

# Caribbean Health Climatic Bulletin

## Vol 6 | Issue 2

### June 2022

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). It aims to help health professionals identify and prepare health interventions for favourable or inclement climate conditions in the Caribbean. The period covered is June-August 2022. It is recommended that health stakeholders should use the combination of monitoring (February-April 2022) and forecast (June-August 2022) 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 June - August 2022?



- The **2022 Atlantic Hurricane Season** officially started on June 1st and is forecast to be active with the consensus suggesting close to 18 named storms (i.e. tropical storm, hurricane or major hurricane), including around 8 hurricanes, of which around 3 could intensify into a major hurricane (i.e. category 3, 4 or 5 on the Saffir-Simpson scale) over the entire season. One named storm (Alex) already occurred in early June. The CIMH further forecasts between 3 and 10 named storms for the period June to August.
- **Severe weather systems**, including but not restricted to named storms, can come with a range of hazards, including high winds, landslides, flash floods, among others, which are expected to affect Caribbean territories. Persons should keenly monitor weather advisories issued by the 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/>).
- June to August forms the **first half of the Caribbean Wet Season** with a fair number of wet days and longer wet spells, and a decreasing number of short dry spells. These trends result in a decrease in dryness, wildfire potential and dust levels, as well as an increase in water levels in soils, rivers and reservoirs. This year, the possibility of a prolonged La Niña event in the Pacific slightly tilts the odds towards even more frequent and more intense rainfall, and higher rainfall totals in the Guianas, Hispaniola, Jamaica and the US Caribbean Territories (*medium confidence*).
- The intensity and frequency of heavy showers tends to be relatively high and, at times, clustered in **very wet spells**, with even a strong chance for the occurrence of **extreme wet spells** throughout the period, particularly towards August. As a consequence, the potential for flash floods, long-term flooding and cascading impacts will increase from *moderate* (i.e. occurs two to five times in 10 years) to *high* (i.e. occurs once every other year or even more often) by August throughout the Bahamas, Belize, the Greater Antilles and the Lesser Antilles. By contrast, in the Guianas, this potential will decrease from high in June and July to *moderate* by late August, whereas, in the ABC Islands, this potential remains *limited* (i.e. occurs once or twice in 10 years) throughout the period.
- As a result of the usual or significantly higher rainfall totals so far this year in most places, **drought** is currently not a widespread concern in the Caribbean.
- As of May 1st, no widespread **short term drought** (on a 3-6 months timescale) is observed, nor is it likely to be of significant concern by the end of August, with the possible exception of Martinique (*medium confidence*).
- As of May 1st, **long term drought** (on a 12 months timescale), which may affect water availability across a multitude of socio-economic sectors in a country, has developed in Antigua, Western Cuba, east Guadeloupe, southeastern Jamaica, Martinique, Saint Lucia, Sint Maarten and St. Vincent. By the end of November, no widespread long term drought concern is expected in the Caribbean (*medium to high confidence*).
- Night-time and day-time temperatures in the Caribbean are set to remain high throughout this portion of the Caribbean's annual **heat season** which starts in April/May and ends in October. The exception is the Guianas which tend to be slightly cooler during their primary wet season lasting through early-August. At the same time, humidity and the associated heat stress will steadily increase through August, and will peak during heatwaves. In the Caribbean Islands, the monthly number of heatwaves (and heatwave days) strongly increases from June (between 0 and 8 heatwave days depending on the location) to August (6 to 12 heatwave days) (*high confidence*). Note that, due to the ongoing La Niña and near-average sea surface temperatures around the Caribbean, **heat stress** is expected to be somewhat lower than during recent hotter years (e.g. 2016 and 2020). Night-time low, daytime high temperatures and heatwave frequency are not expected to be higher than usual across most of the region.
- Episodes of **Saharan dust** incursions into the Caribbean tend to be most frequent during this period, particularly across the Lesser Antilles (access more detailed forecast information on dust and air quality in the Caribbean here: <http://dafc.cimh.edu.bb/>). In addition, in the few places still facing short-term drought, local dust levels could initially be on the high end.
- The **UV index** on sunny days will be extremely high (factor 12) around noontime (on a scale from 1 to 12. For more information see: <https://www.epa.gov/sunsafety/uv-index-scale-1>).

### Disclaimer



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# What are the Health Implications for June - August 2022?



## Respiratory Illness

-  Frequent episodes of Saharan dust incursions into the Caribbean in the coming season may increase the risk of exacerbations of **allergic rhinitis** and **asthma** in susceptible persons. In the few areas where ongoing short term drought is expected to subside (e.g. Martinique), there may still be relatively high atmospheric dust concentrations, as well as, potential soot and smoke from bushfires until the wet season rains moisten the topsoil. Such conditions may initially contribute to higher concentrations of airborne particulate matter. This could result in an increase in **acute respiratory illnesses**, as well as **ocular allergies**.
-  The increased humidity towards the end of July in the coastal Guianas, as well as, in Belize and the Caribbean Islands towards the end of August may promote mold growth in damp and poorly ventilated buildings, leading to increased respiratory symptoms.




## Gastrointestinal Illness

-  Following extreme weather events or disasters, there is an increased chance that the conventional means of water supply may be compromised resulting in persons seeking alternative water resources where the water is untreated and the water quality is unknown. This has the potential to increase gastrointestinal illness.
-  Where episodes of flooding may occur, cases of **gastroenteritis** may increase, where persons consume foods contaminated by these waters. Wading in flood waters could also result in an increase in **skin infections** due to contact with contaminated, stagnant and/or flood waters, especially in the coastal Guianas. This is increasingly the case across Belize and the Caribbean islands towards the end of August, although the likelihood decreases in the coastal Guianas after July.
-  In the unlikely event of lingering drought conditions, concentrations of water pollutants for small reservoirs and tanks may temporarily increase. Additionally, a reduction in water pressure in distribution systems may result in cross-contamination and use of alternative, unsafe sources, in turn potentially causing higher incidences of gastrointestinal illness.




## Non-communicable Diseases

-  **Morbidity from excessive heat** due to high temperatures and increasing humidity, especially during heat waves, is likely to increase across the region towards August. Throughout the three-month period, though to a lesser extent than in recent hot years (e.g. 2016 and 2020), there will be an increased risk of heat stress which may present as a worsening in chronic conditions such as cardiovascular, respiratory, cerebrovascular disease and diabetes related conditions. Symptoms can include lethargy, general weakness, dizziness, fainting and, in extreme cases, kidney failure. More information may be found at: <https://ghhin.org/heat-and-health/>
-  Dangerous UV radiation may lead to excessive UV exposure, which can cause **skin damage**, if persons do not take preventative measures.

## Vector-Borne Illness

-  Episodes of flooding may occur in any area of the Caribbean during this period. In such cases, there is increased risk of **Leptospirosis** due to displaced rodents that could contaminate flood waters, household items and food containers.
-  The presence of stagnant water in the aftermath of a flood may promote the **breeding of mosquitoes**. However, note that in the case of flash floods, flood waters may sweep away mosquito eggs, larvae and pupae, potentially reducing mosquito populations for up to a few weeks after flash flooding.
-  In the few areas where there is lingering drought or where dry spells remain frequent during this period, there may be increased use of containers for storage, as well as water accumulating in any unattended, open containers. This may potentially create more breeding sites for mosquitoes, especially those associated with diseases, such as **Dengue**, **Chikungunya** and **Zika**. Proper management of water storage containers e.g., covering with protective mesh helps to reduce this risk. Access useful mosquito control materials here:
  - <https://www.carpha.org/What-We-Do/Public-Health/Dengue>
  - [https://www.paho.org/hq/index.php?option=com\\_content&view=article&id=12355:cdemosqui-to-awareness-week&Itemid=42087&lang=en](https://www.paho.org/hq/index.php?option=com_content&view=article&id=12355:cdemosqui-to-awareness-week&Itemid=42087&lang=en)

## Well-Being and Mental Health

-  Severe weather systems, which can come with a range of hazards, including high winds, landslides, flash floods, among others, are expected to affect Caribbean territories. With the possibility of severe weather systems such as tropical cyclones, health practitioners and administrators should maintain a **state of readiness**.
-  During extreme weather events or disasters, **vulnerable populations** may have an increased need for medical care as they face a greater risk of poor health and even death. Health care providers and other stakeholders should clearly define and locate vulnerable populations, and develop tailored strategies for assisting them.
-  Peaks in heat stress associated with heatwaves, can increase **mood-affective and stress-related disorders**, as well as, other mental and behavioral disorders. Persons taking medication for mental health disorders are at greater risk of heat-health effects.

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## What are the Health Implications for June - August 2022? (continued)

### COVID-19 and Climate Impacts



- Water availability is critical to support prevention strategies to combat the COVID-19 pandemic, especially with regards to safe water for hygiene purposes. Flooding after an extreme weather event may affect water quality. Special attention should be paid to communities with interrupted or limited access to safe water over the coming period. Further details on water, sanitation and hygiene practices related to the COVID-19 pandemic can be found here:
  - [https://www.carpha.org/Portals/0/Documents/Technical Guidance/Water Sanitation Hygiene and Waste Management during the COVID-19 Pandemic.pdf](https://www.carpha.org/Portals/0/Documents/Technical%20Guidance/Water%20Sanitation%20Hygiene%20and%20Waste%20Management%20during%20the%20COVID-19%20Pandemic.pdf)
  - <https://www.paho.org/en/documents/key-recommendations-water-sanitation-and-hygiene-covid-19>



- Any disaster occurring will compound **psychosocial impacts** related to the COVID-19 pandemic, particularly disasters arising from extreme weather events.



- Extreme weather events or disasters may cause an increased burden on already stressed **healthcare services and the rollout of vaccination campaigns**. National health systems must factor the above issues into multi-hazard disaster response planning for the upcoming months.



- Prior to or following an extreme weather event, displaced persons may require the use of an evacuation shelter. Shelter management is critical during the COVID-19 pandemic as additional measures must be taken to ensure maintenance of physical distancing, appropriate hygiene and respiratory protection. Further information on shelter management during the COVID-19 pandemic can be found here:  
[https://www.carpha.org/Portals/0/Documents/Technical %20Guidance/Emergency%20Shelter%20Management% 20in%20the%20Caribbean%20during%20the%20COVID -19%20Pandemic.pdf](https://www.carpha.org/Portals/0/Documents/Technical%20Guidance/Emergency%20Shelter%20Management%20in%20the%20Caribbean%20during%20the%20COVID-19%20Pandemic.pdf)

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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>

### For a Glossary of Technical Climate Terms:

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

## More on Climate

### Looking Back: February - April 2022

#### Rainfall

- From February to April 2022, which typically is the core of the dry season, higher than usual rainfall was observed in many parts of the region, reducing the impacts of the 2021-2022 dry season. In other areas, the usual rainfall totals were observed, with no areas under short-term drought.

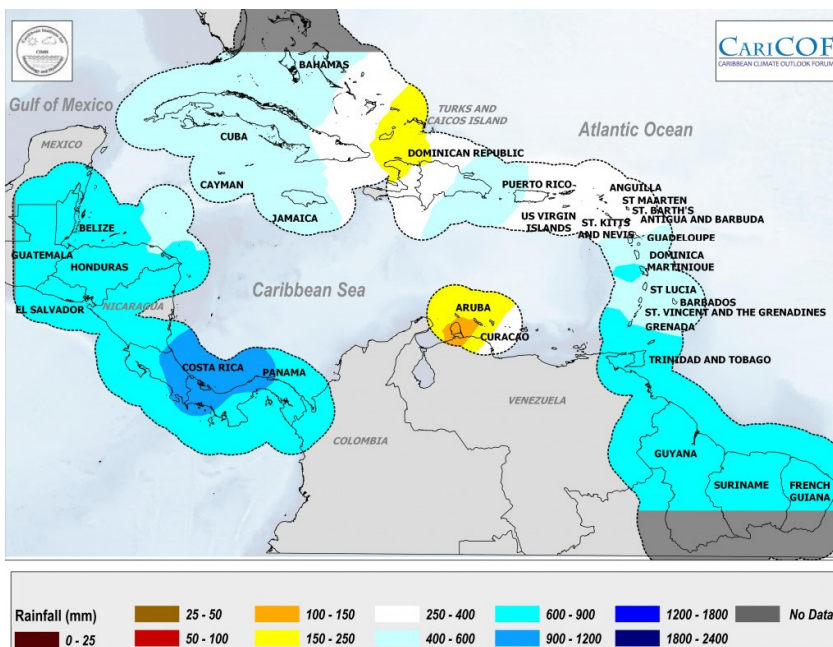
#### Temperature

- As February and March form the second half of the annual cool season and with an ongoing La Niña event suppressing excess heat in the Caribbean, temperatures were generally comfortable across the region.

### What do we Usually Expect for June to August?

#### Rainfall

- This period typically marks the first half of the wet season in Belize and the Lesser Antilles, the centre of the wet season in The Bahamas and the Greater Antilles, the transition from the primary wet season to the dry season during August in the Guianas, and 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

- June to August forms part of the Caribbean Heat Season (which runs from April/May to October), with the annual peak in 'feels-like' temperatures usually starting in August. The likelihood and frequency of heatwaves throughout the region is relatively low in June and July, but high in August. Similarly, air humidity tends to increase while wind speed decreases into August. This makes the 'feels-like' temperatures more stressful to the vulnerable sections of the population, and even to most persons during intense heatwaves.

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