



Swan Lake Watershed

Medium Carbon Emissions (RCP4.5)

Climate Variable	Season	1981-2010 (Baseline)	2021-2050			2051-2080		
			L	M	H	L	M	H
Mean Temperature	Annual	1.1 °C	2.3 °C	2.9 °C	3.6 °C	3.5 °C	4.0 °C	4.4 °C
	Winter	-16.5 °C	-15.4 °C	-14.2 °C	-12.9 °C	-13.7 °C	-12.6 °C	-11.4 °C
	Spring	1.0 °C	1.9 °C	2.6 °C	3.6 °C	2.9 °C	3.5 °C	4.4 °C
	Summer	16.7 °C	17.6 °C	18.1 °C	18.6 °C	18.6 °C	19.2 °C	19.7 °C
	Fall	3.0 °C	4.0 °C	4.6 °C	5.3 °C	5.1 °C	5.7 °C	6.3 °C
Precipitation	Annual	473.3 mm	470.7 mm	501.3 mm	530.0 mm	474.6 mm	502.5 mm	529.0 mm
	Winter	65.8 mm	65.4 mm	72.5 mm	79.6 mm	67.1 mm	75.4 mm	82.8 mm
	Spring	93.7 mm	91.8 mm	105.2 mm	117.3 mm	92.7 mm	108.1 mm	124.3 mm
	Summer	205.8 mm	190.8 mm	205.5 mm	227.7 mm	185.8 mm	200.6 mm	226.4 mm
	Fall	108.2 mm	107.4 mm	118.1 mm	129.6 mm	107.6 mm	118.5 mm	133.0 mm
Days ≥ 30 °C	Annual	5.8 days	6.4 days	10.9 days	15.0 days	13.9 days	19.3 days	25.7 days
Days ≤ -30 °C	Annual	16.1 days	3.4 days	8.5 days	14.2 days	1.5 days	5.6 days	9.6 days
Frost-Free Period	Annual	113.1 days	115.0 days	128.6 days	143.8 days	124.5 days	137.4 days	148.6 days
Date of First Fall Frost		Sep 15	Sep 15	Sep 22	Oct 01	Sep 18	Sep 27	Oct 05
Date of Last Spring Frost		May 25	May 07	May 17	May 28	May 03	May 12	May 20
5 °C Degree Days	Annual	17214.4	17260.1	17284.4	17312.1	17290.3	17314.9	17338.1
10 °C Degree Days	Annual	759.3	866.8	938.6	1006.8	1024.2	1095.4	1161.5
Freeze-Thaw Cycles	Annual	68.2 cycles	54.8 cycles	63.5 cycles	73.0 cycles	55.0 cycles	63.8 cycles	72.2 cycles
Days Precip ≥ 10 mm	Annual	10.6 days	10.1 days	12.1 days	14.0 days	10.4 days	12.0 days	13.5 days
Days Precip ≥ 20 mm	Annual	2.6 days	2.1 days	3.1 days	4.0 days	2.2 days	3.0 days	3.7 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	1.1 °C	2.6 °C	3.2 °C	3.9 °C	4.3 °C	5.4 °C	6.6 °C
	Winter	-16.6 °C	-15.0 °C	-13.6 °C	-12.4 °C	-12.6 °C	-11.0 °C	-9.5 °C
	Spring	1.0 °C	2.0 °C	2.7 °C	3.5 °C	3.2 °C	4.3 °C	5.5 °C
	Summer	16.7 °C	18.0 °C	18.5 °C	19.2 °C	19.6 °C	20.7 °C	21.5 °C
	Fall	2.9 °C	4.0 °C	5.0 °C	5.8 °C	6.2 °C	7.2 °C	8.3 °C
Precipitation	Annual	472.5 mm	466.0 mm	499.9 mm	525.1 mm	482.9 mm	514.7 mm	543.6 mm
	Winter	66.6 mm	66.1 mm	72.1 mm	79.1 mm	66.6 mm	78.3 mm	89.4 mm
	Spring	92.6 mm	92.3 mm	107.5 mm	118.9 mm	99.3 mm	118.5 mm	137.1 mm
	Summer	205.9 mm	185.7 mm	204.6 mm	220.8 mm	177.6 mm	200.2 mm	220.6 mm
	Fall	107.4 mm	101.3 mm	115.5 mm	128.9 mm	101.1 mm	117.6 mm	129.9 mm
Days ≥ 30 °C	Annual	5.7 days	9.1 days	13.3 days	17.8 days	20.1 days	29.4 days	39.5 days
Days ≤ -30 °C	Annual	16.6 days	3.3 days	7.4 days	12.3 days	1.0 days	3.4 days	6.2 days
Frost-Free Period	Annual	113.2 days	118.4 days	132.4 days	148.0 days	130.8 days	146.8 days	163.6 days
Date of First Fall Frost		Sep 15	Sep 16	Sep 24	Oct 05	Sep 21	Oct 01	Oct 13
Date of Last Spring Frost		May 24	May 06	May 15	May 26	Apr 29	May 08	May 18
5 °C Degree Days	Annual	17216.4	17254.9	17288.7	17329.4	17337.4	17367.8	17395.8
10 °C Degree Days	Annual	759.4	934.0	998.0	1084.5	1161.7	1300.9	1467.5
Freeze-Thaw Cycles	Annual	67.7 cycles	53.1 cycles	63.1 cycles	72.8 cycles	51.9 cycles	59.5 cycles	66.7 cycles
Days Precip ≥ 10 mm	Annual	10.7 days	10.6 days	12.0 days	13.3 days	10.8 days	12.6 days	14.3 days
Days Precip ≥ 20 mm	Annual	2.6 days	2.1 days	3.0 days	3.9 days	2.1 days	3.1 days	4.1 days