

# Caribbean Health Climatic Bulletin

## Vol 2 | Issue 1

### March 2018

This Bulletin is a joint effort between the Caribbean Public Health Agency (CARPHA), the Pan American/World Health Organization (PAHO/WHO) and the Caribbean Institute for Meteorology and Hydrology (CIMH) to help health professionals identify and prepare health interventions for favorable or inclement climate conditions in the Caribbean for the period March 2018 to May 2018. It is recommended that health stakeholders should use the combination of monitoring (Nov 2017 - Jan 2018) and forecast (March 2018 - May 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 health interventions and the management of health care systems.

## What are the Key Climate Messages for March 2018 to May 2018?

- The period March to May marks the **late dry season** in Belize and the Lesser Antilles, as well as, the **transition from the dry to wet season** in the Greater Antilles and the Guianas.
- The region usually remains **cool and comfortable in March** but becomes **hot by May**.
- **Rainfall** totals over this three-month period are forecast to be at least as high as usual in The Bahamas, Belize and much of the Greater Antilles (*medium to high confidence*), but quite the usual or drier in the ABC Islands and the Lesser Antilles (*medium confidence*). At this time, the forecast shows little indication of trends towards either drier or wetter than usual patterns in southern Hispaniola and the Guianas (*low confidence*).
- In March, the region is forecast to see a low number of **wet days and wet spells**, but a high number of **dry spells** (*high confidence*). Wet days and wet spells are expected to become more frequent towards May. From May onwards, **flash floods and long-term flooding** become a concern due to the possibility of extremely wet spells, particularly in the Greater Antilles, the Guianas and Belize (*low confidence*).
- **Night-time and day-time temperatures** in the Caribbean are forecast to increase from cool and comfortable in March, i.e. without much heat stress, to uncomfortably hot for some by May (*high confidence*), with the chance of heatwaves in Belize and Trinidad. That said, the heat in May should be less excessive than in the last couple of years (*medium confidence*).
- With the exception of south-eastern Haiti where long term **drought** is evolving, drought or excessive dryness is not forecast to be a major concern during this period (*high confidence*).
- Though the **2018 Hurricane Season officially starts June 1st**, tropical cyclones can and do occur in May. Such storms have historically regularly affected land in the region, mostly through excessive rainfall, leading to flooding.
- Episodes of **Saharan dust** incursions into the Caribbean usually become frequent in this period. Enhanced surface dryness ahead of the wet season may also lead to greater levels of local dust in the atmosphere. Notwithstanding, because of the absence of drought this year, local dust levels should be on the low end in comparison to recent years.
- The **UV index** on sunny days will steadily increase from March to May across the region (except the Guianas, where it will remain near its annual maximum). The UV index will reach levels of at least 10 across the region (on a scale from 1 to 12. For more information, see: <https://www.epa.gov/sunsafety/uv-index-scale-1>). Note that this period in the Lesser Antilles is marked by more sunny days than other times of the year, increasing UV exposure.

## What are the Health Implications for March 2018 to May 2018?

### Physical Injury or Death



- Flash flooding may lead to cases of drowning, persons being swept away by flood waters, physical trauma by debris in the flood water and possible landslides.

### Non-communicable Diseases



- Higher temperatures, beginning in May, can increase the risk of morbidity from **heat stress** in vulnerable persons, especially smaller children and the elderly.
- Throughout the 3 month period, there will be an increased risk of **dehydration**, which may present with symptoms such as apathy, general weakness, dizziness, fainting, and, in extreme cases, kidney failure.



- During the period, excessive exposure due to dangerous UV radiation can cause **skin damage** across the population on sunny days (for more information, see: <https://www.epa.gov/sunsafety/uv-index-scale-1>).



- There is the possibility of **skin infections** due to contact with contaminated stagnant and/or flood waters in Belize, the Greater Antilles and the Guianas.

### Vector-Borne Illness



- The presence of stagnant water in the aftermath of a flood may promote the breeding of mosquito vectors and increase the risk of insect vector borne diseases such as **Dengue, Chikungunya, Zika and Yellow Fever** which remain a perennial concern for Caribbean territories.



- Increased rainfall in The Bahamas, Belize, the Greater Antilles and the Guianas may also create more breeding places for mosquitoes from May onwards. In addition, there is also the possibility of impacts from new and re-emerging diseases related to *Aedes aegypti*.



- 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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## Respiratory Illness



- There may be an increase in symptoms in persons with **asthma**, and in persons prone to **allergic rhinitis** due to more frequent episodes of Saharan dust incursions into the Caribbean, as well as due to local dust kicked up when the ground surface is dry.



- This may be offset by a decrease in **allergic reactions** to fungal spores from **mold** at least until the end of April. By contrast, increased humidity in the Greater Antilles and the Guianas from May onwards may cause dampness in some poorly ventilated residences and offices resulting in the growth of mold. In the Lesser Antilles, increased allergens in the atmosphere may occur from **plant materials** (e.g. pollen) driven by increased wind speeds and reduced washing out by rain. These factors may also trigger increased incidences of upper respiratory tract symptoms.



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

## Well-Being and Mental Health



- **Food insecurity** is still a concern due to widespread crop damage caused by recent hurricanes in affected Caribbean territories, and due to ongoing drought around Port-au-Prince, Haiti.

## Well-Being and Mental Health cont'd



- **Psychosocial impacts** from the 2017 hurricane season are still being felt in the countries affected. When disasters have seasonal patterns, like hurricanes, floods and drought, anxiety among survivors will increase when the season approaches.

## Gastrointestinal Illness



- Cases of **gastroenteritis** may increase in frequency in The Bahamas, Belize, much of the Greater Antilles and the Guianas.
- In the event of flooding, contamination of food crops and water supplies might occur outdoors and contamination of household food and water supplies may occur with household inundation. There is increased risk of **Leptospirosis** due to displacement of rodent vectors from their usual habitats and potential movement into houses, increasing the risk of contamination of household surfaces and food-stores with rodent urine.

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### For More Health Information:

CARPHA

<http://carpha.org>

PAHO

<http://www.paho.org>

### For More Climate Information:

Caribbean Regional Climate Centre (RCC)

<http://rcc.cimh.edu.bb>

## More on Climate

### Looking Back: November 2017 to January 2018

#### Rainfall

- Most areas observed at least the usual rainfall totals, which were extremely high in the Bahamas, eastern Cuba, much of Hispaniola and northern Jamaica. As a result, long-term drought is only seen in few areas.

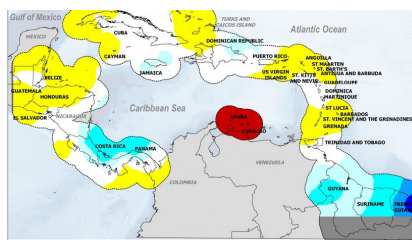
#### Temperature

- Hot 'feels-like' temperatures were rare as the region transitioned into the cool season.
- There were warmer than average temperatures, especially in St. Maarten (>2.5 °C above average) and central Bahamas (>1.5°C above average).
- Slightly cooler than average temperatures were experienced in southern Belize and around the Zanderij area in Suriname.

## What do we Usually Expect for March to May?

#### Rainfall

- This period typically marks the transition between the dry season and the wet season in The Bahamas, the Greater Antilles and the Guianas, but marks the late dry season in the Lesser Antilles and the first part of the long dry season in the ABC Islands. This is illustrated in the Figure below (Historical Average Rainfall Totals). Click on the image to see a larger map.



#### Temperature

- March to May usually sees an increase in temperatures from cool and comfortable in March to hot in May. In May, there is the possibility of heat waves, in particular in Belize and Trinidad ahead of the wet season.

## Disclaimer

This Bulletin provides a broad overview of climate conditions up to 3 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 CARPHA, the 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.