

Drought and Precipitation Statement for Antigua – January 2013



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Meteorological drought

The island had above normal rainfall during January with an average total of 2.96 inches – the second highest for the month since 2008. Notwithstanding, the period November to January (NDJ) had below normal rainfall, the 6th driest on record and the driest since 2000. The rainfall deficit for NDJ is 4.97 inches, which is considered serious. With this deficit, the country is now experiencing a [meteorological drought](#) – largely due to significantly below normal rainfall for November and December. A meteorological drought generally means that rainfall totals are below normal for a given (three month) period, in this case NDJ. With near normal rainfall most likely for February, the drought is projected to ease and become slight by the end of the month. See table 1 for more.

Based on various models, trends, climatology and subjective input, near normal rainfall (1.67 to 2.31 inches) is most likely for February and below normal rainfall (5.79 to 7.97 inches) for FMA. There is a moderate chance, 45%, of a Meteorological Drought over the period FMA.

Period	Rainfall (inches)			Description of Actual (1981 – 2010)	Rainfall Record – 1928 to 2012				
	Previous Month(s)	Actual	Normal (1981 – 2010)		Anomaly (1981 – 2010)	Max	Year	Min	Year
1(Jan)		2.96	2.70	+ 0.26	Above normal	8.57	2006	0.64	1931
3(Nov – Jan)		7.58	12.55	- 4.97	Below normal	26.06	1999	4.95	1947
6(Aug – Jan)		24.57	28.63	- 4.06	Below normal	44.96	1936	16.19	1983
9(May – Jan)		33.93	39.15	- 5.22	Below normal	64.40	1970	21.65	1930
12(Feb – Jan)		39.33	46.49	- 7.16	Below normal	69.81	1951	24.80	1930
24(Feb – Jan)		104.31	93.94	+ 10.37	Well above normal	131.40	1952	65.82	1930

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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