

Caribbean Climate Outlook Newsletter - April to June 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: December 2022 to June 2023

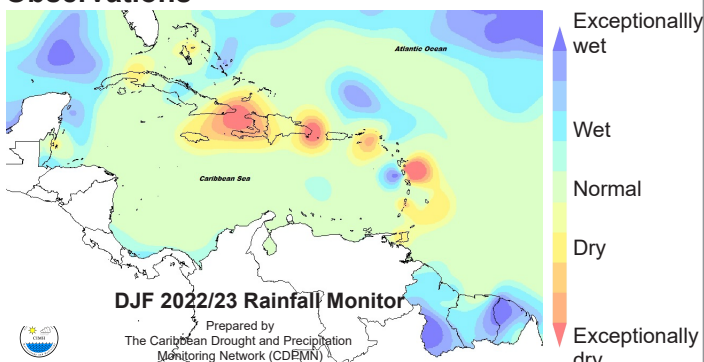
December 2022 to February 2023: A long-lasting La Niña event has ended this month. Characteristic of La Niña from December to February was that the Guianas recorded far higher rainfall totals during their secondary wet season, whereas drought concerns increased in Cuba. The period marked the core of the Caribbean cool season with little heat discomfort.

April to June 2023: The Pacific has transitioned out of La Niña and ocean temperatures around the Caribbean are expected to be close to average. This makes it difficult to forecast unusual climate conditions as the Caribbean transitions into the wet season. Nevertheless, long-term drought concerns are rising in parts of Cuba, while the effects of frequent dry spells across the Islands and Belize will likely continue, with a peak in wild fire potential and Saharan dust intrusions. There is a likelihood of heatwaves in Belize, Cuba, Jamaica and Trinidad from April, and from May elsewhere in the Islands. By contrast, the potential for flooding, flash floods and cascading hazards will increase to moderate or high into May.

LOOKING BACK:

Dec. - Jan. - Feb. (DJF) 2022/23

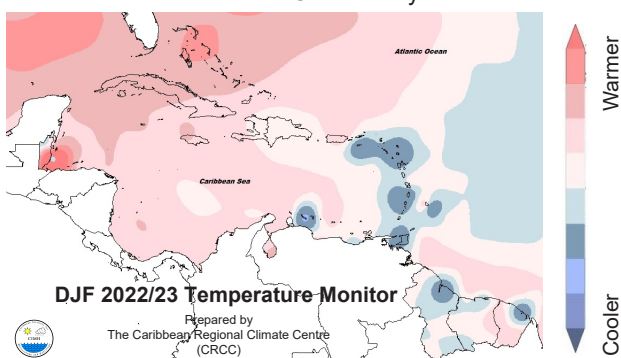
Observations



DJF 2022/23 Rainfall Monitor

Prepared by
The Caribbean Drought and Precipitation
Monitoring Network (CDPMN)

- **RAINFALL:** Southeasternmost Cuba, Dominican Republic, eastern Jamaica, St. Vincent, USVI very dry; Central Bahamas, southwestern Dominica, large parts of the interior of the Guianas as well as coastal French Guiana very wet.



DJF 2022/23 Temperature Monitor

Prepared by
The Caribbean Regional Climate Centre
(CRCC)

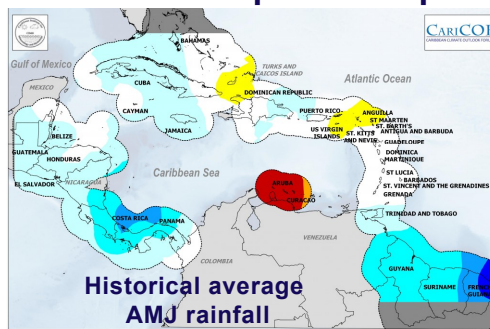
- **TEMPERATURE:** Curaçao, parts of the coastal Guianas, most of the Lesser Antilles were cooler than usual, while the North-western Bahamas, southern Belize and Grand Cayman were signif. warmer than usual.

Notable Climate Records:

- WET:** DJF: 2 locations in Guyana, 2 in French Guiana recorded their highest rainfall totals for this period (150-375% of avg.).
- DRY:** DJF: 3 locations in Dominican Rep. and 1 in Cuba recorded their lowest rainfall totals for this period (30-45% of avg.)
- HOT:** DJF: Northernmost Bahamas and Grand Cayman recorded its highest max. temperature, 2 locations in Belize their highest mean temperature for this period.

WHAT NEXT?

Rainfall patterns April-May-June (AMJ)



Historical average
AMJ rainfall

ABC Islands: Apr to Jun - mostly dry.

Guianas: Apr to Jun - transition to wet season; heavy showers more and more frequent.

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

Apr - end of the dry season. Limited spatial extent and duration of heavy showers.

May & Jun - usually frequent heavy showers.

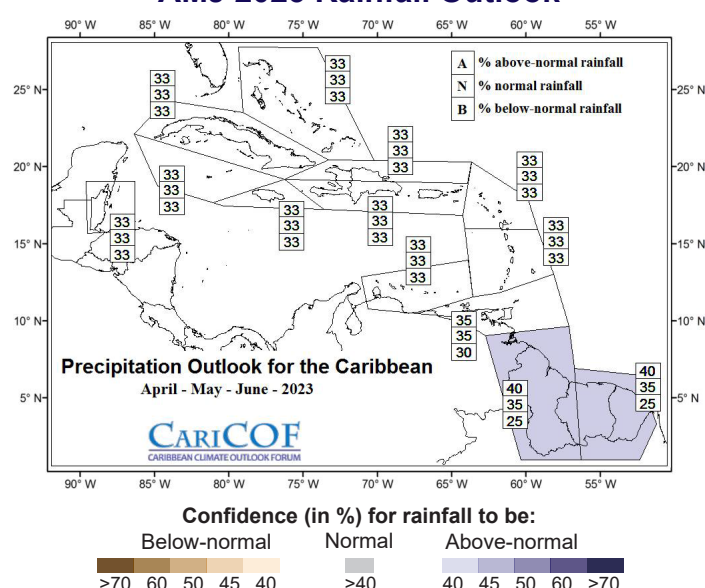
C'bean Islands south of 16°N (except ABC Islands):

Apr to May - end of dry season. Limited spatial extent and duration of heavy showers; occasionally very wet.

Jun - onset of wet season.

Increasingly heavy showers.

AMJ 2023 Rainfall Outlook

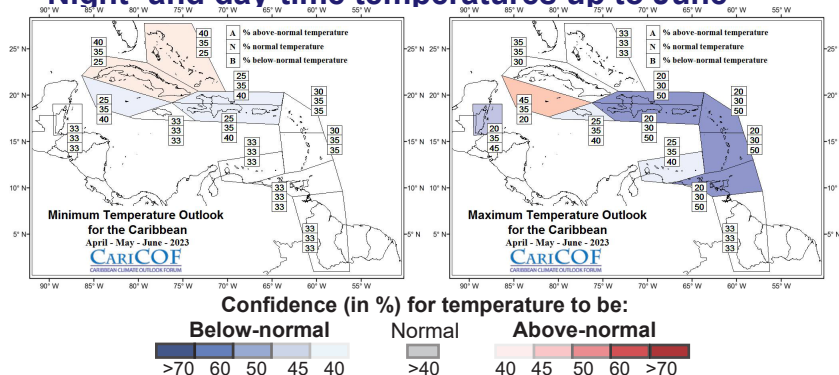


Confidence (in %) for rainfall to be:

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

Apart from the Guianas, where at least the usual rainfall is expected, the April to June forecast indicates little information on rainfall totals at this time. That being said, the chance of widespread, extremely high or extremely low rainfall totals is forecast to be low.

Night- and day-time temperatures up to June



AMJ night-time (min.) and daytime (max.) temperatures are forecast to be close to the usual or slightly lower in most areas, but possibly higher temperatures at night in Cuba and the Bahamas and during the day in Cayman Islands. However, heatwaves can occur in April, especially in Belize and Trinidad, and in areas in drought. From the start of the Caribbean Heat Season in May, they become more common in the Bahamas and Antilles.

Wet days and wet spells up to June

What usually happens from April to June?

- Number of wet days: roughly 20 to 35, (ABC Is. 5-10; Guianas: 40-55).
- # of wet spells: up to 4 (ABC Is. up to 1; Guianas: up to 6), of which up to 2 are very wet (ABC Is. up to 1; Guianas: up to 3).
- # of extreme wet spells: up to 1 (Guianas: up to 2).

Forecast and Implications:

- Moderate flooding, flash flood, landslide/rockfall and soil erosion potential in the northern Guianas and, elsewhere in mountainous areas in April and June, as well as in most areas in May in view of the likelihood of very and extreme wet spells.
- Faster depletion of water reservoirs than usual through April in eastern Cuba in view of a reduced number of wet spells.
- Significant wildfire potential and local airborne dust due to a relatively low number of wet days through April (Guianas and Greater Antilles) or May (elsewhere).

Drought conditions

Lastest drought situation: (as of Mar. 1st, 2023) Moderate (or worse) short-term drought has developed in Western Cuba, in Jamaica, parts of the Dominican Republic, Martinique, St. Vincent, Trinidad and USVI; moderate (or worse) long-term drought has developed in south western Belize, Western Cuba, parts of Haiti, southern and western Jamaica, northern Martinique and in St. Vincent.

Short-term drought (at the end of Jun. 2023) Short-term drought might possibly develop the N. Bahamas, Barbados, N Belize, Grand Cayman, Eastern and Western Cuba, Dominican Rep., Grenada, eastern Jamaica, western Puerto Rico St. Vincent, Trinidad and Tobago, and the USVI.

Long-term drought (at the end of May 2023) Long-term drought is evolving in Central and Western Cuba, and St. Vincent, and might possibly develop or continue in Barbados, northern Belize, Eastern Cuba, southern Dominican Rep., Grenada, and Tobago.

BRIEF CLIMATE OUTLOOK - July to September 2023

Indications are that the summer part of the wet season in the southern and eastern Caribbean islands, as well as in Belize may be drier than usual. Driven by El Niño conditions, such a scenario would typically be accompanied by more dry spells, fewer wet days and wet spells in these areas, but also higher daytime temperatures and more frequent heatwaves than usual across the Caribbean during the peak of the Heat Season. Conversely, the Bahamas and Greater Antilles may end up being wetter than usual during this period due warm ocean temperatures north of the region, and flood potential will increase to high by August or September. The rather large uncertainties at this time should decrease and more clarity is expected in next month's update. *For temperature and precipitation outlooks for JAS 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 have risen from La Niña to near average (ENSO neutral conditions) by mid-March.

Model forecast and guidance: The forecast models indicate ENSO neutral conditions are likely in AMJ (80% confidence) and either remaining so in JAS (30-40% confidence), or possibly transitioning to El Niño conditions from then onwards (55-65% confidence).

Expected impacts on rainfall and temperatures: ENSO neutral offers little contribution to seasonal rainfall or temperature prediction in the Caribbean, but a transition into El Niño more often than not is marked by a delayed onset of the wet season and a drier summer season, resp.

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 and an increased frequency of heatwaves during JAS, 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 they may provide.

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