

Drought and Precipitation Statement for Antigua - February 2016



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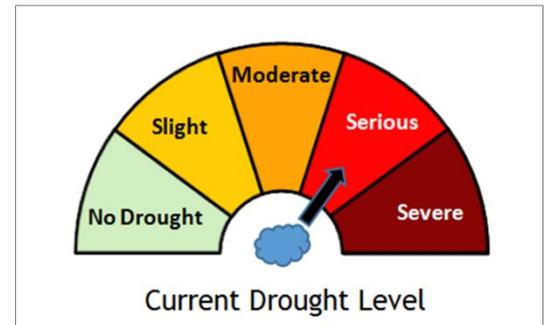
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...Worst drought on record enters 33rd month...

Statement

Below normal rainfall for February has resulted in the drought remaining at **serious levels**. The island-average rainfall for the month was 29.2 mm (1.15 in), drier than the previous two Februarys and the third driest since 2001.

A number of rainfall records were again broken since the start of the drought **32 months** ago. Specifically, there has been **record low rainfall** over the past 9, 10, 11...15, and 19, 20, 21...32 months (see table 1). In addition to being the driest of any similar period ending February, the past 13, 14, 24, 25, 26, 27, 30 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), 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. The just ended winter – DJF, is the **7th driest** in a series which dates back to 1928 and the driest since 2001.

Another indicator of the drought intensity is the Standardized Precipitation Index or **SPI** for the 3-month time scale. As of the end of February, island-average SPI stood at **-1.32**. This means that winter 2015/2016 was deemed severely 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 tied with the drought of 1964-1967 for the longest on record - 32 months. Of droughts lasting at least a year, it is the sixth most intense of a total of twenty. Of the 71 droughts on record, it has the greatest rainfall deficit of **45 inches**; the next highest is 35 inches caused by the 1964-1967 and 1929-1931 droughts.

For the period of the ongoing drought, in addition to being the record driest of the (86) **similar** 32-month time intervals ending February, it is also the driest of any consecutive 32 months, of which there are 1022 on record. In other word, no series of 32 months has been drier since, at least, 1928.

Based on our latest analyses, below to near normal rainfall is being forecast for **spring** (March-May) and **summer** (June-July). Given these and [other forecasts](#), it is now 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(Feb)	1.15	2.20	- 1.05	Below normal	5.15	1982	0.32	1982
3(Dec-Feb)	4.88	8.89	- 4.01	Well below normal	17.16	1937	3.28	1931
6(Sep-Feb)	16.31	26.68	- 10.37	Well below normal	42.36	1937	13.78	1931
9(Jun-Feb)	20.05	37.39	- 17.34	Record low	58.31	1937	20.05	2015
12(Mar-Feb)	22.84	46.44	- 23.60	Record low	71.77	1937	22.84	2015
24(Mar-Feb)	57.99	93.88	- 35.89	Record low	129.80	2012	57.99	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: [March](#), [March-May 2016](#), [June-August 2016](#), [March-August 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 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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