

# Caribbean Climate Outlook Newsletter - April to June 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: December 2023 to June 2024

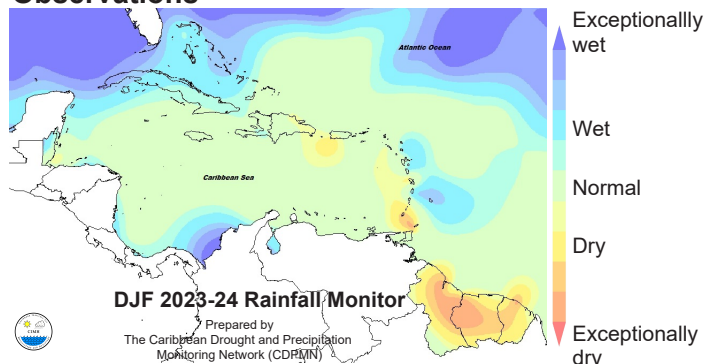
**December 2023 to February 2024:** El Niño peaked in December, while a record-warm Tropical North Atlantic has continued to fuel record-breaking temperatures in the Caribbean. Low rainfall totals in northern Cuba, Grenada, across the Guianas (except far southern Guyana), southern Puerto Rico, St. Vincent and Trinidad & Tobago led to the build up of long-term drought.

**April to June 2024:** A waning El Niño event in the Pacific and record-warm Tropical North Atlantic temperatures are forecast. Therefore, the region is set to enter an intense Heat Season with recurrent heatwaves, as well as an early start to an intense wet season. Shower intensity and frequency are likely to sharply rise, resulting in high potential for flooding, flash floods, cascading hazards and associated impacts in most places, except the ABC Islands. Unknown is how frequent incursions of dry, dust-laden Saharan air into the Caribbean will be. If very frequent, the period will further be characterised by erratic shower activity -- interspersed with frequent dry spells -- and further buildup of ongoing drought, record-breaking heat and wildfire potential.

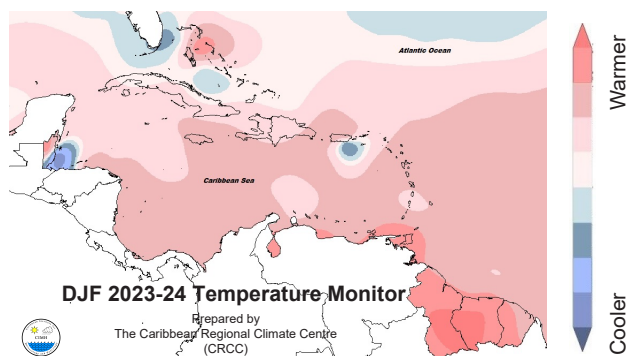
## LOOKING BACK:

### Dec. - Jan. - Feb. (DJF) 2023-24

#### Observations



- ♦ **RAINFALL:** Grenada, most areas across the Guianas, Tobago very dry; Central Bahamas, Western Cuba, Barbados very wet.



- ♦ **TEMPERATURE:** Majority of Caribbean locations 0.5-2°C warmer than usual except southeast Belize, southeast Puerto Rico and St. Croix. Temperature records broken in several places.

## Notable Climate Records in DJF 2023-24:

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

**DRY:** 3 locations in French Guiana, 2 in Guyana, 2 in Suriname reported record low rainfall (~25-55% of avg.).

**HOT:** Curaçao, French Guiana, Grenada, Martinique, Tobago, as well as 1 location in Barbados, 1 in Belize, 5 in Guyana and 2 in Suriname reported record-high mean temp.

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

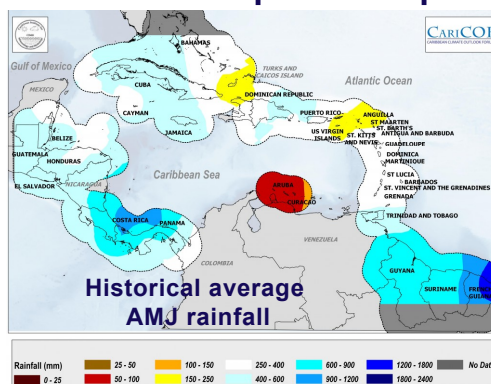
March 2024

find out more by using the clickable images and headings or visit [rcc.cimh.edu.bb](http://rcc.cimh.edu.bb)

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## WHAT NEXT?

### Rainfall patterns April-May-June (AMJ)



#### 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.

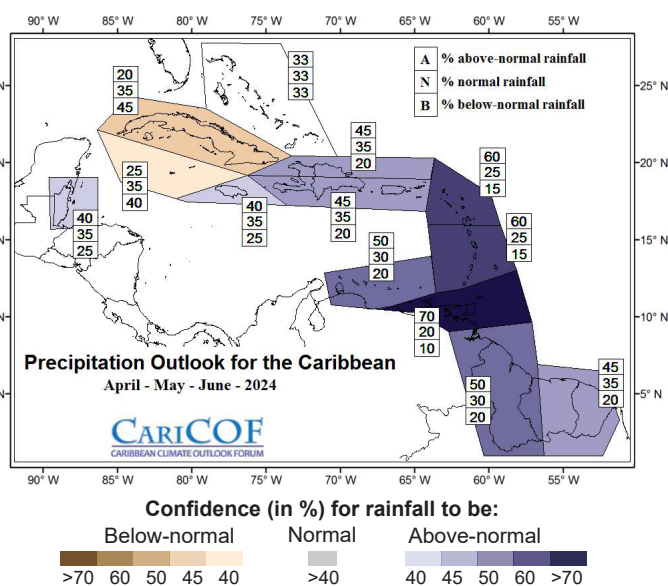
#### C'bean Islands south of 16°N (except ABC Islands):

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.

**ABC Islands:** Apr to Jun - mostly dry.

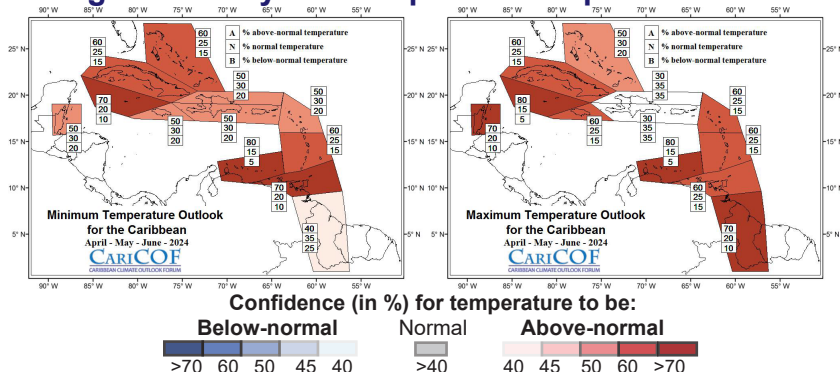
**Guianas:** Apr to Jun - transition to wet season; heavy showers more and more frequent.

### AMJ 2024 Rainfall Outlook



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

## Night- and daytime temperatures up to June



AMJ night-time (min.) and daytime (max.) temperatures, as well as air humidity will likely be considerably higher than usual. Frequent episodes of heat stress are expected as the region set to enter a near-record Heat Season. Heat stress may ramp up even more in areas with ongoing drought, or if incursions of Saharan air are very frequent.

## 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:

- The potential for flooding, flash floods and cascading impacts arising from runoff during intense rainfall events will be high, particularly in mountainous areas and in the Guianas.
- Water recharge rates in surface reservoirs and rivers will likely rapidly accelerate.
- Faster than usual increasing wet day frequency are likely 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 Mar. 1st, 2024) Moderate (or worse) short-term drought has developed in French Guiana, Grenada, Guyana, Martinique, southwest Puerto Rico, Suriname, and Tobago; long-term drought has developed in southern Belize, northern Cuba, Dominica, Grenada, southern Puerto Rico, St. Vincent, eastern and northern Suriname, Trinidad and Tobago.

**Short-term drought** (at the end of June 2024) Short-term drought is evolving in southern French Guiana, and may possibly develop or continue in The Bahamas, Grand Cayman and Central and Eastern Cuba.

**Long-term drought** (at the end of May 2024) Long-term drought is of immediate concern in southern French Guiana, is evolving in southwest Belize, Grand Cayman, parts of Central Cuba, central and northern French Guiana, northern Guyana, southwest Puerto Rico, Suriname, and might possibly develop or continue in ABC islands, northern Belize, Central Cuba, Dominica, Jamaica, Trinidad and Tobago.

## BRIEF CLIMATE OUTLOOK - July to September 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 be in place by August. Unusually high air temperatures and humidity, with the occurrence of significant to potentially record-breaking heat stress expected to evolve. The risk of severe weather impacts from tropical cyclones or other shower activity, including flooding, flash floods, and cascading impacts is expected to be even higher than usual, amounting to unusually copious wet season rainfall. Historically, 2010 was a comparable year in terms of the coincidence of extreme heat, rainfall and floods and an active hurricane season. *For temperature and precipitation outlooks for JAS 2024, please visit [rcc.cimh.edu.bb/caricof-climate-outlooks](http://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 is ongoing, with Sea Surface Temperatures (SSTs) around 1.0°C above average.

**Model forecast and guidance:** The forecast models indicate further cooling to ENSO neutral conditions in AMJ (~70-80% confidence) and La Niña conditions by JAS (~60-75% confidence).

**Expected impacts on rainfall and temperatures:** A transition out of El Niño is often associated with increased chances of heavy showers and higher rainfall totals in April, as well as higher air temperatures. The appearance of La Niña conditions in summer tends to increase tropical cyclone activity in the peak and second half of the Atlantic Hurricane Season.

## Climate conditions in the Tropical North Atlantic and Caribbean

**Recent observations:** Record-warm SSTs in the Caribbean Sea and the Tropical North Atlantic (TNA) around 1°C to 2°C above average have been observed across vast ocean areas since the summer of 2023.

**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, an increased frequency of extreme rainfall and increased tropical cyclone activity throughout the Atlantic Hurricane 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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