# *NATIONAL AGROMET BULLETIN*


Issued by

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**October 2014**

# Highlights for October 2014

- **Most stations reporting moderate drought for the month of October.**
- **Below normal rainfall forecast to continue into January over some southern as well as some eastern parishes.**
- **Above normal Temperature forecast to continue for November through January.**



## Weather Summary for month of October 2014

Rainfall amounts differed significantly across the island for the month of October. While western parishes received about average rainfall, eastern parishes continued to see significant declines in rainfall. Most of the rainfall activities across the island during the month were mainly associated with migrating surface troughs.

During the month, Sangster in the northwest recorded 164.2 mm of rainfall, while Norman Manley in the southeast received 10.4 mm of rainfall. There were nine rainfall days reported for Sangster while Norman Manley International airports recorded had only one rainfall day. Manley received about 9% of average rainfall during the period, while Sangster received 1% above average (1971-2000 mean) or 102%.

The highest maximum temperatures recorded for Sangster Airport was 34.2°C (25th October) meanwhile 34.3°C (3rd October) was reported for Norman Manley Airport and it was noted that the extreme maximum temperature was exceeded at both airports.

## Standardized Precipitation Index (SPI)

The Standardized Precipitation Index (SPI), developed by T.B. McKee, N.J. Doesken, and J. Kleist in 1993, is based only on precipitation. One unique feature is that the SPI can be used to monitor conditions on a variety of time scales namely 1- month, 3-month, 6-monrth, 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.

**KEY**

| SPI Value | Category | | SPI Value | Category |
|---|---|---|---|---|
| **0 to -0.4** | Normal drought | | **0 to 0.4** | Normal Wetness |
| **-0.5 to -0.7** | Abnormally Dry (30%tile) | | **0.5 to 0.7** | Abnormal Wetness (70%tile) |
| **-0.8 to -1.2** | Moderate Drought (20%tile) | | **0.8 to 1.2** | Moderate Wetness (80%tile) |
| **-1.3 to -1.5** | Severe Drought (10%tile) | | **1.3 to 1.5** | Severe Wetness (90%tile) |
| **-1.6 to -1.9** | Extreme Drought (5%tile) | | **1.6 to 1.9** | Extreme Wetness (95%tile) |
| **-2.0 or less** | Exceptional Drought (2%tile) | | **2.0 or more** | Exceptional Wetness (98%tile) |

**Table 1. Rainfall and Drought Analysis for Selected Stations**

| Parish | Station | October Monthly Total (mm) | Percent of 30 year Mean (%) | SPI for October |
|---|---|---|---|---|
| **Hanover** | Mount Peto | 185 | 52 | -1.2 |
| **Westmoreland** | Sav-la-mar | 148 | 62 | -0.7 |
| **Manchester** | Sutton | 78 | 31 | -0.4 |
| **St. Elizabeth** | Y.S Estates | 248 | 84 | -0.8 |
| **St. Elizabeth** | Potsdam | 169 | 69 | -1.1 |
| **Clarendon** | Beckford Kraal | 74 | 28 | -1.2 |
| **St. Catherine** | Tulloch | 116 | 49 | -0.9 |
| **Trelawny** | Orange Valley | 133 | 89 | 0.4 |
| **St. James** | Sangster | 164 | 102 | 0.4 |
| **St. Ann** | Cave Valley | 138 | 69 | -0.6 |
| **St. Mary** | Hampstead | 54 | 39 | -0.6 |
| **Portland** | Shirley Castle | 104 | 26 | -1.2 |
| **St. Thomas** | Serge Island | 49 | 18 | -0.6 |
| **KSA** | Langley | 229 | 64 | -0.1 |
| **KSA** | Manley Airport | 10 | 9 | -1.2 |

## Standardized Precipitation Index Discussion

Seven of fifteen stations were showing moderate drought conditions while four stations reported abnormally dry conditions to the end of October. The continued dry conditions is a result of the deficiency in rainfall that has plagued the island for the greater portion of the year and the month of October was not very different as evidenced by the below normal rainfall amounts reported at fourteen of fifteen stations.

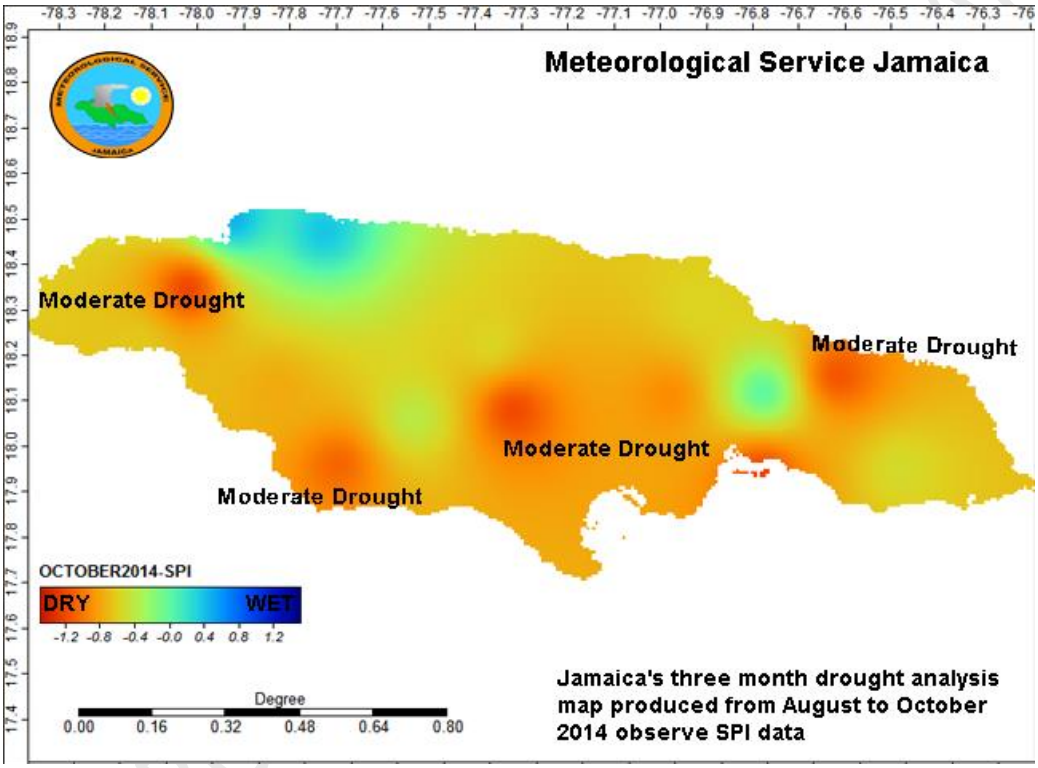


**Fig.1 Station observed drought conditions for October 2014**

## Precipitation Forecast – November 2014 to January 2015

Through the period, the forecasts from the Global Dynamic Models indicate below normal rainfall with warmer than normal temperatures likely to continue across the Caribbean. However, findings from the CPT showed mixed results due to the very low confidence in the sea surface temperature signals. Fifteen rainfall stations were examined across the island, of which eight are likely to receive near normal to below normal rainfall, while seven stations are likely to

have above normal rainfall during the period. Stations across southern parishes are indicating low forecast confidence of above normal rainfall.

The pending El Niño conditions as well as drier than normal atmospheric conditions across much of the Caribbean continues to be the main reasons for forecasting below average rainfall as well as warmer than normal temperatures across most areas of the island.

**Table 2. Climate Predictability Tool (CPT) Outlook NDJ 2014/15.**

| Stations | Below (B) % | Normal (N) % | Above (A) % |
|---|---|---|---|
| Manley (Kingston) | 35 | 33 | 32 |
| Sangster (St. James) | 40 | 31 | 29 |
| Sav. (Westmoreland) | 44 | 31 | 25 |
| Beckford (Clarendon) | 28 | 31 | 41 |
| Serge Island (St. Thomas) | 45 | 34 | 21 |
| Cave Valley (St. Ann) | 28 | 33 | 39 |
| Tulloch Estate (St. Cath.) | 36 | 34 | 30 |
| Y.S. Estate (St. Elizabeth) | 30 | 29 | 41 |
| Hampstead (St. Mary) | 40 | 31 | 29 |
| Orange Valley (Trelawny) | 44 | 29 | 27 |
| Langley (Kingston) | 37 | 30 | 34 |
| Mount Peto (Hanover) | 34 | 31 | 36 |
| Shirley Castle (Portland) | 29 | 31 | 40 |
| Suttons (Manchester) | 21 | 29 | 50 |
| Potsdam (St. Elizabeth) | 18 | 29 | 53 |
| **Jamaica** | **35** | **31** | **34** |

## 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

## Drought Forecast – December 2014(looking back three months)

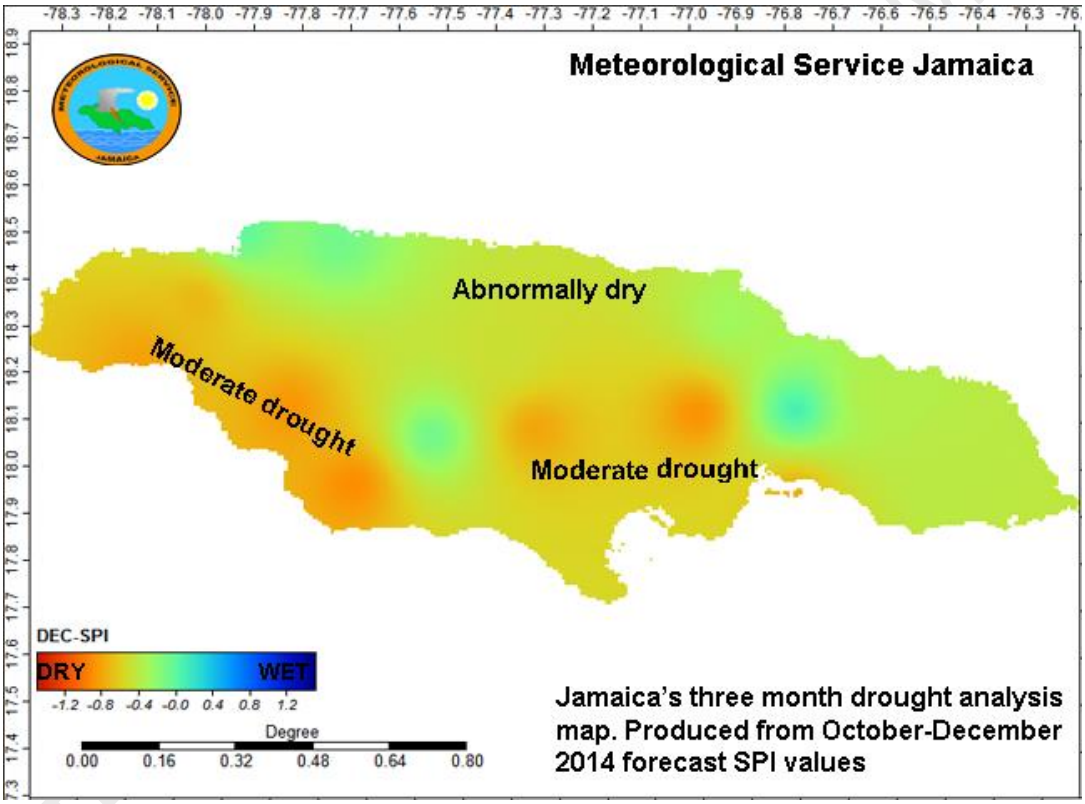


**Fig.2 Expected drought conditions by end of December 2014**

| Location | Below (B) % | Normal (N) % | Above (A) % |
|---|---|---|---|
| **Jamaica Temperature Outlook** | 10 | 25 | 65 |

## Summary and Expected Agricultural Impacts

The models are predicting a slight improvement in drought conditions over some parishes however this will be short lived as the dry season begins in December and the forecast for below normal activity will result in areas reporting drought very early in 2015. Plans will therefore need to be in place by the end of the year in the various sectors in preparation or the dry conditions ahead.