Caribbean Climate Outlook Newsletter - June to August 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: February to August 2024

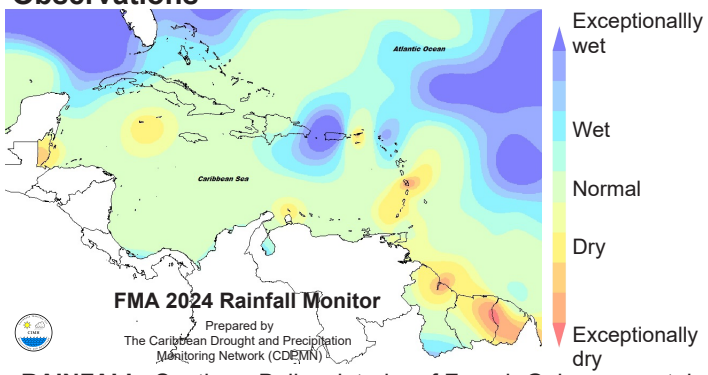
February to March 2024: A record-warm Tropical North Atlantic has continued to fuel record-breaking temperatures in the Caribbean while a weakening El Niño in the Pacific has fueled short term drought in southern Belize, interior French Guiana, Martinique, Suriname, and St. Thomas.

June to August 2024: Cooling temperatures in the equatorial Pacific will result in ENSO neutral or La Niña conditions while (near-)record warm Tropical North Atlantic Ocean are set to continue. Therefore, an intense Heat Season with recurrent heatwaves, a (hyper-)active Atlantic Hurricane Season and an intense wet season are forecast. Frequent and intense shower activity could result in high potential for flooding, flash floods, cascading hazards and associated impacts. Should the intrusion of dry Saharan air (wich usually peak through July) be more frequent than usual, storm and shower activity may be more erratic, delaying relief from any water shortages arising from low rainfall and high evapotranspiration rates observed during the dry season.

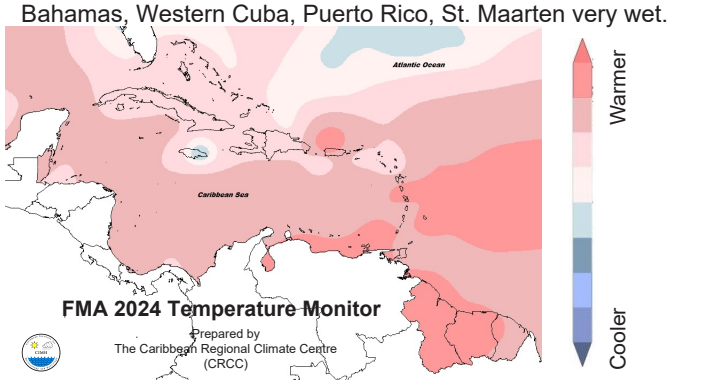
LOOKING BACK:

Feb. - Mar. - Apr. (FMA) 2024

Observations



- **RAINFALL:** Southern Belize, interior of French Guiana, coastal Guyana, Martinique, St. Thomas, east Suriname very dry; North. Bahamas, Western Cuba, Puerto Rico, St. Maarten very wet.



- **TEMPERATURE:** Majority of Caribbean locations 0.5-2ºC warmer than usual except eastern Jamaica where slight negative anomalies were recorde. Several temperature records broken.

Notable Climate Records in FMA 2024:

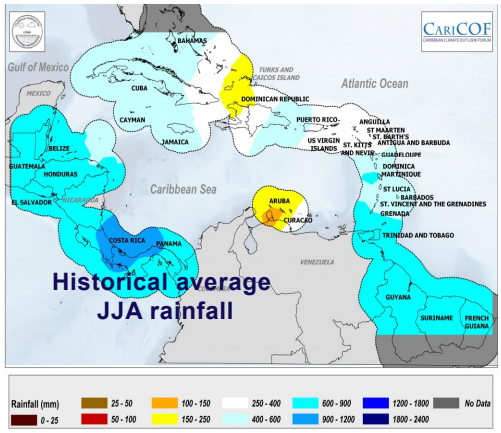
WET: 1 location in Dominican Rep., 1 in Guadeloupe, 1 in Puerto Rico reported record-high rainfall totals for this period (210-225% of avg.).

DRY: 3 locations in Belize, 3 in Guyana, and St. Thomas reported record-low rainfall (~5-25% of avg.).

HOT: French Guiana, Grenada, Guyana, Martinique, Suriname, Tobago, as well as 1 location in Barbados, 2 in Belize, 1 in Jamaica, 2 in Puerto Rico reported record-high mean temp. More at *https://carogen.cimh.edu.bb/index.php/component/countrydata/*

WHAT NEXT?

Rainfall patterns June-July- August (JJA)



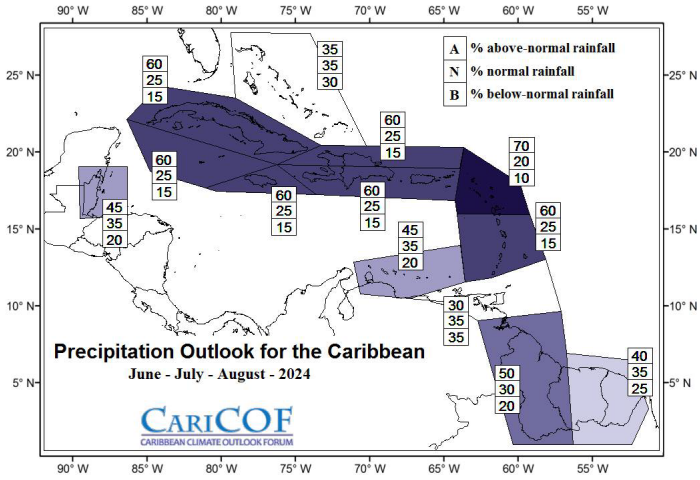
Belize & C'bean Islands north of 16ºN:
Jun - wet season. Usually frequent heavy showers.
Jul to Aug - wet season. Often includes a mid-summer dry spell.

C'bean Islands south of 16ºN (except ABC Islands):
Jun to Aug - first half of wet season. Increasingly heavy showers.

ABC Islands: *Mostly dry*

Guianas: Jun to Jul - long wet season; Frequent heavy showers. Aug - transition to dry season. Heavy showers become less frequent.

JJA 2024 Rainfall Outlook



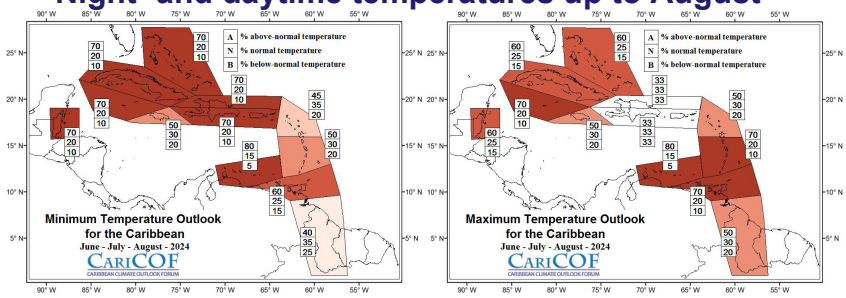
Confidence (in %) for rainfall to be:

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

Rainfall totals from June to August are likely to be the usual or higher across Belize, the Antilles, and the Guianas.

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

Night- and daytime temperatures up to August



Confidence (in %) for temperature to be:

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

JJA 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 ramp up even more if incursions of Saharan air are very frequent.

Wet days and wet spells up to August

What usually happens from June to August?

- Number of wet days: 30 to 45 in flatter areas of the islands. 50-65 in mountanous areas and Guianas (ABC Is. 5 to 15).
- # of wet spells: 3 to 6 (ABC Islands: up to 3), of which 1 to 3 are very wet (ABC Is: up to 2)
- # of extreme wet spells: up to 1 or 2.

Forecast and Implications:

- High to extremely potential for long-term flooding, flash floods and related hazards from very wet and extreme wet spells.
- Increasingly frequent disruptions of outdoor activities, a marked decrease of wild fire potential, and conditions more conducive to moisture-related pests due to an increase in the number of wet days.
- Accelerating recharge rates of large water reservoirs and soil moisture related to an increase in the number of wet spells.

Drought conditions

Lastest drought situation: (*as of May 1st, 2024*)	Severe (or worse) short-term drought has developed in Belize, Martinique, eastern French Guiana, northern Guyana, and Suriname; severe (or worse) long-term drought in Central Cuba, eastern French Guiana, Guadeloupe, northern Guyana, Trinidad, and Suriname.
Short-term drought (at the end of Aug. 2024)	Short-term drought may possibly develop or continue in western Belize and northern French Guiana.
Long-term drought (at the end of Nov. 2024)	Long-term drought is evolving in northern French Guiana, and might possibly develop or continue in central French Guiana and Trinidad.

BRIEF CLIMATE OUTLOOK - September to November 2024

This period marks the late wet season, as well as the peak and, after October, the transition out of the heat season in the Caribbean. An unseasonably warm Tropical North Atlantic, combined with likely La Niña conditions are forecasted. Consequently, unusually high air temperatures and humidity are expected, along with the occurrence of significant to potentially record-breaking heat stress. 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, amounting to unusually copious wet season rainfall. Historically, 2010 was a comparable year in terms of the extreme heat, rainfall, floods and an active hurricane season and their drivers. *For temperature and precipitation outlooks for SON 2024, 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 subsided, 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 (~50-70% confidence) or La Niña conditions in JJA (~20-50% confidence) and likely La Niña conditions by SON (~55-85% confidence).

Expected impacts on rainfall and temperatures: A transition out of El Niño is often associated with increased chances of heavy showers, higher rainfall totals and air temperatures in JJA. La Niña conditions in SON tends to increase Atlantic Hurricane Season activity in its second half.

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 1°C to 2°C above average for JJA and 0.5°C to 1°C above average for SON 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