

## Climate Research Lab Monthly Meteorological Summary-May, 2018

### Background

This summary is produced by the UPEI Climate Lab for the month of May, 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 Climate Station at White Sands (photo courtesy of M. Harwood)

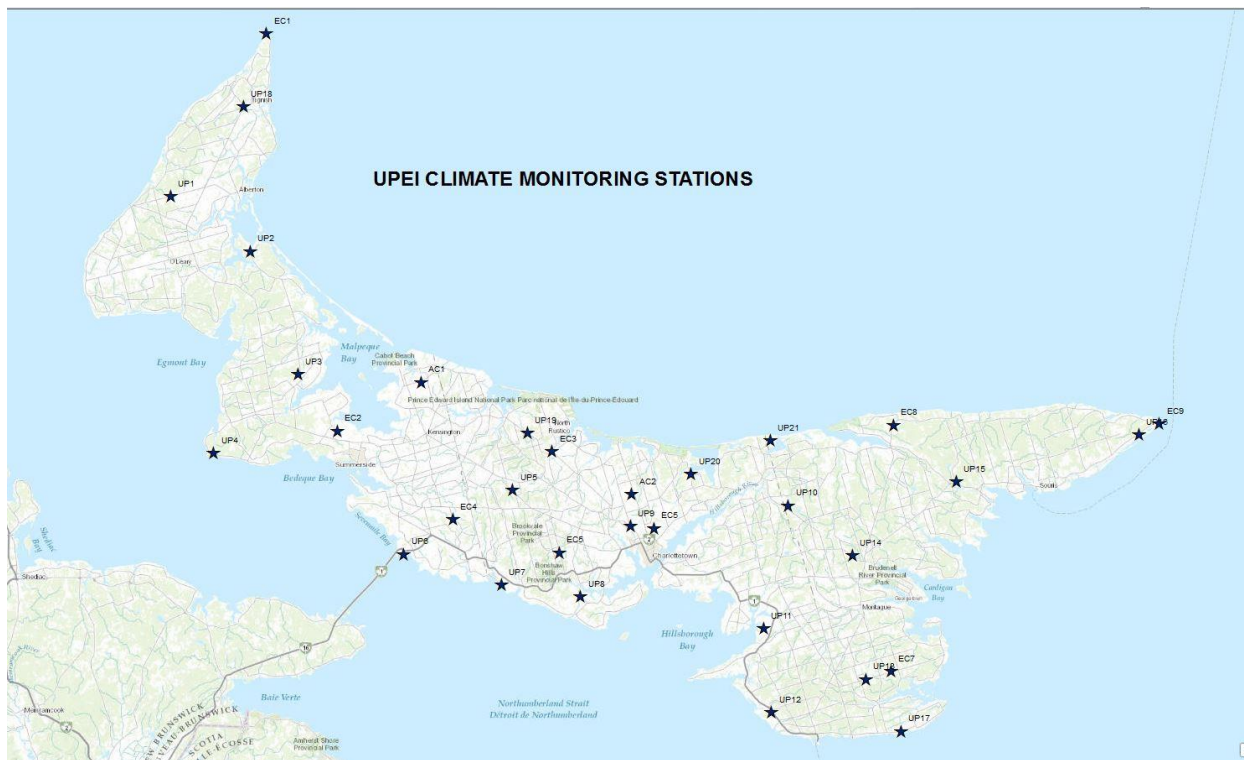


Figure 2 - Map showing climate station locations monitored by the UPEI Climate Research Lab

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

<b>IPRINCEE17</b>	UP14	Cardigan Head	46.2461	-62.66833	01-Oct-14	R. Angus
<b>8300300</b>	EC5	Charlottetown	46.28917	-63.119167	14-Sep-12	NAV Canada
<b>IPRINCEE16</b>	UP15	Dingwells Mills	46.362154	-62.432651	14-Nov-13	UPEI
<b>IPRINCEE31</b>	UP16	East Point	46.43554	-62.018632	16-Jul-15	Newman
<b>8300418</b>	EC9	East Point	46.45227	-61.971635	8-Dec-92	EC
<b>IPEIEMW2</b>	EC5	Elmwood	46.2508	-63.3342	01-Sep-93	B. Jameson
<b>IPRINCEE32</b>	UP10	Fanning Brook	46.32419	-62.8141	05-Nov-15	UPEI
<b>IPRINCEE13</b>	UP12	Flat River	45.999949	-62.852033	06-Nov-13	UPEI
<b>IPRINCEE15</b>	UP2	Foxley River	46.7208	-64.0356	20-Nov-13	UPEI
<b>IPRINCEE30</b>	UP5	Glen Valley	46.34884	-63.439941	06-Oct-15	UPEI
<b>IPRINCEE27</b>	UP7	Hampton	46.2003	-63.4652	11-Sep-15	M. Cassidy
<b>830P001</b>	AC2	Harrington	46.342506	-63.169736	01-Jul-00	Agric. Canada
<b>IPRINCEE 35</b>	UP19	Hope River	46.43816	-63.40707	10-May-16	A.MacKay
<b>8305500</b>	EC4	Maple Plains	46.3028	-63.575567	21-Jun-01	BBEMA
<b>IPRINCEE 4</b>	UP20	Mill Cove	46.37400	-63.03508	24-Apr-12	P. Lawlor
<b>8300497</b>	EC3	New Glasgow	46.408911	-63.350289	01-Oct-71	H. Dingwell
<b>8300516</b>	EC1	North Cape	47.05806	-63.998611	18-Oct-02	EC
<b>IPRINCEE14</b>	UP11	Orwell Cove	46.13153	-62.869768	13-Nov-13	UPEI
<b>IPRINCEE21</b>	UP8	St. Catherine's	46.182023	-63.286157	25-Jun-15	Matos Winery
<b>8300562</b>	EC8	St. Peter's	46.4503	-62.5758	15-Aug-03	Airport CZSP
<b>ISAVAGEH2</b>	UP21	Savage Harbour	46.42587	-62.85565	June 27, 2017	Abegweit Conservation Society
<b>8300700</b>	EC2	Summerside	46.44111	-63.83806	19-Jul-99	EC
<b>IPRINCEE36</b>	UP18	Tignish	46.9453	-64.0516	02-May-16	UPEI
<b>IPRINCEE19</b>	UP17	White Sands	45.970	-62.558	25-Oct-14	M. Harwood
<b>IPRINCEE11</b>	UP9	Winsloe South	46.292358	-63.1727104	13-Sep-13	UPEI

## Data Summary

Table 2 summarizes the climate data recorded during the month of May 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 May 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 <sup>2</sup> /D)
Alliston (CNP)	UP13	9.2	25.2	-2.5	80.0		6.5	53.1	

Arlington	UP3	9.6	28.8	-3.2	80.6		3.8	54.7	
Baltic	AC1	9.2	27.4	-2.0	78.8		15.8	46.9	
Borden	UP6	9.8	24.4	0.0	72.4		13.5	66.0	6.23
Brockton	UP1	9.3	28.2	-2.0	52.8		7.7	49.9	5.7
Cape Egmont	UP4	9.5	24.0	-2.0	77.5		12.6	56.3	5.75
Cardigan Head	UP14	9.5	26.2	-4.7	81.0		3.6	54.7	
Ch'town Airport	EC5	9.1	25.9	-3.0	61.7			89.0	
Dingwells	UP15	8.3	24.3	-4.3	84.1		6.4	66.0	
East Point	EC9	7.8	20.3	-0.9	75.5		19.8	76.0	
East Point (N)	UP16	6.9	20.3	-1.9	85.0		8.4	70.8	
Elmwood	EC5	8.1	25.8	-2.9	73.4		7.9	69.2	
Fanning Brook	UP10	9.3	25.0	-2.8	71.6		8.4	57.9	5.43
Flat River	UP12	9.1	24.9	-2.7	55.6		7.4	48.3	
Foxley River	UP2	9.8	27.8	-0.7	78.0		10.3	61.2	
Glen Valley	UP5	9.3	27.6	-0.9	55.1		14.1	74.0	4.60
Hampton	UP7	8.2	19.7	-1.6	68.4		11.4	57.9	5.46
Harrington	AC2	9.0	25.7	-1.8	77.1		16.3	76.0	
Hope River	UJP19	9.9	25.8	-1.8	30.7		13.2	80.3	
Maple Plains	EC4	9.1	26.3	-4.2	83.8		12.5	35.1	
Mill Cove	UP20	9.5	25.9	-3.7	34.3		5.8	38.6	
New Glasgow	EC3	9.3	25.5	-5.0	83.0				
North Cape	EC1	8.5	21.6	-0.5	78.4		22.3	78.0	
Orwell Cove	UP11	9.8	24.2	-2.3	60.5		8.0	61.1	
St. Catherines	UP8	9.6	24.8	-1.0	62.2		9.1	57.9	
St. Peter's	EC8	8.4	25.0	-2.0	65.6		16.2	70.0	
Savage Harbour	UP21	8.6	21.8	-2.8	50.2		12.4	59.5	5.21
Summerside	EC2	9.2	25.5	-2.0	77.8		20.4	76.0	
Tignish	UP18	9.2	25.7	-3.7	62.4		6.1	53.1	5.71
White Sands	UP17	9.1	19.4	-0.3	68.1		12.4	72.4	5.52

Winsloe South	UP9	9.2	26.6	-1.2	73.2		5.6	40.2	
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Inc. Incomplete record, equipment malfunction

The measurements from ten (10) 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 Ten Locations on PEI, May, 2018**

CoCoRaHS Station	Total Precipitation in mm	Total Snowfall in cm
CAN-PE-1 Stratford	82.8	0.0
CAN-PE-3 Wellington	97.8	0.0
CAN-PE-7 Morell	93.0	0.0
CAN-PE-10 New London	75.7	0.0
CAN-PE-13 Bedeque	68.1	0.0
CAN-PE-19 Winsloe South	88.9	0.0
CAN-PE-20 Bonshaw	90.7	0.0
CAN-PE-23 Borden-Carleton	82.3	0.0
CAN-PE-25 – Caledonia	101.3	0.0
CAN-PE-26 – Grand Tracadie	126.5	0.0

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 May.

**Table 4 May 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	9.2	9.2	9.5	9.4	8.7	8.6	8.3
Mean Monthly Ppt. in mm	91.0	98.3	94.9	102.9	92.7	90.1	93.1
Mean Monthly Snow cm	3.7	3.8	3.2	3.2	1.8	3.4	3.2

## Discussion

May temperatures were close to normal across the province with the station at Cardigan Head reporting 0.9°C above normal and the same station reported the highest monthly mean for the province of 9.9°C. The low monthly mean was 6.9°C at Newman's winery at East Point. The maximum temperature for the

month was 28.8°C at Arlington on May 31st. The coldest temperature reported during the month for all stations listed in this summary was -5.0°C which was recorded at New Glasgow on May 18th. Freeze events after trees are in active growth mode can cause damage to buds, flowers, leaves and bark on some varieties of apples, pears and other woody plants. There were 3 stations recording temperatures below -4 °C on this date: Maple Plains, Cardigan Head and New Glasgow. At Arlington and Cardigan Head there were freezing temperatures for 3 consecutive nights: May 17 to 19<sup>th</sup>.

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

Climate Station	May 2018 Mean C	30 Year Normal C 1981-2010	Variation from Normal C
Alliston CNP	9.2	9.2	0.00
Arlington	9.6	9.4	0.20
Baltic	9.2	9.5	-0.30
Borden - Carleton	9.8	9.5	0.30
Brockton	9.3	8.7	0.60
Cape Egmont	9.5	9.5	0.00
Cardigan Head	9.5	8.6	0.90
Charlottetown A	9.1	9.2	-0.10
Dingwells	8.3	8.6	-0.30
East Point	7.8	8.3	-0.50
East Point – UP16	6.9	8.3	-1.40
Elmwood	8.1	9.2	-1.10
Fanning Brook	9.3	9.2	0.10
Flat River	9.1	9.2	-0.10
Foxley River	9.8	9.4	0.40
Glen Valley	9.3	9.2	0.10
Hampton	8.2	9.5	-1.30
Harrington	9.0	9.2	-0.20
Hope River	9.9	9.2	0.70
Maple Plains	9.1	9.2	-0.10
Mill Cove	9.5	9.2	0.30
New Glasgow	9.3	9.2	0.10
North Cape	8.5	8.7	-0.20
Orwell	9.8	9.2	0.60
St. Catherine's	9.6	9.2	0.40
St. Peters	8.4	8.6	-0.20
Savage Harbour	8.6	9.2	-0.60
Summerside A	9.2	9.5	-0.30
Tignish	9.2	8.7	0.50
White Sands	9.1	9.2	-0.10
Winsloe South	9.2	9.2	0.00

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

Climate Station	Total PPT in mm May 2018	30 Year Normal mm 1981-2010	Variation from Normal mm
Alliston CNP	80.0	91.0	-11.00
Arlington	80.6	102.9	-22.30
Baltic	78.8	94.9	-16.10
Borden – Carleton (CoCo Can-PE-23)	82.3	94.9	-12.60
Brockton	52.8	92.7	-39.90
Cape Egmont	77.5	94.9	-17.40
Cardigan Head (CoCo Can-PE-27)	81.0	90.1	-9.10
Charlottetown A	61.7	92.0	-30.30
Dingwells	84.1	90.1	-6.00
East Point - EC	75.5	93.1	-17.60
East Point – UP16	85.0	93.1	-8.10
Elmwood (CoCo- Can-PE-20)	90.7	98.3	-7.60
Fanning Brook	71.6	92.0	-20.40
Flat River	55.6	92.0	-36.40
Foxley River	78.0	102.9	-24.90
Glen Valley	55.1	98.3	-43.20
Hampton	68.4	94.9	-26.50
Harrington	77.1	92.1	-15.00
Hope River	30.7	98.3	-67.60
Maple Plains	83.8	94.9	-11.10
Mill Cove	34.3	92.1	-57.80
New Glasgow	83.0	98.3	-15.30
North Cape	78.4	92.7	-14.30
Orwell	60.5	92.0	-31.50
St. Catherine’s	62.2	92.0	-29.80
St. Peters	65.6	90.1	-24.50
Savage Harbour	50.2	92.0	-41.80
Summerside A	77.8	94.9	-17.10
Tignish	62.4	92.7	-30.30
White Sands	68.1	92.0	-23.90
Winsloe South (CoCo-Can-PE-19)	88.9	92.0	-3.10

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 May was 90.7 mm at the CoCoRaHS station in Elmwood and the lowest total was 50.2 mm at Savage Harbour.

No snowfall was reported from any of the locations tracking snowfall so snowfall totals were slightly below normal.

Average wind speeds across the province ranged from 3.6 km/h at Cardigan Head to 22.3 km/h at North Cape. The maximum gust for the month was 89.0 km/h reported at Charlottetown Airport on May 5<sup>th</sup>.

The solar radiation values ranged from 4.60 kWh/m<sup>2</sup>/D at Glen Valley to 6.23 kWh/m<sup>2</sup>/D at Borden-Carleton. These readings were slightly higher than those reported for the same month in the previous year.

## Closure

- Temperatures were close to normal across the province.
- Precipitation was below normal for most reporting stations with normal to slightly below normal snowfall reported
- A freak wind storm on May 5<sup>th</sup> caused some uprooting of trees and shingles being blown off rooves.
- A heavy frost with freezing conditions on May 18<sup>th</sup>. Record low temperature of -5.0<sup>o</sup> C at New Glasgow for this date, which is an extreme low for 20 recording stations throughout the province dating back to 1873.
- See Table 7 for some weather and phenological observations

**Table 7–May Weather or Phenological Events 2018**

Date	Location	Type of Event	Comments
May 2, 2018	Winsloe	Heavy rain shower with vivid lightning	
May 5, 2018	Winsloe South	Freak wind storm with lightning.	Shingles off rooves and some trees uprooted.
May 12, 2018	Winsloe South	Cut grass for first time in 2018	
May 18, 2018	New Glasgow, Cardigan Head, Arlington and other areas	A heavy frost with freezing of water and soil. Record all time low of -5.0 <sup>o</sup> C on this date at New Glasgow.	Caused some damage to apple trees and small fruits
May 22, 2018	Winsloe Area	Frost in the morning.	





Figure 3- Lobster Fishing, Souris

**Sources:**

Environment Canada Climate Data Archives and associated websites

WUnderground.com

CoCoRaHS.org/Canada

AgraWeather Atlantic Website

PEIStormChaser

CBC News

The Guardian newspaper

Chris Starbuck and Michele Warmund, University of Missouri

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