



METEOROLOGICAL SERVICE JAMAICA **CLIMATE BRANCH**

MONTHLY RAINFALL SUMMARY FOR MAY 2013 **(PRELIMINARY)**

Introduction

This rainfall summary is prepared by the Climate Branch of the Meteorological Service, Jamaica. The Meteorological Service maintains a network of over one hundred and fifty (150) rainfall stations located across the island. Rainfall is usually read at 7am by a cadre of paid but mainly voluntary dedicated observers and reported for the previous 24 hours.

General

Jamaica's bimodal rainfall pattern consists of two peak periods with higher values of rainfall and corresponding periods of lower rainfall amounts. 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 and deviations from this pattern do occur year to year.

A comparison of the old 30 year mean (1951-80) 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.

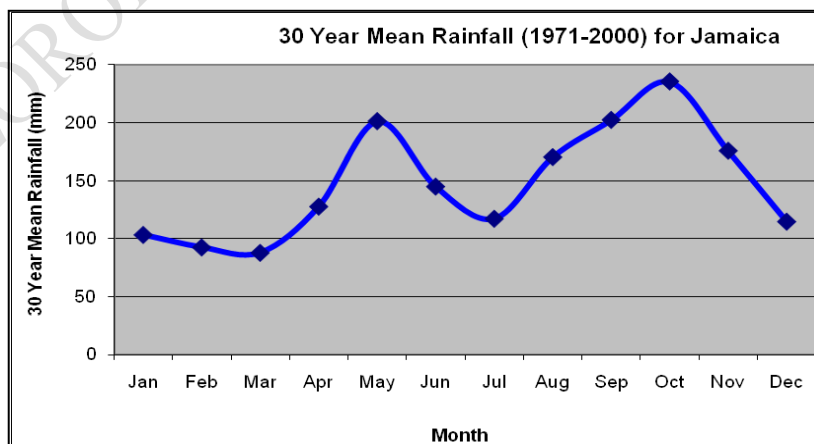


Figure 1: Precipitation Pattern for 1971-2000 for the island of Jamaica.

Island Monthly Rainfall

The month of May represents the peak in the early rainfall season of April, May and June. May 2013 recorded above normal rainfall for most parishes. Surface Troughs were the dominant synoptic feature that determined the weather conditions. May 2013 compared to May 2012 indicates that the island mean was 66mm more than that recorded in 2012. The cumulative island rainfall to the end of May was 359 mm, representing 59% of the normal rainfall expected to date.

<u>Parish Mean Rainfall for May 2013</u>							
(Rainfall in mm)							
		MAY	MAY	MAY	% OF 30 YR NORMAL		
		2013	2012	30 YR NORMAL (1971-2000)	2013	2013	2013
Parishes	KEY				MAR	APR	MAY
Hanover	HAN	222	249	309	62	78	72
Westmoreland	WES	179	258	274	21	90	65
Manchester	MAN	258	273	235	72	94	110
St. Elizabeth	STE	211	160	262	55	124	81
Clarendon	CLA	155	78	139	43	26	112
St. Catherine	STC	241	141	156	56	68	155
Trelawny	TRE	236	133	141	92	67	167
St. James	STJ	193	139	189	73	136	102
St. Ann	STA	137	118	158	127	66	87
St. Mary	STM	64	84	148	82	31	44
Portland	POR	433	131	292	116	26	148
St. Thomas	STT	246	47	162	98	50	152
Kgn. & St. And.	KSA	167	75	152	63	58	110
Jamaica	JAM	211	145	201	78	70	105

Table 1: Parish Mean Rainfall for May 2013 (Rainfall in mm)**Assessment of Parish Figures**

The monthly average rainfall for the island for May was 105% of the normal (1971-2000). The island therefore recorded 5% above normal rainfall for May, 2013.

- Eight parishes also recorded above normal rainfall. These were;
Trelawny with 236mm recorded the highest percentage of normal at 167%. The other parishes exceeding their normals were (in descending order); **St. Catherine** 155% or 241mm, **St. Thomas** 152% or 246mm, **Portland** 148% or 433mm, **Clarendon** 112% or 155mm, **Manchester** and **KSA** both with 110% or 258mm and 167mm respectively and **St. James** 102% or 193mm.
- Five parishes recorded below normal rainfall for the month. These were;
St. Mary- 44% or 64mm, **Westmoreland**- 65% or 179mm, **Hanover**- 72% or 222mm, **St. Elizabeth** 81% or 211mm and **St. Ann**- 87% or 137mm.

Kindly note that Kingston and St. Andrew are combined and reported as one).

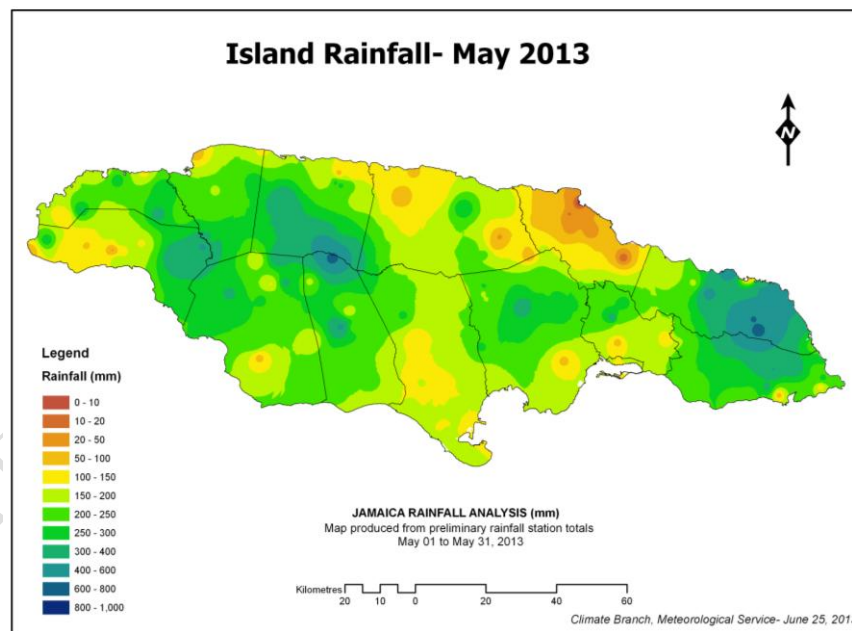


Fig.2. Distribution of Jamaica's Rainfall for May 2013

Drought Conditions

Definition

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 few years.

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 that is presented in Table 2.

This index is similar to that used by the Australian Meteorological Service except for the duration of eight consecutive weeks instead of bi-monthly periods that is used locally.

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

Drought Conditions

Drought Indices (%) for February to May 2013			
Parishes	Feb/Mar 2013	Mar/Apr 2013	Apr/May 2013
Hanover	58	71	74
Westmoreland	38	63	74
Manchester	59	86	103
St. Elizabeth	52	99	98
Clarendon	67	34	83
St. Catherine	62	63	123
Trelawny	85	77	128
St. James	88	112	113
St. Ann	102	92	79
St. Mary	64	53	37
Portland	80	66	90
St. Thomas	78	71	115
KSA	46	60	90
Jamaica	68	73	91

Table 3: Drought indices (%) for February to May 2013

Table 3 is calculated as follows:

Values = {(Month 1 + Month 2) / (Normal month 1 + Normal month 2)} x 100

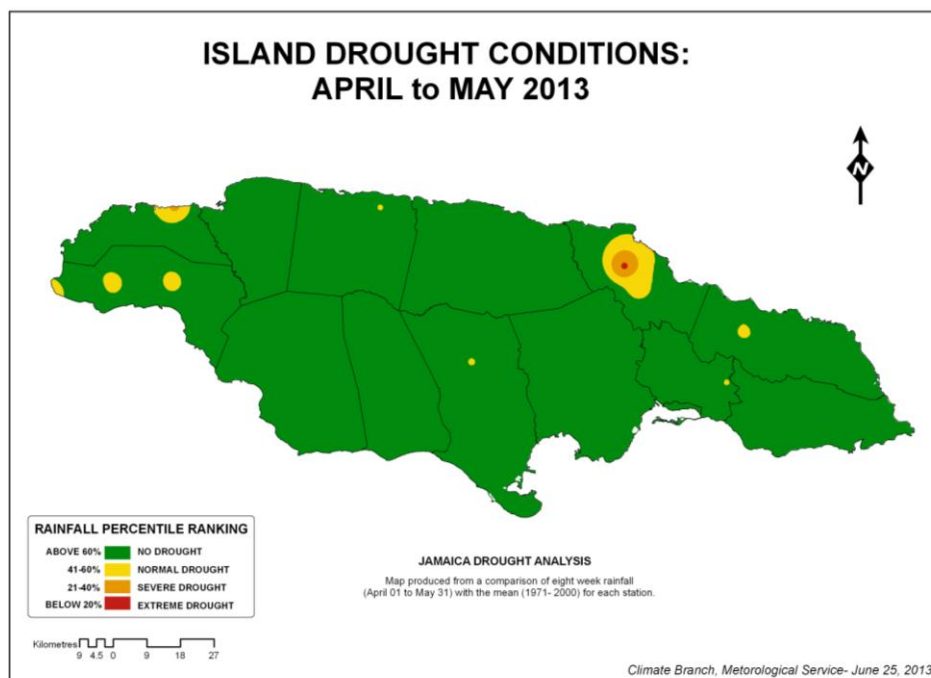


Fig.3. Drought Analysis for April/May 2013

Drought Assessment

The drought assessment for the bi-monthly period April to May 2013 (see Table 3) indicates that only St. Mary experienced drought. All other parishes therefore remained above drought conditions for the period, an improvement on the previous bimonthly period (March to April), where three parishes experienced drought. Localized areas of a few parishes however experienced drought conditions, in some cases, this despite the parish drought index indicating above drought. In Westmoreland, interior areas (Masemure and Shrewbury- 55% and 48% respectively) and the western region (Negril- 43%) recorded normal drought. Tryall in Hanover reported severe drought (37%). There were also stations in Clarendon, Trelawny, KSA and St. Thomas reporting normal drought conditions. The worst case however was Hampstead in St. Mary, which reported extreme drought (18%).

FORECAST**Precipitation Outlook for the period March to May 2013**

The Global Dynamic Models are forecasting that the Caribbean including Jamaica will be moving towards a period of above normal rainfall, as well as warmer than normal air temperatures for the period June through to August. This correlates well with the outlook from the statistical climate predictability tool (CPT) for Jamaica for the same period. The model demonstrated a high level of confidence in forecasting an above normal rainfall season for all stations analysis across the island.

Of a total of ten stations that were examined, ten showed an above normal rainfall pattern, with relatively high confidence strong.

The overall average for Jamaica reflects an above normal rainfall pattern for the period June through to August with higher probabilities over central and western parishes.

Table 4. Climate Predictability Tool (CPT) Station Outlook values.

Stations	Below (B) %	Normal (N) %	Above (A) %
Manley (Kingston)	29	33	38
Sangster (St. James)	20	30	50
Sav. (Westmoreland)	22	32	45
Beckford (Clarendon)	15	28	56
Serge Island (St. Thomas)	22	31	47
Cave Valley (St. Ann)	17	29	54
Tulloch Estate (St. Cath)	26	31	43
Y.S. Estate (St. Elizabeth)	28	33	39
Hampstead (St. Mary)	29	33	38
Orange Valley (Trelawny)	20	30	50
Jamaica	22	31	48

SUMMARY

The rainfall distribution map for May (fig. 2) indicates that the most significant rainfall was concentrated over hilly interior areas of central and western parishes as well as extreme eastern sections of eastern parishes. The northern portions of St. Mary recorded the lowest rainfall totals, while in the west, sections of Hanover and Westmoreland also recorded low rainfall totals. Except for St. Mary, most parishes are moving further away from drought conditions.

The precipitation outlook is forecasting above normal rainfall for the period June to August, with confidence being especially high over central and western parishes. The cumulative rainfall remains low at two thirds of normal and it would be good if the expected increase in rainfall is enough to close that gap.

METEOROLOGICAL SERVICE, JAMAICA