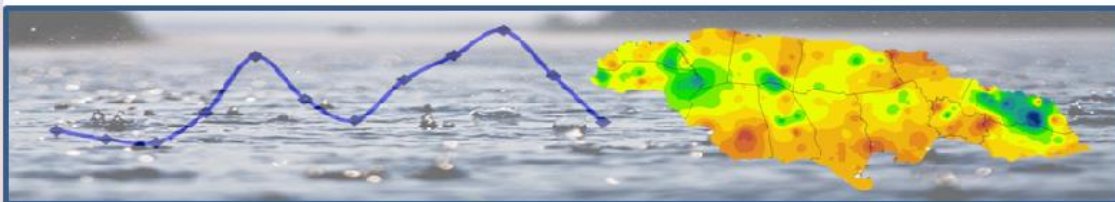




Monthly Rainfall Summary



January 2017

Introduction

This rainfall summary is prepared by the Climate Branch of the Meteorological Service, Jamaica. The Meteorological Service maintains a network of over two hundred (200) rainfall stations located across the island. Rainfall is usually read at 7:00 a.m. and reported for the previous 24 hours. These readings are done by a cadre of paid but mainly voluntary dedicated observers.

General

Jamaica's bimodal rainfall pattern consists of two peak periods with higher values of rainfall and corresponding periods of lower rainfall. The primary peak occurs in October and the secondary in May. The lowest amounts are at a minimum during the period February to March and the month of July. This is based on long-term reports but deviations from this pattern do occur year to year.

A comparison of the old 30-year mean (1951-1980) with the 1971-2000 mean by the Meteorological Service has shown that the island's rainfall patterns and values have not changed significantly for the current thirty-year (1971-2000) period. The main changes noted are that of wetter dry periods and drier wet periods. This has however not affected the

overall rainfall pattern for the island as seen in Figure 1 below.

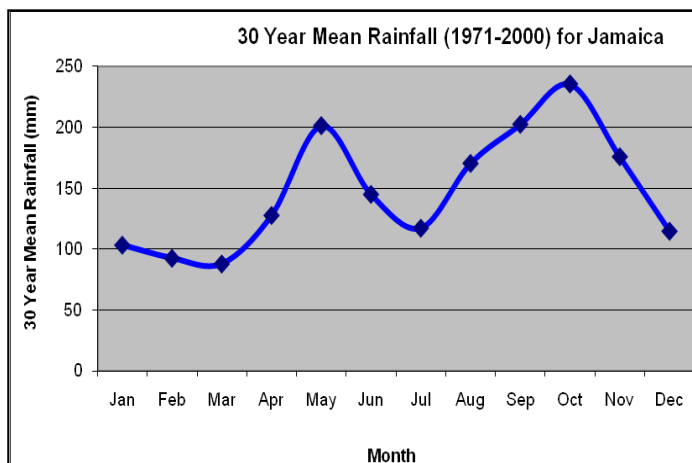


Figure 1: Precipitation Pattern from 1971-2000 for Jamaica.

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HIGHLIGHTS FOR JANUARY

- Most parishes received below-normal rainfall in January.
- Rainfall analysis indicated **severe drought** for Trelawny Hanover, Manchester and Clarendon.
- Below-normal rainfall is forecast for February through to April.

Island Monthly Rainfall

For January 2017, twelve (12) of thirteen (13) parishes¹ recorded below-normal rainfall. Overall, the island’s average January rainfall was 51 mm which corresponds to nearly 50% of the 30-year (1971-2000) monthly mean. In general, nearly all parishes received below-normal rainfall with the exception being St. Ann which recorded rainfall above its 30-year monthly mean.

Cumulative (accumulated) mean rainfall for Jamaica for January 2017 was 51 mm, or 50% of the 30-year (1971-2000) mean.

Parish Mean Rainfall for January 2017 and January 2016							
		JAN	JAN	JAN	% OF 30 YR NORMAL		
Parishes	KEY	2017	2016	30 YR NORMAL (1971-2000)	2016	2016	2017
					NOV	DEC	JAN
Hanover	HAN	33	52	94	20	23	35
Westmoreland	WES	54	61	70	12	26	77
Manchester	MAN	11	35	61	45	34	17
St. Elizabeth	STE	26	40	66	62	72	40
Clarendon	CLA	11	11	45	64	46	24
St. Catherine	STC	27	32	53	110	79	51
Trelawny	TRE	27	135	92	63	31	30
St. James	STJ	52	68	67	70	43	77
St. Ann	STA	107	100	106	137	152	102
St. Mary	STM	61	110	181	116	87	34
Portland	POR	184	161	346	170	90	53

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



St. Thomas	STT	33	39	94	95	77	35
Kgn. & St. And.	KSA	42	23	70	139	101	61
Jamaica	JAM	51	67	103	101	74	50

Table 1: Parish Mean Rainfall for January 2017 and January 2016 (rainfall in mm).

Assessment of Parish Rainfall

Twelve of thirteen parishes recorded rainfall below their respective 30-year (1971-2000) means, with seven of these twelve recorded less than 50% of their normal rainfall for January. One parish recorded rainfall above its 30-year mean for January. The parish rainfall figures indicate the following:

- The parishes recording less than 50% of their normal rainfall were **Manchester (17%) or 11mm, Clarendon 24% or 11mm, Trelawny (30%) or 27mm, St. Mary (34%) or 61mm, Hanover (33%) or 35mm, St. Thomas (35%) or 33mm, and St. Elizabeth (40%) or 26mm.**
- The parishes recording more than 50% but less than their normal rainfall were **St. Catherine (51%) or 27mm, Portland (53%) or 184mm, KSA (61%) or 42mm, St. James (77%) or 52mm, and Westmoreland (77%) or 54mm.**
- The parish recording above-normal rainfall was **St. Ann (102%) or 107mm.**

Meteorological Drought Methodology and Index

Locally, the onset and the duration of a meteorological drought is determined by comparing the average rainfall over a period of two consecutive months with the 30-year historical averages (normal) for a similar bi-monthly period for each parish and the island. The percentage value that is generated is used to quantify the thresholds of the drought index (see Table 2). This index is similar to that used by the Australian Meteorological Service, except that bi-monthly periods are used locally instead of eight consecutive weeks.

Drought is defined as a long period of weather without rain (Heinemann English Dictionary). The more precise definitions for specific areas of concern that are most commonly used are:

- Agricultural drought* – a period when soil moisture is inadequate to meet the demands for crops to initiate and sustain plant growth.
- Hydrological drought* – period of below average or normal stream-flow and/or depleted reservoir storage.
- Meteorological drought* – a period of well-below average or normal precipitation (rainfall) that spans from a few months to a few years.



The Drought Index is calculated as follows:

$$\text{Drought Index} = \{(\text{Month 1} + \text{Month 2}) / (\text{Normal month 1} + \text{Normal month 2})\} \times 100$$

Percentage of Normal for 2 Consecutive Months	Drought Condition or Status
20% or less	Extreme Drought
21% to 40%	Severe Drought
41% to 60%	Normal Drought
Above 60%	No Drought

Table 2: Meteorological Drought Index

Island Drought Assessment

Drought Indices (%) for October 2016 to January 2017			
Parishes	Oct/Nov	Nov/Dec	Dec/Jan
Hanover	41	21	29
Westmoreland	51	17	51
Manchester	90	42	26
St. Elizabeth	99	66	55
Clarendon	92	58	35
St. Catherine	127	99	66
Trelawny	122	47	30
St. James	95	58	57
St. Ann	192	143	128
St. Mary	159	103	62
Portland	180	135	72
St. Thomas	78	89	58
Kingston & St. Andrew	118	126	82
Jamaica	115	90	63

Table 3: Parish Drought Indices (%) for October 2016 to January 2017

Based on the indices, eight parishes experienced drought conditions during the December/January bi-monthly period. Severe drought conditions were experienced by **Hanover**, **Manchester**, **Clarendon** and **Trelawny**. Four other parishes reported normal drought conditions for this bi-monthly period namely: **St. James**, **Westmoreland**, **St. Elizabeth** and **St. Thomas**.

**Precipitation Outlook: February to April 2017**

The rainfall outlook for February to April 2017 indicates a general pattern of below normal rainfall for most areas examined during the period. At the end of January there is significant deficit in rainfall received across western and central parishes and coupled with the current projections of below normal activity this drying will continue and possibly spread over the next three months.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. Thirteen (13) of the seventeen (17) stations are indicating higher probabilities for below normal rainfall for the February to April 2017 period, another three (3) stations are indicating probabilities for normal rainfall while, one station, Suttons is indicating above-normal activity.



Stations	Below (B) %	Normal (N) %	Above (A)%
Manley (Kingston)	33	33	33
Sangster (St. James)	33	33	33
Savanna-la-mar (Westmoreland)	33	33	33
Beckford Kraal (Clarendon)	40	30	30
Serge Island (St. Thomas)	40	30	30
Cave Valley (St. Ann)	40	30	30
Tulloch Estate (St. Catherine)	40	30	30
Y.S. Estate (St. Elizabeth)	40	20	40
Hampstead (St. Mary)	40	30	30
Orange Valley (Trelawny)	40	35	25
Langley (Kingston)	40	30	30
Mount Peto (Hanover)	40	30	30
Shirley Castle (Portland)	40	30	30
Suttons (Manchester)	35	20	45
Potsdam (St. Elizabeth)	40	30	30
Frome (Westmoreland)	40	30	30
Worthy Park (St. Catherine)	40	30	30
<p>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</p>			

Table 4: Precipitation Outlook for Selected Stations for February to April 2017

Forecast Verification for February to April 2016

For the same period last year, the performance from the models were lower than expected. Although the initial forecast did indicate that rainfall was likely to remain below normal, most stations did record higher than normal rainfall amount. This was due mainly to improvement in the environmental conditions across the Caribbean basin.



Summary

Twelve parishes recorded rainfall that was less than their respective 30-year (1971-2000) means, while one parish recorded rainfall of more than 100% of its 30-year mean. Seven parishes recorded rainfall of less than 50% of their 30-year means. Jamaica received rainfall of 50% of what is normal for the month of January.

For the December/January bi-monthly period, Trelawny, Hanover, Manchester and Clarendon experienced severe drought conditions. Four other parishes namely, St. James, Westmoreland, St. Elizabeth and St. Thomas experienced normal drought conditions. Eight parishes reporting drought conditions is an increase by two when compared to the November/December period when six parishes reported drought.

With a forecast of below-normal rainfall activity and with the deficit in rainfall over nearly all parishes, drought conditions could affect more parishes and therefore result in the island possibly reporting drought conditions during the next three months. **Action to alleviate the current drought situation especially for areas reporting severe drought is urgently required to prevent significant damage for the agricultural sector.**