

Climate Research Lab Monthly Meteorological Summary-July, 2018

Background

This summary is produced by the UPEI Climate Lab for the month of July, 2018. Data is reported for 31 climate stations in the province as shown on Table 1. The annual summaries of PEI climate data for 2014, 2015, 2016 and 2017 and the monthly summaries are now posted on the UPEI Climate Lab Website. (<http://projects.upei.ca/climate/research/>).



Figure 1 Field in New Glasgow, Kayaking in River

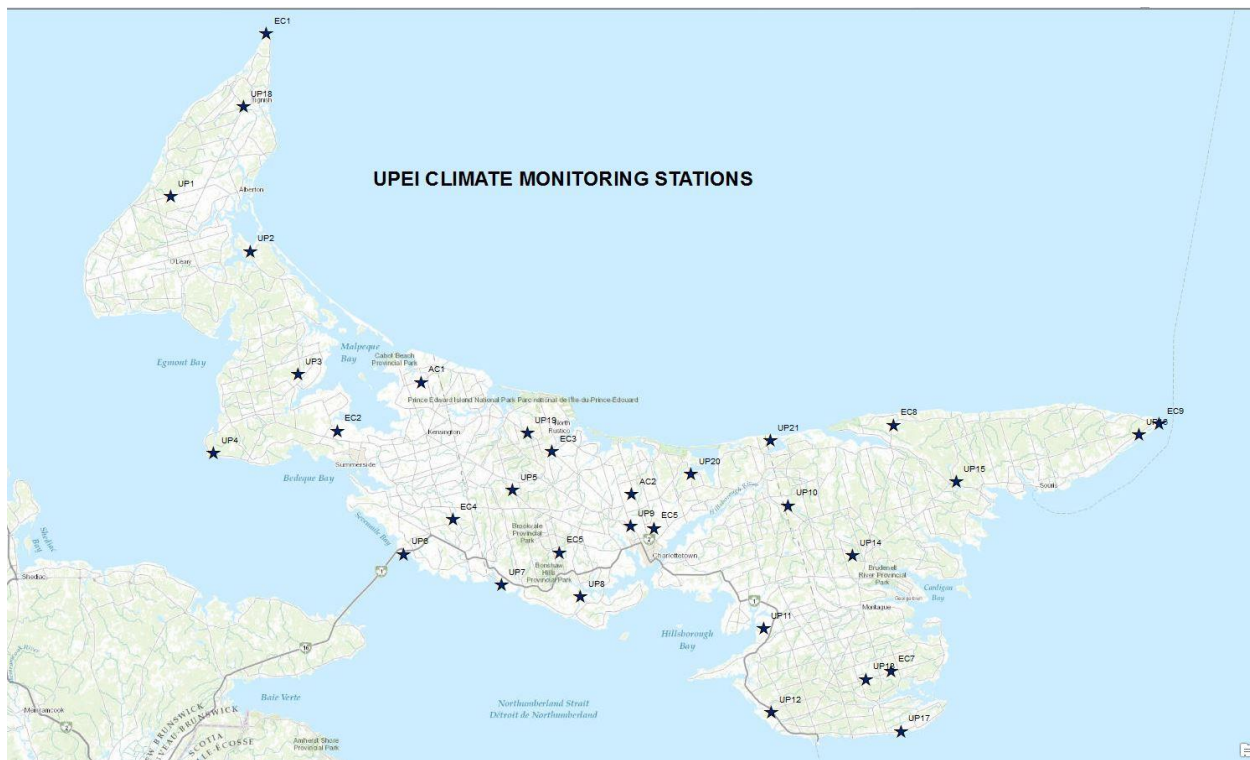


Figure 2 - Map showing climate station locations monitored by the UPEI Climate Research Lab

A listing of stations currently being monitored by UPEI Climate Research Lab is provided in Table 1. This includes Environment Canada, Agriculture Canada, Agriculture PEI, NAV Canada, UPEI and privately operated stations that operate on an annual basis.

Table 1 – PEI Climate Stations Monitored by UPEI

ID Code	Map ID	Community	Lat.	Long.	Date Installed	Operator
IPRINCEE22	UP13	Alliston	46.052032	-62.638389	25-Jun-15	CNP
Remote	UP3	Arlington	46.52964	-63.927503	30-Jun-15	Arlington Orchard
KNW01	AC1	Baltic	46.517266	-63.648411	14-Aug-14	Kensington North
IPEBORDE2	UP6	Borden - Carleton	46.248346	-63.686935	26-Jan-95	G. Read
IPRINCEE28	UP1	Brockton	46.80649	-64.21685	23-Sep-15	UPEI
83000562	EC8	Cable Head	46.4503	-62.5758	14-Aug-03	EC
IPRINCEE26	UP4	Cape Egmont	46.4067	-64.118742	10-Sep-15	UPEI

IPRINCEE17	UP14	Cardigan Head	46.2461	-62.66833	01-Oct-14	R. Angus
8300300	EC5	Charlottetown	46.28917	-63.119167	14-Sep-12	NAV Canada
IPRINCEE16	UP15	Dingwells Mills	46.362154	-62.432651	14-Nov-13	UPEI
IPRINCEE31	UP16	East Point	46.43554	-62.018632	16-Jul-15	Newman
8300418	EC9	East Point	46.45227	-61.971635	8-Dec-92	EC
IPEIELMW2	EC5	Elmwood	46.2508	-63.3342	01-Sep-93	B. Jameson
IPRINCEE32	UP10	Fanning Brook	46.32419	-62.8141	05-Nov-15	UPEI
IPRINCEE13	UP12	Flat River	45.999949	-62.852033	06-Nov-13	UPEI
IPRINCEE15	UP2	Foxley River	46.7208	-64.0356	20-Nov-13	UPEI
IPRINCEE30	UP5	Glen Valley	46.34884	-63.439941	06-Oct-15	UPEI
IPRINCEE27	UP7	Hampton	46.2003	-63.4652	11-Sep-15	M. Cassidy
830P001	AC2	Harrington	46.342506	-63.169736	01-Jul-00	Agric. Canada
IPRINCEE 35	UP19	Hope River	46.43816	-63.40707	10-July-16	A.MacKay
8305500	EC4	Maple Plains	46.3028	-63.575567	21-Jun-01	BBEMA
IPRINCEE 4	UP20	Mill Cove	46.37400	-63.03508	24-Apr-12	P. Lawlor
8300497	EC3	New Glasgow	46.408911	-63.350289	01-Oct-71	H. Dingwell
8300516	EC1	North Cape	47.05806	-63.998611	18-Oct-02	EC
IPRINCEE14	UP11	Orwell Cove	46.13153	-62.869768	13-Nov-13	UPEI
IPRINCEE21	UP8	St. Catherine's	46.182023	-63.286157	25-Jun-15	Matos Winery
8300562	EC8	St. Peter's	46.4503	-62.5758	15-Aug-03	Airport CZSP
ISAVAGEH2	UP21	Savage Harbour	46.42587	-62.85565	June 27, 2017	Abegweit Conservation Society
8300700	EC2	Summerside	46.44111	-63.83806	19-Jul-99	EC
IPRINCEE36	UP18	Tignish	46.9453	-64.0516	02-July-16	UPEI
IPRINCEE19	UP17	White Sands	45.970	-62.558	25-Oct-14	M. Harwood
IPRINCEE11	UP9	Winsloe South	46.292358	-63.1727104	13-Sep-13	UPEI

Data Summary

Table 2 summarizes the climate data recorded during the month of July 2018 for all observation stations monitored by UPEI Climate Research Lab. Daily average solar radiation for stations which have solar radiation sensors is included to provide information for solar energy, crop production, and plant growth purposes.

Table 2 – UPEI July 2018 Climate Station Summary for 32 Stations across PEI

Climate Station Name	Map ID	Tmean °C	Tmax °C	Tmin °C	PPT (mm)	Snow (cm)	Avg. Wind Speed km/h	Max. Wind Speed km/h	Daily Avg. Solar Radiation (kWh/m ² /D)
Alliston (CNP)		21.0	31.2	9.1	37.1		4.7	38.6	

Arlington	UP3	21.1	31.4	9.3	42.6		1.2	40.2	
Baltic	AC1	20.8	32.2	10.2	62.7		14.4	35.6	
Borden	UP6	inc	29.7		26.9				
Brockton	UP1	21.3	31.7	9.4	13.5		5.0	53.1	5.83
Cape Egmont	UP4	21.3	30.9	11.6	65.8		10.2	48.3	6.14
Cardigan Head	UP14	21.4	32.1	5.3	14.2		2.8	37.0	
Ch'town Airport	EC5	21.1	30.1	8.0	26.3			63.0	
Dingwells	UP15	21.0	31.3	6.2	13.7		5.8	48.3	
East Point	EC9	inc	29.2	10.6	inc				
East Point (N)	UP16	20.8	28.3	12.2	98.2		0.4	37.0	
Elmwood	EC5	inc	30.8		29.2		7.2	45.1	
Fanning Brook	UP10	21.2	31.6	7.2	22.1		7.1	53.1	6.07
Flat River	UP12	21.0	31.3	8.2	20.1		6.4	57.9	
Foxley River	UP2	21.6	33.1	10.5	27.7		8.2	51.5	
Glen Valley	UP5	20.9	31.1	10.9	9.4		12.8	64.4	4.88
Hampton	UP7	20.0	27.4	10.0	32.3		9.2	48.3	6.11
Harrington	AC2	20.5	29.4	9.4	24.4		13.2	31.1	
Hope River	UJP19	22.0	32.1	12.5	23.6		11.7	76.3	
Maple Plains	EC4	20.5	30.7	6.9	27.2		10.6	57.0	
Mill Cove	UP20	20.9	31.0		14.0		5.1	32.2	
New Glasgow	EC3	20.3	31.5	7.0	34.9				
North Cape	EC1	21.1	30.3	11.3	19.8		20.5	71.0	
Orwell Cove	UP11	21.3	31.4	9.9	20.6		3.9	46.7	
St. Catherines	UP8	21.2	31.2	10.4	21.8		7.3	43.4	
St. Peter's	EC8	20.8	30.7	7.2	17.0		15.2	40.5	
Savage Harbour	UP21	21.0	30.7	8.1	12.4		10.3	57.9	5.70
Summerside	EC2	20.6	30.1	10.5	39.5		17.4	41.8	
Tignish	UP18	21.3	31.4	8.3	21.8		3.6	40.2	5.84
White Sands	UP17	20.6	30.8	10.2	28.7		10.6	59.5	5.81

Winsloe South	UP9	20.9	30.4	10.2	26.4		2.0	30.6	
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Inc. Incomplete record, equipment malfunction

The measurements from twelve (12) CoCoRaHS observers located on PEI are recorded in table 3. Some of the CoCoRaHS stations listed on table 3 are also climate stations listed on Table 2. This includes: UP6, EC5, and UP9.

Table 3 CoCoRaHS Precipitation Amounts from Twelve Locations on PEI, July, 2018

CoCoRaHS Station	Total Precipitation in mm	Total Snowfall in cm
CAN-PE-1 Stratford	20.1	
CAN-PE-3 Wellington	77.5	
CAN-PE-7 Morell	26.2	
CAN-PE-10 New London	45.2	
CAN-PE-13 Bedeque	33.5	
CAN-PE-19 Winsloe South	29.0	
CAN-PE-20 Bonshaw	46.0	
CAN-PE-23 Borden-Carleton	26.9	
CAN-PE-25 – Caledonia	35.1	
CAN-PE-26 – Grand Tracadie	16.0	
CAN-PE-28 – Peakes	20.6	
CAN-PE-29- Souris West	16.5	

Table 4 provides thirty year climate normal values for the 1981 to 2010 period for seven (7) climate stations in the province for the month of July.

Table 4 July Climate Normal for PEI Stations 1981 to 2010

Parameter	Ch'town A	New Glasgow	Summerside A	O'Leary	Alberton	Monticello	East Baltic
Mean Monthly T in C	18.7	18.8	19.2	18.6	18.7	18.5	18.2
Mean Monthly Ppt. in mm	79.9	78.6	74.1	96.0	86.3	79.3	86.6
Mean Monthly Snow cm							

Discussion

July temperatures were above normal across the province with the station at Foxley River reporting 3.0°C above normal and the same station reported the highest monthly mean for the province of 21.6°C. The low monthly mean was 20.0°C at Hampton. The maximum temperature for the month was 32.2°C at Baltic on July 4th. The coldest temperature reported during the month for all stations listed in this summary was 5.3°C which was recorded at Cardigan Head on July 13th.

Table 5 – Variation of July 2018 Monthly Mean Temperature from 1981-2010 Climate Normal

Climate Station	July 2018 Mean C	30 Year Normal C 1981-2010	Variation from Normal C
Alliston CNP	21.0	18.7	2.30
Arlington	21.1	18.6	2.50
Baltic	20.8	19.2	1.60
Borden - Carleton			
Brockton	21.0	18.7	2.30
Cape Egmont	21.3	19.2	2.10
Cardigan Head	21.4	18.5	2.90
Charlottetown A	21.1	18.7	2.40
Dingwells	21.0	18.5	2.50
East Point		18.2	
East Point – UP16	19.6	18.2	1.40
Elmwood			
Fanning Brook	21.2	18.7	2.50
Flat River	21.0	18.7	2.30
Foxley River	21.6	18.6	3.00
Glen Valley	20.9	18.8	2.10
Hampton	20.0	19.2	0.80
Harrington	20.5	18.7	1.80
Hope River	22.0	18.8	3.20
Maple Plains	20.5	19.2	1.30
Mill Cove	20.9	18.7	2.20
New Glasgow	20.3	18.8	1.50
North Cape	21.1	18.7	2.40
Orwell	21.3	18.7	2.60
St. Catherine's	21.2	18.7	2.50
St. Peters	20.8	18.5	2.30
Savage Harbour	21.0	18.7	2.30
Summerside A	20.6	19.2	1.40
Tignish	21.3	18.7	2.60
White Sands	20.6	18.7	1.90

Winsloe South	20.9	18.7	2.20
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Readings in red may not be accurate.

Table 6 – Variation of July 2018 Total Precipitation Amounts from 1981-2010 Climate Normal

Climate Station	Total PPT in mm July 2018	30 Year Normal mm 1981-2010	Variation from Normal mm
Alliston CNP	31.2	79.9	-48.70
Arlington	42.6	96.0	-53.40
Baltic	62.7	74.1	-11.40
Borden – Carleton (CoCo Can-PE-23)	26.9	74.1	-47.20
Brockton	11.6	86.3	-74.70
Cape Egmont	65.8	74.1	-8.30
Cardigan Head (CoCo Can-PE-27)	14.2	79.3	-65.10
Charlottetown A	26.3	79.9	-53.60
Dingwells	13.7	79.3	-65.60
East Point - EC	na	86.6	
East Point – UP16	39.5	86.6	-47.10
Elmwood (CoCo- Can-PE-20)	46.0	78.6	-32.60
Fanning Brook	22.1	79.9	-57.80
Flat River	20.1	79.9	-59.80
Foxley River	27.7	96.0	-24.90
Glen Valley	9.4	78.6	-69.20
Hampton	32.3	74.1	-41.80
Harrington	24.4	79.9	-55.50
Hope River	23.6	78.6	-55.00
Maple Plains	27.2	74.4	-47.20
Mill Cove	14.0	79.9	-65.90
New Glasgow	34.9	78.6	-43.70
North Cape	19.8	86.3	-66.50
Orwell	20.6	79.9	-59.30
St. Catherine's	21.8	79.9	-58.10
St. Peters	17.0	79.3	-62.30
Savage Harbour	12.4	79.9	-67.50
Summerside A	39.5	74.1	-34.60
Tignish	18.8	86.3	-67.50
White Sands	28.7	79.9	-51.20
Winsloe South (CoCo-Can-PE-19)	29.0	79.9	-50.90

Readings in red may not be accurate due to gauge malfunction.

Precipitation was below normal across the province with no locations reporting above normal values. The highest precipitation total for July was 77.5 mm at the CoCoRaHS station in Wellington and the lowest total was 11.6 mm at Brockton. Stations in the Western tip of the province (North Cape, Tignish, and Brockton) had totals over 65 mm below normal as displayed on figure 4. This may have caused drought conditions in these and other areas of the province.

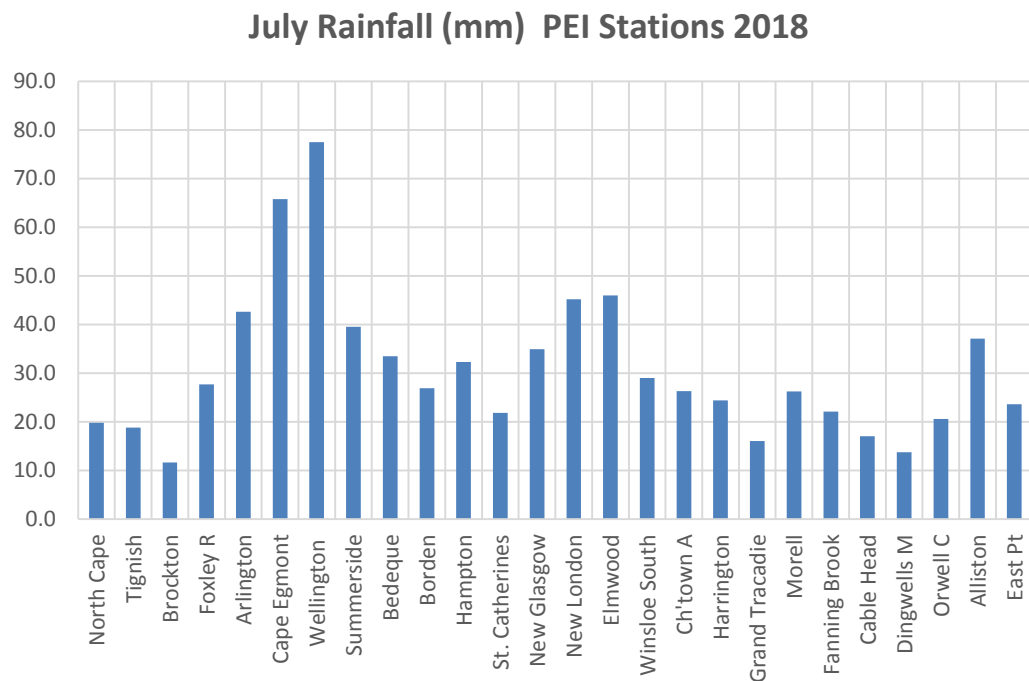


Figure 3 - Rainfall at 26 PEI Locations July 2018

Average wind speeds across the province ranged from 1.2 km/h at Arlington to 20.5 km/h at North Cape. The maximum gust for the month was 76.3 km/h reported at Hope River on July 9th.

The solar radiation values ranged from 4.88 kWh/m²/D at Glen Valley to 6.14 kWh/m²/D at Cape Egmont. These readings were similar to those reported for the same month in the previous year with Glen Valley being 1.19 below 2017 which may be attributed to a change in location of the measuring instrument.

Closure

- Temperatures were up to 3 degrees above normal across the province.
- Precipitation was below normal for most reporting stations
- See Table 7 for some weather and phenological observations

Table 7–July Weather or Phenological Events 2018

Date	Location	Type of Event	Comments
July 4, 2018	Foxley River	Extreme maximum temperature of 33.1 C	Daily maximum temperature record for PEI. Previous record of 31.7 also broken at Cardigan Head at 32.1 C



Figure 4- Weather instruments in field at East Point

Sources:

Environment Canada Climate Data Archives and associated websites

WUnderground.com

CoCoRaHS.org/Canada

AgraWeather Atlantic Website

PEIStormChaser

CBC News

The Guardian newspaper

D. Jardine, UPEI Climate Research Lab, January 15, 2019