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Water—The Magic of the Prairie Farm

By E. F. Drake, Director, Reclamation Service of Canada

Forest conservation is a vital factor in irrigation development. The conservation of our forest resources can be justified on many grounds quite unrelated to irrigation; but irrigation as it is, and must be, developed in Western Canada, particularly in the prairie provinces, is very largely dependent upon the preservation of forest cover on the eastern slope of the Rockies, where rise most of the streams used for irrigation.

Practically all of the eastern slope of the Rocky mountains is now included either in forest reserves or in national parks, thus assuring the permanent reservation of this large tract of non-agricultural land for public purposes. But it is necessary to do more than merely reserve this land from other uses; the forest cover must be adequately protected—particularly from fire, its greatest enemy. This will serve two main purposes: the provision of a permanent supply of timber for commercial uses and the protection of the sources of water supply so essential to the agricultural development of the adjacent plains country.

An Old, Old Question.

There is some uncertainty whether forests have any material effect on precipitation over large areas and the available evidence seems to support the negative opinion; but it seems to be established that there is heavier and more frequent precipitation within forst areas. That, however, is of relatively little importance. The most important effect of forest-covered watersheds is their retarding influence on local run-off.

Forest Cover a Great Equalizer.

As both the snowfall and the rainfall are heavier on these mountain slopes, whether forested or not, than on the prairies to the east, it is essential that the forest cover be preserved in order to retard run-off as much as possible. It has been asserted with some plausibility that cultivated farm land is quite as effective as forest cover in retarding run-off, but these mountainous regions are unfit for agricultural use and will, without tree growth of some kind, shed water almost as freely as paved roads. Forest cover delays the melting of snow in early spring, and thereafter, throughout the summer, prevents loss of moisture by evaporation. The forests, in short, act as retarding reservoirs, the effect of which is to prevent sudden and violent floods and to equalize stream flow.

Without forest cover there would undoubtedly be more frequent and violent spring floods, with resultant periods of low stream flow in summer, when water for irrigation is most needed—alternate periods of flood and famine, in so far as stream flow is concerned. This cannot altogether be prevented. Forest cover will not wholly prevent floods, nor is it possible to conserve all flood water in storage reservoirs, but the preservation of forest cover will unquestionably have an equalizing effect on stream flow, and, in addition, much of the flood water can be held back in reservoirs against a time of need later on.

Quite aside, therefore, from all the other good reasons for the protection of our remaining forest resources, the settlers on the prairies are vitally interested in the protection of the sources of water supply upon which they are dependent, not only for irrigation development, but for domestic supply as well.

A scene at the Gap, on Old Man River, in Southern Alberta, illustrating the class of country, unfit for agriculture or even grazing, where forest cover should certainly be preserved for its regulating effect on stream flow.

Crops From the "Dry Belt."

The "dry belt," comprising a considerable part of Southern Alberta, contains some 23,000,000 acres. Much of this is too high, or too rough, or is otherwise unsuitable for irrigation. No calculation has been made to determine just how much of this area could be irrigated,