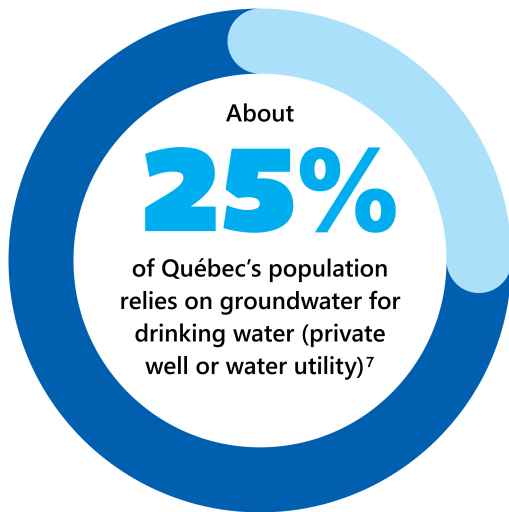


Background

The Great Lakes Commission (GLC) passed a policy resolution in March 2024 which called upon partners and agencies to engage with the GLC toward a better understanding of the current state of groundwater management in the Great Lakes basin.¹ Then, in December 2024, the GLC received funding from the Joyce Foundation to develop groundwater management summaries for each Great Lakes jurisdiction, building upon previous reports supported by the Joyce Foundation.² This report summarizes groundwater management in Québec, both throughout the province and within the Great Lakes-St. Lawrence River basin.

Provincial Ministry Authority



The Québec Ministry of the Environment, the Fight against Climate Change, Wildlife and Parks (MELCCFP) oversees the management and protection of provincial groundwater resources. This includes developing source water protection plans; overseeing the quality of drinking water supply; regulating groundwater withdrawals;³ determining groundwater withdrawal protection zones;⁴ and monitoring the variations in groundwater level and temperature in the context of climate change.⁵

The MELCCFP also has authority to restrict groundwater withdrawals by allowing the construction of groundwater extraction installations only when certain conditions are met.⁶

Table 1 highlights the provincial ministries in Québec which play a role in managing groundwater in the province.

¹ Great Lakes Commission. March 6, 2024. [Understanding Impacts to Great Lakes Agriculture and Water Use Under Changing Climate Conditions.](#)

² The Joyce Foundation. [Groundwater Governance in EPA Region 5.](#)

³ Ministry of the Environment, the Fight Against Climate Change, Wildlife and Parks (MELCCFP). [Drinking water.](#)

⁴ MELCCFP. [Guide for determining groundwater withdrawal protection areas and DRASTIC vulnerability indices.](#)

⁵ MELCCFP. [Québec Groundwater Monitoring Network.](#)

⁶ Q-2, r. 35.2 - Regulation respecting the withdrawal of water and its protection. Section I.13-I.21; Section II.22-II.26. <https://www.legisquebec.gouv.qc.ca/fr/document/rc/Q-2,%20r.%2035.2>

Table 1. Québec provincial ministry organization around groundwater management priority areas.

Agency	Ministry of the Environment, the Fight against Climate Change, Wildlife and Parks
Groundwater Priority Area	Drinking water supply Groundwater withdrawal permitting Groundwater quality oversight Groundwater availability and ecological impacts Groundwater withdrawal protection zones

Groundwater Science and Knowledge Production

The Quebec Groundwater Monitoring Network is made up of more than 260 active monitoring stations throughout the province to measure how groundwater levels and temperatures are evolving in the context of climate change.⁷ Since 2017, the government of Québec has tasked university research teams to conduct groundwater knowledge acquisition projects to better understand the quality, quantity, and vulnerability of groundwater for public supply and ensure development and land use planning is compatible with water resource protection.⁸

Users can view and download the measurements and taken and other information on the monitoring stations in the first Groundwater Status Bulletin for the southern St. Lawrence River region.⁹ These efforts aim to improve groundwater data and develop forecasting capabilities to prepare for the impacts of climate change throughout the province.

Legislation and Regulations

The province of Québec requires a permit for public supply and ground water catchments of at least 75,000 liters and conditions have to be fulfilled when the withdrawals are located on the territory of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement).¹⁰ According to Québec’s regulations on the declaration of water withdrawals, any water user whose total water withdrawals are equal to or greater than 50,000 liters per day, at least one day during a calendar year, must report their withdrawals to the MELCCFP by March 31 of the year following the withdrawals.^{11,12} Withdrawals intended for agricultural purposes, the operation of a fishing pond site or an aquaculture site, and the production of hydroelectric power must be reported to the MELCCFP only when they are carried out in the territory of the Agreement.¹³

⁷ MELCCFP. [Quebec Groundwater Monitoring Network.](#)

⁸ MELCCFP. [Groundwater knowledge acquisition projects.](#)

⁹ <https://www.environnement.gouv.qc.ca/eau/piezo/bulletin-2022-printemps.pdf>.

¹⁰ Subsection 2 relating to the Agreement: Q-2 - Environmental Quality Act 31.88 to 31.104

¹¹ See the “Great Lakes-St. Lawrence River Basin Groundwater Management” section below for withdrawals that are required to be reported only when occurring within the St. Lawrence River basin.

¹² MELCCFP. [Regulations on the declaration of water withdrawals.](#)

¹³ Ibid.

Québec’s “Water Act”¹⁴ appears to codify the public trust of groundwater resources within the province, recognizing that surface water and groundwater are “resources that are part of the common heritage of the Quebec nation.”¹⁵ The Water Act further states that the use of water resources is common to all and only under certain conditions can they be appropriated. The Act established a new authorization regime for water withdrawals, which recognizes the need to prioritize meeting the needs of the population while taking into consideration the needs of ecosystems and economic activities. The Act limits the validity period of water withdrawals to 10 years, except in certain circumstances.

Other regulations include strengthening the protection of water withdrawals made for the purposes of human consumption or food processing and establishing a charge for water use in certain sectors to promote the sustainable development of water resources.¹⁶

Great Lakes-St. Lawrence River Basin Groundwater Management

The Environment Quality Act facilitated the implementation of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement) in Québec in 2006.¹⁷ The Act called for the text of the Agreement is to be published in the *Gazette officielle du Québec*.¹⁸ The Province of Québec requires facilities with the capacity to withdraw 379,000 liters of water per day to declare more information, such as consumption, on the declaration of water withdrawals.

Québec has adopted the water conservation and efficiency provisions of the Agreement. The Province of Québec’s program is consistent with, and fully supports, the goals and objectives of the Agreement, including promoting the efficiency of use and reducing losses and waste of water in the basin and retaining the quantity of surface water and groundwater in the basin.

Per the Agreement, its party states and provinces commit to the development of a collaborative strategy to guide the collection and application of scientific information to support the “improved understanding of the role of groundwater in basin water resources management.”

Great Lakes-St. Lawrence River Basin Groundwater Usage

Québec’s groundwater withdrawals from the Great Lakes-St. Lawrence River basin have varied in volume between 220 million and 310 million liters per day over the last decade. This interannual variation is primarily due to changes in the public supply and industrial water use sectors. See **Figure 1** below to view trends in Québec’s reported groundwater withdrawals within the Great Lakes-St. Lawrence River basin from each facility withdrawing at least 379,000 liters per day from 2014 to 2024.

¹⁴ Long name: Act affirming the collective nature of water resources and promoting better governance of water and associated environments.

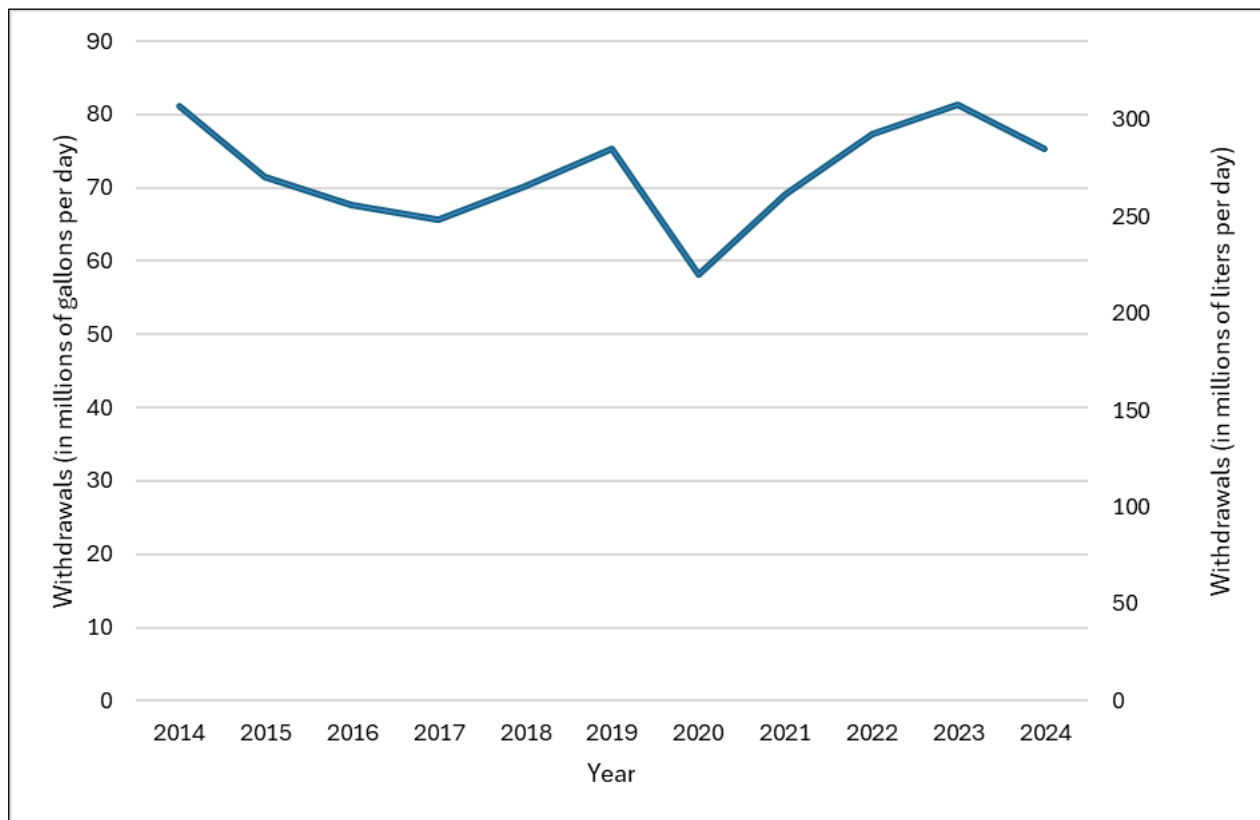
¹⁵ C-6.2 - An Act affirming the collective nature of water resources and promoting better governance of water and associated environments. <https://www.legisquebec.gouv.qc.ca/fr/document/lc/C-6.2>.

¹⁶ MELCCFP. [Laws, regulations and agreements governing the management of water withdrawals](#).

¹⁷ Environment Quality Act. <https://www.legisquebec.gouv.qc.ca/fr/document/lc/q-2?langCont=en>

¹⁸ The *Gazette officielle du Québec* is the official newspaper of the Government of Quebec, providing access to all laws, draft regulations, regulations, decrees, orders, and notices whose publication is required. It has been published by the Official Publisher of Quebec since January 16, 1869.

Figure 1. Québec Great Lakes-St. Lawrence River Basin Groundwater Withdrawals from 2014-2024.¹⁹



Provincial Definitions

Groundwater: water in the saturated zone, or the entire region below the water table.²⁰

High-capacity well: wells that withdraw a daily volume of water equal to or greater than 75,000 liters for at least one day in the year and are wholly outside the Great Lakes-Lake Lawrence River basin. This threshold increases to 379,000 liters of water per day when withdrawals are made within the basin.²¹

¹⁹ As reported to the [Great Lakes Regional Water Use Database](#).

²⁰ Government of Canada. [Water sources: groundwater](#).

²¹ Q-2, r. 14 - Regulation respecting the declaration of water withdrawals. <https://www.legisquebec.gouv.qc.ca/fr/document/rc/q-2,%20r.%2014?langCont=en>.