Key Findings

From the Climate Change and Public Health in Ottawa 2025 Surveillance Report.

Climate change continues to present a significant and evolving risk to public health in Ottawa.

Mental health and wellness, beliefs, and awareness related to climate change

The mental health and wellness of Canadians is increasingly being challenged with the frequency, intensity, and duration of climate change events.[1, 2, 3] Climate change is related to mental health through direct and indirect pathways, and worsens existing inequities.[1, 4, 5]

- In 2023, nearly half of Ottawa students in grades 7 to 12 reported feeling depressed (sad) or worried about climate change.
- In 2024, close to 80% of Ottawa adults aged 18 years and older reported feeling "alarmed" or "concerned" about climate change.
- In 2019, 74-87% of Ottawa adults aged 18 years and older agreed that climate change is very likely to result in more negative environmental outcomes in Ottawa such as more extreme weather, more frequent and extreme heat waves, more days with poor air quality, and more insects carrying diseases. Seventy percent of Ottawa adults agreed that climate change has a negative effect on human health.

Extreme temperatures

By the 2050s, Ottawa is expected to have four times more days where temperatures exceed 30ºC (32-43 days) and 35% less days where temperatures dip below -10ºC (46-53 days) compared to years 1981-2010.[6] While the number of extreme cold weather events is expected to decrease, they are still predicted to occur.[7, 8]

- High temperatures and heat warnings were accompanied by increases in heat-related emergency department (ED) visits and hospitalizations in Ottawa hospitals. Between 2016 and 2024, there was a yearly average of 112 heat-related ED visits and 9 heat-related hospitalizations in Ottawa hospitals.
- From 2016 to 2024, age-standardized rates of heat-related ED visits among Ottawa residents peaked at 15 visits per 100,000 Ottawa residents in 2018, then gradually declined to 7 visits per 100,000 Ottawa residents in 2024.
- Between 2016 and 2024, there was a yearly average of 151 cold-related ED visits and 27 cold-related hospitalizations in Ottawa hospitals.
- From 2016 to 2024, age-standardized rates of cold-related ED visits among Ottawa residents fluctuated between 8 and 23 visits per 100,000 population. The highest rates were observed in 2022 and 2023.

Solar ultraviolet radiation

With climate projections indicating warmer seasons in Ottawa, people may spend more time outdoors, increasing exposure to the sun's ultraviolet (UV) radiation.[9] Excessive UV exposure is linked with health harms including sunburns and skin cancers.[9] Some sunburns can be severe, causing blistering and intense pain, and may result in ED visits.[10, 11, 12]

- From 2010 to 2020, melanoma rates in Ottawa increased from 17.6 to 28.3 cases per 100,000 person-years and were higher than Ontario in 2020 (21.1 cases per 100,000 person-years). Rates of melanoma in Ottawa are projected to increase to 31.2 cases per 100,000 person-years by 2030.

- In the past decade, there was a yearly average of 47 sunburn and other UV radiation-related ED visits in Ottawa hospitals. The number of ED visits generally increased as the number of very high UV index days increased.
- From 2016 to 2024, the age-standardized rates of UV-related ED visits among Ottawa residents decreased by almost half from 7.5 to 4 visits per 100,000 population.

Outdoor air quality

Climate predictions suggest that wildfire frequency, severity and distribution will change as a result of a warming climate.[13] Canada is already experiencing longer wildfire seasons with larger areas burned due to warming temperatures, more extreme weather, and drier conditions.[14] A threat to Ottawa's good air quality is long-range transport of wildfire smoke.

- Ottawa's outdoor air quality has been good in the past decade, with 96% of days within the low-risk range of the Air Quality Health Index (AQHI values 1 to 3)
- In summer 2023, Ottawa experienced two periods of very poor air quality (AQHI 7 and above) due to wildfire smoke. During the first period, there was a corresponding increase in suspected respiratory, asthma, and air-quality related ED visits in Ottawa hospitals.

Vector-borne diseases

Warmer seasons create favourable habitats and increased range for vectors of disease, such as mosquitoes and ticks.[15] Coupled with the growing population in Ottawa resulting in increased human activity outdoors in vector habitats, this increases the risk of vector-borne diseases.[15]

- The rate of Lyme disease infections among Ottawa residents has more than tripled over the last decade, from 8 cases per 100,000 population in 2015 to 37 cases per 100,000 population in 2024.
- In 2023, three new tick-borne diseases became reportable to public health units in Ontario as Diseases of Public Health Significance: anaplasmosis, babesiosis and Powassan virus disease. In 2024, 23 Ottawa residents were reported with anaplasmosis, one with babesiosis, and none with Powassan virus.
- In 2024, there were 13 cases of West Nile virus among Ottawa residents. Rates have varied considerably over the last decade.

Food- and water-borne illness

Climate change is impacting food and water safety, leading to an increased risk of food- and waterborne illness due to contamination from changes in precipitation, temperature, and extreme weather.[16] Also, outdoor food preparation and consumption, a risk factor for food-borne illness, is likely to increase with longer summers.[17]

- While most food- and water-borne illnesses remained below pre-pandemic levels in 2024, the rate of cryptosporidiosis among Ottawa residents in 2024 (3.7 cases per 100,000 population) was slightly above the pre-pandemic average rate (2.5 cases per 100,000 population).
- In 2024, the most frequently reported food-borne illnesses among Ottawa residents were salmonellosis (15 cases per 100,000 population) and Campylobacter enteritis (13 cases per 100,000 population).
- Giardiasis was the most frequently reported water-borne illness among Ottawa residents in 2024 with 10 cases per 100,000 population.
- From 2016 to 2024, beaches in Ottawa met provincial water quality standards 86% of the time.

References

1 Hayes K, Cunsolo A, Augustinavicius J, Stranberg R, Clayton S, Malik M, et al. Mental Health and Well-Being. Ottawa, ON: Government of Canada; 2022. (Berry P, Schnitter R, editors. Health of Canadians in a changing climate: advancing our knowledge for action).

2 Brandt L, Adorjan K, Catthoor K, Chkonia E, Falkai P, Fiorillo A, et al. Climate change and mental health: Position paper of the European Psychiatric Association. Eur Psychiatry J Assoc Eur Psychiatr. 2024;67:e41.

3 Clayton S, Manning C, Speiser M, Hill ANH. Mental health and our changing climate: impacts, inequities, responses [Internet]. Washington, DC: American Psychological Association, and ecoAmerica; 2021 [cited 2025 June 27]. Available from: https://doi.apa.org/doi/10.1037/e503122017-001

4 Hwong AR, Wang M, Khan H, Chagwedera DN, Grzenda A, Doty B, et al. Climate change and mental health research methods, gaps, and priorities: a scoping review. Lancet Planet Health. 2022;6:e281–91.

5 Zhang S, Braithwaite I, Bhavsar V, Das-Munshi J. Unequal effects of climate change and pre-existing inequalities on the mental health of global populations. BJPsych Bull. 2021;45:230–4.

6 City of Ottawa, National Capital Commission. Climate Projections for the National Capital Region Report Volume 1: Results and Interpretation for Key Climate Indices [Internet]. 2020 June [cited 2025 Mar 18]. Available from: https://ouvert.canada.ca/data/info/ecffe357-d8bc-4712-b8d9-11b7ccaffa71/resource/f3be9713-58e2-42a0-ab8a-5d6a87b0d286

7 Environment and Climate Change Canada. Climate scientists calculate role human-caused climate change plays in shifting weather extremes [Internet]. 2025 [cited 2025 July 19]. Available from: https://www.canada.ca/en/environment-climate-change/news/2025/07/climate-scientists-calculate-role-human-caused-climate-change-plays-in-shifting-weather-extremes.html

8 Cohen J, Agel L, Barlow M, Garfinkel CI, White I. Linking Arctic variability and change with extreme winter weather in the United States. Science. 2021;373:1116–21.

9 Gosselin P, Campagna C, Demers-Bouffard D, Qutob S, Flannigan M. Natural hazards [Internet]. Ottawa, ON: Government of Canada; 2022 [cited 2025 Mar 18]. (Berry P, Schnitter R, editors. Health of Canadians in a changing climate: advancing our knowledge for action). Available from: https://ostrnrcan-dostrncan.canada.ca/handle/1845/134215

10 Nowakowska MK, Li Y, Garner DC, Stender CF, Hinkston CL, Giordano SH, et al. Clinical settings and demographic characteristics of patients with sunburn. JAMA Dermatol. 2021;157:1122–5.

11 Guy GP, Berkowitz Z, Watson M. Estimated cost of sunburn-associated visits to US hospital emergency departments. JAMA Dermatol. 2017;153:90–2.

12 Tripathi R, Mazmudar RS, Knusel KD, Ezaldein HH, Bordeaux JS, Scott JF. Trends in emergency department visits due to sunburn and factors associated with severe sunburns in the United States. Arch Dermatol Res. 2021;313:79–88.

13 Berry P, Schnitter R. Health of Canadians in a changing climate: advancing our knowledge for action [Internet]. 2022 [cited 2025 Oct 16]. Available from: https://ostrnrcan-dostrncan.canada.ca/handle/1845/134215

14 Egyed M, Blagden P, Plummer D, Makar P, Matz C, Flannigan M, et al. Air quality [Internet]. Ottawa, ON: Government of Canada; 2022 [cited 2025 Mar 18]. (Berry P, Schnitter R, editors. Health of Canadians in a changing climate: advancing our knowledge for action). Available from: https://ostrnrcan-dostrncan.canada.ca/handle/1845/134215

15 Ogden NH, Bouchard C, Brankston G, Brown EM, Corrin T, Dibernardo A, et al. Infectious Diseases [Internet]. Ottawa, ON: Government of Canada; 2022 [cited 2025 Mar 18]. (Berry P, Schnitter R, editors. Health of Canadians in a changing climate: advancing our knowledge for action). Available from: https://ostrnrcan-dostrncan.canada.ca/handle/1845/134215

16 Takaro T, Enright P, Waters S, Galway L, Brubacher J, Galanis E, et al. Water Quality, Quantity, and Security [Internet]. Ottawa, ON: Government of Canada; 2022 [cited 2025 Mar 18]. (Berry P, Schnitter R, editors. Health of Canadians in a changing climate: advancing our knowledge for action). Available from: https://ostrnrcan-dostrncan.canada.ca/handle/1845/134215

17 Harper SL, Schnitter R, Fazil A, Fleury M, Ford J, King N, et al. Food Security and Food Safety [Internet]. Ottawa, ON: Government of Canada; 2022 [cited 2025 Mar 18]. (Berry P, Schnitter R, editors. Health of Canadians in a changing climate: advancing our knowledge for action). Available from: https://ostrnrcan-dostrncan.canada.ca/handle/1845/134215