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The Forest and the Trees

Canada's forest is by far its greatest source of national wealth. But we have been using it up faster than it can grow back into good shape. What we need now is a major effort to ensure that the forest can sustain itself. And, just as important, an appreciation of what it means to us all . . .

☐ Before the white man came to Canada, it is said, a squirrel could skitter up a tree trunk on the bluffs of the present Quebec City and travel by leaping from branch to branch and swimming rivers to the present Windsor, Ont., without ever touching the ground. This fanciful proposition is used to convey an idea of the extent and density of the great forest that once blanketed the most populous part of the country. Believe it or not, it has a bearing on the plight of our most valuable class of natural resources today.

The problem, to put it at its simplest, is that we are using up our national stock of trees faster than it can adequately restore itself. Canadians have been doing this for years, but it was of little consequence to them in earlier times. The point about the squirrel is that, historically, our timber resources were so unbelievably vast that they could more or less absorb all of man's incursions. By the time man had cut through a virgin stretch of forest, a previously-cut portion had grown to maturity behind him, ready for his axe all over again.

In a nation which even now is 35 per cent covered by woodlands, we have traditionally taken our sylvan bounty for granted. At one time trees were regarded as a kind of enemy, to be destroyed as soon as a pioneer moved onto a piece of land. In *The Canadian Settler's Guide,* first published in 1855 and lately reprinted in paperback by McClelland & Stewart Ltd., we find the advice of a certain Major Strickland on how to clear land in such a way that trees will never again grow on it. The Major recorded with satisfaction that his neighbours had joined him in a "logging bee" to stack up discarded trees for burning. "My hive worked well," he wrote, "for we had five acres logged and fired that night. On a dark night a hundred or two such heaps all on fire at once had a very fine effect, and shed a broad glare of light over a considerable distance."

The very thought of that spectacle of blithe waste is enough to make a modern-day forester shudder. But it was obviously repeated countless times in places that have long since become cities and towns. It is too much to expect of human nature that our pioneers should have given any thought to forest conservation. They used all the wood they could for building, fuel, the fashioning of implements and the production of potash, but there were great quantities left over. To them it was a plain matter of survival to eradicate trees and replace them with crops and pastures that would fill a family's stomachs. In doing so they steadily pushed back Canada's wooded frontier.

Our early timber industry was hardly less profligate. At first it concentrated on trees to make masts and spars for sailing ships; only the tallest and straightest white and red pines would do. In 1806 the first raft of squared timbers was floated down the Ottawa River for shipment to Great Britain. These soon became the chief stock-in-trade of the eastern Canadian forest. They were of such a size that it took uncommonly large trees to produce them. They were hewn square by skilled

axemen on the cutting site, a process which left a large part of the tree on the forest floor in the form of useless chips.

Lumberjacks ranged the eastern woodlands in search of pines of the requisite thickness. In *Canada Before Confederation,* R. Cole Harris and John Warkentin wrote: "As elsewhere in North America, the assault on the forest was marked by wasteful cutting and forest fires, until, by 1860, white and red pine were becoming scarce throughout the great arc of land from the north shore of the St. Lawrence near Quebec to the Upper Ottawa River." A big pine can take at least 100 years to grow to full size, but the supply had been seriously depleted in half that time.

The commercial logging interests carried on as if nothing had happened. They switched most of their production from squared timbers to sawn planks and boards from smaller pines and other species of wood. But at least one prescient Canadian had seen the danger signs. Sir John A. Macdonald wrote to the premier of Ontario in 1871: "We are recklessly destroying the timber of Canada and there is scarcely the possibility of replacing it." Unfortunately, our first prime minister was almost alone in pointing out that our forest resources were not necessarily infinite and could not be expected always to look after themselves.

To most Canadians at that time it was inconceivable that there could ever be a danger of a shortage of timber. They expected, with some reason, that the forest would eventually grow back again after it had been logged. Cutting was confined to certain species of hardwood and pine. Trees were felled with axes or saws and dragged out of the bush by horses and oxen. They were cut only when there was snow on the ground, and could be transported only when the rivers were free of ice. The demand for wood was limited; it had been replaced by metal in many of its traditional applications. It was generally assumed that the combination of slow methods and small markets would preserve the natural growth cycle, and thus keep the forest productive for all time.

But before Macdonald ever penned those lines, the gates were opened to a flood of activity that would change Canadian forestry practices forever. Canada's first mill to grind wood into pulp for making paper began operating at Valleyfield, Que., in 1866. Three years later the nation's first chemical pulp mill opened at Windsor Mills, Que. Canada was on its way to becoming one of the leading pulp and paper producers in the world.

The rallying cry: "There's always more wood over the next hill."

The new industry brought about a change in species selection from hardwood (deciduous) to softwood (coniferous) trees that were more suitable for pulping. In the early twentieth century, as Canadian pulp and paper output grew by leaps and bounds, large areas of softwood forest were cut bare. Canada has the second-largest coniferous forest in the world after the Soviet Union, and its very immensity obscured the fact that the cut-over areas were not restoring themselves very well or promptly. "There's always more wood over the next hill," became the rallying cry of the loggers. They simply moved on to the next hill and forgot about the one behind.

Some forestry engineers and scientists in the nineteen-twenties and thirties warned of the improvidence of harvesting a crop without taking measures to replace it. They pointed out that this was something no farmer would ever do. But, with rare exceptions, they were voices crying in the wilderness. Logging was thought of as more like mining than farming. Somehow it seemed un-Canadian to plant trees.

For the most part, the practice of letting nature take its course has served the Canadian forest products industry well through most of this century. It has grown into Canada's largest industry by far, with total shipments in the order of $13 billion a year. Mills producing pulp, paper, veneer, plywood, box board and other wood-based products have proliferated across the country. The industry is Canada's most important source of employment. A total of 288,000 people work for it directly;

hundreds of thousands of others hold jobs in service industries because the forest products industry exists.

As in decades past, our forests continue to generate more foreign earnings than any other commodity sector, helping Canada to pay its way in the world. The industry's contribution to the trade balance is about $7 billion annually, nearly as much as that of mining, agriculture, fishing and fuels combined. In a sense, it is a public industry in which all Canadians have a share, since 92 per cent of the forest is owned by the provincial and federal governments. Every man, woman and child in Canada is the indirect owner of 23 acres of productive forest land.

In short, it is a precious resource to us all, essential to our economic well-being. It may be said that most Canadians do not realize just how valuable the forest is.

The comforting assumption that growth will exceed the harvest

As the industry has grown, so the forest has been harvested faster. In the 1950s, the lumberjack traded his buck saw for a powered chain saw which increased his daily cut by three or four times. Tractor-like mechanical skidders appeared to handle quantities of logs unheard-of in the days when beasts of burden toiled in the forest. Trucks were used to carry wood to the mills year-round.

And that was minor compared with the leap in harvesting productivity in the past 10 years or so. Mammoth new machines, weighing as much as 40 tons, now snip off trees at the trunk two or three at a time, strip them of their branches, cut them into lengths, stack them and haul them away — all, as it were, in one bite. Such methods enable woodsmen to clear-cut a stand of timber more thoroughly than ever. They have also brought about a significant expansion in the total cut.

In the past few years the cut has reached 2 million acres annually. In statistical terms this may seem rather small. Almost 800 million acres — an area roughly equivalent to the land mass of Ontario, Manitoba and Saskatchewan combined — is classified as "productive forest". These figures tend to bolster the comforting assumption that, with such a vast reserve on hand, the harvest will always be more than balanced by net growth.

Hence as late as last year, the federal government agency, Statistics Canada, reported in its annual year book: "A large surplus of timber exists in Canada although there are shortages in some regions and species which could be overcome by increased silvicultural and management techniques. In addition, greater utilization of individual trees and of certain species could further extend the resource."

Comforting words, those, lending weight to the vague public impression that silviculture and forest management must be well in hand, and that the days of careless exploitation are far behind us. This is further reinforced by occasional news stories saying that one province or another is intensifying its reforestation program, and advertisements by companies and trade associations stressing advanced forest management techniques.

The picture of abundance is largely an illusion

Anyway, Canadians travelling their country can see with their own eyes that the forest has hardly been dented. Take a train from Ottawa to Winnipeg, and for two days running you will see little else but endless vistas of trees. Fly over the northern reaches of our incompletely-named prairie provinces, and a blanket of green will be spread out before you, decorated with the shimmering waters of lakes, streams and rivers. Here and there you might see a stretch that has been cut over, but the ravages of fire and disease are likely to be more evident than the scars left by the harvesting machines.

It is therefore surprising to be told by experts that this picture of seemingly limitless wood is largely an illusion. The National Forest Regeneration Conference held in Quebec City in October, 1977, concluded that adequate forest renewal was nothing less than an urgent economic need. The

conference was attended by 250 representatives of government, industry, the forestry profession, universities, and environmental protection organizations. They agreed unanimously that, as they put it in their communiqué, inadequate forest regeneration is "indeed a serious and fundamental forestry problem. This concern is not yet felt by the general public or by politicians, and there is a real need — as demonstrated by the conference — to 'spread the bad news'."

What about those confident statistics? Studies released at the conference indicated that only about half of the statistical surplus is "economically accessible", meaning that it can be harvested at a low enough cost to enable the producer to sell the end product at a viable price on the world market.

A staggering backlog of unproductive forest land

As for the casual impression that Canada has a superabundance of trees, so it does — but great numbers are too far north to grow to a usable size, and enormous stretches of forest farther south are in hopelessly sub-standard shape. "The new forests which are developing in areas which have been harvested or affected by natural disasters are frequently poorer than the forests they are replacing," said the conference communiqué. "They are often inadequate in terms of preferred species, quality, density of stocking, insect and disease resistance, or location suitable for economic wood supplies to existing mills."

The expert consensus was that up to 20 per cent of the land harvested every year does not and will not regenerate properly. When areas where regeneration has been blighted by insect infestations, fires and wind damage are added, a total of 647,000 acres is lost from the nation's potentially productive forest stock every year.

This is being added in turn to a backlog of unproductive forest land accumulated over many years which the Canadian Forestry Association estimates at a staggering 60 million acres. Large parts of this wasteland are to be found in every province. In fact, no province can claim that regeneration within its boundaries is even keeping pace with the yearly cut.

According to the association, "Inadequate attention to forest regeneration is responsible for restricting expansion possibilities in some regions, has reduced employment in others, and will result in a continuing decline in future forest-based jobs and revenues." Some experts predict really critical shortages by the end of the century if large-scale forest management and renewal programs are not put into effect.

Many difficult problems will have to be resolved

Can Canada catch up? F. L. C. Reed, one of the nation's leading forestry consultants, says the answer is yes — but just barely. As he stated in a recent report for the Canadian Pulp and Paper Association, "A more intensive program of forest management is imperative if market opportunities are to be realized and emerging timber deficits offset."

It would be unfair to suggest that either governments or the industry have been entirely negligent in matters of regeneration. Every province has its tree nurseries and reforestation programs; forest products companies attempt to stimulate regeneration through a variety of techniques. Canada ranks high among the nations of the world in forestry research. The problem is not one of a lack of technology nor of good intentions. It is simply that not enough is being done.

We know what to do and we have the means — fertilizers, site preparation by machines or controlled burning, improved species that grow faster and have more resistance to insects and disease than those seeded naturally. But it will take a deliberate commitment on the part of governments, industry, and indeed the public at large to ensure that our forests meet our future needs. Difficult problems of cost, responsibility, ecology and the claims on the forest of industry and recreation will have to be resolved. The task will call for common sense, compromise, and determination — but it must be accomplished if our greatest natural legacy is to continue to yield its tremendous rewards.

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