Drought and Precipitation Statement for Antigua – September 2012

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October 4, 2012

Near record low rainfall for September

The island had well below normal rainfall during September with an average total of 1.19" (inches). This total was the lowest since 1978 (34 years ago) and the second lowest on record (1928 – 2012). Only three other times September has yielded less than two inches of rainfall – 1978, 0.99"; 1968, 1.75" and 2003, 1.91". Meanwhile, the period July to September (JAS) also had well below normal rainfall; the lowest since 2003 and the sixth lowest on record. The near record low rainfall for September has resulted in the (meteorological) drought, which started in February, reaching serious levels. The total for the last nine months, January to September, is 9.09 inches or 29% below the climatological normal. See table 1 for more.

Based on various models, trends, climatology and subjective input, near normal rainfall is most likely for October and October to December. It is expected that the meteorological drought will continue serious or ease a bit during the next three months.

Period	Rainfall (inches)				Rainfall Record – 1928 to 2012			
Previous Month(s)	Actual	Normal (1981 – 2010)	Anomaly (1981 – 2010)	Description of Actual (1981 – 2010)	Max	Year	Min	Year
1(Sep)	1.19	5.67	- 4.48	Well below normal	14.69	1995	0.99	1978
3(Jul – Sep)	8.17	14.06	- 5.89	Well below normal	28.43	1995	6.17	1968
6(Apr – Sep)	16.86	24.24	- 7.38	Well below normal	43.06	2010	10.19	1939
9(Jan – Sep)	22.08	31.17	- 9.09	Well below normal	50.44	1951	14.28	1939
12(Oct – Sep)	39.27	47.24	- 7.97	Below normal	67.74	1952	23.82	2001
24(Oct – Sep)	103.09	94.20	+ 8.89	Above normal	133.44	1952	64.90	1966

Table 1: Rainfall (inches) over the past 24 months.

Drought

Drought in general means water shortage and rainfall deficiency. 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

Disclaimer

Note: The issuing of formal drought and precipitation statements by the Antigua and Barbuda Met Service is not to be taken to mean that there are unprecedented rainfall totals. Rather, the Met Service in harmony with its mission has seen the need to provide these statements to inform the public regarding the state of rainfall in Antigua and Barbuda.