Caribbean Climate Outlook Newsletter - December to February 2022-23

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 2022 to February 2023

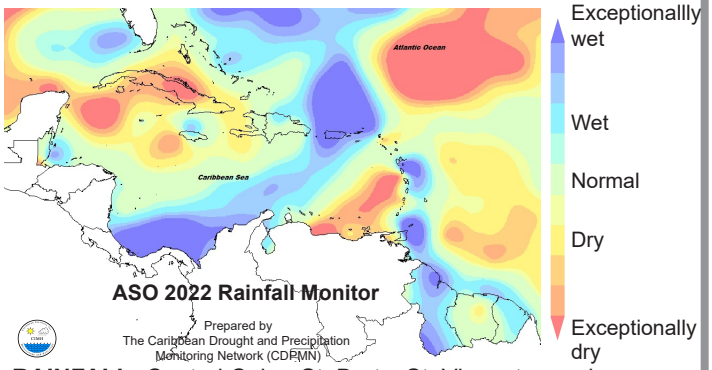
August to October 2022: As is typical during a La Niña in the Pacific, Cuba received less than the usual amount of rainfall, while most areas recorded at least seasonably high -- or even far higher -- rainfall totals for this portion of the wet season. While heatwaves were fewer than in recent hot years (e.g., 2020), high humidity led to a peak in heat stress in September.

December 2022 to February 2023: This first half of the Caribbean dry season is forecast to feature a slower than usual decrease in rainfall, wet days, wet spells, but increase in dry spells. Meanwhile, the likelihood of excessive rainfall with resulting moderate potential for flash floods and cascading hazards in the Antilles -- especially the southernmost islands -- and Belize in December. In contrast, drought concerns arise in Cuba and The Bahamas, which may end up even drier than usual. In the Guianas, the secondary wet season comes with a high likelihood of excessive rainfall, resulting in high flood potential, rising water levels in soils, rivers and reservoirs through February. No heat discomfort is expected in this season.

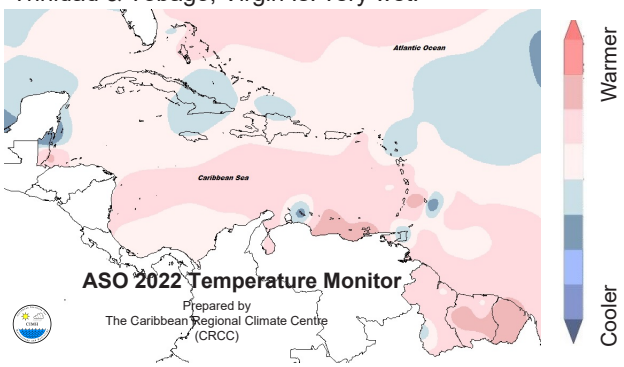
LOOKING BACK:

August - September - October (ASO) 2022

Observations



- **RAINFALL:** Central Cuba, St. Barts, St. Vincent very dry; Central Bahamas, Dominica, Guadeloupe, much of Guyana, northern Jamaica, Puerto Rico, parts of coastal Suriname, Trinidad & Tobago, Virgin Is. very wet.



- **TEMPERATURE:** Near average temperatures in much of the Caribbean; but Antigua, parts of Barbados, northern Belize, Curaçao were significantly cooler than usual, while French Guiana and parts of Suriname were signif. warmer than usual.

Notable Climate Records:

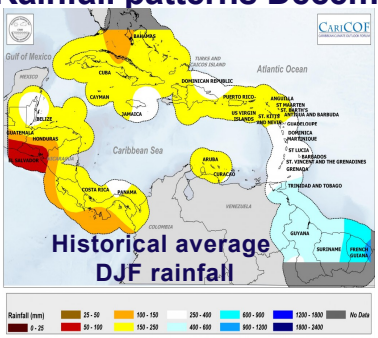
WET: *ASO:* 2 locations in Guyana, 1 in Dominica, 1 in Puerto Rico, 1 in Tobago recorded their highest rainfall totals for this period (~165-175% of avg.). *Oct:* Tobago recorded its month.

DRY: *ASO:* 1 location in Cuba recorded its lowest rainfall totals for this period (50% of avg.).

HOT: *ASO:* 1 location in Dominica recorded its highest daytime maximum temperature for this period.

WHAT NEXT?

Rainfall patterns December - January - February (DJF)



Belize :
Dec to Jan - transition to dry season. Heavy showers becoming less frequent.
February - dry season. Few heavy showers.

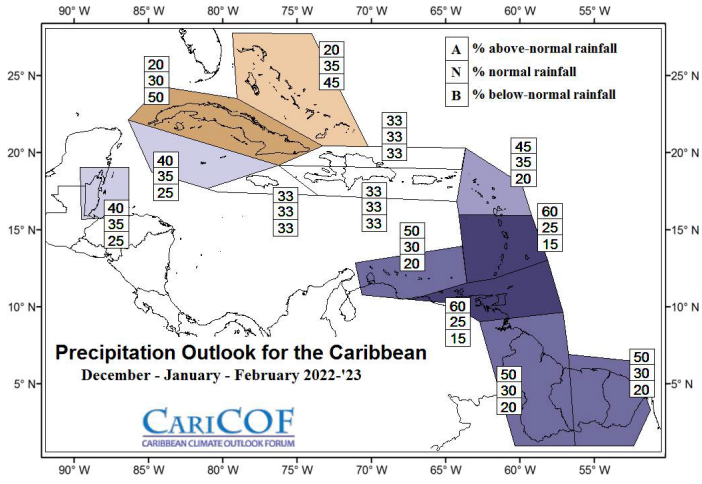
C'bean Islands north of 16ºN:
December - early dry season. Decreasing shower frequency & intensity.
Jan to Feb - mostly sunny, some days with showers.

C'bean Islands south of 16ºN (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.

Guianas:
Dec to Jan - wet season. Frequent, heavy showers.
February - dry season. Heavy showers on some days.

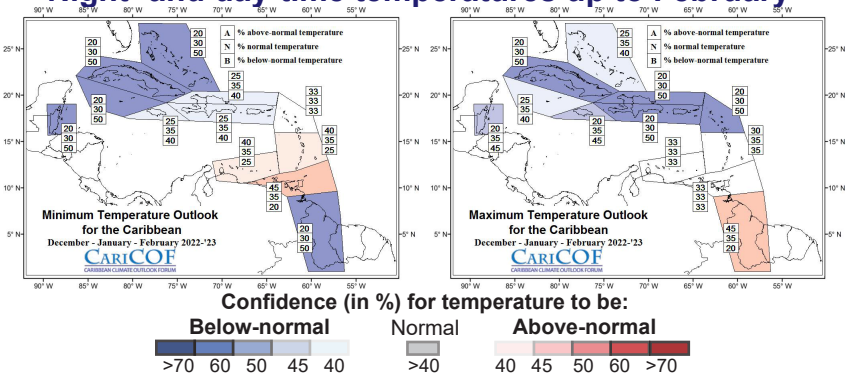
ABC Islands: transition from to dry season in Feb. Frequent heavy showers December in most years.

DJF 2022-23 Rainfall Outlook



Rainfall totals from November to January are likely to be no higher than usual in The Bahamas and Cuba; but at least as high as usual in the ABC Is., Belize, Cayman Is., the Guianas and the Lesser Antilles.
White areas show where the forecast indicates little information on rainfall totals.

Night- and day-time temperatures up to February



Confidence (in %) for temperature to be:

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

DJF night-time (min.) and daytime (max.) temperatures are forecast to be close to the usual or slightly lower in most areas, except for Guyana during the day and, at night, in the Antilles south of Guadeloupe. Heat stress should not be a concern as the Caribbean will be in its 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:

- High potential for flooding, flash floods, land slides / rock fall and soil erosion from very wet and extreme wet spells in the Guianas. Potential decreasing from moderate to high in December to marginal by February in the islands.
- Slower depletion of large water reservoirs in the Greater and Lesser Antilles.
- Slowly increasing wildfire potential by the end of February.

Drought conditions

Lastest drought situation: *(as of November 1st, 2022)*	Moderate (or worse) short-term drought has developed in much of Cuba, western Haiti, northwestern Martinique, St. Barts and in St. Vincent; moderate (or worse) long-term drought has developed in Antigua, Western Cuba, southwestern Hispaniola, southern Jamaica, Martinique, St. Barts and St. Vincent.
Short-term drought (at the end of Feb. 2023)	Short-term drought is evolving across Central Cuba and may possibly develop or continue in The Bahamas, southwest Belize and eastern Cuba.
Long-term drought (at the end of May 2023)	Long-term drought might possibly develop or continue in The Bahamas, southwest Belize and eastern Cuba.

BRIEF CLIMATE OUTLOOK - March to May 2023

Indications are that the second half of the 2022-23 dry season may be characteristic of a La Niña event. Shower frequency should be relatively low, resulting in an annual peak in the frequency of dry spells in the Caribbean Islands and Belize, and in some dry spells in the Guianas until April. Drought concerns may grow in western Belize, western Cuba and southeast Puerto Rico. By contrast, rainfall intensity when it does rain will likely increase towards May. As a result, flood potential will be limited in March across the region, but increasing from April in the Greater Antilles, and May in Belize, the Guianas and the Lesser Antilles. Heat stress in the vulnerable population and small livestock will increase from April (Belize, Cuba and Trinidad) or May (elsewhere). *For temperature and precipitation outlooks for MAM 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. -1°C); La Niña conditions have so far maintained for all of 2022.

Model forecast and guidance: The forecast models indicate La Niña conditions in DJF (75% confidence), likely reverting to neutral conditions by MAM (70-80% confidence).

Expected impacts on rainfall and temperatures: La Niña tilts the odds to more rainfall DJF and MAM, except in the northern Caribbean where it tilts the odds to less rainfall. ENSO neutral offers little contribution to seasonal rainfall or temperature prediction in the 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 Caribbean Sea and the Tropical North Atlantic (TNA) and in the sub-tropical North Atlantic.

Expected conditions: Models are forecasting observed SST to return 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 tends 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 except in the north.

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