

Drought and Precipitation Statement for Antigua - April 2017



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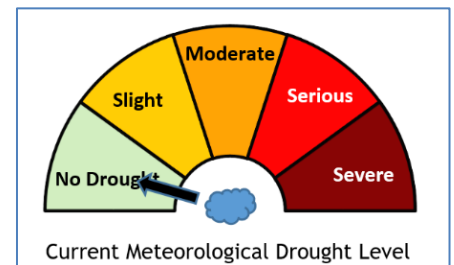
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...Above normal rainfall for April...some droughts continue...

Statement

The rainfall for April was above normal, the wettest April since 2013 and the wettest month since November 2016. The island-average rainfall for the month was 104.4 mm (4.11 in). There continue to be **hydrological** (Hydro) and **socioeconomic** (SE) droughts, which have been ongoing for over three years. They are, at least, at slight levels. The other **droughts** ended last September.

The rainfall total for the past three months – February-April (FMA), was near normal. The period saw an accumulation of 172.5 mm (6.79 in), the most for FMA since 2013.



The intensities of the droughts are based on the rainfall deficits of the previous one, three, six and twelve months, using the deciles approach. Another indicator of the intensity of the droughts is the **Standardized Precipitation Index** or SPI. For the past one, three, six and twelve months, the island-average SPIs were **0.93, 0.26, 0.93 and 0.25** respectively. These positive values are indicative of relatively health rainfall totals for the various time intervals. (see [SPI classification 2011](#)).

Based on the latest outlooks from the Caribbean Institute for Meteorology and Hydrology (CIMH), there is an equal chance of below, near or above normal rainfall for **May-July** and a 75% confidence level of above or near normal rainfall for **August-October**. Given these and **other forecasts**, a slight or worse meteorological drought is possible in the upcoming months.

| PERIOD | RAINFALL | | | | RAINFALL RECORD – 1928 to 2017 | | | |
|-------------|-------------------|--------|----------------------|-----------------------|--------------------------------|------|-------|------|
| | Previous Month(s) | Actual | Normal (1981 – 2010) | Anomaly (1981 – 2010) | Description of Actual | Max | Year | Min |
| 1(Apr) | 4.11 | 3.37 | +0.74 | Above normal | 9.66 | 1981 | 0.23 | 1944 |
| 3(Feb-Apr) | 6.79 | 7.60 | -0.81 | Near normal | 16.19 | 1992 | 2.44 | 1947 |
| 6(Nov-Apr) | 23.52 | 20.16 | +3.36 | Near normal | 34.31 | 1999 | 8.83 | 1947 |
| 9(Aug-Oct) | 38.90 | 36.23 | +2.67 | Near normal | 53.44 | 1951 | 20.05 | 1930 |
| 12(May-Apr) | 47.71 | 46.76 | +0.95 | Near normal | 72.04 | 1951 | 25.11 | 1930 |
| 24(May-Apr) | 73.55 | 94.18 | -20.63 | Below normal | 130.93 | 1951 | 60.33 | 2014 |

Table 1: Rainfall (inches) over the past 24 months. (For rainfall 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 or below the 3 decile). 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

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