Caribbean Climate Outlook Newsletter - August to October 2024

For climate information specific to your country, please consult with your national meteorological service.

CariCOF outlooks speak to recent and expected seasonal climate trends across the Caribbean in general.

BRIEF SUMMARY: April to October 2024

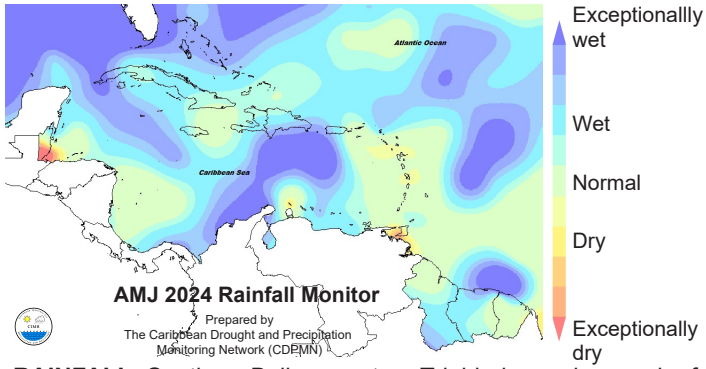
April to June 2024: A record-warm Tropical North Atlantic has continued to fuel record-breaking temperatures in the Caribbean which, along with an El Niño in the Pacific which has ended in May, has fueled short-term drought in Belize and Trinidad, and long-term drought in French Guiana, coastal Guyana and western Jamaica.

August to October 2024: Cooling temperatures in the equatorial Pacific will likely result in a progressive transition to La Niña while (near-)record warm Tropical North Atlantic Ocean are set to continue. Therefore, an intense peak of the 2024 Atlantic Hurricane Season and the Caribbean Wet Season and Heat Season, implying frequent and intense (i) episodes of oppressive humid heat; and (ii) tropical cyclones and severe weather, resulting in high potential for flooding, flash floods, cascading hazards and associated impacts. Should the intrusion of dry Saharan air (wich usually peak through early August) be more frequent than usual, storm and shower activity may be more erratic, though intense in between episodes, while heat will remain in record territory.

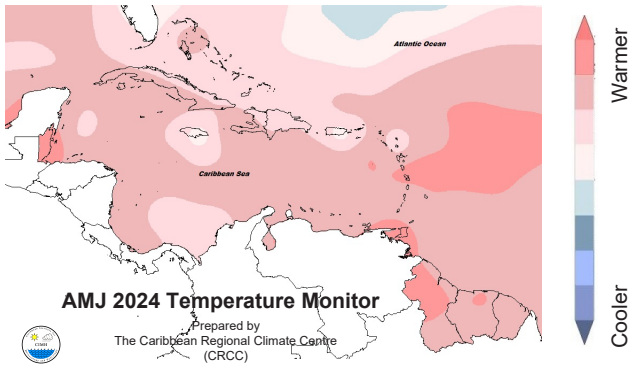
LOOKING BACK:

Apr. - May - Jun. (AMJ) 2024

Observations



- **RAINFALL:** Southern Belize, western Trinidad very dry; much of The Bahamas, Grand Cayman, westernmost Cuba, southern Hispaniola, southwest Guyana, northern Suriname very wet.



- **TEMPERATURE:** Caribbean locations 0.5-2.5ºC warmer than usual. Several temperature records broken.

Notable Climate Records in AMJ 2024:

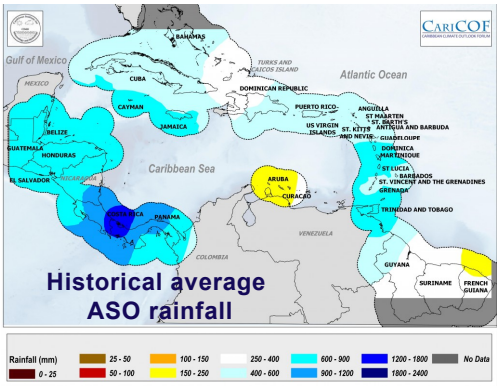
WET: 2 locations in Guyana, 1 in Haiti reported record-high rainfall totals for this period (150-195% of avg.).

DRY: 1 location in Belize reported record-low rainfall (32% of avg.).

HOT: Barbados, Belize, Curaçao, French Guiana, Grenada, Guyana, Martinique, St. Kitts, Saint Lucia, Sint Maarten, Tobago, as well as 4 locations in Guyana, 1 in Jamaica, 2 in Puerto Rico and St. Thomas reported record-high mean temperatures.
More at *https://carogen.cimh.edu.bb/index.php/component/countrydata/*

WHAT NEXT?

Rainfall patterns August - September - October (ASO)



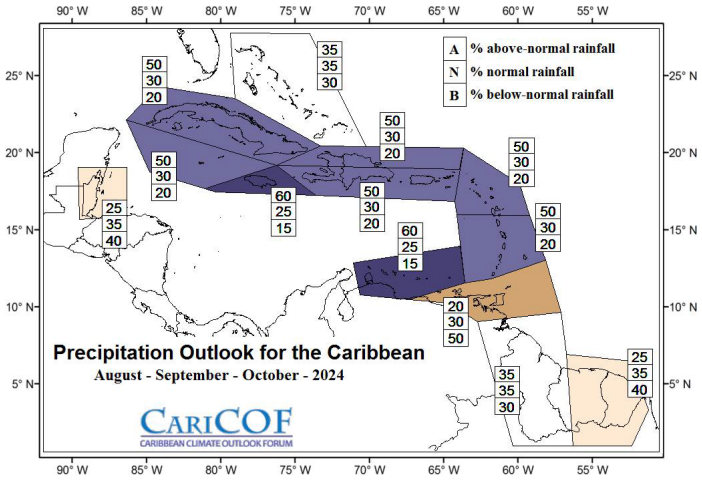
Belize & C'bean Islands north of 16ºN:
Aug - wet season. Often includes a mid-summer dry spell.
Sep to Oct - wet season. Usually frequent heavy showers.

C'bean Islands south of 16ºN (except ABC Islands):
Aug to Oct - wet season. Usually frequent heavy showers.

ABC Islands: *Mostly dry with occasional wet spells, increasing in frequency in October.*

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

ASO 2024 Rainfall Outlook



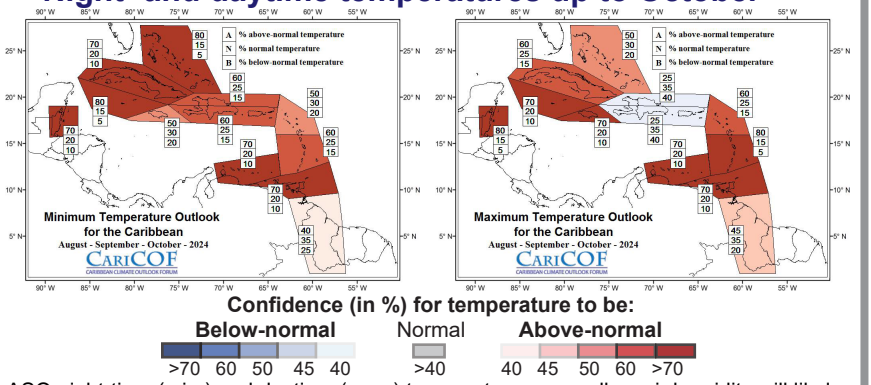
Confidence (in %) for rainfall to be:

Below-normal	Normal	Above-normal
>70 60 50 45 40	>40	40 45 50 60 >70

Rainfall totals from August to October are likely to be the usual or higher across the Antilles but, possibly, the usual or less in Belize, eastern parts of the Guianas and Trinidad & Tobago.

White areas show where the forecast indicates little information on rainfall totals.

Night- and daytime temperatures up to October



ASO night-time (min.) and daytime (max.) temperatures, as well as air humidity will likely be considerably higher than usual in most areas. Frequent episodes of heat stress are expected as the region is likely to continue to be in a potentially record Heat Season. Heat stress may further ramp up if Saharan dust incursions increase dry spell frequency.

Wet days and wet spells up to October

What usually happens from November to January?

- Number of wet days: roughly 35 to 50 (ABC Is: 20 to 45; coastal Guianas: 30 to 50).
- # of wet spells: 2 to 5, of which 1 to 3 are very wet (coastal Guianas: up to 2).
- # of extreme wet spells: up to 2 (Belize & Greater Antilles: up to 1)..

Forecast and Implications:

- High potential for long-term flooding, flash floods and related hazards across the Caribbean Islands and Belize through December; moderate potential in the Guianas, increasing to high after November in coastal and northern areas.
- Surface wetness makes environmental conditions more conducive to moisture-related pests through November.
- Rising water levels in rivers, large water reservoirs and soils.
- In the Guianas, a trend towards heavier showers from late-November is likely to significantly increase flood potential.

Drought conditions

Lastest drought situation: (*as of July 1st, 2024*)	Severe (or worse) short-term drought has developed in Belize and Trinidad; severe (or worse) long-term drought in coastal Guyana, western Jamaica, and French Guiana.
Short-term drought (at the end of Oct. 2024)	Short-term drought may possibly continue in southeast Belize and Trinidad.
Long-term drought (at the end of Nov. 2024)	Long-term drought is evolving in southeast and western Belize, French Guiana, and Trinidad, and might possibly develop or continue in eastern Belize, coastal Guyana, and Tobago.

BRIEF CLIMATE OUTLOOK - November 2024 to January 2025

This period marks the transition out of the 2024 Caribbean Wet and Heat Seasons and out of the Atlantic Hurricane Season. An unseasonably warm Tropical North Atlantic is forecasted, more likely than not combined with La Niña conditions. Consequently, unusually high air temperatures and humidity are still likely in many locations, but a steady decrease in heat stress is expected in November as the region transitions into the Cool Season by December. The risk of severe weather impacts from frequent tropical cyclones or other shower activity, including flooding, flash floods, and cascading impacts is expected to be even higher than usual through December, amounting to unusually copious rainfall, with the likely exception of the Bahamas, Cayman Islands and Cuba. *For temperature and precipitation outlooks for NDJ 2024-25, please visit rcc.cimh.edu.bb/caricof-climate-outlooks*

What influences the next season?

El Niño Southern Oscillation (ENSO)

Recent observations: A strong El Niño event which peaked in December in the eastern equatorial Pacific has ended, with Sea Surface Temperatures (SSTs) having anomalously cooled to average by mid-May.

Model forecast and guidance: The forecast models indicate further cooling to either ENSO neutral (~30-55% confidence) or La Niña conditions in ASO (~45-70% confidence) and, more likely than not, La Niña conditions by NDJ (~50-80% confidence).

Expected impacts on rainfall and temperatures: A transition into La Niña is often associated with increased chances of heavy showers, higher rainfall totals and air temperatures in ASO, as well as increased Atlantic Hurricane Season activity from September onwards.

Climate conditions in the Tropical North Atlantic and Caribbean

Recent observations: Record-warm SSTs in the Caribbean Sea and the Tropical North Atlantic (TNA) around 1°C to 2°C above average have been observed across vast ocean areas since the summer of 2023.

Expected conditions: Models are confidently forecasting warm SST anomalies of 0.5°C to 1°C above average for ASO and NDJ across the Caribbean Sea and the TNA.

Expected impacts: Warm SSTs in and around the Caribbean tend to contribute to higher air temperatures with above-average humidity, seasonal rainfall totals, an increased frequency of extreme rainfall and increased tropical cyclone activity throughout the Atlantic Hurricane Season.

Climate outlooks - background

The Caribbean Climate Outlooks are prepared by the Caribbean Climate Outlook Forum (CariCOF). The Caribbean Institute for Meteorology and Hydrology, in its role as WMO Regional Climate Centre, coordinates the CariCOF process. Contributors to the Outlooks are the Meteorological Services from the region.
The Precipitation and Temperature Outlooks are issued in the form of a map, which shows regions where the forecast rainfall or temperatures have 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, i.e. a range called the 'usual'
Below-normal	(B)	- within the driest/coldest third of the historical record

CariCOF Outlooks offer consensus-based information averaged across multiple territories. In some cases, individual national results may differ from region wide results. To get information on your specific country context, please consult your National Meteorological and Hydrological Services and/or any national level bulletins thay may provide.

DISCLAIMER