

before. Only non-usable trees, brush, and young growth had been killed, and, therefore, the fire did no harm!

Opinion Dies Hard

This statement reflected a quite general opinion of less than a decade since, and it is quite probable that such opinion may still linger in certain quarters. Its existence, however, has a very logical basis in the development of forest fire protection in Eastern Canada. I believe that it is historically correct to state that fire ranging began with the lumber companies, sometimes voluntarily and sometimes at the instigation of the government. In all cases the lumberman bore the expense—in Ontario for at least ten years. Then followed a period, extending about twenty years, in which the government and the lumbermen shared the cost of forest fire protection on a fifty-fifty basis. The modern method is to levy a direct tax upon the lumberman on the basis of a cent to two cents per acre annually. In some provinces, as in Ontario, the lumbermen make recommendations as to the men they wish to serve as fire rangers on their limits, but the actual appointive power lies with the government; in other provinces, as in New Brunswick, the fire rangers are appointed on the basis of a competitive examination. In case of the lumbermen's associations, the lumbermen pay the major cost, but receive certain contributions from the government.

Operator's Point of View

Thus, it will be seen that the operator apparently has always paid at least one half and for the greater part of the time the larger portion of the cost of fire ranging upon his limits. He owns only the timber. The land in most cases belongs to the

Crown, and the operator pays a small rent for the use of it. When he has taken away all the merchantable timber, he has no more use for the land and it reverts to the Crown. As a matter of fact, however, there are certain considerations not concerned directly with growing timber that impel the operator to hold on to his cutover lands until the block, berth or limit has been completely exploited. Notwithstanding this, his primary interest is in the merchantable timber of his limit, and, since he pays the greater share of the fire ranging cost, it is perfectly natural and logical that he should desire the green timber to get the whole or major part of the protection; that his interest in the cutover or previously burned areas should be measured by their degree of hazard in relation to his standing timber.

Even at present, I think it safe to say that the greater portion of the fire protection effort goes to the mature forest. From the foresters standpoint, however, the protection of the cutover and burned-over lands is much more important than the protection of standing timber. There are at least two good reasons for making such a statement. In the first place, if we may judge by the Ontario statistics on a five year average, less than one fifth of the area burned is timberland and one half the area burned has been previously burned. The figures, of course, may be interpreted in two ways, but either substantiates the point I am trying to make. They indicate either that more effective protection is placed upon the standing timber and, therefore, less is burned, or that the standing timber is not as great a hazard and, therefore, does not need as much protection as the areas that have already been burned at least once before.

Must Protect Old Burns

In the second place, although we have no accurate field data on the subject, the areas burned in Eastern Canada undoubtedly greatly surpass in extent the areas containing untouched saw timber and the areas cut and not burned combined. Indeed, it is probable that much more than half of the forested area has been burned within the past 75 years.

Reference to a study of 80,000 acres of burned-over pine lands in central Ontario illustrates this point. On areas burned but once there were 110 young pine trees per acre, burned twice, 14 trees, burned three times, 7 trees and on areas burned many times only three young trees remained on the average acre.

If we supposed that all the 110 trees on the area burned once lived to maturity and all the 80,000 acres to have been burned but once, the value of the final crop in dues and stumpage at the present rate of these would be \$3,900,000. However, the area stocked as it is after the repeated fires will be worth at maturity in terms of commercial timber about \$900,000. Thus the repeated fires reduced the potential value of these 80,000 acres by a round sum of \$3,000,000. That is on 80,000 acres. What is the area of similar conditions in Eastern Canada? We don't know, but we do know that it is enormous. Areas are being repeatedly burned in Ontario at the rate of 100,000 acres a year on a five year average. Young growth is doubtless being killed in a similar proportion in other provinces. We simply cannot endure this, if we are to have a future supply of timber in Canada. Therefore, more adequate protection of areas not at present containing saw-logs is as imperative as it is a patriotic duty.

SIX RULES FOR PREVENTION OF FIRES

1. **Matches.**—Be sure your match is out. Break it in two before you throw it away.
2. **Tobacco.**—Throw pipe ashes and cigar or cigarette stumps in the dust of the road and stamp or pinch out the fire before leaving them. Don't throw them into brush, leaves, or needles.
3. **Making Camp.**—Build a small camp fire. Build it in the open, not against a tree or log, or near brush. Scrape away the trash from all around it.
4. **Leaving Camp.**—Never leave a camp fire, even for a short time, without quenching it with water or earth.
5. **Bonfires.**—Never build bonfires in windy weather or where there is the slightest danger of their escaping from control. Don't make them larger than you need.
6. **Fighting Fires.**—If you find a fire, try to put it out. If you can't, get word of it to the nearest fire ranger at once. Keep in touch with the rangers.