Drought and Precipitation Statement for Antigua – February 2013

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Driest February in a generation...meteorological drought continues…

The island had the driest February in a generation; for some places, it was the driest February in over two generations. The average total for the month of 0.42 inch is the second lowest on record (1928 – 2013) for the month and the lowest since 1983. On average, this degree of dryness for the month only happens once every 60 years. Meanwhile, the period December to February (DJF) had well below normal rainfall, the lowest since 2000 and the 10th lowest for the given period. Further, the period NDJF is the third driest on record and the driest since 1968. The rainfall deficit for NDJF is 6.78 inches, which is considered severe; the meteorological drought, which started last November, continues. A meteorological drought generally means that rainfall totals are below normal for a given period. See table 1 for more.

Based on various models, trends, climatology and subjective input, below normal rainfall is most likely for March and MAM with (1.31 to 2.14 inches) and (6.60 to 10.35 inches) respectively. Given the outlooks and the existing rainfall deficits, the drought is expected to continue through March and likely through May.

Period	Rainfall (inches)				Rainfall Record – 1928 to 2013			
Previous Month(s)	Actual	Normal (1981 – 2010)	Anomaly (1981 – 2010)	Description of Actual (1981 – 2010)	Max	Year	Min	Year
1(Feb)	0.42	2.20	- 1.78	Well below normal	5.15	1982	0.32	1982
3(Dec – Feb)	5.42	8.89	- 3.47	Well below normal	17.16	1937	3.28	1931
6(Sep – Feb)	21.83	26.68	- 4.85	Below normal	42.36	1937	13.78	1931
9(Jun – Feb)	29.34	37.39	- 8.05	Below normal	58.31	1937	21.12	1931
12(Mar – Feb)	38.51	46.44	- 7.93	Below normal	71.77	1937	23.95	1931
24(Mar – Feb)	102.81	93.88	+ 8.93	Above normal	129.80	2012	65.22	1931

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

Drought

Drought in general means water shortage and rainfall deficiency. Meteorological (climatological) drought is defined in terms of the magnitude of a precipitation shortfall 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 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

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

The following definitions are being used on the 1981 to 2010 rainfall dataset:

- **Well Below normal:** Rainfall totals in the lowest 10% of the dataset
- **Below Normal:** Rainfall totals in the lowest 33.3% of the dataset
- **Near Normal:** Rainfall totals in the middle 33.3% of the data
- **Above Normal:** 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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