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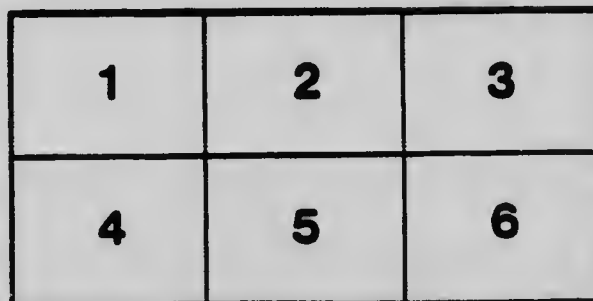
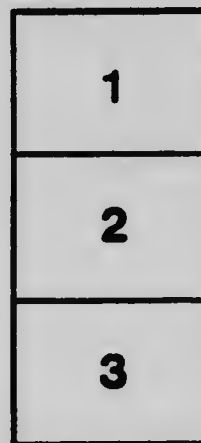
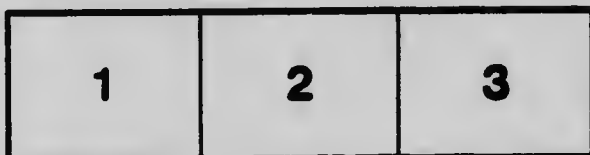
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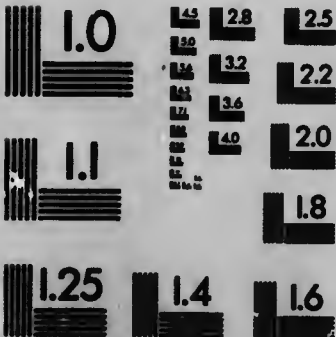
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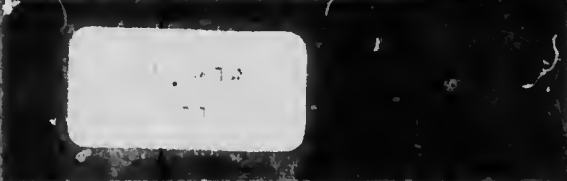
Essential Features of a Successful
Fire Protection Organization

By

H. R. MACMILLAN

Chief Forester, Department of Lands, British Columbia

Reprinted from the Sixth Annual Report of the
Commission of Conservation



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Essential Features of a Successful Fire Protection Organization

MR. CHAIRMAN, ladies and gentlemen : Just prior to my departure for Ottawa, Hon. Mr. Ross, Minister of Lands of the province of British Columbia, asked me to express his great regret to the Commission that he is unable to be present, owing to the fact that the Provincial Legislature opens to-morrow.

Before presenting the paper which I have prepared, I may be permitted to refer to the remarks of Mr. MacTier and a few of the important lessons we have learned in fire protection during exceedingly bad seasons in British Columbia. The first important lesson was: that, during the past season, it would be practically impossible for any organization that could be supported from the money available from any government to have held fire losses down to a reasonable minimum in a country such as that in British Columbia, northern Ontario, northern Quebec, New Brunswick or Nova Scotia, unless such organization were founded with the means of controlling the lighting of fires. Where settlers are going in amongst the timber the only way to get control of fires is by some permit system. If settlers are free to go into the country and light fires whenever they think a fire will run best, without regard to timber, there must be danger. With no supervision they certainly will burn the forests, and our only safety this summer in southern British Columbia was the permit system. We had an extremely bad fire situation this summer for two months, and, with one man to every 300,000 acres, the permit system was the only possible safety.

**Permits Must
be Obtained**

Every person wishing to build a fire for any purpose had to get a permit from the Forest Branch. The result was we issued about 12,000 permits, and only 108 fires got away and none of them did any damage. Public sentiment on this question in British Columbia is excellent; everyone realizes that timber districts have the saw-mill on one side and the poor-house on the other. That gives us an excellent sentiment. Agriculture is only possible in many valleys if the saw-mills are kept running. Then we had 40 prosecutions, 37 convictions, six men in jail and fines of \$50 to \$300.

I was afraid there would be a great public complaint about the obstacles we might be placing in the way of land settlement, but there was absolutely no complaint. People living in timber, recognized that they would not be exposed to the carelessness of their neighbours as they would be if there were no permits. Another thing which I have decided as being most economical is that we must protect all timber-lands.

One cannot pick up a body of temporary men, 400 or 500 in the spring, and make them understand what one wants them to protect. Of course nobody who thinks the situation over wants to protect only merchantable timber; it must all be protected, because, if a fire starts in undergrowth, or if it is left alone and reaches such an extent as to attack merchantable timber, then when it reaches the merchantable timber it is impossible to fight it.

**Must Study
Fire
Conditions**

We realize that, although we have better conditions than in the other provinces, with more streams and mountains and broken country, the only way is to discover fires at the start, to study the hazards, and to take measures to fight the fire when it first breaks out. The first thing we have to do is to give lots of supervision. I am sure there is more money wasted in fire protection to-day than is used economically because of lack of field supervision. Fire wardens are nearly all temporary men, and if one does not give them supervision and training, and does not try to keep the good men from year to year one cannot get the results desired. In the first fire protection services of Canada, far more wardens were wasting money than were making good use of it. Unless we have good permanent supervision of fire protection and have the same men as permanent rangers year after year we will not get the good results because we have large areas to protect with very small sums of money. Probably the most important feature, aside from the actual fighting of the fires, is public education. Most fires that occur are due to carelessness. The only fires that cannot be absolutely guarded against are those caused by lightning and they are not frequent.

**Results
Obtained
Education by**

Most fires which we are spending money to fight are started by residents of the country in which they start. If those people had the situation put before them constantly they would not start the fires, and we have found that by education we have been able to reduce the number of fires. We have moving-picture slides showing the danger of fires, which were shown in all the moving-picture houses. We gave away

wholesomes to people with fire protection mottoes on them. We are trying to get them to understand that it is their timber that they were setting on fire.

OVERLAPPING OF ORGANIZATIONS A DISADVANTAGE

Another important point about fire protection organizations is that there should be only one organization in each province, excepting possibly in such cases as have developed in the Ottawa valley and the St. Maurice valley. If fire protection is good policy for the province it should be under one control all over the province. It does not appear to have been good policy to allow the persons who own timber in a certain country to decide whether or not it should be protected. I think far better results are secured when the country is treated as a whole and the expenditure is made by one body. It may be collected from the lumbermen, but it should be supervised by one body so that the timber limits and the adjoining Crown lands will all be protected by the same organization. Otherwise there might be two organizations over the whole country, one managed by the timber-license holders and the other by the Government covering the Crown timber, or non-agricultural lands covered with timber. There is, thus, fire protection for timber licensed lands and no one protecting the surrounding lands.

SENATOR EDWARDS: Have you the same possibilities of re-production in British Columbia that there are in eastern Canada?

MR. MACMILLAN: I think we have quite the same. Although we have not recognized it, one of the greatest assets we have in Canada in the timber business is the manner in which our native forests reproduce. Of course, in British Columbia, planting would be out of the question for many years. Even if we did not have lots of merchantable timber, on all our logged-over land, where there are no subsequent fires—that is, fires occurring after several years—the natural reproduction is excellent.

Organizing
a Forest
Branch

I have been asked to discuss the principles of organization of a Provincial Forest Branch. This is, of course, a very broad subject. We have not progressed as far in wise, businesslike forest administration in this country as might be expected of a people so dependent upon forests as we are. The reason for our comparative backwardness is to be found in public apathy—apathy founded on ignorance; ignorance of the importance of the national interests at stake; ignorance of the means which should be taken to maintain forest lands in productivity. I shall, therefore, discuss the problem for a few minutes

from the educational standpoint, the standpoint from which it can best be attacked by this influential Commission.

The development of a sufficient forest policy depends upon the spread of three ideas :

1. That forestry represents a commercial and economical policy.
2. That all non-agricultural land should be considered a public asset.
3. That each Government owning timbered or non-agricultural land should maintain one organization charged to study the possibilities of those lands, and to protect and administer them accordingly.

Forestry Not Understood

There are an astonishing number of people in this country who misinterpret the term forestry, and oppose any extension of forest administration because of that misinterpretation. Such people believe that forestry is a conceit of sentimental persons who desire to protect woodlands, to prohibit the cutting of trees ; that it has its place only in parks, where commercial operations are not contemplated. Or they may believe sincerely that forestry involves the expenditure of a great deal of Government money in the planting or cultivation of forests, expenditure which could never be repaid either as to capital or interest. Still another misconception of forestry exists in the minds of many persons connected with the lumber industry, who believe that a forest department would import from Europe or elsewhere absurd regulations requiring the planting of a tree to replace every one cut, or of hedging logging operations about with killing restrictions. Such conceptions are of course founded on misinformation. They are nevertheless prevalent, and are responsible for the fact that Canada is now, of all the countries dependent largely upon forest industries, doing the least for the protection of the timber-lands.

Business Conditions Govern

These false interpretations of the term "forestry" must be met and overthrown if public support is to be secured for a forest policy. The arguments with which they can be met are the arguments that appeal to the business man. Timber must be cut whenever and wherever there is a market for it, wherever and whenever the cutting of it employs labour and supports profitable industries. No expenditure should be made on fire protection or forest administration, which will not be returned both as to principal and interest by the produce of the land to which the expenditure is devoted. The lumberman or logger who fears

the effects of forestry should be made acquainted with the manner in which forest policies have met the needs of industry in the Western states or British Columbia, where many millions of feet of timber have been sold to operating companies without any trouble over the adoption of regulations.

The British Columbia Forest Branch alone has sold several hundred million feet of timber to loggers during the past two years, under regulations requiring clean logging, and such disposition of slash as will prevent the accumulation of a dangerous fire hazard and will encourage the regeneration of the forest. There has been no trouble with the logging industry over the adoption of such a policy; rather, it is supported by the industry. The important point is that regulations are as few, as simple, and as economical as possible. They are framed with a knowledge of the logging conditions of the particular area to which they are to apply, and their estimated cost is allowed for in setting the price for the sale of the timber. The cost of the regulation falls upon the public in the case of such timber sales, which is of course proper, as the regulations are designed for the public benefit. The logger or timber owner, therefore, has nothing to fear from forestry.

CANADA DEPENDENT ON FORESTRY

The proper interpretation of forestry, and what it actually means to Canada, cannot be stated too frequently. The future of this country depends upon our making every acre productive. Broadly speaking, the earth's surface can be made productive in two ways only, by producing agricultural or timber crops. South of the 60th parallel, about 69 per cent of the area of Canada is unsuited for agricultural crops. A very large proportion of this non-agricultural land is suitable for the production of merchantable timber. The production of forest products has been and will always be one of our chief industries. At the present time forest industries supply 12 per cent of our foreign trade, 16 per cent of our railway traffic, and equal in value our annual wheat crop. We have a choice to make. Shall we let these valuable industries perish for want of raw material, or shall we perpetuate them by protection of our present mature timber from fire, by protection of the young forests on our non-agricultural lands, and by the logging of our forests in such a manner as to encourage the reproduction of valuable forests? The perpetuation of these industries and their source of raw material by the investment of such expenditure as the anticipated crop will warrant is forestry.

**Non-Agricultural
Lands**

Optimistic as we have been in this country, we seem to have been unable to see any value worth caring for in our non-agricultural lands. Our vision was broad enough years ago, when we heard of agricultural lands in the Peace River valley, to recognize that such lands, while unused at the time, would within a decade or two grow crops and support a population. We can look across the future to the time when our far northern mineral deposits, though inaccessible and incapable of development at the present time, will develop centres of industry. But we travel daily across the non-agricultural, logged areas and burned-over lands which surround many of our most densely settled communities and lie across our transcontinental railways and we see in such lands no asset. This attitude is both dangerous and unfair to the country. We must realize that our present stands of merchantable timber cannot support our growing industries indefinitely. The growing American demand for forest products, to which in a very few decades will be added a much greater market in Europe than now exists, will very rapidly wipe out our eastern merchantable forests. Even now, New Brunswick, speeded up by foreign markets, is cutting each year from Crown lands more than the annual forest growth.

**Problem Must
Be Faced**

This is a problem which must be faced squarely by every province. The future forest industries, which are almost the only industries possible on three-fifths of the area of Eastern Canada, must be supported by the timber grown on the logged-over and burned-over non-agricultural lands. Looking at these lands we should see, not wastes, holding no promise for the future, but productive lands, needing only protection from fire to enable them to support logging camps, pulp mills, rural and industrial communities of a type which has done much for Canada. If the young forest growth on the non-agricultural lands of Eastern Canada had been protected from fire during the past twenty years, railways would not now be importing railway ties, and saw-mills in Western Ontario, each the centre of a thriving community, would now be supplying the markets with lumber, which, because of lack of forest protection in the past, is being supplied from British Columbia and the United States. Many instances may be quoted which show that care of the young forest on non-agricultural lands is not only a duty we owe to posterity, it is an insurance of timber industries which affects the prosperity of Canadians to-day. Even agriculture will benefit by such a policy, for scattered through our non-agricultural regions are very many small areas of agricultural and semi-agricultural land which can only be developed if some-

where in the neighbourhood the farms can find such a market for labour and produce as the timber industry affords.

**Investigations
Required**

The continuance of investigations, similar to the study of the Trent Valley watershed, by the Commission of Conservation, will have undoubted effect on the popular valuation of our non-agricultural lands. When it is shown that such lands will in 70 years produce a timber crop worth \$96.00 per acre, provided a fraction of a cent per acre per year is expended in fire protection, the public will readily support the fire protection policy.

PROPORTIONS OF NON-AGRICULTURAL LANDS

The importance of timber industries to Canada, and the certainty that such industries cannot be permanent unless the growth of another crop of timber is assured, makes the practice of forestry imperative as an economic measure. Every section of the Canadian public is interested. Roughly, the proportion of non-agricultural land in Canada south of the 60th parallel is : Nova Scotia, 81 per cent ; New Brunswick, 72 per cent ; Quebec, 76 per cent ; Ontario, 64 per cent ; Dominion Lands, 51 per cent ; British Columbia, 85 per cent. Some of these Governments already have forestry departments ; none can afford to be without some forestry organization, charged with the study, protection and administration of timbered and non-agricultural Crown lands. Such lands should be studied in order that the protective and administrative measures adopted may be decided with a full knowledge of the value of the products to be expected from the land. In this way expenditure is avoided on inaccessible and non-productive land which will not yield returns, and the investment is made on those lands where quality and situation guarantee a profitable crop. In each province the area of timber-land is very great. The conditions of forest growth, of fire hazard, of utilization, are so variable that no rule of thumb methods may be safely adopted. The Forest Branch must include men trained to, and free to study, each of these problems, in order that loss of revenue may be prevented, and the most economical possible scheme of administration and protection worked out for each section of the country.

**British
Columbia's
Experience**

Our experience in British Columbia has been that the best results are secured at the least expense where the one organization, call it "Forest Branch" or "Timber Department," is responsible for the necessary forestry studies in fire protection as well as the routine, but highly technical,

Business of timber administration. There are several advantages in such a consolidation of work. The first is the reduction of overhead cost. The head office looks after all work. One field organization serves all purposes. Frequently one man in a district performs various duties as ranger, in charge of scaling, supervision of logging, or fire protection. This form of organization coincides with the seasonal character of forest work. The rangers who supervise logging in the winter are at the same time becoming acquainted with the fire hazards in their districts, and are, therefore, the best men available to supervise patrol and fire protection work in the summer. It is thus possible to give good men permanent employment and to offer them incentives for doing good work in a manner which would be impossible if the men were employed for summer work only. This increase of trained, permanent men, which is economically possible only where the one organization handles the protective and administrative work, is the important feature of our present work in British Columbia. Other obvious advantages of such an organization are that all the timber-land, whether forest reserves or not, is under the one administration; the whole organization in any district is available under one head for any emergency work, and the experience and knowledge of the country gained by a man in one branch of the work serves him in other branches of the work. The retaining of the best men from year to year makes possible the development of the expert forest ranger, a man experienced in the timber business of his district, in scaling, fire protection and fire fighting, without whom no efficient forest administrative organization can exist.

**Must Look
to Future**

I believe that everything that I have said here is self-evident. The man on the street would come to the same conclusion if he had the facts before him and gave a few hours to thinking them over. The trouble has been that the man on the street, the Canadian at his business, has not been worrying over the raising of another crop on our timber-lands. The Commission of Conservation is in an excellent position to start him thinking and I am confident that this Commission, together with the various Forest Branches in Canada, need only make a few studies and place the situation in concrete form before the public to ensure that, in a few years, public timber-lands will be studied, protected and administered in such a way as to maintain their productivity, and to guarantee to Canada permanent forest industries.

I wish to take this opportunity of expressing my appreciation of the valuable assistance which the Commission of Conservation

FEATURES OF A FIRE PROTECTION ORGANIZATION 11

has rendered to the British Columbia Forest Branch, in taking part in a forest survey of British Columbia, and in studying the regeneration of the forest on the logged-over and burned-over lands of the Coast districts. The co-operative spirit, which this Commission has shown, has been a constant influence in forming public sentiment and in securing the information which must be the basis of wise forest administration.

