

Climate Change and Ontario's Water Resources

Water is a vital resource for all life on the planet. It plays a key role in Ontario's economic prosperity, quality of life and environment. Our province includes more than 250,000 lakes, countless rivers and streams, and abundant groundwater resources.

Water is important to Ontarians for drinking, agricultural production, waterpower generation, industrial uses, recreation opportunities and biodiversity (the variety of life on earth).

Climate change is a variation in the long-term weather patterns of temperature and precipitation. Projections for Ontario suggest that average annual air temperatures will increase by 3 to 8°C by the end of the century and precipitation is projected to become more variable.

Ontario's water resources in a changing climate

In Ontario, climate change is anticipated to result in milder, shorter winters with earlier snowmelt, less ice cover on lakes, changing rainfall patterns and increased evapotranspiration. All of these factors have an impact on the normal variation we experience in water supplies and will affect water infrastructure capacity and design.

Extreme weather events such as intense precipitation may increase the frequency and level of high water flow events. This combined with increased runoff from hardened surfaces in urban areas increases the likelihood of severe flooding and erosion, and increases the risks these present to human life and property. Meanwhile, warmer average air and water temperatures may lead to lower water levels in Ontario's lakes and rivers,



particularly during the summer. Increases in evaporation and decreases in summer precipitation may lead to occurrences of drought.

Changes to water supply will be difficult to predict and could mean that there may be less water available for residential use, agriculture, industry, waterpower generation, transportation, or recreation. Ecologically, changes to water supply will impact Ontario's biodiversity, our wetlands, our shorelines and our forests.



“We know that extreme weather is becoming more frequent. Across the Province we have seen an increase in prolonged heat waves, torrential rainstorms, windstorms, even drought. It is no longer a matter of reacting when the next major weather event occurs. Ontario must be prepared by taking prudent steps to deal with a changing climate and the challenges it presents both now and in the long term.”

CLIMATE READY: Ontario's Adaptation Strategy and Action Plan
2011-2014



Adapting to climate change

Worldwide, almost two billion people were affected by natural disasters in the last decade of the 20th century, 86% of them by floods and droughts. Floods are the most costly natural disasters in Canada in terms of property damage. These water-related hazards are anticipated to be more frequent and more severe in the future. We can be prepared for these events by having a greater understanding of the local impacts of climate change on our water resources. We can adapt by ensuring infrastructure is designed to withstand these projected changes. Having effective early warning systems and a coordinated emergency response effort in place will help reduce risks to human life, property and natural resources.

Managing Ontario's water supplies sustainably is becoming increasingly important. There are many options for adapting water management practices in Ontario. We can reduce water demand and increase water use efficiency through water conservation. We can develop local water sustainability plans that address climate change risks and include innovative ways to reduce demands on water resources. We can also minimize runoff in our built environments by naturalizing areas and creating natural habitats that are capable of absorbing water and recharging groundwater sources.



What can you do?

- Look for ways to reduce your water use and increase efficiency. For example,
 - Wash only full loads in the dishwasher or laundry
 - Check for leaks in indoor and outdoor taps
 - Water your lawn or garden only when necessary and during the coolest part of the day and on non-windy days to reduce water loss from evaporation.
- Know and reduce your flood risk to avoid unnecessary property damage. For example,
 - Install backflow valves on residential sewage pipes
 - Limit development in floodplain and shore lands
- Keep informed of current weather conditions and be prepared to react.

Resources:

ontario.ca/flooding
ontario.ca/lowwater
ontario.ca/climatechange

For more information:

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