

APPENDIX A: SUMMARY TABLE OF RECENT CHANGES IN THE CLIMATE ACROSS WESTERN LAKE ONTARIO

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The following presents a detailed summary of recent changes in the climate over the lake (i.e., over Lake Ontario) and over the land (i.e., the watersheds along Western Lake Ontario) based on the [Canadian Surface Reanalysis](#) (CaSR, version 3.2).

Climate Variable	Over-land (Western Lake Ontario watersheds)			Over-lake (Lake Ontario)			Overall Trend
	1990s (1981-2010)	2010s (1991-2020)	Difference	1990s (1981-2010)	2010s (1991-2020)	Difference	
Mean temperature – Average of maximum and minimum temperature							
Annual mean temperature (°C)	7.9	8.1	0.2	8.3	8.5	0.2	↑
Winter mean temperature (°C)	-1.7	-1.4	0.3	-4.1	-3.9	0.3	↑
Spring mean temperature (°C)	4.2	4.2	0.0	6.3	6.3	0.0	↔
Summer mean temperature (°C)	18.9	19.2	0.3	19.7	20.0	0.2	↑
Fall mean temperature (°C)	11.6	11.9	0.3	9.4	9.7	0.3	↑
Maximum temperature – Average of daily maximum temperatures							
Annual maximum temperature (°C)	12.8	12.9	0.2	10.7	10.8	0.2	↑
Winter maximum temperature (°C)	1.1	1.4	0.2	0.2	0.4	0.2	↑
Spring maximum temperature (°C)	6.7	6.6	-0.1	11.8	11.8	-0.1	↓
Summer maximum temperature (°C)	20.8	21.0	0.3	24.8	25.0	0.2	↑
Fall maximum temperature (°C)	13.9	14.2	0.3	14.0	14.2	0.2	↑
Minimum temperature – Average of daily minimum temperatures							
Annual minimum temperature (°C)	3.6	3.9	0.2	6.5	6.7	0.2	↑
Winter minimum temperature (°C)	-3.9	-3.6	0.3	-7.9	-7.6	0.3	↑
Spring minimum temperature (°C)	2.4	2.4	0.0	1.5	1.6	0.1	↑
Summer minimum temperature (°C)	17.5	17.8	0.3	15.1	15.4	0.2	↑
Fall minimum temperature (°C)	9.8	10.2	0.3	5.6	5.9	0.3	↑

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	1990s (1981-2010)	2010s (1991-2020)	Difference	1990s (1981-2010)	2010s (1991-2020)	Difference	
Diurnal temperature range – Difference between daily maximum and daily minimum air temperature							
Diurnal temperature range (°C)	9.1	9.0	-0.1	4.1	4.1	0.0	↓
Total precipitation – Sum of the total rainfall and the water equivalent of the total snowfall							
Annual total precipitation (mm)	894.1	890.5	-3.6	942.4	953.2	10.8	↔
Winter total precipitation (mm)	250.7	262.0	11.2	207.0	214.7	7.7	↑
Spring total precipitation (mm)	222.8	231.7	8.9	218.3	228.6	10.3	↑
Summer total precipitation (mm)	210.8	213.1	2.3	224.1	217.4	-6.7	↔
Fall total precipitation (mm)	257.9	249.3	-8.7	245.0	232.1	-12.8	↓
Precipitation intensity – Total wet day precipitation (> 1 mm) divided by the total number of wet days							
Simple Daily Intensity Index (mm/day)	7.4	7.5	0.0	7.2	7.3	0.1	↑
Frost days – The number of days in a year when daily minimum temperature is less than 0°C							
Days below 0°C	137.8	95.3	-42.5	136.2	94.2	-42.0	↓
Cold days – The number of days in a year when daily minimum temperature drops below -15°C							
Days with minimum temperature < -15°C	14.5	13.7	-0.8	3.7	3.6	0.0	↓
Hot days – The number of days in a year when daily maximum temperature exceeds 30°C							
Days with maximum temperature > 30°C	8.0	8.8	0.8	0.1	0.1	0.0	↑
Coldest and hottest day temperature – The lowest minimum or highest maximum daily temperature (°C)							
Coldest day temperature (or minimum minimum temperature)	-22.5	-16.6	5.9	-22.1	-16.5	5.7	↑
Hottest day temperature (or maximum maximum temperature)	32.3	26.6	-5.7	32.4	26.9	-5.6	↓
Snow depth – The depth of accumulated snow on the ground (cm)							
Average snow depth (cm)	2.6	2.4	-0.2	2.3	2.2	-0.1	↓

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Maximum snow depth (cm)	28.3	28.8	0.5	27.2	27.5	0.4	↑
Near-surface wind speed – Wind speed at 10 m elevation							
Average near-surface wind speed (km/h)	47.6	47.9	0.4	74.4	75.6	1.2	↑
Maximum near-surface wind speed (km/h)	13.0	13.1	0.1	22.2	22.3	0.1	↑