Changes in Our Seasons and Weather

As the climate continues to change, how will our weather change? What will that mean for heatwaves, storm events and snowfall?

The Simcoe Muskoka District Health Unit has outlined the type of climate that we can expect going forward.

By 2030, we will have a climate similar to Ohio
By 2050, we will have a climate similar to Kentucky
By 2080, we will have a climate similar to Mississippi

The graphs below outline the historical average for four of our communities - Barrie, Midland, Orillia and Collingwood. The charts demonstrate effects at the **best case** scenario which is moving towards zero carbon emissions by 2050. Further, the charts provide a range within each category from low to high. You can access these charts and interactive maps at climateatlas.ca

Some guidance to consider when reading the charts. The number of hot days and increased summer temperatures correlate with increased risk for droughts, heat warnings and public health impacts. Increased temperatures in the winter correlate with less snow, less ice and freezing. Also keep in mind that precipitation levels in winter, although increasing in some scenarios does not necessarily mean more snow. This could easily be more rain, hail etc. depending on the air temperature.

Barrie Low Carbon Scenario

Variable	Period	1976-2005	2021-2050			2051-2080		
		Mean	Low	Mean	High	Low	Mean	High
Precipitation (mm)	annual	869	756	910	1071	749	938	1127
Precipitation (mm)	spring	198	144	211	285	145	217	300
Precipitation (mm)	summer	227	142	229	337	139	232	341
Precipitation (mm)	fall	237	163	244	336	167	255	357
Precipitation (mm)	winter	208	162	226	294	170	234	302
Mean Temperature (°C)	annual	6.6	7.2	8.6	10	7.9	9.6	11.3
Mean Temperature (°C)	spring	5.1	4.5	6.9	9.4	5.4	7.8	10.6
Mean Temperature (°C)	summer	18.9	19.1	20.7	22.3	19.8	21.8	23.8
Mean Temperature (°C)	fall	8.8	9	10.7	12.5	9.7	11.5	13.4
Mean Temperature (°C)	winter	-6.4	-7.1	-4.2	-1.4	-6	-2.9	0
Tropical Nights	annual	3	2	9	18	4	15	30
Very hot days (+30°C)	annual	11	9	26	45	15	37	60
Very cold days (-30°C)	annual	1	0	0	1	0	0	0
Date of Last Spring Frost	annual	May 9	April 9	April 29	May 16	April 4	April 25	May 14
Date of First Fall Frost	annual	Oct. 9	Oct. 2	Oct. 22	Nov. 13	Oct. 8	Oct. 27	Nov. 18
Frost-Free Season (days)	annual	151	145	173	201	152	182	215

Orillia Low Carbon Scenario

Variable	Period	1976-2005	2021-2050			2051-2080		
		Mean	Low	Mean	High	Low	Mean	High
Precipitation (mm)	annual	940	826	986	1151	820	1017	1213
Precipitation (mm)	spring	211	154	224	305	156	232	320
Precipitation (mm)	summer	228	145	231	340	142	234	342
Precipitation (mm)	fall	262	185	270	364	189	282	387
Precipitation (mm)	winter	240	189	261	338	197	269	347
Mean Temperature (°C)	annual	6.5	7.1	8.4	9.8	7.8	9.5	11.1
Mean Temperature (°C)	spring	5.1	4.5	6.9	9.3	5.4	7.8	10.6
Mean Temperature (°C)	summer	18.8	19.1	20.6	22.1	19.8	21.7	23.7
Mean Temperature (°C)	fall	8.6	8.9	10.6	12.3	9.6	11.4	13.2
Mean Temperature (°C)	winter	-6.9	-7.5	-4.7	-1.8	-6.5	-3.4	-0.4
Tropical Nights	annual	3	2	9	19	5	16	32
Very hot days (+30°C)	annual	8	6	21	38	11	32	54
Very cold days (-30°C)	annual	1	0	0	1	0	0	0
Date of Last Spring Frost	annual	May 6	April 8	April 27	May 13	April 3	April 24	May 13
Date of First Fall Frost	annual	Oct. 10	Oct. 3	Oct. 22	Nov. 12	Oct. 9	Oct. 27	Nov. 18
Frost-Free Season (days)	annual	154	149	175	203	155	184	215

Midland Low Carbon Scenario *GHG Emissions quickly reduce after 2050*

Variable	Period	1976-2005	2021-2050			2051-2080		
		Mean	Low	Mean	High	Low	Mean	High
Precipitation (mm)	annual	970	859	1017	1179	855	1049	1245
Precipitation (mm)	spring	206	150	219	295	153	227	314
Precipitation (mm)	summer	220	143	224	326	138	226	324
Precipitation (mm)	fall	278	199	286	383	203	298	405
Precipitation (mm)	winter	266	215	289	368	223	298	379
Mean Temperature (°C)	annual	6.5	7.1	8.5	9.9	7.9	9.5	11.2
Mean Temperature (°C)	spring	4.8	4.3	6.7	9.1	5.2	7.6	10.4
Mean Temperature (°C)	summer	18.7	19	20.5	22	19.7	21.6	23.5
Mean Temperature (°C)	fall	9	9.2	10.9	12.6	9.9	11.7	13.5
Mean Temperature (°C)	winter	-6.5	-7.1	-4.3	-1.5	-6	-3	0
Tropical Nights	annual	3	2	10	20	5	16	32
Very hot days (+30°C)	annual	7	5	19	35	9	28	49
Very cold days (-30°C)	annual	1	0	0	1	0	0	0
Date of Last Spring Frost	annual	May 4	April 6	April 25	May 11	April 1	April 22	May 11
Date of First Fall Frost	annual	Oct. 17	Oct. 11	Oct. 29	Nov. 18	Oct. 15	Nov. 2	Nov. 24
Frost-Free Season (days)	annual	163	158	183	212	163	191	222

Collingwood Low Carbon Scenario *GHG Emissions quickly reduce after 2050*

Variable	Period	1976-2005	2021-2050			2051-2080		
		Mean	Low	Mean	High	Low	Mean	High
Precipitation (mm)	annual	907	799	951	1110	796	980	1171
Precipitation (mm)	spring	198	144	211	285	146	218	302
Precipitation (mm)	summer	216	136	219	323	132	221	324
Precipitation (mm)	fall	251	177	258	349	181	269	370
Precipitation (mm)	winter	243	196	264	335	203	272	346
Mean Temperature (°C)	annual	7.2	7.8	9.1	10.5	8.5	10.2	11.8
Mean Temperature (°C)	spring	5.3	4.8	7.1	9.6	5.7	8.1	10.8
Mean Temperature (°C)	summer	19	19.2	20.8	22.4	20	21.9	23.9
Mean Temperature (°C)	fall	9.5	9.7	11.5	13.2	10.5	12.3	14.1
Mean Temperature (°C)	winter	-5.4	-5.8	-3.1	-0.4	-4.7	-1.8	1
Tropical Nights	annual	4	4	12	23	6	19	36
Very hot days (+30°C)	annual	10	8	23	41	13	33	56
Very cold days (-30°C)	annual	0	0	0	0	0	0	0
Date of Last Spring Frost	annual	May 2	April 4	April 23	May 10	March 30	April 20	May 10
Date of First Fall Frost	annual	Oct. 20	Oct. 14	Nov. 1	Nov. 22	Oct. 17	Nov. 6	Nov. 29
Frost-Free Season (days)	annual	168	163	189	217	168	197	229