**JANUARY 2025** **VOLUME 10 | ISSUE 1**

# METEOROLOGICAL DEPARTMENT ST. MAARTEN

# WEATHER & CLIMATE

## KEY POINTS

- 2024 is the hottest year on record.
- December 2024 was the driest since 2012.
- Expect higher than normal temperatures and humidity across the region.
- Normal-to-above normal rainfall is expected for the next three months on St. Maarten.

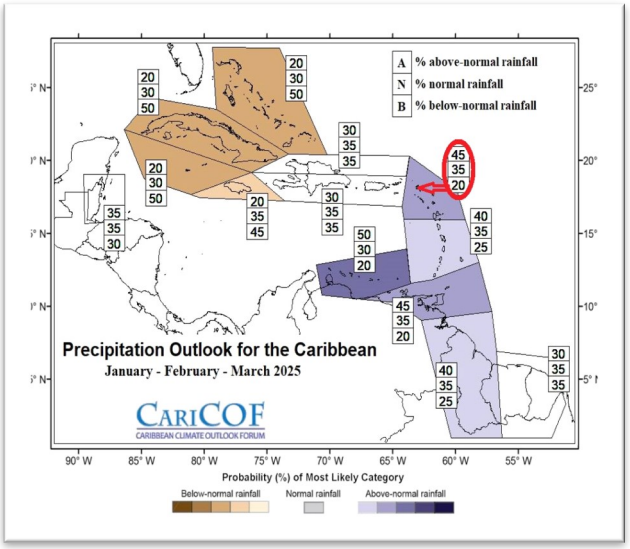
## SEASONAL OUTLOOK FOR JANUARY—MARCH 2025

### RAINFALL FORECAST

According to forecast models, St. Maarten and the Lesser Antilles will likely have normal-to above-normal rainfall.

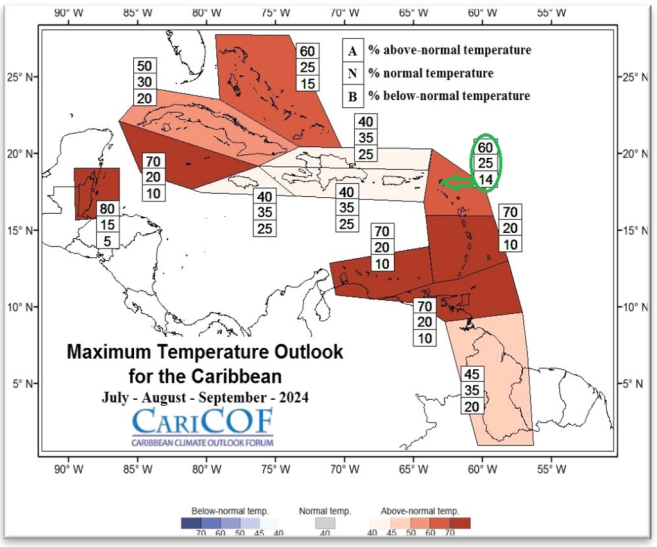
St. Maarten usually experiences 136 mm to 180 mm (5 to 7 inches) of rain, with 28 to 43 wet days during this period. The weather during this season is generally sunny, with occasional showers.

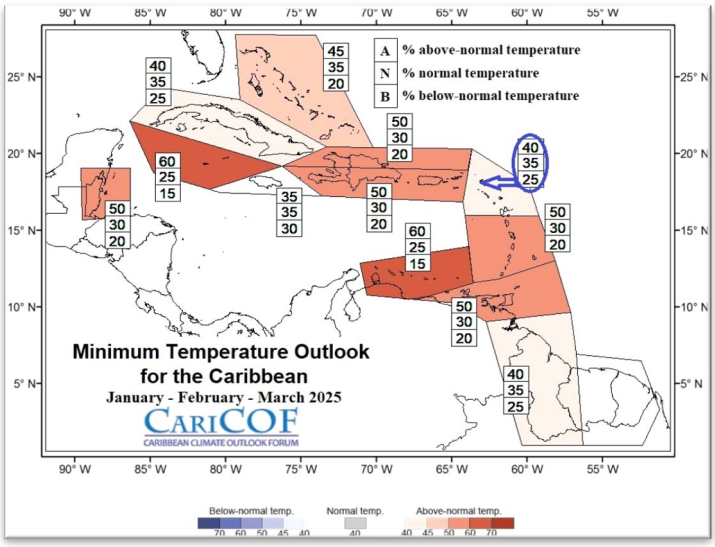
The prediction includes 1 to 4 wet spells, at least 2 very wet spells and up to 6 dry spells, all lasting 7 days.




### TEMPERATURE FORECAST

Daytime (max.) and nighttime (min.) temperatures, as well as humidity, are likely to be significantly higher than usual for this period in St. Maarten. However, since we are in the Caribbean's cooler season, hazardous heat stress is not expected.

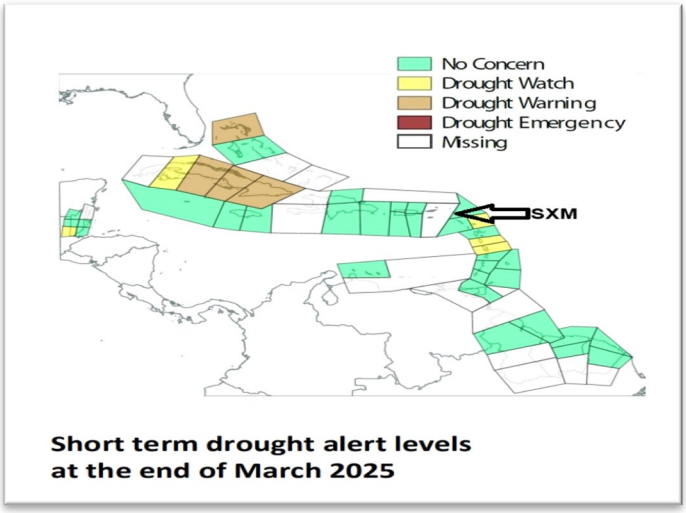


# DROUGHT OUTLOOK

St. Maarten faces no drought concerns throughout the end of March 2025, while parts of the Bahamas and most of Cuba are experiencing evolving drought issues. Areas like Antigua, Dominica, and Martinique may also face developing or ongoing drought conditions.

Long-term forecasts suggest that most of the region, including St. Maarten, will remain drought-free by the end of May 2025. However, it is crucial to monitor resources, update management plans, and enhance infrastructure during this time.



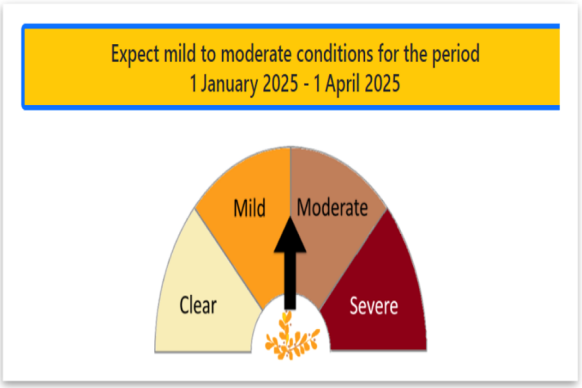

**Short term drought alert levels at the end of March 2025**

# DUST OUTLOOK

Saharan dust incursions in the Caribbean are typically minimal during this period; however, significant episodes can arise as early as February in some years. Recent observations suggest an increasing trend in these occurrences, with local dust levels starting low but expected to rise as February approaches.

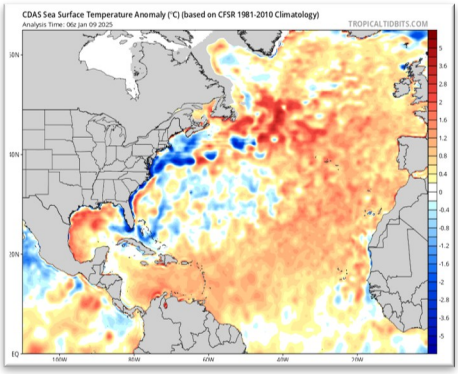
# SARGASSUM OUTLOOK

Northern islands in the region, like St. Maarten, are forecasted to enjoy clear conditions until March 2025, after which moderate Sargassum influxes are expected. The central islands are anticipated to face moderate influxes throughout this period, while the southern islands may experience mild to moderate influxes, peaking in February 2025.




# WHAT INFLUENCES THIS SEASON'S CLIMATE?

The upcoming season in St. Maarten will be influenced by key factors such as the El Niño Southern Oscillation (ENSO) and climate conditions in the Tropical North Atlantic and Caribbean. A strong El Niño event peaked in December and ended in May, resulting in near-average sea surface temperatures (SSTs). Forecast models indicate a likelihood of La Niña or ENSO neutral conditions for January to March, with stronger confidence in ENSO neutral conditions for April to June. Record-warm SSTs, 1°C to 2°C above average, are expected to persist, leading to higher air temperatures, increased humidity, and a greater likelihood of extreme rainfall events, even during typically drier months.



# IMPLICATION OF FORECAST TO VARIOUS SECTORS

## HEALTH

- January has low UV radiation, prolonged sun exposure can still cause skin damage. From February, when UV levels rise, sunscreen is advised.
- Individuals with respiratory issues should exercise caution during Saharan dust episodes and monitor daily forecasts.
- The increased use of containers for water storage in the dry season may lead to more mosquito breeding sites, particularly for species linked to Dengue, Chikungunya, and Zika.

## ENERGY

- Energy requirements for cooling are not expected to rise significantly this season, with nighttime temperatures in St. Maarten anticipated to stay seasonably comfortable. However, increases may be expected later in the season.

## TOURISM

- Less interruptions to outdoor activities.
- Air temperatures and humidity levels during this cool season are expected to be higher than usual, but not to the extent that would cause significant heat stress.

## AGRICULTURE

- In the event of dry spells:
  - Regular weeding is important to reduce competition and stress on crops.
  - Be careful not to over-irrigate to avoid waterlogging and runoff.
  - Do not transplant during prolonged dry conditions to prevent transplant shock and crop loss.

# DECEMBER REVIEW

**Warmest Days:**

December 1st, 3rd, and 4th: Average temperature of 28.5°C/83°F.

**Coolest Day:**

December 31st: Average temperature of 25.1°C/77°F.

**Highest Temperature:**

December 27th: Maximum of 31.8°C/89°F.

**Cool Nights:**

Two nights with temperatures ≥ 22.7°C/73°F; coldest on December 30th at 22.0°C/72°F.

**Temperature Trends:**

Consistently above normal throughout December, continuing a trend since March 2023.

**Sunshine Hours:**

Most sunshine on December 3rd: 10 hours 30 minutes.

Least sunshine on December 31st: 4 hours 18 minutes, due to mostly cloudy skies.

**Rainfall:**

Ten days of rain, no heavy rain day (> 10 mm).

Total rainfall was 37.3 mm which was below normal, making it the driest December since 2012.

**Wind Conditions:**

Significant winds on December 18th and 19th: Average speed of 12 kt /14 mph.

| | | |
|---|---|---|
| **Total Rainfall** | 37.3 mm | 1.5 in |
| **2024 Cumulative Rainfall** | 1306.5 mm | 51.4 in. |
| **Max. 24-Hr. Rainfall** | 7.0 mm | 0.3 in. |
| **No. Rain Days (>=1.0 mm)** | 10 days | |
| **No. Heavy Rain Days (>=10.0 mm)** | 0 days | |
| **No. Thunderstorm Days** | 0 days | |
| **Avg. Wind Speed** | 8 kt. | 9 mph |
| **Max. Wind Gust** | 30 kt. | 35 mph |
| **Avg. Temperature** | 27.2°C | 81°F |
| **Max. Temperature** | 31.8°C | 89°F |
| **Min. Temperature** | 22.0°C | 72°F |

Please note that all data was recorded at the Princess Juliana International Airport and may not necessarily reflect conditions at other points on country St Maarten.

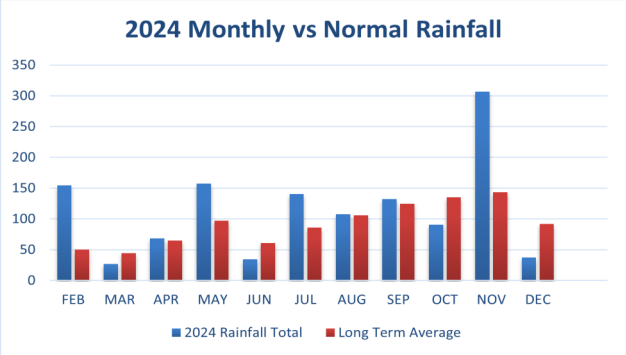
# SHORT / LONG TERM SEASONAL REVIEW

## SEASONAL REVIEW (OCT-NOV-DEC 2024)

While October and December recorded less than average rainfall (530 mm/21 in), the total rainfall for the last three months exceeded the normal range of 325 to 415 mm (13 to 16 in). This period included nine days with heavy rainfall (>10 mm).

## YEAR IN REVIEW (JAN-DEC 2024)

The total rainfall over the past 12 months exceeded the normal range of 976 to 1,246 mm (38 to 49 in). At the Princess Juliana International Airport, a total of 1,306.5 mm (51.4 in) of rainfall was recorded.

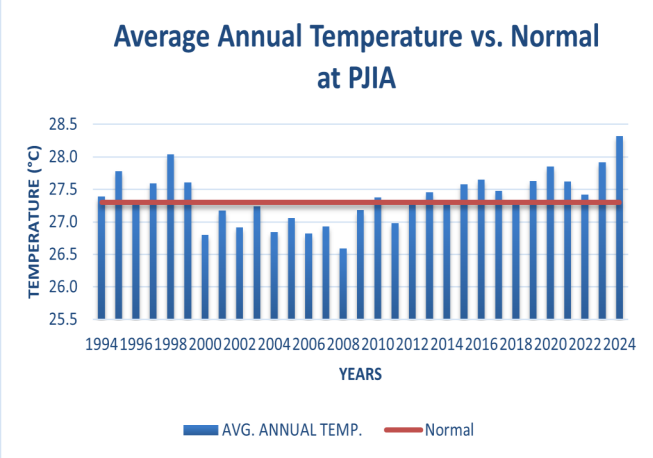



## JANUARY NORMAL CONDITIONS

| | | |
|---|---|---|
| **Rainfall Total** | 58 — 74 mm | 2 –3 in. |
| **Avg. No. of** | 13 days | |
| **Daily Average Temperature** | 25.7°C | 78°F |
| **Avg. Max.** | 28.7°C | 84°F |
| **Avg. Min.** | 23.3°C | 74°F |
| **Avg. Daily Hours of Sunshine** | 8 hours | |

# 2024: HOTTEST YEAR ON RECORD

The World Meteorological Organization (WMO) has declared 2024 the hottest year on record, with global average surface temperatures 1.55 °C above pre-industrial levels (1850-1900). This increase is largely due to rapid ocean warming, with records set at the surface and up to 2000 meters deep. At Princess Juliana International Airport, the average annual temperature for 2024 surpassed the long-term average by 1 °C, with September and October being the warmest months. Several months, including January, May, June, August, and October, broke temperature records. St. Maarten experienced multiple heatwaves: an 8-day heatwave in May, a 13-day heatwave in June, and four heatwaves in July, with August seeing five heatwaves. September had four heatwaves, the longest lasting 12 days, and October had three, the most significant for the year, lasting 17 days.

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