



Alonsa

Medium Carbon Emissions (RCP4.5)

Climate Variable	Season	1981-2010 (Baseline)	2021-2050			2051-2080		
			L	M	H	L	M	H
Mean Temperature	Annual	2.0 °C	3.3 °C	3.8 °C	4.6 °C	4.5 °C	5.0 °C	5.4 °C
	Winter	-15.7 °C	-14.6 °C	-13.4 °C	-12.2 °C	-12.7 °C	-11.7 °C	-10.7 °C
	Spring	1.7 °C	2.6 °C	3.4 °C	4.2 °C	3.7 °C	4.3 °C	5.0 °C
	Summer	17.8 °C	18.7 °C	19.2 °C	19.7 °C	19.7 °C	20.3 °C	20.8 °C
	Fall	4.1 °C	5.2 °C	5.8 °C	6.4 °C	6.3 °C	6.9 °C	7.4 °C
Precipitation	Annual	460.0 mm	464.3 mm	487.3 mm	512.9 mm	465.4 mm	485.2 mm	511.5 mm
	Winter	63.6 mm	63.2 mm	71.1 mm	79.8 mm	68.6 mm	75.4 mm	82.6 mm
	Spring	96.6 mm	88.2 mm	104.7 mm	119.0 mm	91.3 mm	108.8 mm	123.1 mm
	Summer	193.7 mm	176.4 mm	196.2 mm	216.3 mm	171.4 mm	185.5 mm	199.3 mm
	Fall	106.2 mm	105.9 mm	115.3 mm	125.0 mm	105.3 mm	115.5 mm	125.9 mm
Days ≥ 30 °C	Annual	5.0 days	5.1 days	10.5 days	15.5 days	13.0 days	19.1 days	25.8 days
Days ≤ -30 °C	Annual	11.5 days	1.8 days	5.3 days	9.3 days	0.9 days	3.5 days	6.7 days
Frost-Free Period	Annual	124.4 days	120.8 days	139.4 days	160.4 days	133.3 days	145.9 days	158.1 days
Date of First Fall Frost		Sep 23	Sep 16	Sep 29	Oct 12	Sep 23	Oct 02	Oct 10
Date of Last Spring Frost		May 22	May 02	May 13	May 27	Apr 30	May 09	May 19
5 °C Degree Days	Annual	17268.2	17309.6	17336.9	17360.3	17342.0	17362.0	17377.0
10 °C Degree Days	Annual	880.6	1005.7	1071.1	1148.8	1160.9	1239.7	1306.8
Freeze-Thaw Cycles	Annual	61.2 cycles	47.3 cycles	57.8 cycles	67.5 cycles	52.5 cycles	60.3 cycles	68.5 cycles
Days Precip ≥ 10 mm	Annual	10.8 days	9.5 days	11.8 days	14.0 days	10.1 days	11.6 days	13.3 days
Days Precip ≥ 20 mm	Annual	2.8 days	1.8 days	3.1 days	4.4 days	2.2 days	3.1 days	3.9 days

High Carbon Emissions (RCP8.5)

Climate Variable	Season	1981-2010 (Baseline)	2021-2050			2051-2080		
			L	M	H	L	M	H
Mean Temperature	Annual	2.0 °C	3.5 °C	4.1 °C	4.8 °C	5.2 °C	6.3 °C	7.5 °C
	Winter	-15.8 °C	-14.0 °C	-12.8 °C	-11.6 °C	-11.8 °C	-10.1 °C	-8.4 °C
	Spring	1.7 °C	2.6 °C	3.3 °C	4.1 °C	3.9 °C	5.1 °C	6.2 °C
	Summer	17.8 °C	19.0 °C	19.6 °C	20.2 °C	20.6 °C	21.7 °C	22.7 °C
	Fall	4.1 °C	5.2 °C	6.2 °C	7.0 °C	7.4 °C	8.4 °C	9.4 °C
Precipitation	Annual	459.6 mm	454.3 mm	483.1 mm	509.2 mm	466.0 mm	495.5 mm	527.0 mm
	Winter	64.9 mm	63.1 mm	70.9 mm	79.1 mm	66.4 mm	77.6 mm	86.6 mm
	Spring	95.8 mm	91.1 mm	106.7 mm	118.5 mm	102.3 mm	119.3 mm	136.7 mm
	Summer	192.6 mm	177.0 mm	191.0 mm	204.5 mm	164.4 mm	183.3 mm	198.8 mm
	Fall	106.4 mm	102.1 mm	114.3 mm	127.3 mm	100.3 mm	115.2 mm	128.6 mm
Days ≥ 30 °C	Annual	5.1 days	7.3 days	12.8 days	18.4 days	21.5 days	31.2 days	40.5 days
Days ≤ -30 °C	Annual	11.9 days	1.3 days	4.8 days	8.6 days	0.2 days	1.9 days	3.9 days
Frost-Free Period	Annual	124.4 days	125.0 days	145.3 days	167.2 days	136.9 days	156.1 days	177.4 days
Date of First Fall Frost		Sep 23	Sep 23	Oct 03	Oct 17	Sep 24	Oct 09	Oct 24
Date of Last Spring Frost		May 21	May 01	May 11	May 24	Apr 29	May 06	May 16
5 °C Degree Days	Annual	17269.6	17309.7	17339.6	17373.0	17378.5	17405.8	17432.9
10 °C Degree Days	Annual	880.9	1066.3	1134.2	1210.2	1302.6	1456.0	1635.4
Freeze-Thaw Cycles	Annual	61.1 cycles	47.6 cycles	57.8 cycles	65.9 cycles	49.5 cycles	57.3 cycles	64.0 cycles
Days Precip ≥ 10 mm	Annual	10.8 days	10.1 days	11.5 days	12.9 days	10.3 days	12.2 days	14.0 days
Days Precip ≥ 20 mm	Annual	2.8 days	2.1 days	3.0 days	4.3 days	2.5 days	3.3 days	4.1 days