

Drought and Precipitation Statement for Antigua - October 2016



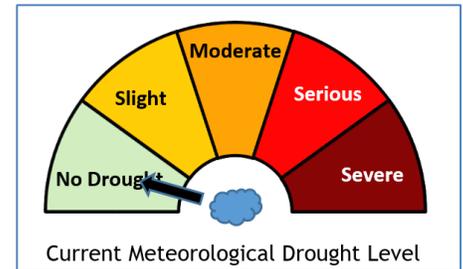
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...Near record low rainfall for October...some droughts continue...

Statement

The great meteorological (Met) and agrometeorological (AgMet) droughts ended in September and remained so through October, notwithstanding it being the fourth driest October on record. However, **September's rainfall was not enough to end the hydrological (Hydro) and socioeconomic (SE) droughts. And October's rainfall did not contribute much toward the exiting of these droughts.** Hydro and SE droughts continue, at least, at slight levels. After a very wet September, October was the total opposite – the island-average of 46.2 mm (1.82 in) for October 2016 is the fourth lowest on record dating back to, at least, 1928 and the lowest since October 2000.



Notwithstanding the Met and AgMet droughts having ended, there exist significant rainfall deficits over the past 39 months that have not been erased, as can be expected. Top 10 low rainfall is evident over the past 16 to 40 months ending October (see table 1).

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 -1.74, -0.05, -0.28 and -0.71 respectively. Negative values are not good; however, the values for three to six month periods are minimal. The very strongly negative value for October is due to the near record low rainfall for the month ([SPI classification 2011](#)).

The ended Met drought started in July 2013, with the Hydro drought commencing three to six months later. The Met drought was the worst dating back to 1928 and perhaps the worst dating back to 1902. It is the longest Met drought on record, surpassing that of 1964-1967.

Based on our latest analyses, there is equal chance of below, near or above normal rainfall for the upcoming [six months](#). Meanwhile, warmer than normal temperature is likely for the same period. Given these and, more so, [other forecasts](#), moderate or worse Met and AgMet droughts are unlikely for the short to long term. Meanwhile, gradual improvements of the Hydro and SE droughts are likely.

PERIOD	RAINFALL				RAINFALL RECORD – 1928 to 2016				
	Previous Month(s)	Actual	Normal (1981 – 2010)	Anomaly (1981 – 2010)	Description of Actual	Max	Year	Min	Year
1(Oct)		1.82	6.34	-4.52	Well below normal	15.13	2008	1.13	1953
3(Aug-Oct)		15.38	16.45	-1.07	Near normal	32.63	1995	6.43	'68, '94
6(May-Oct)		24.19	27.21	-3.02	Near normal	45.01	1951	13.10	'30, '53
9(Feb-Oct)		30.30	34.81	-4.51	Near normal	55.88	2010	16.25	1930
12(Nov-Oct)		38.19	47.37	-9.18	Below normal	67.70	1987	24.88	1968
24(Nov-Oct)		65.32	94.23	-28.91	Well below normal	132.45	1952	62.95	2013

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

Related Products

Climate outlooks: [November](#), [November 2016-January 2017](#), [February-April 2017](#), [November 2016-April 2017](#), [Drought](#)
 Other statements: [Temperature](#), [Wet Season](#), [Dry Season](#)

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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