

FRESH WATER IN A CHANGING CLIMATE

Fresh water is the cornerstone of life everywhere. It's necessary to keep our bodies healthy and thriving, and is an integral part of our well-being and happiness. Whether it's hiking along rivers, swimming in lakes, fishing in streams or building sandcastles on the beach, water-based recreational activities are a significant part of our cultural heritage as Ontarians.

Ontario has over 250,000 lakes and 100,000 km of rivers containing about one-fifth of the world's fresh drinking water. Our Greenbelt is key to protecting water quality for the roughly 9 million Ontarians who live near it. The Greenbelt is also home to 21 urban river valleys and their headwaters. These rivers and creeks, such as the Credit, Humber and Rouge are critical to the province's ecosystems and the four million residents living within two kilometres of them.

CLIMATE IMPACTS ON FRESH WATER

AS TEMPERATURES RISE TO RECORD-BREAKING HIGHS, OUR ACCESS TO ONTARIO'S FRESH WATER BECOMES INCREASINGLY THREATENED.

Already under stress from a recent history of intense industrial and urban development, southern Ontario watersheds face a high risk of deterioration from future development and infrastructure. Conservation Authorities have determined that the water quality in half of the rivers and streams assessed in the Oak Ridges Moraine and the Greenbelt area are degraded and at risk of further degradation if adequate preservation and restoration action is not taken.



More Extreme Rain and Storm Events

Boating, fishing, swimming and other water-based recreational activities are staples of an Ontario summer for those who have access to them. Climate change causes an increase in extreme weather events that can reduce our enjoyment of Ontario's iconic lakes and rivers. Extreme rain and storm events cause flooding, soil erosion and infrastructure damage that makes water-based recreational activities less accessible or even dangerous.



Higher Risk of Drought

On the flip side, higher temperatures can also lead to damaging droughts. Shorter snow seasons, reduced snowpack and increased evaporation that cause lower water levels in the summer. An increase in drought negatively impacts Ontario's farmers by disrupting crop yields and harming livestock health and impacts summer leisure activities like boating and fishing.



Threat to Local Wildlife

Warmer temperatures cause an increase in algae blooms that deplete oxygen in the water. This lowers the water quality and makes it difficult for fish and other species to survive. Cold water fish, like the Brook Trout, are most affected, as warm water reduces the number, size and quality of places where they can reproduce. The increase in flooding and droughts also decreases the amount of benthos, which are flora and fauna, such as beetles, dragonflies and damselflies, that live in waterbeds. A lack of benthos in stream beds makes it difficult for programs such as EcoSpark's *Changing Climate* program to gather sufficient data when conducting water quality assessments.

ACTION YOU CAN TAKE TO PROTECT OUR FRESH WATER

The good news is that we have the ability to mitigate carbon emissions and adapt to the effects of climate change across the Greater Golden Horseshoe as individuals, students and families.

Climate change is having a serious effect on fresh water in Ontario. Each of us – as individuals, families, communities, organizations, businesses and government – must do our part to protect our province's natural assets, like fresh water.



Create an EcoTeam with EcoSpark

EcoSpark is an environmental charity working to empower communities to take an active role in protecting and sustaining their local environment. With EcoSpark's support, teachers and students can play an important role in combating climate change by creating a community of eco-minded citizens. If your school hasn't already, you can create an EcoTeam and undertake climate change education and leadership activities and become a certified Ontario EcoSchool. Actions such as walking to school, bringing in a waste-free lunch and promoting water conservation can earn a school points towards certification.

Participation in EcoSpark's *Changing Currents* program also counts toward your Ontario EcoSchool certification. *Changing Currents* encourages students to take a hands-on approach to climate change resistance by giving them the opportunity to become scientists for the day and monitor local water quality.



Reduce Your Carbon Footprint

Taking steps to reduce your household carbon footprint is an easy way to lend a hand in the fight against climate change. Making small changes like driving less and carpooling or taking public transit more can make a big difference. Use electricity during off-peak times and run air conditioning less often and for shorter periods.



Connect with the Green Space Around You

You can help the planet and your wallet by taking more time to connect and enjoy the green spaces around you. Getting out of the house and into nature is an easy way to reduce your electricity use. Explore Ontario's urban river valleys, lakes and ponds this summer to stay cool, have fun and keep your carbon footprint small.



Support Natural Infrastructure

Natural infrastructure refers to existing or human-made natural systems like forests, wetlands and waterfronts that help protect us against extreme weather events like severe rain or drought. You can support natural assets by getting involved in local restoration efforts and by asking your municipal leaders to protect and invest in local natural systems.



Encourage Others to Live Greener

Take steps in your community to encourage a collective effort toward protecting our fresh water. If you live in an apartment or condominium, you can check out the Greater Toronto Chapter of the Canada Green Building Council's "Green Condo Checklist" to encourage your building management to go green, which includes management options for stormwater. You can also learn more about the watersheds in your area and join a citizen-science project that helps to monitor their health. Get your friends and family to do the same!

ABOUT THIS SERIES:

The Greenbelt Foundation partnered with experts to understand how climate change is affecting our daily lives, and ways that we can individually and collectively respond to these challenges. For other installments in the series, visit www.greenbelt.ca/changing_climate