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SPAM 20273

1958

Addressed to the Vancouver Institute,
8th. February, 1958.

OUR FORESTS, ASSET OR LIABILITY

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The present and future role of our forests is of great importance to all of us. It is frequently discussed by the press, taught in the classroom, investigated by Royal Commissions, and controversies about it shake governments.

I feel that we have the best chance of making sound decisions on forest policy if well-informed citizens interested in all aspects of a full life will participate in shaping these policies.

From the medley of voices which praise life among big trees one tune emerges. Nature was kind to British Columbia by endowing it with extensive forests. People have squandered much of this wealth, but luckily conscience, science and law have combined in time to stop the plunder. If we tend the forest and keep fire and bugs under control, we may continue to derive a large part of our living from this renewable resource.

At this point agreement ends. What we have in our forest, what we should do with it, and who should do the work are controversial issues. They are controversial because the forest means different things to different people, and because few of us agree when we try to forecast what conditions will be one hundred years hence.

We have to look so far ahead because trees grow very slowly and live a very long time. Many trees in our virgin forests are 300 - 600 years old, and old timers are found quite frequently which are 3,000 years old and older. Unlike most other living things trees keep on growing until they die. British Columbia trees put on the largest annual growth between the ages of 40 and 100 years. After that deterioration caused by old age increases, and sooner or later loss due to rot, insect damage and wind breakage will balance or exceed the yearly growth.

The vision becomes blurred when we plan our future forests and try to look a century ahead. Looking 100 years back for guidance is not much help: 100 years ago the population of our planet was 1 billion; it is now 2.5 billion and expected to reach 7 - 12 billion by the year 2,050. Rapidly increasing industrialization of this globe gobbles up raw materials at an unprecedentedly fast rate, and changes in living standards have been more spectacular during the last 100 years than during the previous one thousand. Technological development has avalanched to a state where the experts and industrial managers see increasingly more and more details but less and less of the over-all problem.

I trust that some of the figures I have mentioned will show you why we have to look so far ahead and why this is quite difficult.

To draw a mental picture of what role the forest may have in B.C. a century hence, let me first give you a sketchy outline of our present forest economy. I will first discuss the effect British Columbia's geography has on our forest industry, then tell you about the philosophy which governs how much timber is harvested. I will then review who owns the forest, how the timber is sold and utilized, and what the economic and social implications of present policies are.

Following this I will review developments abroad which are different from ours and therefore may give us some food for thought.

British Columbia is a very rough country, so rough indeed that only 80 years ago surveyors who investigated the possibility of building a railroad from central Canada to the Pacific reported that it was impractical to cross the Rockies by rail, and even if the crossing could be achieved it would not be worth while. They reported that this country could never support a sizeable population.

The $1\frac{1}{2}$ million people who live comfortably in British Columbia today prove that this report was a bit exaggerated, but it is true that only two percent of our land is suitable for agriculture. About one-third is covered with forest or could support a commercial forest and nearly two-thirds of the land area of the province is barren or brush land. In much of our province we have only three months out of twelve without killing frost. Only a narrow strip along the Pacific Coast benefits from the warm Japanese current. We have no major all-the-year-round navigable inland water ways; the country is extremely mountainous, and the only low-cost transportation of goods which Nature has provided is by water through the sheltered stretch of sea between the mainland and Vancouver Island.

Largely because of their inaccessibility, forests in our province fared better than those which cover the more gentle hills of central and eastern Canada. It is true that large areas, particularly on the interior plateau between the Rockies and the Cascade Mountains, have been burned, and some of the forests on the coast have been devastated by indiscriminate logging methods, but by and large, Nature has done a good job of reforestation and most of the suitable land in British Columbia is covered with trees up to the tree line.

Two factors govern the amount of wood which we extract from the forest: market conditions and cutting restrictions made by people who are concerned with planning for a continuous log supply. We have the technical means today of moving trees from almost every hilltop and gully. Whether it is worth while to do so depends on the quality, age, and species of the tree, topography of the terrain, distance to the factory, and most of all, market conditions. In a booming market

when prices for the products are high we can go further afield for our logs; at other times some of our forest must be bypassed because we would lose money in harvesting it.

Our forest planners have adopted the principle of sustained yield. This means the cutting each year of only as much timber as the forest will grow. This is certainly progress over the old method of "cutting out and getting out", but rigid adherence to this principle should be critically investigated.

We cannot do anything about market conditions, but we should realize that the principle of sustained yield is self-imposed and could be revised at will. We may not wish to perpetuate the present forest, but substitute a different, better one; grow different types of trees, and change our methods of harvesting and utilization. If our ancestors had insisted on the sustained yield management of the berry patch, agriculture would never have developed and this planet would support but a fraction of the present population, and even that would starve!

We have been cutting in British Columbia about one billion cubic feet of logs annually over the last ten years. Even if we accept a rather conservative interpretation of sustained yield, we could increase the timber cut in the province about threefold without depleting our forests; but in that case we must spread the timber cut over all the province, otherwise one area or one type of timber will be cut out and the continuity of supply will thereby be disrupted.

Only about 8% of the forested area in British Columbia is privately owned; the balance is held by the government. Privately owned land is much the most accessible and contains the highest grade timber. Most of it is located on the coast. At one time it was alienated by land grants to foster the building of railroads, or it was staked by settlers or sold for what sounds today a trivial sum. The sale of government-owned forest to private parties was stopped in 1896, and present legislation forbids the sale of any government forest land.

Today the government sells the sustained yield of its forests. The piece of land on which logging is to take place is handed over temporarily to the purchaser of the timber who logs the timber off, clears the area of excessive debris called slash, and then returns the land to the government for further management. In some instances, such as on management licences, the logger is given the responsibility for the growing of the next crop.

Much progress has been made lately in the utilization of timber. Twenty-five years ago only about one-quarter of the timber volume grown was turned into saleable products such as piling, shingles, lumber, or plywood; the balance was either burned or left on the ground to rot.

Today about half of the wood volume grown is used. Pulp, newsprint, and building boards have become outlets for much wood which formerly went to the burner, but the volume left behind in the forest is still very great.

We witness a significant development today in the gradual disappearance of the small sawmills and the emergence of giant industrial complexes which are usually described as "integrated plants" because they first extract from the log the lumber, plywood or shingles and then the byproduct from these operations is made into pulp and paper or fibre boards. Some of these units represent investments of from \$30-100 million each. It is assumed to be necessary to earmark for these mammoth plants the log supply of huge areas to protect these large investments. The tendency is towards concentration of the industry in fewer and larger units on whose fortune the wealth of a large section of the countryside depends.

One by-product of this increasing concentration of industry is the working man's feeling of dependence on only one employer in the district, and the general public's suspicion that a monopolistic position may be abused. I believe that the existence of one employer only in a large area aggravates many social conflicts and also creates political problems.

It is instructive to review trends in forestry and forest utilization in other parts of the world and conjecture how they may affect developments at home.

Some five thousand years ago the development of agriculture caused an important change in the way of life of the human race: it enabled people to grow more food on smaller areas and particularly to grow crops and harvest them in relative safety and with less effort. As time went by new crops particularly suited to the location and developed to fit specific requirements were planted: they were less susceptible to the hazard of weather and the crops became more resistant to fungus and insect damage. These and other developments took thousands of years in agriculture but similar ones have been telescoped into a few decades in forestry.

Here in Canada the nomad method of obtaining timber by "cutting out and getting out" has been replaced by sustained yield management of natural stands. This is roughly equivalent to the tending of the berry patch, a stage in food gathering which preceded agriculture, but in many foreign countries today tree growing already copies the methods of agriculture. The suitable sites are carefully prepared for the planting of quick-growing hybrids; the young crop is carefully tended; trees are fertilized, thinned, pruned and sprayed. The vigorously-growing trees can be harvested in a much shorter time than trees in an unmanaged forest and the quality of the timber is often superior to that from the wild forest. It has been estimated that our coast forest in British Columbia will grow about 75 cubic feet per

acre per year and the forest in the interior 25 - 30. Douglas Fir plantations in Denmark have a yearly increment of 330 cubic feet, and Poplar plantations in South Africa and the Argentine will grow up to 400 cubic feet/acre/year. Most of this timber is free from defects, easy to harvest, and it is grown next door to the manufacturing plant.

In a great many countries, capitalistic and socialistic alike, the government regulates the cut of timber, sets requirements for replanting, and shares with the owners the responsibility for the protection of the forest. Sometimes a government agency will manufacture wood products alongside private industry. This is usually done either to introduce new techniques which are only marginally economic, or to enable more secondary producers to share in the manufacture of forest products. To give you one example, many wood-working plants in Germany own no timber at all. The federal, state and municipal governments there, as well as private forest owners, will contract for the logging of timber stands just as they would contract for the building of a road. The logs are then divided into small parcels according to quality and these parcels sold in auction sales. Each manufacturer has a chance to buy the logs he can use best. A great many parcels of logs are auctioned off and many industries can peacefully co-exist knowing that each one will be able to obtain the raw material it can use to the best advantage. This method of log disposal also gives an opportunity to the person who believes he has a novel and more advantageous use for the log, but no control over timber.

Technology of wood utilization has made great strides all over the world. The development in laboratories of processes and techniques is comparable almost everywhere. The application of the new techniques is not. In the Scandinavian countries and in Germany every stick of wood is picked up in the forest. Material which is not suitable for lumber, for plywood, or pulp is used in gas generators or converted into wood sugars, or burned as fuel. The effluent of sulphite pulp mills is the raw material for alcohol and yeast, the latter a rich protein diet for animals and humans.

In British Columbia the abundance of oil, natural gas, animal proteins and sugars makes it uneconomical, or economically risky at least, to proceed so far with the utilization of wood. Therefore we still destroy a tremendous volume of timber either as slash in the forest or mill waste in the plant.

I feel that it is a safe assumption to make that we in British Columbia will always be able to grow as much timber as we can use and that other parts of this earth will likewise have an abundant supply once methods copied from agriculture are employed in forestry.

We are selling today 80 percent of our wood products outside this province. In many instances we are selling to countries which

have developed rapidly their own timber and manufacturing industries. During the last few years most of the new pulp, paper and plywood plants have been built in countries where logs are harvested from plantations, intensively managed natural stands, or from rapidly growing tropical forests. The cost of timber from such areas is much lower than that of most of our timber in Canada, and in many instances manufacturing plants are considerably closer to the markets than we are.

We in British Columbia have felt rather smug about our future just because we have extensive forests. I suggest that this is largely wishful thinking and the possession and perpetuation of the present forest does not assure a privileged position in world markets. In order to remain competitive we must provide for our industries a supply of low cost logs of uniform grade. In the future this will come mainly from intensively managed stands.

At present the huge stands of decaying, over-aged, mixed timber make intensive management difficult and costly. I believe we should cut this timber as rapidly as we can find markets for it. On easily-accessible, good-growing sites we should establish intensively managed plantations to produce low-cost logs. Some people are so busy trying to regenerate the original forest that they find no time to question whether the same mixture of trees will still be desirable when the new forest matures.

I would like to illustrate this problem with a similar one in the fishing industry. Controversy is raging these days whether the erection of dams on the Fraser River will or will not reduce the salmon catch. Everybody is agreed that these dams would provide a huge amount of power, control flooding, make possible irrigation of vast stretches of arid land, and create low cost transportation in a country which today is economically underprivileged because of the high cost of transportation. It is quite likely that the dams would reduce the salmon catch, but it can be proven that much more low cost protein could be produced from lake fish raised in the new storage dams and from cattle grazing on previously arid hillside.

Similarly, some of our methods of forest regeneration will undoubtedly assure continuity of the same forest cover, but whether they will yield low cost wood best suited for the future of the industry is doubtful.

During the last 100 years ships of many nations have called in at our ports to load huge Douglas Fir timbers for masts and beams. Today laminated beams manufactured from narrow boards make a more uniform, better product for the purpose, and such beams can be manufactured from a young forest anywhere in the world. Another example from the plywood industry is Poplar plywood made from 30 year-old logs and it competes successfully with plywood made from 300-year-old choice Fir logs. The pulp chips salvaged from the scrap in the sawmills are a much more economic and equally desirable raw material for the pulp mill than the huge over-aged logs from our virgin forests.

We have to deal with the widespread misconception that we are rich because we have forests, that we are giving something away because we cut our timber, and that we should conserve our old growth timber for the future. We should also question whether the integrated utilization necessarily means integrated industries in one location under single ownership. We must think over very carefully the respective roles of government and private industry. Most people in British Columbia feel today that private enterprise has done a good job for the development of this province and that it should have a chance to continue to do this job. It is felt that a continuance would assure the greatest opportunity for most people.-- A decision for private enterprise is not in contradiction to a partnership with the government in developing the industry and assuring its future, and I suggest it is wise to accept the notion that the government is best fitted to act as a trustee for the future of our forests because government policy is less subject to pressures caused by daily fluctuations in business.

In my opinion the most important role which can be assigned to our forests is to act as a reservoir for surplus labour and creative thinking, at times when our economy has not enough outlets for these human resources. We are in a race to provide better living for all our citizens. We have to face the fact that the capitalistic economy is cyclical and there are long periods when there is more labour and brain power than the market can absorb. We could and I believe we should put the unemployed people to work on the many projects of improving our forests, making the forest more productive, more secure from fire and disease, and more accessible to the millions of people who will want to spend their vacations there.

More and more people, from British Columbia as well as foreign visitors come to our forests and lakes and cruise the magnificent inlets of this province. They discover the joy of a simple life close to nature and they return to work with a better understanding for the real values in living.

The capacity of our campsites are overtaxed even today. In a world becoming rapidly more crowded, we can be sure that the majestic beauty of our scenery, the deep quiet of our forests and lakes will be sought after by more and more people. To open this country up for the visitor is good investment in money and a still better one in good will.

I have spoken about a variety of subjects, and you might well ask what my conclusions are. May I leave these thoughts with you:

- (1) We live in a province rich in forests, but this does not insure automatically a prosperous future. There is no reason to expect a timber shortage at home or abroad, now or in the future.
- (2) Only a very small proportion of our production is consumed at home. Whether we will be able to remain exporters of wood products will depend on our ability to grow and harvest logs

at low cost and convert them completely and cheaply into saleable products.

- (3) In a cyclical economy we must use our forest as a buffer to invest in it surplus labour and creative thinking in times of unemployment and reap the extra harvest when ready markets are available for it.
- (4) Bold, imaginative thinking is required by government and industry alike, and often in partnership, to keep the industry dynamic and to provide not only a living for the largest possible number of people, but a challenge as well.

In short, whether our forests will be an asset or a liability depends entirely on how much of our enterprise, energy and capital we are willing and able to invest in the forest.

February, 1958.