

Caribbean Climate Outlook Newsletter - August to October 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: April to October 2023

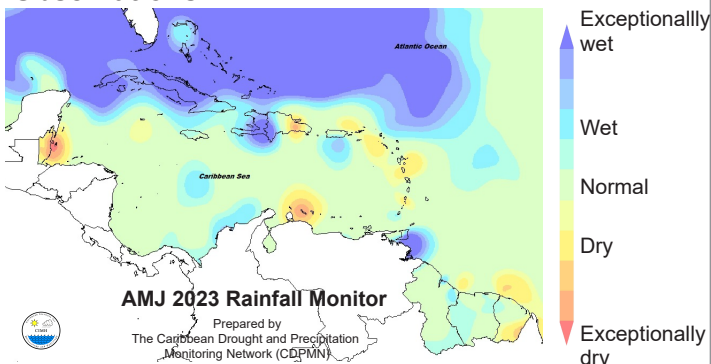
April to June 2023: El Niño conditions and an far warmer than usual Tropical North Atlantic have been observed since late-May. In response, the transition into the Caribbean Heat Season was warmer than usual across most of the region, amping up wildfire weather until wet season rains returned and sharply increasing the recurrence of heatwaves from May.

August to October 2023: Tropical Pacific and Atlantic ocean temperatures should remain well above average, continuing to amplify heat stress in the Caribbean by increasing temperatures, humidity and heatwave frequency to rival the warmest conditions on record (2010, 2016 and 2020). 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 predominant in much of the islands, resulting in limited drought concern, whereas the potential for flooding, flash floods and cascading hazards will be high due to copious rains. By contrast, the Guianas will be predominantly drier and hotter from mid-August.

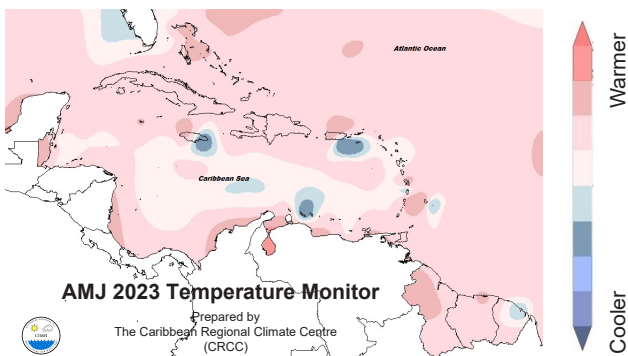
LOOKING BACK:

April - May - June (AMJ) 2023

Observations



- **RAINFALL:** ABC Islands, Belize, eastern Dominican Republic very dry; parts of the Bahamas, Cuba, Haiti and southeast Trinidad very wet.



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

Notable Climate Records:

- WET:AMJ:** One location in Dominican Rep. reported its highest rainfall totals for this period (~265% of avg.).
- DRY:AMJ:** Curaçao, 2 locations in Belize reported record low rainfall totals for this period (~15-45% of avg.).
- HOT:AMJ:** One location in Belize & 1 in Dominica recorded their highest maximum, 2 locations their highest mean temperature for this period.

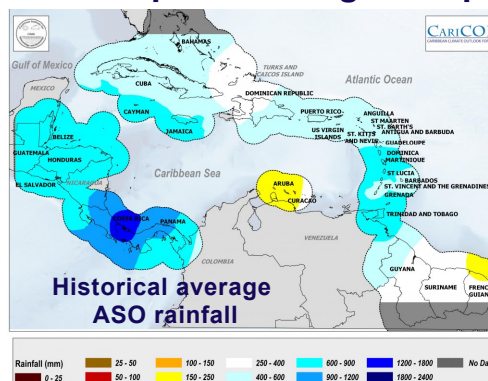
July 2023

find out more by using the clickable images and headings or visit rcc.cimh.edu.bb

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WHAT NEXT?

Rainfall patterns August-September-October (ASO)



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

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

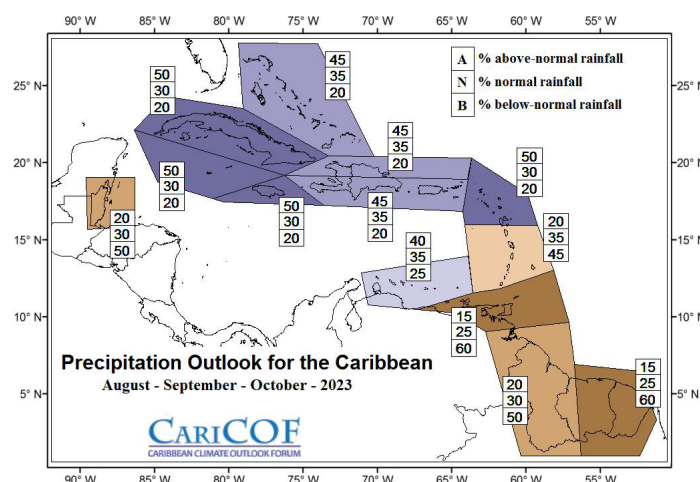
C'bean Islands south of 16°N (except ABC Islands):

Aug to Oct - wet season. Usually frequent heavy showers.

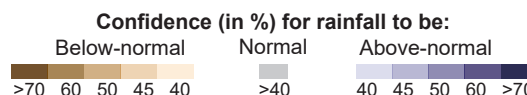
ABC Islands: Mostly dry with occasional wet spells, increasing in frequency in October.

Guianas: early Aug - long wet season. Heavy showers are frequent.
late Aug to Oct - dry season. Heavy showers at times.

ASO 2023 Rainfall Outlook



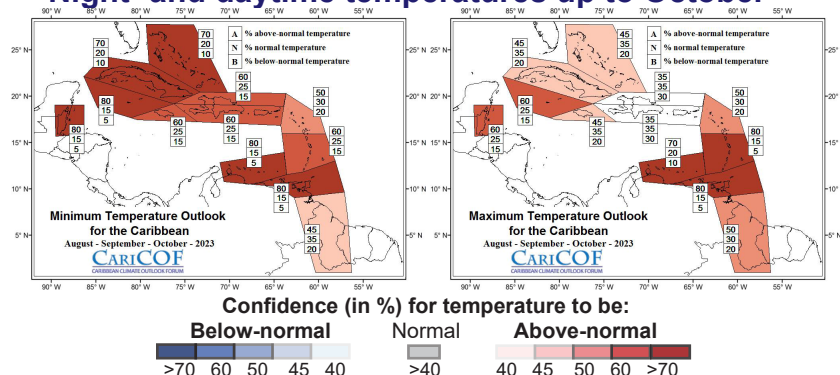
Precipitation Outlook for the Caribbean August - September - October - 2023



Rainfall totals from August to October are likely to be the usual or higher across the ABC Islands, The Bahamas, the Greater Antilles and in the Leeward Islands. By contrast, Barbados, Belize, the Guianas, Trinidad & Tobago and the Windward Islands are likely to record the usual rainfall amounts or less.

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

Night- and daytime temperatures up to October



ASO night-time (min.) and daytime (max.) temperatures are forecast to be uncomfortably high to many, especially because they are likely to end up even higher than usual during the second half of the annual Heat Season. Moreover, humidity and the frequency of heatwaves will ramp up in August and September, further increasing heat stress in a heat season that may rival that of the record hot years 2010, 2016 and 2020.

Wet days and wet spells up to October

What usually happens from August to October?

- Number of wet days: roughly 35 to 50 in flatter areas of the islands, but around 45 to 60 in mountainous areas and 15 to 30 in coastal Guianas (ABC Islands: 10-20).
- # of wet spells: 3 to 6 (coastal Guianas: 1 to 3), of which 1 to 4 are very wet (coastal Guianas: up to 2)
- # of extreme wet spells: up to 1, except in the Guianas.

Forecast and Implications:

- High to extremely high potential for long-term flooding, flash floods and related hazards from very wet and extreme wet spells across the Caribbean Islands and Belize.
- Frequent wet day disruptions of outdoor activities.
- Surface wetness makes environmental conditions more conducive to moisture-related pests, but prevents wildfires.
- Rising water levels in rivers, large water reservoirs and soils.
- In the Guianas, lower rainfall frequency along the dry season will likely lead to opposite trend in implications.

Drought conditions

Latest drought situation: Severe (or worse) short-term drought has developed in ABC Islands, Belize, and eastern parts of the Dominican Republic; (as of July 1st, 2023) severe (or worse) long-term drought has developed in St. Vincent.

Short-term drought (at the end of Oct. 2023) Short-term drought is evolving in French Guiana, and might possibly develop in northern and central Belize, Guyana, and Tobago.

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

BRIEF CLIMATE OUTLOOK - November 2023 to January 2024

The unusually warm tropical North Atlantic Ocean and this year's El Niño are expected to last early 2023 means that unusually high temperatures will likely prevail through January 2024. Fortunately, the frequent, excessive heat exposure observed during this year's Heat Season due to high temperatures, humidity and recurring heatwaves should steadily decrease in November. By contrast, there is considerable uncertainty as to which of the two drivers of unusual climate conditions in the Caribbean will dominate in terms of rainfall patterns and Atlantic hurricane season activity. Notwithstanding, there will still be a high risk of severe weather impacts, including flooding, flash floods, and cascading hazards through December. Updates in coming months should provide more clarity. *For temperature and precipitation outlooks for NDJ 2023-24, 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 to weak El Niño conditions by the end of May.

Model forecast and guidance: The forecast models indicate a likely further anomalous warming of the eastern Pacific to moderate El Niño conditions, with virtually certainly El Niño conditions in ASO (95% confidence) highly likely to remain into NDJ (85-95% 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 June and early July, even reaching record-high values across vast ocean areas.

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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