

Caribbean Climate Outlook Newsletter - July to September 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: March to September 2024

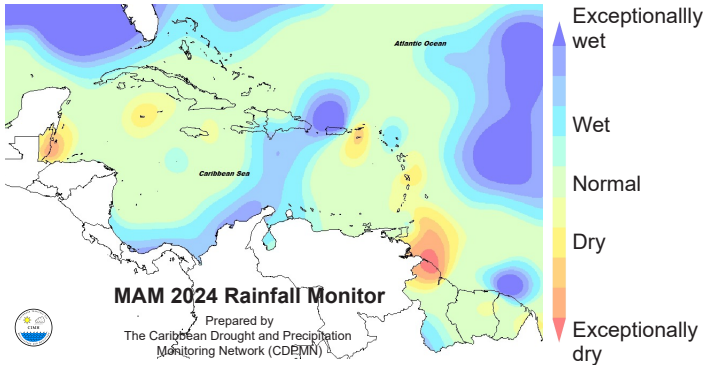
March to May 2024: A record-warm Tropical North Atlantic has continued to fuel record-breaking temperatures in the Caribbean. Meanwhile, an El Niño in the Pacific has ended in May, has fueled short and/or long-term drought in Barbados, Belize, French Guiana, Guyana, Grenada, Saint Lucia, St. Vincent & the Grenadines, Suriname, Trinidad & Tobago, and USVI.

July to September 2024: Temperatures in the equatorial Pacific will likely continue to progressively cool into a La Niña while (near-)record warm Tropical North Atlantic Ocean are set to continue. Therefore, an intense peak of the 2024 Atlantic Hurricane Season, the Caribbean Wet Season and Heat Season, implying frequent and intense (i) episodes of oppressive humid heat; (ii) tropical cyclones and severe weather. The latter results in high potential for flooding, flash floods, cascading hazards and associated impacts. Should the intrusion of dry Saharan air (which usually peak through July) be more frequent than usual, storm and shower activity may be more erratic, while heat will remain in record territory, in particular in the Lesser Antilles.

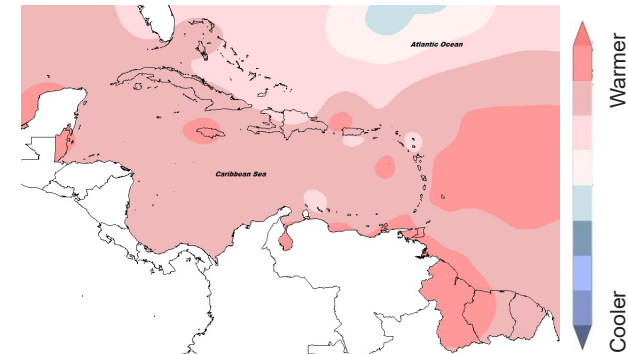
LOOKING BACK:

Mar. - Apr. - May (MAM) 2024

Observations



♦ **RAINFALL:** Southern and central Belize, inorthernmost Guyana very dry; southern Dominican Rep., Puerto Rico very wet.



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

Notable Climate Records in FMA 2024:

WET: 3 in Dominican Rep., 1 in Guyana, and 1 in Haiti reported record-high rainfall totals for this period (155-205% of avg.).

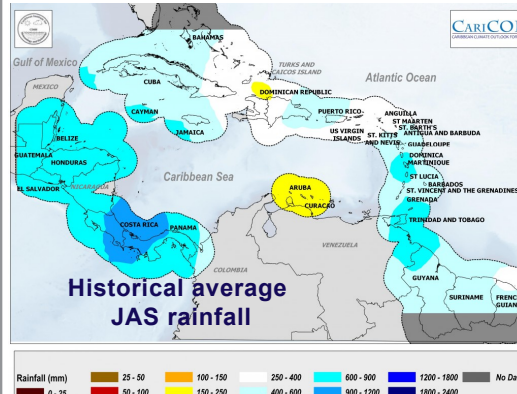
DRY: 6 locations in Belize, and St. Thomas reported record-low rainfall (~5-20% of avg.).

HOT: Belize, Cayman, French Guiana, Grenada, Martinique, St. Kitts, St. Maarten, Suriname, Tobago, as well as 1 location in Barbados, 4 in Guyana, 2 in Puerto Rico, 1 in Saint Lucia.

More at <https://carogen.cimh.edu.bb/index.php/component/countrydata/>

WHAT NEXT?

Rainfall patterns July- August-September (JAS)



Belize & C'bean Islands north of 16°N:

Jul to Aug - wet season. Often includes a mid-summer dry spell.
Sep - wet season. Usually frequent heavy showers.

C'bean Islands south of 16°N (except ABC Islands):

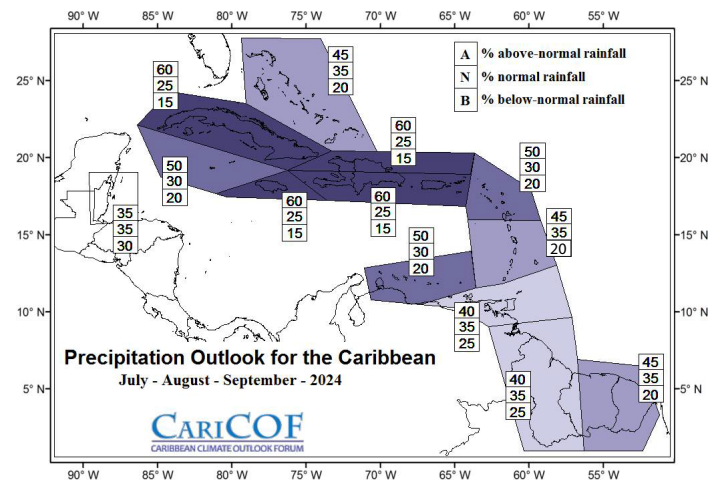
Jul to Sep - wet season. Increasingly frequent heavy showers.

ABC Islands: Mostly dry with occasional wet spells.

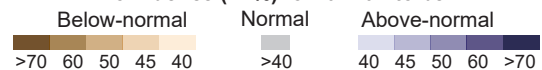
Guianas:

Jul to Aug - long wet season. Heavy showers are frequent. Sep - dry season. Heavy showers at times.

JAS 2024 Rainfall Outlook



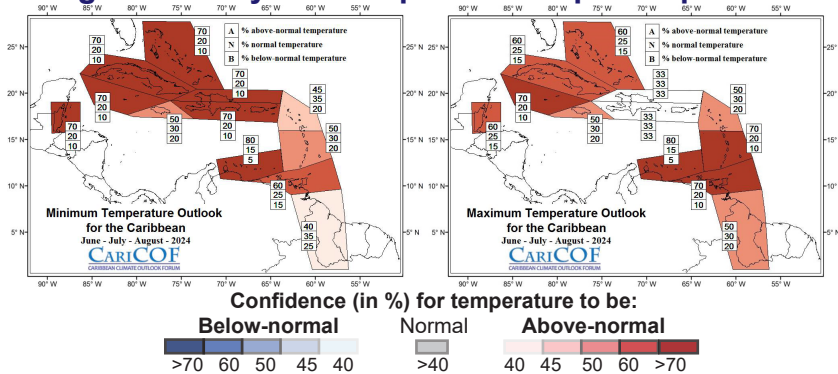
Confidence (in %) for rainfall to be:



Rainfall totals from July to September are likely to be the usual or higher across the Antilles, and the Guianas.

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

Night- and daytime temperatures up to September



JAS 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 September

What usually happens from July to September?

- Number of wet days: roughly 35 to 50 in flatter areas of the islands, 50 to 65 in mountainous areas and in the Guianas (ABC Is. 5 to 15).
- # of wet spells: 2 to 6 (ABC Islands: 1 to 4), of which 1 to 3 are very wet (ABC Is: up to 2)
- # of extreme wet spells: up to 1 (or 2 in mountainous areas).

Forecast and Implications:

- Moderate to high potential for long-term flooding, flash floods and related hazards from very wet and extreme wet spells.
- Increasingly frequent disruptions of outdoor activities.
- Increasing surface wetness makes environmental conditions more conducive to moisture-related pests but fewer wildfires.
- Rising water levels in rivers, large water reservoirs and soils related to an increase in the number of wet spells.
- In the Guianas, the opposite trends are expected after July.

Drought conditions

Lastest drought situation: Severe (or worse) short-term drought has developed in Belize, northern Guyana, and the USVI; severe (or worse) long-term drought in Western Cuba, French Guiana, easternmost parts of Guadeloupe, northern Guyana, and Suriname.

Short-term drought (at the end of Sept. 2024) Short-term drought may possibly continue in central Belize.

Long-term drought (at the end of Nov. 2024) Long-term drought is evolving in northern French Guiana and Trinidad, and might possibly develop or continue in parts of Belize, central French Guiana, and Tobago.

BRIEF CLIMATE OUTLOOK - October to December 2024

This period marks the transition out of the wet season and, after October, out of the heat season and, after November, out of the Atlantic Hurricane Season. An unseasonably warm Tropical North Atlantic, combined with likely La Niña conditions are forecasted. Consequently, unusually high air temperatures and humidity are still likely, along with the occurrence of significant 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 OND 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 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 (~35-65% confidence) or La Niña conditions in JAS (~35-65% confidence) and likely La Niña conditions by OND (~55-85% 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 JAS, 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 1°C to 2°C above average for JAS and 0.5°C to 1°C above average for OND 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 they may provide.

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