



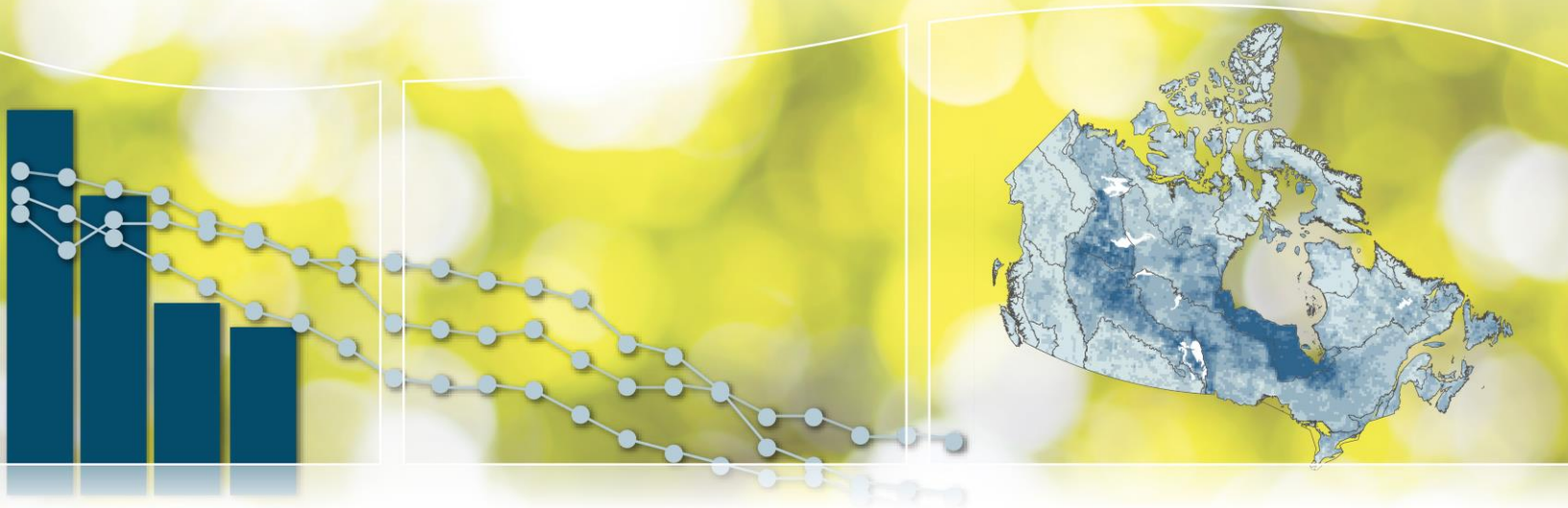
Environment and
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Canadian Environmental Sustainability Indicators

Canada's Water Use in a Global Context



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Canada's Water Use in a Global Context

March 2016

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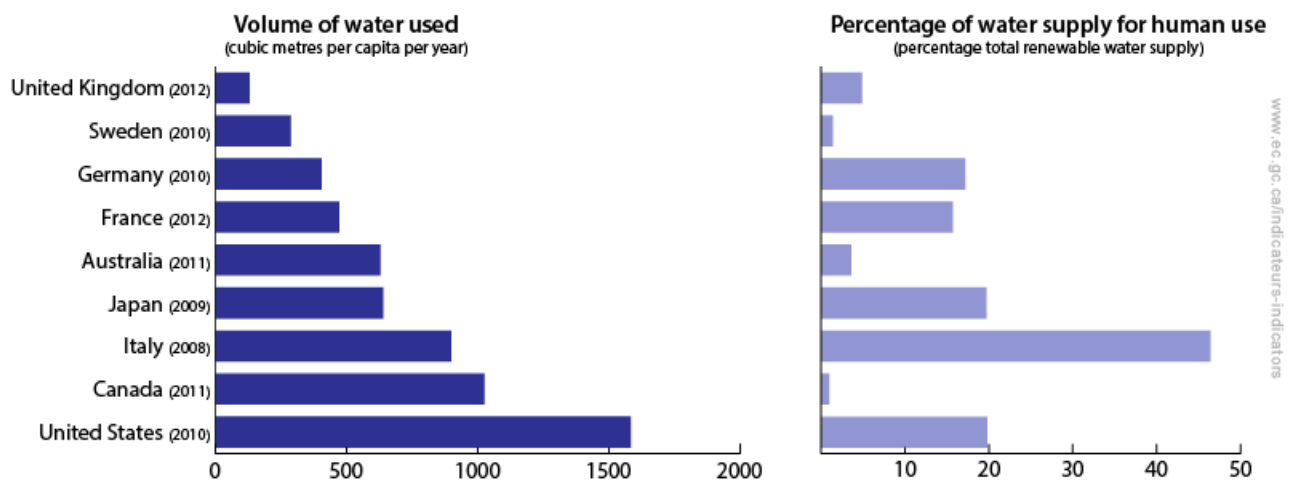
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Part 1. Canada's Water Use in a Global Context Indicator

Canada, the country with the third-smallest population among the nine nations examined, uses the second-highest amount of freshwater per person per year from the environment. As a percentage of its total renewable freshwater resources, Canada's water use rate is the lowest at 1%.

Although Canada has a great deal of renewable water, much of this water flows north and is not easily available to the majority of the population, which is located mostly in the south.

Figure 1. Volume of water used and percentage of renewable water supply used, selected countries, selected years



[Data for Figure 1](#)

Note: Selected countries are the G7 plus Australia, whose population, population density, and territorial extent are similar to those of Canada; and Sweden, which has a similar climate.

Source: Organisation for Economic Co-operation and Development (2014) [OECD Factbook 2014: Economic, Environmental and Social Statistics](#).

Freshwater is withdrawn from the environment for public water supplies, irrigation, industrial processes, and the cooling of electric power plants. While much of the water that is withdrawn is circulated back into the water body from which it was taken, water use impacts both the amount and quality of freshwater resources. Proper monitoring of water resources is critical to ensure this resource is well managed, so that lakes, rivers and aquifers are not subjected to undue stress from human activity. Excessive water removal can lead to rivers drying up or to an unacceptable drop in the level of groundwater aquifers.

Part 2. Data Sources and Methods for the Canada's Water Use in a Global Context

Introduction

The [Canada's Water Use in a Global Context](#) indicator is part of the [Canadian Environmental Sustainability Indicators](#) (CESI) program, which provides data and information to track Canada's performance on key environmental sustainability issues.

Description and rationale of the Canada's Water Use in a Global Context indicator

Description

The Canada's Water Use in a Global Context indicator reports on the amount of water removed from the environment per person per year (cubic metres [m³]/capita/year) for use in agriculture, manufacturing and in homes, and as a percentage of each country's total renewable water supply for nine countries, including Canada.

Rationale

Freshwater is withdrawn from ground or surface water sources, either permanently or temporarily, for public water supplies, irrigation and industrial processes. Human population growth, lifestyle changes, and growth in gross domestic product (GDP) are the main causes of increases in water demand, and as the human population continues to grow, so will the pressure exerted on freshwater resources.

Water use, or abstraction, exerts a major pressure on water resources, impacting both water quantity and quality. Proper monitoring of water resources is critical to ensure this resource is well managed so that lakes, rivers and aquifers are not subjected to undue stress from human activity. Excessive water removal can lead to rivers drying up or to an unacceptable drop in the level of groundwater aquifers.

Recent changes to the indicator

This indicator replaces the Canada's Water Quantity in a Global Context indicator. This new indicator reports on how much water in a country is abstracted per person per year and the corresponding percentage of a country's renewable water supply. The previous indicator reported total renewable water resources and water supply per person.

Data

Data source

Data for this indicator come from the Organisation for Economic Co-operation and Development (OECD) [Water withdrawals data](#).

Spatial coverage

All measurements in this indicator refer to the national level.

This indicator includes data for all countries that are members of the G7, as well as Sweden and Australia. Australia was included as its population, population density, and territorial

extent are similar to those of Canada. Sweden was included because its climate is similar to Canada's.

Temporal coverage

The indicator covers the most recent year of data available at the time of production within a range from 2008 to 2012.

Data completeness

The data for this indicator are compiled by the OECD biannually. Government agencies provide data on their national renewable water volumes and the volumes abstracted. In general, data availability and quality are best for water abstractions for public supply, which represent about 15% of the total water abstracted in OECD countries. The OECD totals are the OECD Secretariat's estimates based on linear interpolations to fill missing values.

Data for the United Kingdom refer only to England and Wales.

Data timeliness

The data used for this indicator were the most recent available when they were downloaded from the OECD in May 2014. Water abstraction and population data are for 2012 for France and the United Kingdom; for 2011 for Canada and Australia; for 2010 for the United States, Germany, and Sweden; for 2009 for Japan; and from 2008 for Italy.

Methods

Total renewable water and water abstraction per capita data for each country were downloaded from the OECD's [Water withdrawals data](#) website. The percentage of the water supply for human use was calculated by dividing the water abstraction per capita by the total renewable water data.

Caveats and limitations

The definition of total renewable water used by the Organisation for Economic Co-operation and Development (OECD) ignores differences in water storage and represents the maximum quantity of water available on average.

Mine water and drainage water are included in the water abstraction estimates, whereas water used for hydroelectricity generation, considered an *in situ* use, is excluded.

In many countries, systematic collection of environmental data has a short history; sources are typically spread across a range of agencies and levels of government, and information is often collected for other purposes.

Definitions and estimation methods used by countries to compile data on water abstractions and supply may vary considerably and change over time. Inter-country comparisons require careful interpretation.

The OECD totals are the OECD Secretariat's estimates based on linear interpolation to fill missing values.

The indicators refer to the national level and may conceal major sub-national differences.

If the water is returned to a surface water source, abstraction of the same water by the downstream user is counted again when compiling total abstractions and may lead to double counting.

Part 3. Annexes

Annex A. Data tables for the figures presented in this document

Table A.1 Data for Figure 1. Volume of water used and percentage of renewable water supply used, selected countries, selected years

Country	Year	Water used per person (cubic metres per person per year)	Percentage total renewable water used	Volume of total renewable water (billion cubic metres)
United States	2010	1583	19.8	2478
Canada	2011	1025	1.0	3524
Italy	2008	898	46.4	116
Japan	2009	639	19.7	414
Australia	2011	629	3.6	387
France	2012	472	15.7	191
Germany	2010	404	17.2	192
Sweden	2012	287	1.4	186
United Kingdom	2010	129	4.9	168

Note: Selected countries are the G7 plus Australia, whose population, population density, and territorial extent are similar to those of Canada; and Sweden, which has a similar climate.

Source: Organisation for Economic Co-operation and Development (2014) [OECD Factbook 2014: Economic, Environmental and Social Statistics](#).

Annex B. References and additional information

References and further reading

Organisation for Economic Co-operation and Development (OECD) (2015) [Water withdrawals data](#). Retrieved on 5 June, 2015.

Related information

[Local Water Quantity in Canadian Rivers](#)

[OECD Factbook 2014: Water Consumption](#)

[Regional Water Quantity in Canadian Rivers](#)

[Residential Water Use in Canada](#)

[Water Availability in Canada](#)

[Water Quantity in Canadian Rivers](#)

[Water Withdrawal and Consumption by Sector](#)

www.ec.gc.ca

Additional information can be obtained at:

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