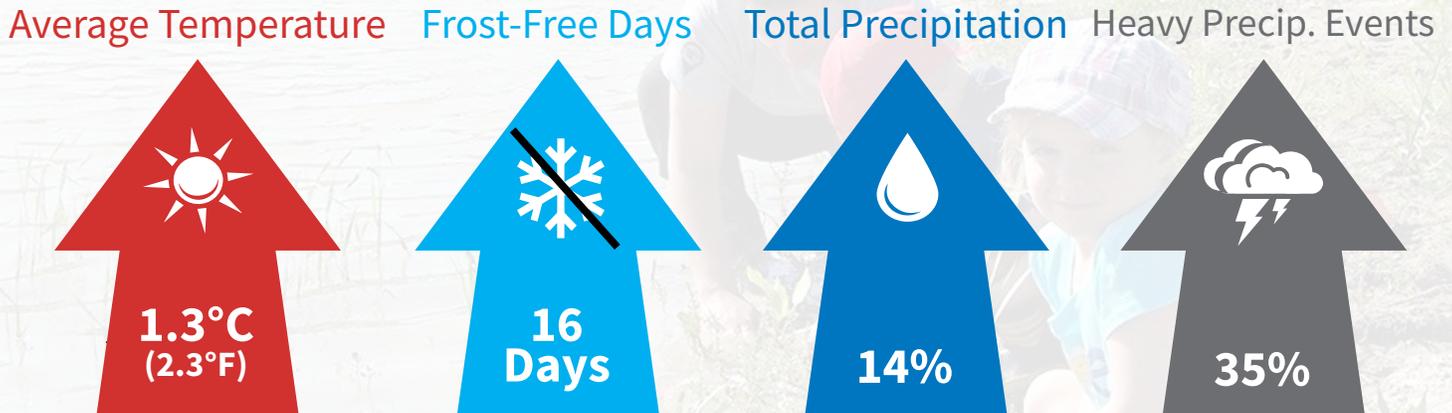


Recent Climate Changes in Windsor-Essex: 1951-2017



“Climate change is here. It effects us now.”

- Dr. Diane Saxe, Former Env. Commissioner of Ontario

Climate Change

- The Windsor Essex Climate Change Collaborative, a partnership between ERCA, municipalities, the County of Essex, the Windsor-Essex Health Unit, the University of Windsor, and others, was established to address regional issues and the multitude of climate change vulnerabilities and risks facing different sectors.
- The climate determines almost everything about how we design, build and live in our communities, and Ontario is warming faster than the global average. Action must be taken now to protect the safety, prosperity and livability of our region.
- This fact sheet contains examples of how life has changed in Windsor-Essex in the past few generations, and what we can do to combat these negative effects.

Primary Impacts of Climate Change In Windsor-Essex

Warmer

Annual mean temperatures are increasing across all seasons. By 2050, we could see upwards of 60 days a year above 30°C, leading to extended heat warnings during the summer. There will also be more frost-free days and fewer freeze/thaw cycles. Warmer temperatures will mean disappearing ice on Lake Erie in the winter and droughts in the summer.

Wetter

Total annual precipitation will increase but not necessarily in all seasons. In the winter and spring, rain is expected to fall faster and shorter storms will have an increasingly high intensity. In other words, heavy rain is likely to get heavier. And return periods of heavy storms will shorten, meaning increased frequency.

Wilder

While climate change may not increase the overall number of storms, there will be a rise in the number of intense storms. Extreme weather is costly. Storm cleanup costs, insurance rates, and business disruption are expected to increase with the wilder weather.

Secondary Impacts of Climate Change in Windsor-Essex

The three primary impacts of climate change (Warmer, Wetter, and Wilder) will give host to an uncountable number of secondary impacts.



Forests and Ecosystems

Despite our region being the most biodiverse region in Canada with more endangered species and species at risk than anywhere else, it also has among the least amount of natural areas. Ecosystems may not be able to keep pace with the rate of warming and species at risk may be increasingly vulnerable to extirpation. New and renewed threats from invasive species will threaten isolated populations of native species.



Natural Hazards & Lake Levels

Over 80% of our shoreline is developed and there are thousands of flood-vulnerable structures located in the flood plains. Most floodplain mapping in Ontario is out of date (on average 30 years) or is not available. With a changing climate, ERCA can no longer rely on decades-old data and assumptions about rainfall and storm surge.



Water levels in the Great Lakes are mainly driven by precipitation, runoff, and evaporation. Modeling and future predictions are uncertain, however, evidence indicates increasing variability in lake level fluctuations. Prolonged periods of extreme high or low lake levels can impact shorelines, the shipping industry, coastal wetlands, and tourism and recreation. In the future, less ice cover and fluctuating water levels may lead to increased erosion and an increased risk of lake and riverine flooding.

Infrastructure & Stormwater Management



From roads to bridges to sewers to power lines, extreme weather can overwhelm and damage critical infrastructure. Warmer temperatures will increase energy demands during the summer months and more intense precipitation events could cause an increase in basement flooding and sewage overflows.

Agriculture



Climate change will bring both opportunities and challenges for farmers in the Essex Region. Longer growing seasons will likely improve crop yields. However, severe weather, summer droughts, new crop pests, and spring flooding will present significant challenges for all farmers.

Water Quality



Our region's watersheds score an average of D- in ERCA's annual watershed report cards. Increasing precipitation and stronger storms will amplify the risk of erosion and sewage overflows. Warmer water temperatures and higher nutrient loading from additional runoff will contribute to more harmful algal blooms in the western basin of Lake Erie.

Human Health



Prolonged extreme heat can impact air quality, water quality and facilitate the spread of foodborne illnesses and vector-borne diseases, like lyme disease. Along with the physical impacts and safety concerns around increased flooding and high temperatures, the mental health effects of a changing climate are becoming increasingly apparent.

Contact Us

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Windsor-Essex
Climate Change
Collaborative



Essex Region Conservation
the place for life

The Windsor-Essex Climate Change Collaborative is developing a county-wide community energy plan will help advance regional priorities around energy conservation to achieve lower emissions.

Join us, or contact us to learn more.