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Weather & Climate

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Key Points

- Night-time & Day-time temperatures for September 2023 were the warmest on record.
- The longest heat wave period in September lasted nineteen (19) days.
- Temperatures expected to remain uncomfortably high through October.
- We are still in the Hurricane Season. Remain Alert and monitor weather updates.

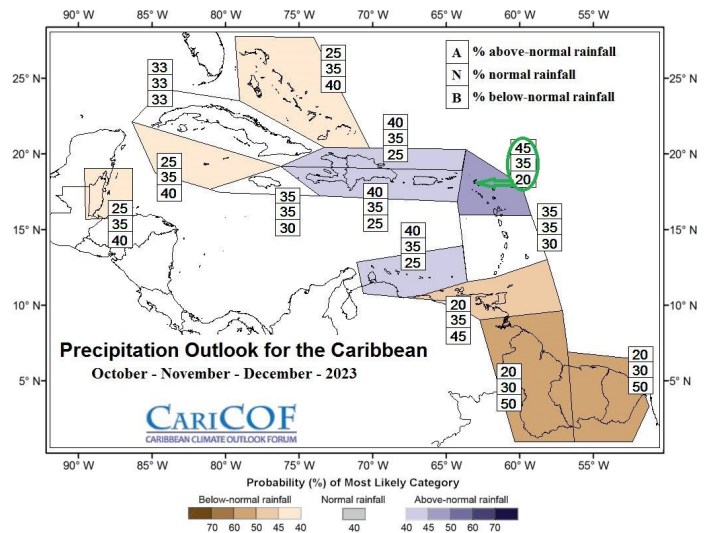
Seasonal Outlook for October to December (OND) 2023

Rainfall Forecast

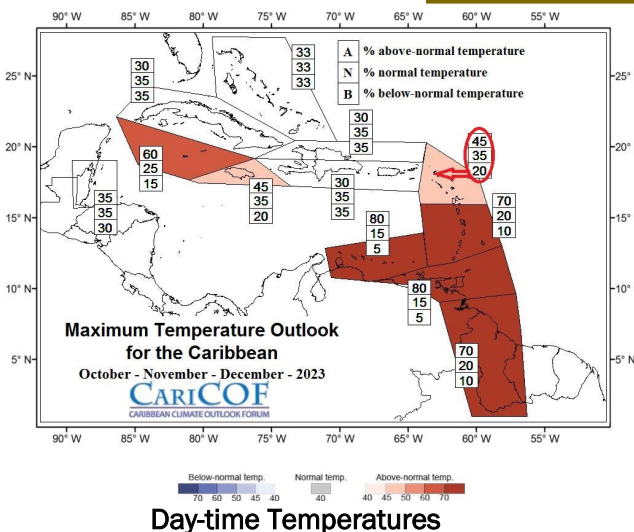
Models are indicating that rainfall totals for the season Oct-Nov-Dec 2023 are likely to be above the normal range in St. Maarten and the rest of the Leeward islands.

The normal rainfall for Oct-Nov-Dec season on St. Maarten ranges 325mm–415mm/13-16 inches, with 37 to 46 wet days. October through November, there is usually frequent heavy showers while in December we transition to the dry season.

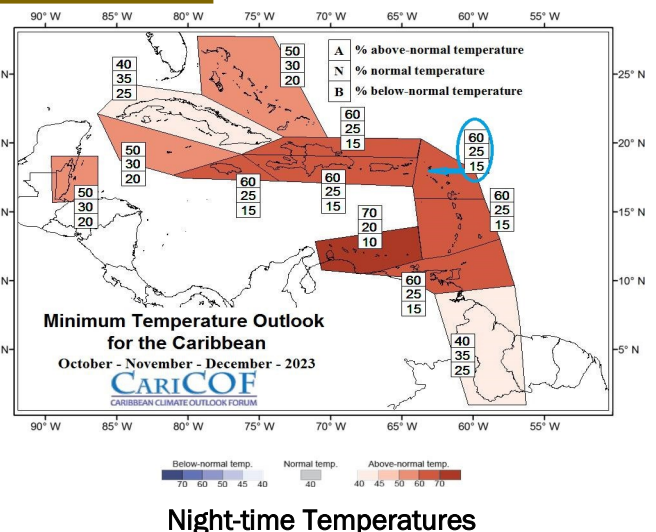
The forecast is for up to 6 (7-day) wet spells, up to 4 very wet spells and about 3 (7-day) dry spells on St. Maarten during this season.



Temperature Forecast



Day-time Temperatures



Night-time Temperatures

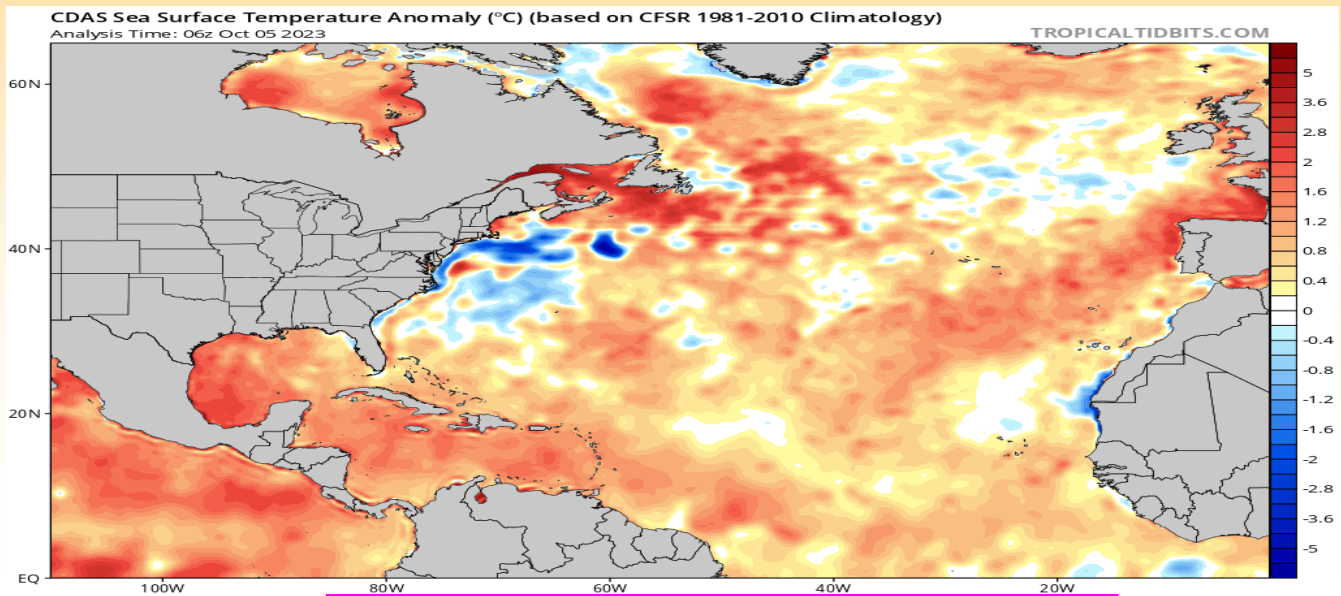
Day-time and night-time temperatures are forecast to remain high through October and gradually become more comfortable in November. Heatwaves are still possible in October but at a lower frequency.

For more information on other Caribbean Outlooks go to <http://rcc.cimh.edu.bb/long-range-forecasts/caricof-climate-outlooks/>

WHAT INFLUENCES THIS SEASON'S CLIMATE?

In mid September, the El Nino conditions in the eastern and central Pacific strengthened further. The El Nino advisory remains in place and the majority of the forecast models predict that an El Nino will persist through the first quarter of 2024 and weaken thereafter with a neutral phase the most likely phase from April 2024.

El Nino more often than not is marked by a warmer end of the heat season and reduced tropical cyclone activity towards the end of the Atlantic Hurricane Season. Warm SSTs in and around the Caribbean tend to contribute to higher air temperatures with above average humidity but also higher cyclone activity, seasonal rainfall totals and extreme rainfall through the end of the year.



2023 Atlantic Hurricane Season

Seven (7) named storm formed in September three (3) of them became hurricanes and one (1) gained Major Hurricane status. (Lee)

T.S Lee formed on September 5th in the central Atlantic and became a hurricane the following day. Lee became a major hurricane east of the northern Leeward Islands and remained over open water for most of its lifetime.

T.S Margot and Nigel formed in the eastern and central Atlantic respectively and became hurricanes however remained over open water.

T.S. Philippe formed on September 22nd in the central Atlantic and went on to posed a threat to the Caribbean islands in early October.

As we move into the latter part of the season, all residents should remain vigilant and monitor weather updates. **Be Prepared!!**

 2023 Atlantic Storm Names		
Arlene	Harold	Ophelia
Bret	Idalia	Philippe
Cindy	Jose	Rina
Don	Katia	Sean
Emily	Lee	Tammy
Franklin	Margot	Vince
Gert	Nigel	Whitney

SEPTEMBER 2023 IN REVIEW

Total Rainfall	37.1 mm	1.5 in
2023 Cumulative Rainfall	524.2 mm	20.6 in.
Max. 24-Hr. Rainfall	8.8 mm	0.4 in.
No. Rain Days (≥1.0 mm)	8 days	
No. Heavy Rain Days (≥10.0 mm)	None	
No. Thunderstorm Days	5 days	
Avg. Wind Speed	8 kt.	9 mph
Max. Wind Gust	23 kt.	26 mph
Avg. Temperature	30.2°C	86°F
Max. Temperature	34.4°C	94°F
Min. Temperature	26.1°C	79°F

Long /Short Term Seasonal Review

Year in Review (October 2022 – September 2023)

Total rainfall over the past twelve (12) months was below the normal range. (953 –1132mm). A total of 820.5mm/32in. of rainfall was recorded at the Princess Juliana International Airport.

Seasonal Review (Jul –Aug–Sept 2023)

Total rainfall for the last three (3) months was 237mm/9in, this amount was below the normal range (250-349mm). There were five (5) days with heavy rainfall (>10mm) during that period.

For the month of September, rainfall was below the normal range this was the driest September since 2015. Temperatures were above normal, this was the warmest September since records began in 1961.

The warmest day in September was the 20th with an average temperature of 31.0°C/88°F. The coolest day was the 19th with an average temperature of 26.2°C/79°F.

The days with the most sunshine hours in September were the 2nd & 20th (11hrs:30min).

The days with the least sunshine hours were the 16th & 27th, (8hr:00min)

The windiest day in September was the 30th with a daily average wind speed of 11kt./13mph.

The day with the highest wind gust was also the 30th (23kt./26mph).

There were eight (8) days with rainfall in September none were heavy rainfall days (>10mm).

The longest dry spell in September lasted ten (10) days. (2nd to 11th).

September 16th recorded the highest maximum temperature (34.4°C/94°F)

There were two (2) heat wave periods in September the longest lasted nineteen (19) days; September 12-30.

Twenty-three (23) warm nights were recorded; fourteen (14) of those were extremely warm. The 12th was an exceptionally warm night with a minimum temperature of 29.1°C/84°F.

NORMAL OCTOBER CONDITIONS

Rainfall Total	97 – 167 mm	4-7 in.
Avg. No. of Rain days	14 days	
Daily Average Temperature	28.3°C	83°F
Avg. Max. Temperature	31.2°C	88°F
Avg. Min. Temperature	26.0°C	79°F
Avg. Daily Hours of Sunshine	8 hrs	

Implication of Forecast for Sectors

Health

- On hot days, excessive UV exposure can cause skin damage.
- On Sunny days; Keep Hydrated!
- Proper management of water storage containers e.g. covering with protective mesh helps to reduce the risk of potential breeding sites for mosquitoes.
- Persons with respiratory illnesses should take the necessary precautions during Saharan dust episodes and monitor daily forecasts for more information.

Tourism Sector

- Coral reef bleaching alerts remains high.

Agriculture

- The potential for flooding and flash flooding remains high
- Irrigation should be considered during dry spells.

Energy/Water Sector

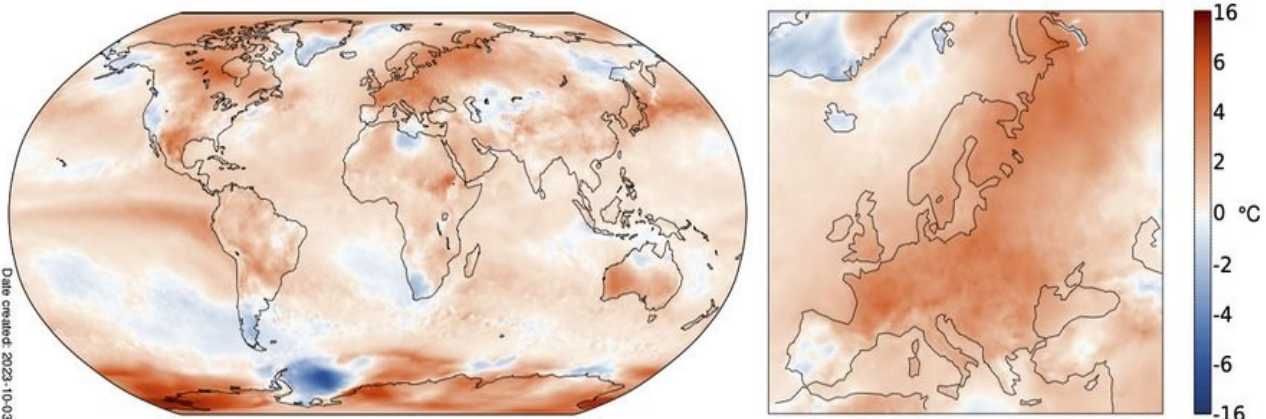
Energy demand for cooling purposes will gradually decrease after October.

Hottest September on record puts 2023 on track to be warmest year ever.....

This September was the hottest one ever and 2023 is firmly set to be the warmest year on record, the World Meteorological Organization (WMO) said on Thursday October 5, citing data from the European Union's Copernicus Climate Change Service (C3S).

Last month was roughly 1.75°C warmer compared to the pre-industrial period. It was also 0.93°C warmer than the 1991-2020 baseline which is used as a practical tool for climate sensitive sectors like agriculture.

Surface air temperature anomaly for September 2023



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Climate
Change Service

WMO said this continues an extended streak of extraordinary land and sea-surface temperatures and is an ominous signal about the speed with which greenhouse gases (GHG) are changing the climate.

"The temperature anomalies are enormous – far bigger than anything we have ever seen in the past. Antarctic winter sea ice extent was the lowest on record for the time of year," said Petteri Taalas, the agency's Secretary-General. "What is especially worrying is that the warming El Niño event is still developing, and so we can expect these record-breaking temperatures to continue for months, with cascading impacts on our environment and society," he added.