



FACT SHEET: GROUNDWATER USE REGULATION

Water law in Canada is based on English common law, which historically distinguished between surface water and groundwater. The former was governed by riparian rights, the latter was governed by the Rule of Absolute Capture. While water users with riparian rights had obligations not to infringe on the rights of downstream users, those with groundwater rights were entitled to extract water without any regard for impacts on their neighbours. Though hydrogeological understandings of groundwater have evolved dramatically, groundwater regulations have yet to ensure sustainable use of groundwater in Canada.

Ground Water in Canada

Lack of information on national groundwater resources and usage makes it impossible to determine whether groundwater is increasing or decreasing in Canada, and to track changing use patterns by different industries. Without this information water management by provinces or communities becomes extremely difficult when they are faced with groundwater stress.

- Drinking water for a third of Canada's population comes from groundwater sources. This includes 80% of Canada's rural residents who get their drinking water from groundwater.
- Agriculture's share of groundwater usage varies considerably, from 44% in Manitoba to as little as 3% in Saskatchewan.
- Quebec has 142 municipalities reliant on groundwater, making it the province with the most municipalities in this situation.
- Ontario has the most people who depend on groundwater resources at 1.3 million.
- Prince Edward Island is the only province that relies entirely on groundwater sources for fresh water.
- While over 25% of municipalities in Canada have experienced water shortages in the past decade, those that rely on groundwater have reported more frequent shortages than those who rely on surface water.
- Environmental impacts that are associated to groundwater overwithdrawal include: water shortages, damage to connected wetlands, and occasionally salt-water intrusion.

Groundwater Jurisdiction

Provinces have primary jurisdiction over water resources as a result of their constitutional power to make laws governing natural resources, and their proprietary powers. The Federal government governs water with respect to transboundary waters, navigation, fisheries, and international treaties, and also has proprietary powers. The provinces and the federal government share responsibility for health and agriculture.

Provincial & Territorial Regulation

Provinces and territories vary dramatically in terms of how they regulate groundwater resources. Key variables that distinguish them include: the presence/absence of a permitting system, how regulators assess the environmental impacts of withdrawals, and public participation rights under water laws. Typically, Water use licenses specify “rate, quantity, duration, and time of use”, and often include the purpose of extraction.

- **British Columbia** is the only province without any general licensing requirements for groundwater extraction at any level, making it one of the only jurisdictions without such provisions in North America. BC’s Ministry of Environment is the primary regulator, and the 2004 Ground Water Protection Regulation addresses well construction standards and quality protection. Over 100,000 wells estimated to be in the province. Voluntary well records submitted to the government are public.
- **Alberta** began licensing wells in 1962 under the Water Act. Alberta Environment is the primary regulator, and has reporting requirements under the Water (Ministerial) Regulation. There are approximately 500,000 wells, with some 5,000 new wells drilled each year (exact numbers are difficult to obtain because licenses are held regionally). There are standard reporting requirements (including location, source, and purpose of extraction) under Water (Ministerial) Regulation (ss. 63,64). Notification requirements for permit applicants fall under 50(2)(d) of the Water Act and Water (Ministerial Regulation), s.13(1); and opportunities for public participation and appeal under the Water Act (ss. 114-117). While there is no central database of permit information, the public has the right to access permit information.
- **Saskatchewan** started licensing wells in 1959 under the Ground Water Conservation Act and has required reporting on use since 2004. Saskatchewan Environment, Saskatchewan Water Corporation and the Saskatchewan Watershed Authority all share in the regulation of groundwater, according to the Ground Water Regulations. There are approximately 3,600 permits, with an additional 300 issued annually. Standard reporting requirements (ss. 31, 34, 35 of the Ground Water Regulations); notification of permit applicants required under the Watershed Authority Act; and only drainage approval may be appealed. There is no permit database open to public.
- **Manitoba** has issued licenses under the Water Rights Act since 1972. Department of Water Stewardship is the regulator, and utilises the Water Rights Regulation. 533 licenses have been since August 2004. Standard reporting requirements are to be kept by every license holder according in a standard form (s. 8 Water Rights Regulation). Notification of applicants is at the discretion of the minister. Participation in process only allowed in cases when environmental assessment procedures apply. Permits may be appealed (s. 24 Water Rights Act). No database of information available to public.
- **Ontario**, the Water Resources Act has included groundwater licensing since 1961. Ministry of Environment (MOE) is the primary regulator, and governs according to the Water Transfer and Taking Regulation. There are approximately 500,000 wells, and a total of 2,800 permits. Annual water use reports must be submitted to MOE (in effect by 2008, s. 9 Water Taking and Transfer Regulation). Notification of applications to municipalities and conservation authorities is mandatory (s. 7 Water Taking and Transfer Regulation). Participation opportunities exist under the Environmental Bill of Rights. Appeal rights exist. Information is currently not available to public.

- **Québec** has been licensing groundwater since 2004 under the Environmental Quality Act. Ministère du Développement durable, de l'Environnement et des Parcs is the primary regulator, applying the Groundwater Catchment Regulation. More than 600 catchments greater than 75 m³ per day receiving permits. Standard reporting required (s.20 Groundwater Catchment Regulation); no notification required; no direct opportunities for participation, though affected parties may complain; appeals allowed; public has access to a database of permit information.
- **New Brunswick** requires approval required for well construction above a certain level. The Clean Water Act and the Clean Environment Act both affect groundwater. Ministry of Environment and Local Governments share regulation, using the Environmental Impact Assessment Regulation, and Water Quality Regulation. Approximately 3,000 new wells each year. Reporting of standard requirements required (s. 33, 34 Water Well Regulation); no participation in approvals, though present in environmental assessments; appeals allowed (s. 39 Clean Water Act); public have access to database (according to ss.36, 37 of Clean Water Act).
- **Newfoundland & Labrador** under the Water Resources Act, water use authorizations were required from May 1988-May 2002; water use licenses have been required since May 2002. Department of Environment and Conservation applies the Act. Over 17,000 wells, with approximately 10 new licenses per year. Under the Water Resources Act: annual water use reports required (s. 31(2)(3)), notification required (s.14), participation in process allowed (s.14(3)), appeals permitted (s.86(4)), and information available to public (s.13, 86).
- **Nova Scotia** has been licensing groundwater under the Environment Act since 1973. Department of Environment and Labour regulates according to the Activities Designation Regulations. Approximately 100 permits issued, less than 10 new per year. Water use records are mandatory; the minister or administrator may require public consultation under the Approvals Procedure Regulations; and information is available to public on environmental registry (s. 10 Environment Act).
- **Prince Edward Island** requires use reporting according to the Environmental Protection Act. Ministry of Environment, Energy and Forestry is responsible for enforcing the Water Well Regulations. Approximately 21,000 wells, with 500-800 of which have licenses. S. 4 of the Water Well Regulations require the well contractor to submit reports to the department and well owner. No participation, (unless there is an environmental assessment), no appeals and no database for public to access information.
- **Yukon Territory** has no licensing, but has required reporting of water use since 2004 (the Waters Act). Environment Yukon regulates in accordance with the Waters Regulation. Approximately 5 permits have been issued in total. Reporting required by the Waters Regulation (s.14(1)). The Waters Act requires: notification (s.21(1)), participation opportunities in permitting process (s.21(1)), and public access to information (s.23(1)). There are also appeal rights to permit decisions.
- **Northwest Territories** governs groundwater according to the Northwest Territories Water Act and the Mackenzie Valley Resource Management Act. The Ministry of Environment and Natural Resources applies the Northwest Territories Waters Regulation. There are no licenses, however under the NT Water Act standard reporting (s.15(1)) and notification (s.23) are required. The Act also permits appeals (s.28), and gives public access to information (s.14), though participation in process is discretionary (s.21).

- **Nunavut** governs groundwater by the Nunavut Waters and Nunavut Surface Rights Tribunal Act. The Department of Environment applies the Nunavut Water Board By-Laws. Reporting and participation (s.52) are discretionary. Notification (s.55) is required, appeals rights exist (s.81), and public has access to a database of information (s.78).

The Federal Role

- Despite a 1987 Federal Water Policy in which the Canadian government pledged to work towards understanding groundwater resources, the federal government has to date failed to make groundwater research a priority.
- The Geological Survey of Canada is the primary federal authority on groundwater supplies, and collaborates with provincial regulators on aquifer mapping.

Groundwater Protection

Legal groundwater protection measures can include conservation requirements (controls on wells, conservation plans, etc.), instream or environmental flow protection requirements (because aquifers provide base flow for surface water these can be used to protect fish, wildlife, and recreation values), and source protection legislation.