



A Joint Bulletin of the CTO, the CHTA and the CIMH

CARIBBEAN TOURISM CLIMATIC BULLETIN

for Tourism Businesses and Policymakers

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Purpose

This Bulletin is a joint effort between the Caribbean Tourism Organization (CTO), the Caribbean Hotel & Tourism Association (CHTA) and the Caribbean Institute for Meteorology and Hydrology (CIMH) to help tourism businesses and policymakers identify and prepare for favourable or inclement climate conditions in the Caribbean and source markets, before they occur. It is recommended that industry stakeholders use the seasonal climate forecast information for the upcoming period (December 2024 - February 2025) presented in this Bulletin in tandem with weather forecasts (1-7 days). This suite of information can inform strategic and operational decisions related to the use of environmental resources, marketing, and enhancement of the visitor experience.

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CLIMATE RISK MANAGEMENT & VISITOR HEALTH

Climate risk management remains a critical factor in ensuring tourism sector resilience and managing the overall visitor experience. Tourism interests across the region should be prepared to deal with weather and climate emergencies in addition to ongoing concerns related to managing respiratory issues and dengue, as well as other possible threats as they arise.

The CTO, CHTA, and CIMH will continue to closely monitor the situation.



Climate Advisories: Caribbean

December through February marks: 1) the early dry season in the Caribbean Islands and Belize, except for the ABC Islands which transition into the long dry season; and 2) the secondary wet season in the coastal Guianas.

What should you do?

Climatically, December to February forms the **first half of the Dry Season** in the Caribbean Islands, Belize, and the far interior of the Guianas. The historical record shows that the first half of the Caribbean Dry Season in the Bahamas, Belize, the Greater and Lesser Antilles is usually characterised by a steady decrease in the frequency of **wet days** and in the intensity of **heavy showers**. Conversely, the number of **dry days and dry spells** is high westwards of Puerto Rico throughout the period while, further east, their frequency increases towards the end of February. The resulting drier surface and foliage increase **wildfire potential** and the concentration of airborne particulates and local **dust levels**.



By contrast, the coastal Guianas are in their **secondary Wet Season** until early February, then moving into their secondary Dry Season. Hence, wet days and wet spells are usually frequent while dry spells are few in December and January.

Climate Advisories: Caribbean



In this period, **flood and flash flood potential** (i.e., the chance of occurrence of an excessive rainfall event that can trigger floods and cascading impacts – such as land slippage, rock fall, soil erosion, river damming, mud flows – in flash flood-prone areas) is typically high (i.e., has a chance of occurrence of at least 50% in the period of interest) to extremely high (i.e., occurs at least once in most years during the period of interest) in the Guianas and southern Belize, but slight (i.e., occurs once every five to ten years during the period of interest) to moderate (i.e., has a 20% to 50% chance of occurring at least once during the period of interest) elsewhere.



December to February further marks the return of the entire Caribbean region to the **Cool Season**. Generally, more comfortable temperatures and decreasing humidity are the historical norm for this period.

This year, a strong El Niño event faded in May, with near- to just below-average sea surface temperatures in the tropical Pacific Ocean observed since then. The forecast models forecast more likely than not **La Niña** conditions (approx. 50-70% confidence) in December-January-February. La Niña conditions are often associated with increased heavy shower activity and rainfall totals in the southeastern Caribbean - including the Guianas -, but the opposite in the northwestern Caribbean.

Climate Advisories: Caribbean Cont'd

By contrast, **near record-high temperatures in the North Atlantic Ocean** and the Caribbean Sea contribute to higher air temperatures, but also to increased air humidity and rainfall throughout the Caribbean, as well as the frequency of severe weather during the early Dry Season. Due to these unusually warm waters in the Tropical North Atlantic Ocean, **air temperatures** and **humidity** during the Cool Season are likely to be higher than normal, but unlikely to the point of significant heat stress.

The **2024 Hurricane Season** officially ended on November 30th. With 18 tropical cyclones reaching at least tropical storm strength this year, 11 of which became hurricanes, including 5 major hurricanes, 2024 marked another hyperactive season. While, for the 2024 Season as a whole, the number of named storms lagged behind the forecasts, the Caribbean Climate Outlook Forum (CariCOF) in May expected that activity could be erratic, with explosive episodes interspersed with quieter periods, for instance due to episodes of increased Saharan dust incursions into the Caribbean. This reconciled the seasonal outlooks with the observations. For instance Hurricane Beryl became a category 5 hurricane on the earliest date in the year on record (2 July) by a wide margin and was the strongest hurricane ever to hit the countries of Grenada and St. Vincent and the Grenadines and devastated the inhabited islands of the Southern Grenadines, Carriacou - where it made landfall as an upper-end category 4 - and Petite Martinique. In addition, in a three-week period late-September to mid-October, two category 4 and one category 5 hurricanes occurred. By contrast, much of July and August was relatively quiet. In addition, the peak of the season from late-August to mid-September was particularly quiet.

Climate Advisories: Caribbean Cont'd



Whereas tropical cyclone activity typically decreases after mid-October, **severe weather systems** related to tropical cyclones, as well as heavy showers can still affect Caribbean territories, particularly during December. The warm Atlantic and possible La Niña conditions increase flood and flash flood potential to high to extremely high in Belize and Guyana, high in the Windward Islands, and moderate to high elsewhere.



Tourism operators are advised to **constantly monitor weather advisories** issued by National Meteorological Services and other information provided by the Caribbean Disaster Emergency Management Agency (<http://cdema.org/>) and the US National Hurricane Center (<https://www.nhc.noaa.gov/>), and abide by any official advisories issued by the National Meteorological Service in their country. At all times, tourism operators should maintain a state of readiness, including communication plans and response protocols to deal with sudden eventualities. An example of why vigilance is still paramount was the flooding Christmas rains in the Windward Islands in 2013.



Seasonal rainfall amounts are forecast to be close to usual or even less in the northwestern part of the Caribbean (i.e., the Bahamas, Cayman Islands, Cuba), whereas, in the south and southeastern part of the Caribbean (i.e., the ABC Islands, Barbados, the Guianas, Trinidad & Tobago and Windward Islands) should record seasonable rainfall amounts - or more - during this period (medium confidence).

Climate Advisories: Caribbean Cont'd

Where less than the usual rainfall totals have been recorded in previous months, such rainfall deficits increase the chances of drought. As such, **short-term drought** is expected to be a significant concern by the end of February 2025 in the extreme northwest Bahamas, southwest Belize, most of Cuba, southeast Puerto Rico, and the U.S. Virgin Islands (medium to high confidence), but also possible in central Cuba, Dominica, southern Dominican Republic, eastern Jamaica, western Puerto Rico and Saint Lucia (medium confidence). Short-term drought may impact food production, water quality and quantity from small streams, small ponds and other surface sources.



Long-term drought is evolving by the end of May 2024 in southwest Belize, southeast Puerto Rico and the U.S. Virgin Islands (high confidence) and might possibly develop or continue in southwest Puerto Rico (medium confidence). Long-term drought (on a 12 months timescale) affects water availability across a multitude of socio-economic sectors in countries where the main freshwater resource is from very large rivers, large reservoirs or groundwater. Tourism facilities should (i) continue to enhance/upgrade their water conservation practices, (ii) rainwater harvesting and repairs to leaky pipes, etc., and (iii) advise staff and guests of the need to reduce water wastage on an ongoing basis.



Climate Advisories: Caribbean Cont'd



In view of the high to extremely high exposure to **harmful UV light** on sunny days, visitors should be encouraged to apply high SPF sunscreen lotion regularly (preferably reef safe), and seek shaded areas between the hours of 10 AM and 3 PM. Outdoor tourism operators and staff should also be mindful to minimise skin exposure during these times, and to wear sunscreen and protective clothing when they work outdoors.



Owing to the near-record ocean temperatures, heat stress in corals in the Atlantic Ocean has led to a mass **coral bleaching** event this year and is still expected to continue through December 2024. It should be noted that a portion of the recently bleached corals may recover in cooler, clear and clean water. Therefore, It is imperative to minimise runoff of pollutants into coastal waters and to encourage the use of reef-safe sunscreen by guests and locals alike, which can increase the survival chances of coral reefs. This is a good season to engage in coral reef restoration activities, especially in destinations where there is an on-going standalone program or partnership between tourism practitioners and coastal managers.

The frequency of Saharan **dust** incursions into the Caribbean tends to be low during this period, though, in some years, significant episodes occur as early as February. (In fact, in recent years, an increase in significant episodes as early as February has been observed.) Though initially low, local dust levels may increase towards February, particularly in areas under short-term drought. Tourism practitioners should be aware that there may be an increase in visitors and staff experiencing respiratory and eye-related concerns.

Climate Advisories: Caribbean Source Markets

December to February marks the Winter season in the source markets.

What should you do?

Northern source markets will experience winter cold, short days and limited sunshine. This may create a climate-driven increase in demand for Caribbean vacations, as well as vacations to the US's Sunbelt area of Florida, the desert southwest and the southeast. Due to a possible La Niña, warmer, drier and sunnier weather than usual is expected in the latter areas of the US, The Bahamas, the Cayman Islands and Cuba. Tourism operators are therefore recommended to monitor the weather forecasts, as well as focus on enhanced marketing efforts to attract visitors. Additionally, they should differentiate themselves through innovative package offers, memorable customer service (bearing in mind appropriate health protocols where applicable), and activities that take advantage of the pristine natural environments on offer.

Marketing efforts could focus on attracting visitors to the generally sunny, warm, breezy weather in the early dry season in the northwestern markets, as well as the anticipated, excellent air quality in this season and general health and safety across the Caribbean region.



Surf and Sargassum Outlook

Surf's Up

Surfers, divers, fishers and marine craft operators should consult the 7-day wave forecast before planning activities. Click here to access this product: <http://ww3.cimh.edu.bb/>

Sargassum Outlook

Tourism operators may consult the University of the West Indies / Centre for Resource Management and Environmental Studies (UWI/CERMES)'s Sargassum sub-regional Outlook Bulletin for the Eastern Caribbean or the monthly University of South Florida (USF)/NASA Sargassum Outlook Bulletin for the entire Caribbean before planning activities. Click here to access the latest UWI/CERMES product: <https://www.cavehill.uwi.edu/cermes/projects/sargassum/outlook-bulletin.aspx>.

Click here to access the USF/NASA product: <https://optics.marine.usf.edu/projects/SaWS.html>.

Additionally, a Sargassum resource guide is available from the Caribbean Alliance for Sustainable Tourism (CAST) and can be accessed here: <https://caribbeanhotelandtourism.com/publications/>

Additional resources and publications for Sargassum management are also available from CTO here: <https://www.onecaribbean.org/our-work/sustainable-tourism-dept/sargassum-resources/>



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Websites

Caribbean Tourism Organization:
www.onecaribbean.org

Caribbean Hotel and Tourism Association:
www.caribbeanhotelassociation.com

Regional Climate Centre:
<http://rcc.cimh.edu.bb>

Glossary

Seasonal climate forecast - the guidance offered by a forecaster or forecast centre on climate conditions during the coming months.

Forecast information in this Bulletin pertains to the 3 months highlighted in the Issue.

Short-term drought – A rainfall deficit over a total period of 6 months.

Long-term drought – A rainfall deficit over a total period of 12 months.

Dry day – A 24 hour period during which the rainfall total is less than 1 mm.

Dry spell – A succession of at least 7 consecutive dry days.

Wet Day – A 24 hour period during which the rainfall total is at least 1 mm.

Wet Spell – A multi-day period during which the rainfall total is large enough to cross a certain threshold.

Extreme wet spell – 3 consecutive days of which the total rainfall is extremely high, with increased flash flood potential.

Caribbean Heat Season - most heatwaves and the associated spikes in heat stress occur between April or May and October in the Caribbean

Caribbean Cool Season - occurs between December and February or March when the Caribbean experiences comfortably cool weather

The Guianas – French Guiana, Guyana and Suriname.

US Caribbean Territories – Puerto Rico, U.S. Virgin Islands.

Leeward Islands – Anguilla, Antigua and Barbuda, British Virgin Islands, Guadeloupe, Montserrat, Saba, St. Barthélemy, St. Eustatius, St. Kitts and Nevis, St. Maarten and St. Martin.

Windward Islands – Dominica, Grenada, Martinique, St. Lucia and St. Vincent and the Grenadines.

Lesser Antilles – Leeward and Windward Islands along with, Barbados and Trinidad and Tobago.

Greater Antilles – Cayman Islands, Cuba, Dominican Republic, Haiti, Jamaica and Puerto Rico.

ABC Islands – Aruba, Bonaire, Curacao

Lucayan Islands – The Bahamas, Turks and Caicos Islands.

For more technical climate terms:

<https://rcc.cimh.edu.bb/glossary-of-terms/>