East Coast to hold hearings on the forestry industry.

The provisional Standing Orders adopted by the House of Commons on February 24, 1986, split the Standing Committee on Fisheries and Forestry into two new Standing Committees: the Committee on Environment and Forestry and the Committee on Fisheries and Oceans. By an Order of the House of February 14, 1986, this order of reference was deemed referred to the Standing Committee on Environment and Forestry.

The Committee's report is as follows:

FOREWORD

During October and November 1985, the Standing Committee on Fisheries and Forestry held public hearings in Quebec City and Ste-Anne-des-Monts, Quebec; Bathurst and Fredericton, New Brunswick; Charlottetown, Prince Edward Island; Digby, Halifax and Sydney, Nova Scotia; and St. John's, Newfoundland in accordance with its Order of Reference on the east coast forestry industry. The Committee heard a total of 39 organizations, comprising 86 individual witnesses. The list of witnesses who appeared before the Committee as well as those who submitted briefs appears at the end of this Report. The contributions of those who participated in the hearings as well as those who submitted briefs were invaluable to the study.

The Committee acknowledges the assistance of the officials of the Canadian Forestry Service who briefed the Committee before our trip.

The Committee wishes to express its appreciation to Suzanne Kinsman, Clerk of the Committee during this study; and to Jean-Pierre Amyot and Thomas Curren, our research officers from the Library of Parliament.

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GLOSSARY OF UNIT MEASUREMENTS AND CONVERSION FACTORS(1)

1) DISTANCE

1 foot	=	0.3048 meters
1 meter	=	3.2808 feet
1 mile	=	1.6092 kilometres
1 kilometre	=	0.6214 miles
1 arpent	=	191.8350 feet
	=	58.4713 meters

2) AREA

1 square foot	=	0.0929 square meters
1 square metre	=	10.76 square feet
1 acre	=	0.4047 hectares
1 arpent	=	0.3419 hectares
1 hectare	=	2.471 acres
1 square mile	=	2.590 square kilometres
	=	259 hectares
	=	640 acres
1 square kilometre	=	0.3861 square miles
	=	100 hectares
	=	247.1 acres

3) VOLUME

1 cubic foot	=	0.0283 cubic meters
1 cubic metre	=	35.3157 cubic feet
	=	1000 litres
1 cord	=	128 cubic feet
	=	3.6245 cubic meters
1 cunit	=	100 cubic feet
	=	2.8317 cubic meters
1 board foot	=	0.0833 cubic feet
	=	0.0024 cubic metres

4) MASS

1 pound	=	0.4536 kilograms
1 kilogram	=	2.205 pounds
1 short ton	=	2000 pounds
	=	0.9072 metric tons
	=	0.8929 long tons
1 metric ton	=	2205 pounds
	=	1000 kilograms

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(1) The data are exact to four significant figures
Source: P.J. Rennie, Measure for Measure, Canadian Forestry Service, Publication No. 1195, Ottawa, 1975, 39 pp.

FOREST RESOURCES AND INDUSTRIES OF EASTERN CANADA

INTRODUCTION

Statistics and cartography can now be used more effectively than ever before to analyze how landscape is shaped by many interdependent biological and non-biological factors. Our increasing scientific understanding of the biophysical and psychosocial potential of the lithosphere(1) enables us to measure how far the exploitation of resources exceeds their capacity. Hence, wherever productive green areas decline because of ill-timed, excessive or irregular use, the danger signals sound immediately.

After too often turning a deaf ear to these alarms, the managers of our natural assets can no longer afford to ignore them, especially now that we see the close links between the careless way in which resources have been exploited and the socio-economic difficulties suffered by certain groups. The present productivity crises in the fishing, farming and forestry sectors result from many factors, including the lure of quick profits, the bad faith of unscrupulous operators and the indifference or ignorance of politicians and the public. To create a climate in which effective management plans can be developed, it is essential to convince all parties that any action based solely on short-term considerations will ultimately be counter-productive. Indeed, this outmoded approach underlies the shortage of wood now facing some processors in various forest regions of Eastern Canada.

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(1) Name given to the external part of the earth's crust

The reconciliation of social needs with the conservation of a healthy, stable environment must become the basic objective of any natural resource management policy. The need for natural and recreational space and the necessity of conserving genetic resources and natural balances is superimposed on the need for wood and wood products. In Canada, a growing body of opinion expressed in the publications of such professional bodies as the Canadian Forestry Association,(1) the Canadian Institute of Forestry(2) and the Science Council of Canada(3) maintain that the country's forest heritage is in danger and the problem of forest regeneration must be addressed. Many Canadian citizens are upset by the current destruction of tropical forests, now disappearing at the rate of 20 hectares per minute and 17 million hectares per year.(4) The same people should, however, also be concerned about the distressing fact that 25 million hectares of formerly productive forest in Canada are now lying in abandoned land. Furthermore, 25 to 50% of the 770,000 hectares of forest cut each year either do not regenerate or revert to non-commercial use. This together with damage caused by fire, insects, disease and wind, makes for an annual loss of one million hectares of softwood forest alone.

None of these figures, however, takes into account the serious damage that may result from acidic precipitation. It is possible that 38 million hectares of Eastern Canadian forest may be affected by this pollution.(5) In addition to the state of health of its primary

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(1) Canadian Forestry Association, Tomorrow's Forests... Today's Challenge? Proceedings of the National Forest Regeneration Conference, Quebec City, October 19-21, 1977, 244 pp.

(2) Canadian Institute of Forestry, A Case for Improved Forest Management in Canada, Brief to the Royal Commission on the Economic Union and Development Prospects for Canada, Ottawa, December 1983, 29 pp.

(3) Science Council of Canada, Canada's Threatened Forests, Ottawa, March 1983, 17 pp.

(4) R. Souchon, "Allocution d'ouverture au Symposium international", Impacts de l'homme sur la forêt, Strasbourg, Sept. 17-22, 1984, Institut national de recherche agronomique, Paris, 1985, p. 15.

(5) Canada, Royal Commission on the Economic Union and Development Prospects for Canada, "Natural Resources and Environment", Report, Vol. II, Part IV, 1985, p. 447.

resource, the forest industry has many other reasons to be concerned: the growing competition on export markets, the obsolescence of wood processing machinery and practices, high labour costs, lack of silviculturists, inadequate investment and the future of employment in the forest industry.

Rooting trees and forests more securely in our landscape, our economy, and our society, is a partial attempt to compensate for some of the misdeeds of urban industrial civilization. Judging that forest-related problems have become social problems that must be addressed comprehensively, the Standing Committee on Fisheries and Forestry undertook an active campaign of consultation with individuals and bodies versed in the difficulties facing the forest industry and resource in Eastern Canada. Over 40 briefs from the three Maritime Provinces, Newfoundland and Quebec were submitted to the Committee. In summary, according to the testimony, the forest sector's problems fall into three major categories: raw materials, processing, marketing and exportation. After compiling, studying and analyzing the briefs and comments submitted by the many witnesses from Eastern Canada, the members of the Standing Committee on Environment and Forestry wish to present the observations and recommendations that follow.

QUEBEC FORESTS

> It seems to me that everything that we are going to do rests on major investments in forests, investments which without doubt will be in the shape of reforestation. Investments in silviculture or forest management will also be needed. On that matter, I must note that the population at large is not ready for this work.
>
> Marcel Lortie, Professor of Forestry, Laval University

INTRODUCTION

The importance of Quebec's forest is primarily a function of its extent, the diversity of its components and the economic and social impact of all the activities relating to its use. The province holds 2% of the world's forest and 11% of North America's. Alone, it equals 66% of all European forest. "Commercial" forest, that is stands of potentially accessible and marketable timber for industry, covers about 780,000 km^2 or 47% of the province, an expanse as large as the combined area of Sweden and Norway. Leaving aside freshwater, unproductive land and urban or farm land, presently accessible and economically exploitable productive forest in Quebec covers 430,000 km^2, or 20% of Canada's total productive forest area.(1,2,3,4)

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(1) Groupe de travail pour la préparation d'un rapport de conjoncture sur la recherche et le développement dans le secteur forestier au Québec, Le secteur forestier: bilan et perspectives, Quebec City, August 1983, p. 8.

(2) Quebec, Department of Energy and Resources, Building a Forest for Tomorrow: The Forest Policy, Quebec City, June 1985, p. 22.

(3) Jean-Claude Mercier, "La forêt québécoise: un secteur en mouvement", Forêt Conservation, vol. 51, No. 4, July-Aug 1984, p. 25.

(4) Productive lands: forest lands that are capable of producing a marketable stand within a reasonable length of time.

Conifers, predominantly spruce, make up 75% of Quebec's forest. Without silviculture, the forest can at present supply 30.1 million m^3 of softwood and 14.4 million m^3 of hardwood per year. The total annual cut was 33.6 million m^3 on average from 1979 to 1981 (30 million m^3 in 1983-84). For the province as a whole, then, there is no discrepancy between the annual harvest and the available supply. However, some regions such as Abitibi-Témiscamingue, the Eastern Townships and the Quebec City area are already exploited to the full, and others are nearly so.(1,2,3)

Wildlife use of the forest alone generates annual revenues of over $ 80 million in Quebec. Observation-related activities generate annual revenues of over $ 27 million. Industrial use of timber, however, remains the largest source of economic activity. In 1983, the total value of all shipments of manufactured products from primary processing of wood was $ 8.3 billion, and forest products totalling $ 3.4 billion ranked first among exports of manufactured goods. In comparison to Quebec's manufacturing industries as a whole, the forest manufacturing sector, not including cutting, in 1983 represented 23% of shipments outside Quebec, 13% of direct jobs, 15% of wages, 14% of the value of shipments and 16% of value added.(4) Table 1 shows additional figures showing the importance of forested land in Quebec.

The Quebec Government, which through the Department of Energy and Resources owns about 85% of the province's forest, plans to increase the supply of wood from about 30 million m^3 to over 51 million m^3. To this end, the Quebec Government adopted an ambitious reforestation policy in 1983, designed to increase the number of seedlings planted annually from the 1983 figure of 65 million to 300 million in 1988. The Standing Committee on Environment and Forestry strongly supports such a program. Moreover, it endorses the Quebec Government's overall objective in the forest sector:

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(1) Canadian Forestry Service, Brief to Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(2) Groupe de travail (1983), p. 13.

(3) Mercier (1984), p. 25.

(4) Quebec, Department of Energy and Resources (1985), pp. 22-24.

TABLE 1: CHARACTERISTICS OF QUEBEC'S FOREST RESOURCE AND INDUSTRY

A. BIOPHYSICAL CHARACTERISTICS OF THE INVENTORIED FOREST LAND

1. **Area**	° provincially owned:		556,000 km^2	(89.0%)
	° federally owned:		2,000 km^2	(0.3%)
	° privately owned:		66,000 km^2	(10.6%)
	- Total forest:		624,000 km^2	
	- Productive forest:		533,000 km^2	
2. **Species** (% of merchantable volume of the productive forests)	- Coniferous 75%	- Spruce		(44.0%)
		- Balsam		(22.5%)
		- Jack Pine		(4.5%)
		- Other		(4.0%)
	- Deciduous 25%	- White birch		(8.1%)
		- Poplar		(6.4%)
		- Maple		(5.5%)
		- Yellow birch		(3.4%)
		- Other		(1.6%)
3. **Volume**	Gross merchantable volume, uncut			
	- coniferous		3.08 billion m^3	
	- deciduous		1.03 billion m^3	
	- total		4.11 billion m^3	
	Annual allowable cut*			
	- coniferous		40.3 million m^3	
	- deciduous		8.0 million m^3	
	- total		48.3 million m^3	
	Cut (1983-84)			
	- public forest		23.2 million m^3	
	- private forest		6.8 million m^3	
	- total		30.0 million m^3	

.../cont'd

TABLE 1 (cont'd)

B. INDUSTRY CHARACTERISTICS

1. Jobs (1983)	Direct: 78,077 (total earnings: $1.7 billion)	
	Indirect: 156,154	
	Number of factories in 1982	
	- pulp and paper	54
	- sawmills and planing	396
	- veneering	25
2. Dollar value	- Wood industries shipments in 1983	$2.1 billion
	- Paper and allied products shipments in 1983	$5.1 billion
	- 1983 exports	$3.4 billion
	- Contribution to GDP in 1982	$2.8 billion (or 3.8% of GDP)

*Annual allowable cut (AAC): the amount of wood which may be harvested year after year indefinitely. The AAC is based on assumptions about tree growth, loss due to pests and other natural causes, the percentage of trees of marketable value and other variables.

Sources: Canadian Forest Industries Council, Canada's Forest Industries 1986: Data Book, 1986, p. 97.

Canadian Forestry Service, Selected Forestry Statistics, Canada 1984, Hull, January 1985, 138 pp.

Canadian Forestry Service, Brief to Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

Quebec, Department of Energy and Resources, Building a Forest for Tomorrow: The Forest Policy, Quebec City, June 1985, pp. 23-24.

> [TRANS] The objective of Quebec's forest policy is to promote the development of the forest industry by enhancing the value of Quebec's forests as much as possible while encouraging harmonious use of the forest environment.(1)

However, the Committee calls on the parties most concerned to bear all the forests' functions (ecological, social and economic) in mind while developing industrial forest operations. In line with this, the Committee supports the recommendation by the "Ordre des ingénieurs forestiers du Québec" that the province zone forest lands so as to construct a precise framework in which to apply forest policy, while designating portions of it for specific exclusive or primary uses.(2)

THE RESOURCE

Everyone today agrees there is an urgent need to develop, cultivate and maintain the forest in order to keep and even increase potential harvests of wood. This new attitude results mainly from analysis of the state of the resource, which has gone from abundance to scarcity. In La politique forestière du Québec: Problématique d'ensemble, the Quebec Department of Energy and Resources emphasized the growing gap between the industry's requirements and the state of the forest resource.(3) It has long been recognized that the birth, survival and development of a forest industry depend essentially on the quantity, the quality and cost of the raw materials. The future is thus clouded, according to Normand Houle of the Canadian Forestry Service (CFS):

> [TRANS] In some parts of Quebec, scarcity of wood is already hampering industrial development or discouraging new businesses from coming in. In other areas, companies can only survive by bringing in large quantities of wood from border areas. Elsewhere, there are often problems of access to remote and scattered

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(1) Quebec, Department of Energy and Resources, La politique forestière du Québec: Problématique d'ensemble, Quebec City, June 1984, p. 121.

(2) Canadian Press, "Les ingénieurs reprochent à Québec de développer une politique forestière sectorielle", La Presse, Montreal, November 21, 1984, section C, p. 2.

(3) Quebec, Department of Energy and Resources (1984), 143 pp.

> forest resources that prevent the establishment of new mills. The concrete problem is the balance between the supply and demand for wood.(1)

The wood surpluses of the 1970s are things of the past. Supplies are expected to be cut off sooner or later unless energetic measures are adopted in both public and private forests. While hardwood problems may be critical in some areas (Témiscamingue, Outaouais and Montréal), the bulk of Quebec's forest structure depends on the processing of softwoods, especially fir, spruce and jack pine.(2)

Thus, on a sustained yield basis,(3) assuming that the fight against the spruce budworm is successful and given that current harvesting practices do not remove entire stands during cutting, 22.0 million m^3 of softwood can be cut annually in Quebec. This figure is weighted to allow for the extraction of 3.7 million m^3 from an area called the "pulp zone" that has not yet been exploited because it has been inaccessible. Certain factors that may decrease the available volume or the productive area have not yet been taken into account. Among these are the phenomenon of gentlemen farmers with freehold forests and temporary loss of area because of mechanized harvesting methods (delimbing and sawing centres, etc.), which take up an average of 14% of the cutting site.(4)

Thanks to the development work carried out to date by the Quebec Department, an additional 5 million m^3 of product can be harvested annually. Thus the actual potential of the Quebec softwood harvest stands at 27 million m^3. On a sustained yield basis, not only is the foreseeable development of the forest industry compromised by the year 2000 (when 36.1 million m^3 will be required), but even the maintenance of the present level of industrial activity cannot be assured (30.6 million m^3 required).(5)

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(1) Normand Houle, "L'importance économique de la forêt québécoise", Milieu, Environment Canada, No. 31, November 1985, p. 22.

(2) Quebec, Department of Energy and Resources (1984), pp. 84-85.

(3) Sustained yield: indefinite production of the same amount of wood from a forest.

(4) Quebec, Department of Energy and Resources (1984), pp. 86-87.

(5) Ibid., p. 87.

Those involved in the forest sector must therefore quickly facilitate access to remote stands of wood, within the context of a multiple-use resource management strategy, and promote the development of a new forest on productive land close to processing plants. Forests must also be better protected, and wood harvesting and processing methods must be improved. The times of unrestricted use and carelessness are over.

Like many other resources which have given rise to sharp controversy because they are easily accessible and have many uses, the forest suffers from a lack of measures designed to preserve it indefinitely for a variety of purposes. Too many people still look on forest wealth as an inexhaustible horn of plenty. More objective or better informed people see wood shortages, loss of soil fertility, reductions in the number of species and habitat destruction as evidence of the fragility of our primary natural asset. Instead of viewing the forest as a marginal world, we are now just beginning to integrate it consciously into our natural and social heritage.

A. Private forests

The Standing Committee on Fisheries and Forestry heard many comments on the exploitation, management and development of private forests in Eastern Canada. In Quebec, private forests cover about 66,000 km^2, or 12% of all productive forest in the province. Most are located in Southern Quebec, in the hands of some 120,000 owners. At present, private forests supply about 20% of total needs for processing plants (mainly pulp and paper), although the percentage ranges from 5% to 90%, depending on the region.(1)

Since the Quebec forest sector's major problem is availability of wood, the governments of Canada and Quebec concluded a subsidiary agreement on forest development on April 30, 1985. Its objective is:

> to encourage and support forest management activities in order to increase the available supply of wood to better the viability and long term competitiveness of the forest industry in Quebec.(2)

(1) Quebec, Department of Energy and Resources (1985), p. 57.

(2) Quebec, Department of Communications, Canada-Quebec Subsidiary Agreement on Forest Development 1984-1990, Quebec City, 1985, p. 11.

The agreement covers five years (1985-90) and provides for a total of $300 million. Its objective for private forest management corresponds to one third of the total effort to reforest land in the province. This means that by 1990, 100 million seedlings should have been planted in private forest lands in Quebec.(1) Some woodlot owners think the money invested by the federal government in forest management could be used more cost-effectively. There are too many partners in the present administrative circuit: in addition to the two levels of government, there are the Fédération des producteurs de bois, the regional wood producers unions and joint management organizations. According to Marcel Giraudo, direct transfer of funds from the Department of Energy and Resources to the joint management agencies would be a much more effective solution.(2)

The observations, challenges and problems raised at the hearings by various witnesses concerned about the future of private forest in Quebec may be grouped as follows:

- Quebec's forest produces little wood in comparison to forests in countries with a similar climate, such as Finland and Sweden.(3) Some say that private Quebec forests produce only one cubic metre of wood per hectare per year, although they are capable of four times that.(4)

- Emphasizing how very far we lag behind some of the Scandinavian countries in forest management, the representative of the Groupement agro-forestier et touristique de Portneuf Inc. stated that the financing needed annually to develop Quebec forests is $300 million, of which a third would be allocated to private forests. It was also considered unfortunate that of the various parties that derive income from forests, namely the municipal, provincial and federal governments, forest industries and woodlot owners, the

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(1) Ibid., p. 39.

(2) Marcel Giraudo, "Suggestion for more efficient use of federal government grants for development of the private forest industry in Quebec", Brief submitted to the Standing Committee on Fisheries and Forestry, St-Georges-de-Beauce, September 1985, 2 pp.

(3) Jean-Marc Drolet, Office des producteurs de bois de la région de Québec, Issue No. 49, October 23, 1985, p. 12.

(4) Réjean Lévesque, Comité d'adaptation communautaire de Gaspé-nord, Issue No. 50, October 24, 1985, p. 65.

last group receives the least. Moreover, current forest management programs would require too much financing by woodlot owners, according to the principle that each party should contribute to increasing the value of forest in proportion as it profits from this.(1)

° Since forest management is incompatible with the development of short-term policies, woodlot owners see the need to implement a long-term financing procedure to promote the enhancement of their forest.(2) Furthermore, it was stressed more than once that manpower for silviculture poses a real problem in regard to motivation and qualification. Marcel Lortie, a researcher at Laval University, feels that most of those concerned about forest management problems are not trained to meet the requirements of silvicultural work.(3)

° It was also suggested that all forest management grant programs should be offered to individual owners on the same basis as owners belonging to joint management organizations.(4)

In light of the above comments, gleaned from the evidence heard by the Members of the Standing Committee on Fisheries and Forestry, we make the following recommendations:

RECOMMENDATION 1

Any government strategy designed to encourage private forest management activities should include the following provisions:

° measures aimed at owners should provide incentives;

° government aid should be offered to all owners with forest producer status who possess a management plan drawn up and signed by a forest engineer;

° owners who demonstrate serious commitment by assuming a share of management costs should be required to pay only a minimum contribution;

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(1) Réjean Julien, Groupement agro-forestier et touristique de Portneuf Inc., Issue No. 49, October 23, 1985, pp. 13-14.

(2) Ibid., p. 14.

(3) Marcel Lortie, Issue No. 49, October 23, 1985, pp. 62 and 66.

(4) Jean-Marc Drolet, L'Office des producteurs de bois de la région de Québec, Issue No. 49, October 23, 1985, p. 12.

- a tax incentive policy should be set up, including an investment tax credit for owners who increase the value of their woodlots;
- steps should be taken to train and bring forward skilled labour to carry out silvicultural work in private forests;
- the funds and duration of federal-provincial agreements designed to promote forest management activities should be increased.

B. Native people

Three Quebec native groups, the James Bay Crees, the Attikamek-Montagnais Council and the Huron-Wendat Nation and the First Nations of Quebec submitted briefs on the sea and forest resources of their territories.

The James Bay Crees form a distinct ethnic and cultural community occupying the northern part of Quebec between the 49th and 55th parallels. They number approximately 9,000 persons and are located in nine main communities: Mistassini, Waswanipi, Nemaska, Waskaganish (Rupert House), Eastmain, Wemindjii, Fort George, Great Whale River and Chibougamau. According to their representatives, the Quebec Government's forest policy, based on the noble principle of sustained yield, will make it difficult for Indians to proceed with industrial forest exploitation. The forest resources in question are already, in their view, heavily over allocated, and processing plants in the region may have surplus capacity. Thus, in accordance with the principle of sustained yield, the cut must be reduced, and this will lead to stiff competition between companies.

Another matter of dispute is fire protection in the forest lands belonging to native people. Traditionally, the Quebec Government has not maintained surveillance and fire-fighting capacity in areas of forest considered non-commercial, except in the immediate neighbourhood of mining towns or hydro-electric construction sites. Consequently, native communities and the fragile ecosystem of the boreal forest remain largely unprotected. In short, the James Bay Crees observe:

> Of course, remote non-commercial forests are not going to receive the same attention as commercial stands in the south, but this should not mean that they receive

> no protection at all. The challenge is to develop a protection policy which recognizes forest fire ecology, but which seeks to reduce and control major, essentially irreparable damage to the northern forest environment.(1)

The James Bay Crees, who are interested in using the forest both for their own subsistence and commercially, deplore how little research federal authorities are carrying out toward enhancing the northern forest. Furthermore, pointing out the federal government's responsibilities for developing forest resources in Indian reserves and category 1A lands,(2) the James Bay Crees call for its direct participation in managing the forest of these regions.

In light of the arguments and observations stated above, the Committee makes the following recommendation:

RECOMMENDATION 2

> The federal government, in co-operation with the James Bay Crees, should develop a program to protect and enhance the forests in the territories under federal authority in accordance with the James Bay and Northern Quebec Agreement.

As noted earlier, the Committee also heard evidence from the Attikamek-Montagnais Council, an Indian association representing three Attikamek bands from the Upper St-Maurice Valley, namely Manouane, Weymontachie and Obedjiwan, and eight Montagnais bands from the Lac-Saint-Jean and North Shore region (Pointe-Bleue, Les Escoumins, Betsiamites, Schefferville, Mingan, Natashquan, La Romaine and Saint-Augustin). They comprise a total population of over 10,000 people, or one third of all Quebec Indians.

After emphasizing the forest's importance to their way of life, the Council's representatives denounced the pillaging of the forest

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(1) James Bay Crees, Presentation of the James Bay Crees to the Standing Committee on Fisheries and Forestry, October 1985, p. 16.

(2) Category 1A lands: an area of about 1,274 square miles under the control, administration and management of the Government of Canada under the conditions of The James Bay and Northern Quebec Agreement. (Government of Quebec, The James Bay and Northern Quebec Agreement, Editeur officiel, Quebec City, 1976, p. 55.)

by white exploiters. The Attikameks claim damages for interference with their subsistance activities because they are denied access to hunting camps in forest operation zones. With a view to furthering the socio-economic and political development of their people by means of forest resources, the Attikameks and Montagnais wish to set up an independent government to regain control over the management of the natural resources in their territories. With this in view, the Council plans to carry on the territorial negotiations initiated with the governments of Quebec and Canada.(1)

For their part, the representatives of the Huron-Wendat Nation and the First Nations of Quebec also described the predicament of Indians driven from their traditional territories by multinational forest companies. The problem of aircraft manoeuvering over Montagnais lands was also said to be causing great disruptions to the way of life of Indians on the North Shore and in Labrador. In addition to damaging wildlife and vegetation in the territories in question, repeated low altitude flying by military aircraft greatly disturbs and upsets Indian populations.(2) The Committee considers that the effects of such activities on the land and people of the Huron-Wendat Nation and the First Nations of Quebec should be investigated promptly, and it consequently recommends that:

RECOMMENDATION 3

> The Minister of National Defence should immediately halt all North Shore and Labrador low-level military air flights, and assess the effects of such flights on the environment in these regions, as soon as possible.

C. Maple dieback

Acidic precipitation is strongly suspected of causing the dieback of a large proportion of Quebec's sugar bush. This suspicion is in accord with the belief of a steadily growing number of people deeply

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(1) Camille Vollant, Attikamek-Montagnais Council, Issue No. 49, October 23, 1985, pp. 88-91.

(2) Konrad Sioui, Huron-Wendat Nation and First Nations of Quebec, Issue No. 49, October 23, 1985, pp. 88-91.

concerned about the potential impact of atmospheric pollutants on the planet's forest ecosystem.(1) Although great uncertainty persists regarding the environmental impact of air pollutants, several scientists already consider these are largely responsible for the recent decline in forest productivity in the Atlantic, Quebec and Ontario regions. Noting the complexity of the issue, a recent report by the Canadian Forestry Service pointed out judiciously:

> Unfortunately, there is a danger involved in awaiting the completion of scientific studies before making policy decisions regarding pollution control. If LRTAP [long range transport of air pollutants] causes serious irreversible damage to forests, then the evidence may come too late. Substantial social and environmental losses could be incurred by a failure to take action now.(2)

Maple growers in the Quebec City region must break out of their present collective inertia if we are to save the sugar maples and the industry based on them. The present dieback of these trees shows outwardly as fewer and paler leaves, slower scarring of incisions, slower growth and a gradual loss of foliage until the tree dies. According to some Quebec Department of Energy and Resources figures, 85% of sugar bushes in the south of the Quebec City region showed signs of dieback in 1983-84. Aerial surveys in 1985 showed that the maple dieback syndrome is progressing very rapidly, and every sugar bush in the province may now be affected. Since the phenomenon began in 1978, an estimated two million maple taps have been lost in Quebec; the potential number of taps is about 25 million, but only 14 million were made in 1986. At the rate the dieback is progressing, maple industry spokesmen expect their businesses to survive for only five to ten years.(3) In brief, if the current trend continues, the survival of an industry that brought in $21.7 million in 1981 will become highly

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(1) Sandra Postel, Air Pollution, Acid Rain and the Future of Forests, Worldwatch Institute, Washington, 1984, 54 pp.

(2) G.A. Fraser et al., The Potential Impact of the Long Range Transport of Air Pollutants on Canadian Forest, Canadian Forestry Service, Alberta, 1985, p. 7.

(3) François Berger, "Les pluies acides provoquent la mort des érables", La Presse, March 22, 1986, Section H, p. 1.

precarious for the 2,190 maple growers in the Quebec City region and all the other maple product producers in the province.(1)

Since the cause or causes of this disease have not yet been formally determined,(2) maple producers call on all interested groups to unite in their efforts to pin down and contain the affliction. To this end, they want governments to release substantial sums to determine the true reasons for the decline and then take action to save the sugar bushes that remain healthy.(3,4) The Committee is greatly concerned over the seriousness and extent of the problem, and we recommend as follows:

RECOMMENDATION 4

> The Canadian Forestry Service and the federal Department of the Environment, in co-operation with the Quebec Department of Energy and Resources, should immediately undertake a concerted program to determine the causes of the sugar maple dieback in Quebec and the necessary corrective action. In addition, measures to indemnify maple growers should be considered should the present problem persist.

PROCESSING AND MARKETING

To offset the anticipated scarcity of wood faced by some mills, a few palliative measures were suggested by witnesses. Marcel Lortie asserted that making northern territory accessible to forest operators by building suitable roads, favouring the use of resistant hardwoods (such as poplar and birch) and chips from sawmills in pulp and paper production and recovering a higher proportion of cut residues would go a long way toward preventing future supply shortages.(5)

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(1) It is actually estimated that the maple industry generates annual revenues of approximately $40 million at the farm level.

(2) The following publication summarizes the actual state of our knowledge on this important subject: Conseil des production végétales du Québec and Quebec Department of Agriculture, Fisheries and Food, Journée d'information sur l'acériculture, Conferences Book, Quebec, May 8, 1986, 129 p.

(3) Jean-Roch Turcotte, Syndicat des producteurs acéricoles de la région de Québec, Issue No. 49, October 23, 1985, pp. 35-38.

(4) Note that the CFS has recently added a new scientific study on maple dieback to the research program of the Laurentian Forestry Service in Sainte-Foy (CFS, News Release, May 6, 1986, p. 2).

(5) Marcel Lortie, Issue No. 49, October 23, 1985, p. 61.

The question of recovering residue was discussed at length by representatives of the Société d'expansion économique de Portneuf (SEEP). According to figures presented to the Committee, about 45% of hardwood and 30% of softwood is discarded in the form of residue on cutting sites. Provided the fibre can easily be separated from the bark, it would be worth recovering. The main problem is that pulp and paper mills do not use bark-covered wood. SEEP is aware of research going on into debarking techniques, and recommends that this be stepped up. SEEP also expressed fears about land infested with spruce budworms. In a few years, severely affected wood will be unusable. Hence, before the damaged land is replanted, it is essential to find an effective way to remove dead and dried-up trees.(1)

Private woodlot owners expressed dissatisfaction with the payment they receive for the wood they sell. They maintain that the provincial government, which owns most public forested land, is competing with them unfairly, since forest companies pay a low price for cutting rights. Consequently, woodlot owners have a shrinking profit margin, since they have to sell their wood for a price that does not take into account such investments and expenses as the purchase price of a woodlot and taxes.(2,3)

According to Réjean Lévesque, who chairs the Comité d'adaptation communautaire de Gaspé-Nord, the current waste in producing sawlogs encourages sawmills to compete fiercely for the business of woodlot owners interested in selling their wood to pulp and paper mills. Because of the methods currently in use, about 25% of sawn wood ends up in the form of chips that could be used for pulp and paper. According to Mr. Lévesque, there is a market in the United States for small pieces of lumber (1" x 2" to 1" x 6"). Wood of this size recovered from sawmills would bring in $28 per ton more than the $78 per ton offered for wood

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(1) Fernand Lirette, Société d'expansion économique de Portneuf, Issue No. 49, October 23, 1985, pp. 50-53.

(2) Jean-Marc Drolet, Office des producteurs de bois de la région de Québec, Issue No. 49, October 23, 1985, p. 33.

(3) Réjean Lévesque, Comité d'adaptation communautaire de Gaspé-Nord, Issue No. 50, October 24, 1985, p. 66.

chips. Thus, while reducing the supply to pulp and paper mills to the benefit of private forest owners, diversifying sawmill products would lead to the creation of jobs by the production of goods with a higher value added.(1)

Taking into consideration the wisdom of these observations, the Committee recommends as follows:

RECOMMENDATION 5

The Canadian Forestry Service should step up its efforts to develop and promote technologies to enable optimum use of wood fibre by processing mills. A special effort should be made to make the best possible use of small pieces of wood and tree species that are underused at present.

RECOMMENDATION 6

The Canadian Forestry Service, in co-operation with the provincial departments concerned, should develop and implement measures which would encourage foresters to improve harvesting techniques to reduce the amount of wood usually left as residue on cutting sites.

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(1) Ibid., pp. 64-65 and 69.

NEW BRUNSWICK FORESTS

> We lack a strong and abiding consensus on a local and national level which says that forests are a heritage. We do not receive them as a gift from our forebears. On the contrary, they constitute a legacy to be handed on to our children and our children's children. [...] Without such a consensus, we will go nowhere.
>
> Don Lockhart, Executive Director
> New Brunswick Forest Products Association

INTRODUCTION

New Brunswick possesses proportionately more productive forest land than any other Canadian province. In absolute terms, forests cover 62,000 km^2, or 85% of the province's area. Standing timber reserves amount to 515 million m^3.(1)

New Brunswick's forest resources are among the most fertile and most heavily used in the country. With only 2.4% of Canada's productive forest land and 2.6% of standing timber, the province contributes 5.4% of the national forest industry's harvest by volume and 4.3% by value. With eleven pulp and paper mills and about 100 sawmills, the forest industry is the province's biggest. Its gross output is worth over one billion dollars and the industry represents 40% of the province's manufactured products and nearly 50% of its exports.(2)

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(1) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(2) Ralph Redmond, New Brunswick Department of Forests, Mines and Energy Issue No. 53, October 29, 1985, p. 15.

The industry consumes 7.89 million m^3 of softwood annually, thereby exploiting 90% of the forest's potential. Although this is partly met by 0.85 million m^3 of imports, the demand is still 24% higher than the annual allowable cut of 5.36 million m^3 in the absence of any silvicultural program. Every year, 28,200 hectares of forest require silvicultural treatment. Even so, there is little room to manoeuvre, for silvicultural work allows an annual cut of 7.16 million m^3 while the industrial requirement is 7.05 million m^3. New Brunswick is one of the leading provinces in forest management in Canada; its management strategy includes maximizing the use of over-mature stands through careful harvest scheduling, increased utilization and forest protection, and intensive silviculture programs.(1,2)

According to a recent study conducted for the Institute for Research on Public Policy, in addition to the threat of softwood shortfalls in the medium term, the managers of New Brunswick's forests must face the crucial tests of eliminating the repeated budworm infestations that destroy spruce and fir, improving the quality of forest inventories, using harvested wood to its full potential and, in the long term, increasing the productivity of the forest resource.(3)

Table 2 describes New Brunswick's forest lands and industry.

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(1) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(2) Don Lockhart, New Brunswick Forest Products Association, letter to the Chairman of the Standing Committee on Fisheries and Forestry, October 31, 1985, 3 pp.

(3) Paul B. Huber, Promoting Timber Cropping: Policies Toward Non-Industrial Forest Owners in New Brunswick, Institute for Research on Public Policy, Montreal, 1985, p. 15.

TABLE 2: CHARACTERISTICS OF NEW BRUNSWICK'S FOREST RESOURCE AND INDUSTRY

A. BIOPHYSICAL CHARACTERISTICS OF THE INVENTORIED FOREST LAND

1. **Area**	° provincially owned		30,540 km^2	(47.0%)
	° federally owned		1,580 km^2	(2.4%)
	° privately owned		32,400 km^2	(50.2%)
	- Total forest		64,520 km^2	
	- Productive forest		62,000 km^2	
2. **Species** (% of merchantable volume of the productive forests)	- Coniferous 65.4%	- Spruce		(30.7%)
		- Balsam		(22.7%)
		- Cedar		(6.2%)
		- Other		(5.8%)
	- Deciduous 34.6%	- Red maple		(8.5%)
		- Sugar maple		(6.5%)
		- Aspen		(6.1%)
		- White birch		(5.0%)
		- Other		(8.5%)

3. **Volume**

Gross merchantable volume, uncut

- coniferous	337.6 million m^3
- deciduous	178.3 million m^3
- total	515.9 million m^3

Annual allowable cut (1983)

- coniferous	7.3 million m^3
- deciduous	2.6 million m^3
- total	9.9 million m^3

Cut (1983)

- public forest	6.5 million m^3
- private forest	0.8 million m^3
- total	7.3 million m^3

- cont'd

TABLE 2: (cont'd)

B. INDUSTRY CHARACTERISTICS

1. **Jobs** (1983)	Direct:	12,704	
	Indirect:	25,408	
	Number of factories in 1982		
	- pulp and paper	11	
	- sawmills and planing mills	72	
	- veneering	1	
2. **Dollar value**	- Wood industries shipments in 1983		$184.5 million
	- Paper and allied products industries shipments in 1983		$755.2 million
	- 1983 exports		$752.6 million
	- Contribution to GDP in 1982		$342.8 million (or 5.6% of GDP)

Sources: Canadian Forest Industries Council, Canada's Forest Industries 1986: Data Book, 1986, p. 93.

Canadian Forestry Service, Selected Forestry Statistics, Canada 1984, Hull, January 1985, pp. 3, 4 and 115.

Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

Canadian Forestry Service, personal communication, Ottawa, February 1986.

Statistics Canada, Canadian Forestry Statistics 1983, Catalogue No. 25-202, Ottawa, December 1985, 55 pp.

THE RESOURCE

In addition to having an exceptional proportion of accessible productive forest, New Brunswick comes second only to British Columbia in annual tree growth.(1) Yet these natural advantages will not be enough to offset the unfortunate lack of wood that the forest industries may experience 25 to 30 years from now. The first point to bear in mind is that New Brunswick's forests suffer from an imbalance in age structure. The Assistant Deputy Minister of Forests, Mines and Energy (FME) for New Brunswick stated the problem as follows:

> Unless some fundamental issues were addressed, particularly the long-term availability of softwood, which is the basis for 84% of our industry, the forest industry would decline significantly.
>
> The constraints on our future supply of softwood timber are the result of the age structure of our softwood forests. Over 55% of the forest is currently mature or over-mature, while another 30% is very young - less than 25 years old. This leaves only 15% of our forest available to supply the industry 25 to 30 years from now when the supply from our mature and over-mature forest will run out. If no efforts were made to resolve this problem now, then the annual harvest would decline by 25% or more.(2)

To alleviate this major problem, the province has amended its forest policy in accordance with these four objectives:(3)

- the system for allocation and distribution of the harvest has to ensure that the available supply goes to firms in an equitable and efficient manner;

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(1) A Bickerstaff, W.L. Wallace and F. Evert, Growth of Forests in Canada: A Quantitive Description of the Land Base and the Mean Annual Increment, Canadian Forestry Service, Chalk River, 1981, p. 84.

(2) Ralph Redmond, New Brunswick Department of Forests, Mines and Energy, Issue No. 53, October 29, 1985, p. 15.

(3) Ibid., pp. 15-16.

- the planning and scheduling of the annual harvest has to be carried out in a manner which ensures that the over-mature and mature timber lasts as long as possible and is not lost to old age and mortality;
- the older forest, which is most susceptible to insect and disease damage, particularly spruce budworm, must be protected;
- intensive silviculture must speed up the natural growth and regeneration of the forest.

In line with this, the Crown Lands and Forest Act (c. 38.1) was promulgated in 1982 to govern forest policy in the province. Under this policy, given the size of its forest resources, New Brunswick would engage more heavily in silviculture than any other Canadian province. Annual public investment in silviculture on Crown lands and financial assistance to small private landowners total $16 million. For its part, the industry has to invest $8 million. In addition, forest protection costs reach an average of $16 million, of which $2 million comes from industry.

Though royalties have increased in recent years, direct revenue from wood harvests on Crown lands does not exceed $15 million. Some provincial officials consider that revenue from Crown wood sales cannot be increased, and because of this, federal financial aid appears closely tied to the success of New Brunswick's forest resource management.(1) Under the Canada/New Brunswick Forest Renewal Agreement (1984-89), some $77 million is to be allocated, $42 million by the federal government and $35 million by the province, to ensure adequate future softwood supplies.(2)

The question of royalties has sparked lively controversy. Don Lockhart of the New Brunswick Forest Products Association considers it would be appropriate to raise the royalties required from those exploiting

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(1) Ibid., p. 17.

(2) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

Crown forest, for that would bring the cost of private wood and the cost of Crown wood closer together.(1) According to Robert Watson of FME:

> When we compare private stumpage prices for the private sector compared to Crown, you just cannot take the so-called royalty payment the licensee or the Crown wood user must pay because he is responsible for his roads, which are far less accessible than the small private woodlot roads are because they are usually closer to public roads, and a whole bunch of management costs are imposed on the licensee over and above what a private woodlot owner would normally have in selling timber. These costs on average run around $3.50 a cubic metre of wood so when you add the $3.50 it is costing the licensee or anybody buying stumpage from him, which is what the sublicensees do, to the royalty you get a final price for stumpage or standing timber which is greater than the so-called private market price on small woodlots.(2)

To clarify the costs incurred by forest operators in private and Crown forests, the Committee recommends as follows:

RECOMMENDATION 7

> The Canadian Forestry Service should carry out an exhaustive study to determine the actual operating costs for public and private forests in the five provinces of Eastern Canada.

In addition to the stumpage controversy, the questions of research, environmental protection and the enhancement of mixed and

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(1) Don Lockhart, New Brunswick Forest Products Association, Issue No. 53, October 29, 1985, pp. 94-95.

(2) Robert Watson, New Brunswick Department of Forests, Mines and Energy, Issue No. 53, October 29, 1985, p. 26.

hardwood stands also evoked comment. Representatives of the provincial government(1) and private enterprise(2) complained in turn to the Committee that the Canadian Forestry Service is not doing enough research.

The Committee's members were perturbed to hear this. They feel there is no doubt that a thorough, quantified knowledge of forest ecosystems is the only foundation on which a strict code can be built to establish sound management programs. Consequently, acknowledging the supreme importance of research in order to make the best possible use of the forest, the Committee recommends as follows:

RECOMMENDATION 8

> The Canadian Forestry Service should carry out a detailed study for the Standing Committee on Environment and Forestry, presenting the history of its research activities over the past two decades. In addition, a five year development plan (1987-91) for its research programs indicating expenditures and person-year allocation for these activities, should be included in the report to the Committee.

As regards the environmental aspects of forest activities, it was pointed out that the methodology developed and put forward by the Department of Fisheries and Oceans (DFO) for habitat management is likely to be quite ineffectual because it may lead to confrontation between the various bodies concerned.(3) The federal Fisheries Act gives the DFO

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(1) Ralph Redmond, New Brunswick Department of Forests, Mines and Energy, Issue No. 53, October 29, 1985, p. 18.

(2) Don D. Lockhart, New Brunswick Forest Products Association, Issue No. 53, October 29, 1985, p. 88.

(3) Ralph Redmond, New Brunswick Department of Forests, Mines and Energy, Issue No. 53, October 29, p. 19.

authority to protect fish stocks and their habitats. In line with this, the Department has put forward the principle of no net loss,(1) in order to maintain the productive capacity of aquatic habitats, in carrying out its work and projects. According to the Assistant Deputy Minister of FME, the current policy does not allow the pros and cons to be weighed when there is a conflict between fish habitats and other resource users. He stated:

> It could mean in forestry that all harvesting, site preparation for planting and stand improvement activities in forestry would have to be reviewed by the federal Department of Fisheries and Oceans for their implications for fish habitat. The results of the review would control these activities. It could prevent the field testing of new chemicals or techniques designed to improve insect and disease protection, forest fertilization or a variety of other activities.(2)

This view is shared by Edward S. Fellows of the Canadian Institute of Forestry, who observes that, if taken literally, sections 31 and 33 of the Fisheries Act give DFO the power to "completely negate the principle of provincial ownership of resources."(3) The Committee is aware of the difficulties to which these two witnesses allude. It must be acknowledged, however, that fish habitats are part of our national heritage, just like farmland and forest. Given this, the primary objective of the fish habitat management program is to conserve, restore and develop fish habitats in order to maintain and improve our country's fishery resources.(4) The Committee recognizes the importance and justification

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(1) No net loss: working principle by which the Department of Fisheries and Oceans strives to balance unavoidable habitat losses with habitat replacement on a project-by-project basis so that further reductions to Canada's fisheries resources due to habitat loss or damage may be prevented.

(2) Ralph Redmond, New Brunswick Department of Forests, Mines and Energy, Issue No. 53, October 29, 1985, p. 19.

(3) Edward S. Fellows, Canadian Institute of Forestry, Issue No. 53, October 29, 1985, p. 100.

(4) Canada, Department of Fisheries and Oceans, Proposed Policy and Procedures for Fish Habitat Management, Ottawa, May 31, 1985, 28 pp.

of this program and, further, hopes that DFO will demonstrate discretion in dealing with projects submitted by the forestry sector.

Often, each project study represents a special case. Strictly speaking, any human intervention in a natural environment may be called a disruption. Yet sometimes, especially if the disruption is minor, such intervention may increase an environment's productive capacity. Beyond a certain level, however, disruption causes stress that lowers production. If changes are too radical, irreversible damage may ensue, and the ecosystem may even be destroyed. In short, the wise motto proposed by ecologist René Dubos, "Think globally, act locally," applies perfectly to the environmental problems associated with exploiting wood resources.

We must also point out that although there is a surplus of hardwood in both the province and the world,(1) some of the witnesses suggested it would be prudent to promote more mixed replanting and cultivate certain hardwoods, for no one can foresee the forest industries' needs 20 or 40 years from now. Moreover, many owners believe that diversifying plant species in their woodlots mitigates to some extent insect and disease epidemics.(2) Ralph Redmond of FME views the question of which species should be favoured in reforestation thus:

> Looking at the provincial scene in total, we have a surplus of hardwood. We have a problem of softwood supply, which we are addressing by addressing our silviculture effort to growing softwood. It is difficult to support the silviculture efforts in hardwood when we already have more hardwood than we can use, except - I should qualify that - for the higher grade hardwoods which are required in sawmills for producing lumber. But of the pulp grade, regular, run-of-the-mill hardwoods we have an oversupply in the province.(3)

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(1) Edward S. Fellows, Canadian Institute of Forestry, Issue No. 53, October 29, 1985, p. 97.

(2) Peter deMarsh, New Brunswick Federation of Woodlot Owners, Issue No. 53, October 29, 1985, pp. 108-114.

(3) Ralph Redmond, New Brunswick Department of Forests, Mines and Energy, Issue No. 53, October 29, 1985, p. 25.

In light of the comments and arguments advanced, the Members of the Committee hope to see consultative and decision-making mechanisms developed that will allow for the different opinions voiced about the ecological, social and economic aspects of the forest and its industries.

A. Private forests

Given the peculiar age class structure of New Brunswick's forests, woodlot owners are concerned about the immediate surplus of standing softwood in the province. Between 1914 and 1920, New Brunswick had a severe spruce budworm epidemic that seems to have devastated fir and spruce stands. The trees that regenerated after this have all grown to maturity at about the same time. The resulting problem is that any wood that cannot be harvested within the next 20 years may be lost forever. Peter deMarsh maintains:

> This has very immediate and direct implications for efforts to promote greater forest management by small woodlot owners. As a woodlot owner, if I cannot be assured of being able to sell the wood I have to harvest today, it is virtually impossible to convince me that it is worth my time and effort to invest in forest management for 30 or 40 years down the road.(1)

The New Brunswick Federation of Woodlot Owners hopes that access to new markets will solve this dilemma by providing an outlet for forest products at attractive prices. To follow up the presentations by the Federation's representatives, the Committee recommends as follows:

RECOMMENDATION 9

> The Canadian Forestry Service, in co-operation with the New Brunswick Ministry of Forests, Mines and Energy, should increase its efforts to develop and

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(1) Peter deMarsh, New Brunswick Federation of Woodlot Owners, Issue No. 53, October 29, 1985, p. 108.

identify new markets on which softwood from New Brunswick forests can be sold at attractive prices.

In addition to the problem of marketing forest products, representations were made about the problem of recruiting technically qualified staff and developing improved silviculture techniques. According to Valerie Fowler, Executive Director, New Brunswick Federation of Woodlot Owners, the present eligibility criteria for job creation programs do not allow people with technical forestry skills to be trained and hired. The existing programs seem too rigid, for they are open only to those who have been unemployed for a long time.(1) In this connection, it is important to note that in the 1986-87 fiscal year, the Canadian Forestry Service will be responsible for co-ordinating, evaluating and controlling a budget of $36 million allocated by the Department of Employment and Immigration to stimulate employment in sound forest management support.(2) Trusting that these funds will help to solve the problems described above, the Committee nevertheless recommends as follows:

RECOMMENDATION 10

The Department of Employment and Immigration, in co-operation with the Canadian Forestry Service, should develop a long-term policy to use the funds allocated to job creation to recruit and train skilled workers to perform forest management tasks.

Commenting briefly on the relatively high costs of the silviculture methods currently favoured, Peter deMarsh observed that the Canadian Forestry Service should step up its research into methods in replenishing deforested lands through natural regeneration. Private

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(1) Valerie Fowler, New Brunswick Federation of Woodlot Owners, Issue No. 53, October 29, 1985, pp. 111-112.

(2) Agriculture Canada, "Canadian Forestry Service Program Expenditure Plan, 1986-87", 1986-87 Estimates, Ottawa, 1986, p. 29.

woodlot owners expressed strong interest in collaborating with researchers by making small parcels of land available.(1)

Under the terms of the Canada/New Brunswick Forest Renewal Agreement, private woodlot owners receive $15.5 million for replanting and forest management. This makes up 20% of the total envelope for the agreement ($77.4 million).(2) In this connection, the New Brunswick Federation of Woodlot Owners submitted that additional funds should be allocated to its members in amounts corresponding more closely to the percentage of wood supplies in their holdings (about 25%).(3) It should be noted that the money assigned to private forest management is all provided by the federal government. According to the provisions of the latest agreement, the provincial government's contribution to private owners is mainly in the form of road planning and management programs.(4)

The Committee is aware that funding of silviculture projects is both an urgent and difficult matter. Nonetheless, as C.M. Johnson, Director, Silviculture Division, British Columbia Department of Forests, has justly remarked, public demand and political will are the key factors that lead to the mobilization of human and financial resources. Where the will makes itself felt, funding mechanisms seem to appear out of nowhere.(5) While it is generally recognized that legislation does not by itself make trees grow, judicious regulations coupled with adequate financial support can accomplish much. Thus the time seems to be ripe to

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(1) Peter deMarsh, New Brunswick Federation of Woodlot Owners, Issue No. 53, October 29, 1985, p. 109.

(2) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(3) Peter deMarsh, New Brunswick Federation of Woodlot Owners, Issue No. 53, October 29, 1985, p. 115.

(4) Robert Watson, New Brunswick Department of Forests, Mines and Energy, Issue No. 53, October 29, 1985, p. 22.

(5) C.M. Johnson, "Legislative mechanisms to balance public and private interests in forest management," Forest Resources Management, the Influence of Policy and Law, International Forest Congress, Quebec City, 1984, p. 22.

address the challenge by developing new provisions that will encourage woodlot owners to invest in improving the quality of their forest. In Finland, for example, when a stand is harvested, its owner must post a bond equal to 15% of the timber's value into a special account controlled by the government. Once the trees have been replanted, two-thirds of the amount invested is given to the landowner. Later, if the project proves successful, the entire difference is paid to him.(1,2)

B. Native People

New Brunswick has 15 Indian bands, located on some 21,000 acres of land.(3) Through their representatives in the Union of New Brunswick Indians, these native groups expressed certain concerns about the future of their forest resources and activities. In addition to concern about the continuation of traditional activities such as hunting and fishing, natives voiced fears about the following matters:(4)

- of the $500,000 included in the federal-provincial agreement (1984-89) for reforesting federal land, only $20,000 seems to be earmarked for developing forest land on Indian reserves;
- many reserves do not have enough forest land fit to be exploited; Indians claim the right to use more land, which they hope will give them access to more resources;
- access to native forests should be made easier by road building; in addition, there is a great need for trained silviculture workers.

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(1) Gérard Arseneau, Issue No. 51, October 25, 1985, p. 100.

(2) Jane O'Hara, "Canada's vanishing forests", Maclean's, January 14, 1985, p. 39.

(3) Graydon Nicholas, Union of New Brunswick Indians, Issue No. 53, October 29, 1985, p. 76.

(4) Ibid., p. 49.

At present, New Brunswick's Indian reserves cover some 14,000 acres or 56.6 km^2 of forest available for harvesting.(1) This represents about 0.1% of the province's productive woodland. The corresponding proportion of the $77.4 million provided by the Canada/New Brunswick Agreement should imply in theory that $77,400 should be available to replant forest lands on Indian reserves. If, however, we calculate that this land represents 3.5% of the productive forest land in New Brunswick owned by the federal government, the $20,000, which represents 4.0% of the $500,000 allocated to replanting federal forest land, is proportionate to the extent of forest land owned by Indian bands. Yet development programs for forest land in federal hands should also take into account the opportunities for creating jobs for native people. Consequently, the sums allocated for replanting their forest lands should probably be adjusted.

As regards the acquisition of new forest lands by natives, Graydon Nicholas, emphasizing that the Minister of Indian and Northern Affairs had recently promised to give them an opportunity to purchase such land, maintained:

> We have not met with the federal minister to sit down with him and discuss these things, but definitely land will have to be obtained because there is a desperate need for a forestry on our reserves, because at the same time the Province of New Brunswick does not recognize Indian people to hunt off the reserve; they say, you hunt only within your lands. But if there is no forest, there is nowhere our people can hunt. So we would like to have these lands added on to our reserves. It is definitely needed. It has tremendous potential, and we would also like to share in those benefits.(2)

The Committee recognizes the view of the representatives of the Union of New Brunswick Indians. Hoping that native people's forest lands will develop successfully and increase in value rapidly, the Committee recommends as follows:

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(1) Ibid., p. 78.

(2) Ibid., p. 55.

RECOMMENDATION 11

A separate agreement should be concluded promptly between the federal authorities concerned and the representatives of Indian groups regarding the management and development of New Brunswick Indians' forest lands.

PROCESSING AND MARKETING

While listening to the presentation by the Maritime Lumber Bureau (MLB), the Committee's members were struck by the challenges of marketing New Brunswick's forest products. Francis Smith of the MLB observed that the major difficulty with selling lumber was to stabilize the demand. This could be done by lowering and stabilizing interest rates to encourage construction wood purchases. Lifting the federal sales tax on lumber would also be a major financial encouragement.(1)

MLB representatives also showed grave concern about the rise of U.S. protectionism with regard to Canadian forest product imports. This matter received considerable attention at the last meeting of the Canadian Lumbermen's Association. It must be borne in mind that U.S. producers have seen the share of their domestic market occupied by their Canadian competitors rise from 28% to 32% in recent years. During the 1981-82 recession, because of the considerable drop in housing starts in the U.S., American producers took their case to the courts, alleging that Canadian lumbermen enjoyed many subsidies, including lower royalties than those collected by our neighbours. The U.S. International Trade Commission dismissed their complaint at the time. Some Canadians maintain, however, that several bills introduced in Congress, particularly the Omnibus Trade Bill, seek to redefine the concept of a subsidy and could give fresh ammunition to U.S. producers. This debate is extremely important to an

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(1) Francis Smith, Maritime Lumber Bureau, Issue No. 53, October 29, 1985, p. 119.

industry that exports $3 billion worth of goods, or 75% of its output, to the United States.(1) Although opinions are divided, New Brunswick producers intend to lobby in favour of a free trade policy.(2) The recent application of countervailing duties on certain Canadian forest products puts additional emphasis on the need for appropriate action on the part of governments and concerned industries to take initiatives to promote and ensure Canada's access to the U.S. market. In this connection, the Committee welcomes the recent creation of an Industry and Trade Relations Branch in the Canadian Forestry Service. This Branch, in co-operation with other federal departments and agencies, determines and assesses the effects of federal policies and programs on the development of the forest industry. As this year progresses, the threat that the United States will impose commercial sanctions on Canadian forest products will receive special attention.(3)

In closing, we would emphasize that two paths down which our forest industries need to travel quickly are the introduction of technologies that make good use of species other than fir and spruce in pulp and paper production and the stepping up of the processing, and hence the value added, and diversification of forest products.(4)

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(1) Gilles Gauthier, "L'industrie du bois de sciage craint d'être victime du libre-échange", La Presse, February 13, 1986, section C, p. 3.

(2) Robert Love, Maritime Lumber Bureau, Issue. No 53, October 29, 1985, p. 128.

(3) Agriculture Canada "Canadian Forestry Service Program Expenditure Plan, 1986-87", 1986-87 Estimates, Ottawa, 1986, p. 19.

(4) Robert Love, Maritime Lumber Bureau, Issue No. 53, October 29, 1985, pp. 125-27.

NOVA SCOTIA FORESTS

> Whose fault is it that the vast majority of Canadians do not realize the economic importance of our industry, do not know we are running out of wood, and do not understand modern forest management practices? It is our fault: foresters, technicians, industry and government. We have long neglected our responsibility to the public to inform and educate them on forestry issues.
>
> Michael A. Brown, Administrator
> Atlantic Forestry Consultants

INTRODUCTION

In future, Nova Scotia's forests must be given the consideration due to the income they generate. We must recognize that the commercial and recreational value of Nova Scotia's woodland is unequalled among the province's natural endowments. Of the province's total area of 55,000 km^2, some 75% or 41,000 km^2 is wooded. Although Nova Scotia's forestry workers have only 1.3% (28,000 km^2) of Canada's productive forest, they harvest between 2.5% and 3.0% of the country's wood.(1,2)

The forest industry's gross annual contribution to the provincial economy is valued at over $500 million. Approximately 8,000

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(1) Nova Scotia Department of Lands and Forests and Canadian Forestry Service, A Plan for Forest Renewal - The Canada-Nova Scotia Forest Resource Development Agreement, n.d., p. 1.

(2) Canadian Forestry Service, Selected Forestry Statistics, Canada 1984, Hull, January 1985, p. 4.

direct and 16,000 indirect jobs are tied to the sector.(1) Trapping brings in profits of over $1 million, and at least 125,000 hunting and 80,000 fishing licences are issued annually in the province. Note also that 1,487 km^2 of reserves and parks allow Nova Scotians and visitors to enjoy outdoor recreation and the majestic beauty of the wilderness.(2,3)

The forest industry's main components are five pulp and paper mills and about 350 sawmills of various sizes. The industry, whose annual wood consumption averages 3.3 million m^3 of softwood and 413,000 m^3 of hardwood, will have to adopt new harvesting and processing practices to ensure conservation and improvement of wood resources.

Following the recent publication of the Report of the Nova Scotia Royal Commission on Forestry, the provincial government announced a new forestry policy whose goals and objectives may be summarized as follows:(4)

- to create a healthier, more productive forest capable of yielding increased volumes of high quality products;
- to encourage the development and management of private forest lands as the primary source of timber for industry in Nova Scotia;
- to support private landowners to make the most productive use of their forest lands;
- to manage all Crown lands more effectively;
- to maintain or enhance fish and wildlife habitats, water quality, recreational opportunities and associated resources of the forest;
- to enhance the viability of forest-based manufacturing industries;

(1) These data, from the Nova Scotia Royal Commission on Forestry Report, are considerably different from those provided by the Canadian Forest Industries Council (see Table 3).

(2) Nova Scotia, Royal Commission on Forestry, Forestry, Halifax, 1984, pp. 1, 57 and 59.

(3) Kenneth Streatch, Nova Scotia Department of Lands and Forests, Issue No. 55, October 31, 1985, p. 24.

(4) Nova Scotia, Department of Lands and Forests, Forestry: A New Policy for Nova Scotia, 1986, p. 3.

- to double forest production by the year 2025;
- to create more jobs immediately and in the longer term through improved productivity.

The Committee welcomes the introduction of a forest policy whose general principles are based on such important concerns as programming and sharing harvests, marketing products, protecting forests and silviculture.(1) It is also hoped that the two existing federal-provincial agreements on forest resources development (1982-87) and renewal (1984-87) will be extended so as to promote the achievement of the above objectives. These two Canada-Nova Scotia agreements providing for a total of $70.9 million, terminate on March 31, 1987.(2,3)

Some highlights of the Nova Scotia forest sector are presented in Table 3.

THE RESOURCE

According to statistics given by the Canadian Forestry Service(4) and the Nova Scotia Royal Commission on Forestry,(5) 41% of Nova Scotia forests are mature or over mature (60 or more years old). Especially vulnerable to spruce budworm attacks, these old coniferous stands represent a surplus of wood that must be harvested over the next two

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(1) Ibid., p. 4.

(2) Canadian Forestry Service, Brief to Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(3) An additional $10 million forestry agreement for Cape Breton should increase the forestry jobs by 500 during the fiscal year of 1986-87. The federal Department of Employment and Immigration is providing $2 million to train silvicultural workers and sponsor forestry-related projects. For its part, the CFS will provide $5 million and the provincial Department of Lands and Forests will contribute $3 million.

(4) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(5) Nova Scotia, Royal Commission on Forestry (1984), p. 12.

TABLE 3: CHARACTERISTICS OF THE NOVA SCOTIA FOREST RESOURCE AND INDUSTRY

A. BIOPHYSICAL CHARACTERISTICS OF THE INVENTORIED FOREST LAND

1. Area	° provincially owned:		11,683 km^2	(28.1%)
	° federally owned:		1,161 km^2	(2.8%)
	° privately owned:		28,704 km^2	(69.1%)
	- Total forest:		41,554 km^2	
	- Productive forest:		28,000 km^2	
2. Species (% of merchantable volume of the productive forests)	- Coniferous 66.6%	- White spruce		(9.1%)
		- Other spruces		(26.0%)
		- Fir		(22.5%)
		- Other		(9.1%)
	- Deciduous 33.4%	- Red maple		(13.3%)
		- Sugar maple		(5.5%)
		- Yellow birch		(5.2%)
		- White birch		(2.8%)
		- Other		(6.7%)
3. Volume	Gross merchantable volume, uncut			
	- coniferous:		193.5 million m^3	
	- deciduous:		96.9 million m^3	
	- total:		290.4 million m^3	
	Annual allowable cut (1981-85)			
	- coniferous:		3.30 million m^3	
	- deciduous:		0.39 million m^3	
	- total:		3.69 million m^3	
	Cut (1981)			
	- public forest:		0.83 million m^3	
	- private forest:		2.86 million m^3	
	- total:		3.69 million m^3	

- cont'd

TABLE 3: (cont'd)

B. INDUSTRY CHARACTERISTICS

1.	Jobs (1983)	Direct: 5,946	
		Indirect: 11,892	
		Number of factories in 1982	
		- pulp and paper:	5
		- sawmills and planing mills:	80
2.	Dollar value	- Wood industries' shipments in 1983:	$78.7 million
		- Paper and allied products industries' shipments in 1983:	$319.6 million
		- 1983 exports:	$230.0 million
		- Contribution to GDP in 1982:	$201.6 million (or 2.7% of GDP)

Sources: Canadian Forest Industries Council, Canada's Forest Industries 1986: Data Book, 1986, p. 89.

Canadian Forestry Service, Selected Forestry Statistics, Canada 1984, Hull, January 1985, pp. 52, 72, 75 and 115.

Maritimes Forest Research Centre, Forestry Report, Fredericton, November 1984, pp. 2-3.

Statistics Canada, Canadian Forestry Statistics 1983, Catalogue No. 25-202, Ottawa, December 1985, 55 pp.

decades. It should be added that during the same period, an additional 35% of standing stock will enter the ranks of mature or over-mature timber.

A shortfall is certain to occur in about 20 years, for only 12% of existing timber is 21 to 40 years old. In one of the conclusions in its recent report, the Royal Commission observed that if conventional forestry practices are maintained, the present temporary surplus of softwood will be followed by a shortage by about the year 2005.(1)

Not all interested parties share these views, however. The Coalition Against Pesticides (CAP) notes that the provincial Department of Lands and Forests itself has stated that the softwood harvest can be kept at the present 3.30 million m^3 if silviculture treatments are maintained at the 1981 level and if projects' abnormal losses to injurious agents do not exceed expectations.(2) CAP strongly opposes the increase in the annual allowable cut (AAC) proposed by the Commission.

An increase in the annual harvest from 3.30 to 4.00 million m^3 could only be justified by an excessively simplified view of forest ecosystems. The CAP criticizes the Commission for considering 60 to 80-year-old softwood as overage. This term applies to stands or types of cover that have gone beyond the rotation age. While it is true that balsam fir and white spruce are mature at 60, this is not the case with species such as red and black spruce (mature at 100) or white pine and hemlock, which together make up 50% of the softwood inventory.(3)

The Committee acknowledges the truth underlying these statements. Consequently, it seems essential to develop a strategy whereby: 1) trees that have reached or passed their maturity are harvested first; 2) mature trees are protected against disease, pests and fire; and those trees that could alleviate the anticipated shortfall are left standing; and 3) existing stands are improved through intensive management

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(1) Ibid., pp. 9-10.

(2) Coalition Against Pesticides, The Royal Commission on Forestry: A Response, June 1985, p. 4.

(3) Ibid.

so as to increase the quantity of usable fibre in the time of projected scarcity.

Much has been said in the Nova Scotia forest community about low forest productivity and the need for silvicultural treatment and management. The Minister of Lands and Forests has said:

> This less than ideal state of forest health in the province is reflected in the growth figures in forest harvest. Statistics indicate that Nova Scotia's forests at the present time are yielding less than 25% of their true potential. In this regard, our government, in co-operation with the Government of Canada, has launched a major new training initiative to create an efficient, effective, contemporary silviculture work force. This work force will be able to apply more care and better management to our forests.(1)

The Committee encourages the authorities concerned to form teams of workers skilled in the fields of forest ecology and silviculture, for it is acknowledged that improving forest management is often hampered by lack of funding and skilled labour.(2) Encouraging results have nonetheless been seen over the past ten years. During that time, the number of silvicultural workers in Nova Scotia appears to have risen from about 100 to 1,200.(3) The days when wood fibre was simply "extracted" are now gone. Forest lands management objectives must now be based first and foremost on the dynamics of forest ecosystems. Loss of soil fertility, reduction in the number of species, negative repercussions on tree quality and wildlife and vegetation as a whole, destruction of invaluable or unique

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(1) Kenneth Streatch, Nova Scotia Department of Lands and Forests, Issue No. 55, October 31, 1985, p. 25.

(2) G.F. Weetman, "Forestry Practices and Stress on Canadian Forest Land", Stress on Land, Environment Canada, Wendy Simpson-Lewis et al., co-ordinators, Ottawa, 1983, p. 296.

(3) Michael A. Brown, Atlantic Forestry Consultants, Issue No. 56, November 1, 1985, pp. 115-116.

habitats, and deterioration of scenic areas are all to be prevented or at least kept in check.

While it is true that forest regeneration and management is very expensive, Michael A. Brown of Atlantic Forestry Consultants reminds us that it is worthwhile, as Sweden has proved:

> To illustrate this, let us consider Sweden, a country that has realized tremendous benefits from substantially increasing forest management expenditures. Sweden's forested area is six times larger than Nova Scotia's. Thus, she spends 30 times more on silviculture. Because of this, the forest growth on an acre of land in Sweden is three times that of Nova Scotia. Yet our soils are better than theirs.(1)

State-of-the-art technology combined with fundamental knowledge can double harvests when species of trees are planted in the appropriate place. The minimum cutting age can also be reduced by half, and genetic stock improvements can increase wood production by a further 15%.(1)

The Committee endorses Mr. Brown's opinion that the federal government should act as a catalyst in arousing interest in appropriate forest land management programs. Reasons for allocating more resources to promoting silviculture can be found, according to Mr. Brown, in the seven points that follow:

- Forest improvement activities are labour intensive, and could create tens of thousands of new jobs without any delay and without any bureaucratic complications; the impact could be felt in every region of our country;
- Forestry is attractive to our youth and to the world population; we know from recent experience that they are willing and able to participate;
- There is a rapidly growing segment of our population who are interested in conservation, and these people will be attracted by action to achieve the wise use of

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(1) Ibid., p. 116.

(2) Canadian Institute of Forestry, Nova Scotia Section, Submission to the House of Commons Committee On Fisheries and Forestry Antigonish, November 28, 1985, p. 13.

our forest resource; urban Canadians are part of this movement;

- Silviculture is similar to agriculture; both are linked to our sense of debt to the land and a corresponding land-use ethic. This is a strength we can all build upon;

- From the foregoing reasons it follows that forest renewal can become a unifying force in Canada for the balance of the 1980s and indeed in the decades to come;

- Forestry is also a winner with the Indians of Canada, who have recently realized that forestry is a means to enhance their livelihood in a manner consistent with their traditional values;

- Continued neglect of the forest resource will reduce the one million employees who now derive their income directly or indirectly from the forest industry in Canada. Can we afford the cost of forest renewal? There is a more urgent question: Would we rather pay the higher price of economic dislocation and social wreckage in scores of the 300 forest-based communities in Canada?(1)

Let us add lastly that, according to estimates by the Nova Scotia Royal Commission on Forestry, silvicultural activities could generate 10,000 direct and indirect jobs in the province.(2) Because of the importance of federal-provincial agreements for maintaining and intensifying silviculture programs in Nova Scotia, the Committee recommends as follows:

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(1) Michael A. Brown, Atlantic Forestry Consultants, Issue No. 56, November 1, 1985, pp. 116-117.

(2) Nova Scotia, Royal Commission on Forestry (1984), Report, p. 31.

RECOMMENDATION 12

The Canadian Forestry Service and the Nova Scotia Department of Lands and Forests should renew their agreements on forest enhancement and renewal before the present agreements expire in 1987.

A. Private Forests

Although statistics as to the ownership of forest lands in Nova Scotia do not always agree, we can estimate that about 70% of forest land is in private hands. The situation is much the same as in New England and Finland.(1) More specifically, about 52% (22,000 km^2) of woodland belongs to some 30,000 free holders owning less than 4.0 km^2 of forest. The stands are comprised of 52% softwood, 32% mixed wood and 16% hardwood. Note that small private woodlots have a higher net growth rate than the lands of large owners or Crown land.(2)

Nova Scotia softwood yields only 25% of its potential, or an average of 2.1 m^3 per hectare. This clearly demonstrates the need for more intensive silviculture. With this in mind, small woodlot owners wish to assume responsibility for managing their land. Consequently, small free holders and private woodlot operators would like control over the allocation of the 52% of the money available in the federal-provincial agreements spent on private lands.(3) Small woodlot owners have putforward other recommendations they would like to see implemented in the short term.

- New markets should be developed so as to obtain the revenue needed for forest regeneration and capital

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(1) Ibid., p. 47.

(2) Ronald Bulmer, Nova Scotia Woodlot Owners' and Operators' Association, Issue No. 55, October 31, 1985, p. 142.

(3) Ibid., p. 145.

improvement. Market research and development should be carried out by the federal and provincial governments jointly with representatives from the local forest industry and woodlot owners.(1)

- Since future market requirements are hard to predict, it would be better to adopt the principle of forest management geared to producing the best possible products on the basis of factors such as species, soil characteristics and climate rather than simply the industry's present needs.(2)

- More co-ordination and co-operation is needed between job creation programs at the federal and provincial levels.(3) The Canadian Forestry Service (CFS) should promote the adaptation of federal job creation programs to the needs of the forest industry.(4). Moreover, the CFS should divest itself of its administrative functions as regards programs aimed at private woodlot owners.(5)

- If woodlot owners are required to operate their forests for a low stumpage return in order to maintain and create jobs in the mills, mill workers should be required to invest in protecting their jobs by becoming shareholders in their plants. Unless an agreement is reached to work toward employee ownership, woodlot owners refuse to subsidize foreign shareholders and unionized workers through controlled operation of their forests.(6)

- Private owners would like to have someone appointed to defend their interests in the provincial Department of Lands and Forests. This person should guarantee equal funding for small woodlot owners; provide professional and technical staff to woodlot owners; make certain that no Crown wood is sold until all the private wood

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(1) Ibid., p. 143.

(2) Ibid., p. 144.

(3) John Dechman, CONFORM Limited, Issue No. 55, October 31, 1985, p. 132.

(4) Ronald Bulmer, Nova Scotia Woodlot Owners and Operators Association, Issue No. 55, October 31, 1985, p. 145.

(5) Ibid., p. 146.

(6) Luke L. Batdorf, Report to the Nova Scotia Woodlot Owners' and Operators' Association, April 13, 1985, p. 15.

has been sold; and monitor all aspects of private woodlot interests and needs.(1)

- The provincial government is competing unfairly with small woodlot owners by selling wood cheaply to pulp and paper mills.(2) Consequently, leases on Crown lands to pulp and paper companies should be reviewed at once, by a committee of woodlot owners and representatives of the pulp and paper companies and the Department of Lands and Forests.(3)

The Committee agrees with the Canadian Institute of Forestry(4) that it would be wise to consider what stimulus the tax system can offer so as to increase the amount spent on forest management on both public and private lands. A recent study by the Canadian Forestry Service's Economics Branch observes that the Canadian tax system contains hardly any provisions to encourage expenditure on intensive forest management activities. This observation deserves to be qualified, however, for we are not fully informed about investment decisions regarding private forest lands.(5) Consequently the Committee recommends as follows:

RECOMMENDATION 13

The Canadian Forestry Service should increase its efforts to determine the nature and extent of tax stimuli that could encourage an increase in private sector expenditures on forest management in Canada.

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(1) Ibid., p. 17.

(2) Ibid., p. 9.

(3) Ibid., p. 13.

(4) Canadian Institute of Forestry, Nova Scotia Sector, Submission to the House of Commons Committee on Fisheries and Forestry, Antigonish, November 28, 1985, pp. 24-27.

(5) David Boulter, Taxation and the Forestry Sector, Canadian Forestry Service Information, Report E-X-33, 1984, p. 87.

B. Native People

The Native Council of Nova Scotia complains that government authorities do not consult with native people before they implement natural resource management programs. Viola M. Robinson, President of the Council, states that native populations suffer from lack of information and consultation about the field of forestry.

> Sometimes all it takes is just good simple advice to help a lot of people. You find learned, educated people sitting on committees and working on policies. I am sure you people all say that you have experience in wood and stuff, but sometimes it just takes some very basic, general person who has really been there and knows what it is all about to open the eyes of a committee. That is all I am saying, I think the aboriginal community of Canada has a lot of these people, if they were approached...(1)

Opposing the destruction of our country's forest and fishery resources, the Native Council maintains that each human being is responsible for ensuring the survival of the physical environment for future generations, and consequently recommends:

- that a central authority be established by special legislation creating a national forum responsible to Parliament through a minister of a new department of protection and orderly use of natural resources;
- that provinces and territories amend existing legislation affecting natural resources, to promote the philosophy of protection and orderly use of natural resources for the well-being of all generations;
- that regional or provincial forums be encouraged and established comprised of individuals who have immediate and diverse affiliations with the physical resources;
- that solutions developed by these forums be promoted as priority government consideration and action;
- that the Committee examine its present and future role as educator and promoter of a new attitude toward our forestry and fishery;

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(1) Viola M. Robinson, Native Council of Nova Scotia, Issue No. 55, October 31, 1985, p. 126.

- that the Committee elevate its stature to become a prominent committee of Parliament whose recommendations would be acted upon;
- that the forums and committees priorize educating the public about the values of preserving the fishery and forestry for our future generations;
- that mechanisms be established to support the will of Canadians that resource users be compelled by law to replenish and enhance for future generations what is used today.(1)

More than ever, the native people of Nova Scotia insist on obtaining a straight commitment from the federal authorities that they will be able to play an active role in the important sector of the economy constituted by the forest.(2) The Committee thus hopes that the Canadian Forestry Service, in co-operation with the federal Department of Indian and Northern Affairs, will step up its efforts to develop management plans for forest lands owned by native people.

C. Occupation and Ownership of Forest Land

The vexing question of the ownership of forest lands in Nova Scotia is causing a debate whose extent has greatly disturbed the Committee's members. In Nova Scotia, the majority of its forest lands are now in private hands. According to comments of a consultant expert on extension education, who in a report to the Nova Scotia Woodlot Owners' and Operators' Association stressed woodlot owners' fears about no longer being masters in their own house:

> The woodlot owner will change his ways if he is educated to see the value of change, but he will revolt, even with blood, if he is taxed, forced, or by any other means, driven from decision-making control over his woodland. The woodlot owner realizes that the issue of expropriation is a "red herring" never

(1) Ibid., pp. 120-121.

(2) Union of Nova Scotia Indians, Submission to the House of Commons Committee on Fisheries and Forestry, November 1, 1985, 7 pp.

> referred to by the report [of the Royal Commission], but he also sees that there is a threat in too much manipulation of what the woodlot owner sees as his private business. He does not want the Crown to have one more inch of private land. He may give some of his land to the Crown to be used for the common good (parks, playgrounds, etc.), but never for the sake of keeping a pulp industry viable.(1)

This issue of expropriation seems to result from a chain of events that began in 1973. At that time, a land surveying and inventory program was introduced in the Maritime provinces, with a view to ensuring more effective exploitation of natural resources and converting the land registration systems to land title systems. Since the forest is tied to land ownership, forest land ownership had to be determined before forest allocation and development policies were established. The inventory of forest land revealed that the provincial government could not supply forest resources as promised to certain newsprint manufacturers, sawmills and so forth. It was then found, according to Miss Smith, that many land registration records had mysteriously disappeared. Under the seal of the Attorney General, the provincial government then adopted the following position: when a file on a land grant could not be located, it must be concluded that the land was never ceded, and thus belonged to the Crown. In addition to land in Shelburne County, 300,000 acres (1,214 km^2) of land occupied by some 13,000 people came to be considered as never having been granted.(2)

In its first five-year mandate, nearly $2.8 million was spent by the Land Registration and Information Service (LRIS). Several LRIS senior officials would seem also to have been senior officials of the provincial government. That naturally raises a problem of conflict of interest, especially in view of the province's urgent need for woodland. Although the system's value should have been reviewed, the federal

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(1) Luke L. Batdorf, Report to the Nova Scotia Woodlot Owners' and Operators' Association, April 13, 1985, pp. 11-12.

(2) Anne Smith, Issue No. 54, October 30, 1985, p. 8.

government cut off funding for it, thus ending the survey and inventory program. Quantities of files attest to a protest movement among private owners. Miss Smith summed up the problems as follows:

> I am certainly in favour of an orderly open system of land registry, but I would ask you to consider the system as it was operating, as the documents which I have provided you show, and as it is defined by the documents and as it was assessed by the Treasury Board, the Department of Regional Economic Expansion, the federal government and the Cabinet.
>
> It is understandable under the circumstances that the Nova Scotia government is opposed to entrenching property rights in the Constitution. Nova Scotia land owners, however, are in great need of such protection if the government is to continue to make promises of land to companies, promises it cannot honour without altering the status of forest land from private ownership to ungranted Crown land to ungranted land. The changes are subtle, but very meaningful and disruptive to private ownership.(1)

In reply to the allegations presented by Miss Smith, Kenneth Streatch, Minister of Lands and Forests of Nova Scotia asserts that no one in any of the areas which she referred to has lost land due to any action taken by the Crown. He summarizes the case as follows:

> ° There is no conspiracy on the part of the Government of Nova Scotia to deprive any person of any lands to which they have a valid claim in order to acquire Crown lands to meet any commitment the Province has to the forest industry, for the off-shore oil and gas program or any other purpose. If lands are required by the Crown for any purpose, they will be acquired by negotiation with persons having interest in the land or, if necessary, by expropriation pursuant to the provisions of the Expropriation Act, 1973. Certain acreages of Crown land were committed to the pulp and paper companies when they were first established in the Province. If the required acreage is not available, the legislation passed when these companies were set up provides for compensation to be paid in lieu of the land.

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(1) Ibid., p. 10.

- The Land Registration and Information Service (LRIS) is an agency of the Council of Maritime Premiers and provides a service to each Province as directed by its Board of Directors. It has provided an excellent service to the three Maritime Provinces and I do not hesitate to say that the co-ordinate survey control system and the series of topographic mapping provided by it are the envy of the rest of Canada. The property mapping, although not yet complete for Nova Scotia, delineates private properties as well as the provincial Crown lands and are extremely useful for planners, assessors and any person requiring data pertaining to location of properties. I question the statement that damage has been created though this program. It is the decision of the Province not to proceed with a land titles system at this time.

- There is no evidence that the Province of Nova Scotia has deliberately removed documents relating to any of the old grants from its Crown land records.

- The procedure to process claims to ungranted lands has been well established since 1963. Claims to thousands of acres have already been recognized with little or no cost to the claimants. All files are processed in conformity with natural justice to all claimants. To date over 800 certificates of release have been issued.

- The Department of Lands and Forests is not reviewing these claims to ungranted land with the sole motive of providing such lands to the pulp and paper industry. The question of title to these lands has been uncertain for many years and the Department is doing its best to gather information on these lands, review the materials and make fair recommendations to Cabinet on what position the Crown should take with regard to these lands. These claims must be settled but not for the reasons stated by Miss Smith.([1])

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(1) Kenneth Streatch, Nova Scotia Department of Lands and Forests, letter addressed to the Chairman of the Standing Committee on Environment and Forestry, Halifax, April 16, 1986, 4 pp.

D. Protection of Forest Land

Spruce budworm epidemics have been troubling the forests of northeastern North America for a very long time. Reasonably reliable tree-dating techniques have been used to plot the passage of the spruce budworm in Eastern Canada over a period of about 250 years. Only since the turn of the century have epidemics gradually become longer and more severe. These changes in epidemic patterns have led some scientists to postulate that they are caused by changes in the makeup and structure of the forest cover, among other things. Some believe that aerial spraying of chemical insecticides prolongs such epidemics by preserving the insect's food and habitat. However that may be, these observations raise questions as to the appropriateness of conventional methods of reforestation and pest control, which may well exacerbate the problem.(1)

At present, the spruce budworm still ranks as the most destructive pest in Canada. The balsam fir is the insect's favourite host, although the red and white spruce and, to a lesser degree, the black spruce are also affected. When larva populations are very high, they also eat hemlock and larch.(2)

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(1) Quebec, Bureau d'audiences publiques sur l'environnement, Rapport d'enquête et d'audience publique sur le programme de pulvérisations aériennes contre la tordeuse des bourgeons de l'épinette, appendix 2, Epidémiologie de l'insecte et efficacité de certaines solutions, Quebec City, 1983, pp. 3-4.

(2) Canadian Forestry Service, Forest Insect and Disease Conditions in Canada 1984, Ottawa, 1985, p. 3.

In Nova Scotia, spruce budworm infestations have been recorded since 1846.(1) Insecticides were first used against the pest in 1927, on Cape Breton Island. Initially, calcium arsenate was applied in powder form; 15 years later, DDT was used, then banned in 1968 and replaced by other chemical insecticides (such as fenitrothion and aminocarb) and a biological pesticide (Bacillus thuringiensis or B.t.).(2) For many years a highly controversial issue, the spraying of chemicals on forest land is still a matter of gravest concern in Nova Scotia. It is important to note that the provinces are responsible for spruce budworm spraying programs on both private and provincially-owned lands. There are, however, some areas to which provincial jurisdiction does not extend, such as federal lands and native reserves.(3)

Some well-informed people in the forestry field assert that the lack of measures to combat the spruce budworm is at the root of Nova Scotia's present and future wood supply problems. According to John Dickey of the Forestry Sector of the Voluntary Planning Board of Nova Scotia:

> ...the major cause of a projected shortage of softwood in Nova Scotia has been the desperately serious effect of the spruce budworm, starting in about 1973 and going on for 10 years until the major softwood resource in Cape Breton and parts of eastern Nova Scotia was completely devastated. That was because of a refusal of the provincial authorities to permit any protection at all for that resource. The losses are still continuing at a most unacceptable rate in central and northern Nova Scotia.(4)

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(1) Nova Scotia, Royal Commission on Forestry (1984), p. 36.

(2) J. Robert Blais, "Historique de la lutte contre la tordeuse", Annales de la Société entomologique du Québec, Vol. 22 No. 2, May 1977, pp. 146-147.

(3) Jacques Rousseau, The Fight Against the Spruce Budworm: A Constitutional Law Perspective, research paper for the House of Commons Standing Committee on Fisheries and Forestry, Ottawa, May 19, 1983, p. 4.

(4) John Dickey, Forestry Sector of Voluntary Planning Board of Nova Scotia, Issue No. 55, October 31, 1985, p. 168.

According to figures supplied to the Committee by the Canadian Institute of Forestry, Cumberland County alone lost 3.3 million m^3 of softwood to the spruce budworm between 1974 and 1982, an amount equal to the annual allowable cut of softwood in one year for the province of Nova Scotia.(1)

In the short term, it seems to be generally acknowledged that pesticides have to be used to combat insect infestations in the forest. Some people view the decision to use, or not to use, chemicals in the forest as often essentially a political one.(2) In this connection, Forestry and Agriculture for Nova Scotians (FANS) considers that registered pesticides are essential to managing wood and food production, and for this reason it calls on those responsible for forestry research to give priority to developing biological and chemical pesticides. This organization and the Institute of Forestry are concerned because there are too few pesticides currently registered for forest use, and thus forest operators cannot choose the most appropriate and selective product.(3,4) A number of arguments are put forward about the advantages and disadvantages of biological insecticides (such as B.t.) in comparison to chemical pesticides. After studying the question, however, the Nova Scotia Royal Commission on Forestry concluded there was no technical reason on the grounds of either public safety or functional effectiveness why bacterial insecticides should be preferred. The Commission went so far as to recommend planning to protect 400,000 ha (1,000,000 acres) of forest

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(1) Canadian Institute of Forestry, Nova Scotia Sector, Submission to the House of Commons Committee on Fisheries and Forestry, Antigonish, November 1985, p. 15.

(2) Kenneth A. Armson, "Chemicals and Our Forests", Canada's Forests: A Commitment to the Future, papers presented at the National Forest Congress, April 9, 1986, Ottawa, pp. 35-39.

(3) Forestry and Agriculture for Nova Scotians, Brief to the Standing Committee on Fisheries and Forestry, December 1985, 3 pp.

(4) Canadian Institute of Forestry, Nova Scotia Sector, Submission to the House of Commons Committee on Fisheries and Forestry, Antigonish, November 1985, pp. 18-19.

annually, on the basis of benefit/risk principles, by chemical insecticides sprayed by aerial means.(1)

Needless to say, the Coalition Against Pesticides (CAP) does not share this opinion. The Coalition submits that the Commission dismissed B.t. as a means of control because of a false, badly documented conclusion that chemicals are as safe to spread as biological products. The CAP points out that Ontario has been using only B.t. since 1985 to fight the spruce budworm, and Quebec will be switching to B.t. exclusively by 1987.(2) Lastly, Charles Restino, who chairs the Coalition, emphasizes that biological pest controls such as B.t. can be produced locally, thus creating new jobs. He sees the ultimate objective of forest management as the diversified, multiple and healthy use of forests. In line with this, he states:

> Present reforestation policy towards large scale, uniform, monoculture softwood plantations could have drastic consequences. The forest we create with our new-found forestry enthusiasm must be one we can afford to manage. To create massive forests of a quality solely suited to pulp and paper production that cannot be diverted to other uses and markets is most unwise.[...]
>
> We have the potential here in Nova Scotia to diversify and enhance our forests, creating more employment.[...]
>
> Now, no one denies the importance the pulp and paper industry [has] in the Nova Scotia forestry picture, but we must also recognize that it takes 300 cords of wood to create one job in that industry. The strain this places on the productive capacity of our forests and environment is enormous.[...]
>
> Forest management funding should be allocated on the basis of forest site productivity potential, rather than the present area formula.[...] Presently, in reforestation programs, upwards of $500 per acre is

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(1) Nova Scotia, Royal Commission on Forestry (1984), p. 37.

(2) Coalition Against Pesticides, The Royal Commission on Forestry: A Response, June 1985, p. 16.

> allocated to replant in the neighbourhood of 1,000 trees on that acre. No regard is taken for the eventual or the natural productivity of that particular site. A site that can produce 50 cords an acre gets the same investment on a per acre basis as a site that has the capability of producing 15 cords.(1)

The Committee sincerely hopes that all these ideas will lead to innovations in the fight against pests and in forest management. The Committee believes that the fight against the spruce budworm depends for its success on a combination of control, prevention and compensation tactics that must be articulated in an integrated action program. Solutions must be based on the following points: (1) innovations in forest technology (recovery of wood attacked by the spruce budworm and use of surplus biomass) and in the mill (processing of poorer quality wood and less sought after species); (2) development of silviculture techniques to reduce the growth cycle of pine and spruce and allow better control over forest composition and structure; (3) development of safe, effective and economical pest control methods (pheromones, parasites, predators and so forth). The Committee is pleased to observe the growing interest and recent progress in developing specific insecticides from pathogens (such as the NPV virus)(2) and developing cultivars resistant to spruce budworm attacks.(3) The Committee also shares the view of the Nova Scotia Department of Lands and Forests that the Canadian Forestry Service continue to play a leading role in research to combat forest diseases and pests.(4) The Forestry Development and Research Act 1966-67 (c. 25, s. 26) makes the federal government responsible for research relating to

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(1) Charles Restino, Coalition Against Pesticides, Issue No. 56, October 31, 1985, pp. 104-105.

(2) James Carlisle, "Lab-bred virus could halt spread of budworm", The Gazette, January 25, 1986, section J, p. 6.

(3) April Lindgren, "NRC on verge of breakthrough toward growing trees that kill spruce budworm", The Citizen, December 5, 1985.

(4) Kenneth Streatch, Nova Scotia Department of Lands and Forests, Issue No. 55, October 31, 1985, p. 26.

forests; in addition, the Plant Quarantine Act 1968-69, (c. 35, s. 4) makes it responsible for monitoring, determining and controlling the movement and progress of insects and diseases from one country to another and from one province to another. The federal government also has a duty to advise and assist the provincial agencies working on forest management in order to improve forest protection and management methods.(1)

Conscious of the great importance that must be attached to protecting forests against spruce budworm and other pest infestations and of the fact that research alone can find a way to eradicate these scourges, the Committee recommends as follows:

RECOMMENDATION 14

The Canadian Forestry Service, in co-operation with the provincial departments concerned, should intensify its efforts to develop and implement integrated action programs aimed at short and long-term solutions to infestations of the spruce budworm and other leading forest pests.

RECOMMENDATION 15

The Canadian Forestry Service should evaluate the success of the chemical spray programs and their impact on non-forest sectors such as groundwater contamination, human health and wildlife, and should also intensify its research into alternative pest management techniques.

In addition to insects, disease and acid precipitation, the question of protecting national parks gave rise to remarks at the Committee's hearings. Windsor Kelly, President of the Nova Scotia Forest Products Association, asserted that dead, diseased and dying trees in national parks presented a danger to visitors, a high risk of fire and an ideal place for insects to multiply. Recommending a review of federal park protection policy, Mr. Kelly maintained that judiciously organized culling would reduce accident risks, beautify parks, make for better land use, improve wildlife habitats and create jobs as well.(2) Since these statements merit consideration, the Committee recommends as follows:

(1) Canadian Forestry Service, Research and Technical Services Directorate, Hull, December 1984, p. 11.

(2) Windsor Kelly, Nova Scotia Forest Products Association, Issue No. 55, October 31, 1985, p. 156.

RECOMMENDATION 16

> The Canadian Forestry Service, in co-operation with Parks Canada, should take new steps to minimize the risks of fire and contamination by insects and disease in forests located in national parks.

Lastly, in view of the huge expanses of forests that burn down each year, it was also suggested that the Canadian Armed Forces should play an active role in fighting forest fires.(1)

PROCESSING AND MARKETING

While the lumber and pulp and paper industries dominate Nova Scotia's economy, the production of Christmas trees ($14 million in 1983), maple products ($507,400 in 1984)(2) and fuel wood (some 400,000 cords per year)(3) contributes to the commercial value of this great natural resource.

Obtaining and keeping stable and lucrative markets is an essential condition for the development of sound forest management. Ronald Bulmer observed:

> Before you have a woodlot owner investing substantial amounts of his time and money into his woodlot, like any investor in any investment activity he has to be guaranteed a reasonable rate of return. The only way to get a reasonable rate of return is to have a market for your product.(4)

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(1) Ibid., p. 158.

(2) Nova Scotia, Royal Commission on Forestry (1984), p. 46.

(3) Kenneth Streatch, Nova Scotia Department of Lands and Forests, Issue No. 55, October 31, 1985, p. 24.

(4) Ronald Bulmer, Nova Scotia Woodlot Owners' and Operators' Association, Issue No. 55, October 31, 1985, p. 152.

Dale Downey, of the North Colchester Forest Cooperative Limited, shares this view, for he maintains that marketing is the key to solving the forest industry's problems.(1) As the representative of the Nova Scotia Voluntary Planning Board pointed out, the comparatively small Nova Scotia market means that the economic use of a larger volume of forest products would depend on the ultimate expansion of exports.(2)

Recognizing the extreme importance of marketing and exporting Canadian forest products, the Committee recommends as follows:

RECOMMENDATION 17

> The Canadian Forestry Service should give top priority to developing commercial strategies to facilitate access to foreign markets for Canadian forest products. In this connection, the creation of a national forest products marketing board should be envisaged.

A. Biomass

The term biomass designates all material of plant or animal origin except fossil fuels. Apart from the forest, our present area of interest, the main sources of biomass are crop harvests, animal waste, aquatic plants and municipal solid waste.(3)

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(1) Dale Downey, North Colchester Forest Cooperative Limited, Issue No. 55, October 31, 1985, p. 110.

(2) Walter Webber, Forestry Sector of Voluntary Planning Board of Nova Scotia, Issue No. 55, October 31, 1985, p. 165.

(3) Peter Love, Biomass Energy in Canada: Its Potential Contribution to Future Energy Supply, summary prepared for Energy, Mines and Resources Canada, report ER 80-4, Toronto, March 1980, p. 4.

This organic matter represents an energy source that can be exploited by various conversion techniques, such as simple direct combustion, hydrolysis (conversion of cellulose into sugars), gasification (production of combustible gas), fermentation (alcohol production) and so forth. Through the use of appropriate techniques, eight different types of fuel can be produced, of which four are liquids (ethanol, methanol, liquid hydrocarbon and pyrolytic hydrocarbon), three are gases (methane/CO_2, methane and synthetic gas) and only one is solid (carbon).(1)

A century ago, biomass was practically the only source of energy used in Canada. In 1980, however, its contribution was only 4.1% of the total demand for primary energy. Over 95% of this resulted from on-site conversion of waste generated by the forestry industry.(2)

In addition to being used as an industrial raw material, then, wood can also serve well to produce energy. The following is a list of the categories of biomass obtained from the forest:

- mill residues - the by-products from conventional processing of forest products by lumber mills, pulp mills and such like, with sawmill chips being excluded since they are used for pulp production;
- logging residues or harvest residues - the residual biomass remaining in the forest after harvesting, plus material accumulated at landings, sorting yards and assembly yards;
- merchantable surplus - the biomass which is available but not harvested, represented by the difference between the allowable annual cut and the actual harvest;
- salvage - the biomass potentially available due to kill or damage by fire, insects, disease, wind or flooding;
- stand conversion - biomass which is available from stands where rehabilitation and regeneration is desirable;

(1) Ibid.

(2) Ibid., p. 1.

° biomass plantations - intensively-managed plantations of fast-growing, high-yield species grown on inferior agricultural land, based on short-rotation harvests with regrowth from the same rootstock for up to 5 rotations.(1)

To promote the use of the energy potential of biomass, the federal government has in recent years introduced various research and grant programs, including the Forest Industry Renewable Energy Program (FIRE) and Energy from the Forests (ENFOR). FIRE provides capital assistance to support the production of energy from biomass. Since it was introduced in 1979, the program has sponsored some 176 projects with a total federal contribution of $85 million.(2) ENFOR offers research and development contracts to promote the research and develop the technology to increase substantially the contribution of forest biomass to Canada's energy resources. The program addresses questions of biomass supply, such as resource inventory, growth, harvesting, processing, transport, environmental impact and socioeconomic effects and constraints. Some 331 projects were begun between 1978 and the end of 1985.(3)

While the Committee was visiting Nova Scotia, several municipal representatives and various forest groups stressed the importance of developing forest biomass as an alternative energy source. Terence Hanlon of the Municipality and Town of Digby Industrial Commission stated:

> [...] there is currently a major unexploited opportunity in the use of biomass fuel to replace offshore oil in Nova Scotia and other areas of Canada. We believe the timing is right. Most of the pieces of the puzzle are in place. That is, we have the resource; we have the harvesting infrastructure; we have the forest management organizations in the province, both voluntary and those sponsored by the government agencies; and we have most of the skills necessary.(4)

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(1) John Stone & Associates Limited, Energy from Forest Biomass, study prepared for Environment Canada, Ottawa, December 1983, p. 3.

(2) Canada, Department of Energy, Mines and Resources, 1986-87 Estimates, Part III, Ottawa, 1986, chapter 3, p. 81.

(3) Canadian Forestry Service, ENFOR Bulletin, Hull, December 1985, pp. i and 19.

(4) Terence Hanlon, Municipality and Town of Digby Industrial Commission, Issue No. 54, October 30, 1985, p. 37.

According to Mr. Hanlon, the first market to be developed should be public institutions, which form a stable and secure market. Job creation and the development of a market for trees of low commercial value, and the availability of slash and mill wastes are reasons for adopting biomass heating systems.(1) In the same vein, the Nova Scotia Woodlot Owners' and Operators' Association asks that all official buildings and also local industry be encouraged to use wood chips for fuel.(2) Other groups, including CONFORM Limited(3) and the Annapolis Valley Affiliated Boards of Trade,(4) also voiced a distinct interest in using forest biomass as an energy source in Nova Scotia.

In view of the substantial research completed already, Canadian expertise in using biomass for energy production and the interest displayed by several groups and representatives from the forestry sector in Nova Scotia, the Committee recommends as follows:

RECOMMENDATION 18

> The Canadian Forestry Service, in co-operation with the Department of Energy, Mines and Resources and the Department of Public Works, should develop a plan to convert the heating systems of federal buildings in Nova Scotia to use forest biomass as a fuel. A cost-benefit analysis as well as an environmental assessment of the impact of this possibility should be submitted to the Standing Committee on Environment and Forestry.

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(1) Ibid., p. 38.

(2) Ronald Bulmer, Nova Scotia Woodlot Owners' and Operators' Association, Issue No. 55, October 31, 1985, p. 144.

(3) John Dechman, CONFORM Limited, Issue No. 55, October 31, 1985, pp. 133 and 136.

(4) Dianne Hankinson LeGard, Annapolis Valley Affiliated Boards of Trade, Issue No. 54, October 30, 1985, pp. 55-56.

B. Bras d'Or Institute Project (1,2)

The Bras d'Or Institute, University College of Cape Breton, submitted to the Committee a long-term plan designed to combat the problems of drought and famine in Africa and other parts of the globe. Overall, the plan acknowledges that famine often results from droughts that are largely induced by man, through deforestation and over exploitation of land. Although reforestation programs are being implemented in many parts of the world, they are often not very successful, because of lack of long-term support, low political prestige and the need for farmland.

About 95% of the wood harvested in industrial countries is used for industry, whereas in developing countries, 85% of the wood cut each year is intended for fuel. When wood runs short or becomes too expensive, low-income people burn dried animal manure or crop residues (two important sources of fertilizer and organic matter to the soil), a practice which merely aggravates their nutrition problems.

To help offset these resource deficiencies, the Institute proposes that fuel wood from Cape Breton forests be offered to the people of Africa under a management program. According to the Institute's estimates, the program would cost $16,820,000 per year and supply 125,000 cords of semi-processed fuel wood. The program would contribute $5 million in gross income to forestry workers in Cape Breton, administer 2,023 km^2 of woodland by clearing and removing non-commercial species and damaged trees, invest over $6 million in shipping the fuel wood to Africa, inject $4 million into the economy of the receiving countries, supply 670,000 people per year with fuel wood and create 2,500 person-months of employment in Cape Breton.

Such a project would require the co-operation of many individuals and agencies, such as the Department of Regional Industrial Expansion (DRIE), the Department of Employment and Immigration, the Department of External Affairs, the Canadian Forestry Service, the Canadian

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(1) Don Arseneault, Bras d'Or Institute, Issue No. 56, November 1, 1985, pp. 91-96.

(2) Bras d'Or Institute, University College of Cape Breton, Forests Fighting Famine: A Plan to Restore Fertility to Arid Lands, January 31, 1985, 18 pp.

International Development Agency (CIDA), non-governmental organizations (NGOs) and, of course, the University College of Cape Breton. When the project was put before the Committee, Don Arseneault of the Bras d'Or Institute summarized it in these terms:

> What we need now in order to make this proposal move, we feel, is some kind of funding commitment that will allow us to carry out a trial operation. Obviously, there is no way that Cape Breton can solve all of the problems of Africa, but if we identify a particular island in the Caribbean, an island which has problems of a source for fuel wood, then we could link up with that particular island, do a trial run and work the kinks out of the system.(1)

This program could be financed in large part under the federal-provincial agreements on forest renewal and forest resource development and with a share of the $500 million to be allocated by CIDA to reforesting Third-World lands.

The Committee strongly hopes that the Government of Canada, through CIDA as intermediary, and the other departments concerned, will make its position known and, if possible, help to execute this project. To this end, the Committee recommends as follows:

RECOMMENDATION 19

> The Canadian International Development Agency, together with the Canadian Forestry Service and the departments concerned, should determine the feasibility of the fuel wood export project submitted by the Bras d'Or Institute, University College of Cape Breton. Should the project prove practicable, a report on funding methods should be submitted to the Standing Committee on Environment and Forestry.

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(1) Don Arsenault, Bras d'Or Institute, Issue No. 56, November 1, 1985, p. 95.

PRINCE EDWARD ISLAND FORESTS

> My message to you, gentlemen, is that we Canadians must resolve to put something back of what we have taken out of the forest; in effect, to strengthen the heritage of future generations. We look to the federal government to continue sharing with the Province of Prince Edward Island in the forest renewal effort, as it is certain to be mutually beneficial.
>
> Fred Driscoll, Minister
> of Energy and Forestry
> Prince Edward Island

INTRODUCTION (1,2)

Prince Edward Island covers an area of 5,750 km^2, of which 48% (2,750 km^2) is productive forest. This comprises some 35% softwood stands, 39% hardwood and 35% mixed. For all species, the total volume of standing timber is estimated at 20.9 million m^3.

The forest sector provides direct employment for 400 person-years(3) in cutting, sawing and forest management. The province has over fifty sawmills, mostly small family businesses that produce on request. About 20% of the annual harvest of 333,600 m^3 is processed into pulpwood for export, mainly to New Brunswick. Fuel wood also makes up a large share of the harvest. A survey conducted in 1982-83 showed that 264,000 m^3 of fuel wood is consumed annually.

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(1) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(2) Fred Driscoll, P.E.I. Department of Energy and Forestry, Issue No. 52, October 28, 1985, pp. 30-35.

(3) Jean-Paul Arsenault, personal communication, P.E.I. Department of Energy and Forestry, Charlottetown, April 1, 1986.

Approximately 90% of forest in the province is privately owned. Although the growth rate is one of the highest in the country (1.8 m^3/ha-year), the trees are of mediocre quality. Note also that the Island's forest resource and businesses are shaped by the following factors:

- only 50% of lumber needs are filled by the Island's forests;
- Prince Edward Island has the highest energy costs of any province, and depends heavily on imported fuel, oil and electricity;
- the long-term future of pulp is uncertain, principally on account of the lack of markets;
- the public is not adequately aware of forestry, and there is a shortage of skilled silviculture workers.

Forest management began in 1951 with the signing of a federal-provincial agreement providing $25,000 per year. In 1974, another agreement led to the infrastructure required to improve forest management by creating nurseries and access roads. Later, a management program for private woodlots was launched in 1980 to awaken interest among freeholders and promote the creation of silviculture jobs. The current Forest Resource Development Agreement (1983-88), building on the existing infrastructure, seeks to increase the volume and quality of the Island's timber resource while expanding direct employment in the forest sector by 200 person-years. Under this agreement, the federal government provides $13.7 million, while the province invests $6.5 million.

Table 4 presents statistics that give a picture of Prince Edward Island's forest industries and resources.

THE RESOURCE

The best of Prince Edward Island's forests are said to have been used in shipbuilding. Better quality trees such as beech, ash and oak

Table 4 - CHARACTERISTICS OF PRINCE EDWARD ISLAND'S FOREST RESOURCE AND INDUSTRY

A. BIOPHYSICAL CHARACTERISTICS OF INVENTORIED FOREST LAND

1. **Area**	° provincially owned:	248 km^2	(9%)
	° federally owned:	26 km^2	(1%)
	° privately owned:	2,476 km^2	(90%)
	- Total forest:	2,750 km^2	
2. **Species** (% of merchantable volume of the productive forests)	- Coniferous 66.0%	- Spruce	(36%)
		- Balsam fir	(24%)
		- Cedar	(3%)
		- Other	(3%)
	- Deciduous 33.0%	- Maple	(15%)
		- Birch	(9%)
		- Poplar	(6%)
		- Other	(3%)

3. **Volume**

Gross merchantable volume, uncut

- coniferous:	10.45 million m^3
- deciduous:	10.45 million m^3
- total:	20.90 million m^3

Annual allowable cut

- coniferous:	159,000 m^3
- deciduous:	206,800 m^3
- total:	365,000 m^3

Cut (1985)

- public forest:	59,000 m^3
- private forest:	335,000 m^3
- total:	394,000 m^3

cont'd

TABLE 4: CONT'D

B. INDUSTRY CHARACTERISTICS

1.	**Jobs** (1983)	- Direct:	148
		- Indirect:	296
		- Number of mills: sawmills and planing	16
2.	**Dollar Value**	- Wood industries' shipments in 1983:	$8.3 million
		- Exports in 1983:	$682,000
		- Contribution to GDP in 1982:	$1.7 million

Sources: Jean-Paul Arsenault, personal communication, P.E.I. Department of Energy and Forestry, Charlottetown, April 1, 1986.

Canadian Forest Industries Council, Canada's Forest Industries 1986: Data Book, 1986, p. 85.

Canadian Forestry Service, Selected Forestry Statistics, Canada 1984, Hull, January 1985, pp. 6, 35 and 115.

Statistics Canada, Canadian Forestry Statistics 1983, Catalogue No. 25-202, Ottawa, December 1985, pp. 19, 27 and 37.

were exploited at such a rate that they have practically disappeared from the island. As less desirable species have taken their place, commercial stands have come to be scarce and scattered. The Island's forest resources now meet only 50% of the province's softwood needs.(1) At present, the wood harvest exceeds natural growth, darkening the future for forest industries. The Canadian Forestry Service predicts, "At present rates of harvest, the supply of softwood sawlogs will be exhausted in 20 years, while the supply of hardwood sawlogs will be exhausted in 14 years".(2)

These bleak prospects only heighten the importance that must be attached to implementing intensive forest management programs, especially given the phenomenal potential growth rate (4.0 to 9.0 m^3/ha-year) of trees in this part of the country.(3)

Integrated forest management is a concept that implies identifying the primary value (for example, fibre, aesthetics or recreation) of the land to be exploited in one way or another. In line with this, the Island Nature Trust identifies and tries to protect small parcels of land with unusual or important assemblages of plants and animals and areas relatively little disturbed by human activities.(4) The Committee is pleased to note that such an initiative has been taken.

The Island Nature Trust is concerned about the strength of the existing scientific infrastructure, which is essential a priori to plan and develop forests to the full. The Trust strongly recommends stepping up research in the sciences and technologies that have a bearing on knowledge and development of the environment and natural resources. Ian MacQuarrie observes that biotechnology is one of the research fields that will have enormous repercussions on the forestry and agriculture industries. As he

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(1) Fred Driscoll, P.E.I. Department of Energy and Forestry, Issue No. 52, October 28, 1985, p. 31.

(2) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Issue No. 52, October 28, 1985.

(3) Ibid.

(4) Ian G. MacQuarrie, Island Nature Trust, Issue No. 52, October 28, 1985, p. 109.

emphasized very clearly, this technology is likely to change the forest sector more than any other.(1)

Many reports and observations could indeed be made on this subject. Two typical examples of industrial applications of biotechnology to forestry are all we shall include in the present report. Rhizotec Inc. of Quebec has successfully used microbial fertilizer technology developed at Laval University to produce trees which can grow rapidly in poor soils. Millions of such trees have been used in reforestation projects at the Manic IV and James Bay hydroelectric sites.(2) By the same token, researchers at Forintek Canada Corporation (National Wood Products Research Institute) use microorganisms to convert cellulose into value-added products. These applied research projects could lead, in the fairly near future, to profitable uses for wood residues and non-commercial tree species to replace petroleum-based chemical products (synthetic rubber, fuel and fuel additives) and to produce animal fodder and sugars cheaply.(3,4)

Biotechnology is indeed a high technology field that is already affecting the future of the forest resource, as regards growth (fixing atmospheric nitrogen, developing fast-growing strains of trees), protection (biological insect and disease control) and processing (preparation and treatment of wood and residue, production of value-added products). Experience teaches us that Canadians must adapt rapidly to the pace set by new technologies. Accordingly, the Committee recommends as follows:

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(1) Ibid., p. 121.

(2) Canada, Ministry of State for Science and Technology, National Biotechnology Advisory Committee, Annual Report 1984, Ottawa, 1985, p. 13.

(3) Forintek Canada Corporation, The Way Ahead, Vancouver, n.d., p. 15.

(4) Forintek Canada Corporation, "The Forintek Culture Collection of Microorganisms", Forintek Review, Vol. 3, No. 3, March 1985, pp. 5-6.

RECOMMENDATION 20

> The Canadian Forestry Service, in co-operation with the Ministry of State for Science and Technology, should develop and co-ordinate a national research and development strategy to enhance Canada's forest resource and industries by means of biotechnology.

Finally, we note that Prince Edward Island has a forest biomass inventory setting forth the quantity and location of available wood, timber growth rates and appropriate cutting times.(1) The fragmentation of private forest land in the hands of some 16,000 owners appears to have held back forest management during the past two generations.(2) Current silviculture work favours softwood plantations and promotes natural regeneration among hardwoods.

PROCESSING AND MARKETING

The main problem facing woodlot owners is a lack of markets. Because they are remote from outside markets, the Island's wood producers receive little for their products. At present, the main outlet is for sawlogs and lumber. It has to be noted that the provincial authorities have only recently begun to take an interest in the marketing of forest products. The Minister of Energy and Forestry states that the Island will never export wood products to any large extent.(3)

Although some witnesses questioned the low prices for pulpwood,(4) the majority considered that the main market to be exploited is wood for energy (heating). The Minister observed:

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(1) Fred Driscoll, P.E.I. Department of Energy and Forestry, Issue No. 52, October 28, 1985, p. 32.

(2) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

(3) Fred Driscoll, P.E.I. Department of Energy and Forestry, Issue No. 52, October 28, 1985, pp. 42-43.

(4) Wanson Hemphill, Central Woodlands Association, Issue No. 52, October 28, 1985, p. 126.

> [...] one of the important markets we have at the moment is wood for fuel. Some of you know something about energy prices in P.E.I. Under our alternate energy agreement with the federal government, we have attempted to promote the wood-chip industry and promote the conversion of commercial and industrial buildings to wood-fuelled installations. That is why in fact a decision was made in 1982 to create this department, which we call now Energy and Forestry. It is very much the key for us in developing the forest. The connection is a market for the waste we have, which has no value at the moment. By using it for chips, it creates a value for that. Therefore, there is some incentive for the owner to do something with his woodlot; he really has something of value on the market if we can increase the demand for wood chips.(1)

Several public institutions and buildings have already converted to wood-fuel and oil furnaces. Using wood for fuel would reduce energy costs by about 33%. The provincial government considers that the federal government should plan to heat its buildings in the province with wood.(2)

According to Kirk Brown, Chairman of the Central Woodlands Association, studies have already demonstrated that 50% to 70% of the oil now used in Prince Edward Island could be replaced by wood chips.(3) The Co-opérative forestière Ltée considers that the value of unused forest resources is the key to the Island's energy costs and oil import needs.(4) Moreover, burning softwood chips would not only fill a large

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(1) Fred Driscoll, P.E.I. Department of Energy and Forestry, Issue No. 52, October 28, 1985, p. 37.

(2) Ibid., p. 44.

(3) Kirk Brown, Central Woodlands Association, Issue No. 52, October 28, 1985, p. 135.

(4) Marcel Arseneau, La Co-opérative forestière Ltée., Issue No. 52, October 28, 1985, p. 137.

portion of energy requirements but also solve the problem of hardwood (used as fuel) over-exploitation. Residential conversion has been hindered, however, by the lack of a wood-chip burner approved by the CSA (Canadian Standards Association).(1)

In response to the consistent and well-argued submissions on the importance of introducing wood heating systems in Prince Edward Island, the Committee makes the following recommendation:

RECOMMENDATION 21

> In so far as the use of wood as fuel is appropriate, and poses no serious threat to air quality, the Department of Public Works should develop a plan to convert the heating systems of federal government buildings in Prince Edward Island to furnaces that use wood chips and other wood residue. In addition, the Canadian Standards Association (CSA) should promptly establish construction standards for wood residue burners for residential heating.

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(1) Kirk Brown, Central Woodlands Association, Issue No. 52, October 28, 1985, p. 125.

THE FORESTS OF NEWFOUNDLAND

> The most important question, in our view, is this: are we, as a society, doing enough to lessen the severe impact that this loss of wood is having and will continue to have on so many aspects of our everyday lives for both the present and future generations? In our opinion, the answer is no. We are not doing nearly as much as we could and should be doing.
>
> Gonzo Gillingham of the United Brotherhood of Carpenters and Joiners of America, Local 2564.

INTRODUCTION

The discrepancy between the various data that are available on Newfoundland's forest resources reflects the difficulties inherent in arriving at firm descriptions of this sector. According to the Minister of Forest Resources and Lands of Newfoundland, the province has 93,000 km^2 of productive forests (38,000 km^2 on the Island and 55,000 km^2 in Labrador).(1) According to Statistics Canada, which relies on data provided by FORSTATS (National Forestry Statistics compiled by the National Forestry Institute at Petawawa), the eastern-most province has 84,550 km^2 of productive forests.(2) For its part, the Canadian Forestry Service maintains that the island of Newfoundland contains only 28,255 km^2 of productive forests.(3)

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(1) Len Simms, Newfoundland Department of Forest Resources and Lands, Issue No. 58, November 4, 1985, p. 11.

(2) Statistics Canada, Canadian Forestry Statistics 1983, Catalogue No. 25-202, Ottawa, December 1985, p. 17.

(3) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

The Committee is somewhat disturbed by the lack of uniformity among these statistics. Moreover, the Committee is concerned about the adequacy of several variable measurements, such as the annual allowable cuttings (AAC), which are arrived at differently in each province.(1) With respect to the data bank which is used to describe the condition of our forests, Gordon F. Weetman, of the University of British Columbia, states that, on balance, the accounting is appalling, that our inventories are archaic and out-of-date, and that we lack data with which to assess adequately the growth and yield of our forests.(2)

The situation is also of concern to the officials of the Canadian Forestry Service who have stated:

> In spite of the great progress realized in recent years with respect to forestry inventory programs, major gaps still exist in the present forestry data bases. The information on the growth and yield of managed natural crops, on the response to silvicultural treatments, and on untimbered lands which will not regenerate must be supported and updated continually.(3)

In acknowledgement of the fact that the acquisition and dissemination of forestry statistics constitute an essential aspect of the decision-making process concerning the management of this important resource, the Committee makes the following recommendation:

RECOMMENDATION 22

> The Canadian Forestry Service should renew its efforts to collect and make available accurate data describing the composition, evolution,

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(1) F.L.C. Reed, "Canada's Timber Supply", Canada's Forests: A Commitment to the Future, 1986 National Forestry Congress, Ottawa, April 9, 1986, p. 31.

(2) Gordon F. Weetman, "Forestry Management in Canada", Canada's Forests: A Commitment to the Future, 1986 National Forestry Congress, Ottawa, April 9, 1986, p. 77.

(3) Canadian Forestry Service, Brief to the Standing Committee on Fisheries and Forestry, Ottawa, October 1985.

growth, yield, area and ownership of the country's productive forests.

The Government of Newfoundland has reached long-term agreements with the pulp and paper industries. Of the three mills in operation, two are licensed to operate for a period of 99 years and the third has a 20-year licence which is renewable every five years. To this one must add the recent introduction of a system for the allocation of wood supply areas for sawmilling.(1)

Finally, it should be mentioned that forestry provides approximately 7,000 direct jobs;(2) that is, about 25% of all jobs in the province's manufacturing sector. Bearing in mind the 11,000 indirectly - related jobs,(2) in 1984 the forest industry generated approximately 10% of all jobs in the province. The three paper mills at Grand Falls, Corner Brook and Stephenville accounted for 4,000 direct jobs while the 1,850 sawmills scattered throughout the rural areas provided other jobs to a population badly in need of employment.(3)

Table 5 presents various statistics concerning Newfoundland's forest sector.

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(1) Len Simms, Submission to the Standing Committee on Fisheries and Forestry, St. John's, Newfoundland, November 4, 1985, p. 4.

(2) These data are considerably different from those presented by the Canadian Forest Industries Council (see Table 5).

(3) Len Simms, Department of Forest Resources and Lands of Newfoundland, Issue No. 57, November 4, 1985, p. 10.

TABLE 5: CHARACTERISTICS OF NEWFOUNDLAND'S FOREST INDUSTRY AND RESOURCES

A. BIOPHYSICAL CHARACTERISTICS OF INVENTORIED FOREST LAND

1. **Areas**	° federally owned:	151 km^2	(0.1%)
	° provincially owned:	134,900 km^2	(94.7%)
	° privately owned:	598 km^2	(0.4%)
	° municipally owned:	10 km^2	
	- Total forest:	142,400 km^2	
	- Productive forest:	84,550 km^2	
2. **Species** (% of merchantable volume of the productive forests)	- Coniferous 92.7%	- Fir	(10.2%)
		- Spruce	(10.0%)
		- Pine	(0.1%)
		- Unspecified	(72.4%)
	- Deciduous 7.3%	- Birch	(3.0%)
		- Poplar	(0.4%)
		- Maple	(0.1%)
		- Unspecified	(3.9%)
3. **Volume**	Gross merchantable volume, uncut		
	- coniferous:	200.2 million m^3	(Island)
		38.9 million m^3	(Labrador)
	- deciduous:	27.3 million m^3	(Island)
		18.4 million m^3	(Labrador)
	- total:	284.8 million m^3	
	Annual allowable cut		
	- coniferous:	2.09 million m^3	(Island)
		292,000 m^3	(Labrador)
	- deciduous:	None	
	- total:	3.4 million m^3	
	Cut		
	- public forest:	860,000 m^3	
	- private forest:	2.0 million m^3	
	- total:	2.9 million m^3	

TABLE 5: CONT'D

B. INDUSTRY CHARACTERISTICS			
1. **Jobs** (1983)	Direct:	3,708	
	Indirect:	7,416	
	Number of mills in 1983		
	- pulp and paper:	3	
	- sawmills and planing mills:	46	
2. **Dollar value**	- Wood industries' shipments in 1983:		$2.5 million
	- Paper and allied products industries' shipments in 1983:		*
	- 1983 exports:		$243 million
	- Contribution to the GDP in 1982:		*

* data not available

Sources: Canadian Forest Industries Council, Canada's Forest Industries 1986: Data Book, 1986, p. 81.

Canadian Forestry Service, Selected Forestry Statistics, Canada 1984, Hull, January 1985, pp. 52 and 114.

Government of Canada and the Government of Newfoundland and Labrador, Canada-Newfoundland Forest Resource Development Agreement 1986-1990, Schedule A, April 1986, p. 13.

Dana Hawden, Canadian Forestry Service, personal communication, May 1, 1986.

Len Simms, Newfoundland Department of Forest Resources and Lands, Issue No. 57, November 4, 1985, p. 10.

Statistics Canada, Canadian Forestry Statistics 1983, Catalogue No. 25-202, Ottawa, December 1985, pp. 17, 19, 57, 39 and 45.

THE RESOURCE

The Island of Newfoundland is not renowned for having a soil and climate particularly favourable to the rapid growth of trees.(1) Nevertheless, the forest resource is substantial enough to generate employment for a sizeable portion of the populations of 80 municipalities in the province.(2)

The province of Newfoundland is divided into four economic timber supply zones according to geography and cutting possibilities. The most important is Zone 1, which is located in the central and western areas of insular Newfoundland. About 84% of the insular timber harvest, meeting nearly all of the province's needs for pulpwood, is from Zone 1. Zone 2, located on the northern portion of the Northern Peninsula, supplies only 2% of the island's total requirements. Zone 3, located in the eastern section of the island, supplies 14% of the total wood requirement and 41% of the fuel wood requirement. Zone 4, situated in south central Labrador, contains vast resources, but the demand is currently restricted to a small amount of saw timber and domestic fuel wood. Most of Labrador's forest resources are scattered and inaccessible, but there is nevertheless a sizeable concentration of trees (41 million m^3 of timber) in the south-central region, near Goose Bay.(3)

The main problem that needs to be resolved in Newfoundland's forestry sector is that of minimizing the eventual shortage of timber in Zone 1. In connection with this, Schedule A of the recent Canada-Newfoundland Forest Resource Development Agreement contains the following observation:

> Without silviculture input a deficit of 302,500 m^3 is forecast by 1995 and the deficit is expected to grow to 1.0 million m^3 or 38 percent of the pulpwood requirement by 2025.(4)

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(1) Wendy Simpson-Lewis, et al., Canada's Special Resource Lands, Environment Canada, Ottawa, 1979, p. 157.

(2) Government of Canada and the Government of Newfoundland and Labrador. Canada-Newfoundland Forest Resource Development Agreement 1986-1990, Schedule A, April 1986, p. 16.

(3) Ibid., p. 14.

(4) Ibid.

This deficit is mainly due to an imbalance in the age of trees (lack of young trees) and to the ravages of the spruce budworm (since the mid-1970s, approximately 25 million m^3 of adult tree timber have been destroyed). Attempts to reduce this deficit include four types of intervention: 1) ensuring silviculture treatments in order to increase the growth rate and yield of forests, 2) continuing to ensure the protection of forests against fire, disease and insects, 3) increasing the efficient use of harvests from private and Crown lands, 4) reducing the effects of land alienation (losses of productive forest lands to other types of uses) and increasing the cutting of softwood trees which now cannot be cut because of social and environmental constraints.

On the other hand, it seems that the implementation of a silviculture program will not be enough to eliminate completely the projected short-term deficit. Therefore, it will be necessary to resort to other management practices, such as the use of unexploited softwood stands. The forest resources in Zone 1, where the supply of wood is critical, are experiencing further pressure, since 324,000 m^3 of softwood, that is 15% of the available annual supply, is being cut for fuel. A public awareness program will therefore be launched to explain why it is necessary to regulate cutting.(1)

Since 1974, two subsidiary agreements on forest resource development have been concluded between Canada and Newfoundland. These five-year agreements provide for a cost-sharing of nearly $125 million. The second subsidiary agreement, signed in January 1981, has made it possible to devote $34.5 million to silviculture. Consequently, 22 million trees have been planted over an area of 95 km^2; 60 km^2 of damaged forest have been reclaimed; and 180 km^2 of seedlings have been thinned. Also, a container seedling complex constructed at Grand Falls has created a total of 41,000 work weeks of employment. This program has made it possible to reduce the projected annual timber supply deficit between 1985 and 2024 by an average of about 25%. A further reduction of 40% is expected when plantations begin to mature in 2025.(2)

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(1) Ibid., pp. 23-24.

(2) Ibid., pp. 18-19.

The objective underlying the forest resource agreements is to increase forest expenditures devoted to reforestation. In Canada, expenditures on silviculture have risen from $118 million in 1977 to $336 million in 1983. This represents an increase of 184% in current dollars, a real increase of 55%, or the equivalent of a combined annual rate of increase of 7.58%.(1) Needless to say, the maintenance and even the increase of the sums devoted to reforestation are in the final analysis largely dependent on agreements reached between the various levels of government. According to the Newfoundland Minister of Forest Resources and Lands:

> It is imperative [....] that the Government of Canada recognize the need to continue funding projects under forestry subsidiary agreements. In this respect we mean long-term commitments, 15 to 20-year plans and that type of thing.(2)

Since 1982, any province wishing to conclude a forest renewal agreement with the federal government has had to develop a forest management plan of a 20-year minimum duration.(3) This is why the Government of Newfoundland and Labrador recently developed a detailed strategy for improving forest management in Newfoundland, in order to guarantee the long-term viability of the forest industry in that province. The Committee is pleased to note that this measure led to the signing last April of a new agreement due to expire on March 31, 1990. Canada will contribute 70% of the expenditures provided by the agreement, to a maximum of $33.6 million, while the province will contribute 30%, to a maximum of $14.4 million. The financing of the projects needed for implementing the strategy aimed at ensuring the viability of the forest industry will be divided among three programs: 1) forest resource management (silviculture,

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(1) D.E. Barron et al, Forest Management Expenditures in Canada, 1977-1983, A Joint Report of the Canadian Pulp and Paper Association and the Great Lakes Forestry Centre, Joint Report No. 9, Montreal, 1986, p. 26.

(2) Len Simms, Department of Forest Resources and Lands of Newfoundland, Issue No. 57, November 4, 1985, p. 12.

(3) Environment Canada, Policy Statement: A Framework for Forest Renewal, Ottawa, September 2, 1982, p. 6.

access roads, inventory, protection): $38.65 million, 2) research and development, opportunity identification and technology transfer: $6.3 million, 3) administration, communications and evaluation: $3.05 million.(1)

The Committee hopes that this new agreement will solve some of the short and long-term problems raised during the hearings held in Newfoundland. It is especially hoped that it will reduce the severity of wood losses due to spruce budworm infestations,(2) reduce the consumption of softwood as fuel wood so as to increase supply to pulp and paper mills,(3) and enhance the appearance of easily visible areas along the highways with the planting of trees.(4).

On the other hand, several of those in attendance expressed the need for the participation of the inhabitants in forest management and protection programs. On this point, Jack Dwyer, from the Barachois Development Association, suggested that funds presently allocated to social service programs be used to create jobs related to silviculture. Moreover, funds should be reallocated to promote the manual spraying of herbicides, which, according to Mr. Dwyer, would lead to the hiring of people who are now on welfare.(5) This opinion was shared by the United Brotherhood of Carpenters and Joiners of America which stressed the relevant need to increase financial resources so as to be able to hire new labour to work in silviculture.(6) The Committee is of the opinion that public participation in forest management and planning should be encouraged as much as possible. Consequently, the Committee makes the following recommendation:

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(1) Government of Canada and Government of Newfoundland and Labrador, Canada-Newfoundland Forest Resource Development Agreement 1986-1990, Schedule A, April 1986, pp. 27-32.

(2) Gonzo Gillingham, United Brotherhood of Carpenters and Joiners of America, Local 2564, Issue No. 58, November 5, 1985, pp. 77-78.

(3) Ibid., p. 80.

(4) Michel Levasseur, Issue No. 58, November 5, 1985, pp. 129-130.

(5) Jack Dwyer, Barachois Development Association, Issue No. 58, November 5, 1985, pp. 15-16.

(6) Gonzo Gillingham, United Brotherhood of Carpenters and Joiners of America, Local 2564, Issue No. 58, November 5, 1985, pp. 77-78.

RECOMMENDATION 23

The Canadian Forestry Service, in cooperation with the Canadian Council of Forestry Ministers, should develop a strategy permitting the maximization of job creation and public participation in the management and development of the country's forest resources.

RECOMMENDATION 24

The Canadian Forestry Service should enhance public participation in silviculture through job creation programs developed in cooperation with the Unemployment Insurance Commission, which promote manual cutting of brush as an alternative to the use of herbicides in the forest.

PROCESSING, MARKETING AND EMPLOYMENT

The newsprint industry is an economic mainstay of Newfoundland. In 1984, about 650,000 tons of newsprint valued at $315 million were manufactured. Virtually all was sold to the United States and Europe; newsprint shipments account for approximately 25% of the total value of exports from Newfoundland. Nationally, in 1984, newsprint shipments from Newfoundland accounted for 7% of Canada's total. As far as the sawmill industry is concerned, it consists of about 1,850 small independent mills. Currently only seven mills produce more than 2,300 m^3 per year. In 1981, this industry generated 1,356 person years of employment. The total value of shipments was $8.8 million while the value added to the provincial economy was $3.5 million. However, problems relating to supply and processing efficiency render this industry's future uncertain.(1)

The fuel wood industry is particularly important in Newfoundland. In 1983, approximately 800,000 m^3 of wood were consumed for fuel. This represented a commercial value of $18.4 million. Each year, approximately 65,000 people cut fuel wood. In addition to the fact that in many cases their cutting methods endanger forest productivity, persons cutting fuel wood also sometimes compete with industrial users. It should be remembered that this activity represents 25% of the total annual

(1) Government of Canada and Government of Newfoundland and Labrador, Canada-Newfoundland Forest Resource Development Agreement 1986-1990, Schedule A, April 1986, pp. 16-17.

cutting of softwood in Newfoundland.(1) In connection with this, representatives of pulp and paper mill workers hope that programs will be put in place to salvage for firewood timber killed by the spruce budworm.(2)

As for the sawmill industry, Newfoundland currently produces 25% to 40% of its lumber needs. According to David Gilbert, Member of the House of Assembly of the Province of Newfoundland, there is another problem that needs to be addressed: the fact that some paper companies are taking logs that could be used for saw milling and redirecting them to pulp manufacturing. Moreover, there is competition from outside the province. These problems hinder the development of the local sawmilling industry. Furthermore, the production of lumber, which could meet 70% to 80% of the province's needs, would create some 2,000 additional jobs.(3)

Another item discussed elsewhere in this report is the question of woodchip production. As before, the suggestion was made that the provincial government continue to vigorously apply its policy to ensure that government buildings are heated by burning woodchips instead of oil.(4)

The familiar theme of job-creation was addressed by several witnesses. In addition to what was mentioned earlier, two interesting statements particularly drew the Committee's attention. The first was made by David Gilbert, who maintained that "with the proper management and investment, the forest industry could take up a lot of the present 20% to 25% that are unemployed."(5) Then there was the view expressed by Edgar

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(1) Ibid., pp. 19-20.

(2) Gonzo Gillingham, United Brotherhood of Carpenters and Joiners of America, Local 2564, Issue No. 58, November 5, 1985, p. 79.

(3) David Gilbert, Member of the House of Assembly of the Province of Newfoundland, Issue, No. 57, November 4, 1985, pp. 24-25.

(4) Ibid., p. 25.

(5) Ibid., p. 27.

Baird, who said that with a commitment similar to the one made by Scotland, 20,000 workers employed on a full-time basis would be needed to do the work that needs to be performed in the island of Newfoundland's forests. The following is an excerpt depicting the scope of Mr. Baird's proposal:

> Ten thousand people working in the woods of Newfoundland would cost $300 million a year, for a total of $12 billion over a period of 40 years. This expenditure would produce the following results: marketable pulpwood, saw logs, fuel wood and other products, $100 million each year; for 40 years, $4 billion. Ten thousand people taken off UIC, welfare, etc., at $10,000 each, equals $100 million a year for 40 years -- another $4 billion. By the work that they would do, a forest asset would be created over this period consisting of an inventory of standing timber as follows: 7 million acres at 40 cords per acre equals 280 million cords, worth, on the stump, $40 a cord for a total of $11.2 billion, say $11 billion. The total production over 40 years of all these things would be $19 billion. The total cost over 40 years would be $12 billion. The net gain in dollars and cents would be $7 billion. The net gain in dollars and cents per year would be $175 million.
>
> That breakdown refers only to dollars and cents and cords of wood. The additional benefits to the environment, flood control, elimination of insects, disease and fire, wildlife, salmon enhancement, recreational benefits, morale of the people employed and so on, would be just as great or greater.(1)

The Committee recognizes the need to increase investments to develop the forest resource and stimulate the productivity of its industries while creating new jobs. However, the over-capacity of production of North American countries, exacerbated by the stagnation of the European market and the threat of the imposition by the United States of restrictions on the import of Canadian forest products, threaten to reduce the size of investments in this economic sector. Moreover, acknowledging the importance and responsibility of industry with respect to the development and renewal of forest resources as well as the maintenance and development of our competitive position on foreign markets, the Committee makes the following recommendation:

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(1) Edgar Baird, Issue No. 57, November 4, 1985, pp. 59-60.

RECOMMENDATION 25

The Canadian Forestry Service should establish mechanisms for urging forest companies to increase their efforts to develop the forests that they exploit. Furthermore, they should strive to raise the productivity of their mills as well as increase the diversity of their products so as to maintain our competitive position and penetrate new markets.

RECOMMENDATION 26

The Canadian Forestry Service, in cooperation with the provincial departments concerned, should examine the feasibility of Mr. Baird's proposal and the Scottish model of forest management.

CONCLUSION

Forests are one of the most valuable biotic components of human existence, creating as they do a biomass of immeasurable value. Our dependence on this resource comes from its obvious ecological role and from its social role as a setting for our lives and a place where we relax and enjoy ourselves. As for its economic value, one job out of ten in Canada is in the forestry sector; some 300 communities across the country have forest-based economies; and shipments of forest products generate revenues in the neighbourhood of $30 billion (1985).(1)

One special characteristic of forests is that their evolution spans more than one human lifetime. They outlast any normal economic plan. This means that the destiny of a forest may depend very largely upon decisions made by numerous generations of its users and managers. A forest is multi-faceted, complex, and rich in flora and fauna. This fact must be respected in using and managing it. In addition, because its uses are many and varied, there must be clear and consistent laws, regulations and policies governing them. The principal values that are to be given priority (fibre products, recreation, wilderness, etc.) must be identified and specific zones set aside for them.(2) From this has evolved the more widely accepted idea that forest lands should be "zoned" so that the most appropriate uses for them can be assigned and enforced.(3) For a management plan to be effective, as Gordon Baskerville, Dean of the Faculty of Forestry at the University of New Brunswick, has pointed out, the first step must be to determine which zones

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(1) Canadian Forest Industries Council, Canada's Forest Industries 1986: Data Book, 1986, p. 21.

(2) Canadian Council of Forest Ministers, "Multiple Use Forestry and Environmental Issues", Canadian Forestry Forum, Winnipeg, January 22 and 23, 1986, p. 18.

(3) Yvon Dubé, "Foresterie, écologisme et développement", L'influence des politiques et des lois sur la gestion des ressources forestières, International Forestry Congress, Quebec City, 1984, pp. 9-17.

ought to be set up and what agencies will be responsible for carrying out the various tasks. If forest management goals are clearly defined, they can include both preservation of wildlife habitats and the possibility of meeting our need for wood.(1)

There is no longer any dispute as to the public's right to oversee the use of forest resources and to be more fully consulted about it. To this end, the citizens of Canada must be well informed about the social, ecological and economic importance of their forests. The Committee is pleased to endorse the views of the members of the Canadian Council of Forest Ministers, who have agreed to sponsor jointly a national awareness campaign aimed at greater citizen information, in order to ensure a healthy forestry sector.(2)

The briefs on which this present study is based dealt primarily with industrial use of forest lands. From the industrial perspective there are two pressing realities, both very well known to those who are familiar with this subject: in a number of regions of eastern Canada, wood that can be harvested economically will soon be - and in some cases already is - in short supply; and many Canadian forest industries are having trouble remaining competitive and finding markets that will give them their anticipated returns.

More and more evidence is accumulating to show that until recently Canadians took very poor care of their forests. The problem is not a new one: in 1906 the then Prime Minister Sir Wilfrid Laurier was telling, "[Do not] allow the destruction of the forest to go on year after year and make no effort to replace what is taken away."(3) Forty years ago Canada already had forest management plans, which were never put into practice, partly because their objectives were poorly defined.(4) The

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(1) Economic Council of Canada, "Problems in Canadian Forestry", Au Courant, Vol. 6, No. 3, 1986, p. 5.

(2) Canadian Forestry Service, "Joint National Forestry Awareness Campaign to be held across Canada", Press Release, April 10, 1986.

(3) Canadian Forestry Association, "New Forestry Congress to Renew Vision of 1906 Gathering", Press Release, Ottawa, September 23, 1985, p. 2.

(4) Economic Council of Canada (1986), p. 5.

plan for the implementation of a forest renewal program that reflected a national forest strategy was announced in 1982. The federal government, along with the provinces, has made a commitment to increase the possibilities of continued wood harvesting through stricter controls on forest use, better protection against fires, insects and diseases, and, above all, more reforestation.(1) With respect to the role of governments, the Committee agrees completely with the following statement by economist N.B. Percy: "Government forest management policies are of particular importance because they constrain the response of firms to market forces and determine the manner in which the resource base is utilized.(2) The real influence of the programs that have been implemented can be measured not only by the volume of funds freed up, but also by their ability to create a climate favourable to private-sector initiatives.

It goes without saying, however, that the anticipated results as regards forest management will be obtained, as Gordon F. Weetman puts it, only to the degree that the contribution of each silviculture job to the wood supply is clear. For this reason, the process of expanding our knowledge of the natural dynamics of forests and the relevance of silviculture programs must be combined with more active participation by forestry companies in forest renewal.(3) The important thing is to be able to anticipate a forest's structural problems and to have the ability to treat these problems as they occur so as to maintain the desired quantity and quality of goods and services. That is the essence of forest management.(4)

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(1) Environment Canada, Policy Statement: A Framework for Forest Renewal, Ottawa, September 2, 1982, p. 2.

(2) N.B. Percy, Forest Management and Economic Growth in British Columbia, a study prepared for the Economic Council of Canada, Ottawa, 1986, p. 11.

(3) Gordon F. Weetman, "The State of Canadian Forest Management", Canada's Forests: A Commitment to the Future, National Forest Congress 1986, Ottawa, April 9, 1986, p. 80.

(4) Gordon Baskerville, "Understanding Forest Management", Canada's Forests: A Commitment to the Future, National Forest Congress 1986, Ottawa, April 9, 1986, p. 15.

At this stage, it is important to recall and endorse a principle first stated in 1979 by the Canadian Council of Resource and Environment Ministers: "Responsibility for funding the maintenance of the resource should be proportionate to the benefits received."(1) Although some discussion has ensured the interpretation of this principle and the responsibilities stemming from it,(2) the Committee can only remind all users and owners of woodland that a change in attitude in favour of increasing scientific, technical and financial activities is needed in order to defend and promote this resource which is vital to the welfare of Canadians and to our economy. While it may at one time have been disadvantageous, from a competitive standpoint, to implement sound management practices, this clearly is no longer the case today.

As far as the processing of raw materials is concerned, the Committee is mindful of the fact that the forest industry is on the brink of a new era in which it will draw its energy from unprecedented scientific growth and from the rapid, relentless advances of technology. It has already been shown that Canada has succeeded to a certain extent in enhancing its advantageous position in the areas of lumber and paper by using new technologies, a key factor in international competitiveness. However, a word of caution is in order. It should be borne in mind that the comparative advantage enjoyed by Canadian forest producers over American producers has decreased, especially in the case of newsprint. This trend appears to be confirmed by statistics showing pulp and paper capacity growing more rapidly in the United States than in Canada.(3) Clearly, industrial research is one area in which industries, with the help of the governments, should step up their efforts. The importance of

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(1) Canadian Council of Resource and Environment Ministers, Forestry Imperatives for Canada, Kelowna, June 6 and 7, 1979, p. 9.

(2) E. Knight, "Double Duty for the Forests", Policy Options, Vol. 7, No. 2, March 1986, p. 26.

(3) Petr Hanel, La technologie et les exportations canadiennes du matériel pour la filière bois-papier, Institute for Research on Public Policy, Montreal, 1985, pp. XXIII-XXV.

remaining competitive with our main rivals should be a recurring motivating factor in getting all Canadians to innovate in order to preserve their jobs and their position on world markets. There has been ongoing concern for the performance of our forest product exports on international markets, given their primary importance. The reasons for this concern are varied: existing conditions of product oversupply, slower growth in demand, the arrival of new producers on the market, adverse exchange rates for the Canadian dollar in relation to European currencies and growing protectionist measures which are beginning to be taken by our largest importer, the United States.(1) Consequently, the Committee supports the efforts of both governments and business to bring our forest industry in line with new international market conditions by securing, among other things, safe market access for our products, despite protectionist pressures, and by lending more effective support to efforts aimed at increasing foreign markets and developing new markets for value-added products.

In addition to all this, we should emphasize the urgency of setting up relevant worker training programs geared to the needs of the environment and of forestry companies. The focus of our concern should be human resources without which our forest industries could not exist. Additional efforts must be made to help workers adapt to technological change and to the new conditions facing their industries. It is important to note that silviculture programs, in addition to providing new job opportunities, also encourage Canadians to develop sound expertise in the fields of manpower and technology.(2)

Knowledge, vigilance, concerted action and integration: these have become key words for all those involved in the forest industry. The present time is crucial for our forest resources and their many uses.

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(1) James Kelleher, "Canadian Interests in Forest Products Trade", Canada's Forests: A Commitment to the Future, National Forest Congress 1986, Ottawa, April 10, 1986, pp. 83-85.

(2) For further information, refer to: L. Anders Sandberg, A Study of Swedish Technology Policies Promoting Development of Industries Linked to Mine and Forest Exploitation, study carried out for the Ministry of State for Science and Technology, Ottawa, March 1986, 98 pp.

Once again, Canadians must draw on their reserves of ingenuity and flexibility to guarantee that this great resource will last forever. Through this report, the Standing Committee on Environment and Forestry hopes to have encouraged timely exchanges of ideas and to have thus contributed to the discovery of appropriate solutions. Finally, the Committee wishes to endorse the recommendation of many witnesses who testified before it, that:

RECOMMENDATION 27

The Government should consider the creation of a Federal Department of Forestry in the near future.

Appendix A - SUMMARY OF RECOMMENDATIONS

Chapter 1 - Quebec Forests

1. Any government strategy designed to encourage private forest management activities should include the following provisions:

- measures aimed at owners should provide incentives;
- government aid should be offered to all owners with forest producer status who possess a management plan drawn up and signed by a forest engineer;
- owners who demonstrate serious commitment by assuming a share of management costs should be required to pay only a minimum contribution;
- a tax incentive policy should be set up, including an investment tax credit for owners who increase the value of their woodlots;
- steps should be taken to train and bring forward skilled labour to carry out silvicultural work in private forests;
- the funds and duration of federal-provincial agreements designed to promote forest management activities should be increased.

2. The federal government, in co-operation with the James Bay Crees, should develop a program to protect and enhance the forests in the territories under federal authority in accordance with the James Bay and Northern Quebec Agreement.

3. The Minister of National Defence should immediately halt all North Shore and Labrador low-level military air flights, and assess the effects of such flights on the environment in these regions, as soon as possible.

4. The Canadian Forestry Service and the federal Department of the Environment, in co-operation with the Quebec Department of Energy and Resources, should immediately undertake a concerted program to determine the causes of the sugar maple dieback in Quebec and the necessary corrective action. In addition, measures to indemnify maple growers should be considered should the present problem persist.

5. The Canadian Forestry Service should step up its efforts to develop and promote technologies to enable optimum use of wood fibre by processing mills. A special effort should be made to make the best possible use of small pieces of wood and tree species that are underused at present.

6. The Canadian Forestry Service, in co-operation with the provincial departments concerned, should develop and implement measures which would encourage the foresters to improve harvesting techniques to reduce the amount of wood usually left as residue on cutting sites.

Chapter 2: New Brunswick Forests

7. The Canadian Forestry Service should carry out an exhaustive study to determine the actual operating costs for public and private forests in the five provinces of Eastern Canada.

8. The Canadian Forestry Service should carry out a detailed study for the Standing Committee on Environment and Forestry, presenting the history of its research activities over the past two decades. In addition, a five year development plan (1987-91) for its research programs should be included in the report to the Committee.

9. The Canadian Forestry Service, in co-operation with the New Brunswick Ministry of Forests, Mines and Energy, should increase its efforts to develop and identify new markets on which softwood from New Brunswick forests can be sold at attractive prices.

10. The Department of Employment and Immigration, in co-operation with the Canadian Forestry Service, should develop a long-term policy to use the funds allocated to job creation to recruit and train skilled workers to perform forest management tasks.

11. A separate agreement should be concluded promptly between the federal authorities concerned and the representatives of Indian groups regarding the management and development of New Brunswick Indians' forest lands.

Chapter 3: Nova Scotia Forests

12. The Canadian Forestry Service and the Nova Scotia Department of Lands and Forests should renew their agreements on forest enhancement and renewal before the present agreements expire in 1987.

13. The Canadian Forestry Service should increase its efforts to determine the nature and extent of tax stimuli that could encourage an increase in private sector expenditures on forest management in Canada.

14. The Canadian Forestry Service, in co-operation with the provincial departments concerned, should intensify its efforts to develop and implement integrated action programs aimed at short and long-term solutions to infestations of the spruce budworm and other leading forest pests.

15. The Canadian Forestry Service should evaluate the success of the chemical spray programs and their impact on non-forest sectors such as groundwater contamination, human health and wildlife, and should also intensify its research into alternative pest management techniques.

16. The Canadian Forestry Service, in co-operation with Parks Canada, should take new steps to minimize the risks of fire and contamination by insects and disease in forests located in national parks.

17. The Canadian Forestry Service should give top priority to developing commercial strategies to facilitate access to foreign markets for Canadian forest products. In this connection, the creation of a national forest products marketing board should be envisaged.

18. The Canadian Forestry Service, in co-operation with the Department of Energy, Mines and Resources and the Department of Public Works, should develop a plan to convert the heating systems of federal buildings in Nova Scotia to use forest biomass as a fuel. A cost-benefit analysis as well as an environmental assessment of the impact of this possibility should be submitted to the Standing Committee on Environment and Forestry.

19. The Canadian International Development Agency, together with the Canadian Forestry Service and the departments concerned, should determine the feasibility of the fuel wood export project submitted by the Bras d'Or Institute, University College of Cape Breton. Should the project prove practicable, a report on funding methods should be submitted to the Standing Committee on Environment and Forestry.

Chapter 4 - Prince Edward Island Forests

20. The Canadian Forestry Service, in co-operation with the Ministry of State for Science and Technology, should develop and co-ordinate a national research and development strategy to enhance Canada's forest resource and industries by means of biotechnology.

21. In so far as the use of wood as fuel is appropriate, and poses no serious threat to air quality, the Department of Public Works should develop a plan to convert the heating systems of federal government buildings in Prince Edward Island to furnaces that use wood chips and other wood residue. In addition, the Canadian Standards Association (CSA) should promptly establish construction standards for wood residue burners for residential heating.

Chapter 5: Newfoundland Forests

22. The Canadian Forestry Service should renew its efforts to collect and make available accurate data describing the composition, evolution, growth, yield, area and ownership of the country's productive forests.

23. The Canadian Forestry Service, in cooperation with the Canadian Council of Forestry Ministers, should develop a strategy permitting the maximization of job creation and public participation in the management and development of the country's forest resources.

24. The Canadian Forestry Service should enhance public participation in silviculture through job creation programs developed in cooperation with the Unemployment Insurance Commission, which promote manual cutting of brush as an alternative to the use of herbicides in the forest.

25. The Canadian Forestry Service should establish mechanisms for urging forest companies to increase their efforts to develop the forests that they exploit. Furthermore, they should strive to raise the productivity of their mills as well as increase the diversity of their products so as to maintain our competitive position and penetrate new markets.

26. The Canadian Forestry Service, in cooperation with the provincial departments concerned, should examine the feasibility of Mr. Baird's proposal and the Scottish model of forest management.

CONCLUSION

27. The Government should consider the creation of a Federal Department of Forestry in the near future.

APPENDIX B

WITNESSES WHO APPEARED BEFORE THE COMMITTEE

	ISSUE	DATE
Annapolis Valley Affiliated Boards of Trade: Dianne Hankinson LeGard, Executive Manager; Gary Leeson, Forestry Committee; Emanuel Adelaar, Economic Development Chairman.	54	October 30, 1985
Annapolis Valley Royal Development Commission: Paul Buxton, Executive Director.	54	October 30, 1985
Gerard A. Arseneau: (Individual Presentation).	51	October 25, 1985
"L'Association des Pourvoyeurs du Québec": André Chassé, Director.	49	October 23, 1985
Atlantic Forestry Consultants: Michael A. Brown, Owner and Manager.	56	November 1, 1985
Edgar Baird: (Individual Presentation).	57	November 4, 1985
Barachois Development Association: Jack Dwyer, Member.	58	November 5, 1985
Bras d'Or Institute: Don Arseneau, Director; Stephen Manley, Biologist.	56	November 1, 1985

	ISSUE	DATE
Kingsley Brown: (Individual Presentation).	56	November 1, 1985
Canadian Forestry Service: Jean-Claude Mercier, Associate Deputy Minister; Carl Winget, Director General, Research and Technical Services.	49	October 17, 1985
Canadian Institute of Forestry, Maritime Section: Edward S. Fellows, Member; Frank E. Webb, Member.	53	October 29, 1985
Central Woodlands Association: Kirk Brown, Chairman; Wanson Hemphill, Director; Neil Chodorow, Director.	52	October 28, 1985
Coalition Against Pesticides: Charles Restino, Chairperson.	56	November 1, 1985
"Le Comité d'adaptation communautaire de Gaspé-Nord": Réjean Lévesque, Administrator; Bernard Landry, Technician; Michel Joncas, Manager.	50	October 24, 1985
CONFORM Ltd. (Consolidated Forest Owners Resource Management): John Dechman, President; Harlen Redden, Manager.	55	October 31, 1985
"Le Conseil Attikamek-Montagnais": Gaston McKenzie, President; Camille Vollant, Vice-President; Paul Charest, Technician.	49	October 23, 1985
"La Co-opérative forestière Ltée": Marcel Arsenault, Manager.	52	October 28, 1985

	ISSUE	DATE
Environment Resources Management Association: Don Pelly, President; Terry Goodyear, Vice-President.	58	November 5, 1985
Forchu Forest Management Company Limited: David Shelley, General Manager.	54	October 30, 1985
David Gilbert: Member of the House of Assembly of the Province of Newfoundland, (Individual Presentation).	57	November 4, 1985
"Le Groupement agro-forestier et touristique de Portneuf inc.": Réjean Julien.	49	October 23, 1985
Government of New Brunswick Department of Forest, Mines and Energy: Ralph Redmond, Acting Deputy Minister; Robert Watson, Director, Policy and Planning.	53	October 29, 1985
Government of Newfoundland: Honourable Len Simms, Minister of Forestry.	57	November 4, 1985
Government of Nova Scotia: Honourable Kenneth Streatch, Minister of Lands and Forests; Burt Robertson, Senior Director, Land Services.	55	October 31, 1985
Government of Prince Edward Island: Honourable Fred Driscoll, Minister of Energy and Forestry; Gerry Gavin, Western District Manager (Forestry).	52	October 28, 1985
Island Nature Trust: Ian MacQuarrie, Vice-President.	52	October 28, 1985

	ISSUE	DATE
Michel Levasseur: (Individual Presentation).	58	November 5, 1985
Marcel Lortie: (Individual Presentation).	49	October 23, 1985
Maritime Lumber Bureau: Francis Smith, Director; Robert Love, Member.	53	October 29, 1985
Municipality and Town of Digby Industrial Commission: Terrence Hanlon, Executive Director.	54	October 30, 1985
"La Nation Huronne-Wendat" and "Des Premières Nations du Québec": Konrad Sioui, Vice-Chief; Guy Bellefleur, Councillor.	49	October 23, 1985
Native Council of Nova Scotia: Viola Robinson, President; Florence Walsh, Secretary Treasurer.	55	October 31, 1985
New Brunswick Federation of Woodlot Owners: Peter deMarsh, President; Peter Hughes, Forest Management Co-ordinator; Valerie Fowler, Executive Director.	53	October 29, 1985
New Brunswick Forest Products Association: Don Lockhart, Executive Director.	53	October 29, 1985
Newfoundland and Labrador Rural Development Association: Stan Dawe, President, Rural Development, Upper Trinity; Ray Jarrett, Co-ordinator, Fishery and Forestry; Sylvester Yetman, President, Rural Development, Southern Shore.	57	November 4, 1985

	ISSUE	DATE
North Colchester Forest Cooperative Limited:	55	October 31, 1985
Dale Downey, Manager; David Sutherland, Forester.		
Nova Scotia Forest Products Association:	55	October 31, 1985
Windsor Kelly, President; Dale Sproule, First Vice-President; Walter Webber, Second Vice-President; Laurie Ledwidge, Past President; Lorne Etter, Executive Director.		
Nova Scotia Woodlot Owners' and Operators' Association:	55	October 31, 1985
Ronald Bulmer, General Manager; Luke Batdorf, Consultant; Laurie Levy, President.		
"L'Office des producteurs de bois de la région de Québec":	49	October 23, 1985
Jean-Marc Drolet, Secretary General.		
Restigouche Indian Band:	51	October 25, 1985
Michael Issac, Councillor.		
Anne Smith:	54	October 30, 1985
(Individual Presentation).		
"La Société d'Expansion Économique de Portneuf":	49	October 23, 1985
Fernand Lirette, Director; Jean Hébert, Assistant Director.		
"Le Syndicat des producteurs acéricoles de la région de Québec":	49	October 23, 1985
Jean-Roch Turcotte, Director; Paul Morrisette, Vice-President.		

	ISSUE	DATE
Union of New Brunswick Indians: Graydon Nicholas, President; Gilbert Sewell, Vice-President; Margaret LaBillois, Elder; Chief Benoît Paul, Pabineau Reserve; Chief Jack Sark, Lennox Island Reserve; Larry Perley, Councillor, Tobique Reserve.	53	October 29, 1985
United Brotherhood of Carpenters, Local 2564: Gonzo Gillingham, Representative.	58	November 5, 1985
Voluntary Planning: Walter Webber, Chairman, Voluntary Sector; Warren Zwicker, Member; John Dickey, Member.	55	October 31, 1985
Anthony Weagle: (Individual Presentation).	54	October 30, 1985

APPENDIX C

ORGANIZATIONS AND INDIVIDUALS WHO SUBMITTED BRIEFS
BUT DID NOT APPEAR IN PUBLIC HEARINGS OF THE COMMITTEE

Canadian Forestry Service

Canadian Institute of Forestry, Nova Scotia Section

Forestry and Agriculture for Nova Scotians

Marcel Giraudo

James Bay Crees

Union of Nova Scotia Indians

INVENTORIED FOREST LAND BY OWNERSHIP AND CLASS, 1981

Area class	Nfld.	P.E.I.	N.S.	N.B.	Atlantic provinces	Que.	Ont.	Man.	Sask.	Alta.	Prairies	B.C.	Y.T.	N.W.T.	Canada
							1 000 km^2								
Stocked, productive, nonreserved forest land															
Provincial	75	-	6	28	109	430	293	113	72	133	318	397	-	-	1 549
Federal	-	-	-	1	1	1	3	1	2	-	3	2	49	137	197
Private	4	-	22	30	56	57	34	4	-	-	4	14	-	-	164
Municipal/ Undetermined	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**79**	**-**	**28**	**59**	**166**	**489**	**331**	**118**	**74**	**133**	**325**	**413**	**49**	**137**	**1 910**
Productive forest land															
Provincial	79	-	6	29	114	469	331	132	84	199	415	437	-	-	1 767
Federal	1	-	-	2	3	2	6	3	5	17	25	5	67	143	252
Private	4	-	22	31	57	63	39	4	-	-	4	16	-	-	180
Municipal/ Undetermined	-	3	-	-	3	-	-	-	-	-	-	-	-	-	3
Total	**85**	**3**	**29**	**62**	**179**	**533**	**377**	**140**	**89**	**216**	**444**	**458**	**67**	**143**	**2 202**
Total inventoried forest land															
Provincial	135	-	11	31	177	556	381	231	118	297	646	543	-	-	2 303
Federal	2	-	1	2	5	2	7	4	5	34	43	6	242	615	919
Private	6	-	29	32	67	66	43	5	-	-	5	17	-	-	199
Municipal/ Undetermined	--	3	-	-	3	-	--	--	-	--	-	--	-	-	4
Total	**142**	**3**	**41**	**65**	**251**	**624**	**432**	**240**	**123**	**331**	**694**	**566**	**242**	**615**	**3 425**

Source: Bonnor, G.M. Canada's Forest Inventory 1981. Forestry Statistics and Systems Branch, Canadian Forestry Service, Environment Canada.

Pursuant to Standing Order 99(2), the Committee requests that the Government table a comprehensive response to its report.

A copy of the relevant Minutes of Proceedings and Evidence (Issue Nos. 49, 50, 51, 52, 53, 54, 55, 56, 57 and 58 of the former Standing Committee on Fisheries and Oceans and Issue Nos. 6 and 7 of the Standing Committee on Environment and Forestry, which includes the report) is tabled.

Respectfully submitted,

LORNE GREENAWAY, M.P.
Chairman.

MINUTES OF PROCEEDINGS

WEDNESDAY, June 18, 1986
(16)

The Standing Committee on Environment and Forestry met in camera at 6:12 o'clock p.m. this day, the Vice-Chairman Guy St-Julien, presiding.

Members of the Committee present: Marc Ferland and Guy St-Julien.

In attendance: From the Library of Parliament: Jean-Pierre Amyot, Research Officer.

The Committee resumed consideration of its Order of Reference dated Thursday, June 27, 1985 and deemed referred to this Committee by an Order of the House dated Friday, February 14, 1986 relating to the East Coast fishing and forestry industries. (See Minutes of Proceedings and Evidence, Tuesday, June 10, 1986, Issue No. 6.)

The Committee resumed consideration of a draft report on the East Coast forestry industry.

At 7:20 o'clock p.m., the Committee adjourned to the call of the Chair.

THURSDAY, June 19, 1986
(17)

The Standing Committee on Environment and Forestry met in camera at 9:50 o'clock a.m. this day, the Vice-Chairman Guy St-Julien, presiding.

Members of the Committee present: Charles Caccia, Marc Ferland, Elliott Hardey and Guy St-Julien.

In attendance: From the Library of Parliament: Jean-Pierre Amyot, Research Officer.

The Committee resumed consideration of its Order of Reference dated Thursday, June 27, 1985 and deemed referred to this Committee by an Order of the House dated Friday, February 14, 1986 relating to the East Coast fishing and forestry industries. (See Minutes of Proceedings and Evidence, Tuesday, June 10, 1986, Issue No. 6.)

The Committee resumed consideration of a draft report on the East Coast forestry industry.

At 12:10 o'clock p.m., the Committee adjourned to the call of the Chair.

AFTERNOON SITTING
(18)

The Standing Committee on Environment and Forestry met in camera at 3:50 o'clock p.m. this day, the Vice-Chairman Guy St-Julien, presiding.

Members of the Committee present: Charles Caccia, Marc Ferland, Elliott Hardey and Guy St-Julien.

In attendance: From the Library of Parliament: Jean-Pierre Amyot, Research Officer.

The Committee resumed consideration of its Order of Reference dated Thursday, June 27, 1985 and deemed referred to this Committee by an Order of the House dated Friday, February 14, 1986 relating to the East Coast fishing and forestry industries. (See Minutes of Proceedings and Evidence, Tuesday, June 10, 1986, Issue No. 6.)

The Committee resumed consideration of a draft report on the East Coast forestry industry.

Charles Caccia moved, - That Recommendation 3 of the draft report be amended to read:

"The Minister of National Defence should halt all North Shore and Labrador low-level military air flights, until a complete assessment of the effects of such flights on the environment in these regions, has been conducted and made public."

After debate, the question being put on the motion, it was, by a show of hands, negatived:

YEAS: 1; NAYS: 2

Marc Ferland moved, - That Recommendation 3 of the draft report be allowed to stand as written.

And debate arising thereon:

At 4:50 o'clock p.m., the Committee adjourned to the call of the Chair.

WEDNESDAY, June 25, 1986
(19)

The Standing Committee on Environment and Forestry met in camera at 3:55 o'clock p.m. this day, the Chairman Lorne Greenaway, presiding.

In attendance: From the Library of Parliament: Jean Pierre Amyot, Research Officer.

The Committee resumed consideration of its Order of Reference dated Thursday, June 27, 1985 and deemed referred to this Committee by an Order of the House dated Friday, February 14, 1986 relating to the East Coast fishing and forestry industries. (See Minutes of Proceedings and Evidence, Tuesday, June 10, 1986, Issue No. 6.)

The Committee resumed consideration of a draft report on the East Coast forestry industry.

The Committee resumed debate on the motion of Marc Ferland, - That Recommendation 3 of the draft report be allowed to stand as written.

After debate, the question being put on the motion, it was agreed to by a show of hands:

YEAS: 3; NAYS: 1

Guy St-Julien moved, - That Recommendation 3 of the draft report be amended by inserting the word "immediately" immediately before the word "halt".

After debate, the question was put on the motion.

And the result of the Vote having been announced:

YEAS: 2; NAYS: 2

Whereupon the Chairman voted in the affirmative.

Accordingly, the motion was carried.

Charles Caccia moved, - That the draft report be amended by striking out the sentence on pages 29 to 30 which reads:

"The Committee recognizes the importance and justification of this program and, further, hopes that DFO will demonstrate discretion in dealing with projects submitted by the forestry sector."

After debate, the question being put on the motion, it was, by a show of hands, negatived:

YEAS: 1; NAYS: 3

Guy St-Julien moved, - That the First Report of the Committee be adopted as amended.

After debate, the question being put on the motion, it was agreed to on division.

On motion of Guy St-Julien, it was agreed, - That 2,000 copies of the Report be printed.

On motion of Guy St-Julien, it was agreed, - That the Report be printed with a special cover.

On motion of Elliott Hardey, it was agreed, - That the Chairman table the Report in the House on or before June 27, 1986.

At 4:45 o'clock p.m., the Committee adjourned to the call of the Chair.

Janice Hilchie
Clerk of the Committee