

RECOMMENDATIONS BY COMMITTEE ON FORESTS

Commission of Conservation urges Additional Laws to
Protect Timber Resources from Fire and Otherwise
to Conserve Great Natural Assets for Future

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tinued under the direction of Dr. C. D. Howe. This involves a careful study of the reproduction and growth of the eastern pulpwood species, after logging. The object of this study is wholly practical, since it has for its aim the determination of what modifications of existing methods of cutting are necessary to secure adequate reproduction and growth of the more valuable species.

The studies thus far made have shown that present methods of cutting in the mixed forests of Eastern Canada are destructive, rather than constructive, and that there is nothing like adequate provision for the future. The constant tendency is to increase the predominance of the less valuable hardwood species, through the cutting of the conifers only. These observations are borne out not only by Dr. Howe's studies, but also by a careful investigation made during the past summer by Prof. B. A. Chandler, of the Forestry Department of Cornell University, on lands in Ne-ha-sa-ne park, in the Adirondack mountains of New York, where conditions are to some extent similar to those obtaining in the St. Maurice valley of Quebec. The lands studied by Prof. Chandler were cut for spruce twenty years ago. The report shows clearly that because of the overpowering domination of the hardwoods over the free spruce, the prospects for future cuts of spruce seem to be very poor. In other words, it will not take very many cuts of spruce on the diameter limit basis to practically eliminate spruce as a commercial species from these areas of mixed forest.

TRANSPORTATION PROBLEM.

It would seem that the full solution of the problem can come only when it is commercially feasible to log the hardwoods as well as the conifers. High transportation costs, however, prevent the utilization of the great bulk of the relatively less valuable hardwoods. Limited markets for the lower grades are also a serious obstacle. It may be that the wider use of motor tractors for winter log-hauling may help toward the solution of the transportation problem, within certain limits of distance, where stream driving is not feasible; and that the use of groundwood pulp from hardwoods, in mixture with spruce and balsam pulp, in the manufacture of newsprint, may constitute one of the elements in the solution of the markets problem. Some experiments have already been made, and are under way, along these lines. It is believed, further, that much more can be done in the direction of transporting hardwoods by stream driving than many people have heretofore believed.

In line with other recommendations for conditions more or less similar, Chandler suggests that, in addition to cutting as much of the hardwoods as the market conditions will permit, the removal include, to the lowest possible size, the diseased spruce, spruce which will not be freed by the cutting, and spruce which have been so badly suppressed that they probably will not recover. As many small and medium, well-topped free spruce should be left as lumbering conditions and the danger from windfall will allow. In other words, as Prof. Chandler says, the timber should be marked by a man who knows all that is known about the silviculture of this type of forest, and, at the same time, knows the market with which he is contending.

It is of the greatest importance that the research projects upon which Dr. Howe has been engaged, in the forest, be continued and extended, with a view to learning actual conditions and finding out what can be done towards improving them, in connection with logging operations. The effect of forest fires upon natural reproduction, particularly that due to seed stored in the forest floor, will be carefully studied. The prospective value of our entire project of forest investigation has been definitely recognized by formal resolution of the Woodlands Section of the Canadian Pulp and Paper Association, as well as by the fact that two of the best known pulp and paper companies of Canada are contributing financially toward the support of the work on their limits. Should the requisite funds be available, it is hoped that similar investigations may be started elsewhere, as in Ontario, preferably including an area of primarily coniferous forest, as contrasted with the mixed stands in which we have been working. Such studies would constitute an admirable basis for comparison with the results of investigations in the St. Maurice valley.

DIAMETER LIMIT SYSTEM.

It should be borne in mind that the diameter limit system of regulating cutting operations, upon which the hopes for a future crop have so generally been built, did not in Canada originate as a measure of scientific forestry, but was first inaugurated in order to ensure some timber being left on the land for the use of the settler who, it was expected, would follow the lumberman. This is parallel to the genesis of the licensing system of disposing of timber, which had its beginning in the recognition of the fact that lumbering operations on a given area, at that time the fertile valleys, would be but temporary, and that the soil itself would be retained for the use of the settlers who would follow later.

Both the licensing and diameter limit systems have served a tremendously valuable purpose in Canada; the former because it has retained under public ownership and control so large a proportion of the non-agricultural lands of the country, and the latter because it has prevented the complete destruction of the forest, as a forest, over great areas, pending the arrival of methods of regulating cutting operations that should take more fully into account the widely varying conditions that always exist in the forest. It is now pretty generally conceded that improvements in the existing situation are urgently needed, and it is to help in finding the answer to this problem that the Commission has embarked upon its plan of forest research. Adequate financial support is, however, imperative if the work is to go forward on an adequate scale, together with investigations of the forest resources of the several provinces, such as have already been made in British Columbia and Saskatchewan.

It cannot be too often or too strongly emphasized that our forest resources are by no means inexhaustible, that the virgin forests of Eastern Canada are rapidly approaching exhaustion, that the continuance of our forest industries depends upon keeping the non-agricultural lands in a productive condition, that present methods of cutting do not adequately provide for the perpetuation of the forest as a forest, and that a great deal of further study and investigation will be necessary to determine just what steps must be taken to meet the situation.

Potato Acreage Less.

The acreage of potatoes in Nova Scotia and Ontario is likely to be less than last year, according to early reports, as stated in a report issued by the Department of Agriculture. In Ontario the prolonged wet weather has made it practically impossible to get on the land. Other reasons for the decreased acreage are the high cost of fertilizer and the shortage of labour.

Save by the W.S.S. plan.

FORESTS MUST PLAY BIG PART IN RECONSTRUCTION

"Statesmen and business men have repeatedly emphasized the part that the further development of our natural resources must play in reconstruction after the war. Any such programme must take full account of the forests. Such increased development will assist materially in providing against unemployment, through the building up of new forest industries, in addition to the 5,000 wood-using industries already in existence. It will be a large factor in stabilizing economic conditions generally.

"A large export trade is particularly essential to Canada, to redress her unfavourable trade balance, particularly with the United States. In this direction, our forests hold a position of peculiar strategic importance, both actual and potential. In British Columbia, for example, it has been shown that the annual lumber cut can be increased five-fold, under good management, without impairing the forest capital stock. This means an enormous export trade to which the shortage of shipping is still the greatest obstacle.

"The present and potential value of Canada's export lumber trade is indicated by the order recently placed by Great Britain for lumber from Canada, aggregating around \$50,000,000 in value. In the East, the value of our pulpwood forests is indicated by the fact that the value of the exports of pulp and paper now total around \$60,000,000 annually. One-fourth of the newsprint used in the United States comes from Canada, and fifteen per cent of the pulpwood consumed in that country is the product of Canadian forests."—Report of the Commission of Conservation Committee on Forests, 1919.

EXPERIMENTAL FARM'S ADVICE ON HAYING

Bulletin says that time of
Cutting is of Prime Im-
portance to Farmer

The cutting and curing of hay is an operation requiring the exercise of prompt action and sound judgment if a maximum yield of hay of suitable quality is to be saved.

An Experimental Farms note, issued by the Department of Agriculture, says:—Towards this end there are several factors which should receive consideration. The time or stage of cutting is of prime importance since it affects both yield and quality. Usually the most profitable yield is obtained when the crop is cut when in blossom or just past that stage, say when about one-third of the bloom has disappeared. Ordinarily the tendency is to leave the commencement of haying too late for proper curing during the latter part of the season, due to overripeness of the crop. It is advisable, therefore, to plan to do this work during the period when there is the least possibility of loss. Beginning haying early is good practice. Clover and alfalfa cut slightly immature will make better hay under favourable weather conditions than left until fairly ripe. Besides, an early start will allow for loss of time through broken weather during the haying season and will ensure a heavier second crop which may be utilized for hay, seed, and pasture purposes.

With regard to methods of curing, no definite rule or rules of procedure can be laid down to meet all requirements. A successful haymaker, so to speak, "Knows his business," a knowledge that is acquired only by long experience with vagaries of weather, periods of cutting, conditions of curing, etc. To become efficient in this work requires one vigilant and with ability to contend with emergencies.

Clovers and alfalfa are more difficult to cure than timothy and other grasses. They are more succulent, absorb rain more readily, and the leaves, the most valuable part of the plant, are more easily broken off than the leaf blades of grasses. They should be cut when free from dew or other moisture, and dried, for placing in cocks, by the agency of wind rather than sun as far as possible. Exposure to rain or even heavy dew will change the green leaves to dark

brown and make them crisp and readily broken off by handling. Rain and dew will also extract the aroma of fragrance a quality essential in making hay palatable and attractive.

Mixed hay, timothy and other grasses cure more readily than clover and are not affected to such an extent by unfavourable weather conditions. Otherwise the general principles of curing laid down for clover and alfalfa apply. Timothy grown for market purposes may be cut at a later period than is recommended for ordinary farm feeding purposes. Market conditions demand well-matured, though not overripe hay.

Males' Large Majority.

The excess of males over females in the Dominion is 437,347, which is an excess percentage of 130 males per 1,000 females, the male population being 3,821,995 and the female 3,384,648. The number of females per 1,000 males is 886, the deficiency of females as compared with males being greater in Canada than probably in any other country. The disparity is especially strongly marked in the Western Provinces. The last census showed that the number of females per 1,000 males for each province was: British Columbia, 560; Manitoba, 622; Alberta, 673; Saskatchewan, 688; Ontario, 942; New Brunswick, 956; Nova Scotia, 961; Quebec, 980; and Prince Edward Island, 991.—Canada Year Book.

Wheat Area Increase.

The wheat acreage in the Dominion has expanded from 1,646,781 acres in 1870 to 2,366,554 acres in 1880, 2,701,246 acres in 1890, 4,224,542 acres in 1900, and 8,864,514 acres in 1910, to 14,756,000 acres in 1917, as shown by Dominion census statistics.

Apples for the U.K.

The Dominion Fruit Commissioner supplies the following table, which shows the quantity of Canadian apples imported into the United Kingdom between January 1 and March 31, 1919, and for the same period in 1918, together with a statement of the total imports of apples:—

	1918.	1919.
	Cwts.	Cwts.
Total imported	193,719	1,472,167
Imported from Canada	307	362,882