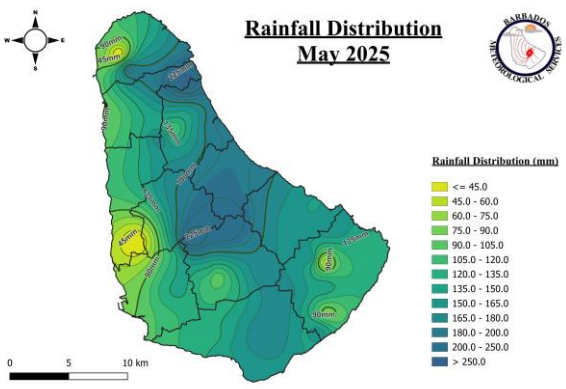
BMS MONTHLY CLIMATE OUTLOOK NEWSLETTER
May 2025|Issue No.64

Key Messages: Above-average rainfall is expected until July and **near to below-average** rainfall is expected thereafter. There is **no concern for Agricultural Drought and Hydrological Drought during the Wet season.** However, persons are urged to continue monitoring the BMS seasonal outlooks for updates. **The Heat season is evolving and warmer than normal temperatures are likely, although not as warm as 2023 and 2024**. ENSO neutral conditions are present and are likely to persist through to October. **Near to above-average tropical cyclone activity is expected during the 2025 Atlantic Hurricane season.**

MAY IN REVIEW

Precipitation

Figure 1: May Rainfall Distribution



Weather conditions during May was a mixture of sunny conditions with a layer of Saharan dust haze, intense rainfall events with thunderstorms and breezy winds. As a result, 150.0mm of rainfall was recorded here at Charnocks, which was about double the climatological average for May (74.1mm). Rainfall across the island ranged from 41.0mm to 253.6mm, as seen in figure 1.

The first of the sigificant rainfall events in May was a result of a trough system on the 12th. A flash-flood watch was issued and the alert level for severe thunderstorms was elevated to yellow (be aware). Parts of the island recorded up to 3 inches of rainfall and there were reports of a lightning strike damaging a structure in the Glebe, St. George in segments of the news media.

One day later, a convergent low-level pattern and a trough system warranted the issuance of a flash-flood watch and a severe thunderstorm warning. Up to 4 inches of rainfall was recorded across the northern Parishes and BMS lightning detectors showed that a maximum of 81 lightning strikes occurred over a fifteen-minute period.

Between the 18th and 19th, a mid to upper-level trough along with surface to low-level convergence generated up to half an inch of rainfall. A flood watch was issued as more intense shower activity skirted the island.

Also issued in May were Small Craft Advisories for above-normal swell heights and/or high winds. On the 16th, BMS spotter buoys measured peak heights of 2.7m and wind speeds peaked at 23 knots, with gusts up to 33 knots, here at Charnocks. On the 25th into the 26th, swell heights up to 2.6m were recorded while wind speeds peaked at 24 knots. On the 31st, winds peaked at 24 knots here at Charnocks. No dust haze advisories or warnings were issued, however slightly hazy to hazy conditions were observed at Charnocks on 17 days.

Temperature

Figure 2: May Average Temperature Distribution

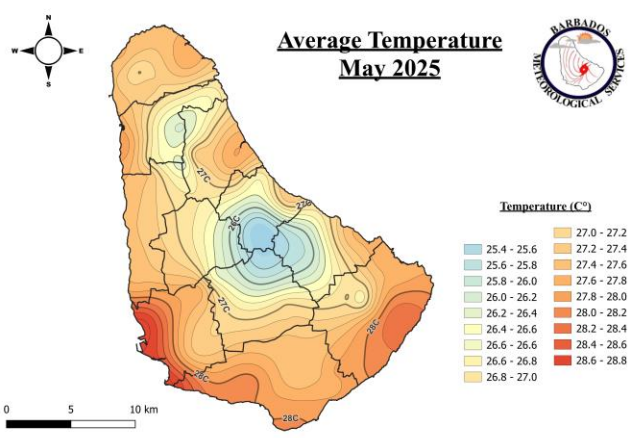
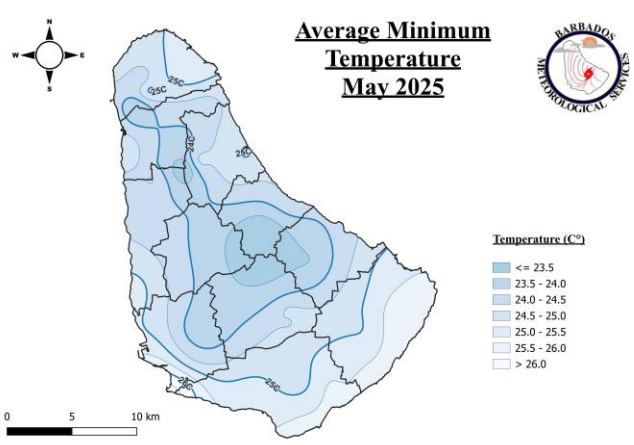


Figure 3: May Average Minimum Temperature Distribution



Nighttime temperatures during May continued to increase, as compared to the previous months. Here at Charnocks, the average air temperature for May was 27.7°C, which was the climatological average. Across the island, average air temperatures ranged from 25.4°C to 28.8°C, as seen in Figure 2. Overnight minimum temperatures at Charnocks cooled to an average of 25.9°C, which was 0.9°C warmer than the climatological average for May (25.0°C), and 1.2°C cooler than last year. As for the remainder of the island, minimum temperatures ranged between 23.1°C and 26.6°C, as seen in Figure 3.

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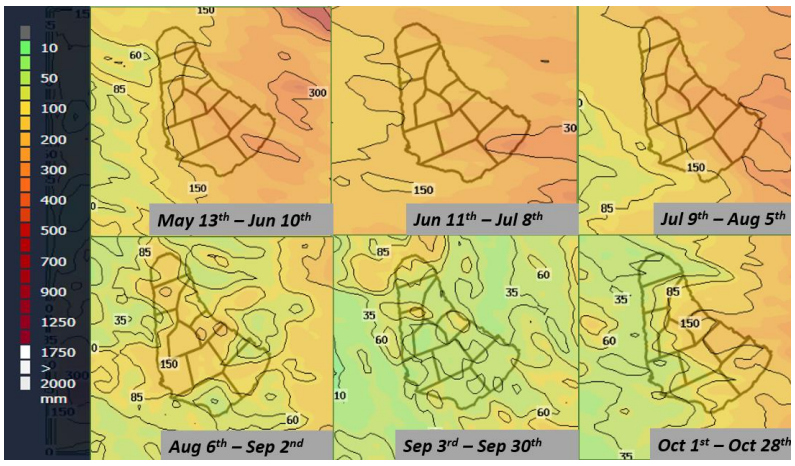
PRECIPITATION OUTLOOK

Figure 4: BMS Experimental rainfall forecast from May to October 2025



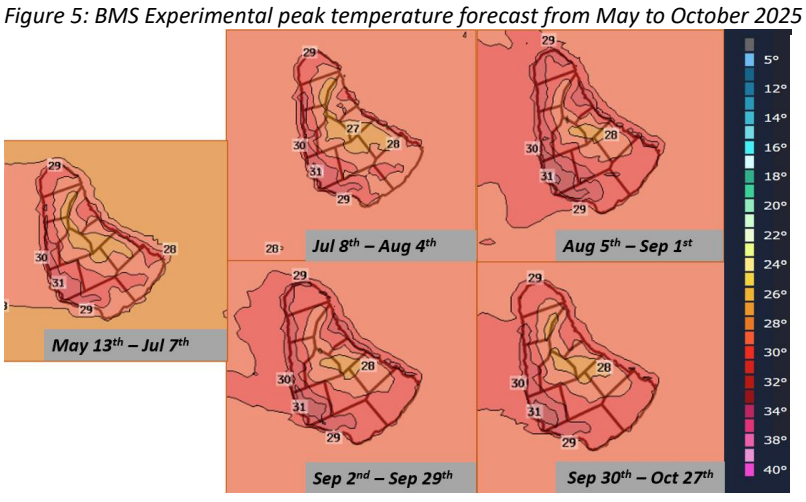
The Wet Season for Barbados has started with above rainfall accumulations and as such, the trend is predicted to continue into the months of June and July. In the coming months, the persistence of ENSO Neutral conditions will have no significant bearing on weather in the eastern Caribbean. As such, the main drivers of Barbados' rainfall in the coming months will be the influx of tropical waves and the warmer than normal Atlantic SSTs. On the other hand, the BMS Experimental Model signals from August to October a reduction in rainfall amounts with generally a below average rainfall deviation. One factor could be periodic intrusions of Saharan dust (CFS model does not factor dust haze), which limit rainfall and are difficult to predict on a sub-seasonal timescale. However, this forecast may be adjusted in subsequent newsletters and as a result, all forecast should be monitored for updates. Table 1 shows the projected rainfall accumulations and the deviation from the climatological average at Charnocks.

Table 1: Rainfall Projections for June to October 2025

Month	Projections (mm)	Deviation from 30-yr Average at Charnocks
June	150-300	Above Average
July	150-200	Above Average
August	85-150	Below Average to Average
September	85-150	Below Average
October	85-150	Below Average

TEMPERATURE OUTLOOK

Figure 5: BMS Experimental peak temperature forecast from May to October 2025



Barbados' heat season is expected to be warmer than normal, but not as warm as 2024 and 2023. The latest probabilistic and dynamic model forecasts continue to project above-normal minimum, mean and maximum temperatures for the entire forecast period (table 2). The BMS experimental WRF model (figure 5) continues to suggest that daytime temperatures will be uncomfortable and are expected to peak between 30°C and 33°C. Although daytime temperatures are expected to be uncomfortable, the number of uncomfortable days are not expected to be as numerous as those in 2023 and 2024. The BMS urges members of the public to continue monitoring the temperature outlook for updates in the coming months and adhere to any recommendations coming from the Ministry of Health and Wellness during the heat season.

Table 2: Temperature Outlook for June to November 2025

Temperature	Season	Forecast Probability (%)		
		Below	Normal	Above
Minimum Temperature	**JJA**	31	25	44
	SON	23	26	51
Maximum Temperature	**JJA**	20	35	45
	SON	31	24	45
Mean Temperature	**JJA**	10	33	57
	SON	35	19	46

DROUGHT OUTLOOK

A forecast for above average rainfall in the coming months along with an above average cumulative rainfall for past two (2) months gives way to no concern for **Agricultural Drought and Hydrological Drought.** Persons in the agricultural sector are urged to continue monitoring the Ministry of Agriculture, Food and Nutritional Security for updates and the BMS for updates to the seasonal drought outlook. Members of the public are urged to take responsibility and continue to conserve water, regardless of the drought alert level and to continue monitoring the BWA and the BMS for updates. Below is a table of the forecast drought alert levels based on the forecast rainfall accumulations (Table 1).

Table 3: Drought Outlooks for June to October 2025

MONTH	AGRICULTURAL	HYDROLOGICAL
JUNE	No concern	No concern
JULY	No concern	No concern
AUGUST	No concern	No concern
SEPTEMBER	No concern	No concern
OCTOBER	No concern	No concern

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No Concern for Agricultural Drought

Responses to the predicted Drought Alert Level.

Key Messages:

- *Monitor resources*
- *Upgrade infrastructure*
- *Update and ratify irrigation plans*

- ✓ ***Continue to monitor for updates from the Barbados Water Authority and Ministry of Agriculture, Food and Nutritional Security.***
- ✓ ***Continue to monitor the BMS Climate Outlook for monthly updates.***

No concern for Hydrological Drought

Responses to the predicted Drought Alert Level.

Key Messages:

- *Monitor resources*
- *Update and ratify management plans*
- *Upgrade infrastructure*

- ✓ ***Continue to monitor for updates from the Barbados Water Authority.***
- ✓ ***Continue to monitor the BMS Climate Outlook for monthly updates.***

Likely Impacts for the June to October 2025 Period

What do these forecasts mean for Barbados?

- Continue to conserve water.
- Recharge in reservoir/aquifer levels.
- Employ rainwater harvesting techniques for rain feed crops during dry periods.
- Increased likelihood of flooding during intense rainfall events.
- Increase in soil moisture content and possible saturation during excess rainfall events.
- Uncomfortable temperatures which may lead to an increased need for cooling and hydration.
- Heat stress in farm animals and pets.
- Air quality may be impacted by periodic intrusions of Saharan dust.
- Keep updated with daily weather as well as seasonal forecasts issued by the BMS.

CLIMATE OUTLOOK

ENSO (El Niño Southern Oscillation)

ENSO is the interaction between the ocean and atmosphere in the equatorial Pacific which results in periodic departures from the expected sea surface temperatures. There are two phases of ENSO, the cold phase of sea surface temperatures, La Niña and the warm phase, El Niño. La Niña conditions usually results in higher rainfall for Barbados. El Niño conditions usually result in lower rainfall for the island. Neutral conditions which are close to average or what is normally expected. These are the general conditions associated with each phase however, there are other factors which influence the rainfall patterns across Barbados which may result in a deviation from the norm.

Current state

ENSO Neutral conditions remain present across the most of the Pacific Ocean.

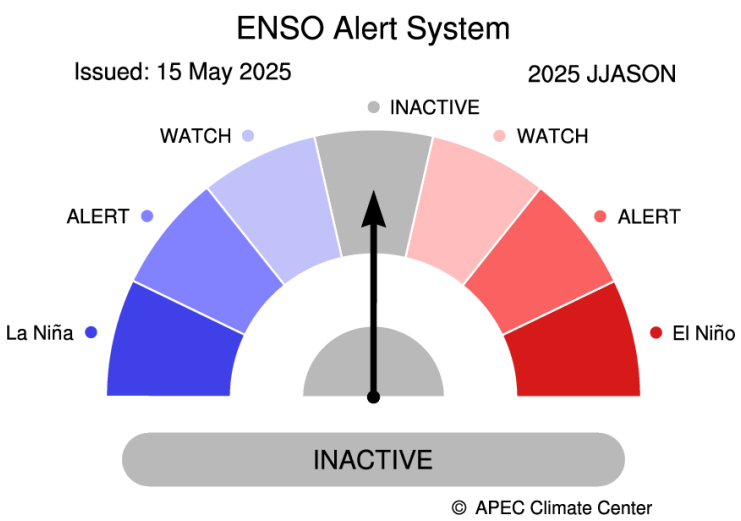
What's the Outlook?

ENSO-neutral is likely to persist through October 2025.

Impact to the Upcoming Seasons

During ENSO-neutral events there is typically no significant predictability on rainfall or temperature patterns in Barbados.

(Source: APCC/ Climate Information Services)



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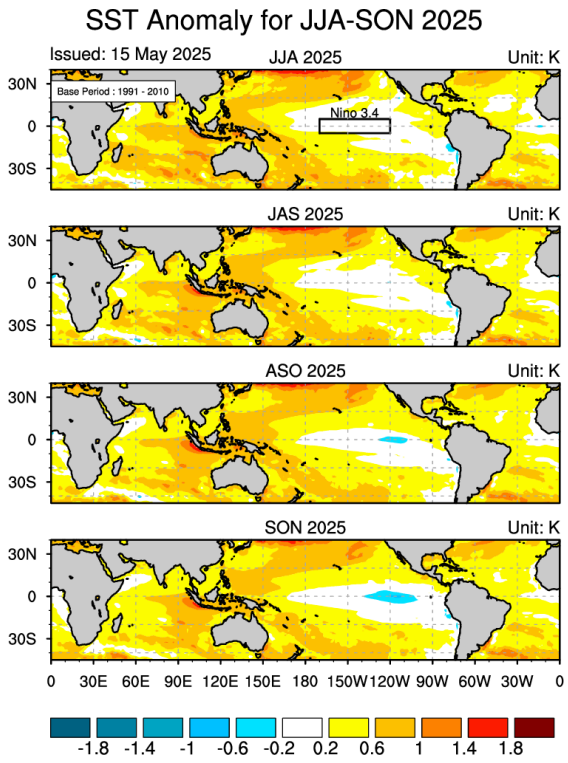
CLIMATE OUTLOOK

Sea Surface Temperatures (SSTs)

The Multi-Model Ensemble continues to forecast above-normal sea surface temperatures (SSTs) across the tropical Atlantic. SSTs are forecast to remain above normal by 0.2°C through to November. Across the eastern and central equatorial Pacific, SSTs are expected to be near normal, consistent with the ENSO-neutral conditions.



(Source: APCC/ Climate Information Services)

Impact on Rainfall

Warmer than normal SSTs may favour increased rainfall characterized by intense rainfall events. This may result in flash flooding across the island, especially during the early rainy season.

Impact on Temperatures

Warmer-than-normal SSTs across the tropical Atlantic will result in warmer-than-normal temperatures and humid conditions. Barbados is now into the Heat Season and recurrent episodes of heat stress are likely.

2025 ATLANTIC HURRICANE SEASON OUTLOOK

Forecasts for the 2025 Atlantic Hurricane season from Colorado State University and Tropical Storm Risk indicate a near normal activity for the Hurricane Season this year. Meanwhile, the National Oceanic and Atmospheric Administration forecasts above normal activity for the Atlantic basin, given their forecast for weak seasonal wind shear and higher activity from the West African Monsoon. The Barbados Meteorological Services has also produced a forecast, a hybrid statistical and deterministic product to predict the activity in the Eastern Atlantic (bounded by 10°W – 65°W, 5°N – 20°N). Additional factors influencing activity are warm Sea Surface Temperatures (SSTs), and continued ENSO Neutral conditions across the Tropical Pacific. These factors favor tropical cyclone development over the Atlantic basin. The below table summarizes these forecasts as compared to Atlantic hurricane season Climatology.

Table 3: 2025 Atlantic Hurricane Season Forecast compared to Atlantic Hurricane Season

	Atlantic Basin Climatology (1991-2020)	Cumulative Forecast Ranges for 2025 Hurricane Season	BMS 2025 Eastern Atlantic Outlook
Named Storms	14	12-19	5-8
Hurricanes	7	7-10	2-5
Major Hurricanes (Category 3 and above)	3	3-5	0-2

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