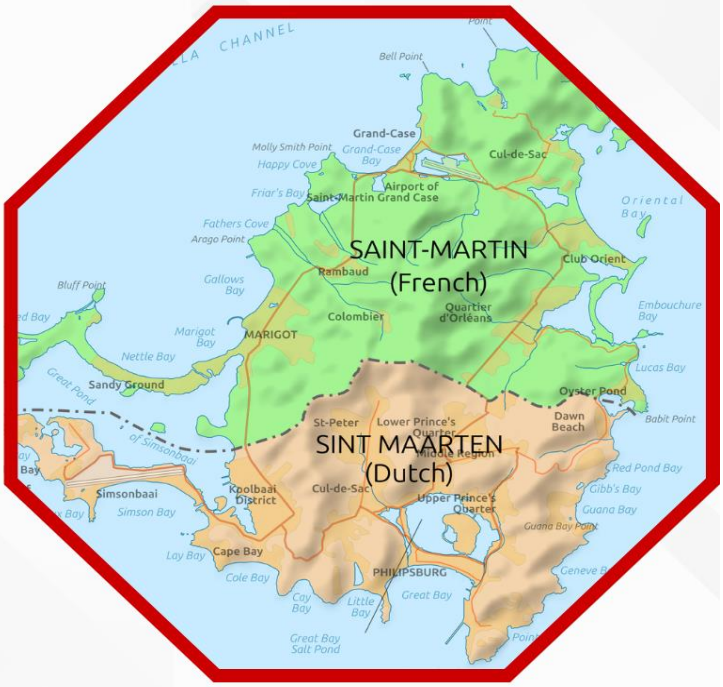
2025 CLIMATOLOGICAL SUMMARY

A 2025 summary of weather and climate activity and Hurricane Season review for St. Maarten

ISSUED MARCH 2026



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Introduction

The country of Sint Maarten is located in the extreme northeast section of the Eastern Caribbean. It is part of an island which is approximately 37 square miles shared by two countries: French St. Martin to the north and Dutch Sint Maarten to the south, they occupy 21 and 16 square mile respectively. The island is relatively flat but has a central range with various peaks. Pic Paradise on the French side is the highest point (1400ft) on the island while Sentry Hill is the highest point on the Dutch side (1100ft).

The Princess Juliana International Airport (PJIA) is located on the southwestern strip of Sint Maarten at latitude 18º 02' north and longitude -63º 06' west.

ISLAND CLIMATOLOGY

Based on records (1991-2020) at Princess Juliana International Airport (PJIA), the normal annual rainfall is approximately 1112 mm or 44 inches. Like many other Caribbean islands, the driest months are from January to June while the wettest months are from July to November. December, May and June are considered transition-months since they can be either dry or wet.

The driest month on record is March while the wettest is November. On average, there are about 140 rain days a year with March and April having the least (8 days), August and November have the most (14 days).

Rainfall during December to April comes mainly from old frontal boundaries or shear lines, dipping southwards from the northeast coast of the United States while the rainfall during May and June are often associated with upper-level trough interactions and from July onwards, rainfall is mostly associated with tropical cyclone activity.

The average daily temperature is 27 °C or 81 °F, the normal maximum and minimum temperatures are 32 °C and 23 °C respectively. August and September are the warmest months while February is the coolest.

The Caribbean heat season is from June to October. Based on the climatological data (1991-2020) St. Maarten experiences approximately thirty-nine (39) hot days (days with maximum temperature above 32.2°C/90°F) during that season. Heat waves are also prevalent during this season. A heat wave period is considered: two (2) or more consecutive days when the maximum temperature is above 32.2°C (90°F).

On average St. Maarten receives approximately 250 hours of sunshine monthly with 8 to 10 hours daily. The months with the most sunshine hours are March and April and the least hours are recorded in November.

ABOUT US

The Meteorological Department of St. Maarten (MDS) — Referred to as the Met. Office — is a scientific organization that operates 24 hours a day, all year round, monitoring and continuously keeping watch of the weather conditions across the island.

OUR MISSION

Our aim is to "Protect life and property through the issuance of timely and appropriate weather products for the adjacent waters, air space and the general public and to provide meteorological, hydrological and seismological related services to specific sectors, in order to sustain social and economic developments."

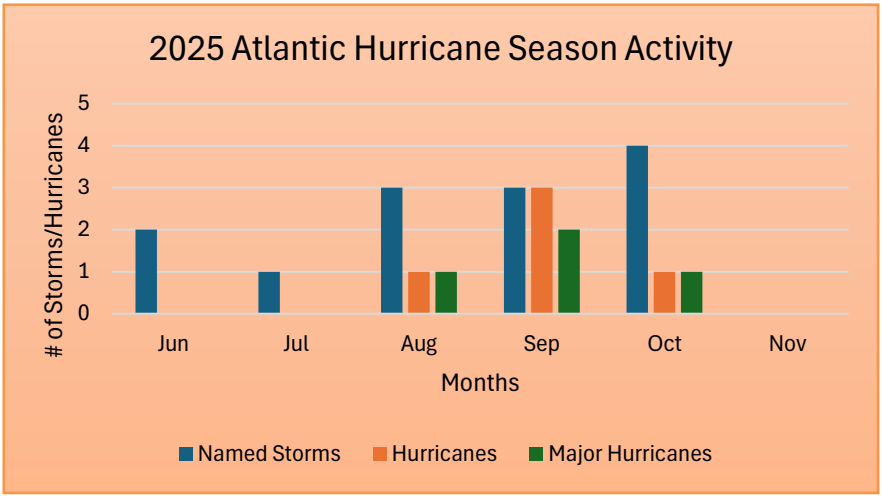
OUR VISION

The vision of the Meteorological Department of St. Maarten is to be a leading weather service provider collaborating with stakeholders to deliver services of high quality and accuracy.


OUR TASKS
Observe, Record & Transmit Surface/ Upper Air Data
Issue Special reports/warnings for tropical storms & other hazardous weather phenomena
Produce Monthly Climate Outlooks & bulletins
Monitor weather conditions 24 hours daily/ all year round
Produce Public & Marine weather forecasts
Produce Aviation Forecasts & Flight Folders
Maintain National, Regional & International Standards/ Policies
Compile & Analyze Meteorological & Climate Data

2025 Hurricane Season Summary

The 2025 Atlantic Hurricane Season concluded with notable contrasts, combining a relatively low number of storms with unusually high intensity, according to the latest assessment from the National Oceanic and Atmospheric Administration (NOAA). Although there were fewer hurricanes overall, the season proved active in terms of storm strength and energy.



A total of 13 named storms developed, with 5 hurricanes 4 of them being major hurricanes (Category 3 or higher). Despite the reduced storm count, the season's Accumulated Cyclone Energy (ACE) finished above the long-term average.

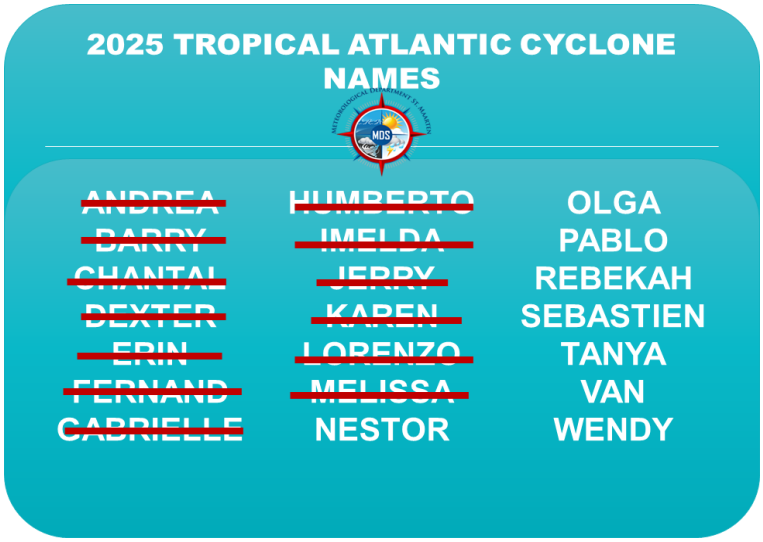
2025 Atlantic Hurricane Season

	Average (1991-2020)	NOAA (Aug. 2025)	2025 Season
Named Storms	14	13-19	13
Hurricanes	7	6-10	5
Major Hurricane	3	3-5	4

A notable feature of the season was the development of three Category 5 hurricanes, making 2025 only the second Atlantic season on record after 2005 to produce these many storms at the highest intensity. Hurricane Melissa, the strongest storm of the year, ranked among the most intense hurricanes ever observed in the Atlantic Basin.

These periods of extreme intensity were made possible by short-lived but highly favorable atmospheric and oceanic conditions. Exceptionally warm sea-surface temperatures, combined with reduced wind shear, created ideal environments for several storms to undergo rapid intensification.

The season began later than usual, with Tropical Storm Andrea forming on June 23, the latest first named storm since 2014. Despite the quiet start, activity increased sharply in the second half of the season, showing that a delayed beginning does not necessarily result in a low-impact year.



Local Weather Effects

St. Maarten experienced two slight storm impacts during the 2025 season:

- Tropical Storm Erin passed approximately 107 miles northeast of the island in August, bringing minimal effects.
- Tropical Storm Jerry passed about 90 miles north-northeast of St. Maarten in October, also producing limited impacts.

Heat Season (June to October)

In 2025, there were 65 hot days and 70 warm nights during the heat season. There are about 37 hot days during a typical heat season on St. Maarten. There were thirteen (13) hot spells and three (3) heat wave periods. August and September had the most hot-days, twenty-two (22) and twenty-five (25) days respectively. September 2025 was the warmest month of the year with an average temperature of 29.5°C (85°F) while the highest maximum temperature of 34.2°C (94°F) recorded on August 12th. 2025 was not as hot as 2023 and 2024.

Rainfall Events

In 2025 there were very few heavy rainfall events on St. Maarten. Most notable was October 16th when 34.8mm/1.4inches was recorded in a 6 hour-period which was associated with the passage of tropical storm Erin. No significant flooding was reported on the island in 2025.

Summary Table

Above is a recap of the 2025 Atlantic Hurricane Season and associated effects on St. Maarten.

	Storm Name	Active Dates	Highest Category	Min. Pressure	Max. Winds		Local Effects	Observed Rainfall (mm)	Observed Winds Gusts	
				mbs	Kt.	Mph			Kt.	Mph
1	**Andrea**	23 – 24 Jun.	**TS**	**1014**	**35**	**40**				
2	**Barry**	28 – 30 Jun.	**TS**	**1006**	**40**	**46**				
3	**Chantal**	4 – 7 Jul.	**TS**	**1002**	**50**	**58**				
4	**Dexter**	3 – 6 Aug.	**TS**	**999**	**50**	**58**				
5	**Erin**	11 – 22 Aug.	**MH**	**913**	**140**	**161**	**Minor**	**51.5**	**35**	**40**
6	**Fernand**	23 – 27 Aug	**TS**	**999**	**50**	**58**				
7	**Gabrielle**	17 – 25 Sep.	**MH**	**944**	**120**	**138**				
8	**Humberto**	24 Sep. – 1 Oct.	**MH**	**918**	**140**	**161**				
9	**Imelda**	27 Sep. – 2 Oct.	**H**	**966**	**80**	**92**				
10	**Jerry**	7 – 11 Oct.	**TS**	**1000**	**55**	**63**				
11	**Karen**	9 – 10 Oct.	**STS**	**998**	**40**	**46**				
12	**Lorenzo**	13 – 15 Oct.	**TS**	**1000**	**50**	**58**				
13	**Melissa**	21 – 31 Oct.	**MH**	**892**	**165**	**190**				
14	**Nestor**									
15	**Olga**									
16	**Pablo**									
17	**Rebekah**									
18	**Sebastien**									
19	**Tanya**									
20	**Van**									
21	**Wendy**									

Overview of the Storms formed in the 2025 Hurricane Season

June 2025

June produced two (2) tropical storms:

Andrea was a short-lived tropical storm over the central Atlantic that did not affect land.

Barry was a short-lived tropical storm that formed over the Bay of Campeche and caused widespread flooding in eastern Mexico resulting in 8 direct fatalities in that country.

July 2025

There was only one (1) tropical storm in the month of July:

Chantal
Chantal was a tropical storm that formed offshore of the southeastern United States and made landfall in northeastern South Carolina early on 6 July. Chantal was responsible for 6 direct deaths in North Carolina, the majority of which were from heavy rainfall and associated flooding.

August 2025

There were three (3) named systems in August, one (1) became a major hurricane.

Dexter was a tropical storm over the western Atlantic that did not affect land.

Erin was a very large and long-lived Cabo Verde hurricane that reached category 5 intensity (on the Saffir-Simpson Hurricane Wind Scale). It moved on a long parabolic track around the North Atlantic Ocean and produced wave and rip current impacts along a large stretch of the Atlantic coastline, causing 13 direct deaths.

Fernand was a tropical storm over the western Atlantic that did not affect land.

September 2025

September produced three (3) named storms all of which became hurricanes; two (2) major.

Gabrielle was a category 4 hurricane (on the Saffir-Simpson Hurricane Wind Scale) that took a climatological track across the tropical Atlantic, recurving northeast of the Leeward Islands and Bermuda. It later affected the Azores with hurricane-force wind gusts as a post-tropical cyclone.

Humberto formed over the tropical Atlantic and peaked as a category 5 hurricane (on the Saffir-Simpson Hurricane Wind Scale). Although Humberto did not directly impact land, it passed close enough to Bermuda to prompt a Tropical Storm Watch for the island.

Imelda moved through the northwestern and central Bahamas as a tropical storm before turning east-northeastward and passing just south of Bermuda as a category 1 hurricane (on the Saffir-Simpson Hurricane Wind Scale). Heavy rainfall produced by Imelda and its predecessor tropical wave over the Greater Antilles resulted in 3 fatalities.

October 2025

October produced four (4) named storms, one (1) became a major hurricane.

Jerry was a tropical storm that produced significant flooding across portions of the Leeward Islands. Heavy rainfall from Jerry and associated flooding resulted in one direct fatality in Guadeloupe.

Karen was a high-latitude subtropical storm that formed well to the northwest of the Azores. Karen's genesis location was the farthest north that a tropical or subtropical cyclone has formed in National Hurricane Center (NHC) records.

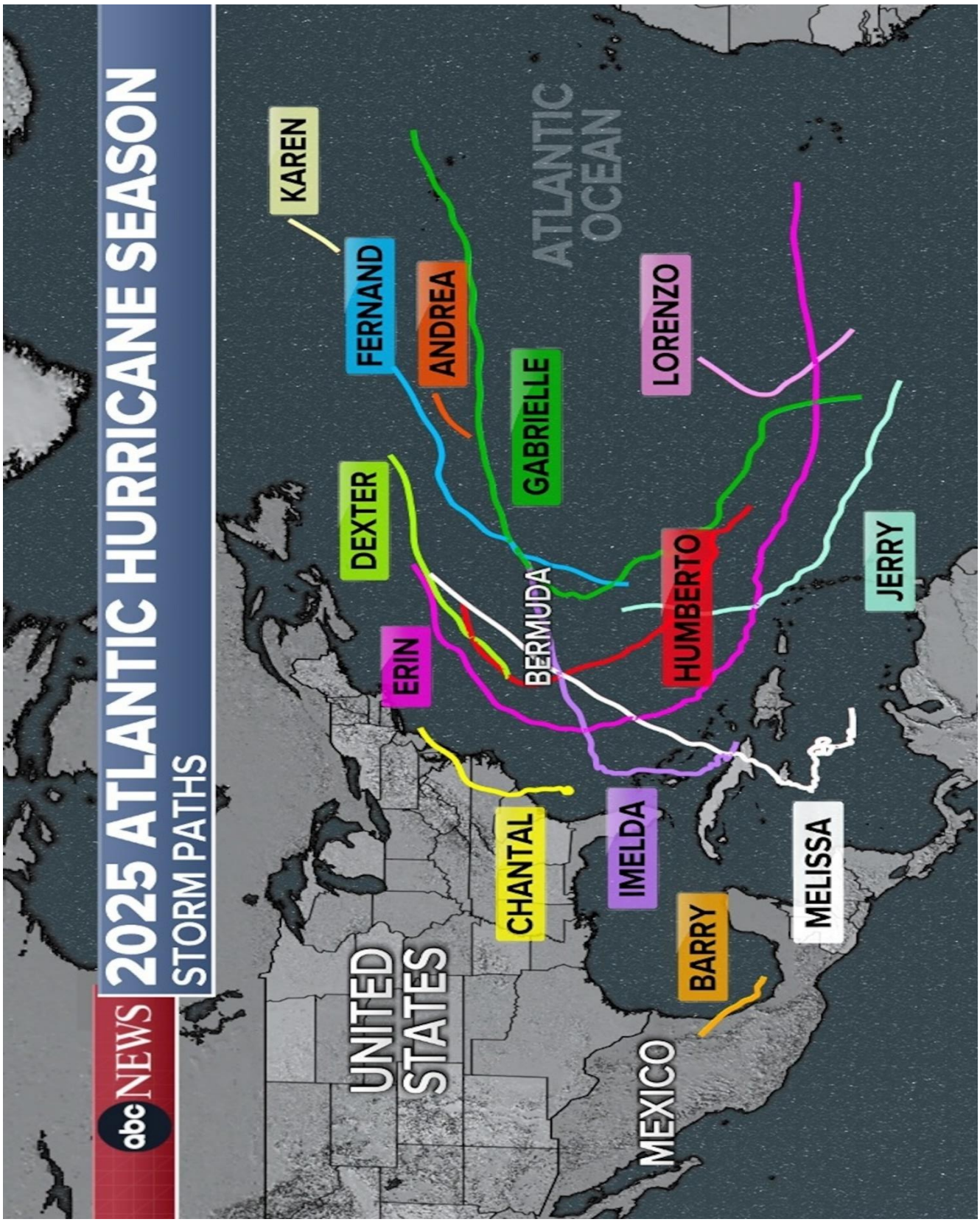
Lorenzo was a tropical storm in the eastern and central tropical Atlantic that stayed far away from land.

Melissa was one of the strongest hurricanes on record in the Atlantic basin. Melissa reached category 5 intensity with a minimum central pressure of 892 mb and brought catastrophic wind and storm surge impacts to portions of western Jamaica. Hurricane Melissa's slow motion also produced heavy rainfall and catastrophic flood impacts across portions of the Greater Antilles. To date Melissa is responsible for 95 fatalities.

November 2025

There was no tropical storm activity in the month of November.

2025 Atlantic Hurricane Season Storm Track



Map compliments "ABC News"

2025 Climate Data

Rainfall

The total rainfall recorded at the Princess Juliana International Airport, for the year 2025 was **729.7 mm or 28.7 inches**. The normal annual rainfall ranges from about 976–1246 mm/38 – 49 inches (1991–2020). This year's total rainfall was below the normal range. This was the lowest annual rainfall total in eleven years (since 2015).

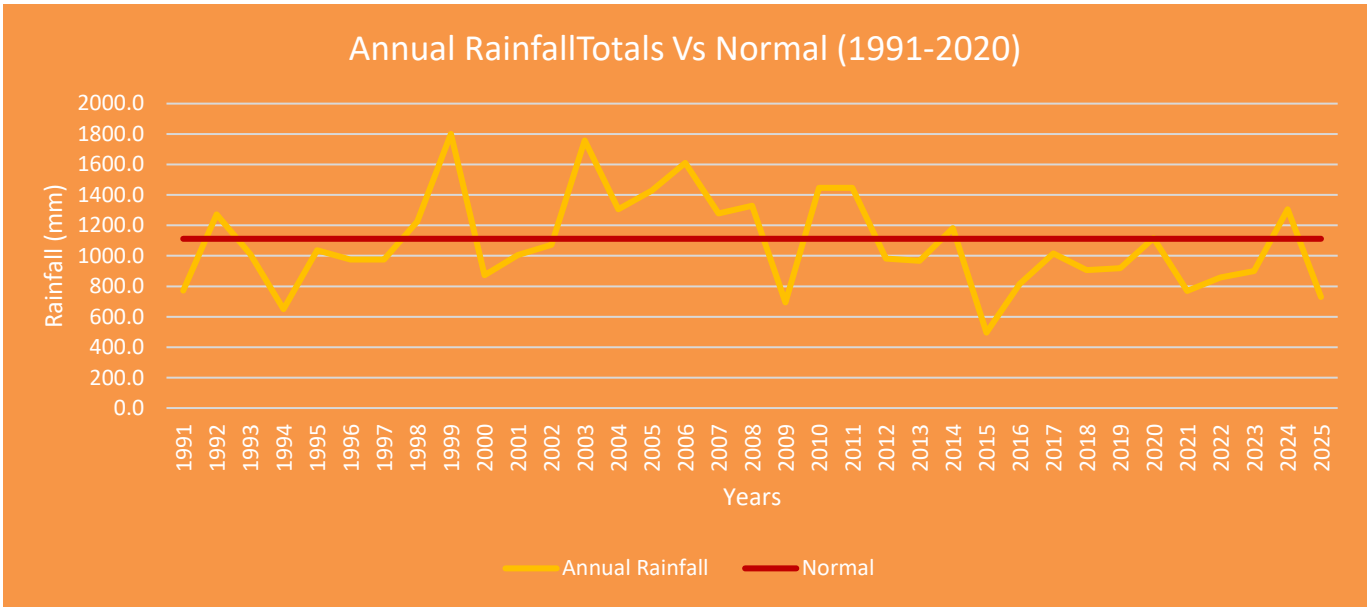


Fig. 1

October was the *wettest month* of the year, with a total of 176.3 mm or 6.9 inches. The *driest month* was **June** with 12.8 mm or 0.5 of an inch. The *wettest day* of the year was August 16th, when 51.5 mm or 2.0 inches of rainfall was recorded. This was as a result of instability and moisture associated with tropical storm Erin.

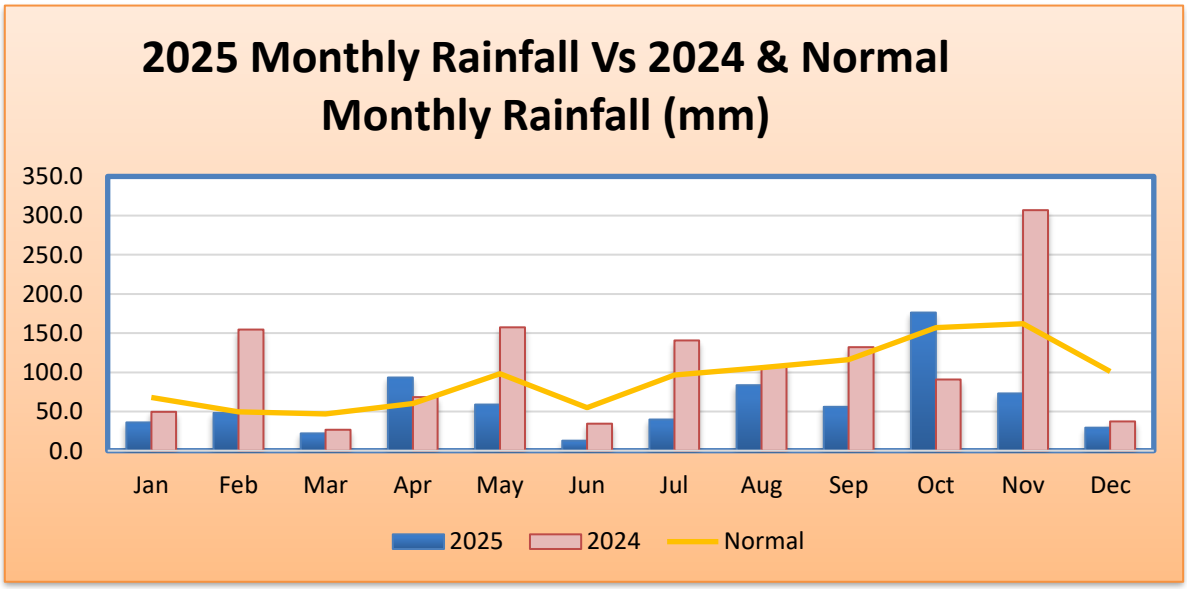


Fig. 2

April 2025 was the wettest April since 2017 while June was the driest since 2018, July was the driest July since 2015 and December the driest since 2012.

A rainy day is considered as any day, which records 1.0 mm or more of rainfall. On average there are approximately 140 rain days in a year on St. Maarten. For 2025, 124 rainy days were recorded with the months of October and November having the most (14 days), while June had the least days (5).

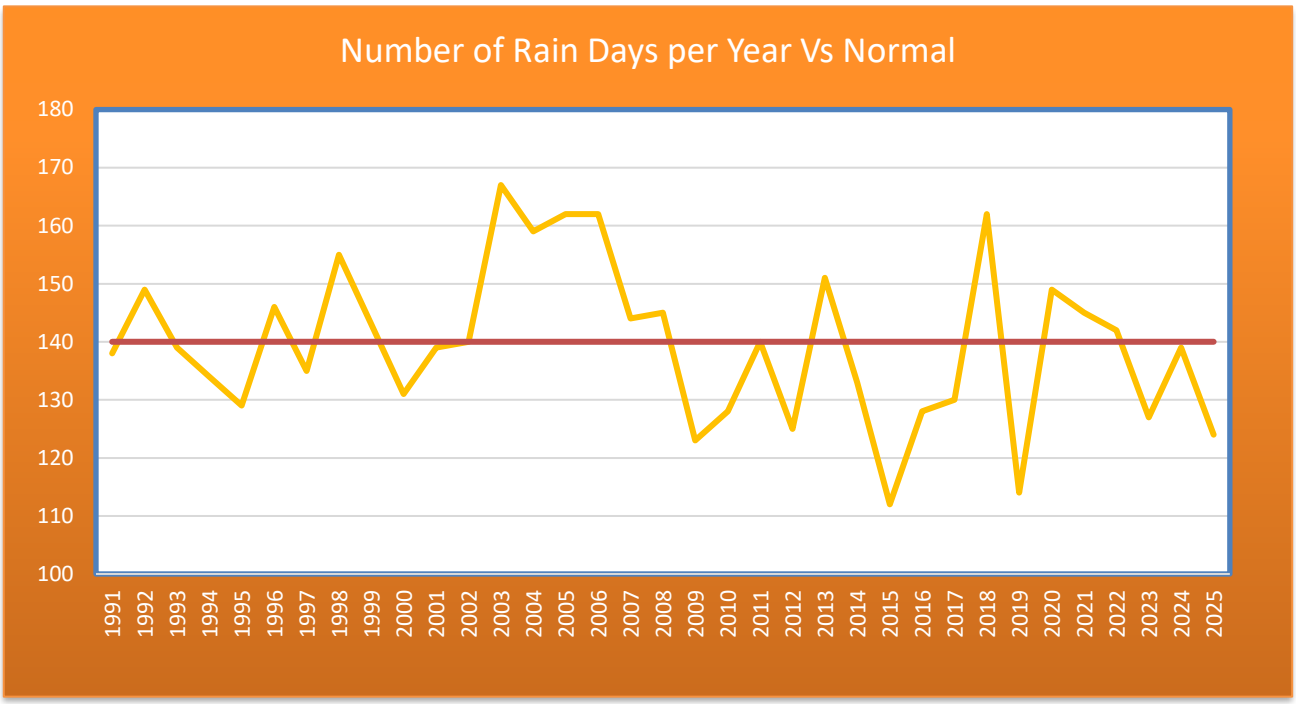


Fig. 3

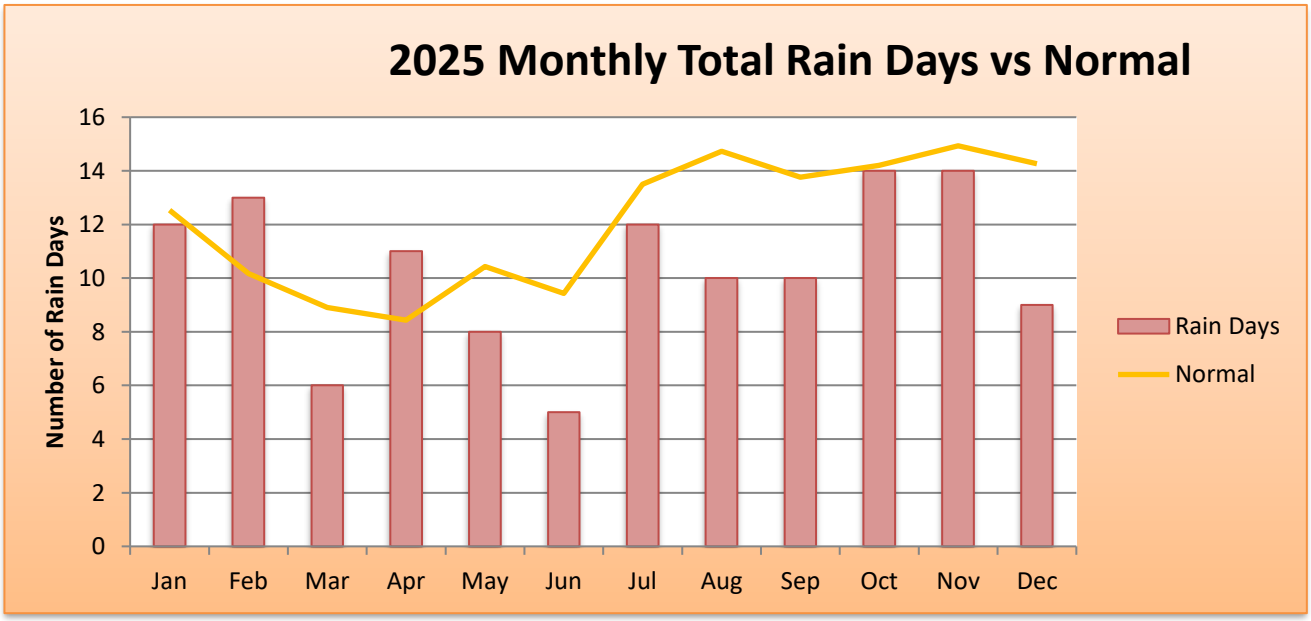


Fig. 4

Temperature

The average temperature recorded in 2025 was **27.9° C** (82° F) which was above normal. The 30-year normal (1991–2020) is 27.3° C/(81°F). **September** was the warmest month with an average temperature of 29.5° C (85° F) while **January and February** were the coolest months with an average temperature of 26.5° C (78° F). 2025 was cooler than 2024 according to the records at PJIA.

The highest daytime temperature recorded in 2025 was **34.2° C (94°F)**, which was recorded on August 12th while the lowest night-time temperature was recorded on December 28th as **21.1° C (70° F**).

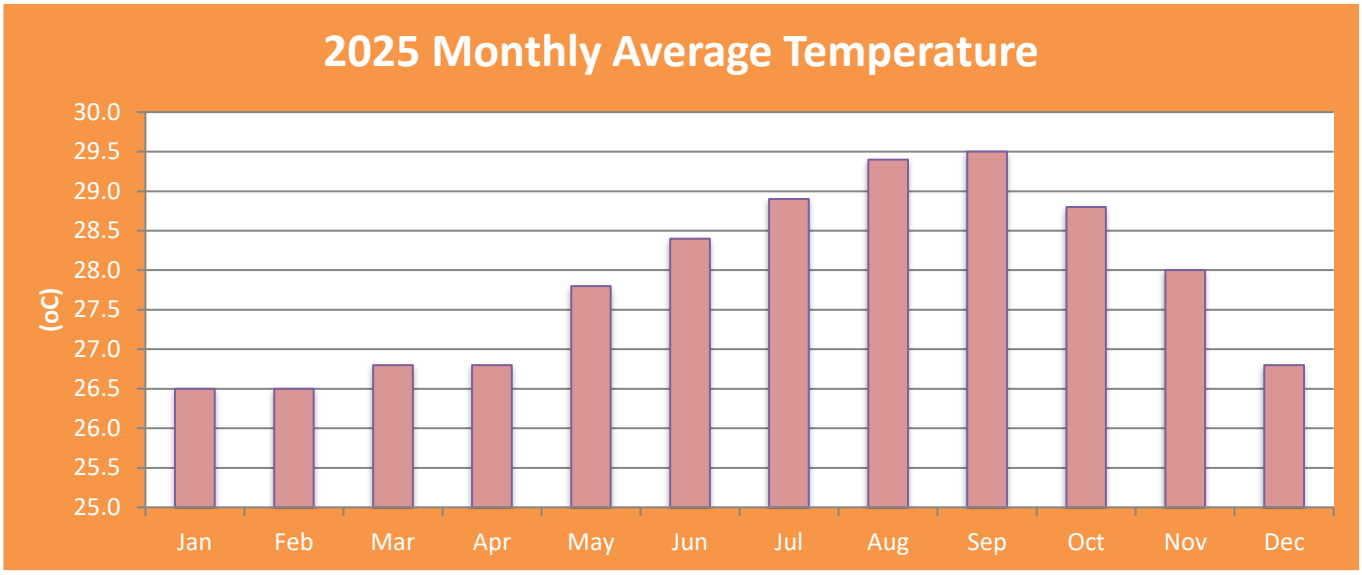


Fig. 5

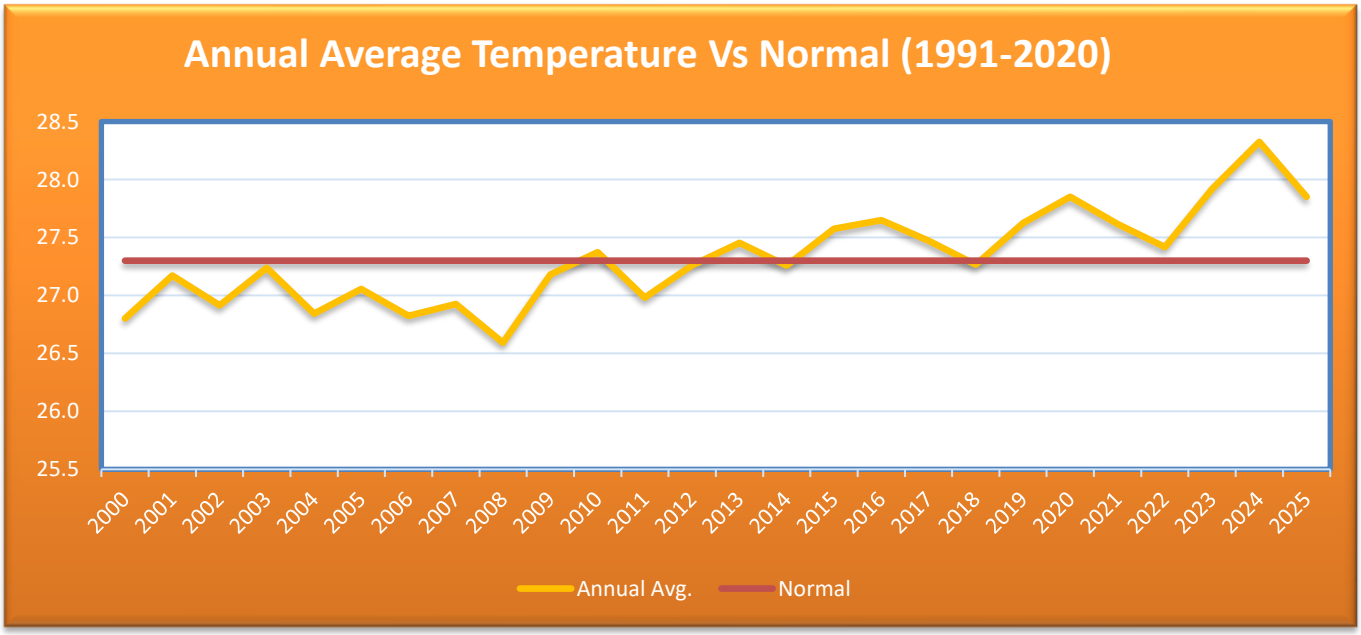


Fig. 6

From 2018 there has been an increasing trend in the number of hot days on St. Maarten. However, in 2025 there was a decrease in that trend. There was 43% less hot days in 2025 than in 2024. A total of sixty-five (65) hot days were recorded in 2025 during the entire Caribbean 'Heat Season' which runs from June to October.

The month of September had the highest number of hot days; 25 out of the 30 days of September were hot. A hot day is considered as a day with a maximum temperature of 32.2 °C or higher.

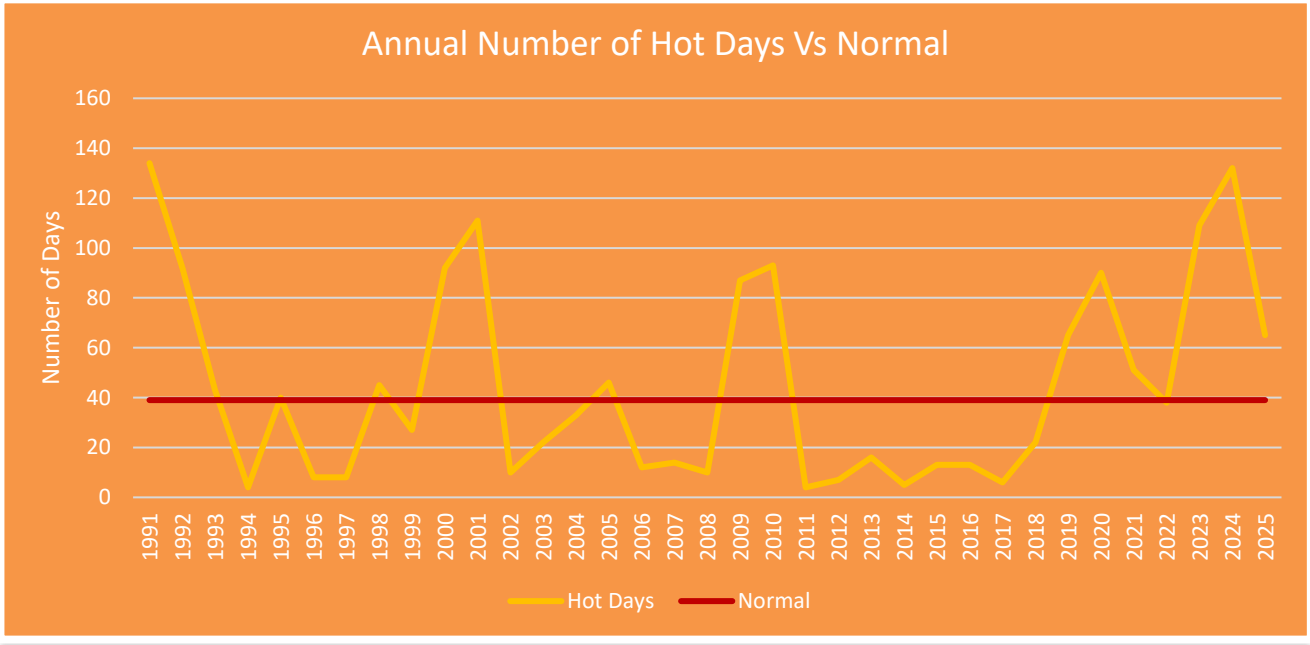


Fig. 7

Additionally, over the past 14 years, there is an increasing trend in the number of warm nights in St. Maarten. There were sixty-eight warm nights in 2024.

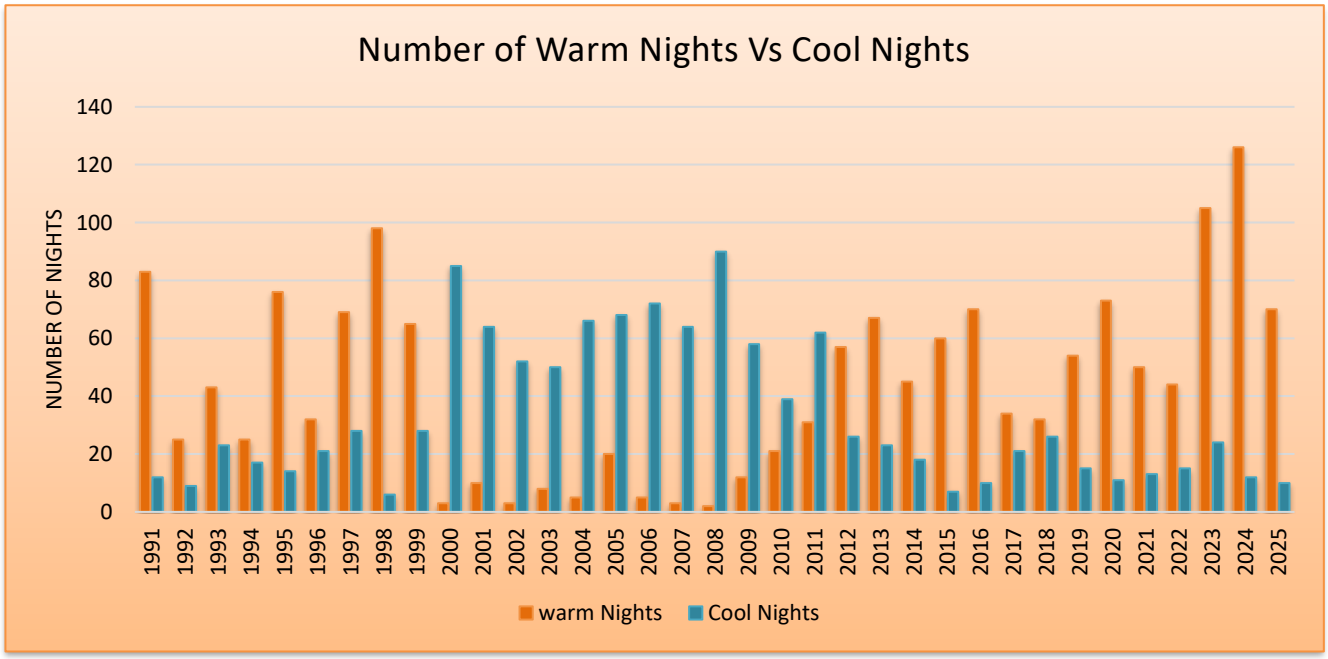


Fig. 8

Wind

Surface winds at the Princess Juliana International Airport for 2025 were generally from the east northeast (80°) at an average speed of 9 **knots** (10 mph) which was slightly below the average compared to the 30–year average (1991–2020) of 10 knots. The *highest monthly average wind speeds were recorded in* ***February*** as 11 knots (13 mph); while **September** had the *lowest monthly average wind speeds* of 7 knots (8 mph). The highest wind gust was recorded on **August 16th** as 35 **knots** (40 mph**)** as a result of Tropical Storm Erin which past approximately 107 miles northeast of St. Maarten.

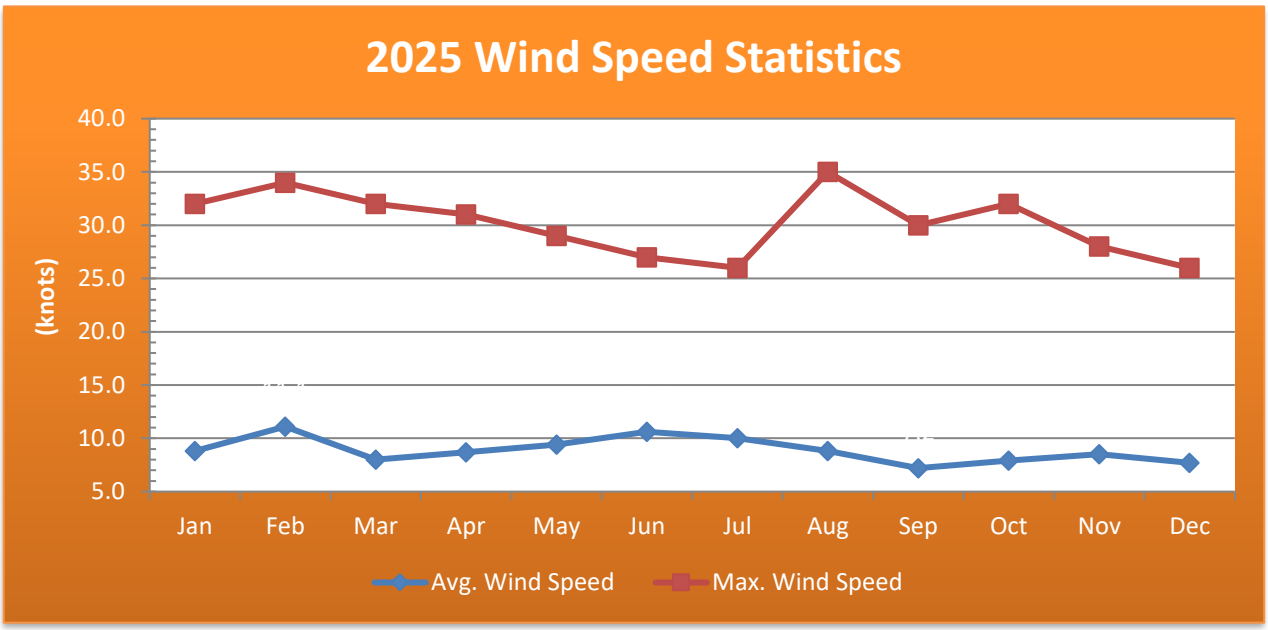


Fig. 9

The following wind analysis was obtained, by using the average hourly wind speeds and direction from 1st January to 31st December 2025.

- Approximately **47%** of the time, wind speeds at Juliana were between **5 and 10 knots**.
- Approximately **38%** of the time, wind speeds were between **10 and 15 knots**.
- Approximately **6%** of the time, wind speeds were between **1 and 5 knots.**
- Approximately **5%** of the time, winds speed were between **15 and 20 knots.**
- Approximately **3%** of the time, winds were **calm.**
- Less than **1%** of the time, winds speeds were greater than **20 knots**.

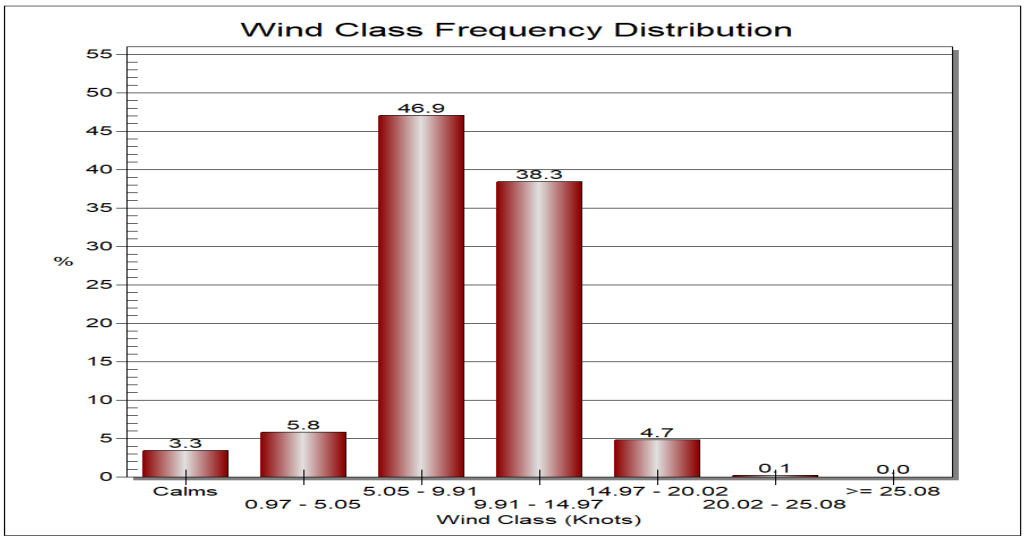


Fig. 10

2025 Wind Rose

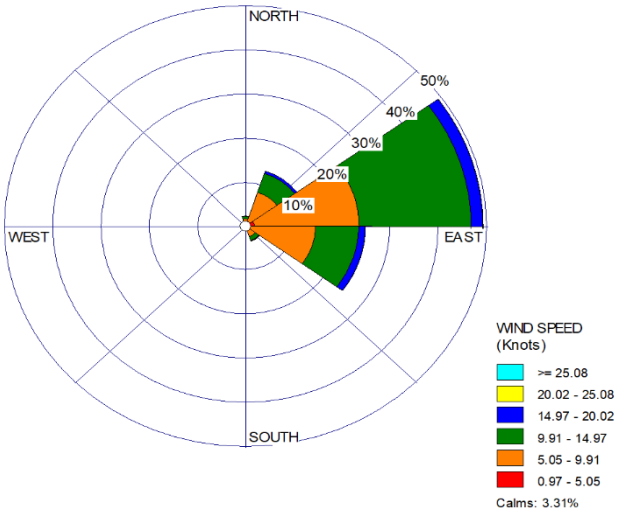


Fig. 11

49% of the time winds came from the **East northeast (ENE)**.
25% of the time winds came from the **East southeast (ESE)**
13% of the time winds came from the **Northeast (NE)**
4% of the time winds came from the **Southeast (SE)**
3% of the time winds were **South, Northwest and Southwest**
3% of the time winds were **calm**
2% of the time winds came from the **North (N)**
1% of the data was missing.

Air Pressure

At the Princess Juliana International Airport, on average the mean sea level Pressure for 2025 was **1016.1 millibars**. The highest monthly average was in **June** while the lowest was in **October**. The highest daily average was recorded as **1020.2** mb on June 15th while the lowest daily average of **1007.6** mb occurred on August 16th .

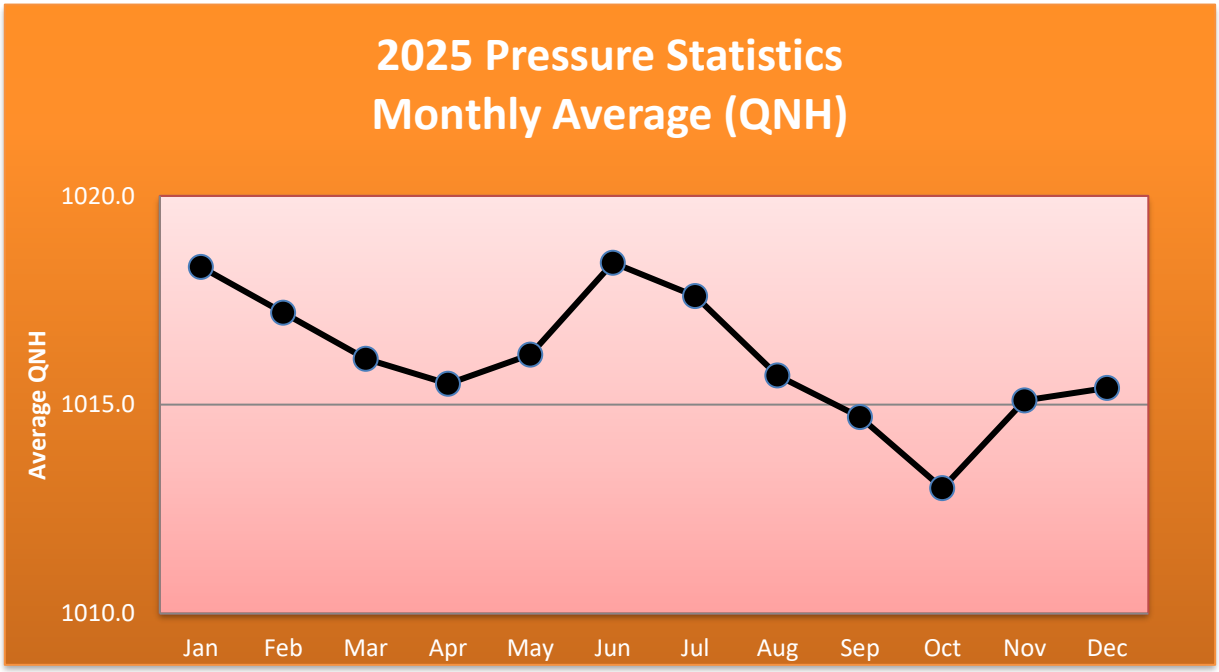


Fig. 12

Cloud Cover

The average cloud cover for St. Maarten over the past year as recorded at the Princess Juliana International Airport was about 46%. The *highest monthly average cloud cover* was 58% during the month of **October** while **December** had the *lowest value* of 31%.

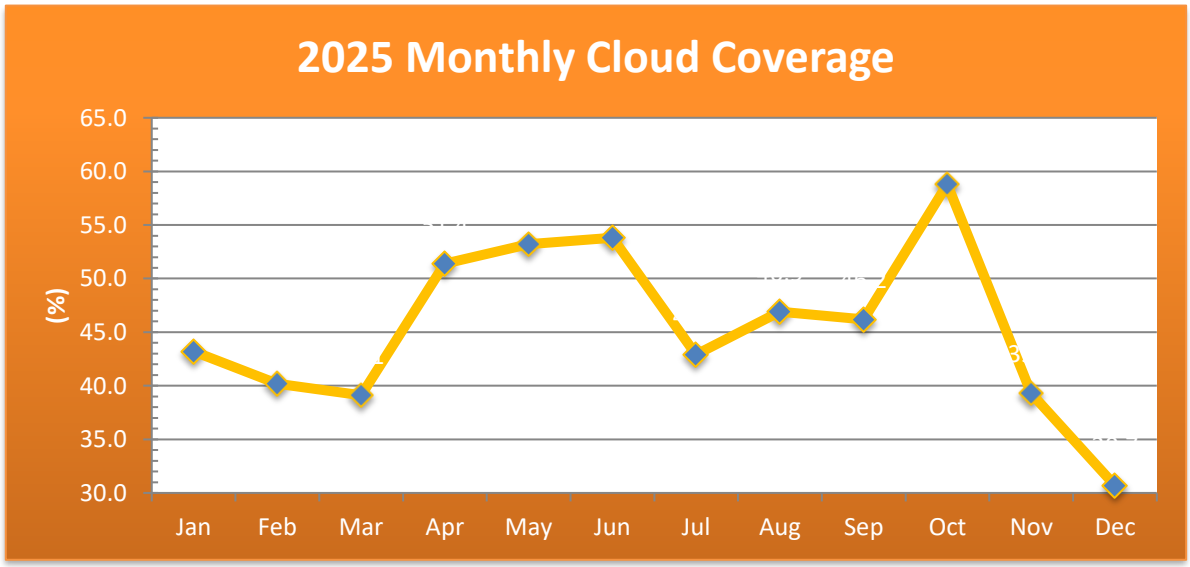


Fig. 13

Sunshine Duration

Approximately 74% of possible sunshine was recorded at the surface at the Princess Juliana International Airport, that is, 3302.8 hours out of a possible 4443.1 hours. The *average daily sunshine duration* was **9 hours 06 minutes**.

July received the most hours of sunshine (316 hours) in 2025 and was also the month with the highest daily average sunshine: 10 hours and 12 minutes. **October** received the least sunshine and was the month with the lowest daily average: 7 hours 42 minutes.

The day with the highest daily sunshine hours was **May 5th** with 11 hours 48 minutes. The days with the least sunshine in 2025 were **August 16th** and **October 11th** when no sunshine was recorded due to overcast conditions.

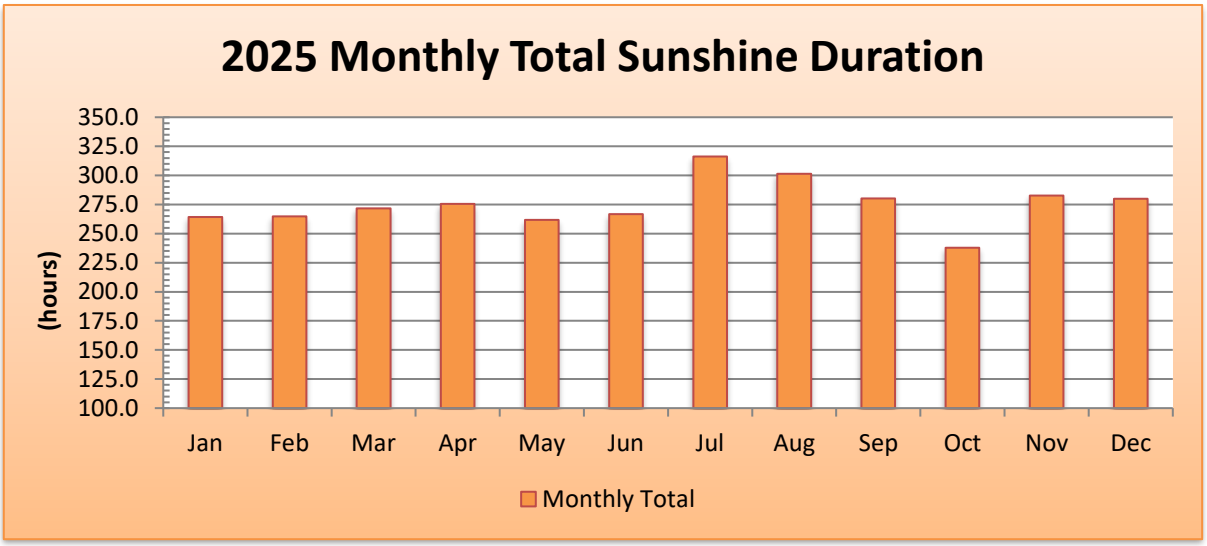


Fig. 14

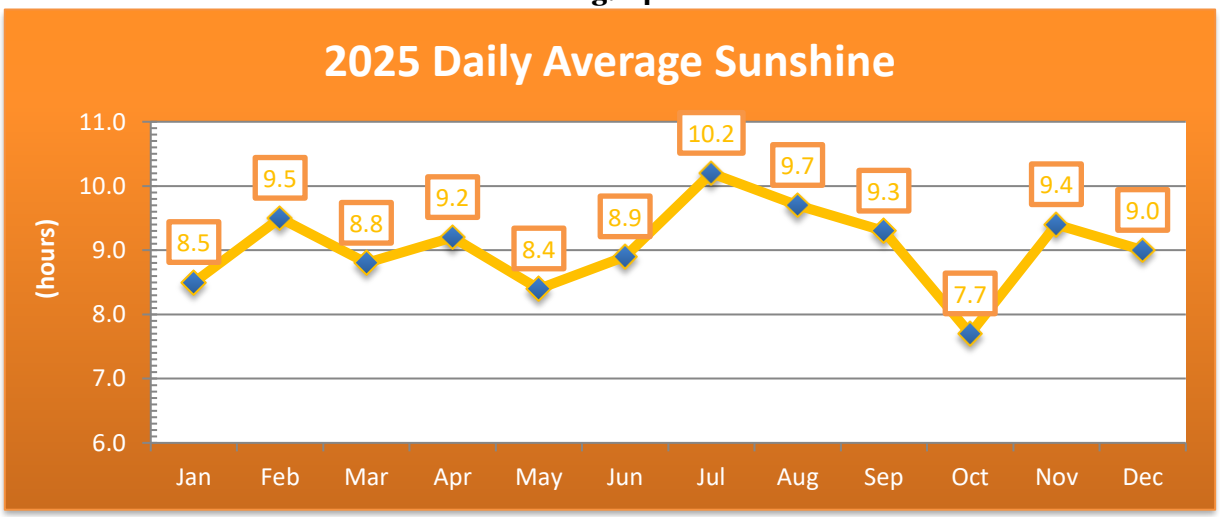


Fig. 15

Statistical Summary

Below is a recap of the 2025 climate data, in terms of averages, extremes, and totals:

Rainfall		
Total Rainfall for the year	729.7 mm	28.7 inches
Wettest Month	176.3 mm/6.9 in	*October*
Driest Month	12.8 mm/0.5 in	*June*
24-hr Maximum Rainfall	51.5 mm/2.0 in	*April 16th*
Number of Rain Days (with 1.0+ mm)	124 days	
Number of Heavy Rain Days (with 10.0+mm)	17 days	
Temperature		
Average Air Temperature	27.9° C	82° F
Absolute Maximum Temperature	34.2° C /94° F	*August 12th*
Absolute Minimum Temperature	21.1° C / 70° F	*December 28th*
Warmest Month	29.5°C/ 85°F	*September*
Coolest Months	26.5°C/ 80°F	*January & February*
Average Relative Humidity	83%	
Wind & Pressure		
Average Wind Speed	9 kts	*10 mph*
Average wind Direction	80°	*East Northeast*
Maximum Wind Gust	*35 kt/40 mph*	*August 16th*
Most frequent category speed	5-10kts	*47%*
Average Air Pressure	1016.1 mb	
Clouds & Sunshine		
Average Cloud Coverage	46%	
Average Daily Sunshine Duration	9 hrs. 06 min.	
Month: Maximum Sunshine	*July 316 hrs.*	
Month: Minimum Sunshine	*October: 238 hrs.*	
Daily Maximum Sunshine	*11 hrs. 48 min.*	*May 5*
Daily Minimum Sunshine	*00 hrs 00 min.*	*Aug. 16 & Oct. 11*

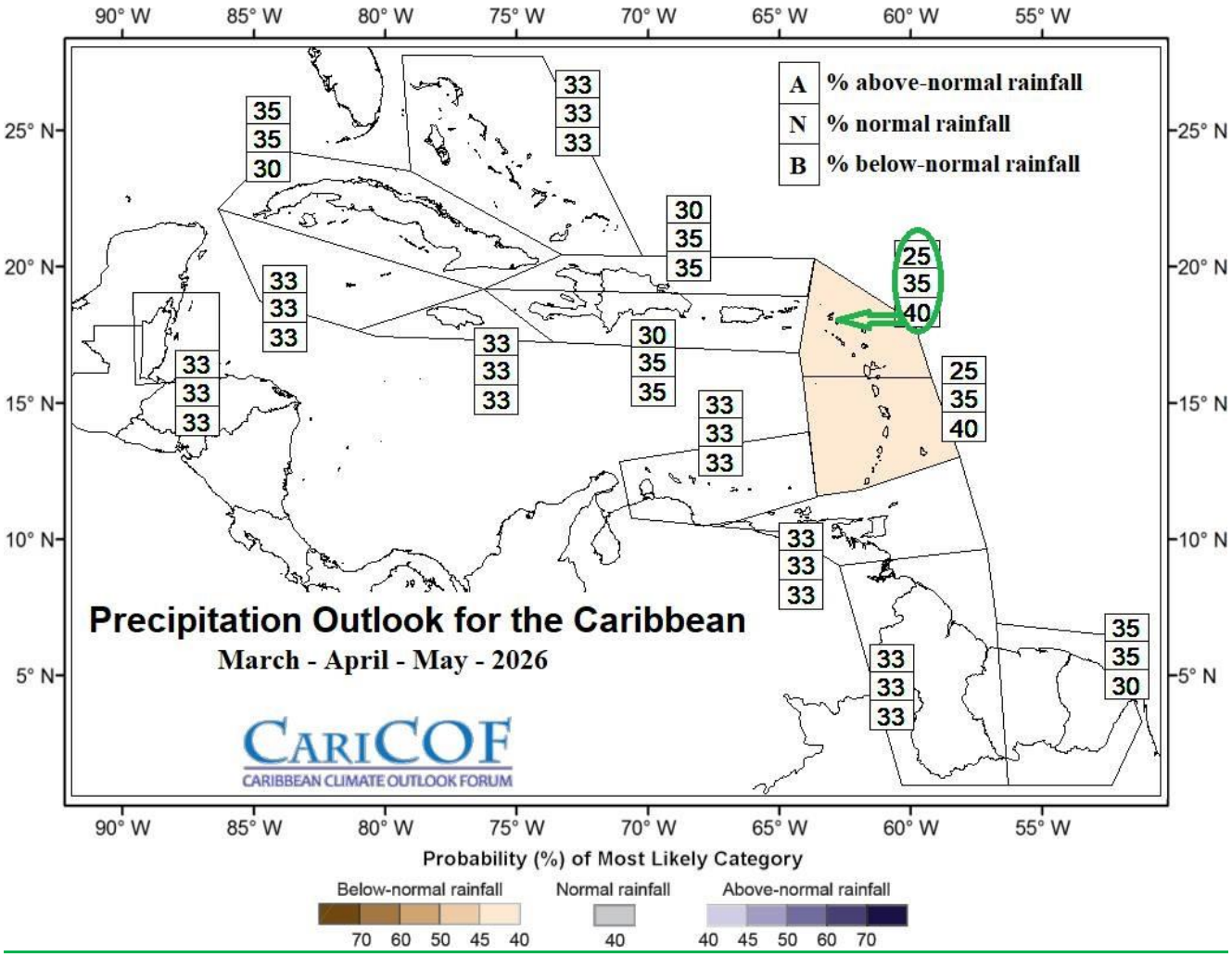
Conclusion

This report provides a summary of all the meteorological data recorded at the Princess Juliana International Airport during the year 2025. The data was collected from various meteorological parameters under regulations stipulated by the World Meteorological Organization (WMO). These elements include rainfall, relative humidity, atmospheric pressure, wind speed and direction, cloud cover and sunshine duration among others.

The Meteorological Department St. Maarten (MDS) records and compiles climatological data for use in research in several fields and institutions. Records go as far back as the 1950's in certain parameters. Requests for data must be put in writing through the Department Head.

Outlook for 2026

Rainfall Outlook for Mar-Apr-May 2025



Map compliments: CARICOF: Caribbean Institute for Meteorology & Hydrology

Rainfall for the next three (3) months Mar-Apr-May 2026 is expected to be drier than the usual in St. Maarten and the eastern Caribbean.

Normal rainfall for this season in St. Maarten ranges between **148—250** mm or **6-10** inches. Based on historical data, the current state of the weather and some subjective input, the rainfall forecast for the next three (3) months in St. Maarten is as follows: a **25%** chance of being above ***Normal*** (more than 250 mm); a **35%** chance of being ***Near Normal*** (between 148 mm and 250 mm); and a **40%** chance of being below ***Normal*** (less than 148 mm).

Note that the green arrow points to St. Maarten and the forecast probabilities are circled in green on the map above.

List of Tropical Cyclone for the 2026 Atlantic Hurricane Season

Arthur	**Hanna**	**Omar**
Bertha	**Isaias**	**Paulette**
Cristobal	**Josephine**	**Rene**
Dolly	**Kyle**	**Sally**
Edouard	**Leah**	**Teddy**
Fay	**Marco**	**Vicky**
Gonzalo	**Nana**	**Wilfred**

BE PREPARED!!!

BE ALERT!!!

BE READY!!!

Be reminded that it only takes one storm to impact our island to make it an active season for us. Therefore, everyone should prepare for every season, regardless of how much activity is predicted.

Appendix

Stages of Tropical Cyclone Development

Below are the decisive factors (criteria) for the various development stages for tropical cyclones:

Stage	Criteria
Tropical disturbance	A discrete system of clouds, showers, and thunderstorms that originates in the tropics and maintains its identity for 24 hours or more.
Tropical wave	A type of trough of low pressure or tropical disturbance that moves generally from east to west, typically embedded in the tropical easterlies. They are also sometimes called easterly waves.
Tropical Depression	A tropical disturbance that has developed a closed circulation (counterclockwise winds blowing around a center of low pressure in the Northern Hemisphere). Tropical depressions contain maximum sustained (1-minute) winds of 38 mph (62 km/h or 33 knots) or less.
Tropical Storm	A well-organized warm-core tropical cyclone that has maximum sustained (1-minute) winds of 39-73 mph (63-118 km/h or 34-63 knots). Once a system reaches tropical storm status, it is given a name by the National Hurricane Center (located in Miami, Florida).
Hurricane	A warm-core tropical cyclone that has maximum sustained (1-minute) winds of at least 74 mph (119 km/h or 64 knots). Hurricanes are categorized by the Saffir-Simpson Scale. (*See next page*)
Extra-tropical Cyclone	A cyclone that is no longer tropical in origin, which usually means the system moves away from the tropics and moves toward the poles. An extra-tropical cyclone has no wind speed criteria and may exceed hurricane force.
Subtropical Cyclone	A closed circulation, low-pressure system that has characteristics of both tropical and extra-tropical cyclones. Subtropical cyclones typically have a radius of maximum winds occurring relatively far from the center (usually more than 60 nautical miles), and generally have a less symmetric wind field and distribution of convection (clouds and thunderstorms).
Post-tropical Cyclone	A former tropical cyclone that no longer possesses sufficient tropical characteristics to be considered a tropical cyclone. Post-tropical cyclones can, however, continue carrying heavy rains and high winds.

Saffir-Simpson Hurricane Scale

The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage.

	Category	Max. Sustained Winds			Effects
		mph	km/h	knots	
	1	74 - 95	119 - 153	64 - 82	**Minimal Damage**
	2	96 - 110	154 - 177	83 - 95	**Moderate Damage**
Major	**3**	111 - 129	178 - 208	96 -112	**Extensive Damage**
Major	**4**	130 - 156	209 - 251	113 - 136	**Extreme Damage**
Major	**5**	157+	252+	137+	**Catastrophic Damage**

Watches & Warnings

Tropical Storm Watch

Issued when tropical storm conditions (sustained winds of 39-73 mph, 63-118 km/h, or 34-63 knots) are *possible* within the specified area *within the next 48 hours* (2 days).

Tropical Storm Warning

Issued when tropical storm conditions (sustained winds of 39-73 mph, 63-118 km/h, or 34-63 knots) are *expected* somewhere within the specified area *within the next 36 hours* (1.5 days).

Hurricane Watch

Issued when hurricane conditions (sustained winds of 74+ mph, 119+ km/h, or 64+ knots) are *possible* within the specified area *within the next 48 hours* (2 days).

Hurricane Warning

Issued when hurricane conditions (sustained winds of 74+ mph, 119+ km/h, or 64+ knots) are *expected* within the specified area *within the next 36 hours* (1.5 days).

Note: Hurricane preparedness activities become difficult once winds reach tropical storm force, therefore, hurricane watches & warnings are issued well in advance of the anticipated onset of tropical-storm-force winds.

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