



AGROMET BULLETIN



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HIGHLIGHTS

- ✚ **Most parishes received above-normal rainfall in December.**
- ✚ **Near-normal to above-normal rainfall is forecast for January through March.**
- ✚ **No parish experienced drought however, a few communities recorded varying levels of drought.**
- ✚ **Above-normal temperatures are forecast for the next 3 months.**

Weather Summary December 2017

During December, the daily weather was dominated by High Pressure Ridges. There were days when rain producing systems such as a Stationary and Troughs resulted in both main airports recording above-normal rainfall.

During the month, Sangster Airport (SIA) in the northwest recorded 132.9 mm of rainfall, while Palisadoes (NMIA) in the southeast recorded 64.2 mm of rainfall. SIA received 140% of its 30-year mean rainfall, while NMIA received about 214% of its 30-year mean rainfall. There were thirteen (13) rain days recorded for SIA, which equals the mean number of rain days for December and six (6) rain days for NMIA, which is two (2) days above the mean number of rain days for the month.

The highest maximum temperature recorded for SIA was 33.0 °C (on December 9th). This value ranks as the 2nd highest maximum temperature recorded at the station in December since 1992, behind the 34.0 °C recorded



in 2015. Meanwhile, the highest maximum temperature recorded for NMIA was 33.4°C (on December 6th); which is the 5th ranked highest maximum temperature recorded at the station in December since 1992.

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 Figure1) and a forecast SPI (see Figure 2) using a 3-month and 6-month time interval, respectively.

Parish	Station	December Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for October-November-December
Hanover	Mount Peto	68	73	0.28
Westmoreland	Savanna-La-Mar	30	38	-0.49
Westmoreland	Frome	60	83	-0.09
Manchester	Sutton	104	183	--
St. Elizabeth	Y.S. Estates	132	176	0.22
St. Elizabeth	Potsdam	199	340	1.88
Clarendon	Beckford Kraal	64	88	0.44
St. Catherine	Tulloch	59	66	-0.08
St. Catherine	Worthy Park	65	81	0.30
Trelawny	Orange Valley	107	94	0.07
St. James	Sangster Airport	133	140	1.82
St. Ann	Cave Valley	102	150	0.95
St. Mary	Hampstead	153	81	0.57
Portland	Shirley Castle	661	129	0.15
St. Thomas	Serge Island	156	152	1.28
KSA	Langley	No data	No data	--
KSA	Palisadoes	64	214	1.33

Table 1: Observed SPI for Selected Stations across Jamaica during the October-December 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 October-December period, 11 stations across the island, showed near-normal (wet) to extremely wet conditions, while 3 stations showed near-normal (dry) conditions.

A comparison of the SPI figures for Oct/Nov/Dec with those for Sep/Oct/Nov and Aug/Sep/Oct shows that:

- Conditions at Potsdam, Sangster Airport, Palisadoes and Serge Island became wetter.as shown by the extremely wet, extremely wet, severely wet and moderately wet rankings respectively.
- Cave Valley and Hampstead were still experiencing wet conditions as shown by the moderately wet and abnormally wet rankings respectively.
- Moving from dry conditions to near-normal (wet) conditions were Y.S. Estates (moving from moderately dry) and Orange Valley (moving from abnormally dry).
- Conditions at Frome and Savanna-La-Mar recorded some improvements. In the case of Frome moving from severely dry to near-normal (dry) conditions and in the case of Savanna-La-Mar moving from abnormally dry to moderately dry to the present near-normal (dry) rankings.

In December, most parishes received above-normal rainfall. This includes western parishes where dry conditions were still being observed in some farming communities. Of the four (4) parishes, three (3) received above-normal rainfall while, Westmoreland received near-normal rainfall.



See Figure 1 below for the graphic representation of observed SPI values for the October-November-December period.

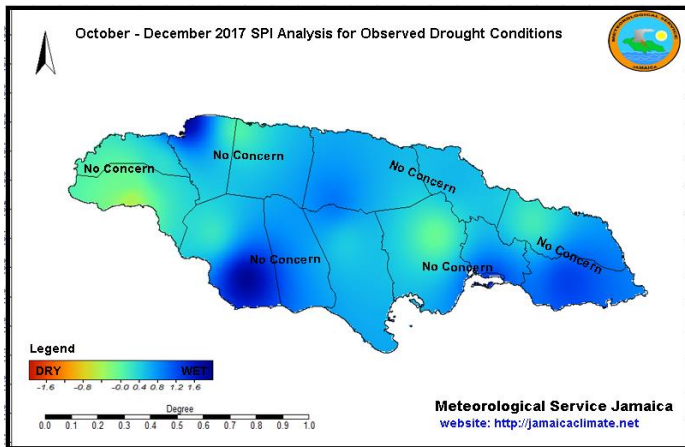


Figure 1: October-November-December SPI Analysis for Observed Conditions

The forecast through March (see Figure 2 below) which includes the dry season, has determined that the island should receive sufficient rainfall which, could reduce the remaining number of dry areas across the island and especially those in Hanover, Westmoreland and sections of St. Elizabeth.

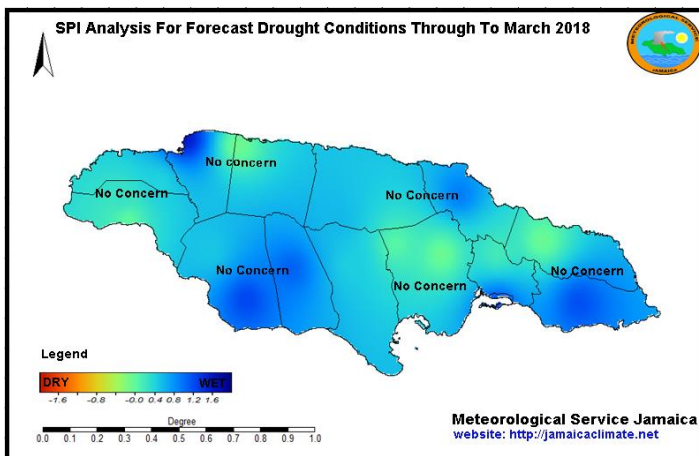


Figure 2: Forecast Drought Conditions through to March 2018

Seasonal Forecast – January to March 2018



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.

During the next three months (January-March), the forecast models are indicating that Jamaica should receive near-normal to above-normal rainfall, that is, a wetter-than-normal dry season. Above-normal temperatures are also expected across the island.

	% Below (B)	% Normal (N)	% Above (A)
Jamaica Rainfall Outlook	30	30	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 January to March 2018.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. For the January to March 2018 period, nine (9) of the seventeen (17) stations are indicating higher probabilities for above-normal rainfall, another five (5) stations for normal rainfall and three (3) stations for below-normal rainfall.



Stations	Parishes	Below (B) %	Normal (N) %	Above (A)%
Beckford Kraal	Clarendon	30	30	40
Mount Peto	Hanover	25	30	45
Palisadoes	Kingston	25	30	45
Langley	Kingston	30	30	40
Suttons	Manchester	10	20	70
Shirley Castle	Portland	33	34	33
Cave Valley	St. Ann	33	34	33
Tulloch Estate	St. Catherine	33	34	33
Worthy Park	St. Catherine	33	34	33
Y.S. Estate	St. Elizabeth	20	10	70
Potsdam	St. Elizabeth	20	25	55
Sangster Airport	St. James	55	25	20
Serge Island	St. Thomas	33	34	33
Hampstead	St. Mary	40	30	30
Orange Valley	Trelawny	50	30	20
Savanna-La-Mar	Westmoreland	20	30	50
Frome	Westmoreland	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 4: Precipitation Outlook for Selected Stations for January to March 2018.



Summary and Expected Agricultural Impacts

The CPT is indicating that some areas across the island are expected to experience above-normal rainfall over the January to March (dry) period. For stations in western parishes, especially in Westmoreland which are projected to see above-normal rainfall, this could be sufficient to reverse the dry conditions which are being experienced in these farming communities.

However, the projections for below-normal to near-normal rainfall in sections of some eastern and central parishes would not be welcomed by farming communities during this dry season. Therefore, farmers will be required to continue action to prevent stress on crops which could occur in farming communities which are already seeing dry conditions.

The Met Office will continue to closely monitor conditions and disseminate advisories as necessary.

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