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Summary of Water Quality Monitoring in Manitoba

By Nicole Armstrong

Manitoba has an extensive long-term water quality monitoring program (one of the best in the country) with some stations that have been monitored since the late 1960s. About 75 sampling stations on rivers and streams are currently included in our long-term monitoring network. Most stations are sampled by staff in the Water Quality Management Section but some are monitored in partnership with Conservation Districts, Manitoba Hydro or volunteer organizations with the laboratory analyses paid for by the Province. Many of the stations were established to assess water quality upstream and downstream of potential impacts such as municipal, industrial and agricultural activities. Typically stations are located at the downstream end of the watershed but we have some long-term monitoring stations in upstream areas or along a longitudinal gradient. A good example is the Assiniboine River where we have nine monitoring stations that stretch between Russell and Headingley. Stations are sampled for about 100 different variables including nutrients, metals, pesticides, and general chemistry. Samples are collected routinely either monthly or quarterly with additional sampling during spring runoff and intense rain events as budgets and schedules allow. We also work cooperatively with the federal government on water quality sampling. Environment Canada is responsible for monitoring at trans-boundary locations such as at the Canada/US border on the Red and Souris Rivers and at the Manitoba/Saskatchewan and Manitoba/Ontario borders. We review these water quality data regularly through our participation on Boards such as the Prairie Provinces Water Board and the International Red and Souris River Boards and incorporate these data in our work (such as to determine nutrient loading from upstream jurisdictions). In terms of inflow to Lake Winnipeg, the Red, Winnipeg, Saskatchewan, Brokenhead, Dauphin, Fisher and Icelandic Rivers are all monitored regularly as well as two sites on the Nelson River (outflow from Lake Winnipeg).

In addition to our long-term monitoring network, about 3000 stations across Manitoba have been sampled occasionally for a wide variety of reasons (for example, in response to spills and incidents, for short term studies of a couple of years, etc.). For example, we have two years or so of intensive water quality data for the La Salle and Seine Rivers with about 10 stations that stretch from upstream areas of the watershed to the outlets to the Red River. We also have some long-term monitoring stations on lakes such as Lake Winnipeg, Lake Manitoba, Shoal Lake, Pelican and Killarney Lakes, etc. and have just initiated a long-term monitoring program in provincial parks on lakes.

I have spreadsheets with the lists of stations and some maps if more information would be helpful.