

Climate Research Lab Monthly Meteorological Summary-June, 2017

Background

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



Figure 1 –June means new potatoes at roadside stands

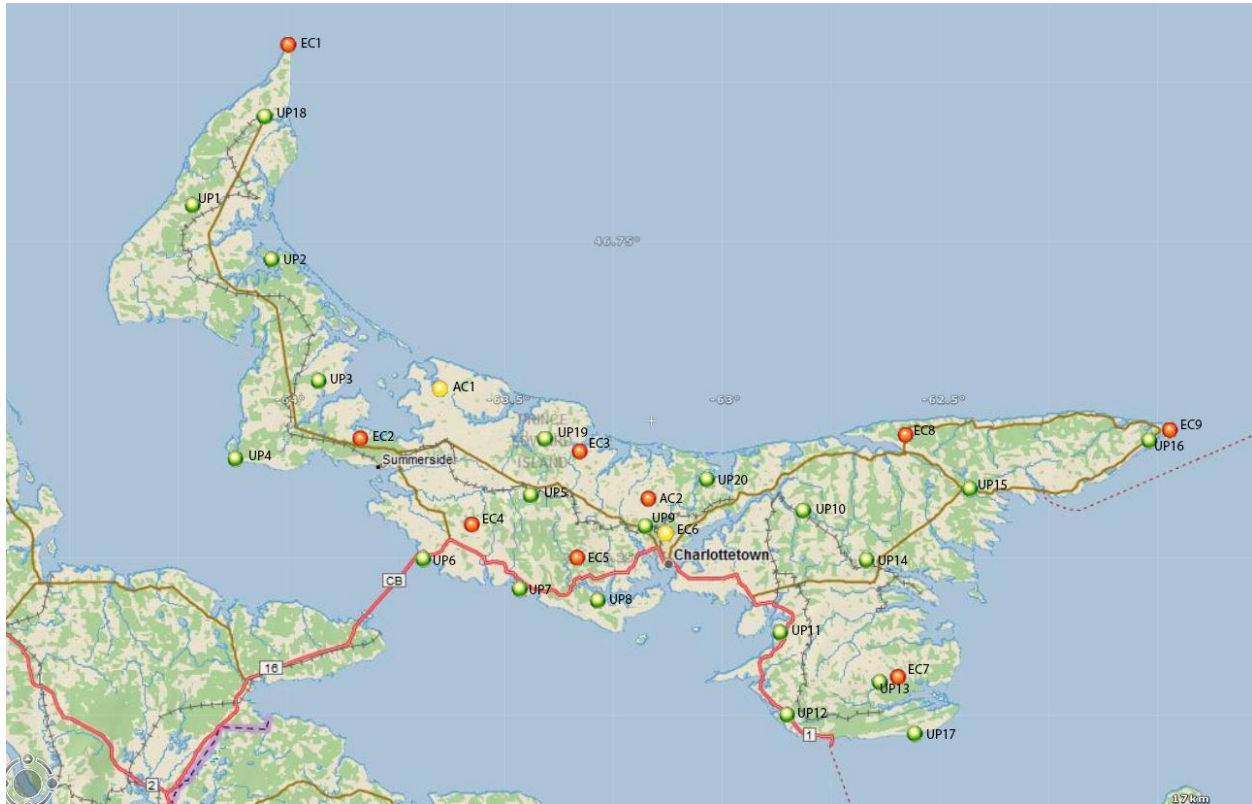


Figure 2 - Map showing climate station locations monitored by the UPEI Climate Research Lab

A listing of stations currently being monitored by UPEI 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
8300100	EC7	Alliston/Peters Road	46.064393	-62.581808	01-Jan-36	M. Radvanyi
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 -	46.248346	-63.686935	26-Jan-95	G. Read

		Carleton				
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
IPEIEMW2	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-June-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
8300700	EC2	Summerside	46.44111	-63.83806	19-Jul-99	EC
IPRINCEE36	UP18	Tignish	46.9453	-64.0516	02-June-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 June 2017 for 31 stations being observed by UPEI Climate Research Lab. June of 2017 had slightly above normal temperatures and was drier than normal. Daily average solar radiation for stations which have solar radiation sensors is included to provide information on the potential for solar energy and for crop production. The number of days with frost is reported for all stations.

Table 2 – UPEI June 2017 Climate Station Summary for 31 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	Days with Frost	Daily Avg. Solar Radiation (kWh/m ² /D)
Alliston / Peters Road	EC7	16.1	29.0	3.0	94.5				0	
Alliston (CNP)	UP13	15.6	29.4	2.6	63.2		5.2	54.7	0	
Arlington	UP3	15.9	30.1	1.4	71.4		1.6	33.8	0	
Baltic	AC1	15.6	27.6	3.1	92.6		15.8	49.6	0	
Borden	UP6	15.8	26.0	3.2	92.2		NR	NR	0	5.96
Brockton	UP1	16.1	30.7	2.0	59.2		3.8	38.6	0	5.44
Cape Egmont	UP4	15.2	25.3	1.2	61.2		10.8	57.9	0	5.66
Cardigan Head	UP14	14.5	29.6	-2.7	73.0		3.4	46.7	5	
Ch'town Airport	EC6	15.5	27.7	2.1	85.0			78.0	0	
Dingwells	UP15	15.2	29.7	-0.4	64.5		6.5	62.8	1	
East Point	EC9	15.2	27.2	5.6	55.4		19.2	83.0	0	
East Point (N)	UP16	14.0	27.5	2.8	68.4		7.6	67.6	0	
Elmwood	EC5	15.6	27.1	2.9	78.2		7.0	61.1	0	
Fanning Brook	UP10	15.9	27.8	1.6	73.2		8.0	61.1	0	
Flat River	UP12	15.3	26.5	0.3	35.3		7.0	49.9	0	
Foxley River	UP2	16.3	29.3	4.6	78.2		0.3?	51.5	0	
Glen Valley	UP5	15.4	26.9	3.7	95.0		14.8	94.9	0	5.55
Hampton	UP7	14.5	25.3	1.9	57.4		10.1	64.4	0	5.49
Harrington	AC2	15.6	27.2	3.8	75.3		15.0	78.0	0	
Hope River	UP19	18.1?	26.7	7.5?	18.0		11.4	88.5	0	
Maple Plains	EC4	14.6	26.5	-1.2	87.4		11.0	38.5	1	
Mill Cove	UP20	16.0	28.2	1.6	68.3		4.7	45.1	0	
New Glasgow	EC3	15.4	27.0	4.3	72.4				0	
North Cape	EC1	14.7	27.3	2.2	64.7		19.4	69.0	0	
Orwell	UP11	15.9	26.9	2.8	48.8		5.2	56.3	0	

Cove										
St. Catherines	UP8	15.8	26.6	3.4	54.1		8.2	64.4	0	
St. Peter's	EC9	15.4	28.6	2.9	50.4		15.0	72.0	0	
Summerside	EC2	15.7	27.2	3.9	69.0		19.5	74.0	0	
Tignish	UP18	15.9	30.9	-0.6	57.0		5.2	48.3	1	5.32
White Sands	UP17	15.4	26.4	4.3	38.6		11.3	70.8	0	5.50
Winsloe South	UP9	15.8	28.3	3.0	67.1		2.9	29.0	0	

? June reading maybe inaccurate.

NR- Not recording wind speed

The measurements from eleven (11) 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, UP14 and UP9.

Table 3 CoCoRaHS Precipitation Amounts from Eleven Locations on PEI, June, 2017

CoCoRaHS Station	Total Precipitation in mm	Total Snowfall in cm
CAN-PE-1 Stratford	85.3	0.0
CAN-PE-3 Wellington	90.9	0.0
CAN-PE-7 Morell	73.4	0.0
CAN-PE-10 New London	91.2	0.0
CAN-PE-13 Bedeque	89.2	0.0
CAN-PE-19 Winsloe South	86.6	0.0
CAN-PE-20 Bonshaw	91.4	0.0
CAN-PE-23 Borden-Carleton	89.9	0.0
CAN-PE-25 – Caledonia	71.9	0.0
CAN-PE-26 – Grand Tracadie	84.6	0.0
CAN-PE-27 – Cardigan Head	71.4	0.0
CAN-PE-28 – Peakes	56.6	0.0

Table 4 provides thirty year climate normal values for seven (7) climate stations in the province for the month of June.

Table 4 June 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	14.5	14.6	14.7	14.8	14.5	14.0	13.6
Mean	98.8	98.3	91.3	84.8	82.1	90.7	100.9

Monthly Ppt. in mm							
Mean Monthly Snow cm	0	0	0	0	0	0	0

Discussion

The monthly mean temperatures for June as shown on table 5 were mostly above normal. The range was -0.2°C cooler at Hampton to 1.6°C above normal at Brockton and East Point. The highest monthly mean of 16.3°C was observed at Foxley River with the lowest monthly mean of 14.0°C recorded at the Newman site in East Point, representing a 2.3 degree difference over the month between these locations. The maximum temperature for the month was 30.9°C at Tignish on June 11th. A search on the Environment Canada Almanac Averages and Extremes webpage for June 11th revealed this temperature to be the highest recorded for the date from the reporting stations on Prince Edward Island. The previous maximum temperature for this date was 30.0°C recorded at Monticello and Bangor on June 11, 1991 and at Alliston on June 11, 1942.

The coldest temperature reported during the month for all stations listed in this summary was -2.7°C which was recorded at Cardigan Head on June 15th. Another search on the Government of Canada Almanac Averages and Extremes Website for this date at reporting stations on Prince Edward Island revealed this to be the extreme low for this date using these historical records. The previous low was 0.0°C at Bangor on June 15, 2002. This temperature did not meet the extreme low for the month in the province which was recorded at Monticello, on June 2, 1967 at -3.9°C . This Cardigan location also recorded a low of -1.8°C on June 7th and this set a record for the coldest June 7th for PEI Climate Stations searched on the Environment Canada Weather Almanac site. The previous minimum temperature on this date was -0.6°C at Monticello on June 7, 1971. The Cardigan Head location also reported the most days with frost ($\leq 0.0^{\circ}\text{C}$) at 5. There were only 4 stations that reported frost ($\leq 0.0^{\circ}\text{C}$) during the month. No significant damage to frost sensitive crops was reported.

Table 5 – Variation of June 2017 Monthly Mean Temperature from 1981-2010 Climate Normal

Climate Station	June 2017 Mean C	30 Year Normal C 1981-2010	Variation from Normal C
Alliston / Peters Rd	15.6	14.5	1.10
Alliston CNP	15.6	14.5	1.10
Arlington	15.9	14.8	1.10
Baltic	15.6	14.7	0.90
Borden - Carleton	15.8	14.7	1.10
Brockton	16.1	14.5	1.60
Cape Egmont	15.2	14.7	0.50
Cardigan Head	14.5	14.0	0.50
Charlottetown A	15.5	14.5	1.00

Dingwells	15.2	14.0	1.20
East Point	15.2	13.6	1.60
East Point – UP16	14.0	13.6	0.40
Elmwood	15.6	14.6	1.00
Fanning Brook	15.9	14.5	1.40
Flat River	15.3	14.5	0.80
Foxley River	16.3	14.8	1.50
Glen Valley	15.4	14.6	0.80
Hampton	14.5	14.7	-0.20
Harrington	15.6	14.5	1.10
Hope River	18.1	14.6	3.50
Maple Plains	14.6	14.7	-0.10
Mill Cove	16.0	14.5	1.50
New Glasgow	15.4	14.6	0.80
North Cape	14.7	14.5	0.20
Orwell	15.9	14.5	1.40
St. Catherine's	15.8	14.5	1.30
St. Peters	15.4	14.0	1.40
Summerside A	15.7	14.7	1.00
Tignish	15.9	14.5	1.40
White Sands	15.4	14.5	0.90
Winsloe South	15.8	14.5	1.30

Table 6 – Variation of June 2017 Total Precipitation Amounts from 1981-2010 Climate Normal

Climate Station	Total PPT in mm June 2017	30 Year Normal C 1981-2010	Variation from Normal mm
Alliston / Peters Rd		98.8	43.90
Alliston CNP	63.2	98.8	-35.60
Arlington	71.4	84.8	-13.40
Baltic	92.6	91.3	1.30
Borden – Carleton (CoCo Can-PE-23)	92.2	91.3	0.90
Brockton	59.2	82.1	-22.90
Cape Egmont	61.2	91.3	-30.10
Cardigan Head (CoCo Can-PE-27)	71.4	90.7	-19.30
Charlottetown A	85.0	98.8	-13.80
Dingwells	64.5	90.7	-26.20
East Point - EC	55.4	100.9	-45.50
East Point – UP16	68.4	100.9	-32.50
Elmwood (CoCo- Can-PE-20)	91.4	98.3	-6.90
Fanning Brook	73.2	98.8	-25.60
Flat River	35.3	98.8	-63.50

Foxley River	78.2	84.8	-6.60
Glen Valley	95.0	98.3	-3.30
Hampton	57.4	91.3	-33.90
Harrington	75.3	98.8	-23.50
Hope River	18.0	98.3	-80.30
Maple Plains	87.4	91.3	-3.90
Mill Cove	68.3	98.8	-30.50
New Glasgow	72.4	98.3	-25.90
North Cape	64.7	82.1	-17.40
Orwell	48.8	98.8	-50.00
St. Catherine's	54.1	98.8	-44.70
St. Peters	50.4	90.7	-40.30
Summerside A	69.0	91.3	-22.30
Tignish	57.0	82.1	-25.10
White Sands	38.6	98.8	-60.20
Winsloe South (CoCo-Can-PE-19)	86.6	98.8	-12.20

In June the precipitation amounts were below normal across the province with the exception of Baltic and Borden-Carleton, two stations located in East Prince County. The CoCoRaHS stations using volunteer observers reported total precipitation amounts ranging from 56.6 to 91.4 mm which were all below normal values. The maximum precipitation was reported at Glen Valley where 95.0 mm was recorded.

Average wind speeds across the province ranged from 1.6 km/h at Arlington to 19.5 km/h at Summerside. The maximum gust for the month was 94.9 km/h reported at Glen Valley on June 11th.

The solar radiation values ranged from 5.32 kWh/m²/D at Tignish to 5.96 kWh/m²/D at Borden-Carleton. These readings were similar to those reported for the same month in 2016.

Closure

- Temperatures were mainly slightly above normal across the province.
- Precipitation was generally below normal across the province
- The maximum wind gust recorded was 94.9 km/h at Glen Valley.

Some phenological and weather events during the month are recorded on Table 7. There was a significant rain storm on June 9th.

Table 7–June Weather or Phenological Events 2017

Date	Location	Type of Event	Comments
June 4	Winsloe South	Purple and white lilacs in bloom	
June 7	Cardigan Head	Record for minimum temperature on this date	Temperature reached a low of -1.6°C.
June 9	Across PEI	Heavy rain and strong winds	

		with over 30 mm in some areas.	
June 11	Tignish	Record for maximum temperature on this date	Temperature reached a high of 30.9°C at 4:30pm.
June 15	Cardigan	Record extreme low temperature for this date.	Temperature reached a low of -2.7°C.
June 28	Alexandra, Stratford and Little Pond	Rain and hail with a large dome shaped cloud at Little Pond.	



Figure 3- Harvesting a crop of hay

Sources:

Environment Canada Climate Data Archives and associated websites

WUnderground.com

CoCoRaHS.org/Canada

AgraWeather Atlantic Website

Michael Radvanyi

PEIStormChaser

CBC News

D. Jardine, UPEI Climate Research Lab, July 20, 2017.