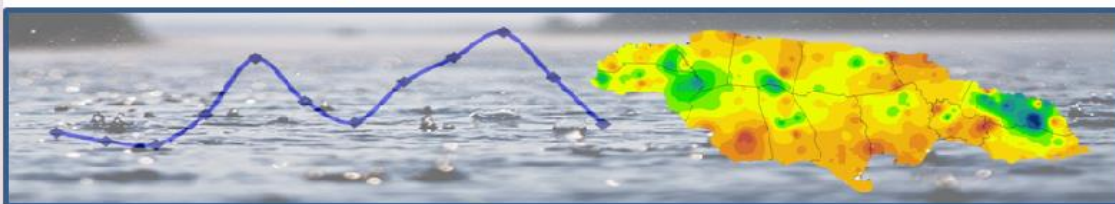




Monthly Rainfall Summary



May 2017

Introduction

This rainfall summary is prepared by the Climate Branch of the Meteorological Service, Jamaica. The Meteorological Service maintains a network of approximate 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.

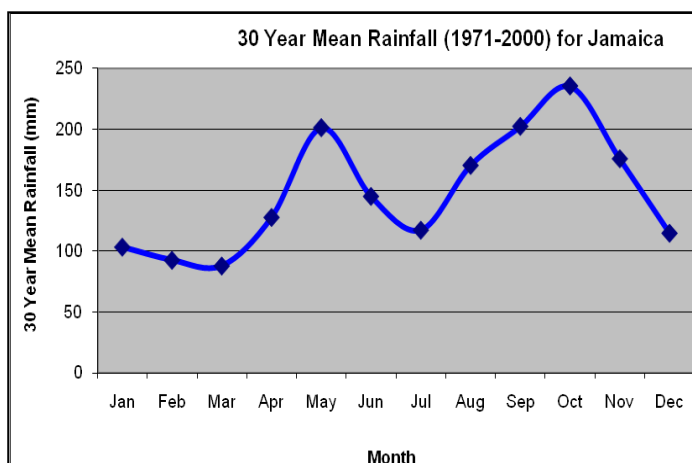


Figure 1: Precipitation Pattern from 1971-2000 for Jamaica.

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HIGHLIGHTS FOR MAY

- All parishes received above-normal rainfall in May.
- Rainfall analysis indicated that all parishes were above drought conditions.
- Above-normal rainfall is forecast for June through to August.

Parish Mean Rainfall for May 2017 and May 2016							
Parishes	KEY	MAY	MAY	MAY	% OF 30 YR NORMAL		
		2017	2016	30 YR NORMAL (1971-2000)	2017	2017	2017
					MAR	APR	MAY
Hanover	HAN	380	362	309	140	135	123
Westmoreland	WES	399	276	274	125	116	145
Manchester	MAN	445	136	235	197	177	190
St. Elizabeth	STE	326	150	262	163	125	125
Clarendon	CLA	420	154	139	195	394	302
St. Catherine	STC	410	179	156	296	336	264
Trelawny	TRE	293	222	141	175	166	207
St. James	STJ	395	234	189	189	134	209
St. Ann	STA	389	278	158	262	203	247
St. Mary	STM	280	151	148	147	114	190
Portland	POR	677	558	292	277	234	232
St. Thomas	STT	404	388	162	180	407	249
Kgn. & St. And.	KSA	236	200	152	162	151	155
Jamaica	JAM	389	253	201	198	194	193

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



Island Monthly Rainfall

For May 2017, all thirteen (13) parishes¹ recorded above-normal rainfall. Overall, the island's average rainfall in May was 389 mm which corresponds to 193% of the 30-year (1971-2000) monthly mean. In general, all parishes recorded rainfall which was above their 30-year monthly means and range from 123% (Hanover) to 302% (Clarendon).

Cumulative (accumulated) mean rainfall for Jamaica for the five months of 2017 was 940 mm, or 153% of the 30-year (1971-2000) mean.

Assessment of Parish Rainfall

All thirteen parishes recorded rainfall above their respective 30-year (1971-2000) means, one parish recording over 300% and six other parishes recording over 200%. The parish rainfall figures indicate the following:

- The parishes recording from 101% to 200% of their normal were **Hanover (123%) or 380mm, St. Elizabeth (125%) or 326mm, Westmoreland (145%) or 399mm, KSA (155%) or 236mm, St. Mary (190%) or 280mm, and Manchester (190%) or 445mm.**
- The parishes which recorded more than 200% of their normal rainfall were **Trelawny (207%) or 293mm, St. James (209%) or 395mm, Portland (232%) or 677mm, St. Ann (247%) or 389mm, St. Thomas (249%) or 404mm, St. Catherine (264%) or 410mm and Clarendon (302%) or 420mm.**

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

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

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.



periods are used locally instead of eight consecutive weeks.

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 February to May 2017			
Parishes	Feb/Mar	Mar/Apr	Apr/May
Hanover	96	137	127
Westmoreland	103	120	136
Manchester	165	184	184
St. Elizabeth	144	139	125
Clarendon	146	305	332
St. Catherine	227	320	290
Trelawny	109	169	191
St. James	124	155	184
St. Ann	163	229	231
St. Mary	84	128	153
Portland	171	253	233
St. Thomas	121	310	306
Kingston & St. Andrew	125	156	154
Jamaica	137	195	193

Table 3: Parish Drought Indices (%) for February to May 2017

Based on the indices, no parish reported drought condition during the bi-monthly period April/May. This makes three consecutive bi-monthly periods with no drought.

**Precipitation Outlook: June to August 2017**

As we approach the next three months (June/July/August) which includes the mid-Summer dry month of July, the forecasts are indicating above normal rainfall across most stations.

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 period of December through to February.

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

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 the 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
<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 June to August 2017

Forecast Verification for June to August 2016

For the same period last year, the model performed below average with accuracy ranging from about 25-60 percent. The initial forecast indicated that rainfall was likely to remain above normal for the period. Throughout the period most stations recorded near normal to below normal rainfall amounts.

**Summary**

All thirteen parishes recorded rainfall that were above their respective 30-year (1971-2000) means. Six parishes recorded rainfall of more than 100% but less than 200%, of their 30-year means, six other parishes recorded more than 200% of their 30-year monthly means and one parish recorded more than 300% of its 30-year monthly mean. Jamaica received rainfall of 193% of what is normal for the month of May.

For the April/May bi-monthly period, there was no report of drought. This meant three consecutive bi-monthly periods in 2017 (Feb/Mar, Mar/Apr and Apr/May) for which there was no drought.

Should the current forecasts of above-normal rainfall for June to August materialize, then it could bring more concerns in areas which experienced flooding, since there are outbreak of pests, and concerns for disease outbreaks (including vector borne) due to the rains.