

Caribbean Climate Outlook Newsletter - November 2023 to January 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: July 2023 to January 2024

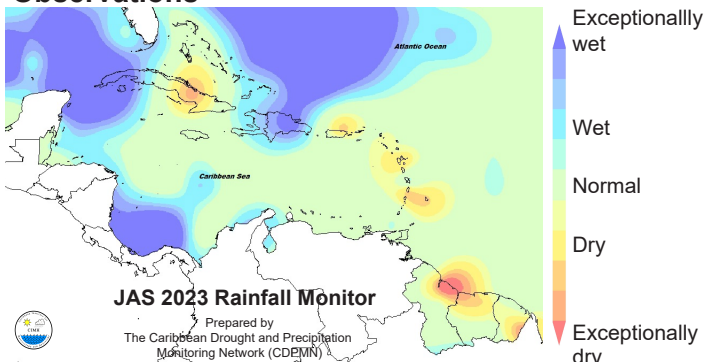
July to September 2024: An El Niño event and a record-warm Tropical North Atlantic have fueled a record-breaking Caribbean Heat Season. Monthly and quarterly-averaged temperatures have been hovering 1-2C above average in most areas while humidity levels were very high. Some drought concern developed in places with fewer cooling showers than usual.

November 2023 to January 2024: North Atlantic temperatures should remain well above average, continuing to (1) fuel some tropical cyclone activity; and (2) increase shower intensity during the tail end of the Caribbean Wet Season, leading to a high potential for flooding and cascading hazards until the end of 2023. Episodes of moderate heat stress may linger with high temperatures, humidity and heatwaves during the transition out of the 2023 Heat Season in November. Drought concerns may continue in Barbados, Grand Cayman and parts of the Lesser Antilles. A decrease in the frequency of wet spells may cause arising drought concerns in the Greater Antilles and, partly due to El Niño, in parts of the Guianas.

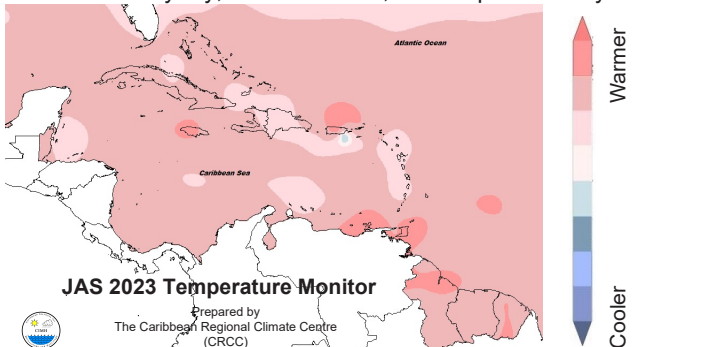
LOOKING BACK:

July - August - September (JAS) 2023

Observations



• **RAINFALL:** Barbados, parts of Central Cuba, southeast French Guiana, northeast Guyana, southern Saint Lucia, and northwest Suriname very dry; Western Cuba, and Hispaniola very wet.



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

Notable Climate Records in JAS 2023:

WET: No reported record-high rainfall totals for this period.

DRY: Grand Cayman, 1 location in Dom. Rep., 1 in French Guiana, 4 in Guyana, 1 in Puerto Rico, 2 in Suriname, 2 in Trinidad & Tobago reported record low rainfall totals (~15-70% of avg.).

HOT: The Bahamas, Barbados, Grenada, Sint Maarten, St. Thomas, Trinidad and Tobago reported record-high mean temp. Moreover, 1 location in The Bahamas, Grand Cayman, 1 in Dominica, 3 in Guyana, Martinique and St. Kitts reported record-high min., mean & max. temps.

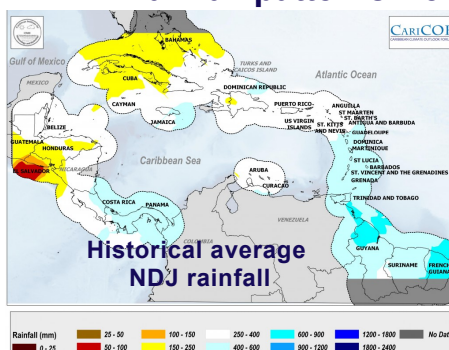
More at <https://carogen.cimh.edu.bb/index.php/component/countrydata/>

October 2023

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

WHAT NEXT?

Rainfall patterns Nov. - Dec. - Jan. (NDJ)



Guianas:

Nov to Jan - wet season. Frequent, heavy showers.

Belize :

Nov to Dec - wet season. Frequent heavy showers.
January - dry season. Few heavy showers in some years.

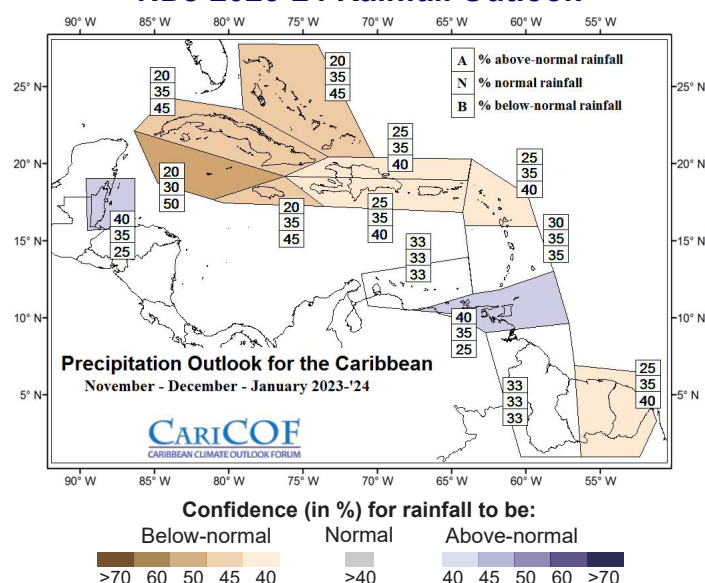
C'bean Islands north of 16°N:

Nov to Dec - transition to dry season. Decreasing shower frequency & intensity. January - sunny days and some days with showers.

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

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

NDJ 2023-24 Rainfall Outlook

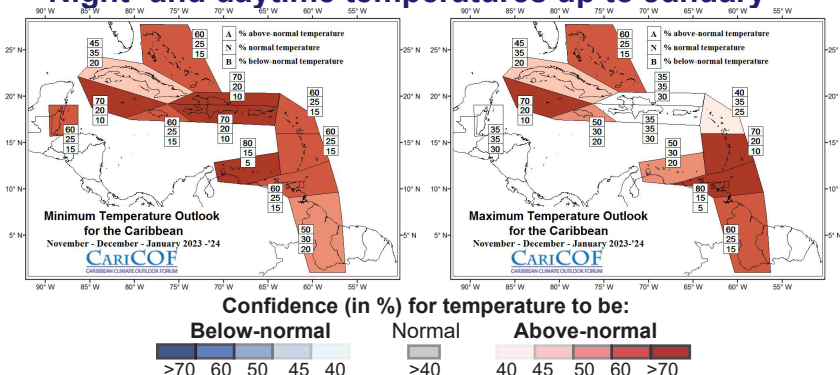


Rainfall totals from November to January are likely to be the usual or higher in the Belize and Trinidad & Tobago. By contrast, the Bahamas, Greater Antilles, eastern parts of the Guianas, and the Leeward Islands are likely to record the usual rainfall amounts or less.

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

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Night- and daytime temperatures up to January



NDJ night-time (min.) and daytime (max.) temperatures are forecast to be as high or even higher than usual in many areas, with the occasional heatwave remaining possible into November. However, heat stress should steadily decrease in November, going into the Cool Season from December.

Wet days and wet spells up to January

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 slow trend towards heavier showers from Late-November may keep flood potential lower than usual.

Drought conditions

Latest drought situation: Severe (or worse) short-term drought has developed in Barbados, parts of Central Cuba, southeast French Guiana, north-east Guyana, southern Saint Lucia, and northwest Suriname; severe (or worse) long-term drought has developed in parts of Barbados, northeast Belize, eastern Cuba, and eastern Guadeloupe.

Short-term drought (at the end of Jan. 2024) Short-term drought evolving in Grand Cayman, and might possibly develop in southwest Belize, The Bahamas, and southern Guyana.

Long-term drought (at the end of Nov. 2023) Long-term drought evolving in Barbados, Dominica, the interior of French Guiana, and might possibly develop or continue in western Belize, Grand Cayman, Cuba, northern Dominican Republic, Martinique, Trinidad & Tobago, and the USVI.

BRIEF CLIMATE OUTLOOK - February to April 2024

The extremely warm tropical North Atlantic Ocean and this year's El Niño are expected to last, meaning unusually high air temperatures are likely to prevail in many locations through April 2024, particularly at night. Fortunately, these unusually high temperatures should not pose significant heat stress until March, after which the the Caribbean Cool Season will come to an end. The risk of severe weather impacts, including flooding, flash floods, and cascading hazards should be low in February and March, but may sharply rise in April. However, a real chance exists that the peak of the dry season will be unusually intense, resulting in growing drought concerns, particularly in the Guianas. In that case, the 2024 Heat Season may get off to an intense start in April. *For temperature and precipitation outlooks for FMA 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 nearing 1.5°C above average, 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 El Niño conditions in NDJ (100% confidence) and FMA (90% confid.).

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/colest 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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