

PEI Growing Season Update to August 31, 2023

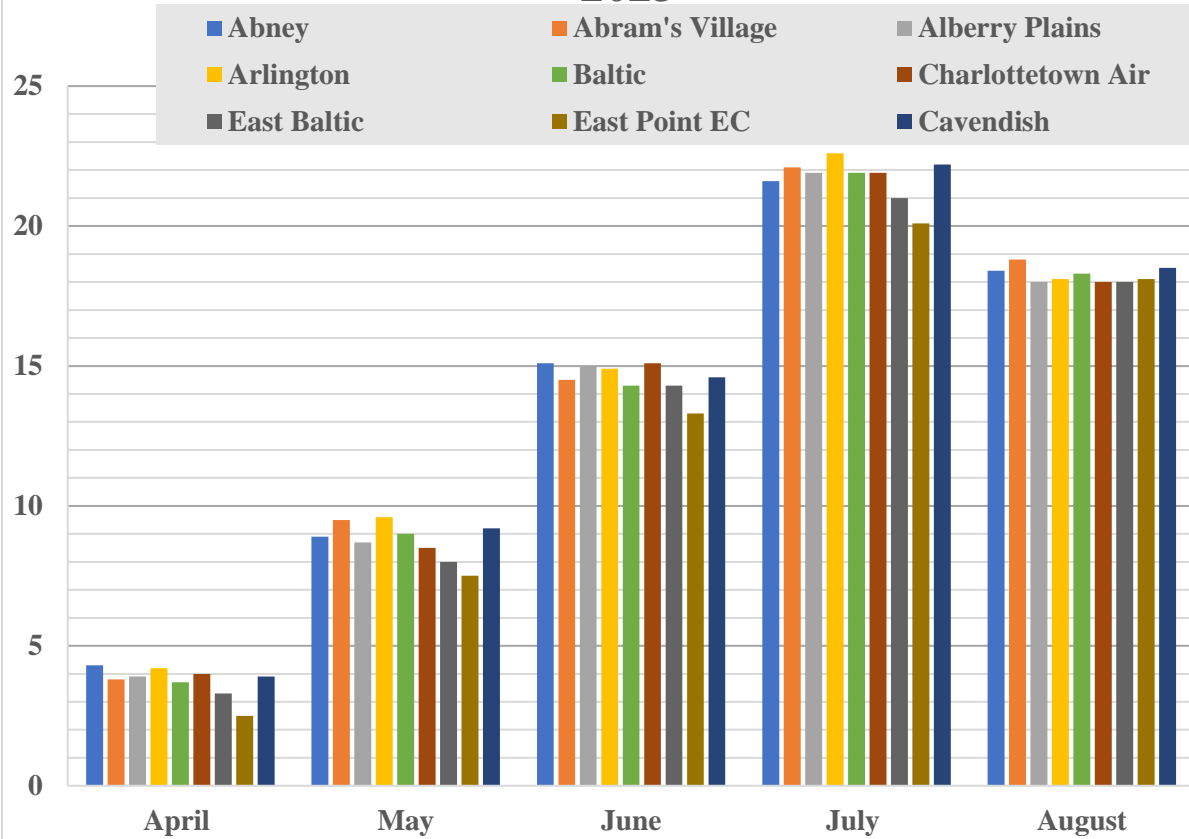
The growing season on PEI typically runs from April 1st to October 31st each year and occasionally runs into November. Plants are greatly impacted by the environment and require inputs of sunlight, temperature, water, humidity, and nutrition to promote good growth. The intensity or concentration of sunlight is a major factor and varies with the month of the year as it helps plants produce food by photosynthesis. The duration or photoperiod is the amount of time a plant is exposed to sunlight, and this controls flowering of plants. Long-day plants require a day length of over 12 hours and many vegetables such as beet, potato, lettuce, spinach fall into this category. Some plants such as tomato, corn, cucumber, and strawberries are day-neutral plants can respond to a combination of day lengths. Since most growing plants contain about 90% water, the amount of water available via precipitation or irrigation is a critical factor in plant growth. The relative humidity is also another important factor in plant growth and warm air can hold more water than cool air and this impacts the plant's transpiration rate. During hot, dry, windy days transpiration is at its peak and this can lead to wilting of plants. On the other hand, days of low sunshine hours and high humidity create conditions which are not conducive for harvesting.

The potato crop can be impacted by a lack of sunshine which can affect the solids and sugars in the tuber so a growing season with a low amount of sunshine can have an impact on the outputs achieved. On dry, hot, windy days potato leaves can wilt and thus have a reduced ability to absorb sunlight and moisture.

The following charts provide a summary of data collected by instrumented stations and also some rainfall data collected by volunteer CoCoRaHS observers across the province.

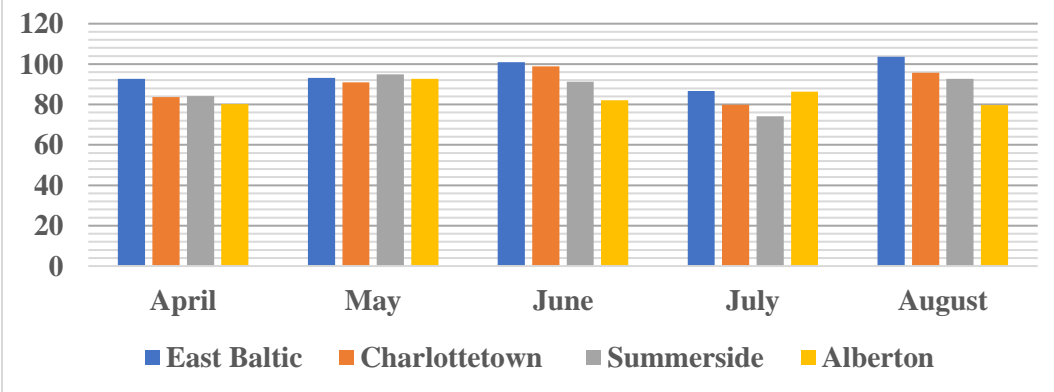
The month of July had the highest average monthly temperature ever recorded in the province since instrumented records have been kept. A station at Arlington in Prince County had an average monthly temperature of 22.6 °C which is the highest ever recorded in the province.

Growing Season Mean Monthly Temperature 2023

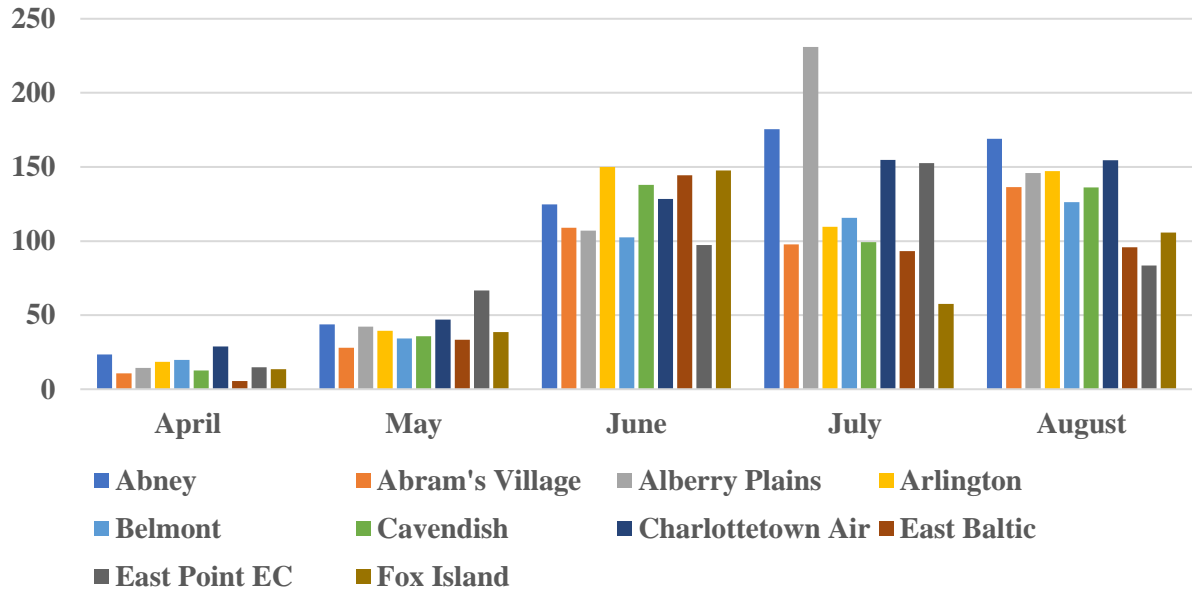


Precipitation during the 5 months ranged from well below normal in April and May, above normal in June and well above normal in July and August. Rainfall in July was 3 times higher than normal at some locations in southern Queens and Kings Counties.

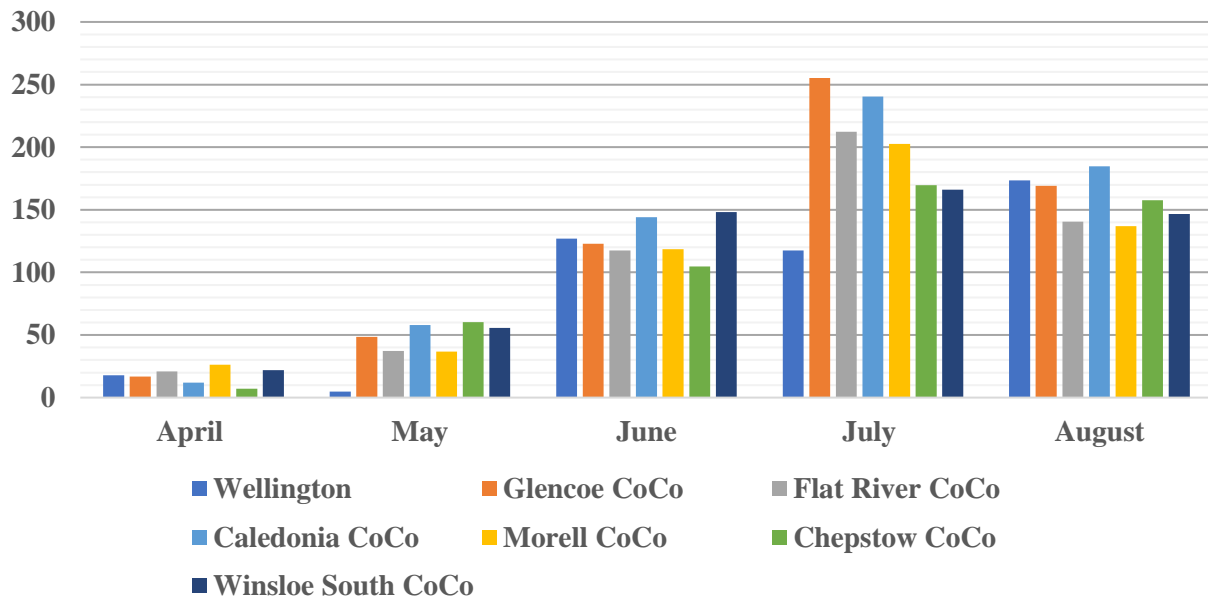
Precipitation 30 Year Climate Normals mm



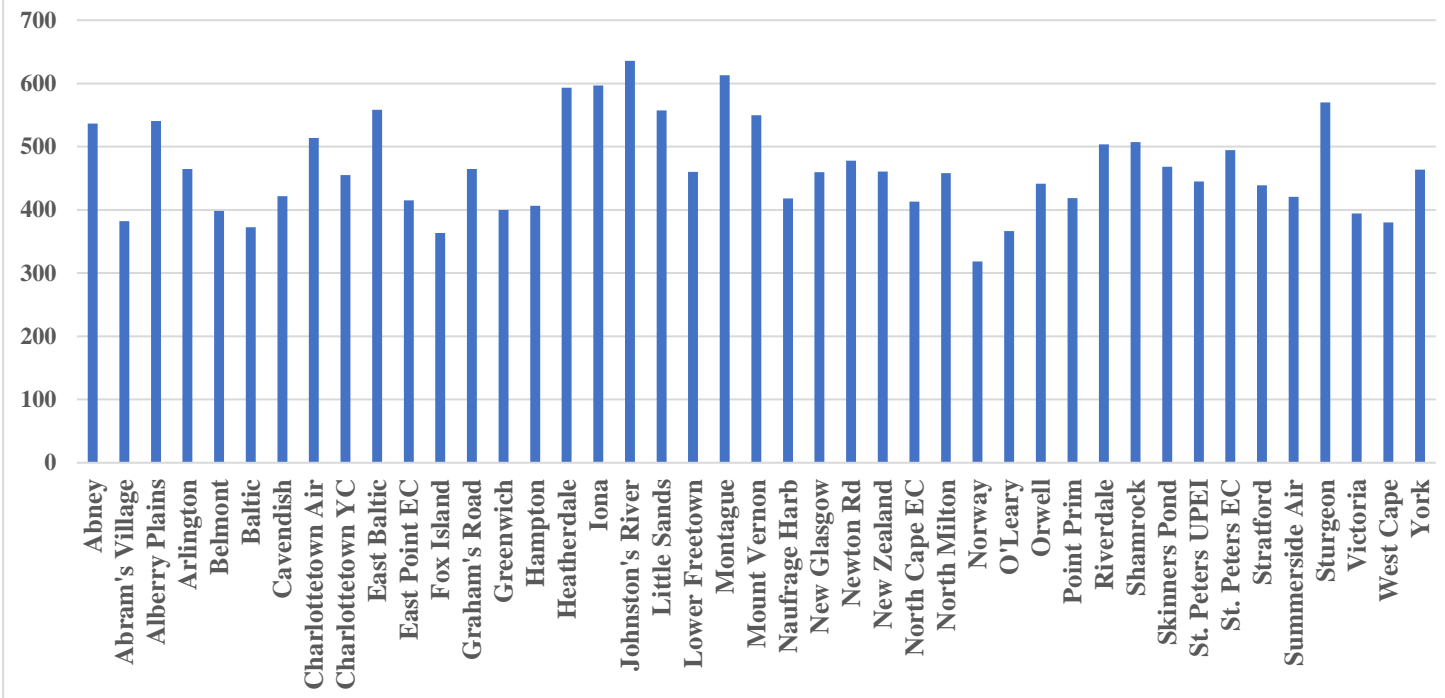
Growing Season Monthly Precipitation (mm)



CoCoRaHS Sites Monthly Precipitation, 2023 mm

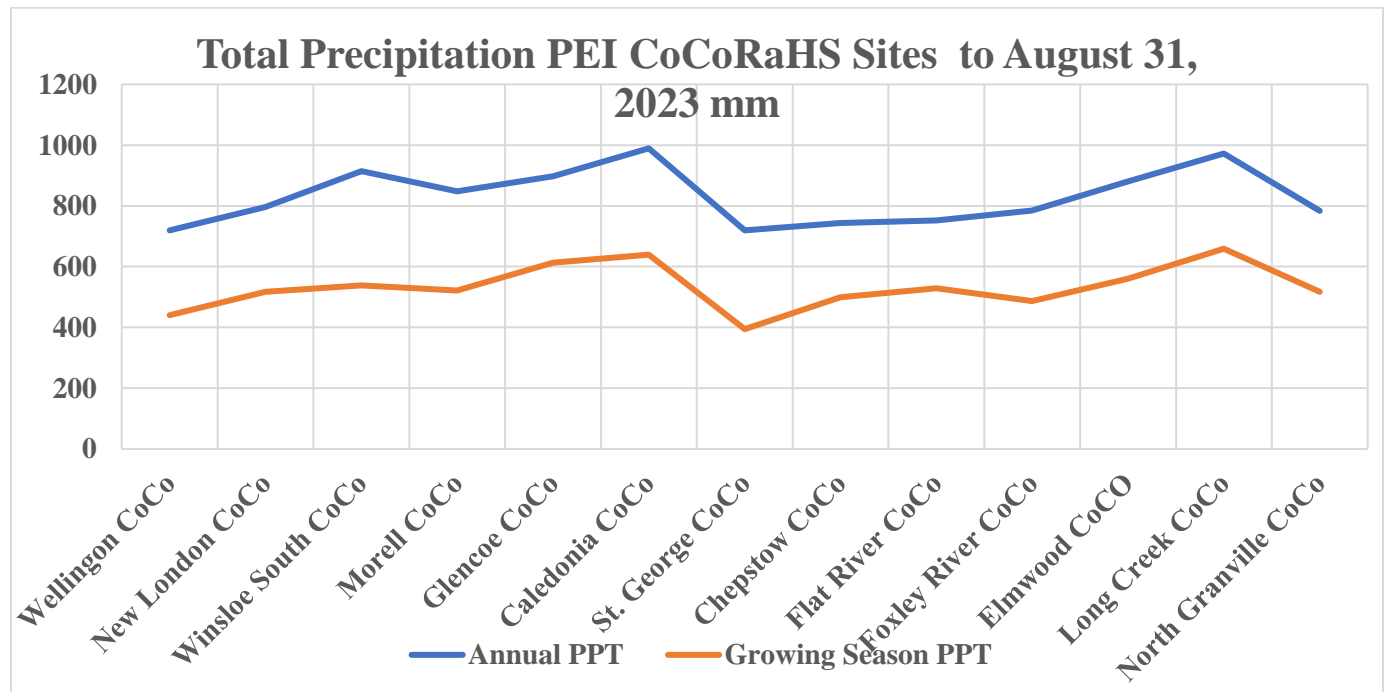


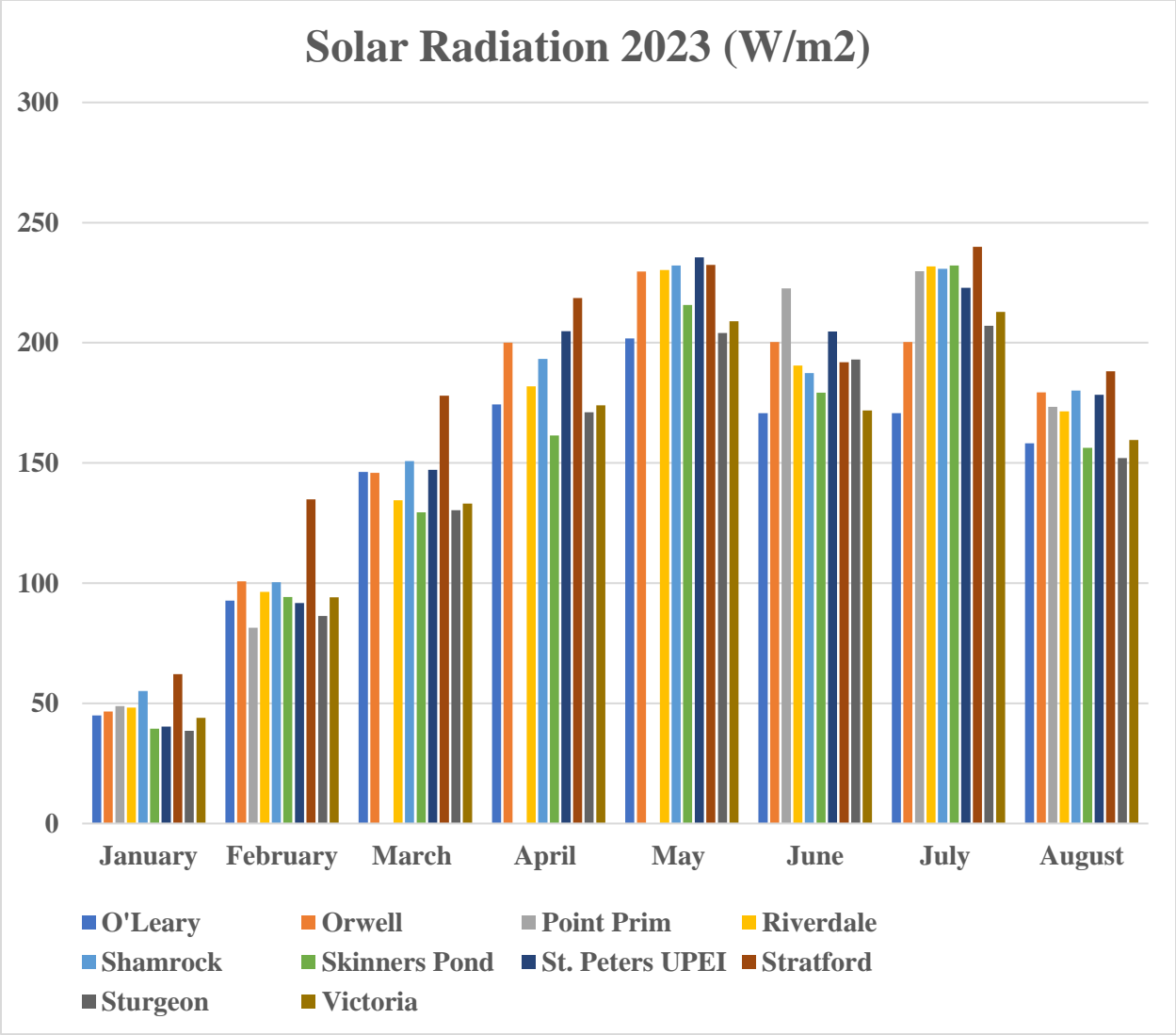
Growing Season Precipitation , PEI Locations up to August 31, 2023 (mm)



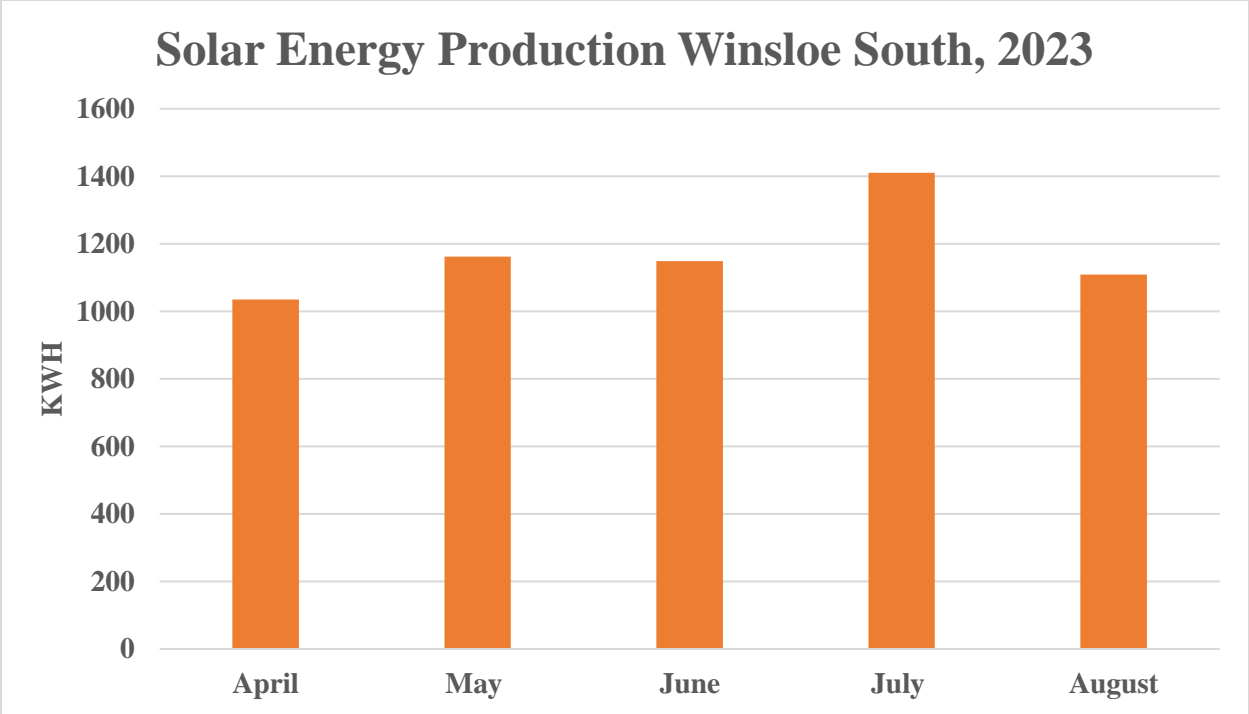
The total precipitation for the CoCoRaHS locations at Caledonia and Long Creek is close to 1000 mm with 4 months still remaining in the year. It remains to be seen if the annual total precipitation record of 1673.3 mm at East Baltic in 1990 will be broken in 2023.

Total Precipitation PEI CoCoRaHS Sites to August 31, 2023 mm





Solar energy production from photovoltaic systems is another indicator of the amount of sunlight available to solar panels. The following chart provides solar energy production from a 22-panel solar array at Winsloe South for the months of April to August. July had the most solar energy production during this period, with the other months all producing between 1034 and 1162 kilowatt hours.



Summary

The year 2023 has not been a typical growing season to the end of August with normal temperatures in the first three months, well above normal temperatures in July and a return to normal in August. Rainfall was low during the months of April and May, but July and August were well above normal. Stations located east of Charlottetown and in the southern portions of Kings and Queens counties had the highest rainfall totals during the growing season up to the end of August.

Solar radiation measurements and photovoltaic solar panel production provide an indication of available sunlight for plant production. June with its longest days of the year had lower solar radiation totals than May or July with August being slightly above the totals for April but lower than June.

Sources: [Environmental factors affecting plant growth | OSU Extension Service \(oregonstate.edu\)](https://oregonstate.edu), accessed Sept. 7, 2023; Dwayne McNeill, August, 2023; UPEI Climate Station Data; Environment Canada Climate Station Data; CoCoRaHS observation data, 2023; Bradley Postma, personal communication, September, 2023.

By DE Jardine

September 13, 2023