

Drought and Precipitation Statement for Antigua - October 2015



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...Drought is at serious levels...record low rainfall for a number of periods...

Statement

On average, rainfall across the island for October was below normal – 3.57 inches. However, there were a few areas, mainly within St. John’s, that had near to above normal rainfall. This was also the fourth driest October since 2000.

A number of rainfall records were again broken over the past 28 months, since the drought started. Specifically, there has been **record low rainfall** over the past 7, 8, 9, 10, 11, 17, 20, 21, 22, 23, 24, 25, 26, 27 and 28 months (see table 1).

The intensity of the drought has eased from severe to serious levels. The intensity of drought is based on the rainfall deficit of the last three months. The previous five “seasons”: March-May (spring), April-June, May-July, June-August (summer 2015) and July-September, had rainfall totals in the bottom 5% of all totals for the respective periods. For the “season” August-October (ASO), the rainfall total falls in the range of 5 to 10% of all totals for the ASO season.

August-October is now **seventh driest such “season”** 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 now the fifth worst of any length, and of the fourth worst of the eleven lasting at least 18 months, based on average rainfall deficit.

The year-to-date is the driest ever on record dating back to 1928. The rainfall deficit since the drought started **in July 2013** has increased to **38.79 inches**, up 2.79 inches from last month. It is the record driest for any **similar** 28-month period ending October and the 12th driest of any 28-months.

Based on our latest analyses, below to 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.

Period	Rainfall			Description of Actual (1981 – 2010)	Rainfall Record – 1928 to 2015			
	Actual	Normal (1981 – 2010)	Anomaly (1981 – 2010)		Max	Year	Min	Year
1(Oct)	3.57	6.34	- 2.77	Below normal	15.13	2008	1.13	1953
3(Aug-Oct)	8.88	16.45	- 7.57	Well below normal	32.63	1995	6.43	‘68&’94
6(May-Oct)	11.84	27.21	- 15.37	Well below normal	45.01	1951	13.10	‘30&’53
9(Feb-Oct)	15.27	34.81	- 19.54	Well below normal	55.88	2010	16.25	1930
12(Nov-Oct)	27.14	47.37	- 20.23	Well Below normal	67.70	1987	24.88	1968
24(Nov-Nov)	62.95	94.23	- 31.28	Record low	132.45	1952	62.95	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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