Drought and Precipitation Statement for Antigua – July 2015

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...Record low rainfall for the past 4, 5, 6, 7, 8, 22 & 24 months...drought is at severe levels...

Statement

A number of rainfall records were broken and set over the past 24 months. Stricken by drought, which has been at severe levels since May, there has been record low rainfall over the past 4, 5, 6, 7, 8, 22 and 24 months.

July, the first month of the wet season, proved to be another extremely dry month for Antigua with 1.31 inches. This is the fifth driest July on record dating back to 1928. Apart from 2015, it is the driest July since 1977.

The intensity of the drought is based on the rainfall total of the last three months. Over the period March-May, April-June and May-July the rainfall totals were in the bottom 5% of all totals for the respective periods; hence, the classification of the drought to be at severe levels.

May-July is now the second driest such period on record and also the driest since 1974. It continues to be the worst drought since 2002/2003. Of the 69 droughts on record dating back to 1928, it's the eighth worst of any length, and of the sixth 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 has increased to 29.46 inches, up 2.64 inches from last month; it is the second driest for any similar 23-month period ending July. Meanwhile, the past 24 months is the driest for any ending July and the seventh driest of any 24 months.

Based on our latest analyses, below normal rainfall is forecast for the next six months. Given these and other forecasts, it is likely that the drought will continue for the foreseeable future.

Period	Rainfall				Rainfall Record – 1928 to 2015			
Previous Month(s)	Actual	Normal (1981 – 2010)	Anomaly (1981 – 2010)	Description of Actual (1981 – 2010)	Max	Year	Min	Year
1(Jul)	1.31	3.95	- 2.64	Well below normal	8.85	1963	0.62	1976
3(May-Jul)	2.96	10.75	- 7.79	Well below normal	28.09	1970	2.86	1974
6(Feb-Jul)	6.39	18.36	- 11.97	Record low	32.19	1970	6.39	2015
9(Nov-Jul)	18.26	30.92	- 12.66	Well below normal	50.03	1987	14.81	1974
12(Aug-Jul)	32.10	46.99	- 14.89	Below normal	71.06	1952	28.78	1974
24(Aug-Jul)	64.89	94.12	- 29.23	Record low	132.22	1952	64.89	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