

Agriculture. Most of Canada's agriculture depends on the direct natural supply of water to the land by snowmelt and rainfall. Of the approximately 62 million acres of land devoted to crops each year, an estimated 1,000,000 acres is irrigated -- less than two out of every hundred acres of crop-producing land. Practically all the irrigated land is in Alberta, British Columbia, and Saskatchewan.

In Alberta, about 545,000 out of the 15.6 million acres of land devoted to crops each year is irrigated (four per cent). British Columbia, with a much smaller area of land devoted to crops -- about 800,000 acres -- has over 200,000 irrigated acres (25 per cent).

Irrigation projects continue to be developed in the Canadian west. The South Saskatchewan River project, for example, will permit the irrigation of 500,000 acres in Saskatchewan; the Waterton River diversion, completed in 1964, has made irrigation water available to an additional 200,000 acres in Alberta.

In humid areas, where irrigation is not generally required, methods of agriculture can have a substantial effect on streamflow. Careless farming methods can speed the runoff of rainfall and result in erosion of soil. Besides the loss of precious soil, this can have two effects on the streams which receive the runoff -- it can increase the danger of flooding downstream, and it can cause streams to become turbid because of the eroded material being carried. Farmers are recognizing more and more the value to themselves and to others of proper agricultural practices which will conserve precipitation for crop use, prevent the loss of soil, and preserve the quality of the streams which drain the land.

Fisheries. In 1867, the year that Canada became a nation, some 3.5 million pounds of fish were taken from fresh-water sources, primarily the Great Lakes-St. Lawrence River system. Since 1867, fresh-water fisheries have continually expanded to the extent that, by 1964, the annual catch had increased to 105 million pounds, worth \$18.3 million. A little less than half of this catch was taken from the Great Lakes-St. Lawrence system.

Although this value is less than one-tenth the value of Canada's coastal fisheries, it should be remembered that the value of rivers lies not only in their yield of fresh-water fish, but also in the fact that they provide the spawning grounds for commercially profitable anadromous ocean fish.

Besides the commercial fresh-water fisheries, there are thousands of sport fishermen who each year cast their lures into lakes and rivers in all parts of the country.

To an increasing extent, commercial and sport fishing are receiving important consideration in the preliminary design of water-use projects affecting fisheries. In some cases, this consideration has not only dictated the nature of the project but also has influenced the choice of location.

Fish require a pollution-free environment, and the increasingly-polluted condition of many lakes and streams has had a serious effect on both the quantity and type of fish available for sport or commerce.