

quality. In keeping with the United Nations Economic Commission for Europe's Protocol on Persistent Organic Pollutants (POPs), most pesticides that are POPs have generally been banned from Canadian agriculture. The few remaining uses of the pesticide lindane are under review for their continued acceptability. Contamination by such pesticides in Canada is steadily declining, except where they are deposited by atmospheric transport from countries where they are still used.

Bacterial contamination of well water is widespread and usually results from faulty well construction. Contamination of surface waters is sometimes associated with leaking manure storage systems or inappropriate application of manure to farmland. Evidence is lacking to link heavy metal contamination of water to agricultural activity.

Risk of water contamination by nitrogen on farmland in Canada's humid regions under prevailing management practices in 1996

Province	Farmland area* (million ha)	Share (%) of farmland in various water contamination risk classes		
		Low (0-6 mg N/L)	Intermediate (6.1-14 mg N/L)	High (>14 mg N/L)
British Columbia	0.1	6	25	69
Ontario	4.2	39	44	17
Quebec	1.9	58	35	6
Atlantic provinces	0.4	82	15	3

*Farmland area here is the sum of all Census of Agriculture land classes except All Other Land. Value for British Columbia is for the south coastal region only.

Water Quantity

Agriculture competes with many other uses of freshwater in Canada, including thermal power generation, manufacturing, municipal uses, fisheries, wildlife habitat, and human recreation. On a national level, agriculture withdraws a relatively small amount of water (8 percent) compared to thermal power generation (60 percent) and manufacturing (19 percent). However, agriculture consumes a large portion of what it uses, returning less than 30 percent to its source where it can be used again. About 75 percent of all agricultural withdrawals of water occur in the semi-arid Prairies. Generally the provinces have jurisdiction over their waters, but federal legislation governs some aspects of water development and use. Water rights legislation has been developed to regulate the withdrawal of surface water and groundwater for beneficial purposes.

At the same time that agricultural demand for water is growing, particularly for irrigation, other sectors are demanding more too. Competition for the finite supply of water, particularly in water-short areas of the country such as the Prairies and the interior of British

Demand Management to Conserve Irrigation Water in British Columbia

In the summer, an average of 123 million litres of water is consumed each day in the South East Kelowna Irrigation District in the Okanagan Valley, British Columbia. Ninety-five percent of this water is used in agriculture to irrigate about 2500 hectares of land. About 1400 domestic connections account for the remainder. In 1995, this district cooperated with the British Columbia Ministry of Agriculture and Food to run a pilot project aimed at reducing water use through universal metering and irrigation scheduling. Ten growers participating in the project use measurements of soil water and climate data to schedule their irrigation. Monitoring actual soil moisture allows these farmers to apply irrigation water only as needed, resulting in more efficient water use. Since solid set and handline sprinklers are the main irrigation systems used throughout the district, additional water savings may be realized by converting from sprinklers to more efficient drip or micro-spray irrigation.