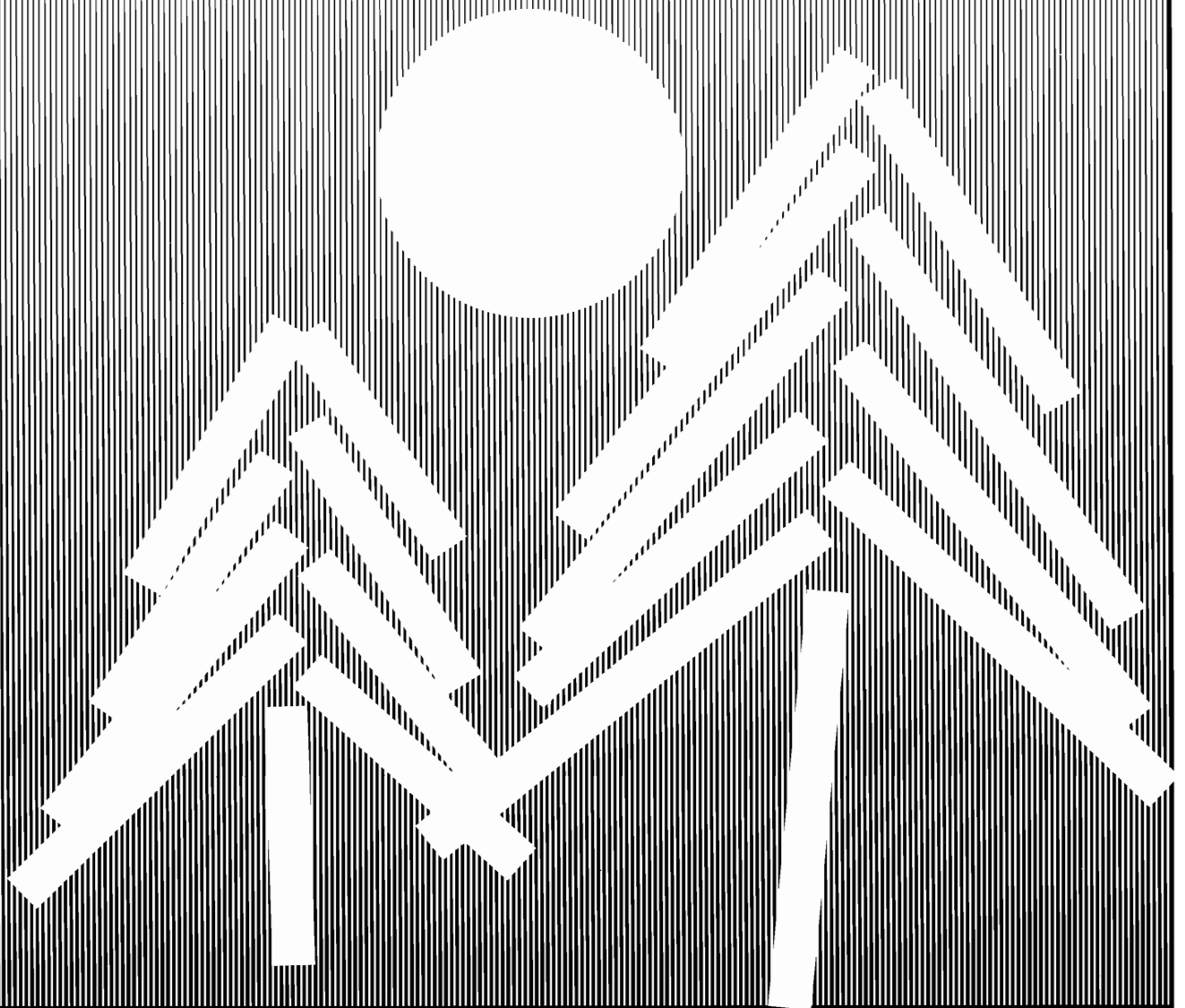


Frank Oberle M.P.

THE GREEN GHETTO

CAN WE SAVE CANADIAN FORESTRY?



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Introduction

The Canadian forest, like the elephant encountered by the blind man, resembles something different depending upon where one touches it. To the hiker or canoeist, the forest is a cathedral where isolation enhances the sense of refuge; to the family on an outing it becomes a playground. Forest company executives see the forest lands as a gigantic farm; governments see it as the source of huge tax revenues.

To all Canadians the forest represents, or should represent, the most significant presence in our national history and heritage, and the continuous source of wealth, employment and trade.

Over the next two decades, millions of people will work in forest-related industries while millions more will use the forest for recreation and escape. **But, on our present national course, by the end of those two decades, the jobs will be vanishing, leaving hundreds of communities with no other industry, and boaters and campers will find their activities confined to increasingly crowded "forest ghettos" called national or provincial parks. Disputes between industrial and environmental interests could become bitter. The social ramifications of reduced government services in provinces presently dependent upon forestry tax revenues will also be considerable.**

Unlike almost any other aspect of public policy, predictions about the future of the forest industries are not based upon guesswork or speculation. They are factual extrapolations of present conditions, based upon known variables. Because of the length of time needed to grow a seedling into a harvestable tree, Canadians can look into the future and know what timber supplies will be available for industrial and recreational purposes at the end of the century, and beyond.

Having recognized this unique aspect of forestry policy, we are immediately faced with a second, more extraordinary fact – even though it is possible to see the future and recognize that we are falling short of our stated goals, this failure has provoked little public alarm, and only sluggish government action.

A favourite comment of individuals studying the forest community is that without rapid action, Canada will fail to exploit an emerging opportunity, as world demand for forest products increases.

Such a statement falls short of the real situation: rapid action is needed just to protect our industries and their employees. Without significant improvement in our forest performance, we will not only forfeit opportunities to expand, we will suffer rapid and painful deterioration.

This gloomy analysis, which partially violates the conventional wisdom, must be explained.

Most observers perceive the future of forestry as a static picture, with Canada's performance as the only variable. This view is deceptive. A more realistic picture would show our competitors expanding their efforts across the whole spectrum of forestry in product diversification, genetic improvement, protection, intensive management, education and training, etc. Since research investments tend to pay off at a greater rate than anticipated ⁽¹⁾, serendipitous discoveries are common – the countries investing today will be the ones to establish new products and techniques tomorrow. They are not waiting for Canada to catch up. So every day we fail to close the gap we make that gap larger.

There are dozens of measurements of forestry activity by which our performance can be compared to other nations. One simple one is the number of foresters currently managing our forests. In 1982 Dr. Marcel Lortie, Professional Forester, estimated that only about 500 professional foresters were engaged in "on site forest development" ⁽²⁾.

While our chief competitors (the United States, Sweden and Norway) have approximately one forester to every 15,000 hectares (34,000 acres) of land, Canada has one for every 450,000 hectares (1,111,000 acres). Moreover, as we improve, so do they. "If, in 10 or 20 years, Canada has attained the ratio of 15,000 hectares per forester . . . the ratio in these countries will have increased to around 10,000 hectares (24,000 acres) per forester." ⁽³⁾ He noted that some countries practice even more intensive management – i.e. Czechoslovakia, with one forester for every 300 to 400 hectares (750 – 1,000 acres).

We will return to the question of Canada's specialized manpower needs later in this paper. For the moment it will suffice to note that the gap between our efforts and those of other nations is considerable, and since enrollment in forestry programs remains limited, the gap is growing.

More important than these bald statistics, however, is the general ignorance of most Canadians about the impact of the imminent forest crisis. It can be sharply contrasted to the shock and outrage with which the nation responded to the energy scares of the 1970s. Elections were fought on energy, corporate decisions were made on energy, government policies and laws were adjusted and whole industries altered, all because of energy.

Without public interest and understanding, similar dramatic steps cannot take place in the forest sector. Governments typically follow the path of least resistance – putting off expensive programs unless forced into them by public pressure. This paper is part of the effort to develop public understanding and to justify a leadership role for the federal government in forestry.

With a concerted effort at all levels, Canada could experience a forestry renaissance. Without it the country will suffer a forest depression, frittering away its most valuable natural resource and becoming a green ghetto.

What the Forest Means to Canada

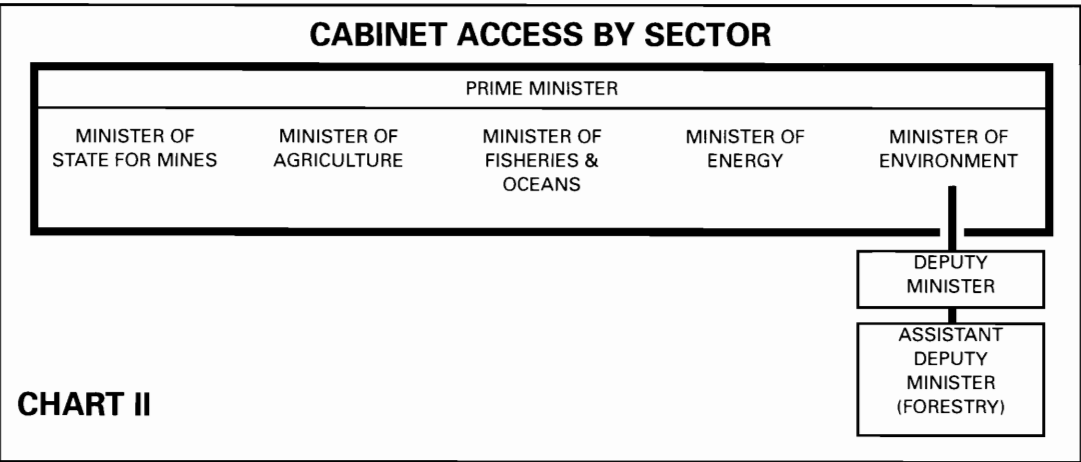
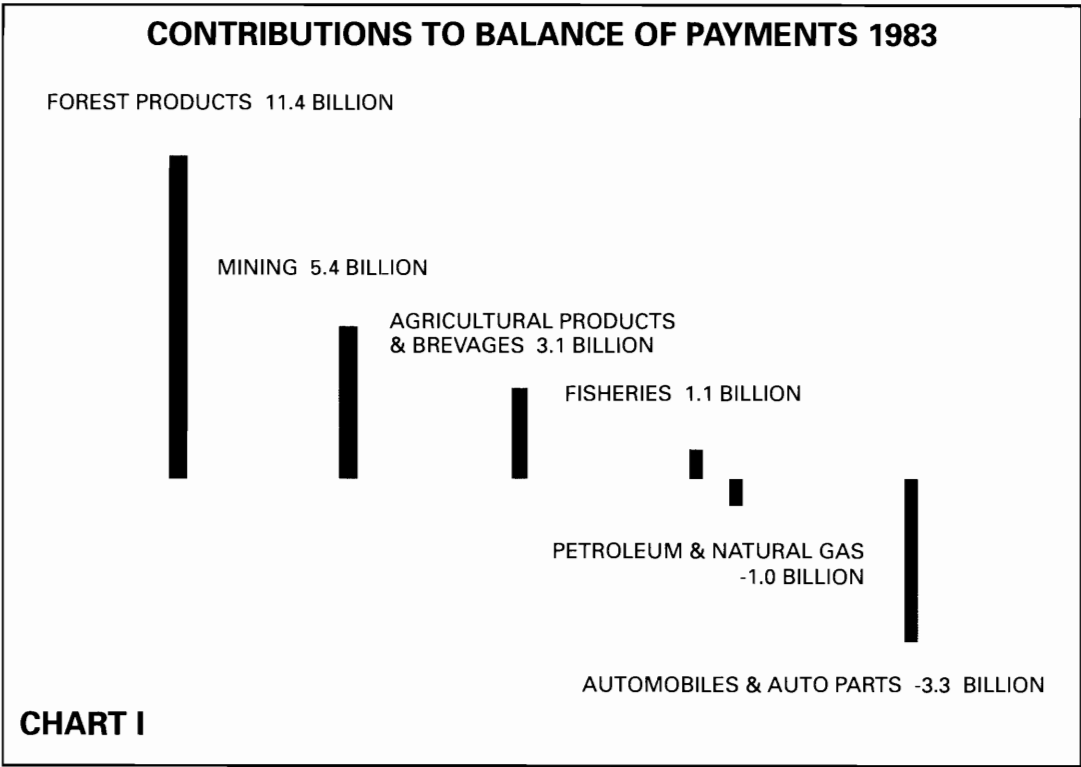
Curiously enough, Canadians are generally rather disinterested in their largest industrial sector. Perhaps because forestry has been with this country for so long – nearly 400 years – and the forests seem so abundant, we take it for granted. For decades this indifference was of little consequence since there were always good supplies over the next hill, but today, when decisions must be made which will have serious effects on every Canadian, the obscurity of forestry has become a problem.

Smaller industries with fewer jobs dependent on them are represented in government right up to the Cabinet level – forestry is not.

Fledgling industries, or foreign dominated industries, command space in the popular and business presses – forestry does not.

In this country's large cities, where thousands of jobs depend directly on the forest industry, most people are understandably unaware that forest policies set by provincial governments thousands of miles away may influence their lives and futures directly. The sheer size of the industry surprises most Canadians:

- **More than 300,000 Canadians work in jobs directly related to forestry.**
- **An additional 700,000 jobs are indirectly supported by the industry. Of these, many are in manufacturing positions – One out of every seven manufacturing dollars in Canada is forestry related.**
- **Many forestry jobs are created in rural areas where other employment is scarce. At least 300 communities in Canada are one-industry forestry towns, without viable options.**
- **Canada's major contributor to our balance of trade is forestry, outstripping the combined net contributions of mining, agriculture, fisheries and petroleum fuels combined.**
- **Sales of forest products, domestic and foreign, mean close to \$25 billion in trade for Canada annually.**
- **Forestry stimulates other industries – it's the largest purchaser of manufactured goods in most of Canada's provinces, second largest purchaser in Quebec, and fourth largest purchaser in Ontario.**
- **The industry generates more than \$1 billion annually in taxes for the federal government. It produces another billion dollars in taxes for the provincial governments.**
- **By recent estimate, just one percent of the forest land-base may contribute up to 3,000 jobs and \$20 million in provincial tax revenues.⁽⁴⁾**



In light of these figures it is surprising to note that warnings about potential threats to the industry have been generally ignored by population and leaders alike. Even the widespread sympathy and concern for environmental issues, for conservationism, for recycling characteristic of the last two decades has not created the necessary expectations in an industrial sector which can survive only through environmental care, conservation and recycling.

That same energy scare produced extraordinary incentives and concessions to energy companies, whose interests were suddenly seen to parallel the general public's. The crisis facing forestry will be just as disruptive as energy interruptions, yet comparable incentives that would serve the public interest as well as the forest companies remain on the drawing board.

Where Have All the Forests Gone?

In 1983, the Science Council of Canada warned, "The forests are essential to our social and economic well-being; yet we have allowed them to degenerate to a dangerous point. We have been felling, selling and shipping timber for so long, and at such a rate, that today a \$23 billion industry is facing economic stagnation".⁽⁵⁾

The Council's comment was nothing new. Concerned citizens, politicians, and spokesmen for industry have been warning Canadians,⁽⁶⁾ for at least one hundred years, that careless exploitation of the forest resource would mean its destruction.

One hundred years ago it was not difficult for an observer to see that forestry techniques were wasteful – the practice of squaring timber, for example, might waste up to a third of the actual felled log and all its branches – but it was more difficult to develop public sympathy and professional cooperation in a nation where forests were seen as both endless and also a barrier to development. Forest companies would not adhere to strict standards for regenerating the forests while settlers burned woodlands to clear them for farming.⁽⁷⁾

But today, despite improved utilization in the forest and in the mills and for replacing the forests, the warnings are more strident. In the late seventies, for the first time, the forest community began to recognize the magnitude of the problem, the reality of a dangerous situation. Examination showed that the forest was not inexhaustible; shortages of commercial timber were developing in every region of the country.⁽⁸⁾

In 1981 the Banque Nationale du Canada's "Revue économique" informed its readers that Canada's economy was based upon the exploitation of natural resources which were "in most cases nonrecoverable – metals, petroleum and forests".⁽⁹⁾ This was an extraordinary comment – the world's leading forest nation admitting its forests are considered nonrenewable.

But if the forest community has recognized the imminent dangers, it is hard for the ordinary citizen driving past miles of forests in almost any province, to understand what all the fuss is about. Canada certainly seems to have plenty of trees.

The fuss is about a shortage of *marketable* wood. Canada has millions of hectares of forests – but mature and available trees are becoming more rare. What are we doing wrong?

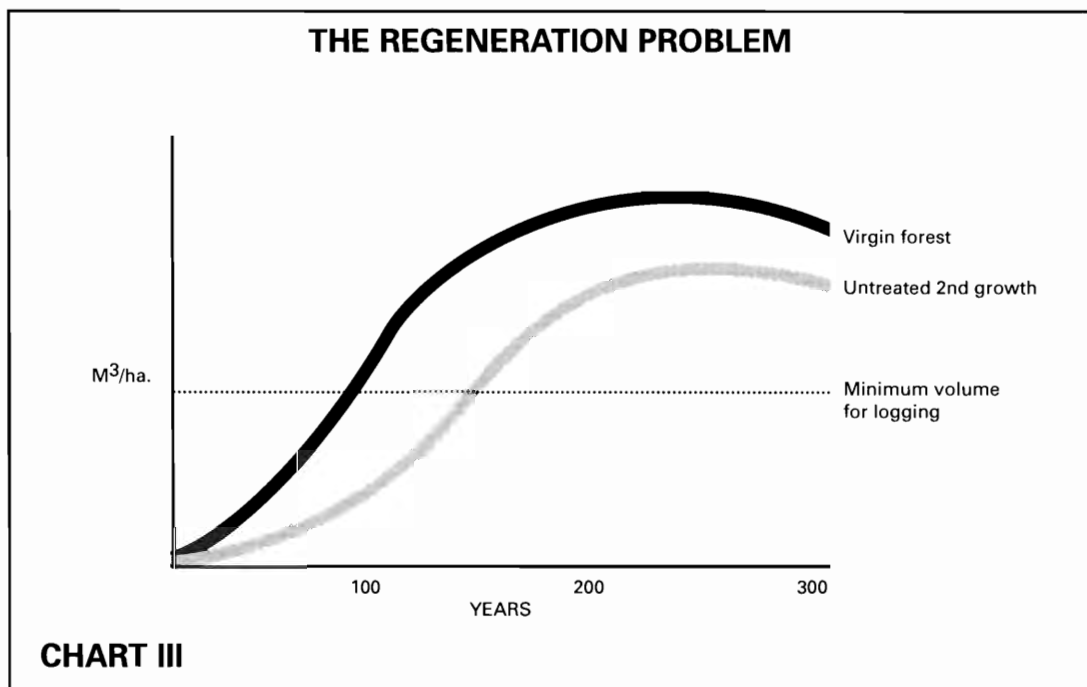
UNREGENERATED LAND

We have an insatiable hunger for wood products. Every day a newspaper like the Globe & Mail consumes more than 2,000 trees.⁽¹⁰⁾ Every year the Canadian forest is reduced by almost a million hectares (2 million acres) through logging. That's an area larger than Prince Edward Island – if you stretched it out it would make a strip across the country a mile wide.⁽¹¹⁾ At least a third of this is not promptly restocked to ensure its usefulness to Canada in the future. It may grow trees - eventually – but it will grow significantly less profitable trees, less attractive species than previously stood there, and they will take much longer to reach maturity.

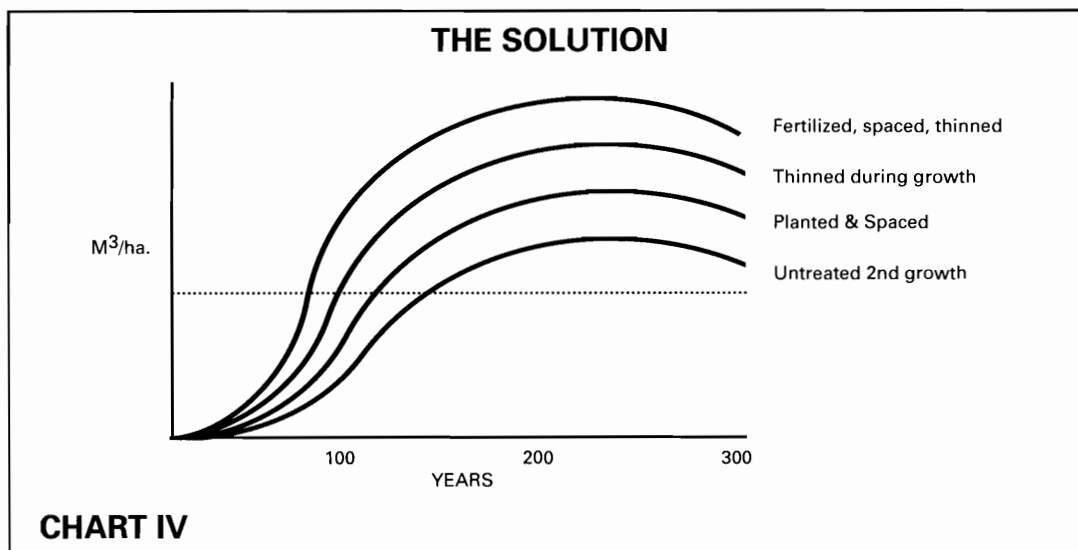
Almost 12% of our productive forest land is now in this dismal condition, and each year 300,000 hectares (half a million acres) are added to the backlog. If properly stocked, this land alone could sustain Canada's harvest for about 30 years.

Until recently, foresters in Canada depended almost entirely upon nature to replace the forests they harvested. Unfortunately nature does not guarantee that the same valuable species will replace the harvested stands, nor could they hurry nature to meet their own frantic pace.

The Chart on the following page shows the problem clearly. Trees growing in a virgin forest may reach maturity in less than one hundred years. But once the forest has been cut, in many parts of Canada, the second growth not only grows much more slowly, but it does not seem to be replacing the original growth with an equal volume of wood. Obviously this poses a terrible problem.



It is, however, a problem with a solution. If the forest is managed, it can be made to grow faster and produce bigger trees. Chart IV shows that by planting seedlings and spacing them to give each plant sunshine and nutrients, the new growth can grow as quickly as the virgin growth did. If we thin the growing trees after several years, the growth figures rise again. If we add fertilizers, we see yet more improvement until, with all these treatments, the forest is growing up to one hundred percent more marketable timber than it did before the first harvest.⁽¹²⁾



Unfortunately, forest regeneration programs cost money. This year governments and industry will spend about half the money required to stimulate replacement forests. The rest of the harvested land will be effectively lost as forest land in the useful future.

PESTS AND INSECTS

In addition to the depletion of the forests by man, nature too attacks them. Every year pests and insects destroy thousands of trees.

The most voracious of these, the spruce budworm, at one time had defoliated nearly 75 million hectares (an area almost as large as Ontario and 14 times the size of Nova Scotia).⁽¹³⁾

Not all the trees in this area died of course, but many did and many others' growth was permanently slowed by the attacks upon them. Defoliated or dying forests are severe fire dangers, while wind will knock down many thousands of trees that might otherwise have been logged immediately for profit. The budworm is only one of dozens of exotically named creatures attacking the forests – the pine beetle, hemlock looper, tent caterpillar . . . their combined assault costs millions, perhaps billions, in annual losses.

From an economic point of view the presence of the budworm and similar pests affecting other species creates uncertainty among forest managers and businesses. A management program nurtured carefully for several decades can suddenly become a forest graveyard when pests invade.

FIRE

Fire itself is a second great destroyer of forests. With our huge land area, we have never provided adequate protection to the resource and we have paid the price – in recent years fires have destroyed about six times as much forest area as we harvest. One fire in 1980 destroyed an estimated 75 million trees in Western Ontario.⁽¹⁴⁾ Advanced technology is becoming available to detect and suppress forest fires, but the Canadian effort will have to be massive and expensive.

In the past the federal government took its fire protection duties lightly. Even though it has responsibility for the whole of the Northwest Territories and Yukon and all Indian reserves, the remoteness of these forests made their loss seem irrelevant, while provincial failure to protect the forest was clearly not the Federal Government's problem. In 1979 there were 380 fires in the Northwest Territories; one of them became more than 100 miles long and forty miles wide and burned from June to October.⁽¹⁵⁾

However, in 1980, the Canadian Forest Congress, in a paper detailing reductions in the forest base, was warned, "the emerging shortages in both sawlogs and pulp wood make it abundantly clear that the country cannot afford to lose even the less attractive forests that are not being harvested because of remoteness or other reasons".⁽¹⁶⁾

Simultaneously, Native protests from the north, where fires in noncritical areas were allowed to burn freely in 1979, destroying millions of acres of forest, traplines, fishing regions and wildlife habitat, became clamorous. Policy assumptions began slowly to change.⁽¹⁷⁾ But it is a long way from changing attitudes to effective forest protection.

ACID RAIN

In the last half decade, a new phenomenon has been added to our forestry concerns: acid precipitation (rain, snow, fog) poses a potential threat to forests all over the world. In Germany, some have estimated that over one million hectares (4 million acres) will be affected this year. If true, this would represent 16% of that nation's forest reserve and a crucial element in her tourism industry.⁽¹⁸⁾ German newspapers refer to the issue as the "Waldabsterben" – the dying forest.

In 1982, Professor Hubert Vogelmann detailed the deterioration of a magnificent conifer stand on a high hill in Vermont called Camel's Hump. His report made dramatic reading:

"Today the red spruces are dead or dying and some firs look sick. Grey skeletons of trees, their branches devoid of needles, are everywhere in the forest. Trees young and old are dead, and most of those still alive bear brown needles and have unhealthy looking crowns . . . The forest looks as if it was struck by a hurricane." (19)

Despite many spectacular accounts of this type in European and North American media, forest scientists remain unsure of the real effect of air-borne pollutants on the forest. The best Canadian experts on this subject have found many questionable assertions in descriptions of both the German and American situations.

However, the implications of acid precipitation, if verified, would be so serious that despite skepticism directed at overly dramatic press accounts, it is obvious that this phenomenon deserves extremely careful attention.

OTHER LOSSES

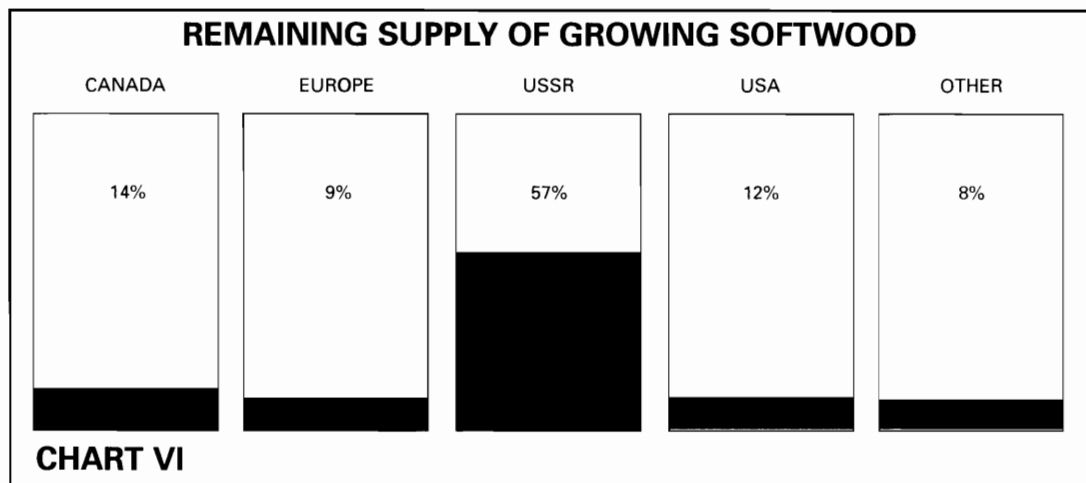
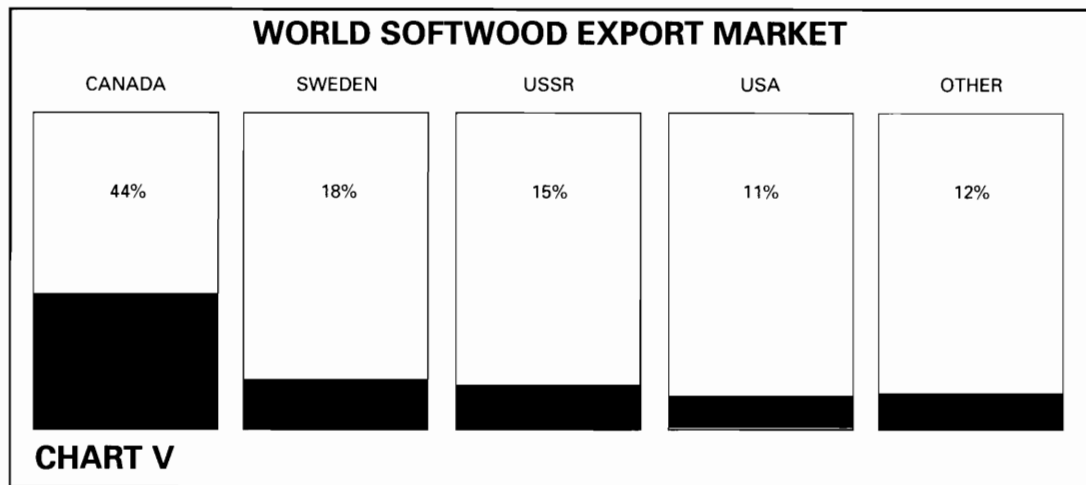
In addition to the damage done to our forests every year by pests, disease, acid precipitation, fire and unregenerated harvesting, we must add the constant encroachment of mankind through roads, hydro lines, mining, urban and agricultural expansion. The creation of wildlife reserves, provincial parks and national parks further limits the land-base available for forestry.

Driven out of those areas close to mills by shortages caused by any or all of the factors we have noted, the forest companies find themselves cutting in increasingly remote areas and even on mountain slopes. The difficult terrain necessitates the use of helicopters to carry the logs out. Stripped of extra weight, the Sikorski F-61 will lift 4 tons of wood but it will cost the company between \$1,200 and \$2,500 an hour to do it. The cost of cutting and transport drives the price of the wood products upward, a process which could put Canada, with only 14% of the world's supply of softwoods, at a competitive disadvantage (see Chart VI).

Today almost half the telephone poles used in eastern Canada are imported. The Canadian Pacific Railway will import about half its railway ties from the United States. this year.⁽²⁰⁾ The situation is ludicrous for a nation covered with trees.

Our success in the past one hundred and fifty years has been based on the exploitation of a natural resource few countries could equal. Foresters exploring Canada found the white pine of Ontario growing 250 feet tall (Parliament Hill's Peace Tower is just fifty feet taller) and six feet across the base. They found the Douglas fir, in the lush forests of British Columbia, so large that an entire home could be built from a single tree. For an emerging nation this resource was a gift from God. The fur traders had explored the land, but it was the foresters who claimed it from the wilderness.

But today, other nations are challenging our leadership position. We not only need wood, we need inexpensive, accessible wood.



As the old-growth forests are depleted, we will turn to smaller, second growth trees. Unfortunately, many mills in Canada are not mechanically equipped to deal with narrow trees, with bent or twisted trees, or with the different species now becoming economically viable. To bring these mills up-to-date will require extensive upgrading and modernization. Expensive at any time, such an overhaul becomes an act of faith when the mills involved are miles away from the nearest marketable timber stands.

Moreover, the modernization of labour-intensive industry will mean some reductions and changes to the labour force. Massive dislocation will soon become a

major factor in forest policy if we do not manage the resource and increase our harvest. This area will require planning and eventually well-funded programs for retraining and other assistance.⁽²¹⁾

The question of competition is a crucial one. Not only can we not afford to inflate the cost of our product, we cannot afford to let other nations outstrip us in forest research and innovation. As noted in the introduction of this paper, Canada has only a fraction of the trained foresters and forest scientists needed to match the silviculture efforts of our chief competitors. Dozens, hundreds of forest graduates are working in other fields, or in the United States, making the discoveries that further the competitive gap between us and them.

Canada has only 4,400 foresters, about one tenth of the number employed in the United States. We have six forestry schools, the United States has 40.

A single U.S. company spends more on research than the entire budget of the Canadian Forestry Service.⁽²²⁾ It should be remembered that forest research is geography-specific. Most cannot be purchased from other nations.

Worse still is the attitude of the Liberal Government. While acknowledging that we do not, and will not, have sufficient numbers of trained professionals to carry out the programs we have committed the nation to, it has taken only tiny steps towards curing the problem. Despite recent initiatives, we cannot yet be content that Canada is educating the necessary forestry experts to implement programs in the future, even though we know already how many we will need and how many we already have.

WORLD CONSUMPTION OF SOFTWOOD TO YEAR 2000

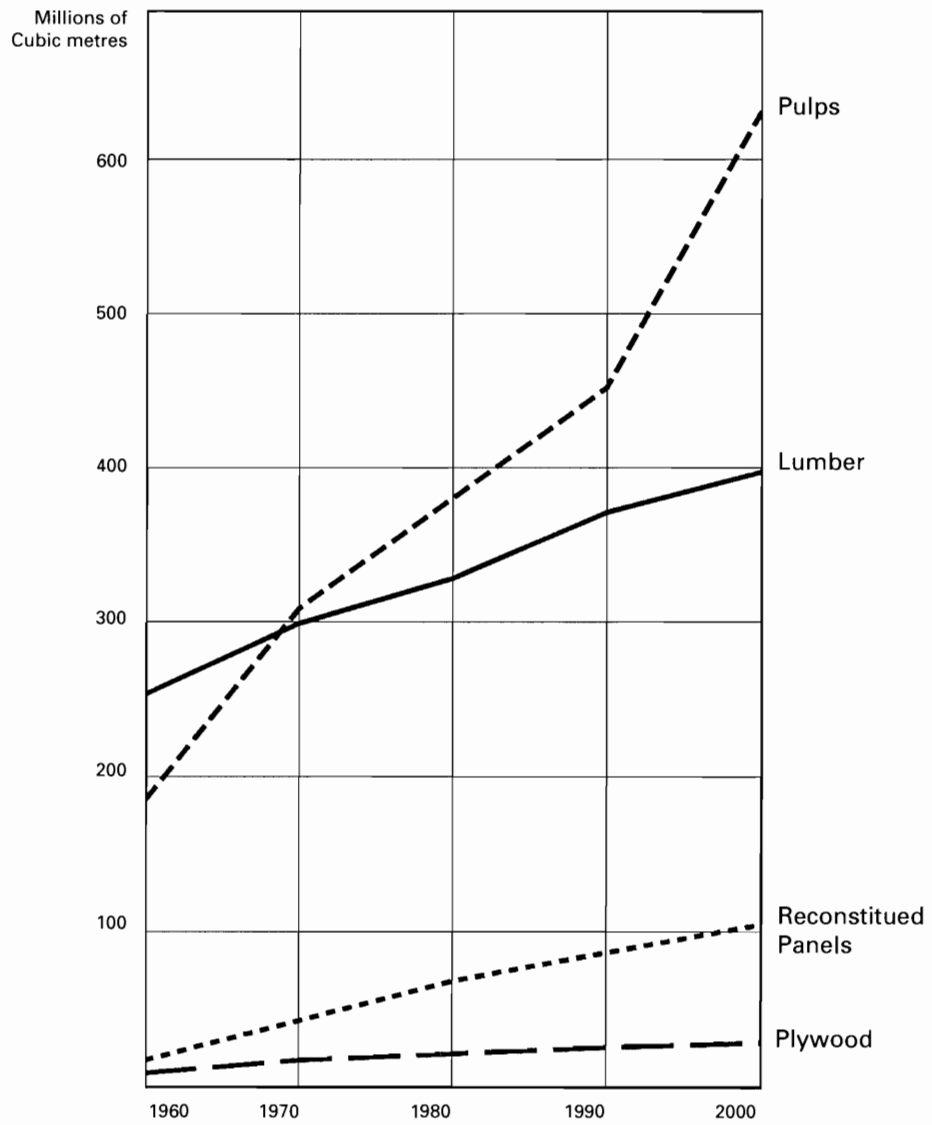


CHART VII

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Why Bother?

It is possible that some Canadians, noting the many problems facing the forest sector, might counsel a policy of retreat, allowing forestry to fade as the resource is depleted and costs rise. In the jargon of the day, forestry would be termed a "sunset" industry. But writing off our leading industry would not only be a traumatic economic failure, it would be a mistake in simple business common sense.

Thus far we have noted the challenges facing the industry and the resource. But there is a brilliant future available as well. The Food and Agriculture Organization of the United Nations has calculated that demand for wood products will rise by approximately 2% per annum from now until the turn of the century.⁽²³⁾ Canada is presently responsible for about 44% of all softwood exports in the world and stands to benefit dramatically by increasing demand.

As forestry research continues, the number of uses for forest products also grows. Today, forest products go into paint, soap, plastics, rayon, explosives, cleaning fluids, photography film, shatterproof glass, soil conditioners, hospital gowns . . . and hundreds of other products. Soon animal and human foods will use forest products. Our automobiles may run on fuels taken from the forests.

Meanwhile, traditional uses for forest goods continue to expand. Energy prices have caused an increase in the number of wood burning homes.⁽²⁴⁾ Christmas tree production and marketing is a growth industry. Genetic research has produced "supertrees" which grow with amazing speed, and may be more disease and pest resistant; soon Canada may be selling these trees to other nations.

While all this is going on – and the New York Times is plugging away, consuming 276,000-plus tonnes annually (that's over 4 million trees)⁽²⁵⁾ – computers are spewing hundreds of thousands of miles of printout paper.

In short, the forest industry is a growth market, with new products and customers each year. It is nothing like a sunset industry.

In September 1981, the National Forestry Conference in Banff, Alberta, outlined the steps necessary to achieve a 40% increase in Canadian production by the year 2000. Those steps included:

- **Increasing the area replanted annually from 200,000 hectares (500,000 acres) to 500,000 hectares (1.2 million acres).**
- **Increasing the area treated to stimulate growth (thinning, fertilizing, etc.) from 100,000 hectares (247,000 acres) to 400,000 hectares (988,000 acres) annually.**
- **Reducing losses to fire, insects and disease by 15% by 1990.**

The price tag on such a program was estimated then to be approximately \$1.1 billion (\$600 million for reforestation and silviculture and \$500 million for protection by the year 1987). But this enormous expense would be offset by the profits accruing to industry and government estimated to be:

- **100,000 to 300,000 new jobs supported by the sector.**
- **Increased sales of more than \$20 billion, and a 10-12-billion dollar increase in exports approximately doubling forestry's contribution to our balance of payments.**
- **Large but undefined increases in related industrial activity, i.e. transportation, services and supply, machinery, and manufacturing.**
- **Additional government taxes of approximately \$3 billion per annum.⁽²⁶⁾**

How many government programs can increase employment, increase tax revenue and stimulate private industry by these incredible figures?

The hidden advantages of action on this front include the possibility of employment in healthy outdoor work for our young people on a seasonal basis, protection of our forest heritage for recreational and wildlife functions, and a relief of the pressure on the shrinking wilderness by reclaiming lands already forested once instead of constantly expanding the areas of man's harvest.

The Role of Governments

To understand the Canadian forest scene, one must look at land ownership. Unlike the United States, where 60% of the land is privately owned, Canada is almost entirely publicly owned. The Federal Government owns about 40% of the nation's almost four million square miles, the provinces about 50% and private owners only 10%.

Within the provincial boundaries, the provinces own about 91% of the forest land, with the federal share reduced to only 1% and private land accounting for about 8%.⁽²⁷⁾

What do these figures prove? They demonstrate that the use of our national resources is immediately and unavoidably a political issue. The decisions are made by public servants, reporting to public representatives, mostly within provincial government structures. Since most of the federal government's Crown lands are located in relatively inhospitable lands north of 60°, the provinces are clearly the most significant actors in the forestry drama we are now witnessing.

Public ownership of the resource means that no one else can be blamed for neglecting our forest wealth. But forests grow slowly – a government or even a political career may come and go before it is clear that forests are being mismanaged. When we demand policies that will guarantee prosperity in sixty years time, we are asking those governments to do what democratic governments traditionally do not do well – plan for a time when the present legislators will be retired and off the scene. Only by making it a current political issue will sufficient pressure be applied to force creative governmental response.

Industry keeps up the pressure because every seedling planted today means a full grown tree added to the annual allowable cut the companies are permitted to make right away.⁽²⁸⁾ The public must add its voice, demanding better management, but also more consistent policies. We can't manage this resource in our spare time.

If legislators are unreliable managers (they are), and if governments do not demand the highest standards for work done on public lands (they don't), then it is time that individuals and corporations were granted longer responsibility for the lands they use, through extended tenures. This is not a new or radical suggestion; a farmer harvesting his ten-acre field can be relied upon to replace the harvest with a marketable crop which he will tend with care. Governments, controlling hundreds of thousands of public hectares, are often less prudent.⁽²⁹⁾

In Canada, an even more disturbing reality must be faced; with two levels of government and a massive industry all involved in programs and public debate, it is possible for the buck to be endlessly passed among them.

An example of this phenomenon occurred after the 1980 release of "Canada's Forests: Transition to Management", a paper by the Banff Forestry Conference. In that paper all parties agreed that a target figure of \$650 million should be reached in replanting and silviculture expenses.⁽³⁰⁾

In 1982, the federal government released "A Framework for Forest Renewal" in which it charted its proposed financial contribution.⁽³¹⁾ The paper proposed that federal contributions should increase from \$110 million (37% of the \$300 million presently spent by all parties) to \$130 million (20% of the agreed target figure). In other words, the federal government would increase its contribution by 15%, as long as the other two partners (one of which it will eventually tax) increase their contribution by 63%.

The federal justification for this sort of measure was summed up with frustration by the Honourable John Fraser, former Minister of Environment:

"There is a view, I believe, shared by some bureaucrats and politicians, that the Federal Government has no legitimate role to play in forestry. The argument advanced to support this point of view is that because the forests belong to the provinces the federal government should not have to commit in time, personnel, or money, what the provinces should be doing."⁽³²⁾

Remember, the federal government's share of tax revenues produced by an expanded industry should be more than two billion dollars per annum by the turn of the century.

The argument quoted by Mr. Fraser will not serve to justify federal inactivity while that government is responsible for the overall health of the economy and when it profits so greatly from forest industry tax dollars.

The Federal Government's Forestry

The Federal Government's involvement with forestry has been long but sporadic. A Forestry Commission's report helped to establish the Canadian Forestry Service (CFS) in 1899, with responsibility for forests along the railways and for the Peace River districts of B.C. and Alberta. The expansion of the Service's responsibilities and initiatives over the years made Canada one of the world's leading forestry nations, with ongoing research, improved management and scientific data collection.⁽³³⁾

In 1960, the nation took a step forward with the creation of a Forest Ministry under the Government of John Diefenbaker. The debate in the House was enthusiastic. M.P. Stuart Fleming told his colleagues:

"This is something that has long been needed. If this Department is created, if there is imaginative leadership, and if it can bring about coordination of the best work being done in the provinces and industry to contribute to the general welfare of the forest industry of Canada, the benefits which will finally accrue to the people of Canada will be beyond measure."⁽³⁴⁾

The motion passed unanimously. It was the beginning of a "golden age" for federal forestry. Over the next six years the CFS led the national forestry effort. Joint agreements were signed with the provinces and administered with a minimum of jurisdictional infighting. A chain of federal forest laboratories and institutes provided a steady supply of research data, often produced by studies not related to immediate profit-oriented research.

In 1966 the forest effort reached its highwater mark and began a steady decline. In June of that year Forestry was merged with Rural Development as one department. In 1968 the federal/provincial agreements were discontinued. That year the Honourable Jack Davis was appointed Minister and under his direction the department, now merged into Fisheries and Forestry, was drastically cut. The Forest Economics Research Institute was closed. The top forestry official was now a Director-General. The department was soon absorbed by the Department of the Environment. Staff cutbacks had been large and painful.

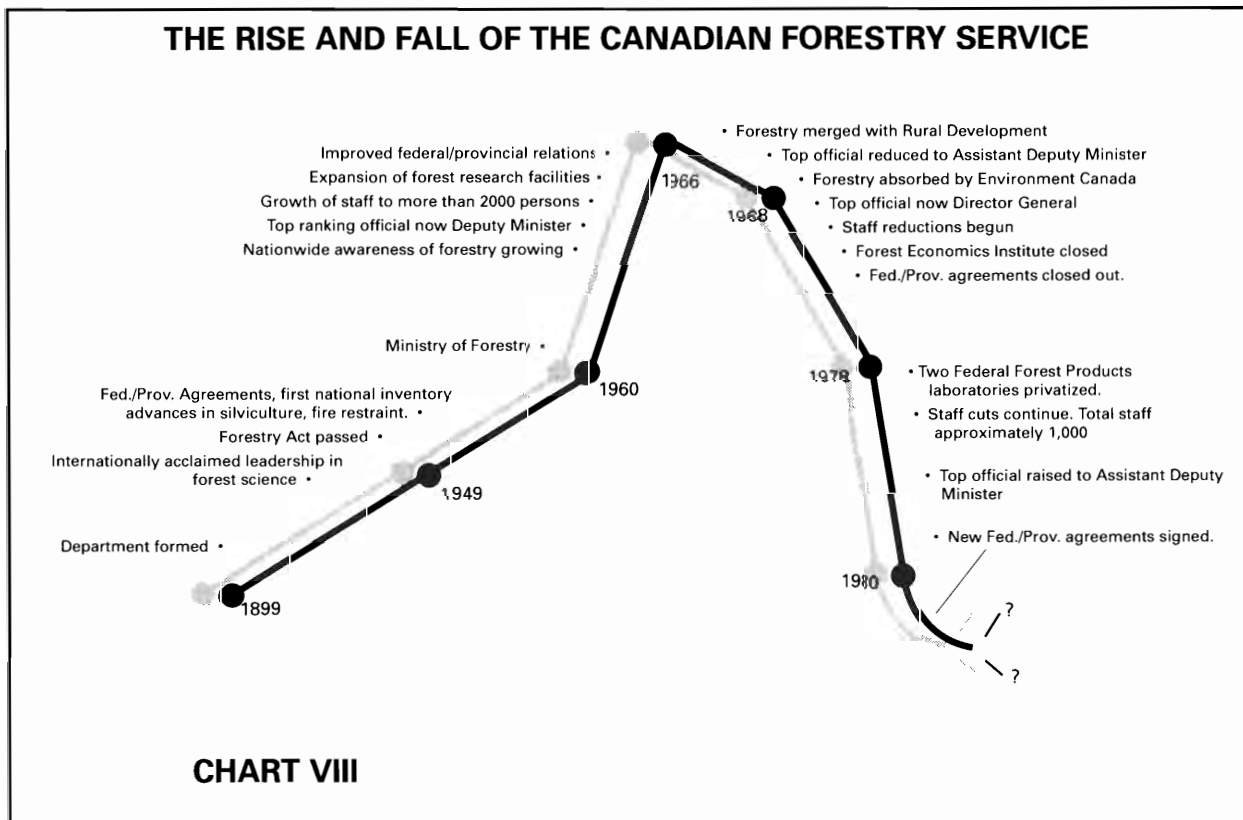
In the next five years the Government appointed three different ministers to the department. The Honourable Len Marchand inherited an even larger Ministry (in which forestry was a correspondingly smaller part) from his predecessor the Honourable Romeo Leblanc and took steps to reduce the forest effort still further. The two federal forest products laboratories were scheduled to be privatized in 1978 and the Petawawa Forest Experiment Station was slated for closure. Public outcry led to a compromise – the Petawawa National Forestry Institute was established to absorb the Experimental Station as well as the Forest Management and Forest Fire Research

Institutes. Meanwhile, the total staff of the CFS was cut in half, and the Service's capacity to recruit new staff was diminished almost to zero.

By 1979 the federal forestry role had become so diffused that of \$196.1 million it spent on forestry, only \$41 million (less than one quarter) passed through the CFS.(35)

Since those bleak years the federal effort has improved slightly. The head of the CFS is now an Assistant Deputy Minister, and a variety of new programs have been initiated. But new agreements have been signed with only two of the provinces. Improved funding is being made available to the forestry schools. In effect, we have wasted fifteen years.

And despite the recent successes of the department, bureaucratic juggling continues. Forestry is a loose shirt-tail on the Department of the Environment, which is not the correct ministry to support and stimulate such a huge labour-intensive industry. When the top official in forestry speaks to the Deputy Minister, he shares his access with six other Assistant Deputy Ministers.(36) His access to the Minister is extremely rare.



Before there will be effective federal action there must be a higher profile for forestry in Parliament. There must be a demand from the forest community for better access to the decision-making councils of government and more strength in the federal forestry agency.

Relations between the federal and provincial governments must be improved. Amicable relations will ensure team efforts which are more productive in sum than the scattered results of independent approaches. However, even distant relations do not rule out federal action on a number of fronts – in fact poor relations create a greater incumbancy.

Some of the main federal initiatives should be:

- **Ensuring proper inventory, silviculture and management plans for federal crown lands. Negotiating new agreements with all the provinces.**
- **Intensive effort on Crown lands and in cooperation with the provinces to cut Canada's annual fire loss.**
- **Stimulation of private woodlot development, and assistance in product research and marketing for private woodlots.**
- **Public information and awareness. Creation of public view of some forest as farmland.**
- **Leadership on controversial issues of use of pesticides in forest management, rationalization of provincial and federal guidelines to ensure consistency.**
- **Support for Canada's forest schools and their research. Development of a professional forestry community.**
- **International marketing assistance.**
- **Development of forest potential on Indian reserves, for the benefit of the Native peoples, who will take advantage of employment opportunities and independent sources of wealth.**
- **Improved support for federal research labs and institutes.**

INTENSIVE FEDERAL FOREST MANAGEMENT

The record shows that the intensification of forest management has often occurred only after the federal government has intervened with incentives and cost-shared programs. We have only to recall the passage of the Canada Forestry Act in 1949 which provided for agreements with any province for inventories, reforestation, silvicultural treatments, fire protection, research and related activity. Similar powers were included in the Department of Forestry Act of 1960.

The regeneration after harvesting of a new forest crop, its subsequent tending, and the rehabilitation of the backlog of neglected land are demanding concerted action today. In 1979, the Canadian Council of Resource and Environment Ministers, lead by the Honourable John Fraser, stated that responsibility for forest management should be shared among those who benefit, namely, the Federal and provincial governments and industry.

The task is enormous and it will require the combined efforts of all three players. There is now a clear-cut consensus stemming from the Canadian Forest Congress in 1980 and the Banff Forestry Conference in 1981.

The federal government must begin by putting its own house in order. Federal forest lands have the poorest inventories, the worst neglect of regeneration, and virtually no protection from fire and insects.

FIRE PROTECTION

The problem of forest fires has been briefly discussed earlier in this paper. The terrible losses experienced annually can be reduced through aggressive action and cooperation between the levels of government.

In 1982 the Interagency Fire Centre was established at Winnipeg to serve as the nerve centre of the national effort to restrict fire loss. But with a budget of only a fraction of the value of the forests burned every year, the centre cannot be expected to serve a valuable role as yet. A federal forestry spokesman recently said: "It doesn't really exist yet".

A second program of more immediate value is the federal/provincial agreement to purchase a fleet of Canadair CL-215 waterbombers, on a matching purchase ratio. At time of writing, this program had ordered 22 of the "aerial firetrucks" desperately needed to augment our aging fleet. However, the purchase program demonstrated the danger in allowing federal/provincial relations to sour – British Columbia has refused to purchase the planes, arguing its privately owned aircraft are more effective for its needs and that there was not adequate consultation about the program before it was announced.

Not since Nero has there been so much fiddling, while so much burned.

In addition to the water bombers, Canada needs high altitude aircraft with infra-red scanning equipment to detect fires as soon as they start. Extraordinary work is being done in this area around the world today, but it is expensive and more shared-cost programs will be needed if we are to have the technology available here in Canada.

In the Northwest Territories and the Yukon, the federal government's policy of allowing wildfires to go unchecked until they reach "priority" areas near habitation is one forced on it by the number of fires annually and the vast area to be covered.

But as new technology and monies become available, this policy must be reviewed. Fires are most easily fought when they are small. Moreover, the empty forests of the north are the workplace of Native Canadians and have great potential as recreational sites in the growing international tourist trade. The Native Canadians were once nomads; today they stay in the same area and it imposes hardship for them to follow the wildlife and fish that fires drive away. Lamentably the tourists can leave, and do.

PRIVATE WOODLOTS

One of the key areas in Canada's forestry future are the private woodlots in every province.

Though we tend to concentrate on the problems of larger areas of provincially owned land, we must recognize that privately owned woodlots offer perhaps the greatest potential for development with the least expense or difficulty.

Privately owned timber land accounts for only 8% of our country's total area, yet in eastern and central Canada it already supplies more than 20% of the annual timber harvest.⁽³⁷⁾ From the federal and industry points of view, the proximity of most private lands to access roads, the closer supervision of private forests and woodlots and the "free" labour provided by the owner make this form of supply highly desirable.

In addition to these advantages, most private land has already been removed from the wilderness, and is therefore not regarded by the general public as a part of the "wilderness heritage" which serves a variety of uses on provincial lands.

Main roles for the federal government would include promotion of the small woodlot as an economic reality for farmers and other landowners; economic analysis of the markets for maple syrup, firewood, mixed species products, oils and hardwoods and Christmas trees.

Research to refine production techniques for each of these purposes would be a responsibility of both the government and industry production research institutes. Both would be expected to study the technology by which neglected woodlots or unused farm land could be reclaimed for forestry in the quickest, most efficient way. Both would have an interest in providing ongoing support, information and assistance to woodlot operators.(38)

Experts calculate that perhaps 40 million hectares (100 million acres) in Canada are idle or submarginal farm land ⁽³⁹⁾ (that's an area half the size of Ontario, or five times New Brunswick). Land that is inappropriate for agriculture may be ideal for another crop – trees. Only a country as large as Canada could afford this extraordinary waste – we can be legitimately considered one of the world's least developed nations – but economic hardships and foreign competition are fast making this waste a national disgrace.

Once operating models of woodlots are publicized and their profitability assured, attention should be turned to those unused, marginal or unimproved farm lands in Canada. There are few places in the nation where these lands are not suitable for woodlot development, and they are more frequently accessible than much of the forest presently being cut by forest industries.

An exciting model of effective small woodlot operations is available to us in the United States, where 48,000 landowners participate in the American Tree Farm Program, farming about 84,000 million acres (34 million hectares).

The American program is based on the voluntary labour of 10,000 foresters who encourage landowners in their areas to convert land to forestry, and assist them in management once the decision is made. Each woodlot is registered with the American Forestry Institute, which runs a popular competition each year with the winner receiving his award from the President of the United States.

The American system developed from a historical reality – private ownership accounts for 60% of the forest land-base in the United States. Wood shortages could only be offset by private initiative; and only if it was recognized as a key industrial issue. Thus support from the government, while not expensive, has been crucial.

The American system has obvious advantages we should try to incorporate into the Canadian scene.

It is culturally and environmentally benign. By transferring land from poor farm use to productive forest use the landowner harms no one, and there is no major slump in farm labour, or farm equipment sales. No new land needs to be seized from other purposes. There is no increase in pollutants. Landowners may substantially increase their revenues. Wildlife and birds may find forest stands to be better homes than agricultural lands.

It is inexpensive. The forest community (foresters, landowners, administrators), run the program. No large federal bureaucracy is needed. The forest industry supports the Institute, which puts about one million dollars into the program annually.⁽⁴⁰⁾

Ontario and Nova Scotia also have small woodlot stimulation programs in which the landowner agrees to protect a stand, and in most cases can get assistance with work that must be done on the land. For farmers with woodlots, such a program is a valuable opportunity, particularly, as with the Ontario model, because assistance in marketing their product is also available. Ontario offers tax rebates to landowners who are managing a forest lot: the rebate is 50% of the municipal tax levied on the woodlot. Ontario forest owners may also receive assistance in planting government-supplied seedlings and in selecting species. Costs are minimal.

The Nova Scotia program is jointly operated by the federal/provincial governments, with provincial foresters doing most of the field work. By agreement, the federal support is directed on small woodlot operators, while provincial support is aimed at larger group organizations.⁽⁴¹⁾

PUBLIC AWARENESS – SEEING THE FOREST AS FARMLAND

A visitor to Canada, aware of the vital role played by forestry in our national economy and the dependence of a million Canadians on forestry for employment and security, would be excused for imagining that forest issues commanded the front pages on our newspapers and captured the time and talents of our finest administrators and political leaders.

The visitor would be wrong, and would have every right to be shocked by Canadian ignorance and neglect. Forestry issues, crucial to the nation as a whole, are generally noticed only in regional media.

In 1979 the nation's resource and environment ministers commented, "Most Canadians . . . have little or no appreciation of the importance of the resource to Canada's well-being. In short, there is no effective forestry constituency in the country. This is a serious lack and needs correction. Governments and industry must give a high priority to developing in Canadians a clear understanding of what the resource means to Canada . . ." ⁽⁴²⁾

Despite the obvious truth of these comments, not enough has been done since that conference to raise the profile of the resource or the industry dependent upon it. Today the major federal department dealing with forestry – the Canadian Forestry Service – has only a small budget for general public information. Most of its budget is spent on technical publications ("Eastern dwarf mistletoe on black spruce in Newfoundland", "Intra specific competition among grubs") which, strangely enough, have somehow failed to capture the attention of the general public.

The public attitudes which must be dealt with are numerous and quite complex. Among them:

"Forestry is a colonial occupation, characteristic of rural, unsophisticated economies. The high technology fields provide a more satisfactory self-image for a nation obsessed with its alleged inferiorities."

Answer: The public should be aware of the growth potential of the industry, of advanced genetic study and hybrid research to produce "super trees". It should be shown the elaborate machinery of timber and pulp processing plants. It can be seen as just as modern an industry as any in the country.

"Forestry is an "upstream" occupation, which passes on cheap raw materials to other countries who refine it into expensive products."

Answer: Forestry is one of Canada's most developed "downstream" industries. Most of the raw material that leaves the country has no value added to it before being put to its final use – it is never "refined".

"Forestry is another area where foreign countries exploit our cheap natural resources. We're trading money now for a resource that will soon be gone."

Answer: Not much of the forest industry is foreign owned. About 70% of the pulp and paper industry is Canadian owned. Sawmills and other wood producers are about 80% Canadian owned. This compares favourably with manufacturing, which is less than 50% Canadian owned. In any case, there is no need for the resource to be used up. Wise management can make it last into perpetuity.

"Forest companies aren't interested in preserving the wilderness. They rape the land and leave it barren. A managed forest is lost to nature and nature lovers."

Answer: Harvesting a forest is like harvesting a field of corn. Either both, or neither, are "rapes". The replanting of sites is much more common now than it was twenty years ago. It has to become more common still. A managed forest can be home to wildlife, fish and birds. With creative planning it could also be valuable for human recreational purposes. Good forestry is, by definition, good environmental management.

We must make people realize that effective management is the only way to *prevent* the rape of the resource. The overwhelming weight of thousands of jobs and billions of dollars will not go away. If the wood supply runs out, that weight will be applied to provincial and federal governments and, through them, to game preserves, national parks and provincial parks. Legislators will be forced to choose *between* the social/spiritual benefits of nature and the immediate needs of their constituents.

Careful forest management can ensure employment and wealth through an environmentally benign process of growth, harvest and regeneration. Failure to inform Canadians of this possibility will mean – without doubt – increased conflict between conservationists and industry, higher prices for increasingly scarce timber, and spontaneous, poorly planned decisions to conserve or exploit the remaining forests based on regional public pressures. Public comprehension is the first step in the development of an advanced public policy. Without it, the entire effort for sophisticated forest management will fail.

THE FOREST AS FARMLAND -- A NOTE ON PUBLIC ATTITUDES

Comparisons between farm techniques and forestry are not always appropriate, but the two industries are certainly more similar than they are different. Not so the public attitudes towards them, which differ wildly. Farmers are generally seen as the "salt of the earth" in our society, holders of a certain social tradition, living embodiments of national values. Their work is socially beneficial; the common industrial unit, at least in the public mind, is a family farm.

Foresters, on the other hand, are more likely to be seen as exploiters, raping the land and despoiling the wilderness. The industrial unit is commonly imagined to be a corporation. The cutting of a corn field is thought of as a "bountiful harvest" – the cutting of a forest is seen as exploitation.

The destruction of a farm crop by nature – insects, weather, – is deplored, fought. The destruction of a forest by pests is seen as a natural event, a cyclical pattern characteristic of wilderness.

These inconsistent reactions extend to every area of forest activity, from harvesting to site preparation, species selection, planting, competition suppression and crop protection. We must make the forestry/farmland comparison frequently and forcefully.

When the crop is taken in the fall, the farmer doesn't leave the land and wander off to find a new field; he carefully tends the site and prepares it for the next season.

To suggest to the farmer that he sit back and wait for nature to replant his corn or barley would be ludicrous. He would end up with a mixture of vegetation, including weeds and worthless growth that would retard the growth of plants he could sell.

Nature's seeding would take years, leaving him with a field of various-aged plants so that no matter when he harvested, he would always get many plants before they matured, and others would have died or have succumbed to wind and weather.

No farmer could survive using these techniques – and no farmer tries. Instead the farmer selects the crop he wants, after considering the weather, soil composition, markets and post-harvest peculiarities.

A few yards from our farmer's field may be a forest, probably owned by the provincial government. The government issues timber rights to a forest company, which harvests the trees. At this point the difference between forester and farmer becomes evident.

While the farmer carefully discs and harrows his field, the forest lies fallow. While the farmer is spraying herbicides to kill the weeds, the forest is choked with fast growing brush and non-commercial hardwood species, which replace the softwood crop.

When the farmer detects pests or disease in his crops, he sprays them, aware that by spraying he will not eradicate the pest, but remains determined that the damage be controlled. Meanwhile the forest may be attacked by equally voracious pests and it will be left to its fate. Repeated defoliation will kill the trees, which will then collapse in windstorms. The forest will be choked with dead and dying trees, unattractive to forest companies, therefore doing nothing to repair the damage. As an economic unit, the forest is out of action for decades.

By the time a forest company returns to the stand to harvest it for a second time, the farmer has harvested his field sixty times and has passed on, leaving his son to harvest the field another sixty times.

Obviously, as an economic unit, the forest lot is being used in a less productive and useful way than the farmer's field. Yet the product is also of crucial importance to our society. We have to do better.

INSECTICIDES, HERBICIDES AND FERTILIZERS

Probably no area of forest activity causes so much discussion and public reaction as the use of chemicals, particularly those applied with aerial sprays. Beginning with the publication of Rachel Carson's famous "Silent Spring" and continuing through the '60s and '70s, there has been a drumbeat of protest and controversy.

In 1983 landowners in Nova Scotia went to court to demand a permanent injunction against aerial spraying of herbicides in their area – so concerned were they that they undertook the case despite the financial risk of a loss that might force them into bankruptcy.

There is a wide gap between the opinions of scientists who deal with the chemicals and the population at large. The latter, alarmed by earlier experiences with DDT and Agent Orange, makes little distinction between one type of chemical and another.

Ironically, the general population does distinguish between uses of chemicals – acquiescing to the use of a wide variety of herbicides and fertilizers by farmers, but protesting their use by foresters.

So one-sided has the public concern about the chemical sprays become that the gap between farm and forest uses has become remarkably wide. In 1982 according to CFS estimate, 36 million hectares (89 million acres) of farm land were sprayed with 2,4-D, while only 70,000 hectares (173,000 acres) of forest land was treated with the chemical. About 80% of all farm land in Canada is treated annually with some chemical, while only about .03% of Canada's forest lands are treated with pesticides.⁽⁴³⁾

Though farm spraying is often done by tractor-pulled tank, and therefore seems more controlled, it is also done by individuals who are not required to have professional training or to take adequate safety precautions. Forest spraying is done by trained crews and their precautions are far more advanced than those of most farmers.

Protests over forest spraying tend to be on two fronts. First, specific chemicals with disputed effects are identified and questions about their use raised. Obviously this is a healthy exercise. Corporations in search of profits have made mistakes in the past, allowing warnings to go unnoticed because the implications would be too expensive, regardless of the human beings concerned. Citizens groups, scientists and doctors have a right to challenge their decisions.

However, there is another theme in anti-spray literature that is also a factor, relating to the concept of the forest as wilderness as we have discussed previously. Advocates of this attitude advise that forest pests are cyclical and if left alone, will die when the food supply runs out or they develop diseases. They note that spraying to kill most (but rarely all) the pests merely sustains their attack, as the food supply is available to a smaller population.⁽⁴⁴⁾

As we have stated before, the use of the forest as farmland requires that nature be helped along by mankind's husbandry – spacing the trees, thinning them, protecting them and fertilizing them. This is a crop. It must be tended. If farmers can apply their chemicals directly to foodstuffs such as corn, tomatoes and potatoes, foresters must be allowed to apply the same chemicals in remote areas to materials most humans never touch.

New Brunswick Member of Parliament, Fred McCain, effectively makes the point:

"If one wishes to measure the success of the spray program in terms of the elimination of the budworm, and in those terms only, then one can properly say that it has been virtually a total failure. If, however, one wishes to assume this position, then may I suggest that they review the meals that they have eaten in the past week? Virtually every item on the

menu today is available in quantities which can satisfy our culinary desires only because science has been able to develop pesticide controls along with treatments for bacterial and viral infection in both plants and animals."⁽⁴⁵⁾

We must never stop the study of chemicals. We should promote the non-chemical materials such as the biological control organism *Bacillus thuringiensis* (Bt) to make them more effective and more economical.⁽⁴⁶⁾

But until these measures are available, we must use the sprays that have proved so useful in the defense of agriculture for another equally valuable crop.

FORESTRY SCHOOLS – THE BRAINPOWER GAP

Early in this paper the need for more qualified forest experts was raised and some attention paid to the "brainpower" gap opening between Canada and her competitors. The most advanced forest renewal programs will be useless if we do not have the manpower to execute those plans and compete for the research breakthroughs that will determine which nations will lead the world's forest revolution.

An estimate quoted earlier put the number of on-site professional foresters needed for advanced forest management at between 4,500 and 8,000, with a working estimate of 6,500.⁽⁴⁷⁾ If we assume that our forestry needs are urgent and look forward to the earliest time we could have new Canadian-educated foresters in the field, we realize to our dismay that a forest technician may require a two or three year degree, a Master of Forestry four or five and a Phd six or more. We recognize that advanced forest research will only be done by these latter categories, and only in excellent laboratories with adequate research funding.

Moreover, we find that Canada produces about 10 Phds and 60 Masters of Forestry annually and 40% leave the country to work elsewhere.⁽⁴⁸⁾ Not only are we not producing enough expert manpower; we are even falling short of experts to teach in the universities and thus our "brainpower" gap is growing ever larger.

Despite recent federal initiatives – among them a \$15.5 million three-year program for forestry training and an additional \$5.5 million for forest research – the national picture is a queer mixture of rhetorical commitment and financial hesitancy, of localized support and overall restraint. Lack of coordination among governments is a severe problem, as is inconsistency in federal funding, and the lack of a national forest strategy with programs designed to achieve delineated targets.

At the Université Laval in Quebec, the budget for the School of Forestry and Land Surveying has been cut significantly in recent years. Undergraduate enrollment has suffered. In Ontario, the government has been supportive of research

but not of basic forest programs needed to produce students qualified to do the research. The province's two forestry schools have significantly less per-student operating revenue than other schools across the country.

In British Columbia, where the federal government is spending \$15 million on a pulp and paper research building, the forestry school suffers space constraints and can offer enrollment to only a small percentage of the students that the province will need in a decade's time. Forestry observers there regard the growing backlog of unregenerated land as the greatest priority, but there is a recognition that basic silvicultural training is inadequate.

"We have very few native-born silviculturalists. It's just appalling", Associate Dean Peter Murphy of the University of Alberta told the *Globe & Mail*.⁽⁴⁹⁾

The federal government offers a summer training program for approximately 300 forestry students annually, which is recognized as a useful apprenticeship and praised by a number of spokesmen. But at least one academic has warned that the wages offered are not competitive with industry and thus the finest students are not inclined to select the CFS program. An excellent program such as this should be a priority for funding.

Federal efforts in this area are hampered by the fact that the provinces have legal control over education. However, the reality of our past failures and the pressure of international competition forbid federal withdrawal from this vital concern. Perhaps reluctantly, but nevertheless inevitably, provincial and federal governments will have to combine their efforts to produce high quality manpower for the forest community.

INTERNATIONAL MARKETING

The forestry industries are overwhelmingly dependent on export trade sending abroad about 70% of the wood products manufactured in Canada. For this reason, support for foreign marketing is a concern of the federal government, directly related to its over-all responsibility for the health of the nation's economy.

The federal government starts with an advantage over industry and provincial governments given the extensive bureaucracy already in place to serve our national interests abroad. Reports on foreign markets, maintaining trade offices, organizing trade fairs and gathering information on emerging political developments are part of the duties of our foreign representatives. The needs of the forest industry should be a major consideration in these activities.

The other key role of the federal government on the international front is in support of free trade without protectionist trade barriers. A recent attempt by U.S. interests to impose a crippling tariff on Canadian lumber imports was defeated through the efforts of industry and government officials. Only the principals involved

can judge the effectiveness of the government representatives, but it should be noted that the industry has spent at least \$2 million to lobby against the tariff and such expenditures cannot be undertaken regularly.

The U.S. action was characterized by the unusual presence of two of the largest U.S. forest companies whose interests in the case was said by some forest spokespersons to be primarily revenge for "injustices" they suffered at the hands of a single Canadian province.

A cost data centre, jointly funded by industry and government, could be extremely important in keeping companies abreast of currency adjustments and other international price factors.⁽⁵⁰⁾ It would serve to provide reliable figures for use in negotiations of all sorts – whether between trading partners or labour/management.

INDIAN RESERVES

One of the most exciting programs available to the federal government is also one which could be immediately beneficial to the people involved.

Canada's Indian population numbers over 300,000, on 2,242 different reserves.⁽⁵¹⁾ These reserves comprise more than 10 million square miles of land (almost as big as Nova Scotia), much of it forested. Many millions of hectares have been claimed in addition to reserve land – in British Columbia alone between 4 and 6 million hectares (12 to 15 million acres) are presently under claim.

If these lands are placed under Indian control, there will be an opportunity for the federal government to initiate a useful and rewarding program in cooperation with the Native people; one in which bands could find independent employment and exercise entrepreneurial skills in developing Indian-owned businesses.

At present, the federal officials responsible for reserve land are employed by the Department of Indian Affairs and Northern Development. They are not qualified to do the basic preparatory work necessary to make reserve forest management a reality. If skilled manpower was active on the reserves, preparing inventories, analyzing the soils and reviewing market possibilities, management programs could be available for band scrutiny within a relatively short time.

By careful preparation, and assuming acceptable natural conditions, a band could be in a position to develop a continuous rotation of harvesting, site preparation and replanting. Bands would have assured income produced through their own labour. Individual Indians would have an opportunity to work for themselves in their home regions.

Some work has begun on this scheme, under an agreement between Environment Canada and the Department of Indian Affairs and Northern Development. It

should be expanded and its potential examined with the Native leadership. The provincial governments need not be involved; this is an opportunity for the federal government to act with independent resolution to correct the shocking neglect of federal lands and take an important step to improve the opportunities for Native Canadians as well.

SUPPORT FOR FEDERAL RESEARCH LABORATORIES AND INSTITUTES

The Canadian Forestry Service has a nation-wide structure in place through which it could contribute much more effectively to the national forestry effort if proper funding and support were available.

The federal structure includes six regional centres whose primary responsibilities are for the concerns of the areas in which they are located, though important data produced by one centre is naturally available to all.

These centres are Pacific Forest Research Centre – Vancouver; Northern Forest Research Centre – Edmonton; Great Lakes Forest Research Centre – Sault Ste. Marie; Laurentian Forest Research Centre – Sainte Foy; Maritimes Forest Research Centre – Fredericton; and the Newfoundland Forest Research Centre – St. John's.

Annual budgets for these centres average between \$4 and \$6 million, with staff sizes ranging between 90 and 200 person-years.

In addition, the federal government maintains two forestry institutes, the Petawawa National Forestry Institute at Chalk River and the Forest Pest Management Institute in Sault Ste. Marie. These two organizations are responsible for programs of national importance and application. Both centres have staff numbering approximately 100 person-years. Expenditures for the Chalk River Institute in 1981/82 were just over \$4 million, Sault Ste. Marie's budget for the same period was \$3.2 million.⁽⁵²⁾

There is no evidence that the personnel manning these centres is anything but fully qualified and capable of important work. However, persistent reports indicate that morale is often low, and initiatives frequently frustrated by lack of funding support. In addition, the radical curtailment of the CFS during the 1970s has damaged the Service's capacity to recruit top-quality personnel because of lack of confidence.

One organization no longer part of the CFS but nonetheless important to the forestry effort is Forintek Canada. Born on the campus of McGill University in 1913 as the Eastern Forest Products Laboratory, the nation's forest products research effort became national in 1918 with the opening of the Western Forest Products Laboratory. Both facilities were brought under the jurisdiction of the federal Department of Forests in 1960, and returned to the private sector in 1979 as Forintek. A three-sided financial structure was established with revenue coming from provincial, federal, and industrial sources.

The new company has had a difficult adjustment in its first years, attempting to market research in the midst of a deep recession with federal support locked into a fixed base until 1984. Industry funding has not met target figures, while companies are losing millions and laying off thousands of workers.

When federal funding is next reviewed, Forintek's share should be given a high priority. Research is one area where stinginess does not pay and since private industry cannot maintain funding through periodic depressions, the federal and provincial governments must fill in the funding gaps to maintain a consistent research effort.

Concluding Remarks

The title of this paper – "*THE GREEN GHETTO*" – was intended to symbolize the grim future we are facing through apathy. There has been an attempt throughout the paper to make obvious the optionality of forest policy; we can choose our forestry future. It can be an exciting and prosperous growth industry, but not without effort.

The paper was intended to show that our national policy has been to avoid decisions, allowing neglect to make the choices for us. Years of indifference have restricted the number of options now available and we are close to a time when what we do will not make any difference.

One forest expert, commenting on the situation during the research for this paper said, "If the public realized what was going on, there'd be a riot". He has a point. What *would* happen if Canadians realized their children would inherit an economy from which the chief engine had been removed by simple mismanagement?

We have tried, insofar as it was possible, to avoid partisan attacks on the government of the day. This is a national problem, and the solution is nonpolitical, pragmatic management. However, it is terribly apparent that for a decade and a half we could have done and should have done more. The advice from all sides has been available. What was missing was the will.

We Canadians have had a great deal to say about our subservience to other nations and to international conglomerates which, it is alleged, exploit our resources and consume them for foreign advantage. But we fail to note that it is we Canadians who are mismanaging this resource, and it is our own failures that will deny it to the future generations. The voices from the past, of Macdonald, of Laurier, were the warnings of prescient men. If we continue on our present course, the voices of the future would be condemnatory cries of betrayal.

Shall the forests be available, *as they can be*, for foresters and campers and wildlife, into perpetuity, or will they be consumed and thereby be denied to everyone? We must choose or resign ourselves to life in a "*GREEN GHETTO*".

Footnotes

- (1) The Science Council of Canada, *Canada's Threatened Forests*, Ministry of State for Science and Technology, March 1983, p. 12. The Council noted that research expenditures often pay off at ratios of \$50/1 for forestry.
- (2) Dr. Marcel Lortie, Prof. For. *Evaluation of Canadian Requirements for – Professional Foresters; Scientists with Basic Training in Forestry; Forest Technicians in Coming Years*, The Canadian Forest Advisory Council, 1982, p. 2.
- (3) Dr. Lortie, *Ibid.*, p. 5.
- (4) These statistics are available from a number of sources, among them *A Forest Sector Strategy for Canada*, Environment Canada, September 1981, or *The British Columbia Forest Industry Fact Book*, Council of Forest Industries, Spring 1983.
- (5) Science Council of Canada, *op. cit.*, p. 5.
- (6) Perhaps the most famous warning came from Sir John A. Macdonald, who said in 1871: "The sight of immense masses of timber passing my windows every morning constantly suggests to my mind the necessity of looking into the future of this great trade. We are recklessly destroying the timber of Canada and there is scarcely a chance of replacing it".
- (7) There was insufficient space in this report for a study of the great lumber trade of the nineteenth and early twentieth centuries, though its importance to Canada's development and present circumstances is incalculable. An authoritative account of the history of Canadian forestry is found in A.R.M. Lower's *The North American Assault on the Canadian Forest*, Ryerson Press, Toronto; Carnegie Foundation, New York, 1938.
- (8) A turning point in this process was the Canadian Forest Congress in 1980, which saw the publication of F.L.C. Reed & Associates' *Recent Reductions in the Canadian Timber Base*, in which it was noted that AACs in most provinces were set artificially high for changing circumstances.
- (9) "Revue économique", Banque Nationale, 1981, and Dr. Marcel Lortie's "Some Institutional Constraints to Intensive Forest Management in Canada", September 10, 1981, p. 3.
- (10) David Lancashire, "When the Trees are Gone, What Then?", *The Globe & Mail*, January 31, 1981.
- (11) "Logged Out", Fifth estate, *CBC Television*, November 10, 1981.
- (12) The problem of declines in forest productivity during natural regeneration was discussed by: Professor Gordon Weetman, "Canada's Forest Management Problem", in an address to the Committee of Parliamentarians, Scientists and Engineers, May 10, 1983. A specific field exercise of great interest is "Fertilization and Thinning Effects on a Douglas-Fir Stand Ecosystem at Shawnigan Lake – 9 Year Growth Response", Environment Canada, 1982.
- (13) F.L.C. Reed & Associates, *Recent Reductions in the Canadian Timber Base*. Published for the Canadian Pulp and Paper Association, 1980, p. 37.

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- (14) David Lancashire, *op. cit.*
 - (15) This was fire SM (Fort Smith) No. 2 in the Cariboo range. Started by lightning, the blaze burned in a low priority area and eventually absorbed 11 other blazes. The total burned area was estimated at 725,399 hectares (1,792,500 acres).
 - (16) F.L.C. Reed & Associates, *op. cit.*
 - (17) An important document in this change was: *Forest Fire Management in the Northwest Territories* by Peter Murphy, Stanley Hughes and John Mactavish. Department of Indian Affairs and Northern Development, 1980. Reviewing the disastrous fires of 1979, the panel linked forest fire policy to the cultural and economic impacts of fires on the Native inhabitants of the North.
 - (18) David Folster, "Europe Faces a New Air War", *The Globe & Mail*, August 2, 1983.
 - (19) Dr. Hubert W. Vogelmann, "Catastrophe on Camel's Hump", *Natural History*, November 1982.
 - (20) "Logged Out", Fifth estate, *CBC Television*, November 10, 1981.
 - (21) The problem of worker displacement is seen as unavoidable by many industry experts and was a major concern of the Forest Industries Advisory Committee whose Interim Report was released by the Department of Industry, Trade and Commerce in August 1983.
 - (22) R.W. Kennedy, "Can We Overcome The Sad State of Forest and Forest Products Research in Canada?", Western Forest Products Laboratory.
 - (23) Estimate of the United Nations Food and Agriculture Organization, cited by the Canadian Council of Resource and Environment Ministers: See *Forestry Imperatives For Canada*, 1979.
 - (24) Biomass conversion remains one of the most exciting areas for forest utilization. While there was, unfortunately, insufficient space in this report for an indepth look, there are many excellent sources available through the Ministry of Energy, Mines and Resources and the National Research Council.
 - (25) David Lancashire, *op. cit.*, *The Globe & Mail*.
 - (26) Report of the Banff Conference, "Canada's Forests – Transition to Management", September 1981.
 - (27) Statistics Canada.
 - (28) This phenomenon is called the Allowable Cut Effect (ACE) and provides for an increase in the annual cut for each new seedling planted. ACE is a measure which offers immediate, tangible rewards to industry for prompt regeneration, but long term management funding is still needed to bring the seedling to maturity.
 - (29) The concept of extended tenures to promote better management was explored by Francis Wetton. See "Facing Forestry Realities", *Policy Options*, November/December 1982.
 - (30) Canadian Council of Resource & Environment Ministers, *op. cit.*, p. 13.
 - (31) Environment Canada, *A Framework for Forest Renewal*, September 1982, p. 5.
 - (32) The Honourable John Fraser, "Address to the Canadian Institute of Forestry", April 1980, p. 4.

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- (33) F.L.C. Reed, "The Role of the Federal Government in Forestry", Forest Industry Lecture Series, University of Alberta, 1980.
- (34) Hansard, *House of Commons Debates*, June 28, 1960, p. 5499.
- (35) The Honourable John Fraser, *op. cit.* p. 6.
- (36) Environment Canada has seven Assistant Deputy Ministers. They are Planning; Finance and Administrative Services; Environmental Protection Service; Environmental Conservation Service; Atmospheric Environment Service; Parks Canada; and Canadian Forestry Service.
- (37) George Sinclair, Ministry of Natural Resources, Ontario. Interview with Author, 1983.
- (38) An excellent overview of the major issues for small, private woodlots is found in the *Proceedings of the Symposium on Eastern Canada Small Private Land Forestry*, sponsored by the Département d'aménagement et de sylviculture of the Université Laval, and the Laurentian Forest Research Centre (Environment Canada), October 1981.
- (39) F.L.C. Reed, "The Forgotten Forest", Ontario Forestry Association, February 1980.
- (40) Details on the American program provided by Lester Decoster, Vice President of the American Forestry Association in an interview with the author, June 1983.
- (41) Information on the Canada/Nova Scotia Agreement courtesy of Ian Miller, Chief Implementation Officer of the Canadian Forestry Service, Truro, Nova Scotia.
- (42) *Forestry Imperatives for Canada*, *op. cit.* p. 13.
- (43) Canadian Forestry Service. Testimony before the Standing Committee on Fisheries and Forestry, March 24, 1983.
- (44) Catherine Richards, Elizabeth May, "Spruce Budworm Spraying and Pesticide Registration", A brief to the Toxic Chemicals Management Centre, March 1982. Submitted by the Concerned Parents Group, New Brunswick, and the Cape Breton Landowners, Nova Scotia.
- (45) Fred McCain, M.P., "Sylvicon '79", February 1979.
- (46) Don Lockhart, David Oxley. Testimony before the Standing Committee on Fisheries & Forestry by the New Brunswick Forest Products Association and the J.D. Irving Company. Their testimony suggests that Bt is considered desirable by industry, but the costs of it are still excessive.
- (47) Dr. Marcel Lortie, "Evaluation of Canadian Requirements . . ."
- (48) *Ibid.*, p. 17.
- (49) Recent developments in Forestry school funding were studied in a recent *Globe & Mail* article, "School Woes Hurt Forest Industry", by Ailan Robinson. Comments from academics given here are from this article. June 20, 1983.
- (50) The establishment of such a data centre was one of the recommendations of the Forest Industry Advisory Committee's "Interim Report" to the Minister of Industry, Trade & Commerce. August 1983.
- (51) Figures courtesy of the Department of Indian Affairs and Northern Development.
- (52) Figures from annual reports of the Forest Research Centres and Forest Institutes.

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Several hundred newspaper articles were consulted in the research of this paper, and obviously they cannot all be named here. Some publications and individuals did merit special mention through their consistently well-documented work however, such as the *Vancouver Province's* Eli Sopow, and the *Globe & Mail's* "Report on Business". The *Canadian Press'* Carl Mollins supplied excellent coverage of the threatened American forest products tariff.

David Lancashire's two part feature on forestry "When the Trees are Gone, What then?" and Micheal Keating's more recent "The Vanishing Forests" series provide excellent examples of well-researched and comprehensible work. Both these features appeared in the *Globe & Mail*, the latter accompanied by an editorial pithily entitled "Plant or Perish".

Other newspapers consulted frequently included:

The Vancouver Sun
The Ottawa Citizen
The Toronto Sun
The Financial Post
The Prince George Citizen
The Canadian Press
The Montreal Gazette

TELEVISION

Television coverage of forest issues and policies continues to be sporadic. Proving that it can be covered well was a *Fifth Estate* feature entitled "Logged Out", which was broadcast November 10, 1981, and hosted by Eric Malling.

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