

Caribbean Climate Outlook Newsletter - January to March 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: September 2023 to March 2024

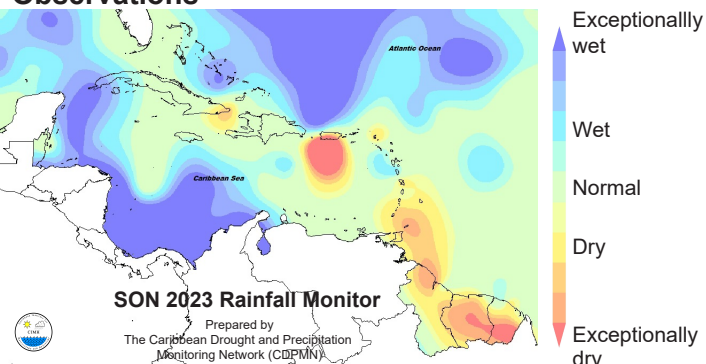
September to November 2023: An El Niño event and a record-warm Tropical North Atlantic have continued to fuel record-breaking seasonal temperatures in the Caribbean, combined with high humidity and prolonged heatwaves. Rainfall deficits, particularly in September, led to drought concern primarily in the Guianas, southern Puerto Rico and Tobago.

January to March 2024: The cool season features more comfortable temperatures and humidity. This period also marks the build up towards the peak of the dry season in the Caribbean region, which may be even drier than usual for most. This is forecast to be associated with an increase in short- and long-term drought concern -- especially in Belize, the Guianas and Puerto Rico --, the frequency of short dry spells and wildfire potential towards March. Nevertheless, the chance of intense showers in central and southern parts of Belize, the Guianas and in mountainous areas of the Caribbean islands, keeps the potential for flooding, flash floods and cascading hazards moderate to high there through January.

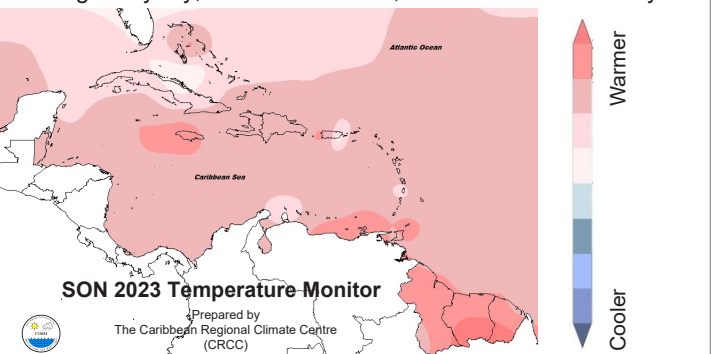
LOOKING BACK:

Sept. - Oct. - Nov. (SON) 2023

Observations



• **RAINFALL:** Southeasternmost Cuba, Grenada, French Guiana, far northern Guyana, southern Puerto Rico, Suriname and Tobago very dry; Central Bahamas, westernmost Cuba very wet.



• **TEMPERATURE:** Majority of Caribbean locations 0.5-2°C warmer than usual. Temperature records broken in many places.

Notable Climate Records in SON 2023:

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

DRY: 1 location in French Guiana, 1 in Guyana, 1 in Puerto Rico, 1 in Suriname reported record low rainfall (~20-40% of avg.).

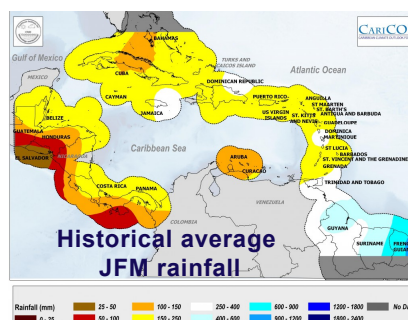
HOT: Barbados, Belize, Grand Cayman, French Guiana, Grenada, Martinique, Puerto Rico, St. Kitts, Saint Lucia, Sint Maarten, Trinidad & Tobago all reported record-high mean temp.

Moreover, Grand Cayman, 4 locations in Guyana, St. Kitts simultaneously reported record-high min. & max. temps.

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

WHAT NEXT?

Rainfall patterns January-February-March (JFM)



Guianas:

Jan - wet season. Frequent, heavy showers.

Feb - Mar - dry season; occasional heavy showers and thunderstorms.

Belize:

Jan - start of dry season; occasionally still wet.
Feb to Mar - dry season. Mostly without heavy rainfall.

C'bean Islands north of 16°N:

Jan to Mar - sunny days and some days with showers.

C'bean Islands south of 16°N

(except ABC Islands):

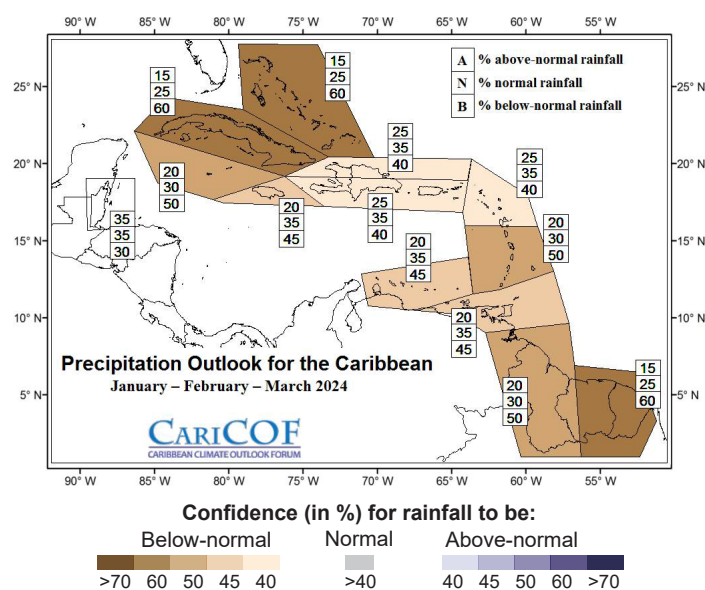
Jan to Mar - sunny days and some days with showers.

ABC Islands:

Jan - wet season ending.

Feb to Mar - generally dry.

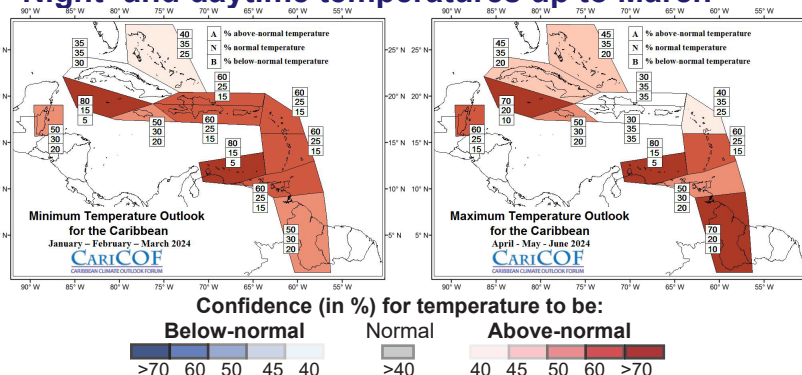
JFM 2024 Rainfall Outlook



Rainfall totals from January to March are likely to be the usual or less across the Caribbean Islands and the Guianas.

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

Night- and daytime temperatures up to March



JFM night-time (min.) and daytime (max.) temperatures are forecast to be higher than usual in most areas. Usually, no significant episodes of heat stress are expected during the Caribbean Cool Season. However, given persistently higher than usual temperatures, heatwaves might well be recorded this March, notably with very low soil moisture content.

Wet days and wet spells up to March

What usually happens from January to March?

- Number of wet days: roughly 15 to 30 (ABC Is.: 10 to 25; coastal Guianas: 20 to 50).
- # of wet spells: up to 3 (ABC Is.: 1 to 4; Guianas: up to 4), of which up to 1 is very wet (ABC Is.: up to 2; Guianas: up to 3).
- # of extreme wet spells: up to 1 or two in the northern Guianas, virtually none elsewhere.

Forecast and Implications:

- High potential for flooding, flash floods and cascading hazards arising from very wet and extreme wet spells in the coastal Guianas through February; only slight potential elsewhere.
- Slower than usual depletion of large water reservoirs, except in the Bahamas, Cayman Is. and Cuba.
- Often favourable conditions for outdoor tourism activities, but rapidly increasing wildfire potential in Cuba.

Drought conditions

Latest drought situation: (as of Dec. 1st, 2023) Moderate (or worse) short-term drought has developed in Barbados, southeasternmost Cuba, Grenada, most parts of the Guianas, Martinique, southern Puerto Rico, St-Barts, St. Martin, St. Vincent, Trinidad & Tobago; long-term drought has developed in southern Barbados, parts of northern Belize, eastern Cuba, southeast French Guiana, Grenada, Martinique, southern Puerto Rico, St. Croix, St. Vincent, Trinidad & Tobago.

Short-term drought (at the end of Mar. 2024) Short-term drought is evolving in southwest Belize, Grand Cayman, interior French Guiana, southwest Puerto Rico, and northeast Suriname, and may possibly develop or continue in several other areas.

Long-term drought (at the end of May 2024) Long-term drought is evolving in southwest Belize, southern French Guiana, southwest Puerto Rico, northern Suriname, and Trinidad, and might possibly develop or continue in several other areas.

BRIEF CLIMATE OUTLOOK - April to June 2024

This period marks the transition from the dry to the wet season, as well as the transition into the Heat Season in the Caribbean. The tropical North Atlantic Ocean is forecast to remain unseasonably warm, whereas the strong El Niño is expected to fade. Unusually high air temperatures will most likely prevail in many locations through June 2024 and the occurrence of significant heat stress is expected to evolve. The risk of severe weather impacts, including flooding, flash floods, and cascading hazards may sharply rise in April or May, as the chance of an intense early wet season is higher than in most years. Historically, a reasonable analog to this year's expected conditions is 2010, when regional drought was followed by extreme heat, rainfall and floods. *For temperature and precipitation outlooks for AMJ 2024, please visit rcc.cimh.edu.bb/caricof-climate-outlooks*

What influences the next season?

El Niño Southern Oscillation (ENSO)

Recent observations: An El Niño event has been declared, with Sea Surface Temperatures (SSTs) in the eastern equatorial Pacific now exceeding 1.5°C above average, indicative of strong El Niño conditions.

Model forecast and guidance: The forecast models indicate a likely anomalous cooling of the eastern Pacific after March, with strong El Niño conditions in JFM (100% confidence), but a possible return to ENSO neutral conditions by AMJ (~40% confid.).

Expected impacts on rainfall and temperatures: El Niño more often than not is marked by a warmer cool season. Rainfall tends to be lower than usual in the southeastern half of the region, but higher than usual in the far north.

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), 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, seasonal rainfall totals and an increased frequency of extreme rainfall through the end of the year. In some years, there is lingering tropical cyclone activity after November.

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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