

Commission of Conservation CANADA

Hon. W. C. EDWARDS
Acting Chairman
JAMES WHITE
Deputy Head

CONSERVATION is published monthly. Its object is the dissemination of information relative to the natural resources of Canada, their development and proper conservation, and the publication of timely articles on housing and town planning. The newspaper edition is printed on one side of the paper only, for convenience in clipping for reproduction.

OTTAWA, DECEMBER, 1920

Study of Power

Conditions

The many advantages to be derived from a power survey repay many-fold the labour and money expended in conducting the survey in a thorough and systematic manner. The necessity for such an investigation is most pronounced in a rapidly expanding country, such as Canada, at a time when development and power requirements are growing by leaps and bounds. It is the only solution to overcome existing local power deficiencies and to afford proper guidance in providing for future requirements.

For these purposes it is not sufficient to have bulk figures and general statements. The study should go into details and, where it is opportune to do so, should cover individual cases and indicate where deficiency exists. Perhaps most important of all, it should point out how the difficulty should be remedied or avoided in the future.

As an example of progress in this direction outside of Canada, such a survey has recently been recommended for the state of North Carolina. It is to comprise a complete compilation of data relating to the present status of power demand in the state, a comprehensive survey of the water-power resources, the development of a general scheme for district power service, and the passage of a water-power conservation law.

The power supply of Canada is now derived partly through central electric stations which serve various industries and partly through steam and water-power plants installed to operate individual factories. Proper co-ordination of these would result in a more efficient and easily available power supply, and is of national importance.—L. G. Denis.

Planting Windbreaks as Crop Protectors

Results Emphasize the Importance of Trees to the Farmers of Prairie Provinces

Mr. Norman Ross, Chief of the Tree Planting Division, Dominion Forestry Branch, at Indian Head, Sask., in speaking of the effectiveness of trees as windbreaks on field crops, at the conference on Soil Fertility and Soil Fertility at Winni-

peg, under the auspices of the Commission of Conservation, gave illustrations of the results actually obtained. Of special importance was that secured at the new nursery near Saskatoon, which Mr. Ross described, where the main outside shelter belts had not yet reached more than six to eight feet in height. The nursery is divided into one-acre plots, each about 25 yards wide, with caragana hedges about 21 feet high dividing the plots. Of these plots 35 were sown to oats, after summer-fallow. Almost adjoining and on exactly the same class of soil and similarly cultivated, a ten-acre field was sown, also fifteen acres on stubble either spring or fall ploughed. The ten-acre summer-fallow field was completely blown out, while the stubble field yielded but 10 bushels per acre. The protected summer-fallow plots yielded 40 bushels of oats per acre—the largest crop in the district. In other words, hedges, 21 feet high and 75 feet apart, made all the difference between a crop of 40 bushels per acre and a complete failure, all other conditions being equal.

This question is of maximum importance to the Prairie Provinces, and some co-operative system of planting should be developed, whereby large areas could be set out, otherwise much damage may be done to protected lands by blowing soil from adjoining properties.

Feeding Grounds for the Migratory Birds

To Increase Numbers of Birds the Inland Lakes and Swamp Areas must be Perpetuated

Friends of our migratory birds appreciate that in the adoption of the Migratory Bird Treaty the first important step for the perpetuation of the birds has been made, but that another vital safeguard remains to be provided.

For purposes of shelter and refuge during migration and for feeding and rearing their young, it is essential that small inland lakes and swamp and marsh areas be perpetuated. With protection the birds are rapidly increasing, and provision must be made that as far as possible, natural conditions shall be available for them in their passage north and south.

Canada is appreciating this condition, and is setting aside areas throughout the country as bird reservations. These are under the jurisdiction of the Dominion Parks Branch, which has the administration of the Migratory Bird Treaty and the Northwest Game Act. Many private reservations are also being established, and it is hoped that with the increase of bird life many of the enemies of agriculture and forestry will be overtaken. The farmers of Canada can well afford to encourage the birds, as they very much more than pay their way.

Forest Research is Needed in Canada

Intensive Study of Forest Conditions Essential to Perpetuation of Wood-using Industries

At the Imperial Forestry Conference, held during the past summer at London, England, stress was laid upon the urgent necessity for a comprehensive scheme of forest research, to serve as a basis for the intelligent handling of the forest with a view to its perpetuation by wise use. It is recognized by those familiar with conditions, that lack of intelligent direction in the method of forest exploitation results usually in the deterioration of the quality and quantity of the succeeding forest, if, indeed, the forest is not entirely destroyed and the land rendered wholly unproductive.

The effects of repeated fires in bringing about forest devastation are now quite generally recognized, and object lessons may be seen in all parts of the country. The serious effect upon the composition of the forest brought about by the lack of intelligent regulation of the methods of carrying on cutting operations, are, however, less recognized. For example, white pine, formerly the premier timber tree of Canada, has largely disappeared from great areas where it was formerly plentiful and where it formed the foundation for the early prosperity of the timber industry of Eastern Canada. The methods of cutting were such as to favour the increasing preponderance of the less valuable species.

Similarly, to-day, spruce, the premier pulpwood species, is being steadily driven out of our eastern forests as a result of heavy cutting for pulpwood and lumber, with but little conscious attempt to modify the methods of logging so as to ensure the continuously satisfactory regeneration of this valuable species on cut-over lands. In many cases, all the merchantable spruce is taken, but only a percentage of the less valuable and shorter-lived balsam, and generally none of the hardwood species, of which birch is the most conspicuous example. The inevitable effect of such treatment is to increase the proportion of hardwoods and balsam in the succeeding forest, providing the area is fortunate enough to escape the ravages of successive fires.

Authentic information as to the effects of fires and of different methods of cutting upon the composition and growth of the forest is absolutely essential as a foundation for any intelligent system of forestry practice. One of the resolutions adopted at the Imperial Forestry Conference, referring particularly to the situation in Canada, set forth that, important as are researches in the technology of wood, it is of even greater urgency to carry on investigations, on an adequate scale, into such fundamental questions as seeding and

regeneration, and rate of growth of forest crops.

In Canada, only a comparatively small beginning has been made in this direction, due largely to lack of sufficient funds, the scarcity of trained investigators, and an inadequate appreciation of the need for such information, coupled with pressure for the assignment of qualified technical men to administration as distinguished from research.

Among the governmental organizations which have made at least a beginning in forest research are the Dominion Forestry Branch, Quebec Forest Service, New Brunswick Forest Service, Ontario Forestry Branch, British Columbia Forest Branch, and the Commission of Conservation. In addition, a number of the pulp and paper companies have done some work along similar lines, either independently or in co-operation with the Commission of Conservation.

The investigations under way by the Commission of Conservation involve a study of the present methods of cutting upon the character of the forest, the amount and kind of natural reproduction, the rate of growth which is taking place, and the effect of forest fires upon the future of the forest. The development of the Canadian pulp and paper industry during the past few years is of such importance in the economic and industrial life of the country that too much emphasis cannot be placed upon the necessity for ensuring a perpetual supply of the raw materials so vitally essential to the continued existence of this great industry. To this end, a vast amount of research will be necessary, challenging the best efforts of all the various agencies, both public and private.—Clyde Lawitt.

To Study Forestry Practice in Europe

Quebec Government Sends Members of Forest Service Overseas to Investigate Conditions

The appreciation of the Quebec Government of the necessity for the practice of forestry on its non-agricultural lands, and of the need for thoroughly trained foresters to make its programme effective, has recently been further evidenced. Four of the employees of the Provincial Forest Service, —graduates of the Forest School at Laval University—have recently been sent to Europe by the Provincial Government, to spend a period of six months in making advanced studies of forestry practice and forest utilization in France, Belgium, Switzerland and Germany. One of the men will extend his studies to cover a period in Sweden. Among the lines of investigation to which particular attention will be paid by these men will be methods of lumbering, sawmilling, silvicultural practice, reforestation, aerial photography,

(Continued on p. 44.)