

Drought and Precipitation Statement for Antigua - November 2015



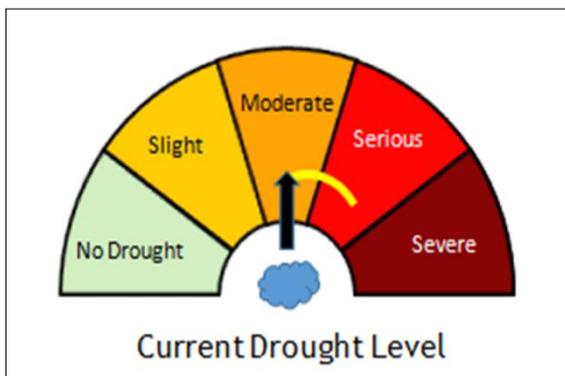
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...Drought has eased to moderate levels...record low rainfall for a number of periods...

Statement

Near normal rainfall for November has eased the drought from serious to moderate levels. The island-average rainfall for the month was 4.16 inches. Easily, this has been the wettest month of the year, thus far. It is also only one of four months with more than four inches of rain since December 2013. Unlike the past two months, November's rainfall was fairly uniformly spread across the island.



A number of rainfall records were again broken over the past 29 months, since the drought started. Specifically, there has been **record low rainfall** over the past 6, 7, 8, 9, 10, 11, 18, 21, 22, 23, 24, 25, 26, 27, 28 and 29 months (see table 1).

The intensity of drought is based on the rainfall deficit of the previous three months. The preceding six "seasons": March-May (spring), April-June, May-July, June-August (summer 2015), July-September and August-October (ASO) had rainfall totals in the bottom 10% of all totals for the respective periods, with the first five falling in the bottom 5%. For the "autumn" September-November (SON), the rainfall total falls in the range of 10 to 20% of all totals for the SON season.

September-November is now **tenth driest "autumn"** on record dating back to 1928. The drought remains the worst since 2000/2001. However, of the 69 droughts on record dating back to 1928, it's the fifth worst of any length, and the fourth worst of the eleven lasting at least 18 months, based on average rainfall deficit. The current drought is now tied with the 1946/1947 for the second longest on record.

The year-to-date is the third driest on record dating back to 1928. The rainfall deficit since the drought started **in July 2013** has increased to **40.51 inches**, up 1.72 inches from last month. It is the record driest of the (86) **similar 29-month** periods ending November and the 17th driest of any 28 months, of which there are 1028.

Based on our latest analyses, near to below normal rainfall is **forecast** for the next three months. Given these and **other forecasts**, it is likely that the drought will continue through, at least, the first quarter of 2016. In the short-term, the drought could ease further to slight; however, in the medium to long-term, it is likely to be at **moderate levels or worse**.

Period	Rainfall			Description of Actual (1981 – 2010)	Rainfall Record – 1928 to 2015			
	Actual	Normal (1981 – 2010)	Anomaly (1981 – 2010)		Max	Year	Min	Year
1(Nov)	4.16	5.88	- 1.72	Below normal	20.91	1999	0.99	1947
3(Sep-Nov)	11.43	17.88	- 6.45	Well below normal	33.57	1974	6.45	1983
6(Jun-Nov)	15.17	29.01	- 13.84	Record low	43.87	1999	15.17	2015
9(Mar-Nov)	17.96	38.49	- 20.53	Record low	59.33	1987	17.96	2015
12(Dec-Nov)	23.82	47.38	- 23.56	Record low	69.01	1951	23.82	2014
24(Dec-Nov)	61.97	94.02	- 32.05	Record low	134.39	1950	61.97	2013

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

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). 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 30th percentile to the 20th percentile
- **Moderate:** rainfall ranges from less than the 20th percentile to the 10th percentile
- **Serious:** rainfall ranges from less than the 10th percentile to the 5th percentile
- **Severe:** rainfall less than the 5th 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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