

Caribbean Climate Outlook Newsletter - March to May 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: November 2023 to May 2024

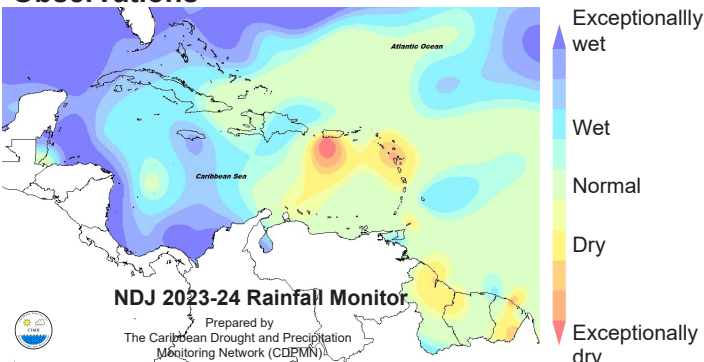
November 2023 to January 2024: El Niño peaked in December, while a record-warm Tropical North Atlantic has continued to fuel record-breaking temperatures in the Caribbean. Unusually high and low rainfall totals were mostly observed in northwestern and southeastern parts of the region, respectively.

March to May 2024: A waning El Niño event in the Pacific and near-record warm Tropical North Atlantic temperatures are forecast. Therefore, the region is set to transition into a much warmer than usual Heat Season with recurrent heatwaves as early as April. March may still be characterised by high evaporation rates and an annual peak in the frequency of short dry spells, as well as further buildup of any ongoing drought and/or with increasing wildfire potential in the far northwest and in the southeast. By contrast, from April to May, rainfall intensity and shower frequency are likely to sharply rise, resulting in high to extremely high potential for flooding, flash floods, cascading hazards and associated impacts in most places, except the ABC Islands.

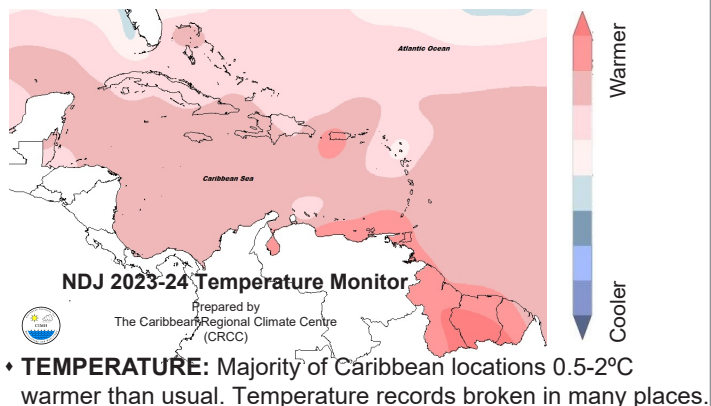
LOOKING BACK:

Nov. - Dec. - Jan. (NDJ) 2023-24

Observations



- **RAINFALL:** Antigua, parts of French Guiana, Guadeloupe, southern Puerto Rico very dry; northern & central Bahamas, northern Belize, most of Cuba, southern Jamaica very wet.



- **TEMPERATURE:** Majority of Caribbean locations 0.5-2°C warmer than usual. Temperature records broken in many places.

Notable Climate Records in NDJ 2023-24:

WET: 1 location in Belize, 2 in Dominican Rep. reported record high rainfall (~165-380% of avg.).

DRY: Antigua, 3 locations in Guyana, 1 in Puerto Rico, 1 in Suriname reported record low rainfall (~15-50% of avg.).

HOT: Grand Cayman, Curaçao, French Guiana, Grenada, Martinique, St. Croix, St. Kitts, Trinidad & Tobago, as well as 1 location in Barbados, 1 in Belize, 5 in Guyana, 1 in Jamaica, 2 in Puerto Rico and 2 in Suriname reported record-high mean temp.

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

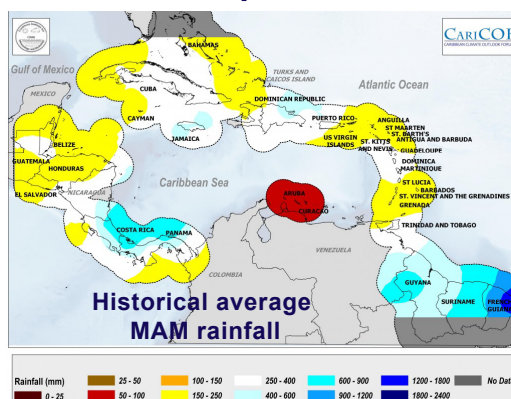
February 2024

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

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WHAT NEXT?

Rainfall patterns March-April-May (MAM)



Guianas: Mar to May - transition to wet season; heavy showers more and more frequent.

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

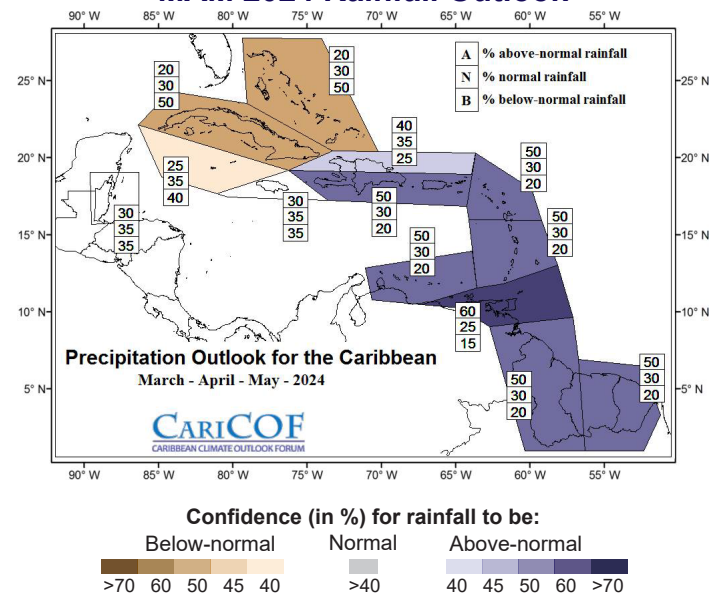
Mar to Apr - latter part of dry season; limited duration and area of heavy showers.
May - transition to wet season.

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

Mar to May - second half of dry season; limited duration and area of heavy showers; April & May occasionally very wet.

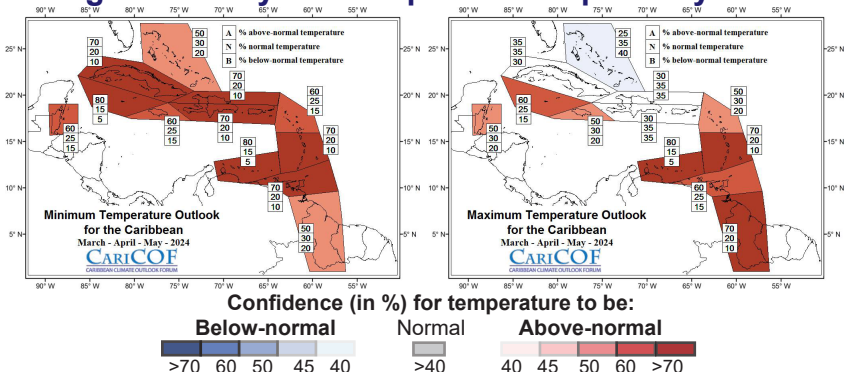
ABC Islands: Mar to May - generally dry.

MAM 2024 Rainfall Outlook



Rainfall totals from March to May are likely to be the usual or even less in The Bahamas, Cayman Is. and Cuba, but the usual or higher in the ABC Islands, Hispaniola, the US C'bean Territories, the Lesser Antilles and the Guianas. White areas show where the forecast indicates little information on rainfall totals.

Night- and daytime temperatures up to May



MAM night-time (min.) and daytime (max.) temperatures are forecast to be higher than usual in most areas. Significant episodes of heat stress may, therefore, appear as the region is forecast to transition into the Heat Season in April. However, heatwaves might well be recorded this March, notably where soil moisture content is even lower than usual.

Wet days and wet spells up to May

What usually happens from March to May?

- Number of wet days: roughly 15 to 30 (ABC Is.: 5 to 15; northern Guianas: 20 to 45).
- # of wet spells: up to 2 or 3, of which up to 1 is very wet (northern Guianas: up to 2).
- # of extreme wet spells: up to 1 or 2 in the northern Guianas and mountainous areas. Up to 1 in flatter areas and very small islands.

Forecast and Implications:

- The potential for flooding, flash floods and cascading impacts arising from intense rainfall events increases from limited or moderate in March, to high or extremely high in April and May.
- Water recharge rates in surface reservoirs and rivers will likely greatly accelerate after March, especially in the southeast.
- Faster than usual increasing wet day frequency after March to often disrupt outdoor tourism activities, lower wildfire potential, but make conditions more conducive to moisture-related pests.

Drought conditions

Latest drought situation: (as of Feb. 1st, 2024) Moderate (or worse) short-term drought has developed in Antigua, Dominica, French Guiana, Guadeloupe, Martinique, St. Kitts and Suriname; long-term drought has developed in northern Belize, Eastern Cuba, Dominica, southeast French Guiana, northern Guyana, Haiti, southern Puerto Rico, St. Kitts, Trinidad & Tobago and the Windward Islands.

Short-term drought (at the end of May 2024) Short-term drought is evolving in southern French Guiana, and may possibly develop or continue in southern Belize, Grand Cayman, central French Guiana, northeastern Guyana, Jamaica, and the USVI.

Long-term drought (at the end of May 2024) Long-term drought is evolving southwest Belize, Grand Cayman, inland portions of French Guiana, northeastern and inland portions of Guyana, southwest Puerto Rico, Suriname northern Suriname, and might possibly develop or continue in northern Belize, Central Cuba, Dominica, coastal French Guiana, northern Guyana, Tobago, the USVI.

BRIEF CLIMATE OUTLOOK - June to August 2024

This period marks the summer portion of the Caribbean wet season and heat season. The tropical North Atlantic Ocean is forecast to remain unseasonably warm, whereas a La Niña event is increasingly likely to develop in this period. Unusually high air temperatures will most likely prevail in many locations and the occurrence of significant to potentially record-breaking heat stress is expected to evolve. The risk of severe weather impacts, including flooding, flash floods, and cascading impacts is expected to be even higher than usual, amounting to unusually copious wet season rainfall. Historically, a reasonable analog to this year's expected conditions is 2010, extreme heat, rainfall and floods evolved after March, followed by an active hurricane season. *For temperature and precipitation outlooks for JJA 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 peaked in December and anomalous cooling of the eastern equatorial Pacific has started, with Sea Surface Temperatures (SSTs) around 1.0°C above average.

Model forecast and guidance: The forecast models indicate an anomalous cooling of the eastern Pacific, from weak or moderate El Niño conditions in MAM (75-85% confidence) to La Niña or ENSO neutral conditions (~50% and ~40-45% confidence, resp.) by JJA.

Expected impacts on rainfall and temperatures: El Niño more often than not is marked by anomalously high air temperatures, even after El Niño wanes. A transition out of El Niño more often than not is associated with increased chances of heavy showers and higher rainfall totals in April.

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 Caribbean Sea and 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 ahead of and in the early wet 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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