

# Drought and Precipitation Statement for Antigua - March 2016



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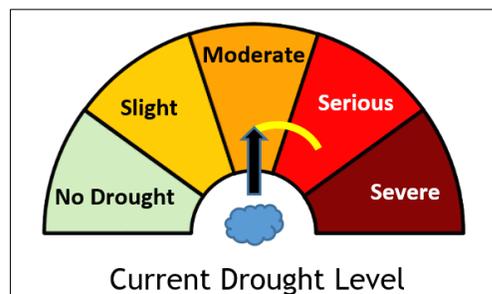
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**...Worst drought on record enters 34<sup>th</sup> month...**

## Statement

Near normal rainfall for March has resulted in the drought easing to **moderate levels**. The island-average rainfall for the month was 47.0 mm (1.85 in), wetter than the previous two Marches combined and wetter than 10 of the last 14 months.

A number of rainfall records were again broken since the start of the drought **33 months** ago. Specifically, there has been **record low rainfall** over the past 11, 12, 13, 15, 16, 21, 22, 23...33 months (see table 1). In addition to being the driest of any similar period ending March, the past 15, 16, 26, 27, 29, 31 and 32 months are the absolute driest ending any month.



The intensity of drought is based on the rainfall deficit of the previous three months, using the deciles approach. With the exception of September-October-November (SON) 2015 and JFM 2016, all “seasons” – overlapping three-month intervals, for the past 14 months had rainfall totals in the bottom 10% of all totals for the respective periods. This means that the drought has been mostly at serious levels or worse for over a year.

Another indicator of the drought intensity is the Standardized Precipitation Index or **SPI** for the 3-month time scale. As of the end of March, island-average SPI stood at **-0.77**. This means that JFM was deemed slightly dry, based on the [regional climate centre SPI classification 2011](#).

The current drought, which started in **July 2013**, is the worst on record. It is now the longest drought on record, surpassing that of 1964-1967. Of the 71 droughts on record, it has the greatest rainfall deficit of **1168 mm** (46 in); the next highest is 889 mm (35 in) caused by the 1964-1967 and 1929-1931 droughts. Of droughts lasting at least 18 months, it is the fourth in intensity of a total of twelve.

For the period of the ongoing drought, it is the driest of the (86) **similar** 33-month time intervals ending March and the fourth driest of any consecutive 33 months, of which there are 1022 on record. In other word, only three consecutive 33-month periods have been drier since, at least, 1928.

Based on our latest analyses, near to below normal and below normal rainfall is being forecast for [April-June](#) and [July-September](#) respectively. Given these and [other forecasts](#), it is likely that the **drought will continue into the second half of the year**.

PERIOD	RAINFALL				RAINFALL RECORD – 1928 to 2016			
	Previous Month(s)	Actual	Normal (1981 – 2010)	Anomaly (1981 – 2010)	Description of Actual	Max	Year	Min
1(Mar)	1.85	2.04	- 0.19	Near normal	8.90	1967	0.36	1930
3(Jan-Mar)	4.80	6.93	- 4.01	Below normal	12.95	1937	1.82	1931
6(Oct-Mar)	14.46	23.09	- 8.63	Well below normal	38.52	1999	10.47	2000
9(Jul-Mar)	21.08	36.89	- 15.81	Well below normal	55.26	1936	19.95	1930
12(Apr-Mar)	23.87	46.56	- 22.69	Record low	71.72	1951	23.87	2015
24(Apr-Mar)	59.20	94.09	- 34.89	Record low	131.61	1951	59.20	2014

Table 1: Rainfall (inches) over the past 24 months. (For records, the year given marks the start of the period).

## Related Products

Climate outlooks: [April](#), [April-June 2016](#), [July-September 2016](#), [April-September 2016](#), [Drought](#)

Other statements: [Temperature](#), [Wet Season](#), [Dry Season](#)

## Definition

[Drought in general means](#) water shortage and rainfall deficiency. [Meteorological \(climatological\) drought](#) is defined in terms of the magnitude of a precipitation shortfall/deficit and the duration of this shortfall event. This is assessed by first examining the rainfall periods of three months or more for selected places to see whether they lie below the 30th percentile (lowest 30% of the historical records or below the 3 decile). The approach used to determine the rainfall deficit is an adjusted version of the decile method developed by Gibbs and Maher (1967). An adjusted version of this method is used as the measurement of droughts within the Australian Drought Watch System.

The drought levels, based on consecutive three-month historical data, are defined as follow:

- **Slight:** rainfall ranges from less than 30<sup>th</sup> percentile to the 20<sup>th</sup> percentile
- **Moderate:** rainfall ranges from less than the 20<sup>th</sup> percentile to the 10<sup>th</sup> percentile
- **Serious:** rainfall ranges from less than the 10<sup>th</sup> percentile to the 5<sup>th</sup> percentile
- **Severe:** rainfall less than the 5<sup>th</sup> percentile

The level of a drought period/episode (drought lasting three or more months) is described based on the maximum consecutive three-month rainfall deficit.

Probability of drought:

- **Slight chance:** 5 to 25% chance of occurring
- **Chance:** 30 to 55% chance of occurring
- **Likely:** 60 to 75% chance of occurring
- **Highly likely/expected:** Greater than or equal to 80% chance of occurring

Rainfall Description used on the 1981 to 2010 rainfall dataset:

- **Well below normal:** Rainfall totals in the lowest 10% of the dataset
- **Below normal** (lower or less than usual): Rainfall totals in the lowest 33.3% of the dataset
- **Near normal** (normal or usual): Rainfall totals in the middle 33.3% of the data
- **Above normal** (more or higher than usual): Rainfall totals in the highest 33.3% of the dataset
- **Well above normal:** Rainfall totals in the highest 10% of the dataset
- **Rainfall:** Island average, based on rainfall at the Airport and Green Castle

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