Caribbean climate outlook August 2015 to January 2016

CariCOF - The Caribbean Climate Outlook Forum

WHAT HAPPENED? April - May - June (AMJ) 2015

Dry to very dry in most of the Islands; temperatures rising to hot & record high in Cuba in April

+ impacts

little water-bourne diseases outbreaks in dry areas

- impacts

water shortage in Antigua & Barbuda, Jamaica, St. Lucia, many bushfires & crop losses in Dominica

Notable climate events - April to June 2015

- Observed rainfall records: **Dry** - AMJ: 1 station in Aruba, 1 in Belize, 5 in Dom. Rep., 1 in Guadeloupe, 3 in Jamaica, & 1 in St. Lucia (4-38% of avg.) April :1 in Dom. Rep.,1 in Martinique, 1 in St. Kitts, 1 in St. Lucia & 1 in Trinidad. May: 1 stn. in St. Lucia. June**:** 3 stns. in Jamaica, 1 in Martinique, 1 in St. Lucia & 1 in St. Croix. **Wet** - June: 1 stn. in Cayman &1 in Guyana.

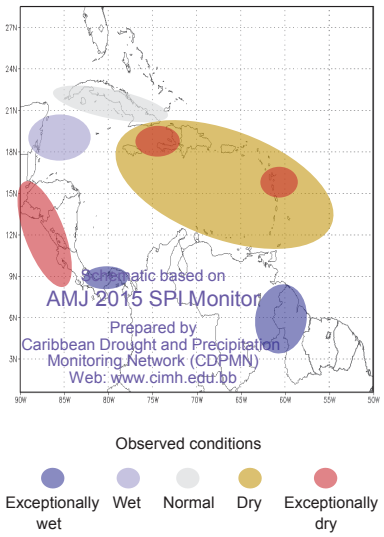
Summary

- April: very dry in S Belize, Dominica & E Jamaica. May: very wet in W & E Guianas; very dry in Dominica, St. Kitts & St. Lucia. June: very wet in W Guyana; very dry in Dominica, S Dom. Rep. & Jamaica.
- Temperatures rose in April (to record high in Cuba) and May, and were normal to above-normal across the Caribbean.

Headline Impacts

- Continued low rainfall over the past year in Antigua led to Potswork Dam water levels below 20%, more bushfires than usually, stress in livestock and 65% of farmers (as of April) running out of business.
- Dry conditions in Dominica impacted vegetation, with more bushfires than usually, and crops (e.g. 35% of onion crop lost).
- St. Lucia implements additional water restrictions as drought worsens.
- Continued drought in parts of Jamaica led to imposed water restrictions.

AMJ 2015 Precipitation



WHAT NEXT? August - September - October (ASO) 2015

Consensus Outlook

Wet season drier than usual in Antilles, with fewer wet days and wet spells; generally hot.

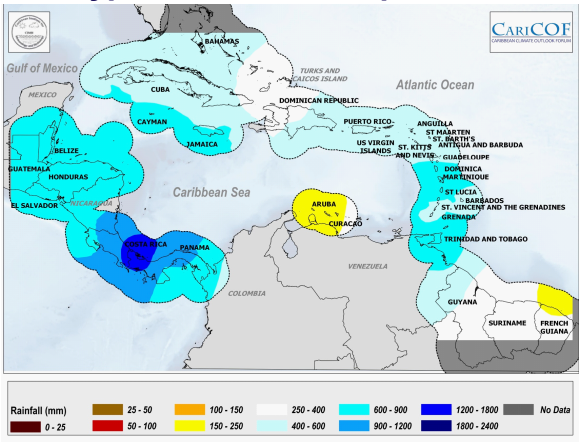
+ impacts

some short-term drought relief, limited water-related pests, epidemics and flood potential

- impacts

long-term drought remaining in parts the Islands; heat stress

Our typical ASO rainfall patterns



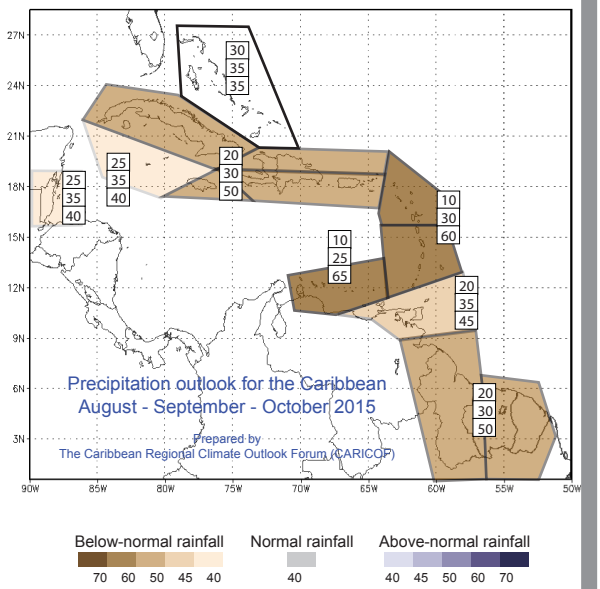
Belize & Caribbean Islands north of 16°N:
Aug - wet season. Often incl. a mid-summer dry spell.
Sep to Oct - wet season. Usually frequent heavy showers.

Caribbean Islands south of 16°N (except ABC Islands):
Aug to Oct - wet season. Usually frequent heavy showers.

ABC Islands: mostly dry with occasional wet spells.

Guianas:
Aug - long wet season. Heavy showers are frequent.
Sep to Oct - dry season. Heavy showers at times.

ASO 2015 Precipitation Outlook



ASO rainfall in the Caribbean is likely to be below- to normal across the Caribbean, *with fewer wet days and wet spells than usual.*

<<< see outlook discussion on page 2 >>>

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Climate outlook

August - September - October

(*ASO temperature, wet days and wet spells outlook maps available at rcc.cimh.edu.bb*)

Rainfall **ABC Islands**: below- to normal, confidence 90%, **Barbados, Leewards & Windwards**: below- to normal, confidence 90%. **Cuba, Guianas, Hispaniola, Jamaica, US C'bean Terr.**: below- to normal; confidence 80%. **Trinidad & Tobago**: below- to normal; confidence 80%. **Belize, Cayman**: below- to normal; confidence 75%. **Bahamas, Turks & Caicos**: below- or normal; confidence 70%.

Temperature **Bahamas, Turks & Caicos**: above- to normal; confidence 85%. **Jamaica**: above- to normal, confidence 85%. **Leewards**: above- to normal; confidence 80%. **ABC Islands, Barbados, Cayman, Hispaniola, US C'bean Terr., Windwards**: above- to normal; confidence 80%. **Belize**: below- to normal, 75% confidence. **Elsewhere:** above- or normal; confidence 70%.

Drought conditions May to October

(*Drought outlook available at rcc.cimh.edu.bb*)

Drought situation: South-eastern Jamaica, Haïti, many of the Leewards & Windwards, Dominica, St. Lucia are in long-term drought and have suffered water shortages. Barbados, the Leewards and parts of the Windwards are in short-term drought.

Drought alert levels: **Drought warning:** ABC Islands, Barbados, Central Cuba, Leewards & northern Windwards, US C'bean Territories.

Long-term concern: Water shortages may persist throughout the wet season, especially in St. Lucia and some of the Leeward Islands.

November - December - January

(*NDJ precip. and temp. outlook maps available at rcc.cimh.edu.bb*)

Rainfall **Trinidad & Tobago**: below- to normal, confidence 80%. **ABC Islands, Barbados, Windwards:** below- to normal, confidence 80%. **Cayman, Guianas**: below- to normal; confidence 75%. **Bahamas, Belize, Cuba, Turks & Caicos:** above- to normal; confidence 75%. **Leewards**: below- or normal; confidence 70%. **Elsewhere**: above- or normal; confidence 70%.

Temperature **Cayman, Jamaica**: above- to normal; confidence 90%. **ABC Islands, Belize**: above- to normal, confidence 90%. **Hispaniola, Leewards, US C'bean Terr.**: above- to normal; confidence 80%. **Elsewhere**: above- to normal; confidence 75%.

What influences the next season?

El Niño Southern Oscillation (ENSO)

Recent observations: moderate El Niño; sea-surface temperatures (SSTs) 1-1.5°C above avg. & rising in equatorial eastern Pacific (NINO3.4).
Model guidance: 95% of the models indicate continued El Niño conditions for ASO & NDJ with many suggesting further warming into a strong El Niño event by ASO and NDJ.
Forecast: 95% confidence in El Niño conditions during ASO and NDJ.
Expected impacts on rainfall and temperatures: a large shift to higher probabilities for below-normal rainfall and higher temperatures for the region, as El Niño usually weakens the development of rain-, thunder- and tropical storms. However, a shift towards above-normal rainfall is noted for the NW of the Caribbean during NDJ due to reduced winds in the upper atmosphere, which allows for stronger showers.

Climate conditions in the Tropical North Atlantic and Caribbean

Recent observations: SSTs 0.5-1°C above-average north of the Caribbean, -1°C to average further east; trade wind speed near to below avg.
Expected conditions: SST anomalies expected to weaken; strength of trade winds hardly predictable in most areas, but expected to become stronger over the ABC Islands as a result of the El Niño.

Precipitation and temperature outlook - background

The Caribbean Climate Outlooks are prepared by the Caribbean Regional Climate Outlook Forum (CariCOF). The Caribbean Institute for Meteorology and Hydrology, in its role as WMO Regional Climate Centre in demonstration phase, coordinates the CariCOF process. Contributors to the Outlooks are the Meteorological Services from the region.

This consensus outlook is produced by combining global, regional and national forecasts and expert interpretation. National and region-wide forecasts produced using the Climate Prediction Tool (CPT) are considered together with global dynamical climate models. Global forecasts that are examined include those from the IRI, the U.K. Met Office, ECMWF, Météo-France, the WMO LRF-MME and the APCC.

Probabilities for three-month rainfall totals and average temperatures are estimated for sub-regions based on the model outputs, the level of agreement between the different models and expert knowledge of the regional setting.

The Precipitation Outlook is issued in the form of a map, which shows regions where the forecast rainfall has the same probabilities to be:

Above-normal	(A)	- within the wettest/hottest third of the historical record
Near-normal	(N)	- within the middle third of the historical record
Below-normal	(B)	- within the driest/coldest third of the historical record