



SRC CLIMATE REFERENCE STATION DAILY DATA REPORT

SASKATOON STATION 4057180

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

Preliminary

JULY

2019

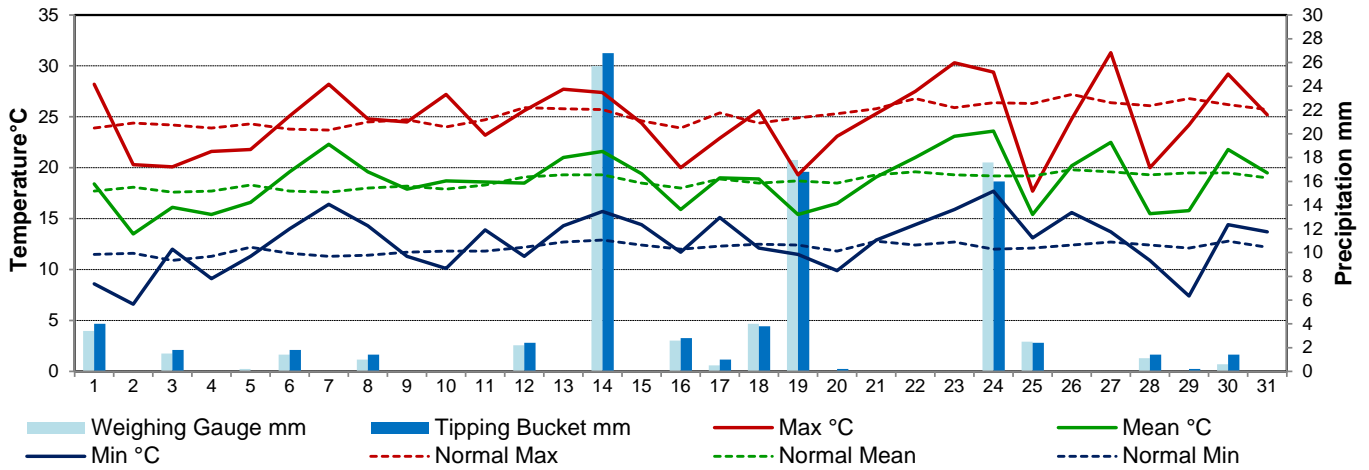
Day	Temperature						Degree-days			Precipitation			Relative Humidity		Station Pressure (sea level)	
	Max	Normal Max	Min	Normal Min	Mean	Normal Mean	Growing	Heating	Cooling	Weighing Gauge	Tipping Bucket	Notes	Max ½ hr Avg	Min ½ hr Avg	Max ½ hr Avg	Min ½ hr Avg
	°C	1981-2010	°C	1981-2010	°C	1981-2010	5°C base	18°C base	18°C base	mm	mm		%	%	mbar	mbar
1	28.2	23.9	8.6	11.5	18.4	17.7	13.4	0.0	0.4	3.4	4.0	t storm	84	25	1015	1005
2	20.3	24.4	6.6	11.6	13.5	18.1	8.5	4.5	0.0	0.0	0.0		86	40	1014	1009
3	20.1	24.2	12.0	10.9	16.1	17.6	11.1	1.9	0.0	1.5	1.8	t storm	76	45	1013	1011
4	21.6	23.9	9.1	11.3	15.4	17.7	10.4	2.6	0.0	0.0	0.0		88	37	1020	1013
5	21.8	24.3	11.3	12.2	16.6	18.3	11.6	1.4	0.0	0.2	0.0		87	43	1025	1020
6	25.1	23.8	14.0	11.6	19.6	17.7	14.6	0.0	1.6	1.4	1.8	t storm	89	52	1025	1015
7	28.2	23.7	16.4	11.3	22.3	17.6	17.3	0.0	4.3	0.0	0.0		89	40	1015	1006
8	24.8	24.5	14.3	11.4	19.6	18.0	14.6	0.0	1.6	1.0	1.4	t storm	90	47	1012	1006
9	24.5	24.7	11.3	11.7	17.9	18.2	12.9	0.1	0.0	0.0	0.0		90	38	1018	1012
10	27.2	24.0	10.1	11.8	18.7	17.9	13.7	0.0	0.7	0.0	0.0		92	36	1020	1008
11	23.2	24.7	13.9	11.8	18.6	18.3	13.6	0.0	0.6	0.0	0.0		87	47	1013	1007
12	25.6	25.9	11.3	12.2	18.5	19.1	13.5	0.0	0.5	2.2	2.4	t storm	91	41	1014	1011
13	27.7	25.8	14.3	12.7	21.0	19.3	16.0	0.0	3.0	0.0	0.0		81	43	1013	1009
14	27.4	25.7	15.7	12.9	21.6	19.3	16.6	0.0	3.6	25.7	26.8	t storm	92	48	1012	1007
15	24.4	24.6	14.4	12.4	19.4	18.5	14.4	0.0	1.4	0.0	0.0		90	47	1013	1008
16	20.0	23.9	11.7	12.0	15.9	18.0	10.9	2.1	0.0	2.6	2.8	showers	93	59	1014	1009
17	22.9	25.4	15.1	12.3	19.0	18.9	14.0	0.0	1.0	0.5	1.0	showers	91	54	1013	1002
18	25.6	24.4	12.1	12.5	18.9	18.5	13.9	0.0	0.9	4.0	3.8	t storm	87	44	1001	997
19	19.3	24.9	11.5	12.4	15.4	18.7	10.4	2.6	0.0	17.8	16.8	rain	93	78	1009	1000
20	23.1	25.3	9.9	11.8	16.5	18.5	11.5	1.5	0.0	0.0	0.2		94	55	1020	1009
21	25.3	25.8	12.9	12.8	19.1	19.3	14.1	0.0	1.1	0.0	0.0		92	46	1024	1020
22	27.5	26.8	14.4	12.4	21.0	19.6	16.0	0.0	3.0	0.0	0.0		82	40	1024	1020
23	30.3	25.9	15.9	12.7	23.1	19.3	18.1	0.0	5.1	0.0	0.0		84	37	1020	1014
24	29.4	26.4	17.7	12.0	23.6	19.2	18.6	0.0	5.6	17.6	16.0	t-storm	90	49	1013	1003
25	17.7	26.3	13.1	12.1	15.4	19.2	10.4	2.6	0.0	2.5	2.4	light rain	89	60	1008	1003
26	24.8	27.2	15.6	12.4	20.2	19.8	15.2	0.0	2.2	0.0	0.0		86	43	1013	1009
27	31.3	26.4	13.7	12.7	22.5	19.6	17.5	0.0	4.5	0.0	0.0		82	32	1013	1001
28	20.0	26.1	10.9	12.4	15.5	19.3	10.5	2.5	0.0	1.1	1.4	light rain	87	48	1017	1003
29	24.2	26.8	7.4	12.1	15.8	19.5	10.8	2.2	0.0	0.0	0.2		90	37	1019	1014
30	29.2	26.2	14.4	12.8	21.8	19.5	16.8	0.0	3.8	0.6	1.4	t-storm	81	35	1014	1008
31	25.2	25.7	13.7	12.2	19.5	19.0	14.5	0.0	1.5	0.0	0.0		93	50	1017	1009
Total							425.4	24.0	46.4	82.1	84.2		Extreme / Date	Extreme / Date	Extreme / Date	Extreme / Date
Avg	24.7	25.2	12.7	12.1	18.7	18.7	1981-2010 Normal			59.0	Normal					
Extreme Date	31.3		6.6				424.0	30.7	51.7	201.2	Cumulative		94	25	1025	997
	27		2							226.5	Cumulative Normal		20	1	5	18

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

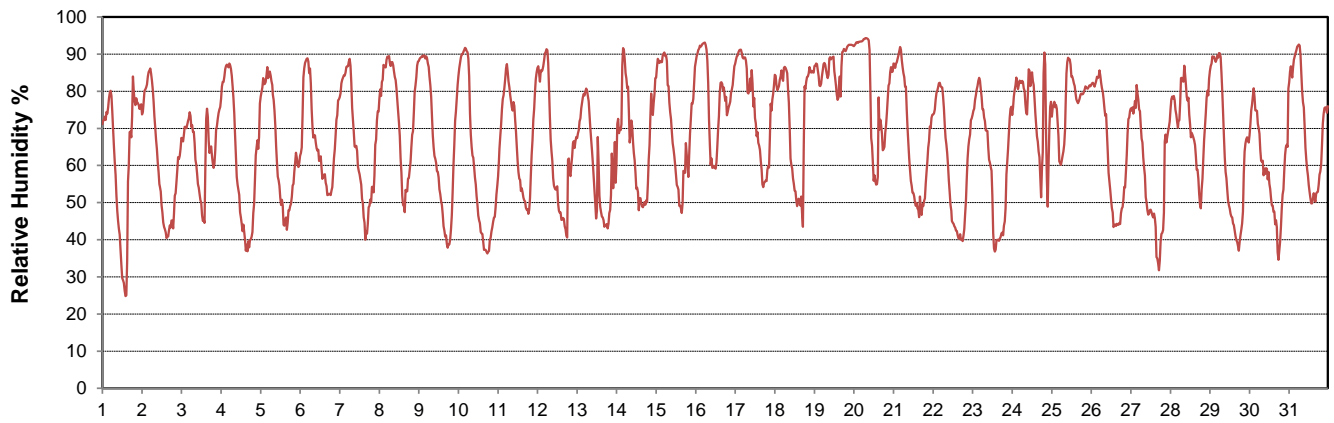
SRC proudly recognizes the following CRS supporters:



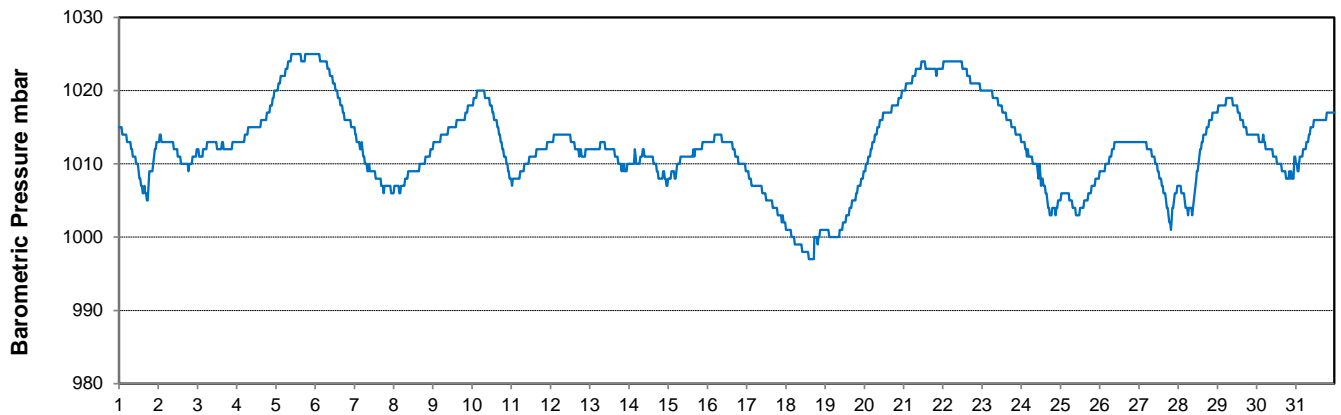
Temperature and Precipitation for July 2019



Relative Humidity for July 2019



Barometric Pressure Corrected to Sea Level for July 2019





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JULY 2019

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 ²	MJ/m ²
1	69.4	W	15:24	20.5	16.5	17.0	17.5	16.5	12.0	9.5	7.0	10.5	16.7	63.0	21.3	3.2
2	49.8	WSW	14:13	14.0	14.5	15.0	16.5	16.0	12.0	10.0	7.0	9.1	16.7	54.7	20.7	7.6
3	37.5	N	14:46	15.5	15.5	16.0	16.0	15.5	12.0	10.0	7.5	8.7	16.6	52.3	20.2	8.2
4	37.6	W	14:45	15.5	15.0	15.5	16.5	15.5	12.0	10.0	7.5	11.8	16.6	71.0	25.1	6.5
5	18.5	ENE	15:45	14.5	17.0	17.5	17.5	16.0	12.0	10.0	7.5	2.6	16.6	15.7	15.7	9.0
6	29.4	SE	16:07	18.0	17.5	18.0	18.0	16.0	12.0	10.0	7.5	12.5	16.6	75.5	25.0	6.0
7	32.9	S	8:44	21.5	19.5	19.5	19.0	16.5	12.0	10.0	7.5	11.5	16.5	69.5	26.1	5.7
8	33.7	W	15:31	17.0	20.5	21.0	20.5	17.5	12.5	10.5	7.5	8.7	16.5	52.7	22.7	7.4
9	28.6	N	11:45	17.0	19.0	20.0	20.0	18.0	12.5	10.5	7.5	11.4	16.5	69.2	23.8	6.7
10	44.5	S	22:59	17.5	18.5	19.5	20.0	18.0	13.0	10.5	7.5	11.3	16.5	68.7	23.0	7.5
11	41.5	NW	12:51	20.0	20.0	20.5	20.5	18.0	13.0	10.5	8.0	13.2	16.4	80.4	23.7	7.1
12	31.1	SSW	12:22	19.5	18.5	19.0	20.0	18.0	13.0	11.0	8.0	12.9	16.4	78.7	23.4	6.1
13	40.6	NW	15:07	21.5	19.0	19.5	20.0	18.0	13.5	11.0	8.0	9.9	16.4	60.6	21.3	6.9
14	52.8	NW	3:28	21.0	19.0	19.5	20.0	18.5	13.5	11.0	8.0	12.9	16.3	79.0	24.8	5.6
15	41.4	NNE	17:58	18.5	19.5	20.5	20.5	18.5	13.5	11.0	8.0	13.4	16.3	82.3	25.8	4.9
16	26.9	ESE	19:07	19.0	18.5	19.0	20.0	18.5	14.0	11.5	8.0	4.0	16.2	24.6	9.9	5.6
17	26.0	WNW	14:11	17.5	18.5	19.0	18.5	18.0	14.0	11.5	8.0	7.1	16.2	43.8	16.5	7.0
18	97.3	WNW	17:36	17.5	18.5	19.0	19.0	18.0	14.0	11.5	8.5	8.0	16.2	49.5	21.9	5.1
19	37.9	W	16:01	14.0	17.5	18.0	19.0	18.0	14.0	11.5	8.5	0.9	16.1	5.6	7.9	5.1
20	30.4	NNE	14:54	14.5	16.0	16.0	17.0	17.5	14.0	11.5	8.5	7.6	16.1	47.3	20.2	7.7
21	21.1	SSE	13:57	19.0	17.5	18.0	18.0	17.5	14.0	11.5	8.5	12.7	16.0	79.2	25.3	6.2
22	29.2	SSE	12:08	20.0	18.5	19.5	19.5	18.0	14.0	11.5	8.5	14.2	16.0	88.8	26.4	3.5
23	35.3	SE	18:18	20.0	19.5	20.0	20.0	18.5	14.0	12.0	8.5	12.8	15.9	80.3	24.0	5.3
24	48.7	SW	11:07	22.5	21.0	21.5	21.0	19.0	14.0	12.0	8.5	5.9	15.9	37.1	14.0	5.1
25	81.3	W	5:53	14.0	17.5	18.5	19.5	19.0	14.5	12.0	9.0	0.0	15.9	0.0	4.7	3.6
26	48.8	WNW	10:50	17.0	17.0	17.5	17.5	18.0	14.5	12.0	9.0	12.3	15.8	77.8	25.4	2.9
27	68.0	WNW	20:31	21.0	17.5	18.0	18.5	18.0	14.5	12.0	9.0	14.3	15.8	90.8	25.9	3.0
28	65.1	W	6:15	14.5	18.0	19.0	19.5	18.0	14.5	12.0	9.0	6.2	15.7	39.5	16.0	7.2
29	28.6	SE	23:52	16.0	15.0	16.0	17.5	18.0	14.5	12.0	9.0	13.8	15.7	88.2	25.6	4.2
30	45.2	WNW	23:25	19.0	18.0	18.0	18.5	17.5	14.5	12.0	9.0	10.8	15.6	69.2	22.0	5.5
31	31.8	NNW	14:15	18.0	18.5	19.0	19.5	18.0	14.5	12.5	9.0	13.6	15.5	87.5	25.5	4.1
Total												304.6	502.0	60.7	653.8	179.5
Mean				17.9	18.0	18.5	18.9	17.6	13.4	11.1	8.1	1981-2010 Normal for Radiation				
Extreme	97.3	WNW	17:36	1971- 2000 Normal for Soil Temperatures								298.8	501.80	59.5	650.6	213.5
Date	18			17.5	18.0	18.9	16.7	13.1	10.9	7.5	No. of Bright Sunshine days = 30					

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

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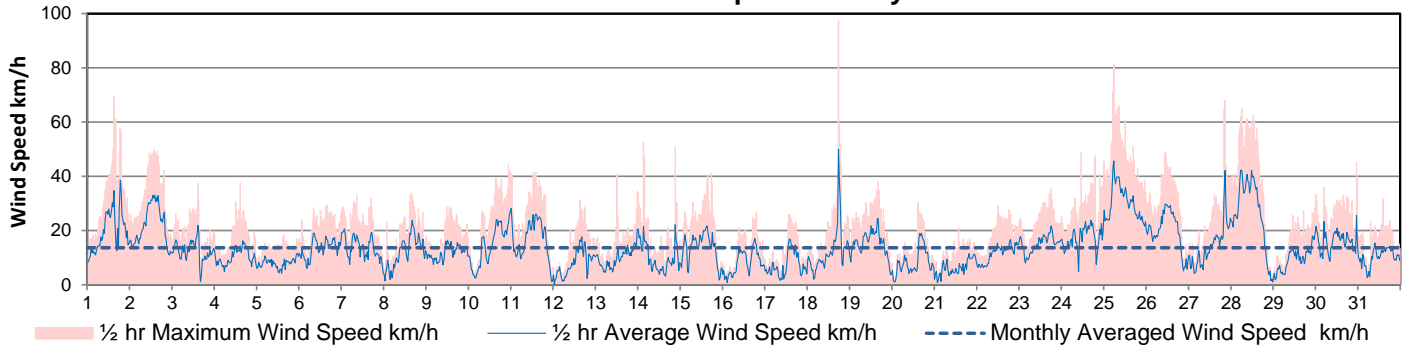


Agriculture and Agri-Food Canada

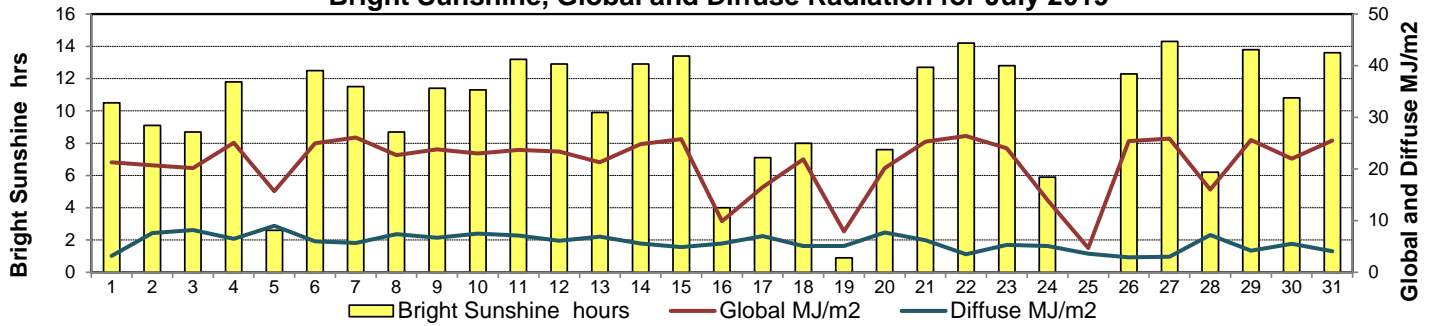
Agriculture et Agroalimentaire Canada



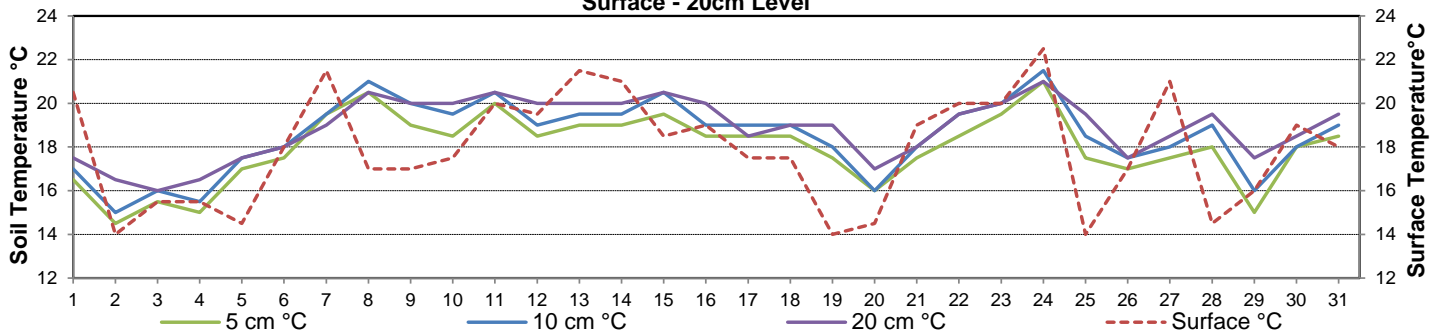
10 meter Tower Wind Speed for July 2019



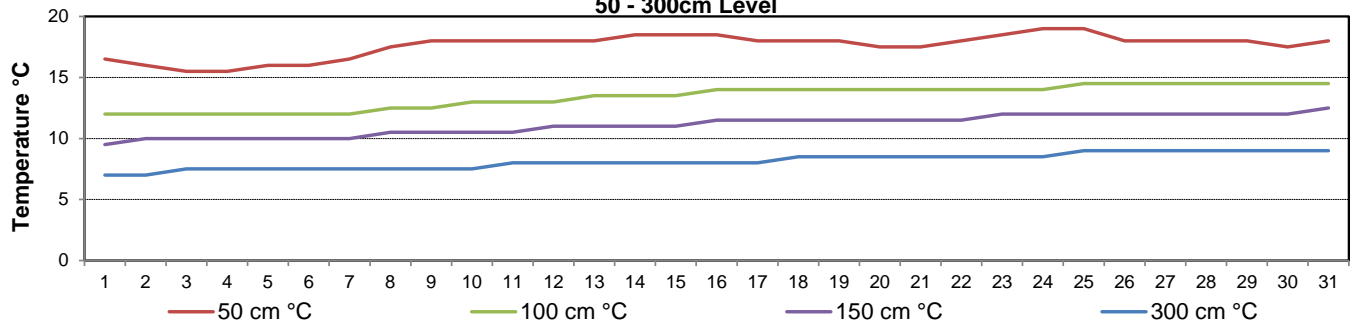
Bright Sunshine, Global and Diffuse Radiation for July 2019



**Soil Temperatures for July 2019
Surface - 20cm Level**



**Soil Temperatures for July 2019
50 - 300cm Level**





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

Preliminary **JULY 2019**

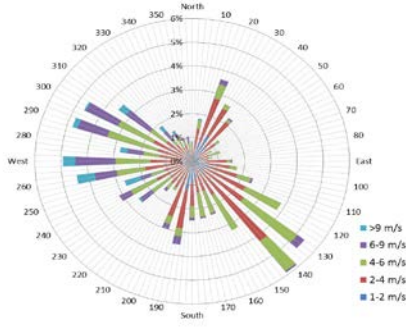
Extreme Records for July

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
40.0	(1919,41)	1946 (SE SA) US	39.3	05/2001	162.9	1928	SE	125.9	1971	113 ^E	05/1955	160	1985	386.2	1974	31	1967*
-0.6	25/1918	SE	1.7	02,09/1967,78	0.0	1988	SC	13.0	1984					185.5	1998	27	2004

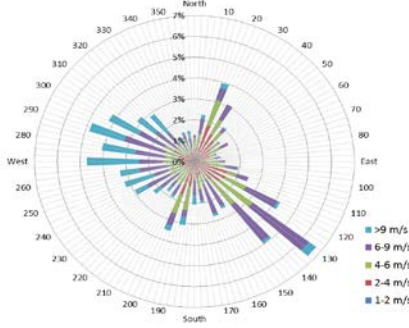
**1975 forward * more than one year

Notable Events for CRS Saskatoon - July						Saskatoon Area Stations			Glossary	
Element	Type	Day	New Record	Old Record	Year	SM	NWMP	c. 1892-1901	T	Trace of precipitation
Precipitation	Daily total	14	25.7	20.0	1982	SE	Eby	1901-1941	Normal	30 year average beginning with the decade
	No. of days with 15 mm ppt		3	3	2011, 2012	US	Univ. of Sask.	1915-1964		
						S	Saskatoon	1941-1942	SOG	Depth of snow-on-the-ground in cm
						SA	Saskatoon A	1942 -	na	not available
						NRC	Nat. Res. Council	1952-1966	Degree-days	
						SRC	Sask. Res. Council	1963-	Tm	Mean Temperature
						SWT	S'toon Water Treatment Plant	1974 -	Growing	(Tm-5°C); if Tm ≤ 5°C then GDD = 0
						SC	S'toon Central Ave	1974-1989	Heating	(18°C-Tm); if Tm ≤ 18°C then HDD = 0
						S1	Saskatoon 1	1976-1978	Cooling	(Tm-18°C); if Tm ≥ 18°C then CDD = 0
						S2	Saskatoon 2	1977-1990	Extreme Cooling	(Tm-24°C); if Tm ≥ 24°C then CDD = 0
						K	S'toon Kernen Farm	1993-2004		
						KCS	S'toon Kernen Farm CS	1996-		
						RCS	Environment Canada	2008-		
						SF	Sutherland Forestry	1943-1970		

10 minute Average Wind Speed and Direction Saskatoon July 2019



1/2 hr Maximum Wind Speed and Direction Saskatoon July 2019



SRC proudly recognizes the following CRS supporters:





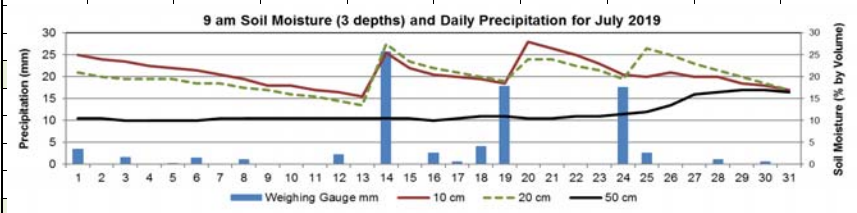
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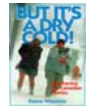
Preliminary July 2019

Day	2 meter Wind Speed			Soil Moisture at 0900 hrs (rounded to the 0.5%)		
	Daily Average	Max ½ hr Avg	½ hr Extreme Max	10 cm	20 cm	50 cm
	km/h	km/h	km/h	% by volume (soil type is Loam (45.5% Sand, 41.1% Silt, 13.3% Clay))		
1	14.0	27.4	59.8	25.0	21.0	10.5
2	16.0	24.4	39.1	24.0	20.0	10.5
3	10.0	16.0	27.5	23.5	19.5	10.0
4	8.0	12.7	28.1	22.5	19.5	10.0
5	6.0	8.3	18.3	22.0	19.5	10.0
6	10.0	14.2	24.1	21.5	18.5	10.0
7	10.0	15.2	27.0	20.5	18.5	10.5
8	9.0	16.2	25.2	19.5	17.5	10.5
9	8.0	12.3	23.5	18.0	17.0	10.5
10	10.0	18.0	32.1	18.0	16.0	10.5
11	12.0	19.5	33.3	17.0	15.5	10.5
12	6.0	13.6	28.7	16.5	14.5	10.5
13	7.0	13.9	26.4	15.5	13.5	10.5
14	8.0	15.4	37.9	25.5	27.5	10.5
15	10.0	16.0	33.3	22.0	23.5	10.5
16	6.0	12.4	21.2	20.5	22.0	10.0
17	5.0	12.7	20.6	20.0	21.0	10.5
18	9.0	35.3	74.2	19.5	20.0	11.0
19	11.0	17.5	31.6	18.5	19.0	11.0
20	6.0	13.7	21.8	28.0	24.0	10.5
21	5.0	7.4	18.9	26.5	24.0	10.5
22	7.0	10.5	22.9	25.0	22.5	11.0
23	10.0	13.4	24.7	23.0	21.5	11.0
24	12.0	17.1	40.2	20.5	19.5	11.5
25	21.0	31.3	58.6	20.0	26.5	12.0
26	14.0	21.1	36.8	21.0	25.0	13.5
27	9.0	29.9	49.4	20.0	23.0	16.0
28	19.0	29.0	56.3	20.0	21.5	16.5
29	7.0	13.5	23.5	18.5	20.0	17.0
30	11.0	17.2	32.7	18.0	18.5	17.0
31	7.0	19.0	19.0	17.0	17.0	16.5
Total						
Mean				21	20	11.6
Extreme	21.0	#N/A	#N/A	28	27.5	17
Date	#N/A					

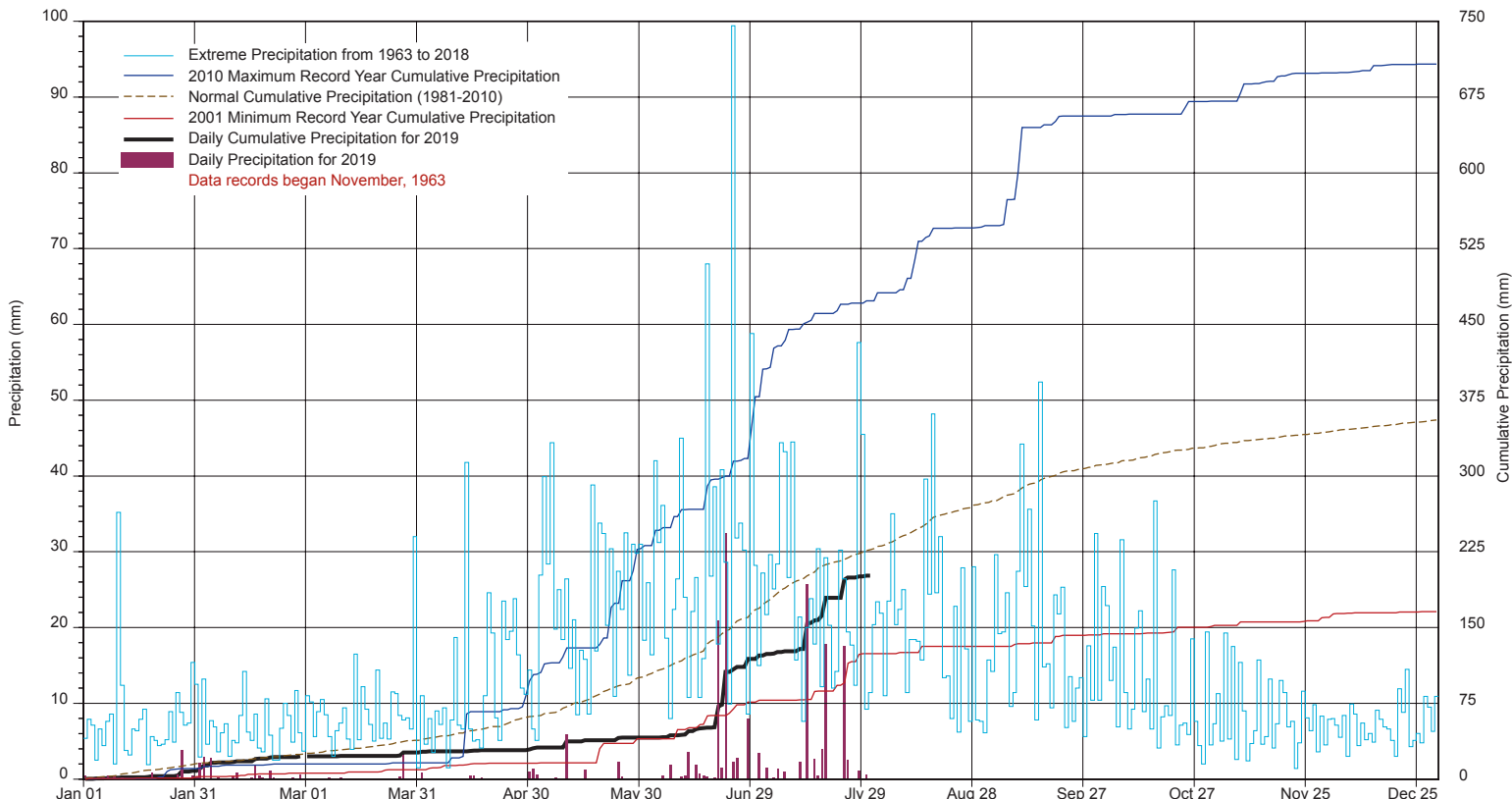


Note: Red numbers indicate manual calculation; Red cell indicate data not available

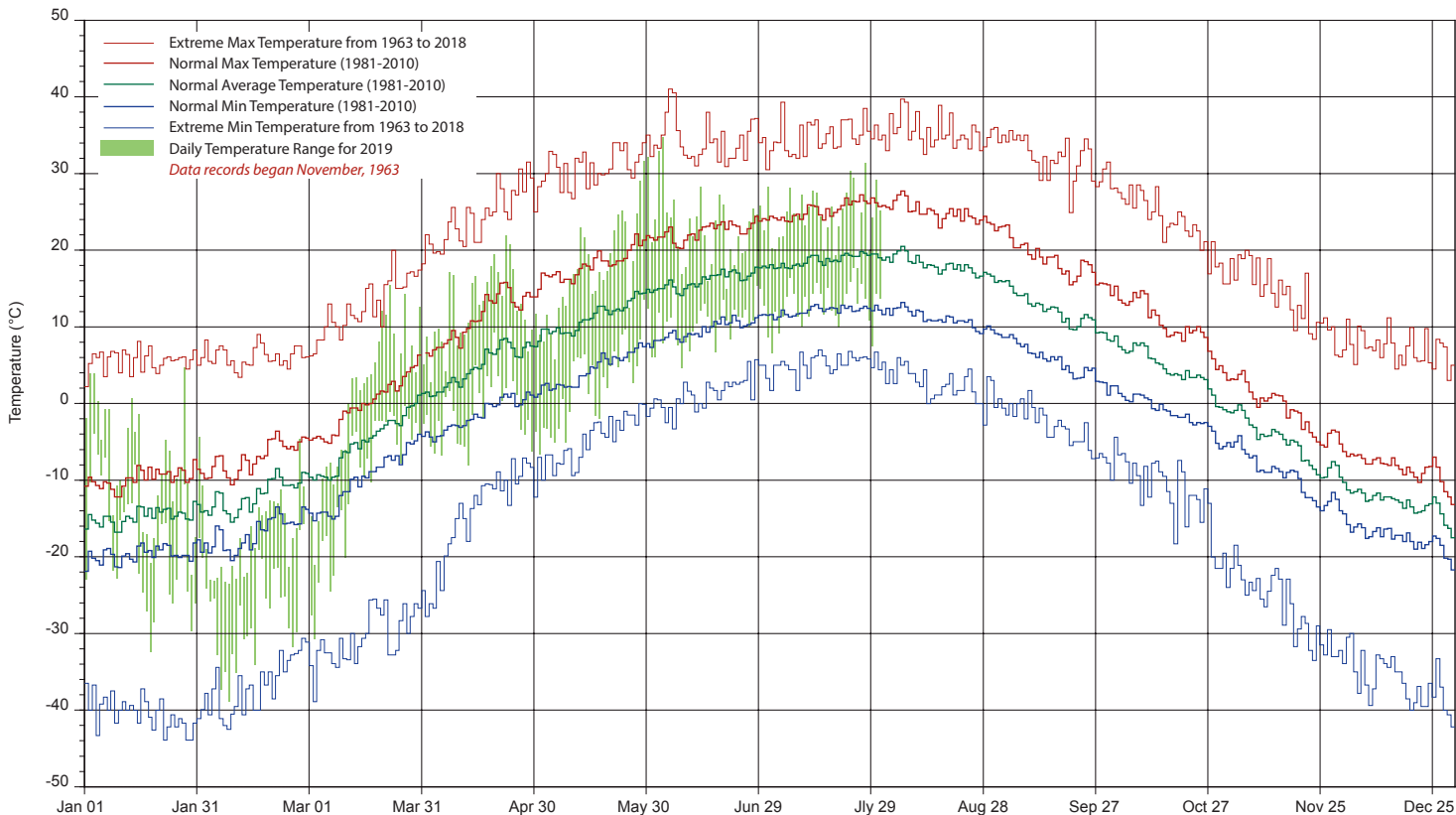
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SASKATCHEWAN RESEARCH COUNCIL SASKATOON CLIMATE REFERENCE STATION 2019 PRECIPITATION AND NORMALS



2019 TEMPERATURES AND NORMALS



SRC proudly recongnizes the following CRS supporters:

