

Caribbean Climate Outlook Newsletter - July to September 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: March to September 2023

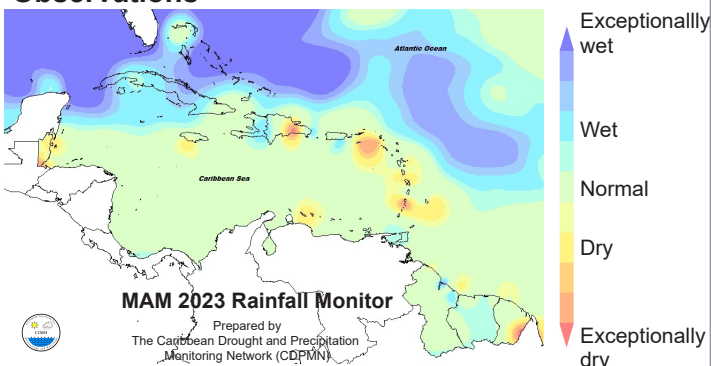
March to May 2023: The Pacific transitioned into an El Niño while the Tropical North Atlantic became record warm by the end of May. In response, the second half of the dry season was more intense than usual in a number of locations across the Greater and Lesser Antilles, resulting in recurring wildfire weather. Temperatures have been on the rise since April.

July to September 2023: Tropical Pacific and Atlantic ocean temperatures should remain well above average, steadily amplifying heat stress in the Caribbean by increasing temperatures, humidity and heatwave frequency. However, the coinciding unusually warm Pacific and Atlantic have opposing effects on Caribbean rainfall and hurricane season activity. For now, the record-warm Atlantic appears to dominate, resulting in little concern for drought due to copious wet season rains. The potential for flooding, flash floods and cascading hazards increases from moderate to high in August. By contrast, the Guianas will potentially be excessively wet in July, with predominantly drier and hotter weather from mid-August.

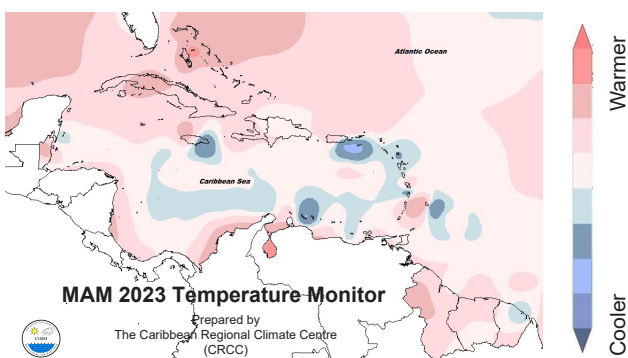
LOOKING BACK:

Mar. - Apr. - May (MAM) 2023

Observations



- **RAINFALL:** Belize, eastern Dominican Republic, southeastern French Guiana, and St. Vincent very dry; parts of the Bahamas, and Cuba very wet.



- **TEMPERATURE:** Curaçao, southeast Jamaica and St. Croix cooler than usual; Northwestern and Northern Bahamas, west Barbados, Central Belize, northern Cuba, northwestern Jamaica, western Guyana signif. warmer than usual.

Notable Climate Records:

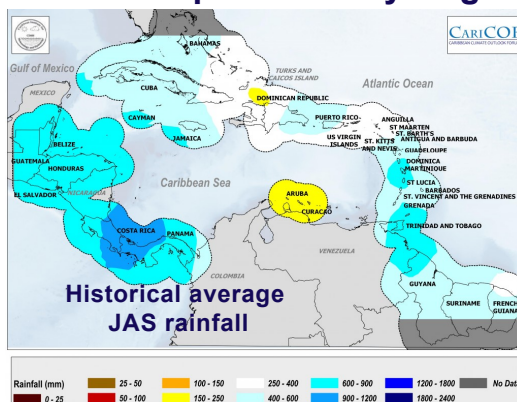
WET:MAM: No locations reported record high rainfall totals for this period.

DRY:MAM: No locations reported record low rainfall totals for this period.

HOT:MAM: One location in Martinique recorded its highest minimum temperature for this period.

WHAT NEXT?

Rainfall patterns July-August-September (JAS)



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

Jul to Aug - wet season. Often includes a mid-summer dry spell.
Sep - wet season. Usually frequent heavy showers.

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

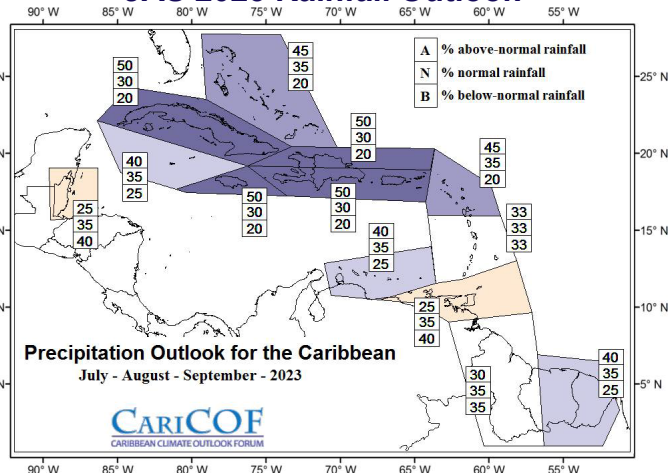
Jul to Sep - wet season. Increasingly frequent heavy showers.

ABC Islands: Mostly dry with occasional wet spells.

Guianas:

Jul to Aug - long wet season. Heavy showers are frequent. Sep - dry season. Heavy showers at times.

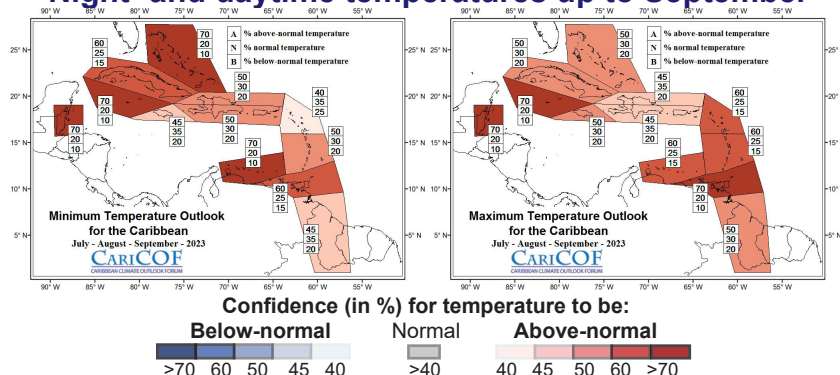
JAS 2023 Rainfall Outlook



Rainfall totals from July to September are likely to be the usual or higher across the ABC Islands, The Bahamas, the Greater Antilles, eastern parts of the Guianas and in the Leeward Islands. By contrast, Belize and Trinidad & Tobago are likely to record the usual rainfall amounts at most.

White areas show where the forecast indicates little information on rainfall totals.

Night- and daytime temperatures up to September



JAS night-time (min.) and daytime (max.) temperatures are forecast to be high enough to often be uncomfortable to many, especially because they may end up even higher than usual during what is the peak of the annual Heat Season. Moreover, humidity and the frequency of heatwaves will ramp up by August and September, further increasing heat stress in a summer that may rival that of the record hot years 2010, 2016 and 2020.

Wet days and wet spells up to September

What usually happens from July to September?

- Number of wet days: roughly 35 to 50 in flatter areas of the islands, 50 to 65 in mountainous areas and in the Guianas (ABC Is. 5 to 15).
- # of wet spells: 2 to 6 (ABC Islands: 1 to 4), of which 1 to 3 are very wet (ABC Is: up to 2)
- # of extreme wet spells: up to 1 (or 2 in mountainous areas).

Forecast and Implications:

- Moderate to high potential for long-term flooding, flash floods and related hazards from very wet and extreme wet spells.
- Increasingly frequent disruptions of outdoor activities.
- Increasing surface wetness makes environmental conditions more conducive to moisture related pests but largely prevents wildfires.
- Rising water levels in rivers, large water reservoirs and soils related to an increase in the number of wet spells.
- In the Guianas, the opposite trend is expected after July.

Drought conditions

Lastest drought situation: (as of June 1st, 2023) Severe (or worse) short-term drought has developed in southern Belize, eastern Dominican Republic, southeastern French Guiana, and St. Vincent; severe (or worse) long-term drought has developed in far southern Belize, southeastern most parts of Cuba, western parts of Haiti, and St. Vincent.

Short-term drought Short-term drought might possibly develop in parts of western Belize by the end of September 2023.

Long-term drought (at the end of Nov. 2023) Long-term drought might possibly develop or continue in parts of western Belize, Dominica, central and southern French Guiana, Martinique, St. Vincent, and Trinidad and Tobago.

BRIEF CLIMATE OUTLOOK - October to December 2023

Though the unusually warm tropical North Atlantic Ocean and this year's El Niño are expected to last through the end of 2023, confidence is very limited as to which of the two drivers of unusual climate conditions in the Caribbean will dominate during the last quarter. However, the frequent, excessive heat exposure expected through October due to high temperatures, humidity and recurring heatwaves should steadily decrease in November. There will still be a high risk of severe weather impacts, including flooding and flash floods, as well as cascading hazards. Updates in the coming months should give us clarity on which signal ends up being dominant. *For temperature and precipitation outlooks for OND 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 near-average to weak El Niño conditions by the end of May.

Model forecast and guidance: The forecast models indicate a likely transition to El Niño conditions in JAS and OND (90% confidence).

Expected impacts on rainfall and temperatures: El Niño more often than not is marked by a warmer heat season, a drier summer season, and reduced tropical cyclone activity, especially from September to November.

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 Tropical North Atlantic (TNA) in recent weeks, even reaching record-high values by mid-June.

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 and an increased frequency of heatwaves, but also higher Atlantic Hurricane Season activity, seasonal rainfall totals and an increased frequency of extreme rainfall during the 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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