

Caribbean Climate Outlook Newsletter - October to December 2023

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: June to December 2023

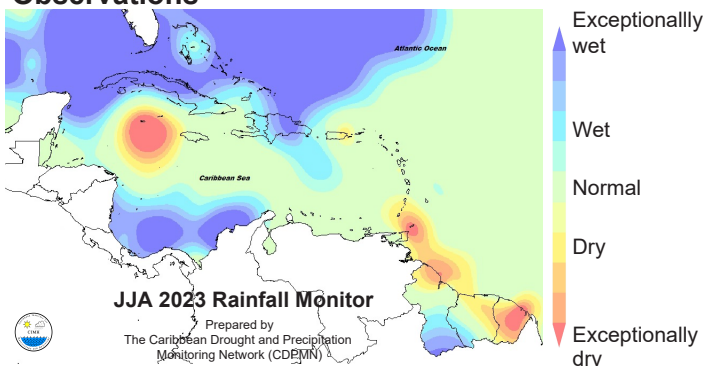
June to August 2023: An El Niño event and a record-warm Tropical North Atlantic are fuelling a record-breaking Caribbean Heat Season. Monthly and quarterly-averaged temperatures have been hovering 1-2C above average in most areas while humidity levels remain very high and cooling showers fewer than usual in many places, all continuing into September.

October to December 2023: North Atlantic temperatures should remain well above average, continuing to (1) fuel unusually strong tropical cyclone activity; (2) amplify heat stress through October with higher temperatures, humidity and heatwave frequency -- fuelling a record-breaking Caribbean Heat Season; and (3) increase shower intensity during the peak of the Wet Season, leading to a high potential for flooding and cascading hazards. However, a moderate to strong El Niño in the Pacific should dampen rainfall frequency in Belize and the southern Caribbean, where drought concerns arise. Heat and drought are a growing concern in the coastal Guianas, as is flood potential through December.

LOOKING BACK:

June - July - August (JJA) 2023

Observations



JJA 2023 Rainfall Monitor

Prepared by
The Caribbean Drought and Precipitation
Monitoring Network (CDPMN)

- **RAINFALL:** Grand Cayman, French Guiana, N Guyana, E Suriname, and Tobago very dry; The Bahamas, Cuba, Dominican Rep. and S Guyana very wet.

Calculation changes to the JJA 2023
Temperature Monitor delayed the
preparation of this map. It will be made
available in coming days at
rcc.cimh.edu.bb/mean-temperature-anomalies/
Our apologies for any inconvenience caused

JJA 2023 Temperature Monitor

Prepared by
The Caribbean Regional Climate Centre
(CRCC)

- **TEMPERATURE:** Majority of Caribbean locations at least 1°C warmer than usual. Temperature records broken in many places.

Notable Climate Records in JJA 2023:

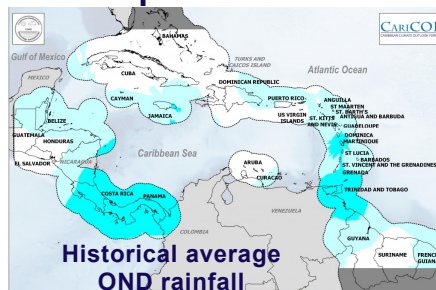
- WET:** Two locations in Dominican Rep. reported their highest rainfall totals for this period (~245-285% of avg.).
- DRY:** Grand Cayman, 1 location in Dominican Rep. reported record low rainfall totals for this period (~30-35% of avg.).
- HOT:** Barbados, Belize, Grand Cayman, Grenada, Dominica, Martinique and St. Kitts recorded their highest mean temp. for this period. In addition, 4 stations in Guyana recorded their highest min., mean & max. temperature for this period. Many more records were broken for this period, as compiled at <https://carogen.cimh.edu.bb/index.php/component/countrydata/>

September 2023

find out more by using the clickable images and headings or visit rcc.cimh.edu.bb

WHAT NEXT?

Rainfall patterns October-November-December (OND)



Historical average
OND rainfall

Guianas:

Oct - Dry season with heavy showers at times.
Nov to Dec - transition to wet season. Increase in showers.

Belize :

Oct to Dec - wet season. Frequent heavy showers.

C'bean Islands north of 16°N:

Oct - wet season. Frequent heavy showers
Nov to Dec - transition to dry season.
Decreasing shower frequency & intensity.

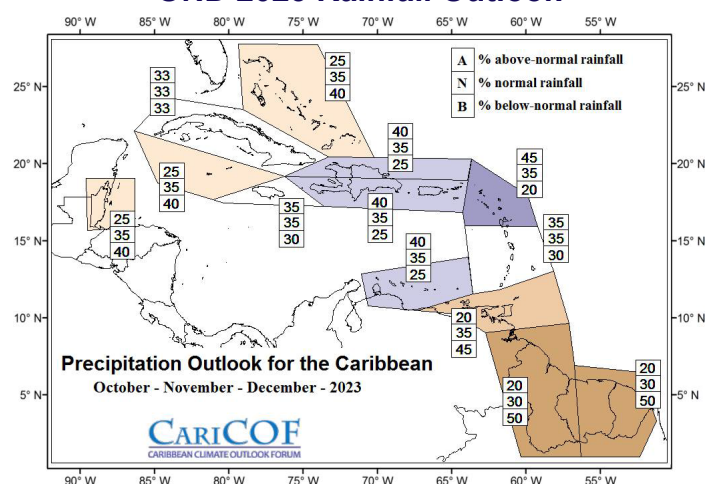
C'bean Islands south of 16°N (except ABC Islands):

Oct to Nov - wet season. Frequent heavy showers. Dec - transition to dry season. Decreasing shower frequency & intensity.

ABC Islands:

Oct to Dec - frequent showers, occasionally heavy.

OND 2023 Rainfall Outlook



Precipitation Outlook for the Caribbean
October - November - December - 2023

Confidence (in %) for rainfall to be:

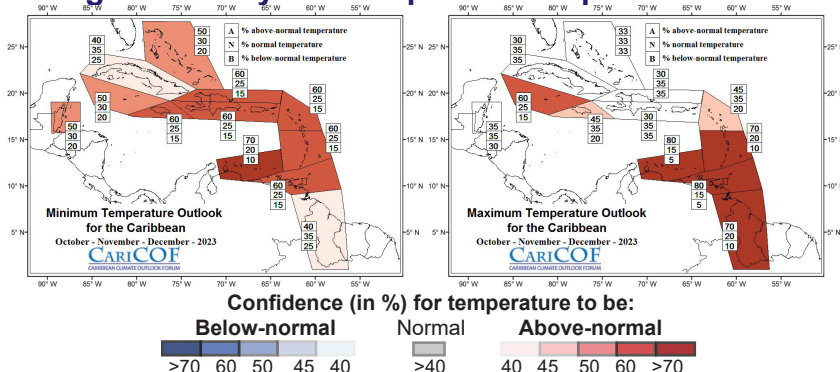
Below-normal	Normal	Above-normal
>70 60 50 45 40	>40	40 45 50 60 >70

Rainfall totals from October to December are likely to be the usual or higher in the ABC Islands, Hispaniola, the Leeward Islands and the US C'bean Territories. By contrast, the Bahamas, Belize, the Cayman Islands, the Guianas, Trinidad & Tobago are likely to record the usual rainfall amounts or less.

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

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Night- and daytime temperatures up to December



October – the last month of this year's record-breaking Caribbean Heat Season – will very likely remain even warmer and more humid than usual with intense night-time and daytime heat and the possibility of heatwaves possibly extending into early-November. Heat stress should steadily decrease in November, going into the Cool Season from December.

Wet days and wet spells up to December

What usually happens from October to December?

- Number of wet days: roughly 35 to 50 (ABC Is: 10 to 20; coastal Guianas: 20 to 35).
- Number of wet spells: 3 to 6 (coastal Guianas: 1 to 3), of which 1 to 4 are very wet (coastal Guianas: up to 2).
- Number of extremely wet spells: up to 2 (Guianas: none).

Forecast and Implications:

- High to extremely high potential for long-term flooding, flash floods and related hazards across the Caribbean Islands and Belize; 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, but prevents wildfires.
- Rising water levels in rivers, large water reservoirs and soils.
- In the Guianas, lower rainfall frequency along the dry season will likely lead to opposite trend in implications.

Drought conditions

Latest drought situation: Severe (or worse) short-term drought has developed in Grand Cayman, French Guiana, northern Guyana, eastern Suriname, Tobago, US Virgin Is.; severe (or worse) long-term drought has developed in Grand Cayman, northern Cuba.

Short-term drought (at the end of Dec. 2023) Short-term drought evolving in central and southern French Guiana, Suriname, Trinidad, and might possibly develop in Dominica, Guyana, Martinique, Saint Lucia, St. Vincent, and northern French Guiana.

Long-term drought (at the end of Nov. 2023) Long-term drought evolving in W Belize, Dominica, S French Guiana, Martinique, SE Puerto Rico, St. Vincent, Trinidad & Tobago, and might possibly develop or continue in ABC Is., Barbados, N & E Belize, Grand Cayman, W & central Cuba, N Dominican Rep., French Guiana, Grenada, NW Puerto Rico, USVI, Saint Lucia, and Sint Maarten/St-Martin.

BRIEF CLIMATE OUTLOOK - January to March 2024

The extremely warm tropical North Atlantic Ocean and this year's El Niño are expected to last into early 2024, meaning unusually high air temperatures are likely to prevail in most locations through March 2024. Fortunately, these unusually high temperatures should no longer pose significant heat stress as this period is part of the Caribbean Cool Season. There is some uncertainty as to how the two aforementioned drivers of unusual climate conditions in the Caribbean will dominate in terms of rainfall patterns. Notwithstanding, the risk of severe weather impacts, including flooding, flash floods, and cascading hazards should strongly decrease from January. However, the 2024 dry season may be unusually intense, resulting in growing drought concerns, particularly in the Guianas. *For temperature and precipitation outlooks for JFM 2024, please visit rcc.cimh.edu.bb/caricof-climate-outlooks*

What influences the next season?

El Niño Southern Oscillation (ENSO)

Recent observations: An El Niño event has been declared, with Sea Surface Temperatures (SSTs) in the eastern equatorial Pacific exceeding 1°C by the end of August, indicative of moderate El Niño conditions.

Model forecast and guidance: The forecast models indicate a likely further anomalous warming of the eastern Pacific to exceed 1.5°C, with virtually certainly El Niño conditions in OND and JFM (>95% confidence).

Expected impacts on rainfall and temperatures: El Niño more often than not is marked by a warmer end to the heat season and reduced activity toward the end of the hurricane season. Rainfall tends to be lower than usual in the southeastern half of the region, but higher than usual in the far north.

Climate conditions in the Tropical North Atlantic and Caribbean

Recent observations: SSTs have hovered around 1°C to 2°C above average in much of the Tropical North Atlantic (TNA), reaching record-high values across vast ocean areas.

Expected conditions: Models are confidently forecasting increasingly warm SST anomalies of 0.5°C to 2°C (or more) above average 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 and an increased frequency of heatwaves, but also higher hurricane season activity, seasonal rainfall totals and an increased frequency of extreme rainfall through the end of the year.

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.

DISCLAIMER

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