AGROMET BULLETIN

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HIGHLIGHTS

- **Eleven of thirteen parishes received above-normal rainfall in May.**
- **Portland continued to experience drought conditions, while dryness was still affecting some communities in other parishes.**
- **Below-normal rainfall is forecast for Jamaica for June through August.**
- **Above-normal temperatures are forecast for the next 3 months.**

Weather Summary May 2018

During the month of May, the daily weather was dominated by both Troughs and High Pressure Ridges. For the period May 3-7, unstable weather conditions associated with one of these Troughs, impacted weather conditions across the island. This resulted in flooding and landslides occurring in ten (10) of thirteen (13) parishes[1].

During the month, Sangster International Airport (SIA) in the northwest recorded 126.9 mm of rainfall, while Norman Manley International Airport (NMIA) in the southeast recorded 265.1 mm of rainfall. SIA received 119% of its 30-year mean rainfall, while NMIA received 396% of its 30-year mean rainfall. There were eleven (11) rain days recorded for SIA, while NMIA recorded six (6) rain days. These values were below the monthly means of fourteen (14) and nine (9) rain days respectively.

The highest maximum temperature recorded for SIA was 34.3°C (May 28) The records from 1993 showed that, this value ranks 7th for a May highest maximum temperature, behind the 35.1°C recorded in 2005. Meanwhile,

[1] Note that Kingston and St. Andrew (KSA) are combined and reported as one parish.

the highest maximum temperature recorded for NMIA was 32.0°C (May 3 & 29). This is the lowest value for a highest maximum temperature recorded at the station since May 1993; behind the 34.7 °C recorded in 2010.

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	May Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for March-April-May
Hanover	Mount Peto	300	75	0.64
Westmoreland	Savanna-La-Mar	374	156	1.20
Westmoreland	Frome	491	171	1.23
Manchester	Sutton	229	93	0.14
St. Elizabeth	Y.S. Estates	191	58	0.04
St. Elizabeth	Potsdam	245	139	0.68
Clarendon	Beckford Kraal	231	99	-0.62
St. Catherine	Tulloch	140	70	-0.92
St. Catherine	Worthy Park	213	114	-0.92
Trelawny	Orange Valley	134	149	No SPI value due to unavailability of rainfall data for March.
St. James	Sangster Airport	127	119	0.68
St. Ann	Cave Valley	182	94	-0.20
St. Mary	Hampstead	310	215	0.79
Portland	Shirley Castle	146	47	-1.23
St. Thomas	Serge Island	334	148	0.43
KSA	Lawrence Tavern	226	140	0.01
KSA	Palisadoes	265	396	1.22

Table 1: Observed SPI for Selected Stations across Jamaica during the March-May 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 March-May period, five (5) of seventeen (17) stations across the island had rankings ranging from moderately dry to near-normal (dry). Another eleven (11) stations had rankings ranging from moderately wet to near-normal (wet). There were eight (8) stations that recorded decreases in their SPI figures while, another eight (8) stations recorded increases in their SPI values, when comparing the March-May period with the February-April period.

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

- There was a reversal in conditions at Palisadoes, with the station's ranking moving from moderately dry to moderately wet.
- Conditions became wetter at Hampstead, Savanna-La-Mar and Frome as indicated by the rankings ranging from abnormally wet to moderately wet.
- There were changes in the rankings for the following stations:- Potsdam from near-normal (dry) to abnormally wet; Serge Island and Lawrence Tavern, both moving from near-normal (dry) to near-normal (wet).
- Conditions at Beckford Kraal moved from severely dry to abnormally dry. Meanwhile, conditions became drier at Tulloch and Worthy Park both with rankings moving from abnormally dry to moderately dry.

In May, eleven (11) of thirteen (13) parishes received above-normal rainfall while, the other two (2) parishes received below-normal rainfall. The parishes recording **below-normal** rainfall were, St. Elizabeth and Portland, with all other parishes recording above-normal rainfall. From observations, drier conditions were experienced in western Portland and most areas of St. Catherine. Westmoreland and Hanover were still experiencing wet conditions. On the parish level normal drought conditions continued for Portland. Meanwhile, St. Thomas recorded wet conditions after previously experiencing normal drought and, St. Mary was above drought. 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 March-April-May period.

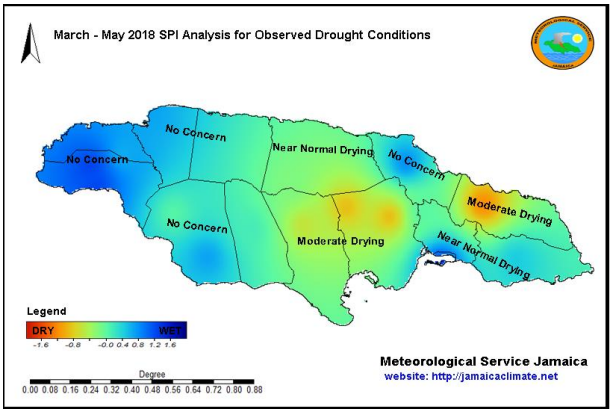

Figure 1: March – May 2018 SPI Analysis for Observed Conditions

The forecast through August, has determined that the island should receive less than expected rainfall, with the possibility of dryness spreading to more areas especially in eastern and central parishes.

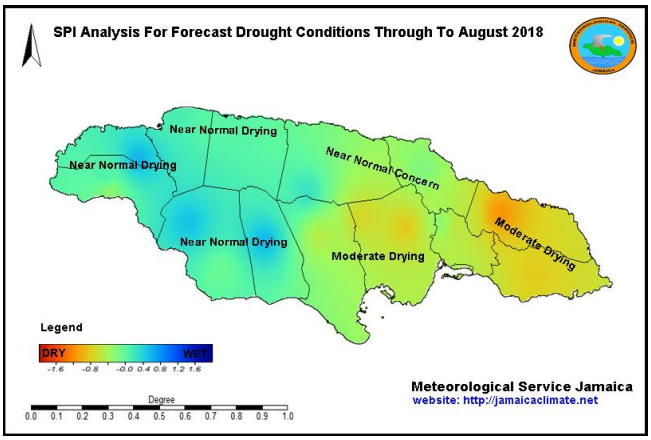

Figure 2: Forecast Drought Conditions through to August 2018

Seasonal Forecast – June to August 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 (June-August), the forecast models are indicating that Jamaica should receive below-normal rainfall; this period includes the mid-summer dry month of July. The forecast for above-normal temperatures remains consistent for the June-August 2018 period.

	% Below (B)	% Normal (N)	% Above (A)
Jamaica Rainfall Outlook	40	30	30
Jamaica Temperature Outlook	30	30	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 June to August 2018.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. For the June to August 2018 period, fourteen (14) of seventeen (17) stations are indicating higher probabilities for below-normal rainfall, one (1) station has a higher probability for normal rainfall and the remaining two (2) stations showing higher probabilities for above-normal rainfall.

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

Summary and Expected Agricultural Impacts

The below-normal rainfall received in May over Portland has resulted in drought conditions persisting across the parish. The above-normal rainfall received in St. Thomas and St. Mary has resulted in these parishes moving from drought conditions.

Although Westmoreland, Manchester, Clarendon, St. Catherine and Trelawny recorded above-normal rainfall in May, there were some farming communities in these parishes that continued to experience dry/drought conditions.

Should the forecast of below-normal rainfall over the June-August period materializes, conditions in Portland could become more severe. The risk, therefore, for the expansion of dry/drought conditions to more farming communities in the above mentioned parishes, is high. Therefore, drought monitoring and water management plans for farming communities, as well as, for other water users, should be implemented to lessen the impacts on crops and livestock, due to the likely deficits in rainfall amounts, during the 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.

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