

## Drought and Precipitation Statement for Antigua – December 2010

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January 12, 2011

### The rainfall for 2010 is among the top 10 wettest

Notwithstanding the drought of 2009, which lasted through March of 2010, the record rainfall total of 53.64 inches, over the period April to October has resulted in well above normal rainfall for 2010. The 2010 total of 65.29 inches is the sixth highest on record and the highest since 1992, when 66.98 inches were measured. The wettest year on record is 1951 with 69.45 inches. August was the wettest month for the year with 13.23 inches, and February was the driest with 0.72 inch. Regarding the rainfall for December, it was near normal across Antigua. The average total rainfall for December of 4.24 inches or 107.70 mm was the highest since 2007.

Based on various models, trends, climatology and subjective input, above normal rainfall is most likely for the month of January, and above normal rainfall is mostly likely for the period (January to March - JFM). There is only a slight chance of drought over the period JFM. See table 1 for the rainfall totals for the past 24 months.

Period	Rainfall (inches)			Description	Rainfall Record			
	Actual	Standard Normal (1961 – 1990)	Anomaly (1961 – 1990)		Max	Year	Min	Year
1(Dec)	4.24	4.04	+ 0.20	Near normal	11.02	1971	0.96	1947
3(Oct – Dec)	17.64	15.79	+ 1.85	Near normal	31.18	1999	5.63	1983
6(Jul – Dec)	39.84	29.54	+ 10.30	Well above normal	44.26	1951	15.97	1983
9(Apr – Dec)	60.70	39.68	+ 21.02	Well above normal	62.60	1979	22.47	1930
12(2010)	65.29	46.30	+ 18.99	Well above normal	69.45	1951	26.83	1983
24(2009 – 2010)	104.27	92.62	+ 11.65	Above normal	133.02	1952	66.55	1930

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

### Top 10 Wettest Years:

- 1 69.45 in or 1764.03 mm in 1951
- 2 68.17 in or 1731.52 mm in 1979
- 3 66.98 in or 1701.29 mm in 1992
- 4 66.44 in or 1687.58 mm in 1987
- 5 65.96 in or 1675.38 mm in 1981
- 6 65.29 in or 1658.37 mm in 2010
- 7 63.57 in or 1614.68 mm in 1952
- 8 63.14 in or 1603.76 mm in 1936
- 9 60.08 in or 1526.03 mm in 2004
- 10 60.07 in or 1525.78 mm in 1999

### 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 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 30<sup>th</sup> percentile to the 20<sup>th</sup> percentile
- **Moderate:** rainfall ranges from less than the 20<sup>th</sup> percentile to the 10<sup>th</sup> percentile
- **Serious:** rainfall ranges from less than the 10<sup>th</sup> percentile to the 5<sup>th</sup> percentile
- **Severe:** rainfall less than the 5<sup>th</sup> 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 in the description of rainfall:

- **Well Below normal:** Rainfall totals in the lowest 10% of the historical data
- **Below Normal:** Rainfall totals in the lowest 30% of the historical data, but not in the lowest 10%
- **Near Normal:** Rainfall totals in the middle 40% of the historical data
- **Above Normal:** Rainfall totals in the highest 30% of the historical data, but not the highest 10%
- **Well Above Normal:** Rainfall totals in the highest 10% of the historical data
- **Rainfall:** Island average, based on rainfall at the airport and Green Castle

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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.