

Caribbean Health Climatic Bulletin

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This Bulletin is a joint effort between the CARPHA, the PAHO and the CIMH to help health professionals identify and prepare for favorable or inclement climate conditions in the Caribbean for the period December 2017 to February 2018. It is recommended that health stakeholders should use the combination of monitoring (Aug - Oct 2017) and forecast (Dec 2017- Feb 2018) climate information presented in this Bulletin in tandem with weather forecasts (1-7 days). This suite of information is intended to guide strategic and operational decisions related to the management of health care systems.

What are the Key Climate Messages for December 2017 to February 2018?

- The period December to February typically marks the **early dry season** in the Caribbean islands, whereas coastal areas in the Guianas, as well as, the ABC Islands would experience their **short wet season**, up until the end of January. The entire region is usually at its **coolest in this season**.
- **Rainfall** totals over this three-month period are forecast to be at least as high as usual in the Guianas, the ABC Islands and Trinidad & Tobago (high confidence), the rest of the Lesser Antilles, southern Hispaniola and the US Caribbean Territories (medium confidence). By contrast, The Bahamas are likely to see less or no more than the usual amount of rainfall (medium confidence).
- While still in their short wet season, the ABC Islands and coastal Guianas are forecast to see a higher number of **wet days and wet spells** (medium to high confidence). This number is expected to decrease towards February. Until then, **flash floods and long-term flooding** are a concern due to the possibility of extremely wet spells. In other areas, extreme wet spells and the associated flash flood potential remain a concern until the end of December (low confidence).
- **Night-time and day-time temperatures** in the Caribbean are forecast to be comfortable (high confidence), i.e. without much heat stress, in spite of daytime temperatures being at least as high as usual for this time of year.
- With the exception of Haïti and parts of The Bahamas where drought is evolving, **drought** or excessive dryness is not forecast to be a major concern during this period (high confidence).
- Though we have come to the end of the 2017 Hurricane Season, tropical cyclones can still occur in December. This has been observed especially during very active seasons not unlike the 2017 season. Most commonly, such **late-season cyclones** occur either in the western Caribbean Sea, affecting surrounding territories, or in the open Atlantic where they usually do not affect land.
- Episodes of **Saharan dust** incursions into the Caribbean are usually quite rare in this period. By contrast, in the interior of the Guianas, surface dryness may lead to greater levels of dust in the atmosphere.
- During December and January, the **UV index** on sunny days will be at its lowest, but UV radiation still reaches dangerous levels at this time throughout much of the region. The UV index will then quickly increase during February, which tends to also be the sunniest month of the three month period.

What are the Health Implications for December 2017 to February 2018?

Respiratory Illness



- There may be a decreasing trend in symptoms in persons with **asthma**, as well as persons with allergies to dust due to fewer episodes of Saharan dust incursions into the Caribbean. However, in the interior of the Guianas, there may potentially be an increasing trend in asthma symptoms due to surface dryness.



- There may be a decrease in **allergic reactions** to fungal spores from **mold**. By contrast, increased humidity in the ABC Islands and the coastal Guianas may cause dampness in some poorly ventilated residences and offices resulting in the growth of mold. In the eastern Caribbean region, increased allergens in the atmosphere may occur from **plant materials** (e.g. pollen) driven by increased wind speeds and reduced washing out by rain. This may trigger incidences of upper respiratory tract reactions.



- Where episodes of flooding may occur, there is increased risk of **ENT** from contaminated water in the coastal Guianas.



Vector-Borne Illness



- Vector borne diseases such as **Dengue, Chikungunya, Zika and Yellow Fever** remain a concern for Caribbean territories.



- Increased rainfall in the coastal Guianas may create more breeding places for mosquitoes. In addition, there is also the possibility of impacts from new and re-emerging diseases (e.g. **Mayaro Virus Disease**) related to *Aedes aegypti* in the coastal Guianas.



- Some mosquito eggs laid last year may still be present in breeding areas and may become activated by settling rain water, thus contributing to increased mosquito populations.
- There may be accelerated mosquito proliferation in communities where water is stored in containers without protective mesh, especially at times of drought.
- **Leptospirosis** (see Gastrointestinal Illness).

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Gastrointestinal Illness



- Cases of **gastroenteritis** may increase in frequency in the coastal Guianas.
- In the event of flooding, contamination of food and water supplies might occur. There is increased risk of **Leptospirosis** due to human contact with flood waters contaminated with the urine of infected animals, as well as food or soil exposed to these contaminated flood waters.

Well-Being and Mental Health

- **Food insecurity** may be exacerbated due to widespread crop damage caused by recent hurricanes in affected Caribbean territories.

Non-Communicable Diseases



- Morbidity from **heat stress** is very likely to be minimal between December and February.
- There is an decreased risk of **dehydration** and an associated decrease in its symptoms such as apathy, general weakness, dizziness, fainting, and kidney failure.
- There is an decreased risk of **skin damage** up until February, due to the reduced UV radiation at this time of year on sunny days.
- There is the possibility of **skin infections** due to contact with contaminated flood waters in the coastal Guianas.



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CARPHA
<http://carpha.org>

PAHO
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For More Climate Information:

Caribbean Regional Climate Centre (RCC)
<http://rcc.cimh.edu.bb>

More on Climate Looking Back: August to October 2017

Rainfall

- Many of the areas affected by the passage of the tropical cyclones, especially Hurricanes Irma and Maria, experienced unusually large rainfall sums during August - October, which quite typically is already the wettest time of the year.
- Portions of the Dominican Republic, Guadeloupe and eastern Trinidad experienced their wettest August to October period on record.
- In August, French Guiana was very dry. However, south eastern Puerto Rico and Tobago were very wet.
- In September, central Belize and western-most Jamaica were very dry. By contrast, Barbados, eastern Cuba, Dominica, Dominican Republic, Guadeloupe, western Guyana, central Jamaica, St. Kitts and southern Suriname were very wet.
- In October, southwestern Guyana and eastern Puerto Rico were very dry, while Barbados, north & south Belize, eastern Tobago and eastern Trinidad were very wet.

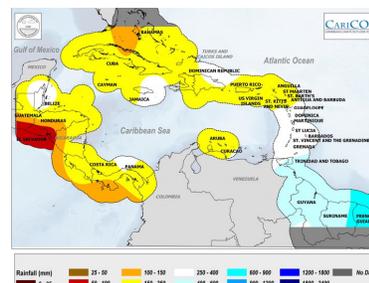
Temperature

- Most countries were warmer than average, especially Haïti (day-time maximum temperatures averaged a record high 37°C over the three-month period), central portions of The Bahamas and Trinidad. Exceptions were Antigua, parts of the Guianas and St. Vincent and the Grenadines.

What do we Usually Expect for December to February?

Rainfall

- This period typically marks the early dry season in The Bahamas, Belize, the Greater and Lesser Antilles. At the same time, the ABC Islands and coastal Guianas usually transition from a short wet season to the dry season. This is illustrated in the Figure below (Historical Average Rainfall Totals). Click on the image to see a larger map.



Link: https://rcc.cimh.edu.bb/files/2015/03/DJF_MAP-1030x797.jpeg

Temperature

- December to February constitutes the coolest three-month period of the year, with heatwaves being extremely rare at this time.

Disclaimer

This bulletin provides a broad overview of climate conditions up to three months in advance. It is based on insights drawn from CIMH's suite of technical climate information products and epidemiological insights from CARPHA and PAHO. The information contained herein is provided with the understanding that the Caribbean Public Health Agency (CARPHA), the Pan American Health Organization (PAHO) and the Caribbean Institute for Meteorology and Hydrology (CIMH) make no warranties, either expressed or implied, concerning the accuracy, completeness, reliability or suitability of said information. The bulletin may be freely used and disseminated by the public with appropriate acknowledgment of its source but shall not be modified in content and then presented as original material.