



AGROMET BULLETIN



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HIGHLIGHTS

- ✚ **Seven of thirteen parishes received below-normal rainfall in April.**
- ✚ **Some eastern parishes are experiencing drought, while dry conditions have expanded across communities in other parishes.**
- ✚ **Near-normal to above-normal rainfall is forecast for Jamaica for May through July.**
- ✚ **Above-normal temperatures are forecast for the next 3 months.**

Weather Summary April 2018

During the month of April, the weather was dominated by troughs. None of these troughs produced any severe weather conditions across the island.

During the month, Sangster International Airport (SIA) in Jamaica's northwest recorded 60.6 mm of rainfall, while Norman Manley International Airport (NMIA) in the southeast recorded 13.4 mm of rainfall. SIA received 98% of its 30-year monthly mean rainfall, while NMIA received 45% of its 30-year monthly mean rainfall.

There were six (6) rainfall days reported for SIA and two (2) rain days for NMIA. These values were below the monthly means of ten (10) and four (4) rain days respectively.

The highest maximum temperature recorded for SIA was 33.4°C (on April 15). A look at the records from 1993 showed that, this value ranks 7th for a April highest maximum temperature, behind the 34.5°C recorded in 2012. Meanwhile, the highest maximum temperature recorded for NMIA was 32.6°C (April 3). This value ranks 13th for a maximum temperature recorded at the station since April 1993; behind the 34.6 °C recorded in 2009.



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	April Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for February-March- April
Hanover	Mount Peto	390	201	0.81
Westmoreland	Savanna-La-Mar	283	238	0.56
Westmoreland	Frome	225	150	0.16
Manchester	Sutton	306	175	0.27
St. Elizabeth	Y.S. Estates	399	191	0.69
St. Elizabeth	Potsdam	140	120	-0.12
Clarendon	Beckford Kraal	52	43	-1.31
St. Catherine	Tulloch	97	41	-0.55
St. Catherine	Worthy Park	56	57	-0.41
Trelawny	Orange Valley	36	54	No SPI value due to unavailability of data for March.
St. James	Sangster Airport	61	98	0.70
St. Ann	Cave Valley	103	97	-0.01
St. Mary	Hampstead	9	5	0.37
Portland	Shirley Castle	111	33	-0.34
St. Thomas	Serge Island	50	56	-0.39
KSA	Lawrence Tavern	58	64	-0.29
KSA	Palisadoes	13	45	-0.93

Table 1: Observed SPI for Selected Stations across Jamaica during the February-April 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 February-April period, 9 of 17 stations across the island had ranking ranging from severely dry to to near-normal (dry). Another 7 stations had rankings from moderately wet to near-normal (wet). There were 14 stations that recorded decreases in their SPI figures for the February-April period when compared to the January-March period.

A comparison of the SPI figures for Jan-Mar with those for Feb-Apr shows that:

- Conditions at Savanna-La-Mar and Y.S. Estates became wetter with both having rankings of abnormally wet. In the case of Y.S. Estate moving from an abnormally dry ranking the previous period.
- Despite changes in their SPI values, Mount Peto, Sangster and Hampstead were still experiencing wet conditions; Mount Peto remained moderately wet, Sangster was experiencing abnormally wet conditions, while, Hampstead's ranking moved from exceptionally wet to near-normal (wet) conditions.
- Beckford Kraal had the lowest SPI value with a ranking of severely dry, followed by Palidasoes with a moderately dry ranking.
- Also recording drier conditions was Tulloch, with its ranking moving from moderately wet to moderately dry.

In April, six (6) of thirteen (13) parishes received above-normal rainfall while, the remaining seven (7) parishes received below-normal rainfall. The parishes receiving above-normal rainfall were, Trelawny, St. James,



Hanover, Westmoreland, St. Elizabeth and Manchester. Meanwhile, Clarendon, St. Catherine, Kingston & St. Andrew, St. Thomas, Portland, St. Mary and St Ann received below-normal rainfall; with St. Thomas, Portland and St. Mary recorded 48%, 26% and 7% respectively of their 30-year monthly mean rainfall in April. Observed conditions indicate that drier conditions were experienced especially in sections of eastern and central parishes, while, St. James along with bordering areas of Hanover, Westmoreland and northern St. Elizabeth were experiencing wet conditions. On the parish level normal drought conditions were recorded for St. Thomas, Portland and St. Mary. Drought/dry conditions were experienced in several communities of other parishes however none of these parishes recorded drought conditions.

See Figure 1 below for the graphic representation of observed SPI values for the February-March-April period.

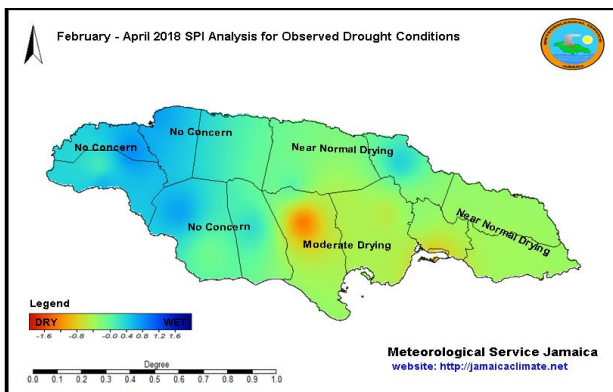


Figure 1: February – April 2018 SPI Analysis for Observed Conditions

The forecast through July, has determined that the island should receive near-normal to above-normal rainfall during the early wet season going into the dry period in July.

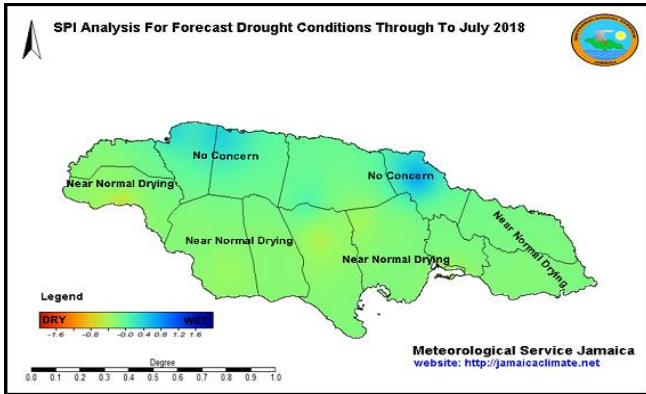


Figure 2: Forecast Drought Conditions through to July 2018

Seasonal Forecast – May to July 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 (May-July), the forecast models are indicating that Jamaica should receive near-normal to above-normal rainfall, during the early rainfall season and going into the mid-summer dry month of July. Confidence is however, low for this forecast. The forecast for above-normal temperatures remains consistent for the May-July 2018 period.

	% Below (B)	% Normal (N)	% Above (A)
Jamaica Rainfall Outlook	30	30	40
Jamaica Temperature Outlook	25	35	40
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 May to July 2018.



Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool for the May to July 2018 period. Seven (7) of seventeen (17) stations are indicating higher probabilities for above-normal rainfall and the other ten (10) stations are indicating higher probabilities for below-normal rainfall.

Stations	Parishes	Below (B) %	Normal (N) %	Above (A)%
Beckford Kraal	Clarendon	40	30	30
Mount Peto	Hanover	20	35	45
Palisadoes	Kingston	45	30	25
Lawrence Tavern	Kingston	20	30	50
Suttons	Manchester	30	30	40
Shirley Castle	Portland	40	30	30
Cave Valley	St. Ann	20	30	50
Tulloch Estate	St. Catherine	40	35	25
Worthy Park	St. Catherine	40	30	30
Y.S. Estate	St. Elizabeth	15	25	60
Potsdam	St. Elizabeth	40	30	30
Sangster Airport	St. James	25	30	45
Serge Island	St. Thomas	60	25	15
Hampstead	St. Mary	50	25	25
Orange Valley	Trelawny	40	30	30
Savanna-La-Mar	Westmoreland	50	30	20
Frome	Westmoreland	15	35	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 May to July 2018.



Summary and Expected Agricultural Impacts

The below-normal rainfall received in April over St. Thomas, Portland and St. Mary has resulted in these parishes recording drought conditions. The below-normal rainfall received in some other parishes have also resulted in some farming communities recording drought or continued drying conditions. In contrast, the above-normal rainfall received over Hanover, Westmoreland and St. Elizabeth has resulted in a temporary easing of the dry conditions that were being experienced in farming communities of these parishes.

Despite the previous forecasts of near-normal to above-normal rainfall, the lack of sufficient rainfall has resulted in several farming areas especially across eastern and central parishes recording drought or continued drying conditions. Therefore, drought monitoring plans for farming communities as well as other water users, should be implemented to lessen the impacts of the drought/dry conditions especially on crops and livestock ahead of the upcoming (traditional) mid-summer dry period.

The forecast for continued above-normal temperatures could cause heat stress for other animals, therefore, cooling solutions are still being recommended.

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

Issued by the
Climate Branch
Meteorological Service, Jamaica
65 ¾ Half Way Tree Road
Kingston 10
Telephone: 929-3700/3706
Email: datarequest@metservice.gov.jm