



AGROMET BULLETIN



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HIGHLIGHTS

- ✚ **Most stations experienced below-normal rainfall in August, with drying observed in some areas.**
- ✚ **Above-normal rainfall is forecast for sections of central and eastern parishes for September through November.**
- ✚ **Four parishes are now experiencing drought conditions, with the worst case seen in St. Thomas where severe drought was observed.**
- ✚ **Above normal temperatures are forecast for September to November.**

Weather Summary August 2017

During the month of August, the weather was dominated by High Pressure Ridges and Tropical Waves. Showers occurred mostly during the afternoon hours and mainly over hilly sections of central and western parishes.

During the month, Sangster in the northwest recorded 63.1 mm of rainfall, while Norman Manley in the southeast recorded 65.1 mm of rainfall. Sangster received 70% of its 30-year mean rainfall, while Manley received 89% of its 30-year mean rainfall. There were nine (9) rain days recorded for Sangster Airport and five (5) rain days for Manley Airport.

The highest maximum temperature recorded for Sangster Airport was 35.3°C (on August 31) meanwhile, Manley Airport recorded 36.9°C (on August 3), which was the highest temperature recorded at the station in 24 years.



Standardized Precipitation Index (SPI)

The Standardized Precipitation Index (SPI), developed by T.B. McKee, N.J. Doesken, and J. Kleist in 1993, is a tool used to monitor drought conditions based on precipitation. The SPI can be used to monitor conditions on a variety of time scales namely 1-month, 3-month, 6-month, 9-month and 12-month periods. This temporal flexibility allows the SPI to be useful in both short-term agricultural and long-term hydrological applications by providing early warning of drought and for making assessments on the severity of a drought. The Meteorological Service, Jamaica (MSJ) calculates an observed SPI (see Table 1 and Figure 1) and a forecast SPI (see Figure 2) using a 3-month and 6-month time interval, respectively.

Parish	Station	August Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for June-July-August
Hanover	Mount Peto	279	90	-0.12
Westmoreland	Savanna-La-Mar	258	104	-0.38
Westmoreland	Frome	175	62	-1.39
Manchester	Sutton	272	166	0.69
St. Elizabeth	Y.S. Estates	250	92	0.47
St. Elizabeth	Potsdam	70	51	0.46
Clarendon	Beckford Kraal	139	95	0.48
St. Catherine	Tulloch	171	81	0.53
St. Catherine	Worthy Park	97	66	0.69
Trelawny	Orange Valley	42	52	-0.77
St. James	Sangster	63	70	-0.13
St. Ann	Cave Valley	149	105	0.30
St. Mary	Hampstead	176	190	0.85
Portland	Shirley Castle	144	74	-0.52
St. Thomas	Serge Island	19	8	-2.26
KSA	Langley	44	21	-0.99
KSA	Manley Airport	65	89	0.28

Table 1: Observed SPI for Selected Stations across Jamaica during the June-August Period.



SPI Value	Category	SPI Value	Category
0.00 to -0.50	Near Normal	0.00 to 0.50	Near Normal
-0.51 to -0.79	Abnormally Dry	0.51 to 0.79	Abnormally Wet
-0.80 to -1.29	Moderately Dry	0.80 to 1.29	Moderately Wet
-1.30 to -1.59	Severely Dry	1.30 to 1.59	Severely Wet
-1.60 to -1.99	Extremely Dry	1.60 to 1.99	Extremely Wet
-2.00 or less	Exceptionally Dry	2.00 or more	Exceptionally Wet

Table 2: Severity Classes of the SPI

Standardized Precipitation Index Discussion

Based on the SPI figures for the June-August period, 9 of the 17 stations across the island, showed near-normal to moderately wet conditions, while the other 8 stations showed near-normal to exceptionally dry conditions. A comparison with the period April -July showed a very different image where all but one of the seventeen stations showed near-normal to extremely wet conditions with only one station reporting drying.

A comparison of the SPI figures at the end of August with those at the end of July showed that:

- Hampstead was still experiencing moderately wet conditions.
- Orange Valley moved from experiencing extremely wet to recording abnormally dry conditions.
- Serge Island moved from experiencing moderately dry conditions to recording exceptionally dry conditions.

The reduction in rainfall activity across the island in July and August has resulted in drought conditions mainly over eastern parishes and drying conditions over western and some central parishes. Portland, St. Thomas and Manchester, joined St. Mary in recording drought conditions. Therefore, along with the possibility of pest outbreak, which still require continued action by all stakeholders, the lack of sufficient rainfall should be of concern for farmers not only in parishes experiencing drought conditions but, in other parishes as well.

See Figure 1 below for the graphical representation of observed SPI values for the June-July-August period.

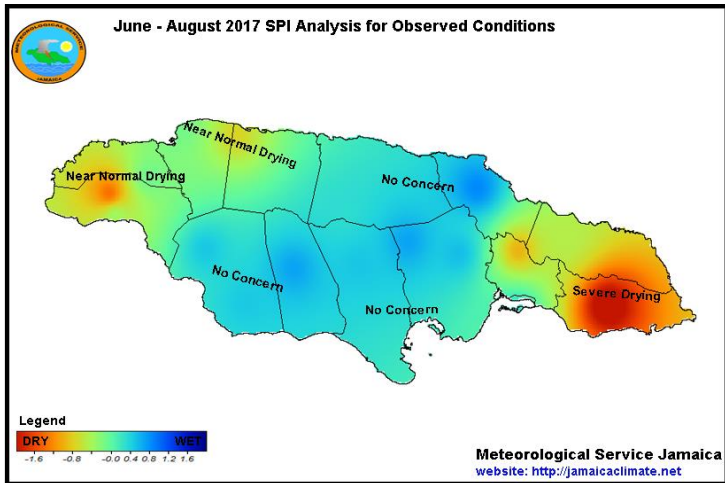


Figure 1: June-July-August SPI Analysis for Observed Conditions

The forecast through November (see Figure 2 below) has determined that there should be some level of drying, especially over eastern and extreme western parishes, with moist conditions over sections of some central parishes. This outlook will benefit farmers in central parishes, but would be cause for concerns for farming communities in eastern parishes where dry/drought conditions have been observed.

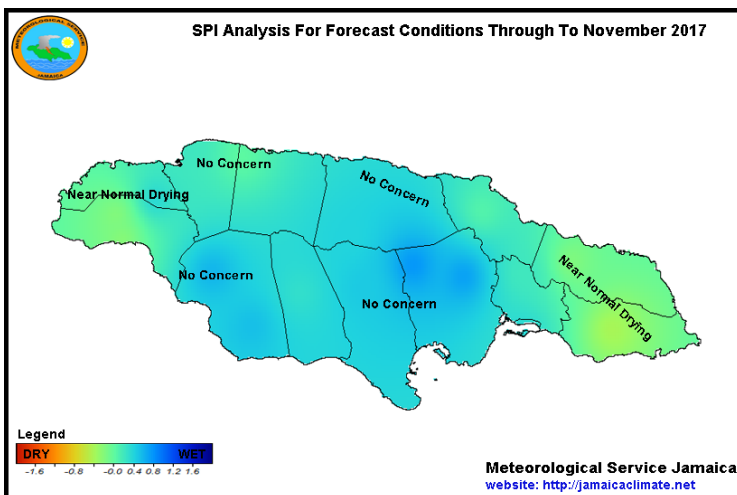


Figure 2: Forecast Drought Conditions through to November 2017



Seasonal Forecast – September to November 2017

The MSJ makes seasonal climate forecasts using the Climate Predictability Tool (CPT). The CPT was developed by the International Research Institute for Climate and Society (IRI) in order to create and communicate seasonal forecasts that address the needs of different user groups.

As we approach the next three month (September/October/November) which includes the peak period (late August to September) for the hurricane season, as well as the primary rainfall season, the forecast models are indicating near-normal to above-normal rainfall across most stations, with above-normal temperatures.

The projections for above-normal rainfall in eastern and central parishes would be welcomed, especially by the farming communities in St. Mary, Portland and St. Thomas where drought conditions were recorded. However, the outlook of less rainfall over some western parishes would be a concern for farming communities. Therefore, water management plans are recommended, should the forecast materialize. The Meteorological Service will continue to monitor the findings from the models in order to advise farming communities.

	% Below (B)	% Normal (N)	% Above (A)
Jamaica Rainfall Outlook	25	35	40
Jamaica Temperature Outlook	20	30	50
Key A: Above-normal rainfall means greater than 66 percentile of the rank data N: Near-normal rainfall means between 33 and 66 percentile of the rank data B: Below-normal rainfall means below 33 percentile of the rank data			

Table 3: Jamaica Rainfall and Temperature Probability for September to November 2017.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. Twelve (12) of the seventeen (17) stations are indicating higher probabilities for above-normal rainfall for the September to November 2017 period, while four (4) stations are indicating probabilities of normal rainfall and one (1) station the probability of below-normal rainfall.



Stations	Parishes	Below (B) %	Normal (N) %	Above (A)%
Beckford Kraal	Clarendon	25	35	40
Mount Peto	Hanover	33	34	33
Manley Airport	Kingston	25	35	40
Langley	Kingston	30	20	50
Suttons	Manchester	25	35	40
Shirley Castle	Portland	30	20	50
Cave Valley	St. Ann	25	35	40
Tulloch Estate	St. Catherine	25	35	40
Worthy Park	St. Catherine	25	35	40
Y.S. Estate	St. Elizabeth	33	34	33
Potsdam	St. Elizabeth	33	34	33
Sangster	St. James	25	35	40
Serge Island	St. Thomas	30	20	50
Hampstead	St. Mary	30	20	50
Orange Valley	Trelawny	30	20	50
Savanna-La-Mar	Westmoreland	40	35	25
Frome	Westmoreland	33	34	33

Key

A: Above-normal rainfall means greater than 66 percentile of the rank data

N: Near-normal rainfall means between 33 and 66 percentile of the rank data

B: Below-normal rainfall means below 33 percentile of the rank data

Table 4: Precipitation Outlook for Selected Stations for September to November 2017.



Summary and Expected Agricultural Impacts

The CPT is indicating that most central and eastern areas across the island are expected to experience above-normal rainfall, while western areas should experience below-normal to near-normal rainfall during the September to November period.

If less than normal rainfall is realized especially in areas already having drought conditions there could be significant impact on plants and animals therefore farming interests should put plans in place to minimize possible losses or damage. The Met Office will continue to closely monitor conditions and disseminate advisories as necessary.

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