

Caribbean Climate Outlook Newsletter - May to July 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

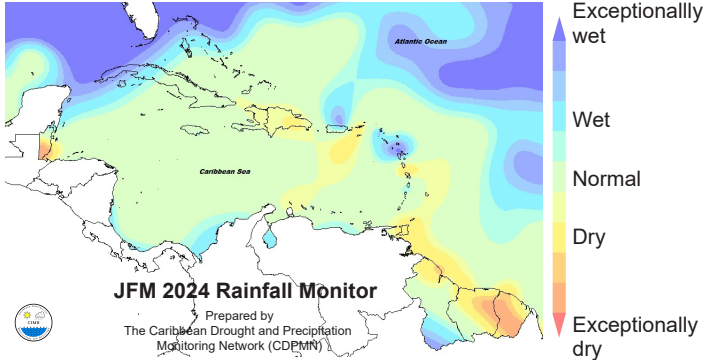
January to March 2024: A record-warm Tropical North Atlantic has continued to fuel record-breaking temperatures in the Caribbean while a weakening El Niño in the Pacific has fueled short term drought in Aruba, parts of Belize, Dominica, the Dominican Republic, French Guiana, northern Guyana, Haiti, Martinique, Suriname, Trinidad and Tobago, and the USVI.

May to July 2024: A return to normal ocean temperatures in the equatorial Pacific and a (near-)record warm Tropical North Atlantic Ocean are forecast. Therefore, the region enters an intense Heat Season with recurrent heatwaves, and a possibly 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 -- but frequent dry spells -- and further buildup of ongoing drought, increasing heat and wildfire potential in May.

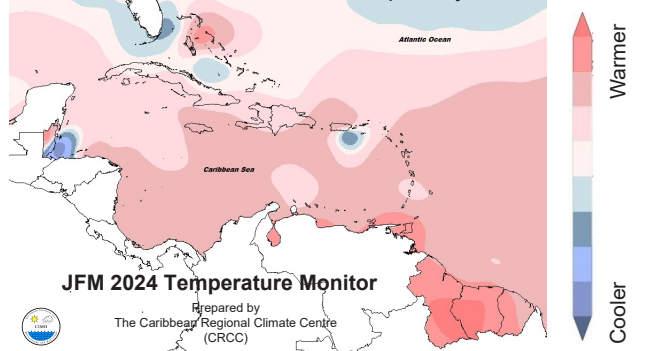
LOOKING BACK:

Jan. - Feb. - Mar. (JFM) 2024

Observations



♦ **RAINFALL:** Areas in the interior of southern Belize, French Guiana, Suriname very dry; Antigua, Northern Bahamas, Western Cuba, northern Guadeloupe very wet.



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

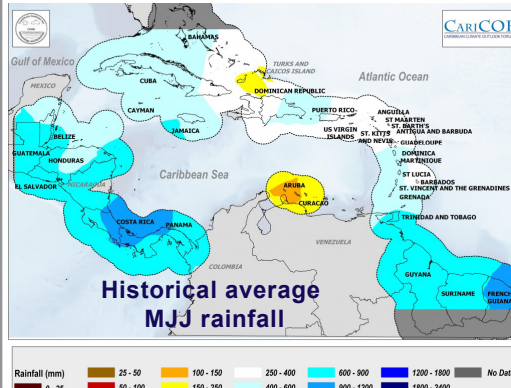
Notable Climate Records in DJF 2023-24:

- WET:** No reported record-high rainfall totals for this period.
- DRY:** record low rainfall at 3 locations in Belize, 1 in French Guiana, 3 in Guyana, 2 in Jamaica, 1 in Suriname (~10-60% of avg.).
- HOT:** Cayman Is., French Guiana, Grenada, Martinique, Suriname, Tobago, as well as 1 location in Barbados, 4 in Belize, 1 in Dominica, 4 in Guyana, 1 in Jamaica, 2 in Puerto Rico reported record-high mean temp.

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

WHAT NEXT?

Rainfall patterns May-June-July (MJJ)



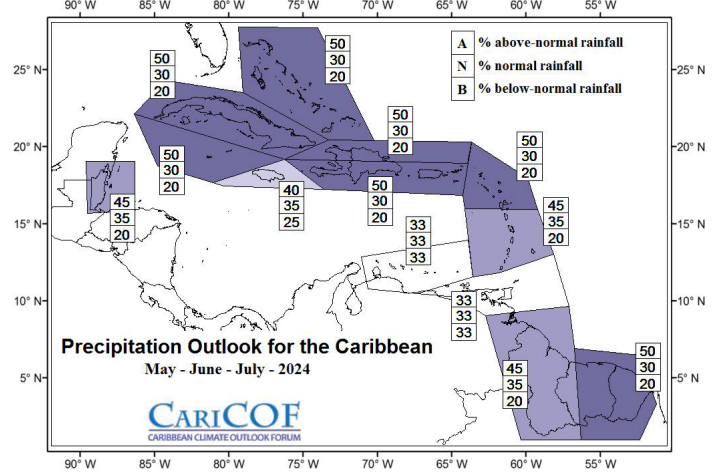
Belize & C'bean Islands north of 16°N:
May & Jun - usually frequent heavy showers.
Jul - wet season, often including a mid-summer dry spell.

C'bean Islands south of 16°N (except ABC Islands):
May - end of dry season. Limited spatial extent and duration of heavy showers; occasionally very wet.
Jun & Jul - early wet season. Increasingly heavy showers.

ABC Islands: May to Jul - mostly dry.

Guianas: May to Jul - long wet season; heavy showers are frequent.

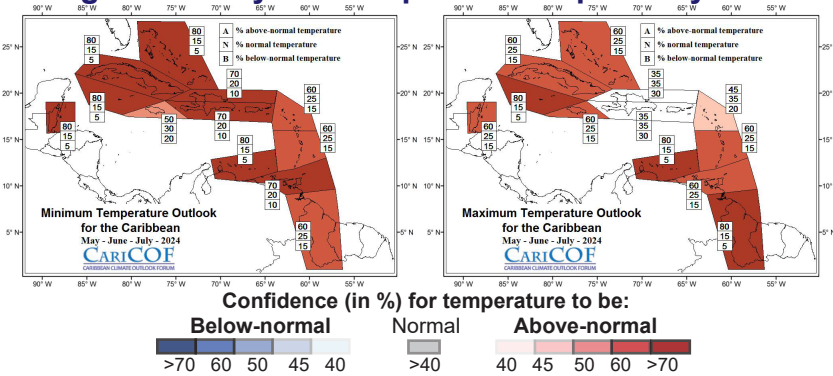
MJJ 2024 Rainfall Outlook



Rainfall totals from May to July are likely to be the usual or higher across the Bahamas, Barbados, Belize, the Greater Antilles, the Guianas, the Leeward and Windward Islands.

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

Night- and daytime temperatures up to July



MJJ night-time (min.) and daytime (max.) temperatures, as well as air humidity will likely be considerably higher than usual in most areas. Frequent episodes of heat stress are expected as the region is in a potentially 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 July

What usually happens from May to July?

- Number of wet days: roughly 20 to 40, (ABC Is. 5-15; Guianas: 45-65).
- # of wet spells: 1 to 5 (Guianas: 4 to 7), of which 2 or 3 are very wet (ABC Is. up to 1; Guianas: 1 to 5).
- # of extreme wet spells: up to 1 in most locations.

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 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 and mosquito breeding.

Drought conditions

Latest drought situation: Moderate (or worse) short-term drought has developed in Aruba, central & southern Belize, southern Dominica, Dominican Rep., French Guiana, northern Guyana, Haiti, Martinique, Suriname, Trinidad & Tobago, USVI; long-term drought in Antigua, southern Belize, Central Cuba, Dominica, Guadeloupe, French Guiana, westernmost Jamaica, southern Puerto Rico, St. Vincent, Suriname, Trinidad & Tobago.

Short-term drought (at the end of July 2024) Short-term drought is evolving in western & southeast Belize, and in Eastern Cuba. It may possibly develop or continue in eastern and northwest Belize, and central French Guiana.

Long-term drought (at the end of May 2024) Long-term drought is evolving in southwest Belize, Grand Cayman, central & northern French Guiana, northern Guyana, southwest Puerto Rico, Suriname, and Trinidad, and might possibly develop or continue in ABC islands, northern Belize, Dominica, western Jamaica, St. Vincent, the USVI.

BRIEF CLIMATE OUTLOOK - August to October 2024

This period marks the peak of the Caribbean wet season, as well as the peak and late parts of the Caribbean heat season. An unseasonably warm Tropical North Atlantic, combined with likely La Niña conditions are forecasted. Consequently, unusually high air temperatures and humidity are expected, along with the occurrence of significant to potentially record-breaking heat stress. 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 extreme heat, rainfall, floods and an active hurricane season developing on the back of a drought. *For temperature and precipitation outlooks for ASO 2024, please visit 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 MJJ (~70-80% confidence) and La Niña conditions by ASO (~60-80% confidence).

Expected impacts on rainfall and temperatures: A transition out of El Niño is often associated with increased chances of heavy showers, higher rainfall totals and higher air temperatures in MJJ. The appearance of La Niña conditions in ASO 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 1°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.

DISCLAIMER

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