



BARBODON



BMS MONTHLY CLIMATE OUTLOOK NEWSLETTER

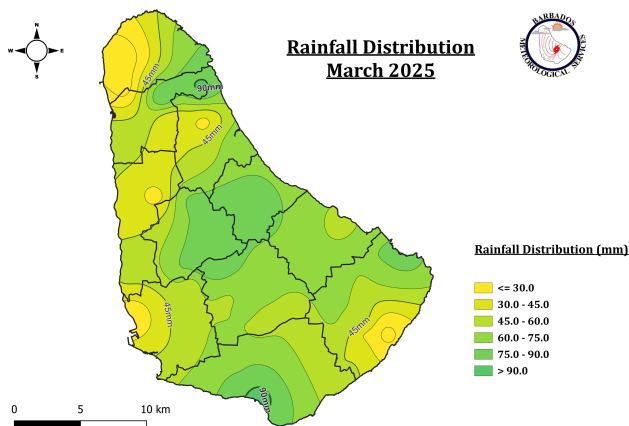
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Key Messages: Near to below-average rainfall is expected until July. An **Agricultural Drought Warning** is now in effect for parts of Christ Church, St. Philip, St. Michael, and St. Lucy. A **Hydrological Drought Watch** is in effect, persons should monitor the BMS seasonal outlooks for updates. **The Heat season is expected to begin in April.** Although not as warm as 2023 and 2024, warmer than normal temperatures are likely persist due to warmer than normal Atlantic SSTs. ENSO neutral conditions are present and are likely to persist through ASO.

MARCH IN REVIEW

Precipitation

Figure 1: March Rainfall Distribution



Warm, dry conditions remained prevalent across Barbados as the Atlantic High continued to dictate weather conditions. Data from the Barbados Fire Service indicated that 121 bush fires were tended to during the month. Rainfall accumulations for March at Charnocks were centered around 8 rain days. The most notable rainfall event, from 14th - 15th March, produced 2 inches of rainfall across the southern portion of the island. Approximately, 50mm of rainfall was recorded at the BMS station, 11.1mm higher than the climatological average of 38.9mm. Across Barbados, rainfall accumulations ranged from 10.2mm to 94.4mm as seen in Figure 1.

Temperature

Figure 2: March Average Temperature Distribution

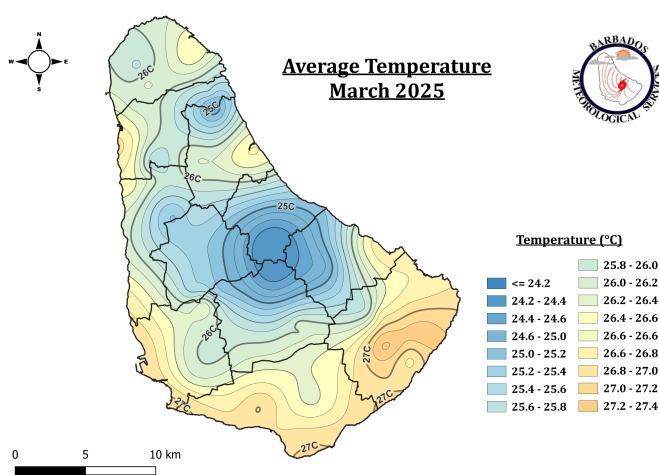
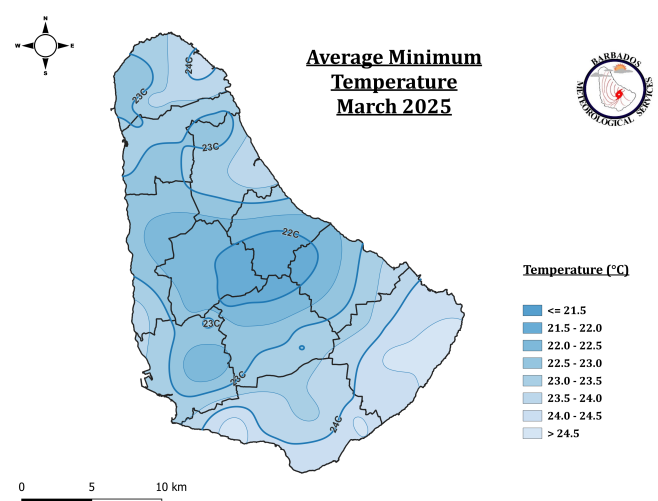


Figure 3: March Average Minimum Temperature Distribution



More comfortable air temperatures were recorded; here at Charnocks, the average air temperature for March was 26.6°C which was 0.3°C higher than the climatological average, but 0.5°C cooler than the average air temperature for March 2024. The 3DPAWS stations across the island, recorded average air temperatures which ranged from 24.3°C to 27.4°C. Overnight minimum temperatures at Charnocks cooled to an average of 24.6°C which was 0.3°C warmer than the climatological average of 23.4°C, and 0.4°C cooler than last year. As for the remainder of the island, minimum temperatures ranged between 21.6°C and 24.7°C, as seen in Figure 3.



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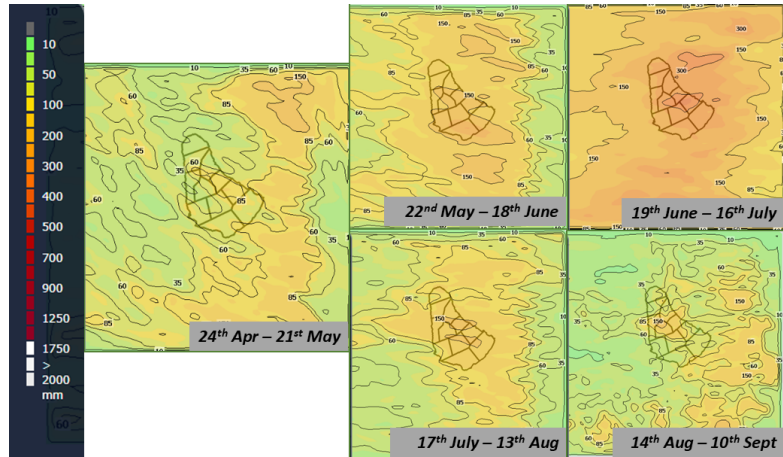


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PRECIPITATION OUTLOOK

Figure 4: BMS Experimental rainfall forecast from April to August 2025



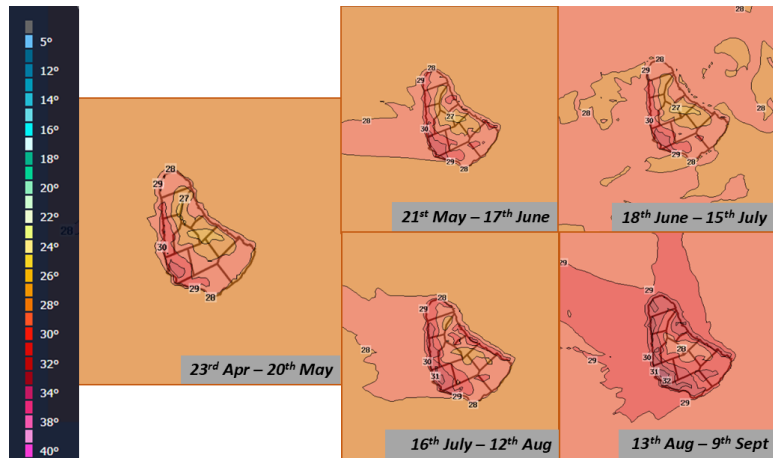
As Barbados transitions into the Wet Season, global models and the regional outlook indicate average precipitation totals from April to September. However, given that ENSO Neutral conditions are expected to evolve in the tropical Pacific, the main drivers of Barbados' climate in the coming months will likely be a result of conditions in the Atlantic. The warmer than normal Atlantic SSTs are expected to persist which could be the source of intense rainfall events during the forecast period. However, especially for the JAS period, there is some uncertainty in the forecasts; one factor will be periodic intrusions of Saharan dust which are difficult to predict on a sub-seasonal timescale. These intrusions can limit rainfall. Therefore, the official forecast calls for near to below average rainfall for much of the forecast period but may be adjusted in subsequent newsletters. All forecast should be monitored for updates in the coming months. Table 1 shows the projected rainfall accumulations and the deviation from the climatological average at Charnocks.

Table 1: Rainfall Projections for April to August 2025

Month	Projections (mm)	Deviation from 30-yr Average at Charnocks
April	30-70	Near to Below Average
May	35-90	Near Average
June	85-200	Near Average
July	150-350	Near to Above Average
August	60-150	Near to Above Average

TEMPERATURE OUTLOOK

Figure 5: BMS Experimental peak temperature forecast from April to August 2025



Barbados' cool season is still expected to end in April and temperatures are expected to be warmer than normal. Given the expected persistence of the above-normal Atlantic SSTs, 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 should peak between 28°C and 32°C until early May. The transition into the heat season will be uncomfortable, with daytime temperature expected to peak between 29°C and 33°C. Although daytime temperatures will become uncomfortable, they are not expected to be as warm as 2023 and 2024. Regardless, the BMS urges members of the public to continue monitoring the temperature outlook for updates in the coming months and adhere to the recommendations from the Ministry of Health and Wellness during the heat season.

Table 2: Temperature Outlook for April to August 2025

Temperature	Season	Forecast Probability (%)		
		Below	Normal	Above
Minimum Temperature	AMJ	21	24	55
	JAS	22	23	55
Maximum Temperature	AMJ	31	29	40
	JAS	20	20	60
Mean Temperature	AMJ	11	37	52
	JAS	22	29	49

DROUGHT OUTLOOK

The cumulative rainfall for past three (3) months has been slightly below average, with the uncertainty in the rainfall forecast for the upcoming season and the grass fires observed across some districts, the BMS has upgraded the **Agricultural Drought Watch to an Agricultural Drought Warning for parts of St. Lucy, St. Michael, Christ Church and St. Philip**. Persons in the agriculture sector are urged to continue monitoring the Ministry of Agriculture, Food and Nutritional Security and the BMS for updates to the seasonal drought forecast for updates. Similarly, the alert level for hydrological drought has also been elevated to a **Hydrological Drought Watch**. 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 April to August 2025

MONTH	AGRICULTURAL	HYDROLOGICAL
APRIL 2025	Drought Warning	Drought Watch
MAY 2025	Drought Warning	Drought Watch
JUNE 2025	Be Aware	Drought Watch
JULY 2025	No concern	Drought Watch
AUGUST 2025	No concern	Be Aware



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Agricultural Drought Warning

Responses to the predicted Drought Alert Level.

Key Messages:

- *Keep updated*
- *Protect resources*
- *Update and ratify management plans*
- *Utilize irrigation systems for the best crop yield*
- *Release public service announcements*
- *Report the impacts*
- ✓ **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.**

Hydrological Drought Watch

Responses to the predicted Drought Alert Level.

Key Messages:

- *Keep updated*
- *Protect resources and conserve water*
- *Implement management plans*
- *Monitor resources and upgrade infrastructure*
- *Update and ratify management plans for the possibility of drought*
- ✓ **Continue to monitor for updates from the Barbados Water Authority.**
- ✓ **Continue to monitor the BMS Climate Outlook for monthly updates.**

Likely Impacts for the April to August 2025 Period

What do these forecasts mean for Barbados?

- Continue to conserve water.
- Depletion of reservoir/aquifer levels as the dry season progresses.
- There may be inadequate soil moisture at times for certain crops.
- Employ rainwater harvesting techniques for rain feed crops.
- It is recommended to have an irrigation plan and systems to ensure the best crop yield during periods of dryness.
- More comfortable days and nights until late March/ early April.
- A transition into the Heat Season and uncomfortable temperatures around April.
- Air quality may be impacted by periodic intrusions of Saharan dust and grass fires.
- 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

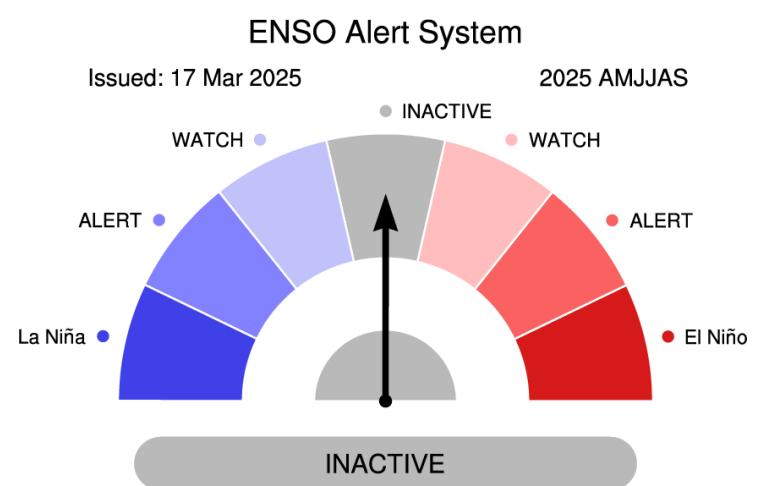
ENSO Neutral conditions are present across the central Pacific Ocean with near to below-average sea surface temperatures (SSTs) while above – average SSTs are occurring in the eastern Pacific.

What's the Outlook?

ENSO-neutral is likely to persist through August - October 2025.

Impact to the Upcoming Seasons

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



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(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. Across the tropical Atlantic, SSTs are forecast to remain above normal by 0.2°C through to August. Across the eastern and central equatorial Pacific, SSTs are expected to be near normal, consistent with the projected ENSO-neutral conditions.

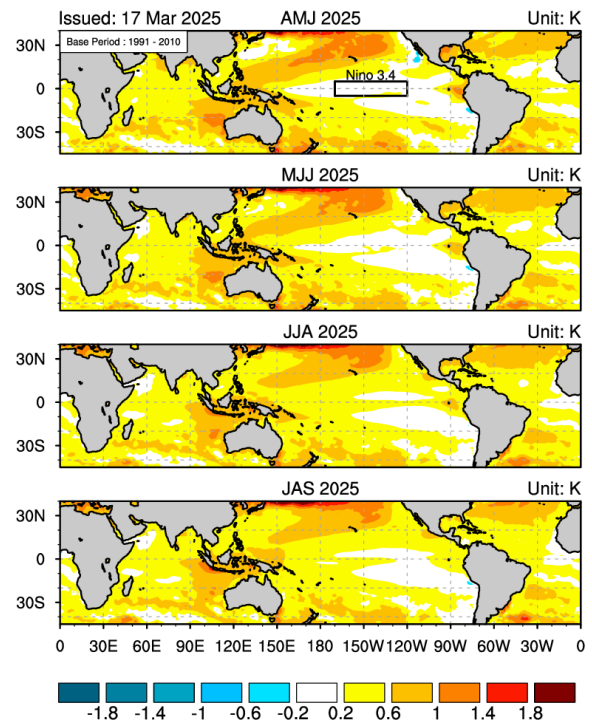
Impact on Rainfall

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 late dry season and 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 will transition into the Heat Season by Mid-April and recurrent episodes of heat stress are likely as the Heat Season evolves.

SST Anomaly for AMJ-JAS 2025



(Source: APCC/ Climate Information Services)

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