

Caribbean Climate Outlook Newsletter - December 2023 to February 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: August 2023 to February 2024

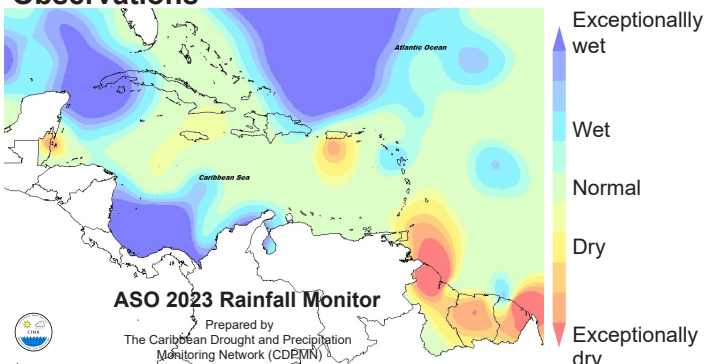
August to October 2024: An El Niño event and a record-warm Tropical North Atlantic have fueled a record-breaking Caribbean Heat Season. Nighttime and daytime temperatures were 1-2C above average in most areas combined with high humidity and prolonged heatwaves. Rainfall deficits, particularly in September, led to drought concern in some places.

December 2023 to February 2024: The cool season features more comfortable temperatures and humidity. This period also marks the early dry season in the Caribbean Islands and Belize and the long dry season in the far interior of the Guianas, with fewer wet days and spells of heavy showers by February. There is a concern for moderate drought in areas with ongoing rainfall deficits and short dry spells should become more frequent, particularly in northwest Belize. The potential for flooding and cascading hazards will be mostly moderate through December, but high in mountainous areas. In the coastal Guianas, the secondary wet season may end up drier than usual, but flood potential remains high through January.

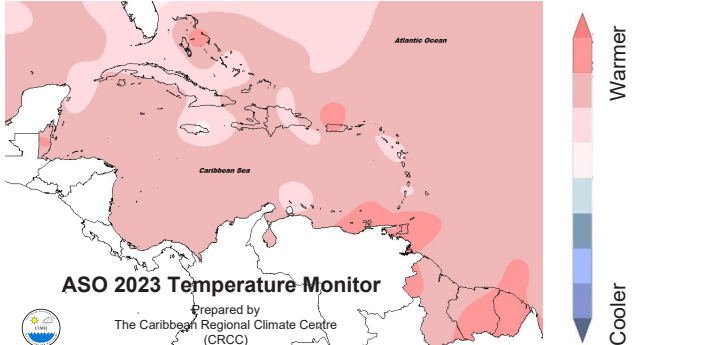
LOOKING BACK:

August - September - October (ASO) 2023

Observations



- **RAINFALL:** Belize, French Guiana, Guyana, Suriname and Trinidad & Tobago very dry; Western Cuba very wet.



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

Notable Climate Records in ASO 2023:

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

DRY: Grenada, 3 locations in Belize, 1 location in Dom. Rep., 1 in French Guiana, 3 in Guyana, 1 in Trinidad & Tobago reported record low rainfall totals (~10-60% of avg.).

HOT: The Bahamas, Barbados, Grenada, Martinique, St. Kitts, Sint Maarten, Trinidad, the USVI, 1 location in French Guiana, 2 in Puerto Rico reported record-high mean temp. Moreover, Grand Cayman, Dominica, 3 locations in Guyana, Martinique and St. Kitts simultaneously reported record-high min. & max. temps.

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

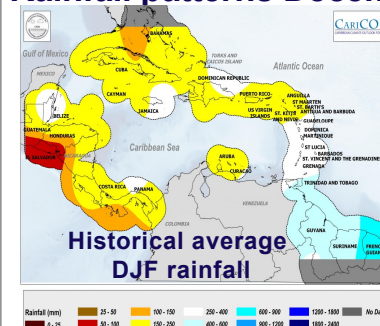
November 2023

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

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WHAT NEXT?

Rainfall patterns December - January - February (DJF)



Guianas:

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

February - dry season. Heavy showers on some days.

Belize:

Dec to Jan - transition to dry season. Heavy showers becoming less frequent.

February - dry season. Few heavy showers.

C'bean Islands north of 16°N:

December - early dry season. Decreasing shower frequency & intensity.

Jan to Feb - mostly sunny, some days with showers.

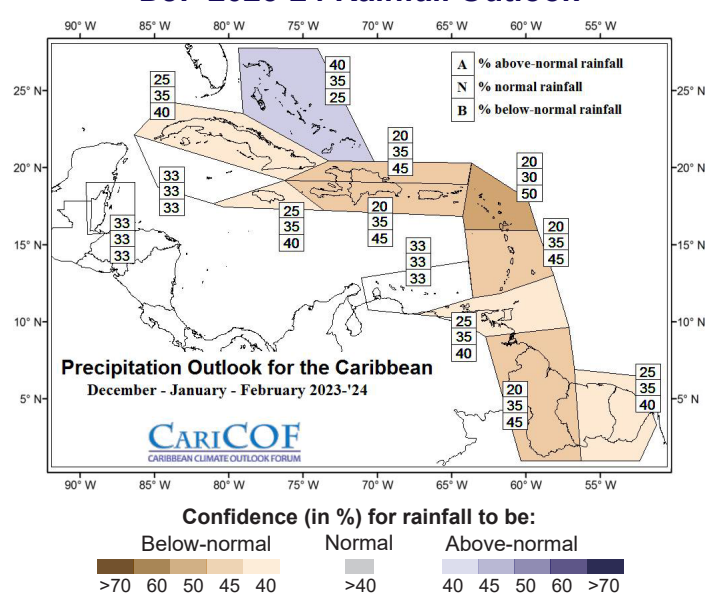
C'bean Islands south of 16°N (except ABC Islands):

Dec to Jan - transition to dry season. Decreasing shower frequency & intensity.

February - peak of dry season. Often sunny, mostly light morning or evening showers on some days.

ABC Islands: transition from to dry season in Feb. Frequent heavy showers December in most years.

DJF 2023-24 Rainfall Outlook



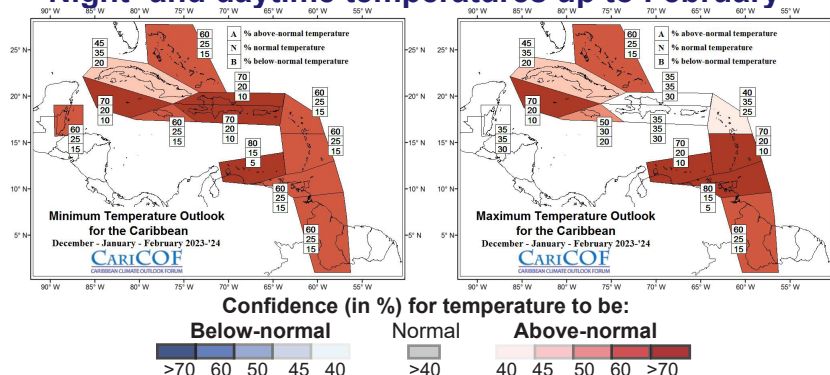
Confidence (in %) for rainfall to be:



Rainfall totals from December to February are likely to be the usual or higher in the Bahamas. By contrast, nearly all other areas are likely to record the usual rainfall amounts or less.

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

Night- and daytime temperatures up to February



DJF night-time (min.) and daytime (max.) temperatures are forecast to be higher than usual in many areas. However, no significant episodes of heat stress are expected during the core of the Caribbean Cool Season.

Wet days and wet spells up to February

What usually happens from December to February?

- Number of wet days: roughly 25 to 40 (ABC Is: 10 to 35; coastal Guianas: 30 to 50).
- # of wet spells: 1 to 3 (ABC Is.: 2 to 6; Guianas: 1 to 5), of which 1 or 2 are very wet (ABC Is & Guianas: up to 3).
- # of extreme wet spells: up to 1 in Belize & some islands (coastal Guianas: up to 2).

Forecast and Implications:

- Moderate potential for long-term flooding, flash floods and related hazards in most areas. High potential in mountainous areas through Dec. and in the coastal Guianas through Jan.
- Water levels in rivers, large water reservoirs and soils decreasing through February in few of a decreasing number of wet spells, particularly in Barbados, Cayman Is., Grenada, Trinidad & Tobago.
- Decreasing surface & soil moisture in view of fewer wet days to increase wildfire potential and local dust.

Drought conditions

Latest drought situation: Severe (or worse) short-term drought has developed in Belize, French Guiana, Guyana, and Suriname; severe (or worse) long-term drought has developed in parts of eastern Cuba, Grenada, Saint Vincent, and Tobago.

Short-term drought (at the end of Feb. 2024) Short-term drought evolving in northern Belize, southern French Guiana, Grenada, western Puerto Rico, northern and central Suriname, and might possibly develop or continue in many other areas across the Caribbean.

Long-term drought (at the end of May 2024) Long-term drought evolving in much of Belize, southern French Guiana and southwest Puerto Rico, and might possibly develop or continue in southwest and east-central Belize, Grand Cayman, Eastern Cuba, central French Guiana, Jamaica, St. Vincent, northern Suriname.

BRIEF CLIMATE OUTLOOK - March to May 2024

The extremely warm tropical North Atlantic Ocean and this year's El Niño are expected to last, meaning unusually high air temperatures will most likely prevail in many locations through May 2024, particularly at night. Fortunately, these unusually high temperatures should not pose significant heat stress until March, after which the Caribbean Heat Season is expected to get off to an intense start in April and May, with heat stress on the rise. 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 Belize and the Guianas. *For temperature and precipitation outlooks for MAM 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 now exceeding 1.5°C above average, indicative of strong 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 DJF (100% confidence) and MAM (90% confid.).

Expected impacts on rainfall and temperatures: El Niño more often than not is marked by a warmer cool 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, seasonal rainfall totals and an increased frequency of extreme rainfall through the end of the year. In some years, there is lingering tropical cyclone activity after November.

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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