# AGROMET BULLETIN

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## HIGHLIGHTS

- **All stations experienced above-normal rainfall and very wet conditions.**
- **Above normal rainfall resulted in repeat flooding in sections of eastern and central parishes.**
- **Above normal rainfall is forecast for most areas for June through August.**
- **Wet conditions in southern parishes now a concern for pest and disease outbreaks in farming areas.**
- **Above normal temperatures are forecast for June to August.**

**Weather Summary May 2017**

During the month of May, the daily weather was dominated by troughs and high pressure ridges. Throughout the month unstable weather conditions associated with these troughs, impacted weather conditions across the island. This resulted in flooding and landslides across eastern and central parishes.

During the month, Sangster in the northwest recorded 309.7 mm of rainfall, while Norman Manley in the southeast recorded 121.8 mm of rainfall. Sangster received 291% of its 30-year mean rainfall, while Manley received 162% of its 30-year mean rainfall. There were fourteen (14) rainfall days recorded for Sangster Airport, while Manley Airport recorded seven (7) rainfall days.

The highest maximum temperature recorded for Sangster Airport was 34.8°C (on May25) meanwhile Manley Airport reported 33.4°C (on May 31).

## 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 | 535 | 133 | 1.37 |
| Westmoreland | Savanna-La-Mar | 414 | 173 | 1.24 |
| Westmoreland | Frome | 426 | 149 | 1.29 |
| Manchester | Sutton | 626 | 253 | 2.23 |
| St. Elizabeth | Y.S. Estates | 432 | 132 | 1.17 |
| St. Elizabeth | Potsdam | 280 | 159 | 1.58 |
| Clarendon | Beckford Kraal | 589 | 253 | 2.16 |
| St. Catherine | Tulloch | 369 | 104 | 1.23 |
| St. Catherine | Worthy Park | 449 | 241 | 2.09 |
| Trelawny | Orange Valley | 303 | 338 | 2.46 |
| St. James | Sangster | 310 | 291 | 1.85 |
| St. Ann | Cave Valley | 632 | 329 | 3.15 |
| St. Mary | Hampstead | 290 | 202 | 0.78 |
| Portland | Shirley Castle | 431 | 140 | 1.61 |
| St. Thomas | Serge Island | 380 | 168 | 1.56 |
| KSA | Langley | 299 | 115 | 1.02 |
| KSA | Manley Airport | 122 | 182 | 1.11 |

***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-April-May period all seventeen (17) stations experienced wet conditions. Five stations namely, Suttons, Beckford Kraal, Worthy Park, Orange Valley and Cave Valley recorded exceptionally wet conditions, while Tulloch Sangster and Shirley Castle recorded extremely wet conditions. Three other stations, namely Mount Peto, Potsdam and Serge Island were severely wet, Savanna-La-Mar, Frome, Y.S. Estates, Langley and Manley Airport experienced moderately wet conditions, while Hampstead experienced abnormally wet conditions.

All seventeen stations across the island experienced from abnormal to exceptionally wet conditions for the three month period.

With wet conditions being experienced, the rains (over the March/April/May period) have provided relief from any dry conditions which were being experienced in farming communities. Central and eastern parishes in particular, may now be experiencing an excess in rainfall, which is a reversal of the conditions experienced during the dry season months of December to February. See Figure 1 below for the graphical representation of observed SPI values for the March-April-May period.

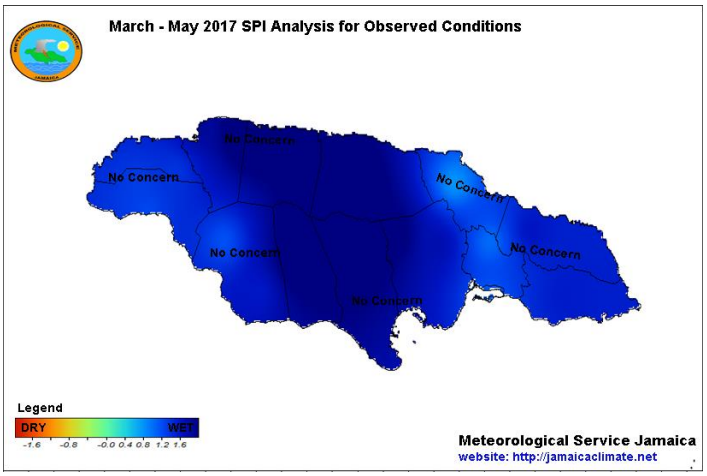


*Figure 1: March-April-May SPI Analysis for Observed Conditions*

The forecast through August (see Figure 2 below) has determined that there should be wet conditions over eastern and central parishes, with some mild drying over western parishes. This forecast may not be very welcomed by farmers in eastern and central parishes who would have fears of more damage from flooding as was experienced in May.

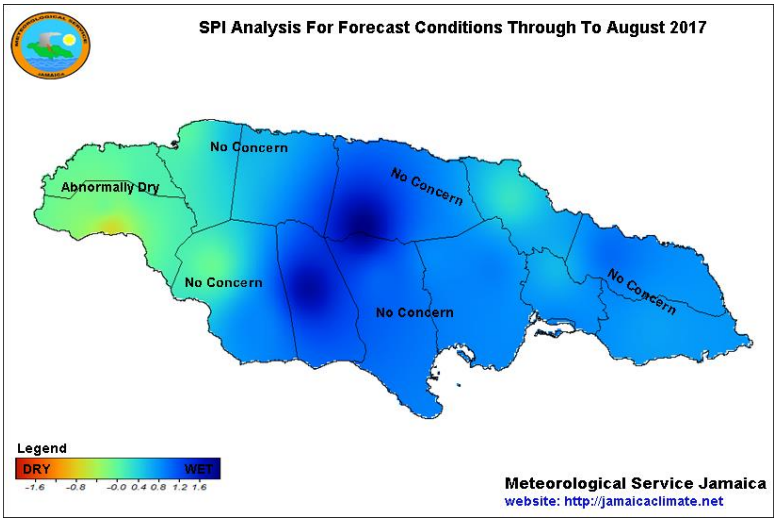


*Figure 2: Forecast Drought Conditions through to August 2017*

**Seasonal Forecast – June to August 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 (June/July/August) which includes the mid-Summer dry month of July, the forecasts are indicating above normal rainfall across most stations, with above normal temperatures.

Over the past three months (March, April and May) the island recorded significant increases in rainfall amounts, which offset the deficit in rainfall that was observed over most central and western parishes during the period of December through to February.

The current projections are not indicating any significant decline in rainfall amounts over the next three months (June-August). The rains experienced from March to May and which caused wet/flooding conditions in many farming areas, have also resulted in crop losses with outbreak of pests affecting some areas. Should the projections of more rains materialize, this could result in more concerns for crop damage in farming areas especially those in the eastern and central parishes.

| | % Below (B) | % Normal (N) | % Above (A) |
|---|---|---|---|
| **Jamaica Rainfall Outlook** | 30 | 25 | 45 |
| **Jamaica Temperature Outlook** | 30 | 20 | 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 June to August 2017.*

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. Eleven (11) of the seventeen (17) stations are indicating higher probabilities for above-normal

rainfall for the June to August 2017 period, while six (6) stations are indicating probability for below-normal rainfall.

| Stations | Below (B) % | Normal (N) % | Above (A)% |
|---|---|---|---|
| Manley (Kingston) | 20 | 30 | 50 |
| Sangster (St. James) | 20 | 30 | 50 |
| Savanna-la-mar (Westmoreland) | 60 | 25 | 15 |
| Beckford Kraal (Clarendon) | 20 | 25 | 55 |
| Serge Island (St. Thomas) | 55 | 25 | 20 |
| Cave Valley (St. Ann) | 10 | 20 | 70 |
| Tulloch Estate (St. Catherine) | 30 | 25 | 45 |
| Y.S. Estate (St. Elizabeth) | 20 | 25 | 55 |
| Hampstead (St. Mary) | 40 | 25 | 35 |
| Orange Valley (Trelawny) | 55 | 25 | 20 |
| Langley (Kingston) | 15 | 25 | 60 |
| Mount Peto (Hanover) | 40 | 25 | 35 |
| Shirley Castle (Portland) | 40 | 25 | 35 |
| Suttons (Manchester) | 10 | 15 | 75 |
| Potsdam (St. Elizabeth) | 20 | 25 | 55 |
| Frome (Westmoreland) | 30 | 25 | 45 |
| Worthy Park (St. Catherine) | 30 | 25 | 45 |

**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 2017.*

**Summary and Expected Agricultural Impacts**

The CPT is indicating that Jamaica is generally expected to experience above-normal rainfall during the June to August period.

With the rainfall received from March to May, the concerns would be for wet/flooding conditions and loss of crops in many farming communities therefore, the current forecast of no significant reduction in rainfall will be of concern to farmers especially in eastern and central parishes. Additionally the increased temperatures which are forecast could cause heat stress for animals and crops and therefore close monitoring is required in the farming communities.

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

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