Caribbean Climate Outlook Newsletter - February to April 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: October 2022 to April 2023

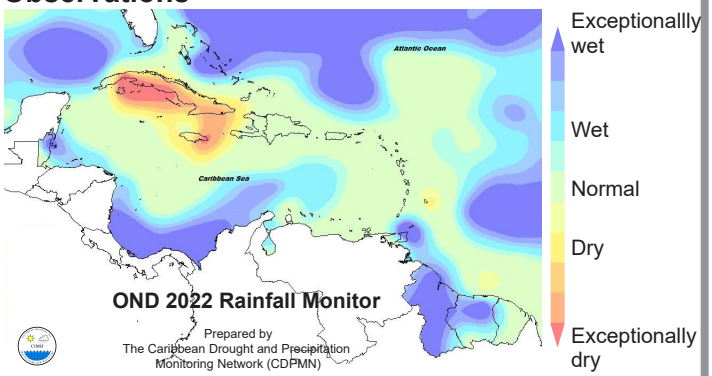
October to December 2022: As is often the case during a La Niña, Cuba received less than the usual amount of rainfall, while most areas recorded at least seasonably high -- or even far higher -- rainfall totals for the late wet season. Until October, episodes of heat stress occurred, but fewer than in recent hot years (e.g., 2020). Heat discomfort faded in November.

February to April 2023: With the likely exception of The Bahamas, Cayman Is. and Cuba, the core of the dry season is forecast to be somewhat less intense than usual, with a few more wet days and wet spells than usual. Meanwhile, with little chance of excessive rainfall through March, marginal to slight potential for flooding, flash floods and cascading hazards is forecasted for most areas. This potential is expected to increase to moderate in April. In contrast, drought concerns will likely continue in Cuba and dry spells are expected to be frequent across the region. No significant episodes of heat discomfort are expected through March, but heatwaves may occur in April, particularly in Belize, Cuba, Jamaica and Trinidad.

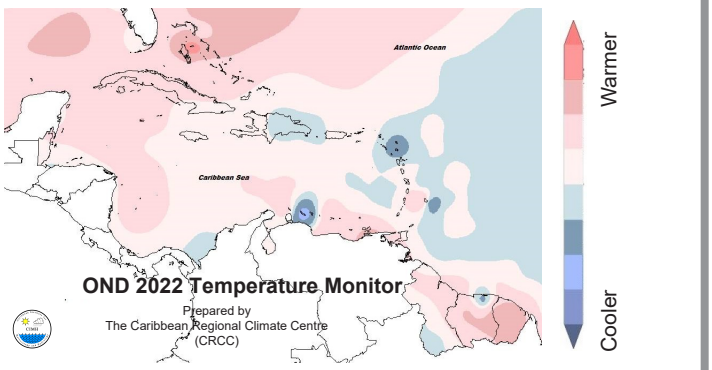
LOOKING BACK:

Oct. - Nov. - Dec. (OND) 2022

Observations



- **RAINFALL:** Cuba, eastern Jamaica very dry; Central Bahamas, northern Belize, Guyana, Puerto Rico, northern parts of inland Suriname, Trinidad & Tobago very wet.



- **TEMPERATURE:** Near average temperatures for most; but Curaçao was significantly cooler than usual, while the Northwestern Bahamas, French Guiana and parts of southern Suriname were signif. warmer than usual.

Notable Climate Records:

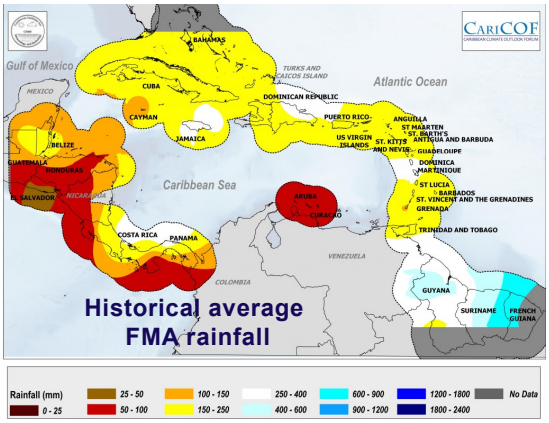
WET: *OND:* 3 locations in Trinidad & Tobago, 2 in Guyana and 2 in French Guiana recorded their highest rainfall totals for this period (~155-425% of avg.).

DRY: *OND:* 1 location in Jamaica and 1 in Puerto Rico recorded their lowest rainfall totals for this period (~15-40% of avg.).

HOT: *OND: No highest minimum, mean or maximum temperatures were recorded for this period, respectively.*

WHAT NEXT?

Rainfall patterns February-March-April (FMA)



Belize : Feb to Apr - dry season. Mostly without heavy rainfall.

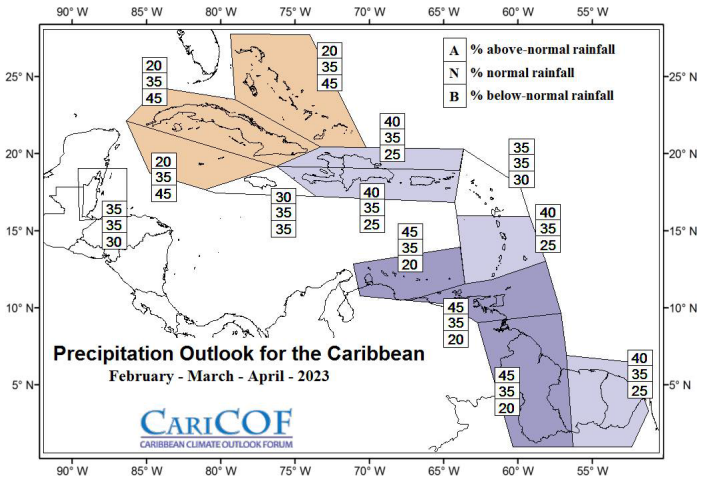
C'bean Islands north of 16°N: Feb to Apr - sunny days and some days with showers.

C'bean Islands south of 16°N (except ABC Islands): Feb to Apr - sunny days and some days with showers.

ABC Islands: Feb to Apr - generally dry.

Guianas: Feb to Apr - End of dry season with occasional heavy showers and thunderstorms.

FMA 2023 Rainfall Outlook

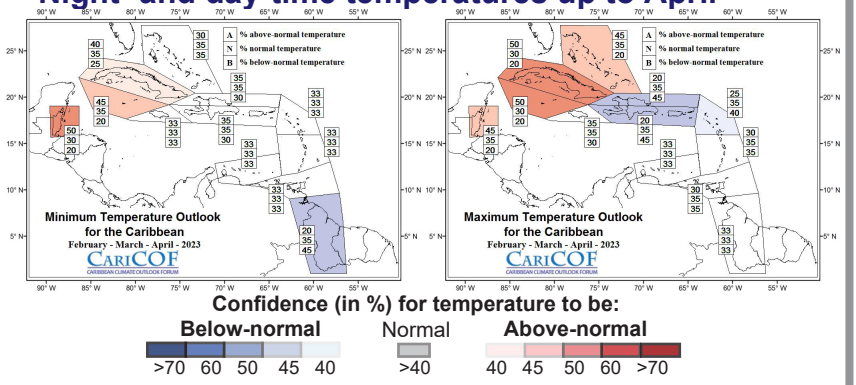


Confidence (in %) for rainfall to be:

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

Rainfall totals from February to April are likely to be no higher or even lower than usual in The Bahamas, Cayman Is. and Cuba; but at least as high as usual in the Guianas, Hispaniola, the US C'bean Territ. and the islands south of Guadeloupe. *White areas show where the forecast indicates little information on rainfall totals.*

Night- and day-time temperatures up to April



Confidence (in %) for temperature to be:

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

FMA night-time (min.) and daytime (max.) temperatures are forecast to be close to the usual or slightly lower in most areas, but possibly higher in The Bahamas, Belize, Cayman Is. and Cuba. Heat stress should not be a significant concern through March. However, heatwaves do occur in April, especially in Belize and Trinidad, and in areas in drought.

Wet days and wet spells up to April

What usually happens from February to April?

- 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 two in the northern Guianas and mountainous areas. Virtually none elsewhere.

Forecast and Implications:

- Marginal to slight flooding, flash flood, landslide/rockfall and soil erosion potential in Belize and the islands through March. Moderate potential in the northern Guianas and mountainous areas in April in view of very wet and extreme wet spells.
- Faster depletion of water reservoirs than usual for the core of the dry season in Cuba in view of a lower than usual number of wet spells.
- Increasing wildfire potential and local airborne dust from Hispaniola westwards. Slower increase from Dominica southwards.

Drought conditions

Lastest drought situation: (*as of Jan. 1st, 2023)*	Moderate (or worse) short-term drought has developed in Cuba, and eastern and southern Jamaica; moderate (or worse) long-term drought has developed in lCuba, eastern and southern Jamaica , and northern Suriname.
Short-term drought (at the end of Apr. 2023)	Short-term drought is evolving across Western Cuba and might possibly develop in Antigua, Eastern Cuba, Guadeloupe, northern Hispaniola, southwest Puerto Rico, and St.Kitts.
Long-term drought (at the end of May 2023)	Long-term drought is evolving in Central and Eastern Cuba, and might possibly develop or continue in western Cuba, Dominican Republic, and St. Vincent.

BRIEF CLIMATE OUTLOOK - May to July 2023

This period may be typical of a transition out of a La Niña event. This means a potential delay of the onset of the wet season by a number of weeks in the islands south of Guadeloupe. Though less extensive than after El Niño, recurrent episodes of heat stress during heatwaves will likely be a feature of this first half of the Caribbean Heat Season in areas experiencing drought such as Cuba, in particular during frequent dry spells ahead of the wet season. Shower frequency and intensity should increase towards May in the Greater Antilles, the Guianas and Belize, or towards June/July elsewhere. Flood potential will be moderate across most of the region. Finally, this period usually marks the annual peak in the frequency of Saharan dust incursions into the Caribbean. *For temperature and precipitation outlooks for MJJ 2023, please visit rcc.cimh.edu.bb/caricof-climate-outlooks*

What influences the next season?

El Niño Southern Oscillation (ENSO)

Recent observations: Sea Surface Temperatures (SSTs) in the eastern Pacific remain below normal (i.e. -0.5°C to -1°C); La Niña conditions maintained for all of 2022.

Model forecast and guidance: The forecast models indicate a return to ENSO neutral conditions is likely in FMA (70-80% confidence) and remaining so in MJJ (50-60% confidence), or possibly transitioning to El Niño conditions from then onwards (30-40% confidence).

Expected impacts on rainfall and temperatures: ENSO neutral offers little contribution to seasonal rainfall or temperature prediction in the Caribbean, but a transition out of La Niña more often than not is marked by a delay of the onset of the wet season in the southeastern Caribbean.

Climate conditions in the Tropical North Atlantic and Caribbean

Recent observations: SSTs have hovered around 0.5°C above average in much of the sub-tropical North Atlantic, but are near average in the Caribbean Sea and the Tropical North Atlantic (TNA).

Expected conditions: Models are forecasting observed SST to remain to between 0°C and 0.5°C 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, but also higher Atlantic Hurricane Season activity, seasonal rainfall totals in an increased frequency of extreme rainfall during the summer 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 thay may provide.

DISCLAIMER