

Caribbean Climate Outlook Newsletter - June to August 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: February to August 2023

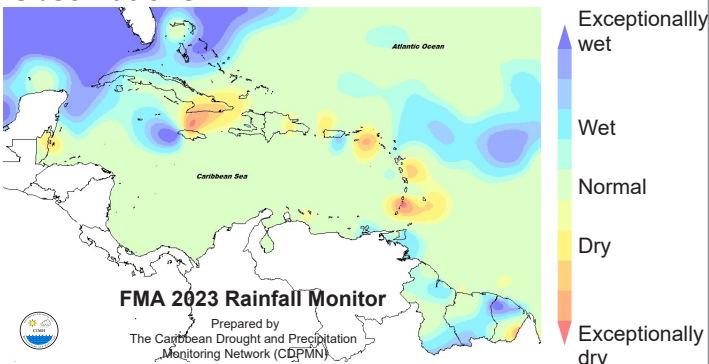
February to April 2023: The Pacific transitioned into ENSO neutral conditions. The peak of the dry season was more intense than usual in a number of locations across the Greater and Lesser Antilles, resulting in wildfire weather by February or March in many locations. With the Caribbean cool season ending March, temperatures have been on the rise in April.

June to August 2023: The Pacific will very likely transition into El Niño while ocean temperatures in and around the Caribbean are expected to be well above-average. These two factors will steadily amplify heat stress by increasing temperatures, humidity and heatwave frequency. However, El Niño and an unusually warm Atlantic have opposing effects on rainfall totals and extremes, as well as hurricane season activity. Until we know which of these two drivers will dominate, we can expect little concern for drought by August. Nonetheless, the potential for flooding, flash floods and cascading hazards will increase from moderate to high by August. Finally, frequent episodes of Saharan dust intrusions into the region are expected.

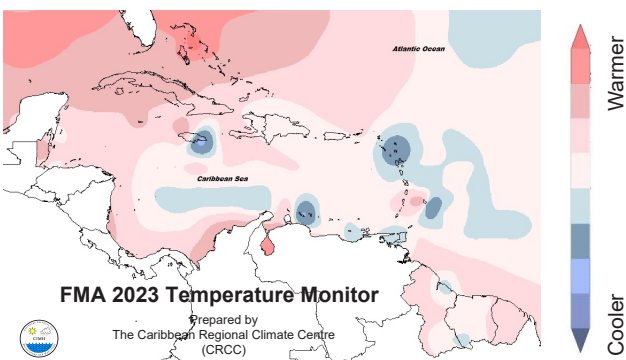
LOOKING BACK:

Feb. - Mar. - Apr. (FMA) 2023

Observations



- **RAINFALL:** southeasternmost Cuba, parts of northern Jamaica, St. Vincent very dry; westernmost Cuba, Northwest Bahamas, northwest French Guiana, westernmost Jamaica very wet.



- **TEMPERATURE:** Antigua, southeast Barbados, Curaçao, Guadeloupe, southeast Jamaica, St. Kitts cooler than usual; Northwestern Bahamas signif. warmer than usual.

Notable Climate Records:

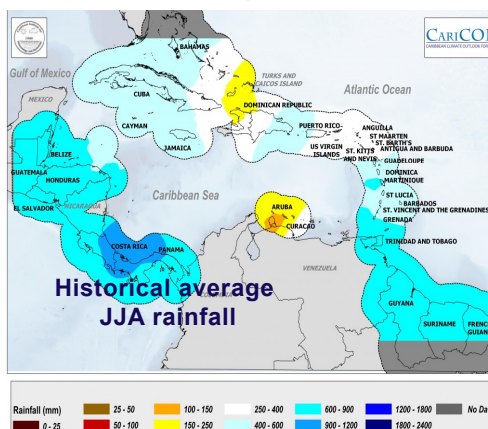
WET: FMA: No locations reported record high rainfall totals for this period.

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

HOT: FMA: One location in Belize recorded its highest mean temperature for this period.

WHAT NEXT?

Rainfall patterns June-July-August (JJA)



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

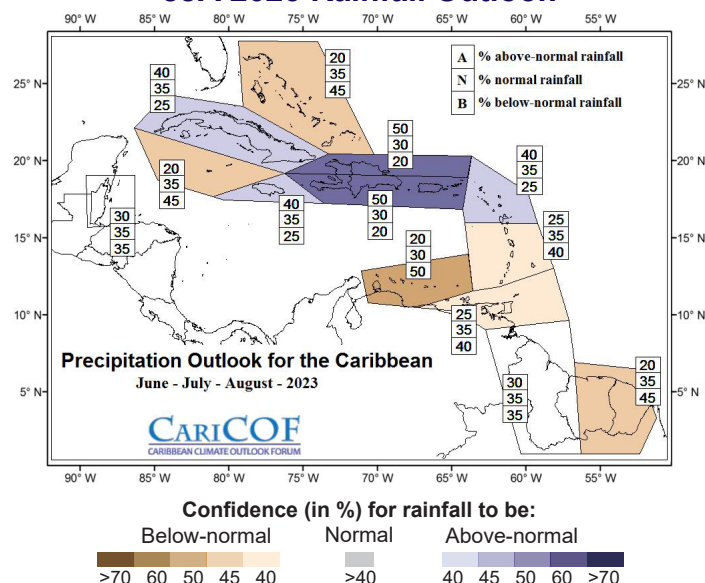
Jun - wet season. Usually frequent heavy showers.
Jul to Aug - wet season. Often includes a mid-summer dry spell.

C'bean Islands south of 16°N (except ABC Islands):
Jun to Aug - first half of wet season. Increasingly heavy showers.

ABC Islands: Mostly dry

Guianas: Jun to Jul - long wet season; Frequent heavy showers. Aug - transition to dry season. Heavy showers become less frequent.

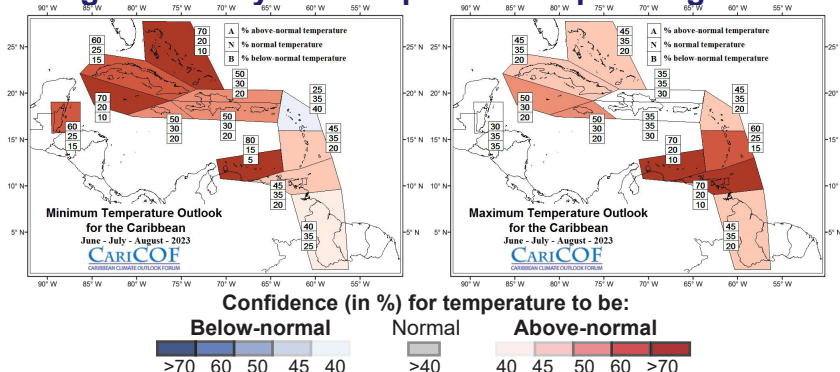
JJA 2023 Rainfall Outlook



Rainfall totals from June to August are likely to be the usual or higher across most of the Greater Antilles and the Leeward Is. By contrast, the ABC Is., The Bahamas, Barbados, Cayman, eastern parts of the Guianas, Trinidad & Tobago and the Windward Is. 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 August



JJA 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. Moreover, heat and humidity will ramp up by August as the Caribbean approaches the peak of the annual Heat Season. Recurring heat waves are expected to further compound to sharply increasing heat stress in a summer that may rival the hot year 2020.

Wet days and wet spells up to August

What usually happens from June to August?

- Number of wet days: 30 to 45 in flatter areas of the islands. 50-65 in mountainous areas and Guianas (ABC Is. 5 to 15).
- # of wet spells: 3 to 6 (ABC Islands: up to 3), of which 1 to 3 are very wet (ABC Is: up to 2)
- # of extreme wet spells: up to 1 or 2.

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, a marked decrease of wild fire potential, and conditions more conducive to moisture-related pests due to an increase in the number of wet days.
- Accelerating recharge rates of large water reservoirs and soil moisture related to an increase in the number of wet spells.

Drought conditions

Lastest drought situation: Severe (or worse) short-term drought has developed in far southern Cuba, parts of northern Jamaica, St. Vincent; severe (or worse) long-term drought has developed in southwest Belize, southeasternmost parts of Cuba, western parts of Haiti, and St. Vincent.

Short-term drought Short-term drought might possibly develop in southern French Guiana by the end of August 2023.

Long-term drought Long-term drought is evolving across Cuba, in northwest Puerto Rico, and St. Vincent and might possibly develop or continue in Barbados, northwest Belize, southern Dominican Republic, Grenada, and southeast Puerto Rico.

BRIEF CLIMATE OUTLOOK - September to November 2023

Indications are that this part of the wet season may be drier than usual in the southeastern and far western Caribbean in view of a likely further development of El Niño. Combined with unusually high ocean temperatures around the Caribbean, this may further lead to frequent, excessive heat exposure due to high temperatures and humidity -- exacerbated during heatwaves -- through October. Whereas El Niño tends to slow down deep convective activity such as tropical cyclone development and heavy showers during this period, an unusually warm North Atlantic may, in fact, increase such activity. This increases the risk of 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 SON 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 slightly above average (ENSO neutral conditions) by mid-May.

Model forecast and guidance: The forecast models indicate a likely transition to El Niño conditions in JJA and SON (85-90% 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 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 0.5°C to 1.5°C above average in much of the sub-tropical North Atlantic and eastern Tropical North Atlantic (TNA), but are near average in the Caribbean Sea.

Expected conditions: Models are confidently forecasting increasingly warm SST anomalies of 0.5°C to 1°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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