

Agricultural use

Most of Canada's agriculture depends on the direct natural supply of water to the land in the form of rain and melted snow. Of the approximately 28 million hectares (69 million acres) of land devoted to crops each year, 448,200 hectares (1.1 million acres) are irrigated — fewer than two out of every 100 hectares (or acres). Most of the irrigated land is in Alberta, British Columbia and Saskatchewan.

In Alberta, over 245,000 hectares (600,000 acres) of the 5,310,000 hectares (13,100,000 acres) of land devoted to crops each year are irrigated (4 per cent). British Columbia, with a much smaller area of land devoted to crops — about 325,000 hectares (800,000 acres) — has over 81,000 irrigated hectares (or 200,000 acres) — 25 per cent.

In 1974, 5,920 million litres of water (or 1,303 million gallons) a day were used for irrigation in Canada, and another 1,350 million litres (or 296 million gallons) a day for stock-watering. Although not as large as other water-uses, the irrigation totals are of critical importance to Western agriculture and to new projects that are being developed. The South Saskatchewan River Project, for example, will permit the irrigation of 202,400 hectares (500,000 acres) in Saskatchewan and the Southwest Saskatchewan irrigation projects will permit irrigation of another 10,100 hectares (25,000 acres); the Waterton River Diversion, completed in 1964, has made irrigation water available to another 81,000 hectares (200,000 acres) in Alberta. In addition, there are at least another 10,000 hectares (25,000 acres) under individual farm-irrigation schemes in Saskatchewan and Alberta.

Owing to the importance of conserving water, efforts are being made to improve the efficiency of irrigation. Systems using gravity-flow have been improved through land-levelling and better irrigation methods. Pressure systems that distribute water through sprinklers have replaced some of the less-efficient gravity systems, and have made irrigation possible in areas that could not be flooded. In increasing acreage under irrigation, the restricting factor is usually the limited water-supply in areas that need it most.

Land-use practices can have a significant effect on stream-flow. Careless farming methods can speed the runoff of snow-melt and rainfall and cause soil erosion. Besides the loss of precious soil, this can have adverse effects on the streams that receive the runoff. It can increase flooding, cause streams to become turbid because of the