



# SRC CLIMATE REFERENCE STATION DAILY DATA REPORT

## SASKATOON STATION 4057180

52°09' N 106°36' W 497 m asl Estab. 1963

Preliminary **NOVEMBER 2018**

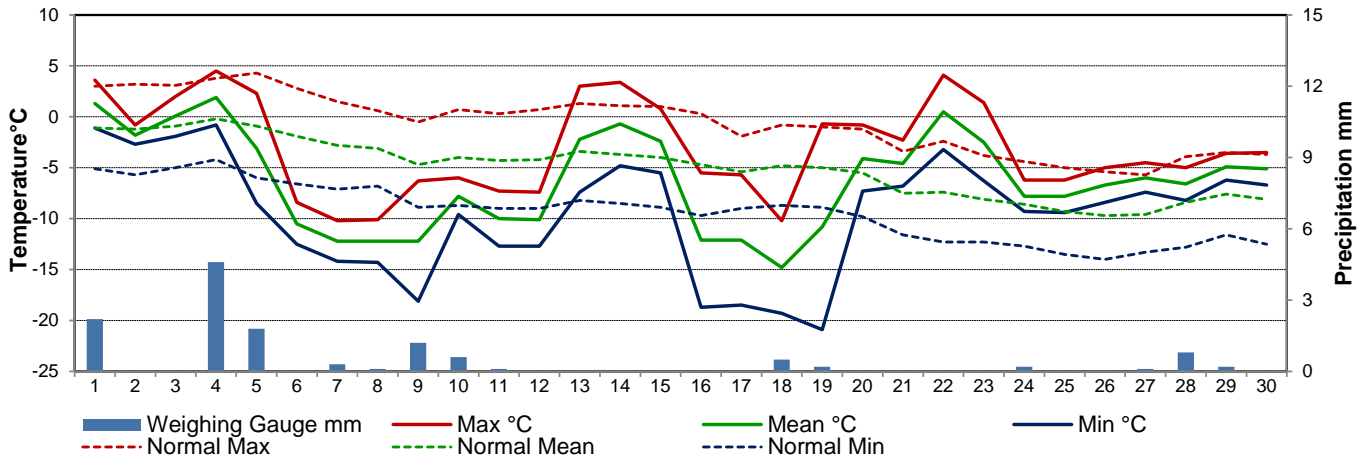
Day	Temperature						Degree-days			Precipitation			Relative Humidity		Station Pressure (sea level)	
	Max	Normal Max	Min	Normal Min	Mean	Normal Mean	Growing	Heating	Cooling	Weighing Gauge	Notes	Snow-on-Ground 0900h	Max ½ hr Avg	Min ½ hr Avg	Max ½ hr Avg	Min ½ hr Avg
	°C	1981-2010	°C	1981-2010	°C	1981-2010	5°C base	18°C base	18°C base	mm		cm	%	%	mbar	mbar
1	3.6	3.0	-1.1	-5.1	1.3	-1.1	0.0	16.7	0.0	2.2	light rain / snow	0	94	78	1017	1005
2	-0.8	3.2	-2.7	-5.7	-1.8	-1.2	0.0	19.8	0.0	0.0		0	90	79	1016	1010
3	2.0	3.1	-1.9	-5.0	0.1	-0.9	0.0	17.9	0.0	0.0		0	90	72	1019	1010
4	4.5	3.8	-0.8	-4.2	1.9	-0.2	0.0	16.1	0.0	4.6	light rain / snow	0	95	83	1009	994
5	2.3	4.3	-8.5	-6.0	-3.1	-0.9	0.0	21.1	0.0	1.8	light snow	1	95	80	1016	996
6	-8.4	2.8	-12.5	-6.6	-10.5	-1.9	0.0	28.5	0.0	0.0	light snow	9	84	69	1026	1016
7	-10.2	1.5	-14.2	-7.1	-12.2	-2.8	0.0	30.2	0.0	0.3	light snow	7	88	61	1026	1025
8	-10.1	0.6	-14.3	-6.8	-12.2	-3.1	0.0	30.2	0.0	0.1	light snow	7	88	68	1033	1024
9	-6.3	-0.5	-18.1	-8.9	-12.2	-4.7	0.0	30.2	0.0	1.2	light snow	8	91	68	1033	1007
10	-6.0	0.7	-9.6	-8.7	-7.8	-4.0	0.0	25.8	0.0	0.6	light snow	11	93	74	1020	1007
11	-7.3	0.3	-12.7	-9.0	-10.0	-4.3	0.0	28.0	0.0	0.1	light snow	10	90	66	1034	1021
12	-7.4	0.7	-12.7	-9.0	-10.1	-4.2	0.0	28.1	0.0	0.0		9	80	69	1034	1023
13	3.0	1.3	-7.4	-8.2	-2.2	-3.4	0.0	20.2	0.0	0.0		8	90	65	1023	1012
14	3.4	1.1	-4.8	-8.5	-0.7	-3.7	0.0	18.7	0.0	0.0		6	94	66	1012	1007
15	0.8	1.0	-5.5	-8.9	-2.4	-4.0	0.0	20.4	0.0	0.0		6	91	79	1017	1010
16	-5.5	0.3	-18.7	-9.7	-12.1	-4.7	0.0	30.1	0.0	0.0		6	89	72	1034	1017
17	-5.7	-1.9	-18.5	-9.0	-12.1	-5.4	0.0	30.1	0.0	0.0		6	86	67	1034	1016
18	-10.2	-0.8	-19.3	-8.7	-14.8	-4.8	0.0	32.8	0.0	0.5	light snow	6	88	77	1021	1014
19	-0.7	-1.0	-20.9	-8.9	-10.8	-5.0	0.0	28.8	0.0	0.2	light rain / snow	6	91	82	1023	1011
20	-0.8	-1.2	-7.3	-9.8	-4.1	-5.5	0.0	22.1	0.0	0.0	light rain / snow	7	97	86	1015	1012
21	-2.3	-3.4	-6.8	-11.6	-4.6	-7.5	0.0	22.6	0.0	0.0		7	97	94	1014	1003
22	4.1	-2.4	-3.2	-12.3	0.5	-7.4	0.0	17.5	0.0	0.0		7	96	65	1003	997
23	1.4	-3.8	-6.3	-12.3	-2.5	-8.1	0.0	20.5	0.0	0.0		6	93	73	1007	998
24	-6.2	-4.4	-9.3	-12.7	-7.8	-8.6	0.0	25.8	0.0	0.2	light snow	6	91	78	1021	1007
25	-6.2	-5.0	-9.4	-13.5	-7.8	-9.3	0.0	25.8	0.0	0.0		6	87	78	1025	1021
26	-5.0	-5.4	-8.4	-14.0	-6.7	-9.7	0.0	24.7	0.0	0.0		6	90	85	1024	1013
27	-4.5	-5.7	-7.4	-13.3	-6.0	-9.6	0.0	24.0	0.0	0.1	light freezing rain	6	89	83	1013	1000
28	-5.0	-3.9	-8.2	-12.8	-6.6	-8.4	0.0	24.6	0.0	0.8	light snow	6	93	80	1004	1000
29	-3.6	-3.5	-6.2	-11.6	-4.9	-7.6	0.0	22.9	0.0	0.2	fog	6	96	94	1005	1003
30	-3.5	-3.7	-6.7	-12.5	-5.1	-8.1	0.0	23.1	0.0	0.0	fog	6	96	94	1012	1005
Total							0.0	727.3	0.0	12.9			Extreme / Date	Extreme / Date	Extreme / Date	Extreme / Date
Avg	-3.0	-0.6	-9.4	-9.4	-6.2	-5.0	1981-2010 Normal			13.4	Normal					
Extreme Date	4.5		-20.9				2.9	690.1	0.0	213.1	Cumulative		97	61	1034	994
Date	4		19							342.6	Cumulative Norm		20	7	11	4

Note: Red numbers indicate manual calculation; Red cell indicate data not available

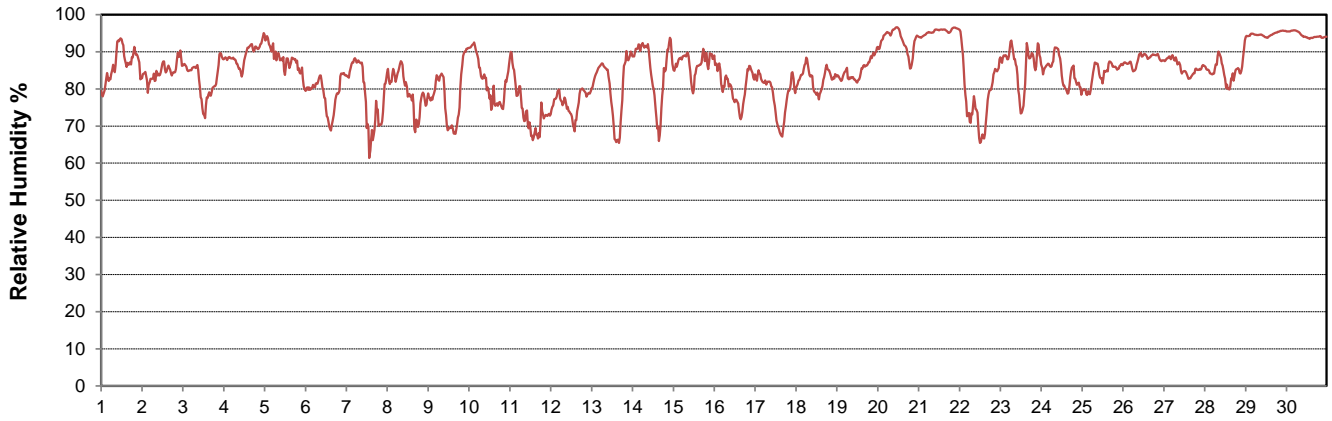
### SRC proudly recognizes the following CRS supporters:



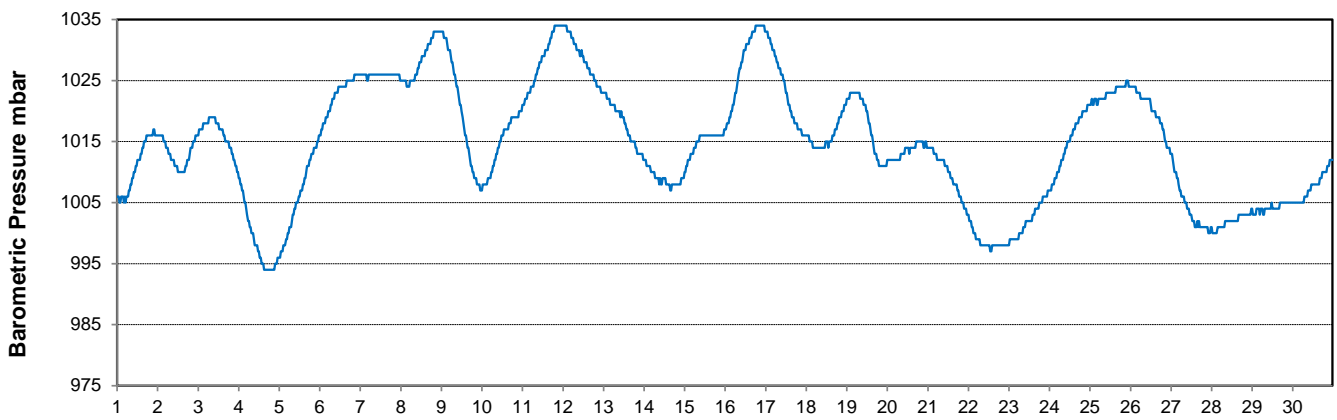
### Temperature and Precipitation for November 2018



### Relative Humidity for November 2018



### Barometric Pressure Corrected to Sea Level for November 2018





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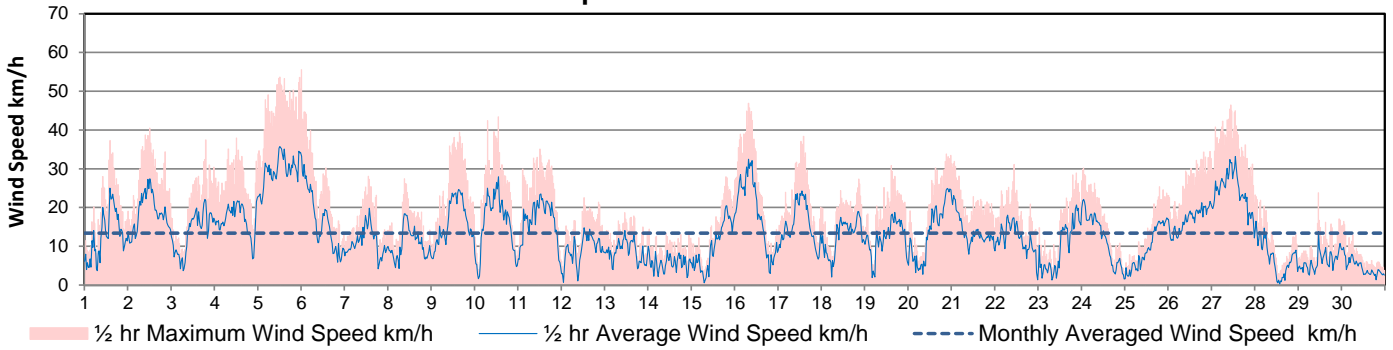
Day	Wind Gust			Soil Temperatures at 0900hrs								Radiation				
	Max	Direction	Time	Surface	5 cm	10 cm	20 cm	50 cm	100 cm	150 cm	300 cm	Bright Sunshine	Possible	% Possible	Global	Diffuse
	km/h			°C	°C	°C	°C	°C	°C	°C	°C	hours	hours		MJ/m <sup>2</sup>	MJ/m <sup>2</sup>
1	37.3	N	14:14	2.5	3.0	3.5	4.0	6.0	7.0	8.0	9.0	0.0	9.6	0.0	1.1	0.9
2	40.5	ESE	12:07	-2.5	1.5	2.5	3.5	5.5	7.0	8.0	9.0	0.0	9.5	0.0	1.5	1.2
3	37.4	SW	19:10	-1.5	1.0	1.5	2.5	5.5	7.0	7.5	8.5	4.3	9.5	45.4	5.2	2.4
4	37.9	SSE	12:00	1.0	1.0	1.5	2.0	5.0	7.0	7.5	8.5	0.0	9.4	0.0	1.6	1.4
5	53.6	ESE	12:04	-4.0	1.5	2.0	2.5	5.0	7.0	7.5	8.5	0.0	9.4	0.0	1.9	1.6
6	55.6	N	0:05	-12.5	1.0	1.5	2.0	4.5	7.0	7.5	8.5	5.5	9.3	59.2	5.7	2.6
7	28.1	NW	13:25	-14.0	0.5	1.0	1.5	4.5	6.5	7.5	8.5	0.1	9.2	1.1	2.8	2.3
8	27.4	NNE	9:28	-12.5	0.5	1.0	1.5	4.0	6.5	7.5	8.5	4.8	9.2	52.3	5.4	2.8
9	39.5	SSE	15:41	-17.5	0.0	0.5	1.0	4.0	6.5	7.5	8.5	1.9	9.1	20.8	4.3	3.2
10	43.4	NNW	13:04	-9.5	0.0	0.5	1.0	4.0	6.5	7.5	8.5	1.8	9.1	19.9	4.2	3.0
11	35.1	NNW	12:26	-9.5	0.0	0.5	1.0	3.5	6.0	7.0	8.5	0.2	9.0	2.2	3.6	2.8
12	22.5	SSE	11:20	-11.5	0.0	0.5	1.0	3.5	6.0	7.0	8.5	3.9	9.0	43.6	5.1	2.8
13	18.7	SSW	12:38	-4.5	0.0	0.0	0.5	3.5	6.0	7.0	8.5	6.2	8.9	69.7	5.1	2.6
14	14.4	S	0:36	-4.5	0.0	0.5	0.5	3.5	6.0	7.0	8.5	3.8	8.8	43.0	4.0	2.3
15	27.9	NE	19:04	-1.5	0.0	0.0	0.5	3.5	6.0	7.0	8.0	0.0	8.8	0.0	1.8	1.5
16	46.9	NNE	7:43	-15.5	0.0	0.5	0.5	3.0	5.5	7.0	8.0	4.0	8.7	45.8	4.3	2.6
17	38.4	WSW	14:03	-18.0	-1.0	0.0	0.5	3.0	5.5	6.5	8.0	7.7	8.7	88.6	6.9	1.4
18	27.4	NE	20:37	-11.5	-1.0	-0.5	0.5	3.0	5.5	6.5	8.0	0.3	8.6	3.5	3.1	2.5
19	30.9	S	14:42	-14.0	-1.0	-0.5	0.0	3.0	5.5	6.5	8.0	0.0	8.6	0.0	2.0	1.7
20	33.8	ESE	21:04	-1.5	-0.5	-0.5	0.0	2.5	5.5	6.5	8.0	0.0	8.5	0.0	1.7	1.4
21	31.9	SE	1:52	-4.5	-0.5	-0.5	0.0	2.5	5.5	6.5	8.0	0.0	8.5	0.0	2.2	1.8
22	31.1	SW	10:31	-1.0	-0.5	0.0	0.0	2.5	5.0	6.5	8.0	5.7	8.5	67.5	4.2	1.9
23	28.9	NNE	21:10	-2.5	-0.5	0.0	0.0	2.5	5.0	6.5	8.0	4.5	8.4	53.6	3.7	1.4
24	30.2	NNE	1:28	-8.0	-0.5	0.0	0.0	2.5	5.0	6.0	8.0	0.0	8.4	0.0	2.2	1.8
25	25.3	SE	19:01	-8.5	-1.0	-0.5	0.0	2.5	5.0	6.0	8.0	0.0	8.3	0.0	1.8	1.5
26	34.5	SSE	23:02	-7.5	-1.0	-0.5	0.0	2.5	5.0	6.0	7.5	0.0	8.3	0.0	1.8	1.5
27	46.4	ESE	10:48	-5.0	-1.0	-0.5	0.0	2.5	5.0	6.0	7.5	0.0	8.2	0.0	2.0	1.7
28	23.2	ENE	0:27	-8.0	-1.0	-0.5	0.0	2.5	5.0	6.0	7.5	0.0	8.2	0.0	2.0	1.7
29	23.8	SSE	11:11	-5.0	-1.0	-0.5	0.0	2.5	5.0	6.0	7.5	0.0	8.2	0.0	1.7	1.5
30	16.4	S	1:14	-5.0	-0.5	-0.5	0.0	2.5	4.5	6.0	7.5	0.0	8.1	0.0	1.8	1.5
Total												54.7	263.9	20.7	94.7	59.3
Mean				-7.3	0.0	0.4	0.9	3.5	5.9	6.9	8.2	1981-2010 Normal for Radiation				
Extreme	55.6	N	0:05	1971- 2000 Normal for Soil Temperatures								97.0	270.3	35.9	127.2	63.8
Date	6			-2.2	-1.7	-0.5	3.0	5.6	6.8	8.1	No. of Bright Sunshine days = 15					

Note: Red numbers indicate manual calculation; Red cell indicate data not available

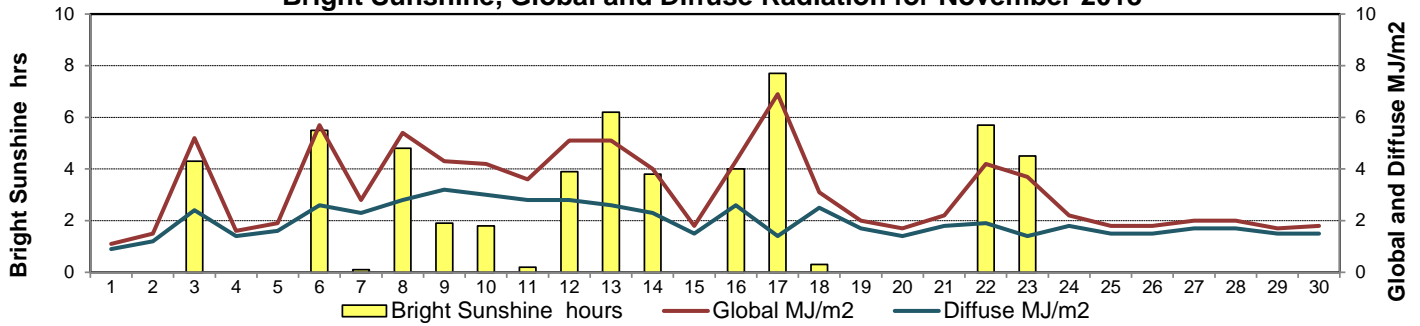
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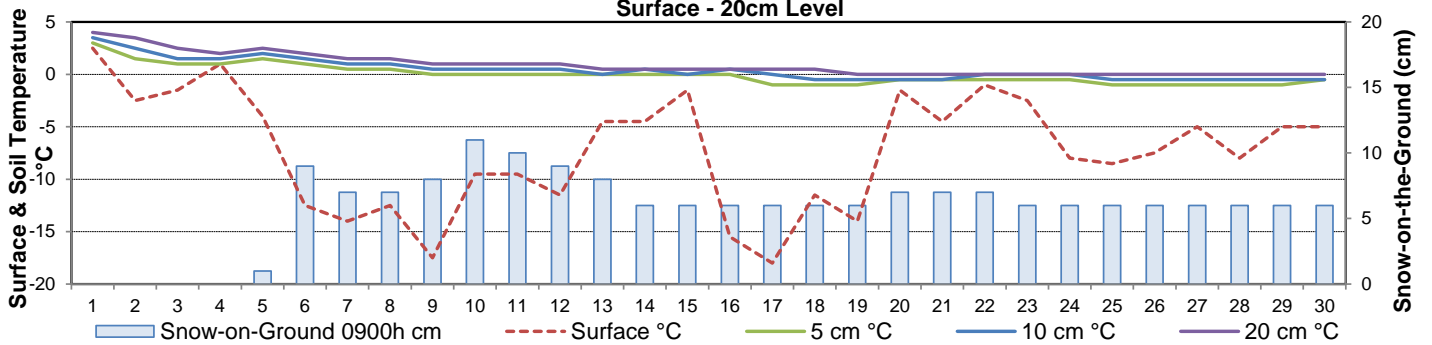
**Wind Speed for November 2018**



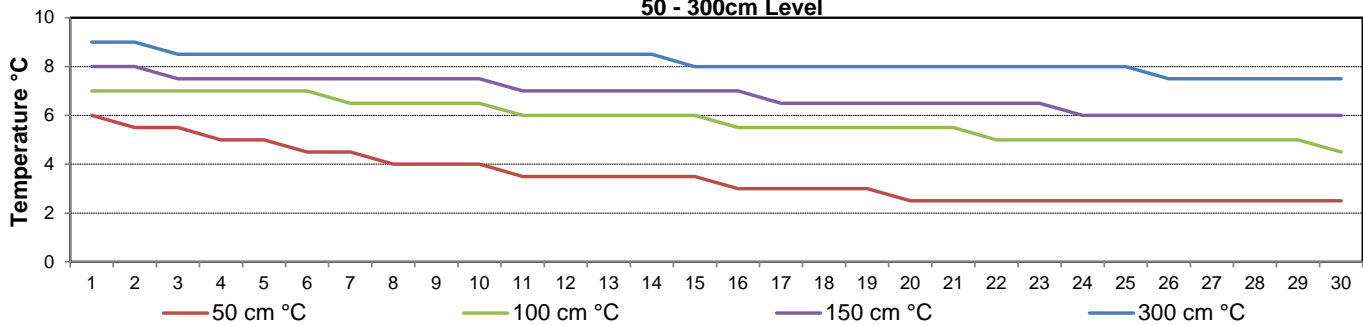
**Bright Sunshine, Global and Diffuse Radiation for November 2018**



**Soil Temperatures for November 2018  
Surface - 20cm Level**



**Soil Temperatures for November 2018  
50 - 300cm Level**





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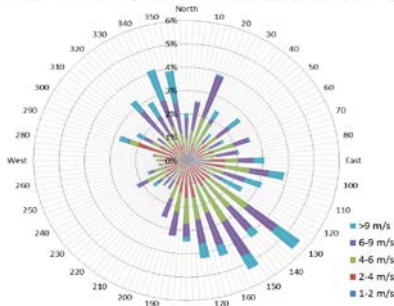
### Extreme Records for November

Max/Min Temperature °C			Precipitation - Monthly mm				Wind Monthly km/h				CRS Bright Sunshine - Monthly						
S'toon Area	Date	Site	S'toon CRS	Date	S'toon Area	Date	Site	S'toon CRS	Date	S'toon Airport	Date	S'toon CRS**	Date	Hours	Year	No. of Days	Year
21.7	03/1903	SE	20.0	06/2016	57.3	1940	SE	48.2	1973	100 <sup>W</sup>	17/1976	101	1976	188.5	1976	30	1976
-39.4	30/1893	SM	-33.5	24/1985	0.0	2002*	SWT*	0.4	2009					37.2	1972	10	1972

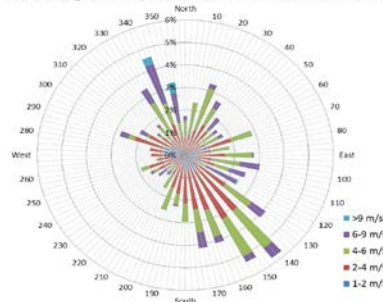
\*\*1975 forward \* more than one year

Notable Events for CRS Saskatoon - November						Saskatoon Area Stations			Glossary	
Element	Type	Day	New Record	Old Record	Year (day)	Station	Location	Period	Term	Definition
We didn't break any records but we did have some interesting items						SM	NWMP	c. 1892-1901	T	Trace of precipitation
<p><b>CRS Saskatoon officially turned 55 this month</b></p> <ul style="list-style-type: none"> <li>- fall 2018 had the fourth lowest number of days that recorded any bright sunshine</li> <li>- fall 2018 had the fourth lowest seasonal maximum average temperature mainly due to September being one of the coolest on record</li> <li>- fall 2018 precipitation amounts is pretty close to average, mainly due to all the precipitation received in September</li> </ul>						SE	Eby	1901-1941	Normal	30 year average beginning with the decade
						US	Univ. of Sask.	1915-1964	SOG	Depth of snow-on-the-ground in cm
						S	Saskatoon	1941-1942	na	not available
						SA	Saskatoon A	1942 -	<b>Degree-days</b>	
						NRC	Nat. Res. Council	1952-1966	Tm	Mean Temperature
						SRC	Sask. Res. Council	1963-	Growing	(Tm-5°C); if Tm ≤ 5°C then GDD = 0
						SWT	S'toon Water Treatment Plant	1974 -	Heating	(18°C-Tm); if Tm ≤ 18°C then HDD = 0
						SC	S'toon Central Ave	1974-1989	Cooling	(Tm-18°C); if Tm ≥ 18°C then CDD = 0
						S1	Saskatoon 1	1976-1978	Extreme Cooling	(Tm-24°C); if Tm ≥ 24°C then CDD = 0
						S2	Saskatoon 2	1977-1990	<b>Manual snow depth:</b>	
K	S'toon Kernen Farm	1993-2004	8th = 8 cm							
KCS	S'toon Kernen Farm CS	1996-	14th = 6.5 cm							
RCS	Environment Canada	2008-	22nd = 6 cm							
SF	Sutherland Forestry	1943-1970	30th = 6 cm							
						manual snow depth is average of three meter sticks inside the site				

1/2 hr Maximum Wind Speed and Direction Saskatoon Nov 2018



10 minute Average Wind Speed and Direction Saskatoon Nov 2018



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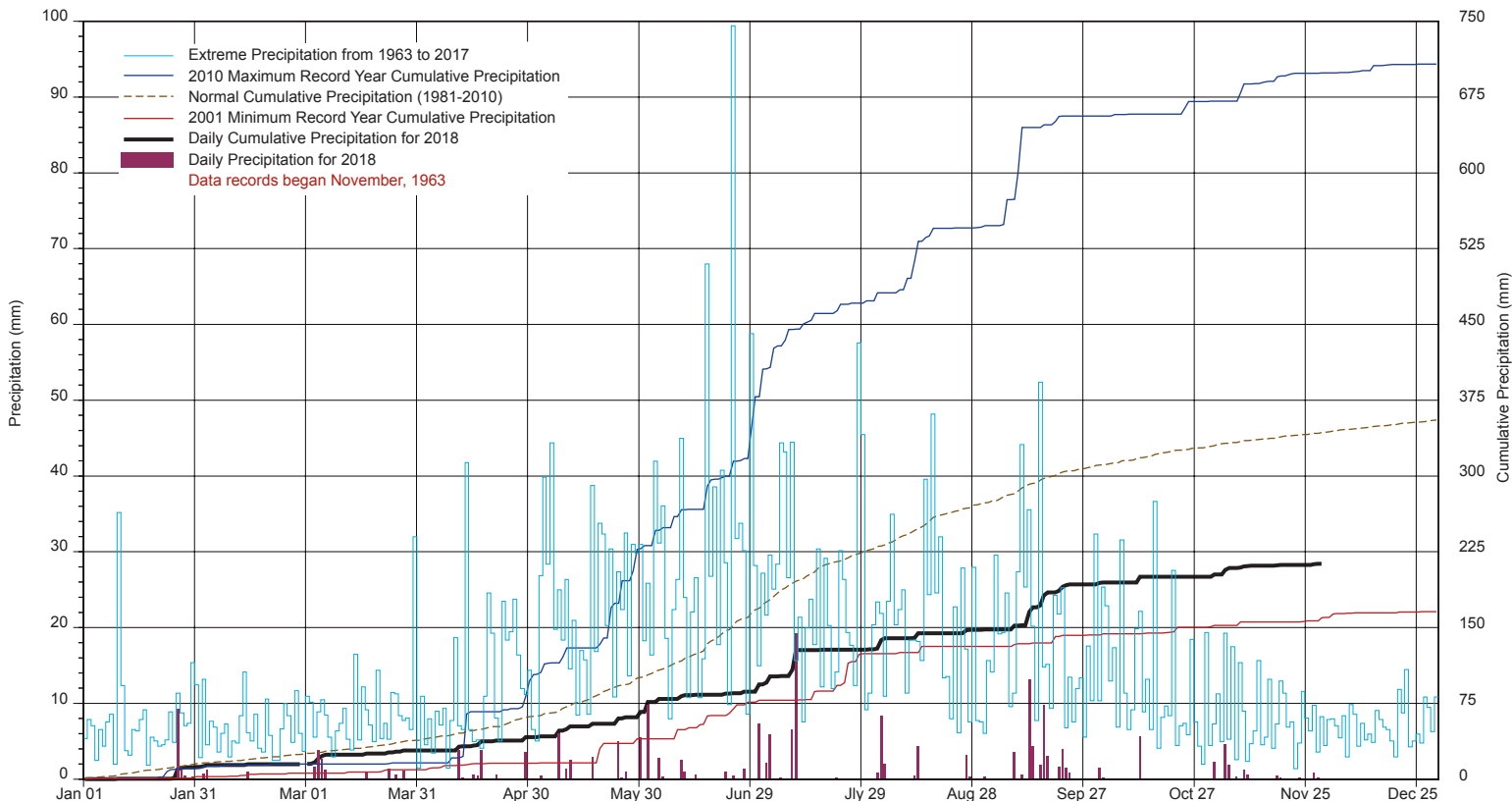


Agriculture and Agri-Food Canada

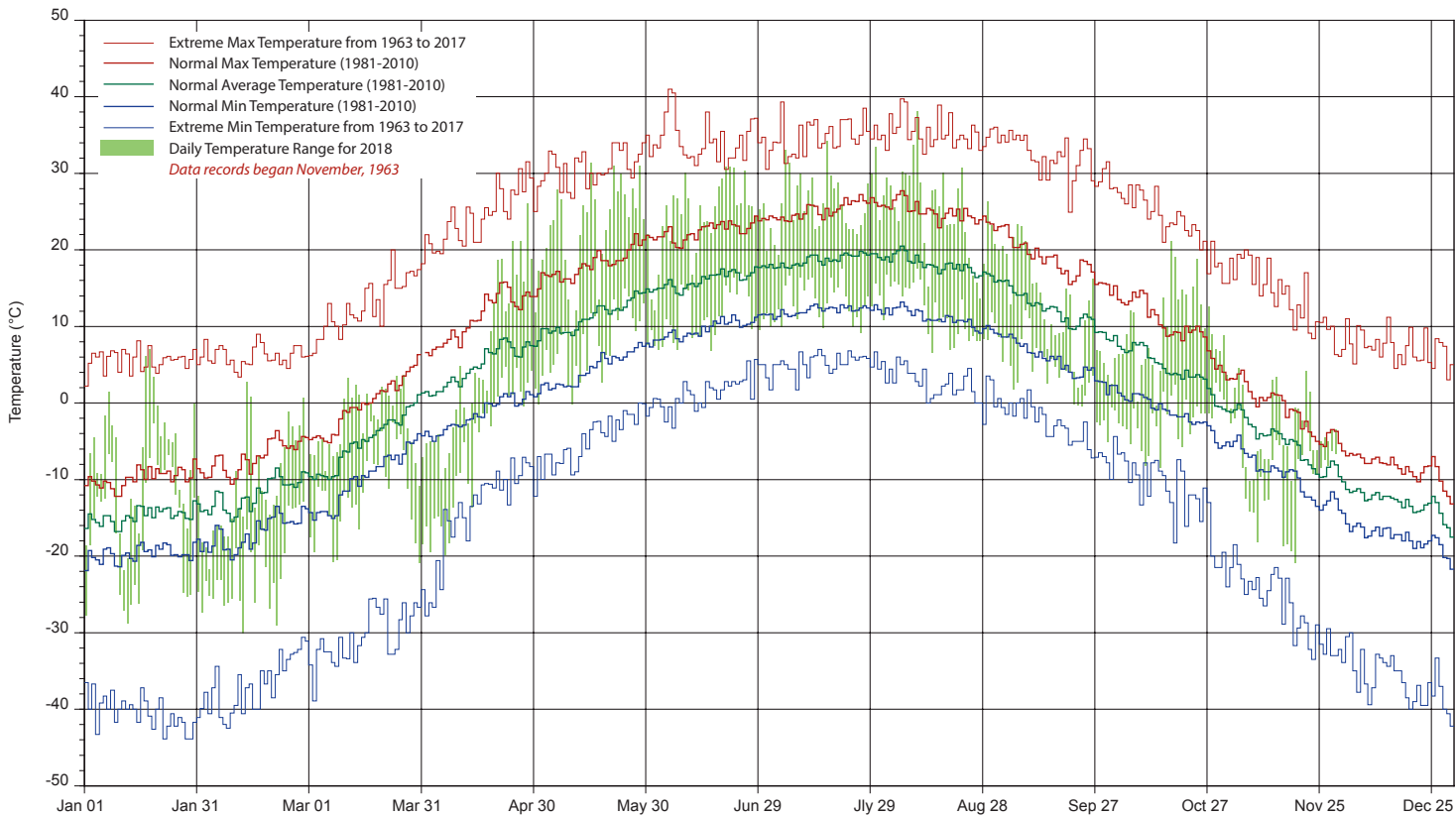
Agriculture et Agroalimentaire Canada



# SASKATCHEWAN RESEARCH COUNCIL SASKATOON CLIMATE REFERENCE STATION 2018 PRECIPITATION AND NORMALS



## 2018 TEMPERATURES AND NORMALS



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