

Caribbean Health Climatic Bulletin

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CARPHA, PAHO and CIMH celebrate the 5th anniversary of the publication of the Caribbean Health Climatic Bulletin!

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 March-May 2022. It is recommended that health stakeholders should use the combination of monitoring (November 2021-January 2022) and forecast (March-May 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 March - May 2022?





- Climatically, March to May forms the second half of the Caribbean Dry Season in Belize and the Caribbean Islands, characterised by relatively few wet days and a small number of wet spells, but many dry days and quite a few dry spells. There is typically an increase in wildfire potential during this part of the dry season. In the Guianas, the first part of this period ends one of their two climatological dry seasons.
- Regionally, forecasts of rainfall totals are not typically very confident for the period March to May (MAM). For the forecast period March to May (MAM) 2022, a persistent weak La Nina pattern is expected to transition to near neutral conditions during the upcoming season, which may drive increasing uncertainty into the seasonal rainfall forecast. This uncertainty points the MAM rainfall and wet day forecast towards climatology across most of the region (equal chances for above normal, normal, and below normal probabilities, so prepare for what is typical at this time of the year).
- A small increase in wet spell frequency is expected for the eastern Caribbean which could lead to marginal flash flood and soil erosion potential in Belize and the islands through March. 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/>).
- Moderate (or worse) short term (3-6 months) drought that can impact available soil water, water quality and quantity from small streams, small ponds and other surface sources, has developed in western Cuba and across all areas east of and including The Dominican Republic, excluding the Guianas.
- Moderate longer term (12 months) drought has developed in Belize, western Cuba, along the southern coastline of the Dominican Republic, and along the Lesser Antilles excluding Trinidad and Tobago.
- Short term drought will continue or evolve by the end of May in The USVI and Sint Martin and may develop or continue in Barbados, Dominica, The Dominican Republic, Guadeloupe, Martinique, southwest Puerto Rico, Saint Lucia, and Saint Vincent.
- Long term drought will continue or evolve by the end of May in the ABC Islands, Antigua, parts of Belize, Dominica, Guadeloupe, Martinique, Sint-Martin, Saint Lucia, and The USVI and might possibly develop or continue in the northern Bahamas, Barbados, western Cuba, The Dominican Republic, southern Puerto Rico, Saint Kitts, Trinidad, and Saint Vincent.
- As the region enters the second half of the dry season, the high number of dry days and dry spells across the region are expected to continue, but decrease as May approaches. This will be especially so in the Lesser Antilles and coastal Guyana.
- As May approaches, flood potential will increase as rainfall and the number of wet spells increase.
- Temperatures in the Caribbean are forecast to warm up into May (high confidence), but may remain comfortably cooler than usual throughout much of the Hispaniola and the Lesser Antilles. Region-wide, the early part of the Caribbean Heat Season (which runs from April or May to October) is not expected to be as intense as in 2020, with likely fewer heat waves and fewer heat records. However, temperatures will likely still be warmer than usual in The Bahamas, Belize, the Cayman Islands and Cuba. At times, the heat may become uncomfortable across the region, especially in the event of heat waves which are relatively frequent during the month of May, particularly in Belize and Trinidad.
- The frequency of Saharan dust incursions into the Caribbean tends to increase during this period to peak starting in May. It should be noted that, in some years, significant Saharan dust episodes also occur in March and April. Local dust levels should be increasing during prolonged dry spells and towards the end of the dry season.
- During this period, the UV index will be very high to extremely high on sunny days.

Disclaimer



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What are the Health Implications for March - May 2022?




Respiratory Illness

-  The short term drought and associated increase in dust, as well as, potential soot and smoke from bushfires may contribute to higher concentrations of airborne particulate matter. This could result in an increase in **acute respiratory illnesses**.
-  There may be an increase in symptoms in persons with chronic respiratory conditions such as **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 being suspended in the air 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, increasing humidity across the region from May onwards could cause dampness in some poorly ventilated residences and offices resulting in the growth of mold. This could be particularly so in the Guianas. In the Caribbean islands, 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 an increased risk of **ear, nose, and throat infections** from contaminated water across the region, particularly in April and May.







Gastrointestinal Illness

-  Drought conditions may increase concentrations of water pollutants. Additionally, a drop in water pressure in the pipes of water supply systems may result in cross-contamination and reduced access to water by consumers. Alternative use of unsafe sources of water, in turn may potentially contribute to higher incidences of **gastrointestinal illness**.
-  Cases of **gastroenteritis** may increase in frequency across the region from May, particularly in the Guianas, due to contamination of food and water supplies, and contact with flood waters.




Non-communicable Diseases (NCDs)

-  Higher temperatures and heat waves, beginning in May, can increase the risk of morbidity from **heat related health effects** such as apathy, general weakness, dizziness, fainting, exhaustion (heat strain) and, in extreme cases, kidney failure in persons living in conditions of vulnerability, especially smaller children and the elderly. For information on heat and health see: https://www.who.int/health-topics/heatwaves#tab=tab_1 and <https://ghin.org/>
-  During this period, excessive exposure due to dangerous UV radiation can cause **skin damage** in persons who spend extended periods outdoors, especially on sunny days (for more information, see: <https://www.epa.gov/sunsafety/uv-index-scale-1>). For simple action steps on sun protection see: <https://www.who.int/features/qa/40/en/>
-  There is the increasing possibility of **skin infections** due to contact with contaminated stagnant and/or floodwaters in the region in May - particularly so in the Guianas.

Vector-Borne Illness

-  Increased rainfall and the more frequent occurrence of stagnant water from flooding towards May, particularly in the Guianas, may create more breeding sites for the *Aedes aegypti* and *Aedes albopictus* mosquitoes which are the vectors of diseases such as **Dengue, Chikungunya, Zika and Yellow Fever**. These diseases remain a perennial concern for Caribbean territories.
-  With drought evolving in a few locations, particularly east of Hispaniola and with recurrent dry spells across the region in this period, there may be increased use of containers for water storage.
-  At the household level, careful attention should be given to the management of water storage containers. This includes mosquito proofing water tanks, barrels, drums and buckets.
-  The focus should be on public education and awareness on source reduction and personal protection. If fogging operations are considered by the Ministry, advice from the local meteorological services on temperature, wind speed, humidity, etc. should be sought.
-  Access useful materials on mosquito control measures here: (<https://www.paho.org/en/campaigns/caribbeanmosquito-awareness-week-2020>); Join the fight against mosquito-borne disease in the Caribbean: <https://www.carpha.org/What-We-Do/PublicHealth/Dengue> and <http://missionmosquito.carpha.org/>
-  Flooding may increase the risk of **Leptospirosis** due to displacement of rodent vectors from their usual habitats into houses, increasing the risk of contamination of flood waters, household surfaces and food-stores with rodent urine.

Well-Being and Mental Health

-  Severe weather systems, which can come with a range of hazards, including high winds, landslides, flash floods, among others, may possibly affect Caribbean territories, particularly in the Guianas. With the possibility of tropical cyclones before the official start of the 2022 Atlantic Hurricane Season, health practitioners and administrators should maintain a **state of readiness**.
-  **Food insecurity** would be a concern due to the potential for extensive crop damage and/or loss due to evolving drought and frequent dry spells across the region. A similar concern arises as a result of the high flood potential in the Guianas in May.
-  Mental health effects may increase due to extreme weather events, their impacts and associated alerts. Health Care Professionals are therefore advised to be aware of these issues, as they interact with patients.

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What are the Health Implications for March - May 2022? (continued)

COVID-19 and Climate Impacts



- Water quantity and quality is critical to support prevention strategies to combat the COVID-19 pandemic, especially with regards to safe water for hygiene purposes. Flooding and drought may affect continuous access to safe water. Therefore, special attention should be paid to impacted communities.



- Any disaster occurring will compound psychosocial impacts related to the COVID-19 pandemic, particularly disasters arising from extreme weather events. Health care professionals are therefore advised to be sensitive to these issues, as they interact with patients.



- Extreme weather events or disasters may cause an increased burden on already stressed healthcare services and the rollout of vaccination campaigns. Countries should factor this into their contingency plans and actions.

Symbol Key



Container



Dry conditions



Extreme weather event



Flooding



Food availability



Medical care or medical condition



Rodents



Mosquitoes



Temperature-related



UV radiation

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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: November 2020 - January 2022

Rainfall

- From November 2021 to January 2022, lingering seasonal dryness was reported throughout most of the eastern Caribbean with many islands there experiencing severely dry or drier conditions.

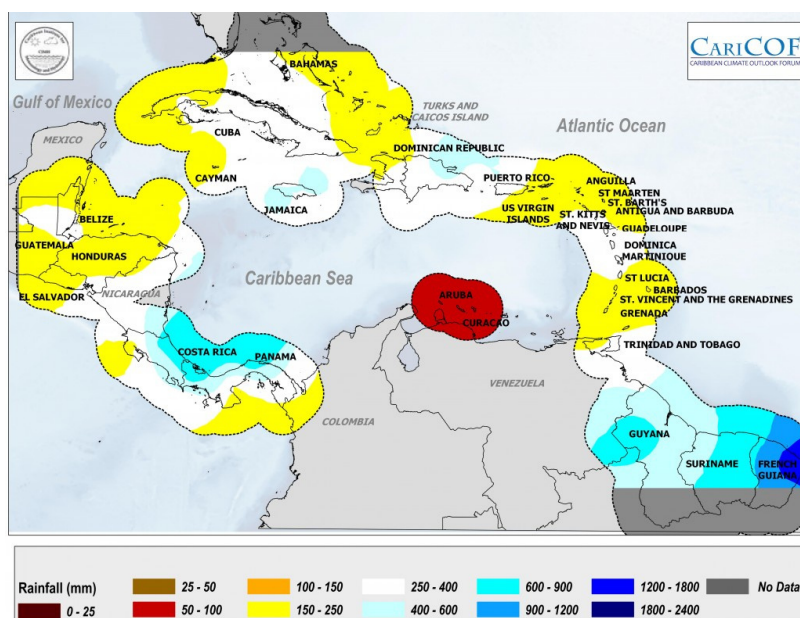
Temperature

- Although temperatures were warmer than usual, they were generally comfortable across the region.

What do we Usually Expect for March to May?

Rainfall

- This period typically marks the late dry season in Belize and the Caribbean Islands, with May marking the onset of the early wet season in the Greater Antilles. March to April further marks the secondary dry season in the coastal Guianas, where the primary wet season starts in May. The March to May period is a 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 is the last month of the cool season. From April onwards, temperatures rise to become uncomfortable at times during May, which forms the first month of the heat season across the region. In Belize and Trinidad, a peak in the number of heatwaves typically occurs during May. That said, with the exception of the Guianas, air humidity is typically at its lowest during the late dry season, moderating 'feels-like' temperatures as compared to the second half of the heat season (i.e. August to October).

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