

**CIHM
Microfiche
Series
(Monographs)**

**ICMH
Collection de
microfiches
(monographies)**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1999

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming are checked below.

- Coloured covers / Couverture de couleur
- Covers damaged / Couverture endommagée
- Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- Cover title missing / Le titre de couverture manque
- Coloured maps / Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- Bound with other material / Relié avec d'autres documents
- Only edition available / Seule édition disponible
- Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.
- Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from filming / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments / Commentaires supplémentaires:

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed / Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies / Qualité inégale de l'impression
- Includes supplementary material / Comprend du matériel supplémentaire
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image / Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.
- Opposing pages with varying colouration or discolourations are filmed twice to ensure the best possible image / Les pages s'opposant ayant des colorations variables ou des décolorations sont filmées deux fois afin d'obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10x		12x		14x		16x		18x		20x		22x		24x		26x		28x		30x		32x

The copy filmed here has been reproduced thanks to the generosity of:

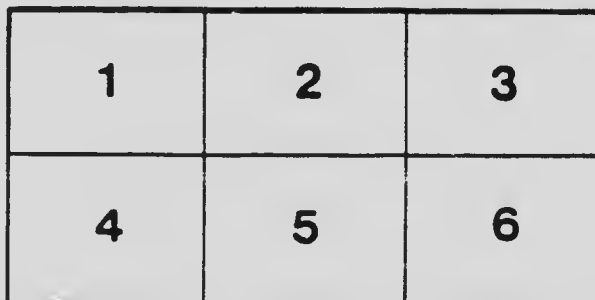
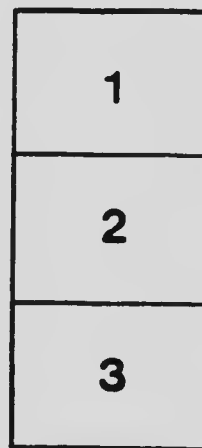
Queen's University
Dept. of Geological Sciences
Library

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Queen's University
Dept. of Geological Sciences
Library

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

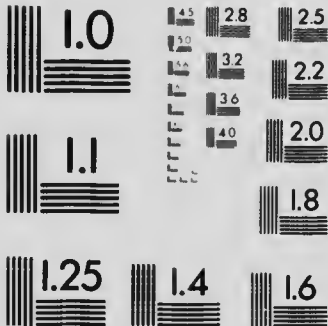
Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

453 East Main Street
Rochester, New York 14609 USA
(716) 482-0300 Phone
(716) 288-5989 - Fax

QUEEN'S UNIVERSITY LIBRARY
DOCUMENTS DEPARTMENT

Commission of Conservation
CANADA

COMMITTEE ON FORESTS

Fire Protection from the
Private Timber Owners'
Viewpoint

BY

ELLWOOD WILSON

Forester, Laurentide Company, Limited

Reprinted from the Seventh Annual Report of the
Commission of Conservation

OTTAWA—1916

Commission of Conservation
CANADA

COMMITTEE ON FORESTS

Fire Protection from the
Private Timber Owners'
Viewpoint

BY

ELLWOOD WILSON

Forester, Laurentide Company, Limited

Reprinted from the Seventh Annual Report of the
Commission of Conservation

OTTAWA—1916

CAI R
FR71
36

Fire Protection from the Private Timber Owners' Viewpoint

BY

ELLWOOD WILSON

Forester, Laurentide Company, Limited

IMAGINE a manufacturer, with his whole stock of raw material for his lifetime, piled up in one store-house. Would he not insure it? Would he not instal automatic sprinklers? Would he not have watchmen on the premises? Let me carry the parallel a little further, and ask what you would do, if you knew that the destruction of your stock of raw material meant the destruction of the elements from which it could be reproduced, as also the supply for your children and your children's children.

The forest is such a store-house, and on it depend some of our most important industries, the stability and continuity of our water-powers, the welfare of our agricultural population, and the comfort of our daily lives. The private timberland owner is just as vitally interested in fire protection for his woodlands as is any manufacturer. He might far better let his saw-mill, his sulphite plant, or his paper-mill go uninsured, and spend the money in protecting his forests. In a year or two he can rebuild his mill; he can easily borrow the money for the purpose, and go on just as before. But he cannot reproduce his forests.

Bad Fires Destroy the Soil After a bad fire the soil itself is partially or wholly destroyed, and, if the fire has been of any extent, the nearest source of seed may be too far distant to permit natural reforestation. I have seen a tract of land, of about ten square miles in extent, which, after fifty-six years, has not a stick of merchantable timber on it, although covered with a growth of small birch and aspen, already past its prime. Not only is there no merchantable timber but, on this whole tract, there are but 1,280 spruce and balsam trees 3" or less in diameter. Of burnt-over land in Quebec 16 per cent, or about 10,597 square miles, is not reproducing, and that on which reproduction has begun is 12.9 per cent. These figures are based on actual surveys over a large area, and, when applied to the areas under license, are rather under than over the amounts.

2013117

**Slash Disposal
Is Important**

One of the most important questions to be considered by lumbermen for the protection of their forests is an efficient and economical method of slash disposal. Toppling on operations where large amounts of timber are cut has proved, in my experiments, to be too expensive for the measure of protection it gives, and I think the only solution will be in brush-piling and burning. The cost of this will be very little more than for simple lopping, as the brush has to be piled in any case, and the protection will be absolute. In my experience, the great majority of fires originate in slashings, and such fires cause most damage and are the hardest to fight. If all operators are required to dispose of their slash, it will be no hardship, as it will put all on the same basis and the cost will be added to the finished product.

Would a farmer set fire to his wheat crop? Would he burn his seed wheat for years to come? Would he let his employees smoke if it endangered his crop? Would he allow hunters, fishermen and campers to freely travel over his land, making fires and scattering lighted tobacco from their pipes? Would he let his neighbour light bonfires where the fire would spread to his standing grain? He would not. Is he wiser, more practical, more hard-headed than the lumberman? Is he a keener business man? You will say no. But there are dozens of men, whose bread and butter depend on their supply of raw material from the forest, who do just such things and worse. I could multiply instances enough to make a volume.

**Fire Protection
is Plain Business**

Fire protection is not forestry, any more than it is logging or milling, but, it is the foundation, the absolute essential, of all these. Without it they cannot exist. If we are not prepared to protect our forests, then, as practical men, let us cut them down and use them up before they are burnt. Fire protection is not a matter of cost; it must be done as cheaply as possible, but it must be done at any cost.

Remember, in Canada we are not dealing with privately-owned forests, but with government-owned forests; they are the property of the people; every man, woman and child has a direct interest in them, which extends to generations yet unborn. It is the duty of our public servants to see that they are protected, and that the licensees, who are but tenants, should not be allowed to shirk their responsibilities. Quebec is the only province in eastern Canada to fully realize this, and its fine of \$5.00 per square mile for the licensee who fails to properly protect his limits has done much good.

The average man does not realize how closely fire protection touches him. Every stock-holder of timber-owning companies should take an interest in fire-protection, and see that his directors are taking care of their forests. Bond-holders are vitally interested, as a good part of their security may be wiped out in one large fire. Banks should not loan money on timber limits as collateral, until they have investigated the fire prevention provided by the borrower. Do not depend upon any concern which does its own fire protection, unless it is done by a department which has no other duties. The timberlands departments have too many other duties, they have men they want to "take care of" from one season to the next, from the end of the drive to the beginning of the fall cut. They leave their patrol to cache-keepers, dam-keepers, and, if there is any exploring, any repairing or other odd jobs, fire rangers are taken off to do them. Then, too, it runs up the logging cost, and you all know what a terrible thing that is. Fire protection is a business by itself. It requires special knowledge, special training, and special tools and methods; the man who is skilled in logging or driving is not necessarily a good fire discoverer or fighter, in fact, rather the reverse.

Railway Fire Protection

The same thing applies to railway fire-fighting, which is usually left to section crews. These men have other work to do and many of them do not take any interest in fire protection work. It would pay the railways, and be far more efficient, to have special fire patrolmen under a separate department head. The reduction of damage claims would pay for the expense many times over. Just as volunteer fire-fighting is out of date, so is amateur forest fire protection. Maintenance-of-way department begrudges every cent spent on fire protection, and this attitude filters down to the section men.

All our work for the conservation of our timber resources is wasted if we cannot conquer the fires. When I first went into the woods in Quebec, I was told one day that there were fires all along a river. "Why don't you put them out or prevent them?" I asked. "Oh, you can't help having fires; it is impossible to put them out. We'll get rain pretty soon." But this attitude has changed and the outlook is very hopeful.

Co-operative Protection

The first real attempt at fire protection in Quebec was made in 1908, and now, after only eight years, we have 38.5 per cent of the licensed area of the province under co-operative protection, and this protection is becoming more and more efficient each year. Co-operative fire protection is not only more efficient, but it is much cheaper than individual protection. It is costing the larger members of

the association only two-thirds of what it cost them to protect their own limits and has wiped out the menace of the small limit-holder, who never used to protect his territory. If a man owns fifty square miles, it would require two men for six months, with their outfit of canoe and tent and provisions, at a minimum of \$500, to patrol it, or \$1.60 per 100 acres. Under co-operation he gets much more efficient service for 40 cents per hundred acres.

The Quebec Department of Lands and Forests, under Hon. Mr. Allard, Mr. Déchene and Mr. Hall, deserves the highest praise for the work it has done in helping along this movement. These men have shown their broad-mindedness and their sense of responsibility for this great provincial asset placed in their care. In every way they have helped, often at political inconvenience to themselves from members of Parliament trying to save their constituents from punishment for infraction of the fire laws, as well as others who did not want to spend any money in protecting their limits. Mr. Allard is now at work on amendments to the provincial fire laws which will bring them up to date, make them easier of enforcement, and do away with some abuses. The settler and the woodsman, living so much in the wilderness, have naturally become ignorant of the law and contemptuous of it, but this condition is rapidly changing for the better.

Losses of
Revenue

Of the 70,000 square miles of timber limits under license, about 10,000 square miles are burnt; these have not yet commenced to reproduce themselves. At an average of 2,500 board feet per acre, this means a loss to the Quebec government of \$15,000,000 in stumpage dues, and, for the 8,500 square miles reproducing, but which will not be ready to cut for 50 years, a large loss of revenue, due to interest charges for this long period. When licensees awake to the fact that they are paying the government \$5.00 per square mile per annum for lands which they cannot cut during the next fifty years, and release these limits to the government, the loss of revenue will amount to \$90,000 a year.

The agitation for better fire protection has also resulted in closer utilization. Until recently, fire-killed timber was never cut, but now the larger companies cut all the trees on burnt-over land, and the government encourages this by a reduction in the stumpage dues, thus saving a great waste.

Education is
Necessary

The great necessity is education of all classes of our people—the man in the street, the government officials, members of Parliament, lumbermen, business men, woodsmen, farmers, settlers and hunters, and above all the

children, for they will be the men of the coming generation; and often the only effective way is to educate the children. The Roman Catholic Church in the province of Quebec has done splendid work. His Eminence Cardinal Begin, Archbishop Bruchesi and Monseigneur Laflamme have for years sent special notices to all their parish priests to impress upon their people the necessity for care. The Department of Education, through its inspectors, has distributed leaflets to the schools in both languages, showing by pictures and by simple sentences the danger of forest fires.

The reduction in the number of settlers' fires has been remarkable, and, once the laws are enforced, it is hoped they will be a thing of the past. Members of Parliament are especially in need of instruction, for several times they have encouraged their constituents to fight arrest; they have influenced the magistrates, tried to use their influence at Quebec, and some have even paid the fines themselves. The magistrates have been very remiss in their duty in some districts, discharging offenders in spite of clear evidence and in some cases imposing fines of \$1.00, thus making a mockery of the law they are sworn to administer.

Improved Conditions Along Railways The railways, with one notable exception, have had a decided change of heart, and railway fires of any seriousness are rapidly becoming a thing of the past.

The one exception is the railway directly under government control, the National Transcontinental. While the Hon. Mr. Cochrane has given instructions to have put into effect all that the Dominion Railway Commission requires, the order has not been fully carried out. The provisions for control during the coming year are still incomplete, in spite of every effort on the part of the Provincial Government and private owners to get the matter settled.

Workers in the woods are still in need of education, as ten per cent of the fires are still set by river-drivers. Woodlands departments are getting more strict, and, in the most progressive companies, setting a fire is now cause for instant discharge of the man and punishment for the foreman.

The proposed amendments to the present law, approved by Hon. Mr. Allard, and the better enforcement of the fire laws, will be a great step in advance. These changes will require permits to burn clearings at any time during the summer, will require all persons called on by a fire-ranger for help in extinguishing fires to respond under penalty of a fine, will fix minimum fines for infractions of the laws, so that a magistrate cannot make the law ridiculous by letting a man off with a one dollar fine, and will punish by imprisonment any deliberate setting of fire to get employment

in extinguishing it. Last year, trouble was caused by men setting fire in order to gain work, but, under the new law, this will be punishable by imprisonment without a fine, and a minimum fine will be imposed, so that magistrates will have no discretion but have to impose a sufficient fine if they find the person guilty.

Better Methods of Slash Disposal Required There is great need for better methods of slash disposal, and I believe that the only right method is the piling and burning of the branches and tops as soon as the trees are felled. A fire in a slashing is terribly destructive and almost impossible to fight, and, if there was no inflammable material of this kind, fires, except in unusually dry seasons, could never assume dangerous proportions and could be easily extinguished. If this is made compulsory on all lumbermen, it will be no hardship, because the added cost will be the same, it will be added to the price of the lumber and will have to be paid by the consumers.

The greatest advance in fire prevention methods will probably come in a year or two, through the use of aeroplanes or hydro-aeroplanes. This may sound impracticable, but it will not appear so when you consider how short a time it was since the aeroplane was a toy, while now it is the most vital part of the fighting forces in the war. There is no reason for not using it to protect our forests. In Michigan last fall, a rich aeroplanist undertook to help in fire protection and the amount of territory he has been able to cover was remarkable. This matter was taken up by the St. Maurice Association last spring, but, unfortunately, the high cost of hydro-aeroplanes (\$10,000, including duty and freight) precludes their use at least for a few years. But, when you consider that two men with an aeroplane can protect 10,000 miles more efficiently than fifty fire rangers, you can easily see that we can afford to buy the machines and hire experts to run them.

Educate the Public The great difficulty is that which Mr. Wentworth has already spoken of, namely, of educating people—of bringing home to every man the absolute necessity of taking care of our forests. I think the greatest benefit this Commission can render is precisely the same as that suggested by Mr. Wentworth in regard to fire protection in cities; that is, the necessity for starting some cheap, but effective, method to educate the children, to educate the ordinary man interested in timber, or the woods, or saw mills, or in any other way; and, above all, in educating the population who live on the boundaries of forests—the farmers and the settlers. To do this we have a great inertia to overcome. It is difficult to get people

in the mass to realize what they realize as individuals. Every intelligent man, when you talk to him about fire protection, agrees that it is very necessary, but men in the mass do not seem to understand this matter nor the necessity of meeting the difficulty. They are inert, they lack the stimulus, the initiative, to do anything. While they realize the conditions, they do not want to start on the remedy.

**Patriotism in
Times of Peace**

We must realize that in this great question of forest fire protection there is a patriotism behind it all, a patriotism of peace, just as important as the patriotism that we have shown in this great war. There are slackers in peace times, just as much as in war times; and it is time for every one of us to realize his individual responsibility in this matter; to make government officials, who are responsible for fire protection, see that they are only public servants, that public office is a public trust, and that they have no political and no individual interest in this matter; that their duty is perfectly clear and plain, and is, first of all, to protect our natural resources—and that applies to every one of us, because, if each man realizes his responsibility, his representative will realize his responsibility too.

