

Weather & Climate

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December 2024

KEY POINTS

Monitor Updates!

- November 2024 was the wettest November in the last 10 years.
- November 2024 makes it 21 consecutive months of above normal temperatures on St. Maarten.
- Extreme Weather events can still occur outside the official Hurricane Season.

SEASONAL OUTLOOK FOR DECEMBER TO FEBRUARY (DJF) 2024/25

RAINFALL FORECAST

Models are indicating that rainfall totals for the season Dec-Jan-Feb 2024/25 are likely to be the usual across St. Maarten, the northern Caribbean and most of the Greater Antilles. The southern Caribbean is expected to be wetter than usual.

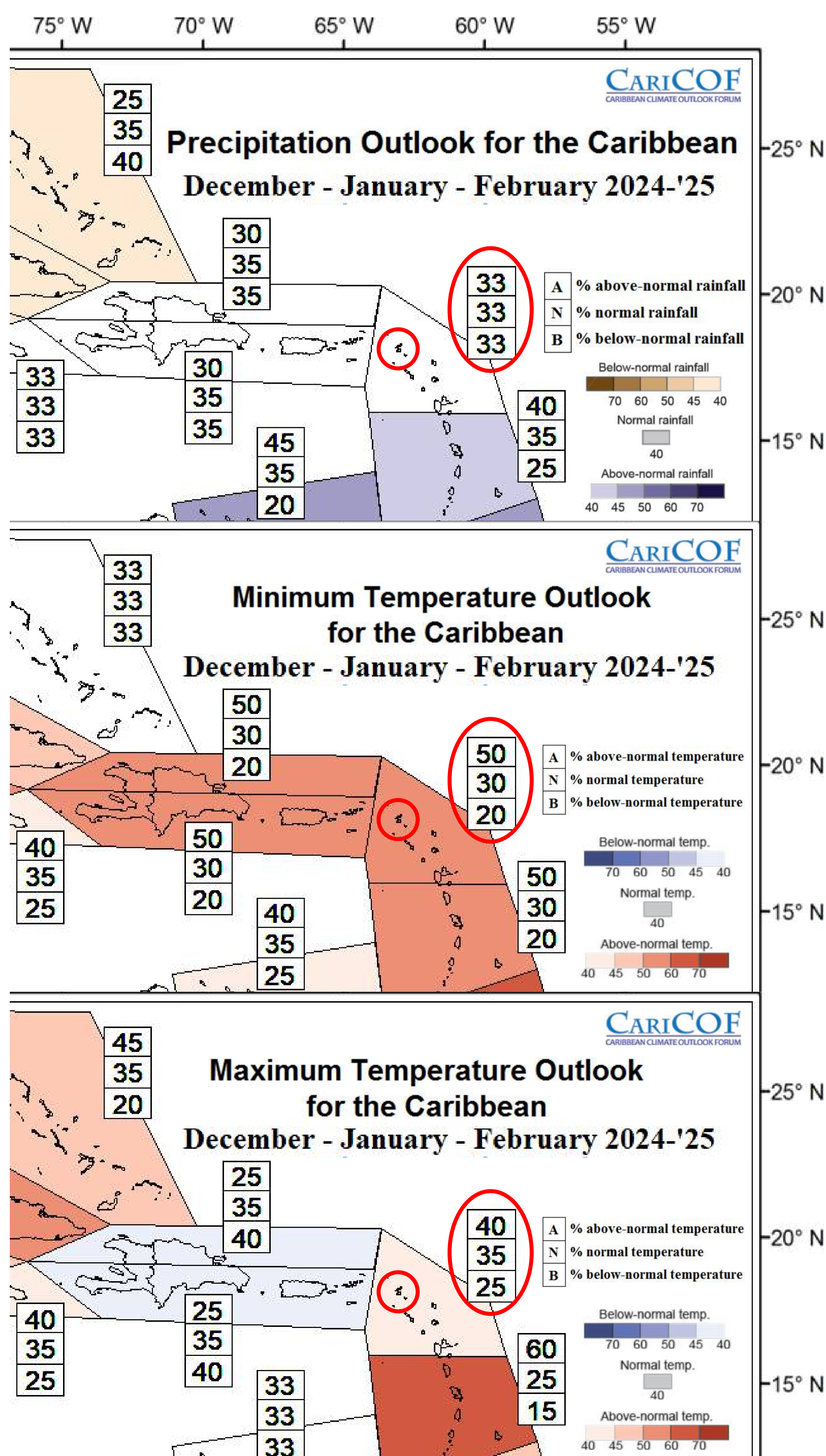
The normal rainfall for the Dec-Jan-Feb season on St. Maarten ranges 160mm–249mm/6-10 inches, with 33 to 42 wet days. We are transitioning to the dry season with decreasing shower intensity and frequency.

The forecast is for 2 to 5 (7-day) wet spells and up to 8 (7-day) dry spells on St. Maarten during this season.

The 2024 Atlantic Hurricane season is officially over. However, there is a moderate chance flooding and flash flooding.

TEMPERATURE FORECAST

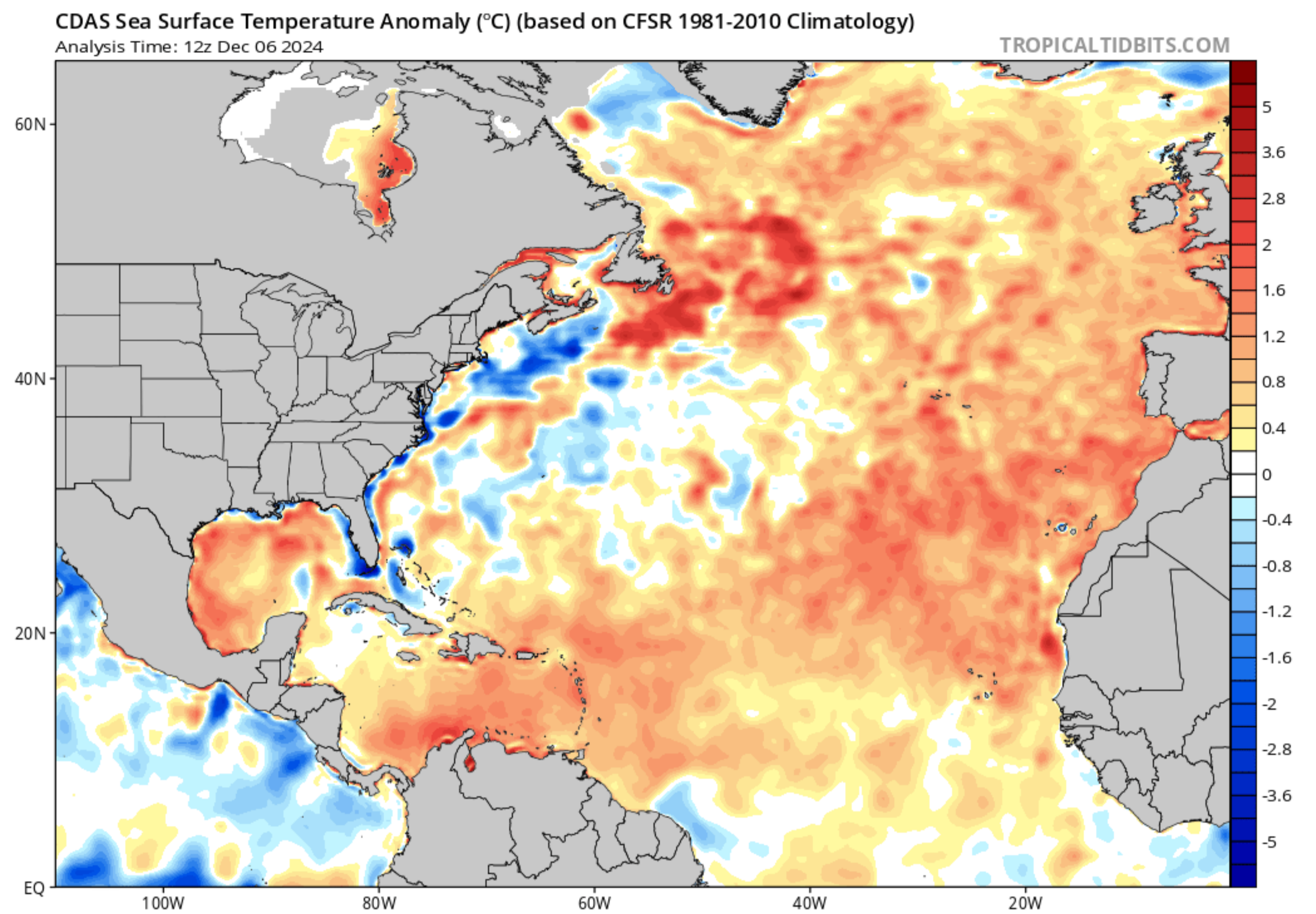
Day-time and night-time temperatures are expected to remain higher than usual. However, we are in the cool season therefore episodes of heat stress are NOT expected.



WHAT INFLUENCES THIS SEASON'S CLIMATE?

As of mid-November 2024, ENSO-neutral conditions remain in place across the equatorial Pacific, with both oceanic and atmospheric indicators reflecting this neutral state. During September, October, and early November 2024, a consistent weakening of trade winds was observed, hindering the development of La Niña conditions.

The IRI ENSO prediction model indicates a slightly higher likelihood (52%) of ENSO-neutral conditions persisting through November-December 2024. Borderline La Niña conditions are anticipated briefly during December-February 2025 (with a 50% chance), but a return to ENSO-neutral conditions is expected from January-March 2025, continuing through the forecast period ending in July-September 2025. In summary, ENSO-neutral conditions are projected to dominate through the boreal winter, spring, and summer of 2025.



Record Sea Surface Temperatures (SSTs) in much of the Caribbean Sea and the tropical Atlantic are currently 1 to 2°C above normal since summer of 2023. Models are confidently forecasting above average SSTs across the Caribbean Sea and the Tropical North Atlantic from November through April 2025.

Warm SSTs in and around the Caribbean contribute to higher air temperatures with above-average humidity seasonal rainfall totals, increased frequency of extreme rainfall and tropical cyclone activity through the end of the year.

DROUGHT ALERT/ FLASH FLOOD POTENTIAL

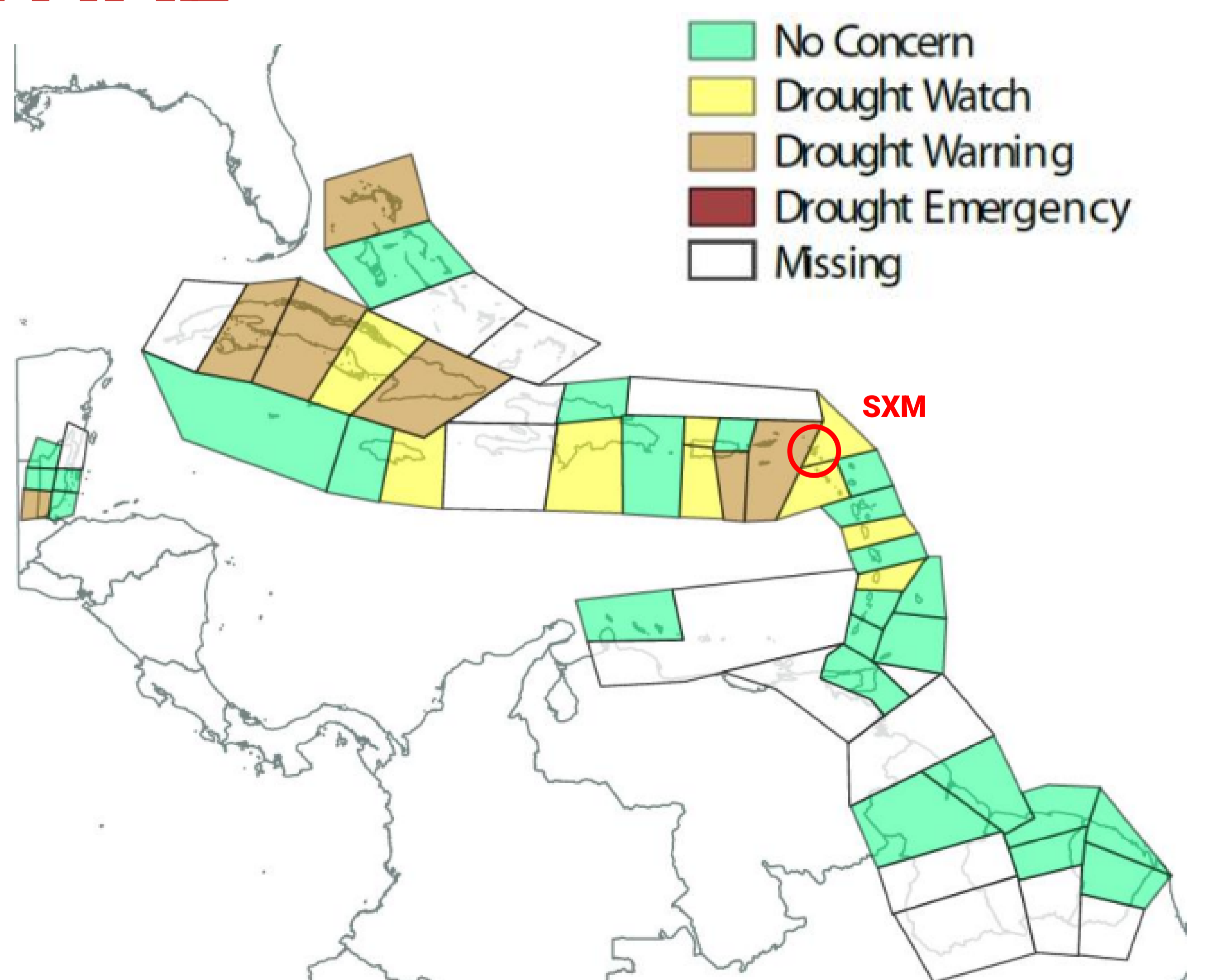
DROUGHT INFORMATION:

The short-term drought forecast for the Caribbean is indicating a possibility for drought conditions across St. Maarten by the end of February 2025. As a result the necessary management plans should be put in place.

Small farmers should have their irrigation plans ready, fire hydrants should be checked and monitor monthly updates.

FLASH FLOOD INFORMATION:

There is a high chance (50-80%) that at least one (1) event could cause flooding/flash flooding during the next 3-months (DJF). For the month of December there is a moderate flash flood potential for St. Maarten.



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



NOVEMBER 2024 IN REVIEW

Warmest day: November 8th
Average Temperature of 29.8°C/86°F

Coollest day: November 11th
Average Temperature of 26.0°C/79°F

Most Sunshine hours: November 13th (10hrs:30mins)
Least Sunshine hours: November 11th (0hrs:00mins)
→ Overcast skies throughout the day.

Windyest day: November 25th
Daily Average Wind Speed of 11kt./13mph.

Highest wind gust: November 17th

No significant dry spell.

Highest Maximum Temperature: November 3rd

Heatwave: 1 period

Hot days(>= 32.2°C/90°F): 5 days

Warm nights(>= 27.2°/81°F): 5 nights
Extremely warm: 1 night - November 8th
Minimum Temperature: 28.2°C/83°F

Total Rainfall	307.0 mm 12.1 in
2024 Cumulative Rainfall	1269.2 mm 50.0 in
Maximum 24-hr. Rainfall	89.2 mm 3.5 in
No. of Rain Days	17 days
No. of Heavy Rain Days	6 days
No. of Thunderstorm Days	12 days
Average Wind Speed	7 kt. 8 mph.
Maximum Wind Gust	35 kt. 40 mph.
Average Temperature	28.2°C 83°F
Maximum Temperature	33.0°C 91°F
Minimum Temperature	23.6°C 75°F

For the month of November, rainfall was above the normal range, this was the wettest November since 2014. Generally, temperatures were above the normal range. Monthly average temperatures remain above normal from March 2023 on St. Maarten.

LONG/ SHORT TERM SEASONAL REVIEW

YEAR IN REVIEW (DEC 2023 - NOV 2024)

Total rainfall for the last 12 months was above the normal range; (943-1207mm). A total of 1326mm/52in. of rainfall was recorded at the Princess Juliana International Airport.

SEASONAL REVIEW (SEP-OCT-NOV 2024)

Total rainfall for the last three (3) months was 530mm/21in; this amount was above the normal range (320-466mm). There were fourteen (14) days with heavy rainfall (>10mm) during that period.

NORMAL DECEMBER CONDITIONS

Total Rainfall	69-123 mm 3-5 in
Average No. of Rain Days	14 days
Daily Average Temperature	26.4°C 80°F
Average Maximum Temperature	29.3°C 85°F
Average Minimum Temperature	24.1°C 75°F
Average Daily Hrs. of Sunshine	8 hours

IMPLICATION OF FORECAST FOR SECTORS

HEALTH

- Proper management of water storage containers e.g. covering with protective mesh helps to reduce the risk of potential breeding sites for mosquitoes.
- UV radiation will be at its annual minimum in December and January, and gradually increase from February.

ENERGY/WATER

- Energy demand for cooling purposes will gradually decrease this season.

TOURISM

- Heat stress should no longer be a hazard.
- The frequency of Sharan Dust incursion is low at this time.
- Fewer interruptions for outdoor activities.

AGRICULTURE

- Ensure regular weeding to reduce competition and further stress to crops.
- Schedule irrigation.
- Utilize irrigation techniques to apply the right amount of water for the crop.

2024 ATLANTIC HURRICANE SEASON ENDS

The Atlantic Hurricane season officially came to an end on 30th November 2024. There were eighteen (18) named storms, eleven (11) hurricanes five (5) of them were major.

It was the ninth successive season with above average activity. An average season produces 14 named storms, seven hurricanes and three major hurricanes.

The 2024 Atlantic seasonal activity fell within the NOAA Climate Prediction Centre's predicted ranges for named storms and hurricanes in the August updated outlook.

There were no impacts from any hurricanes or storms in St. Maarten. However, Hurricane Beryl, the earliest Category 5 hurricane on record left a trail of destruction on the southern Caribbean in July. The islands of St. Vincent and the Grenadines and Grenada were the most affected. Then later passed near Jamaica and the Cayman Islands before moving through the Yucatan Peninsula.

In November, St. Maarten experienced significant flooding caused by troughs interacting with frontal boundaries over the northeastern Caribbean. These events served as a clear reminder that heavy rainfall can have a substantial impact on lives, even without a hurricane or named storm.

The island endured two consecutive rain events, each bringing accumulations of 5 inches. At Princess Juliana International Airport, approximately 2 inches of rainfall was recorded within a six-hour period. Since soils were already saturated, this led to major flooding in many parts of the island.

The Meteorological Department of St. Maarten (MDS) will continue to monitor atmospheric conditions beyond the hurricane season and keep the public informed. Remember, impactful weather events can occur outside the hurricane season, so staying updated with daily weather reports is essential.

2024 ATLANTIC STORMS

ALBERTO	HELENE	OSCAR
BERYL	ISAAC	PATTY
CHRIS	JOYCE	RAFAEL
DEBBY	KIRK	SARA
ERNESTO	LESLIE	TONY
FRANCINE	MILTON	VALERIE
GORDON	NADINE	WILLIAM

2024 ATLANTIC HURRICANE SEASON

	AVERAGE (1991-2020)	NOAA (AUG 2024)	2024 SEASON
Named Storms	14	17-24	18
Hurricanes	7	8-13	11
Major Hurricanes	3	4-7	5

