

# 2024 Atlantic Hurricane Season Outlooks - early August update

**(Hyper-)active season!!**

compiled by CIMH (*issued: 08.08.2024*)  
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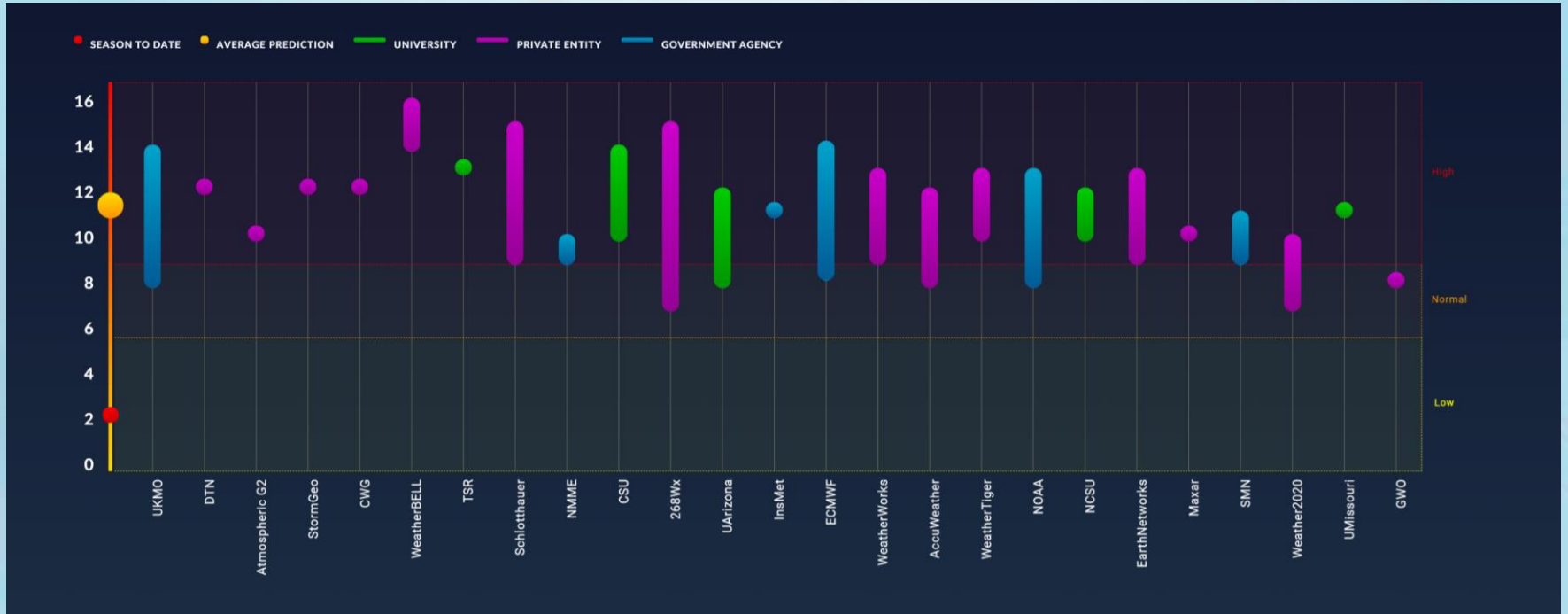
# 2024 Hurricane Season Forecasts – Likely a hyper-active season!!

Forecast Parameter (1991-2020 average in parentheses)	CSU 9 <sup>th</sup> July 2024	Tropical Storm Risk 06 <sup>th</sup> August 2024	The Weather Co. 16 <sup>th</sup> May 2024	NOAA CPC (70% confidence range) 08 <sup>th</sup> August 2024	CIMH (70% confidence range) 17 <sup>th</sup> May 2024*
<b>Named Storms (NS) (14)</b>	<b>25</b>	<b>24</b>	<b>25</b>	<b>17-24</b>	<b>23* (19-28*) *</b> *06 <sup>th</sup> August update
<b>Hurricanes (H) (7)</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>8-13</b>	<b>13 (10-16)</b>
<b>Major Hurricanes (MH) (3)</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>4-7</b>	<b>7 (5-9)</b>
<b>Accumulated Cyclone Energy (ACE) (123)</b>	<b>230</b>	<b>230</b>	<b>-</b>	<b>165-245</b>	<b>211</b> (146-277)

# Comparing 2024 CSU Atlantic Hurricane Season outlook to the hyperactive 2020 and 2017 seasons

Forecast Parameter and 1991–2020 Average (in parentheses)	Issue Date		
	9 July 2024	<b>2020 Obs.</b>	<b>2017 Obs.</b>
Named Storms (NS) (14.4)	25	30	17
Named Storm Days (NSD) (69.4)	120	118	91.25
Hurricanes (H) (7.2)	12	13	10
Hurricane Days (HD) (27.0)	50	34.75	51.25
Major Hurricanes (MH) (3.2)	6	6	6
Major Hurricane Days (MHD) (7.4)	16	8.75	19.25
Accumulated Cyclone Energy (ACE) (123)	230	180	226

# Agencies predict around 12 Hurricanes in the Atlantic in 2024 (as of 6 August 2024)



# Caribbean Landfall probabilities

## ▶ CSU:

- ▶ **62% probability for at least one major hurricane (Cat 3, 4 or 5) after 8 July**, tracking into the Caribbean (10-20°N, 60-88°W).  
1880-2000 average probability for major hurricanes in an entire year is 47%.

\*\*\*Note: In late June/early July when Beryl became the earliest category 4 (30 June) and category 5 (1 July) on record in the Atlantic, making landfall in several islands of the southern Grenadines (in the countries of Grenada and St. Vincent & the Grenadines).

- ▶ For **country-by-country forecasted probabilities** of named storms and hurricanes passing within 50 miles of the location, see <https://tropical.colostate.edu/resources.html> .

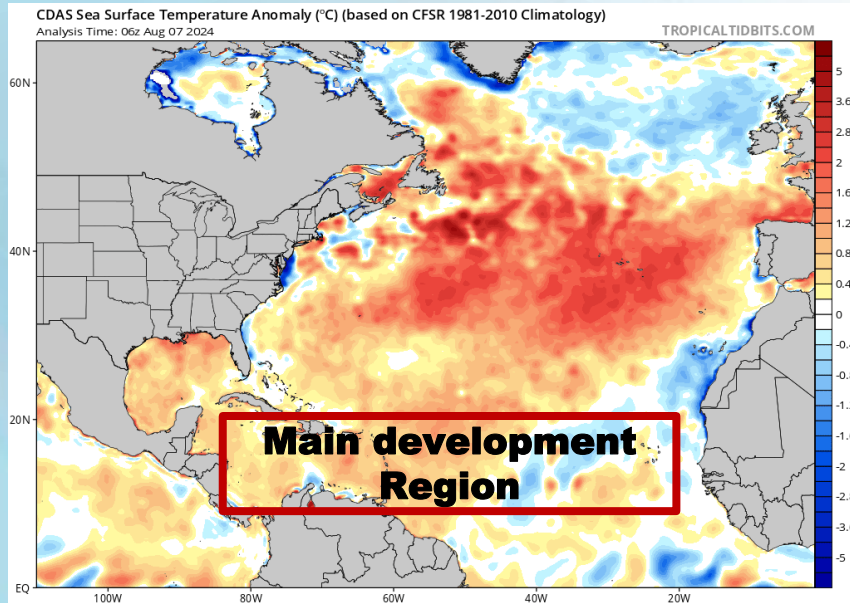
# Drivers of hurricane season activity in 2024

**Near-record warm Tropical North Atlantic,** incl. Main Development Region where 70% of major hurricanes form.

→ **boosts hurricane season activity**

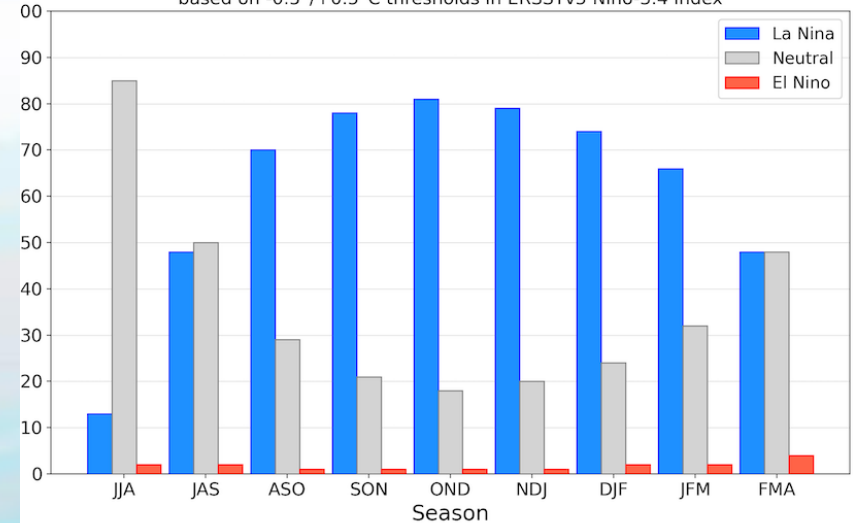
In the Pacific, **La Niña** will very likely develop in coming months.

→ **boosts hurricane season activity, especially after August**



## Official NOAA CPC ENSO Probabilities (issued July 2024)

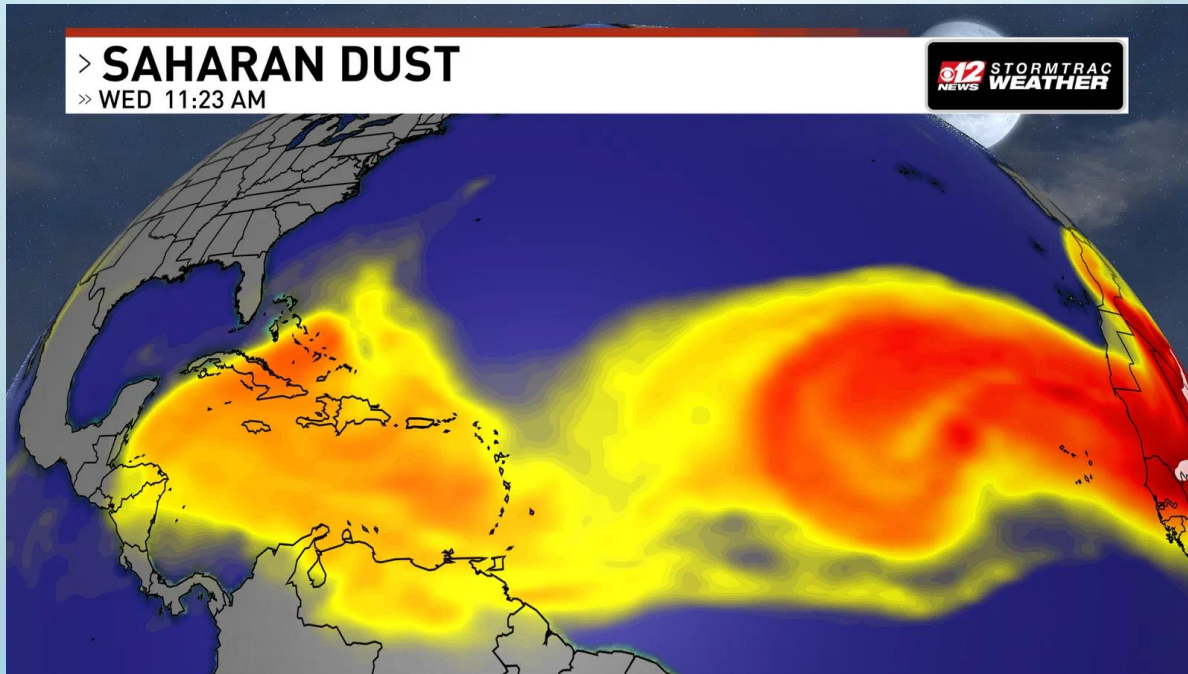
based on  $-0.5^{\circ}/+0.5^{\circ}\text{C}$  thresholds in ERSSTv5 Niño-3.4 index



# Drivers of Hurricane Season activity in 2024

## What we do not know yet...

No predictions of **how often** intrusions of the dry (often dusty) Saharan Air Layer (**SAL**) will **stifle activity**



# The possible effect of lower/higher frequency of dry, dusty Saharan air intrusions

## Scenario A: infrequent Saharan air intrusions into the Tropical North Atlantic

tropical cyclone	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

## Hyperactive 2024 Atlantic Hurricane Season

- Entire season: 23-29 named storms, 11-13 hurricanes, 5-7 major hurricanes
- On May 17<sup>th</sup>, CIMH forecasted 7-14 named storms through August and 13-19 from September onwards

## Scenario B: very frequent Saharan air intrusions

tropical cyclone	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

- before mid-August: muted/erratic tropical cyclone activity
- from mid-August: similar as scenario A

**Observed through July 2024: Scenario B** (*virtually non-stop Saharan air intrusions*

*except late June/early July when earliest category 5 Atlantic hurricane on record (Beryl) developed*)



# 2024 Atlantic Tropical Cyclone Names

~~Alberto~~

~~Beryl~~

~~Chris~~

~~Debby~~

Ernesto

Francine

Gordon

Helene

Isaac

Joyce

Kirk

Leslie

Milton

Nadine

Oscar

Patty

Rafael

Sara

Tony

Valerie

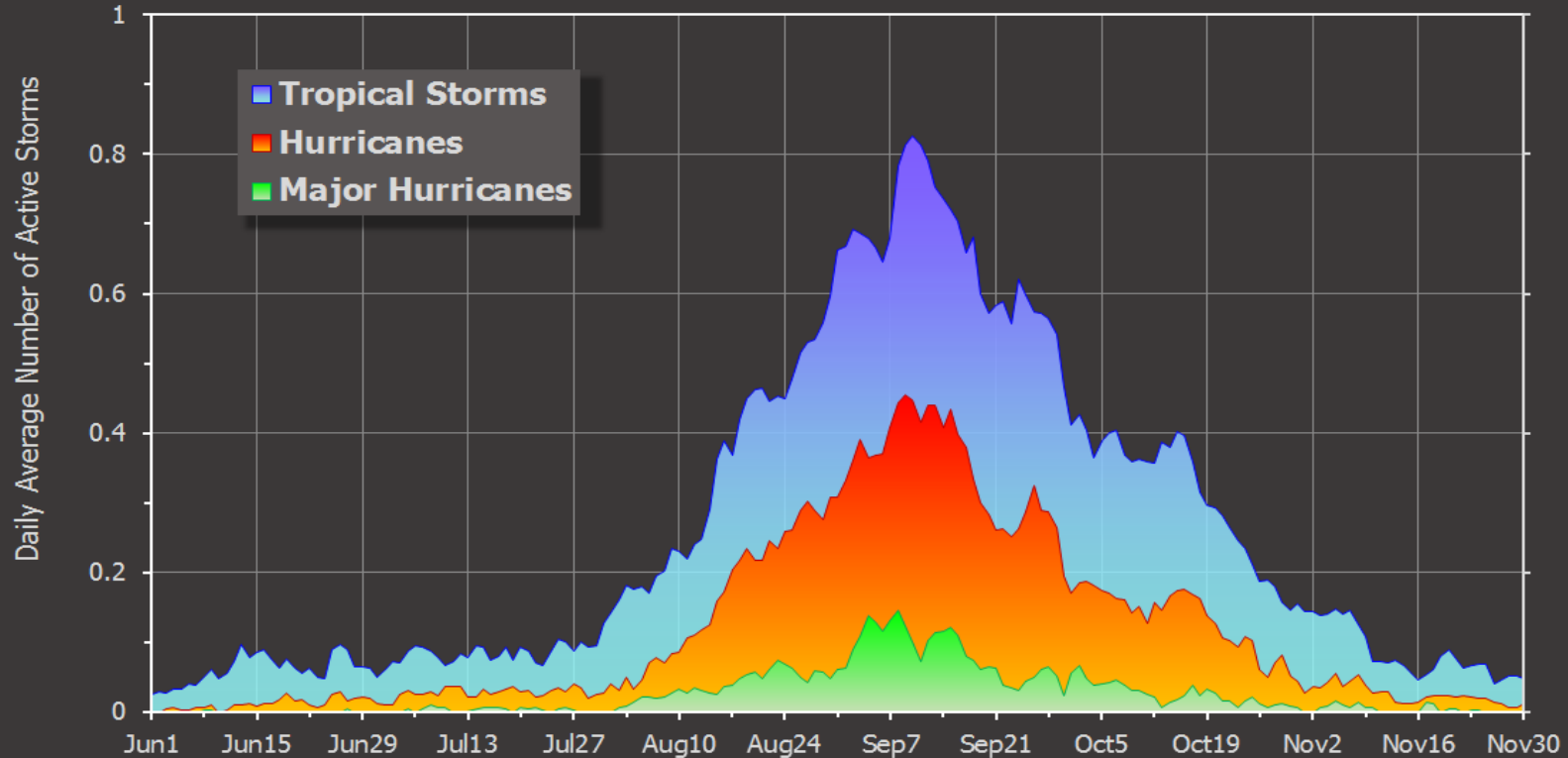
William

Names provided by the World Meteorological Organization

Be Prepared: Visit [hurricanes.gov](https://hurricanes.gov)



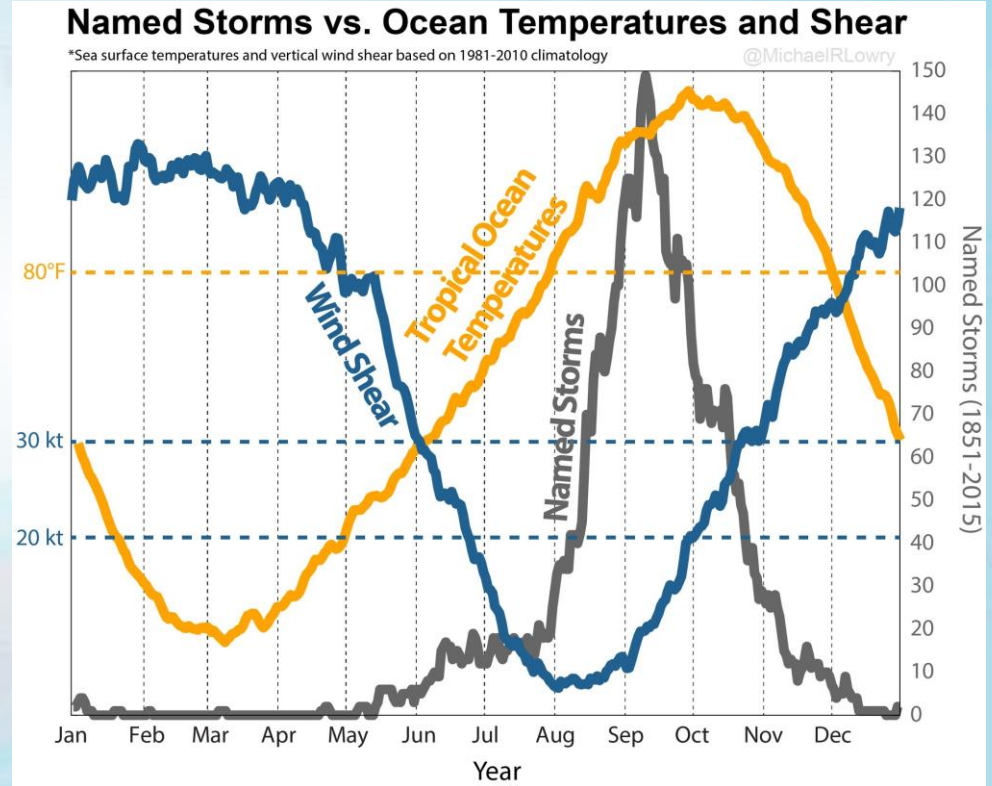
## Atlantic Tropical Cyclone Climatology (1851-2013)



Basin-wide TC activity historically **peaks on 10 September**

# Could we make useful predictions of parts of the season?

- ▶ The **peak of the season** is from August to October
- ➔ what will this period bring?
- ➔ What could the **first half** (June to August) and **second half** (September to November) of the season look like?



Source: Michael Lowry/FEMA

## How good were the CIMH 2023 forecasts?

Period	Observed	Mid-May 2023		Early August 2023	
		Forecast	Range*	Forecast	Range*
<b>Number of Named Storms</b>					
<b>2023</b> (entire season)	<b>20</b>	<b>17</b>	12-22	<b>21</b>	17-24
<b>Jun.-Aug.</b> (1 <sup>st</sup> half)	<b>11</b>	<b>8</b>	5-12		
<b>Aug.-Oct.</b> (peak)	<b>15</b>	<b>13</b>	9-17		
<b>Sep.-Nov.</b> (2 <sup>nd</sup> half)	<b>8</b>	<b>8</b>	5-11		
<b>Aug.-Dec.</b>	<b>15</b>			<b>16</b>	12-20
<b>Accumulated Cyclone Energy (ACE)</b>					
<b>2023</b> (entire season)	<b>146</b>	<b>120</b>	41-179		



# 2024 Atlantic Hurricane Season Activity

## CIMH forecasts

Period	1991-2020	Forecast	Range*	Confidence level
<b>Entire season (issued May 17<sup>th</sup>, 2024)</b>				
<b>Named storms</b>	14	<b>29</b>	24-35	High
<b>Hurricanes</b>	7	<b>13</b>	10-16	Medium
<b>Major Hurricanes</b>	3.2	<b>7</b>	5-9	Medium
<b>ACE</b>	123	<b>211</b>	146-277	Medium
<b>August 2024 forecasts for the Number of Named Storms</b>				
<b>Entire season</b>	14	<b>23</b>	19-27	High
<b>Aug. to Dec. 2024</b>	12	<b>20</b>	16-25	High

\*70% confidence range, i.e. the observed number has a 70% chance of falling in this range

# The new norm

## 'Average' Atlantic Hurricane Season

\* Effective 2021

**1981-2010**

12 Named Storms  
6 Hurricanes  
3 Major Hurricanes



**1991-2020**

14 Named Storms  
7 Hurricanes  
3 Major Hurricanes

\* Numbers for an average season reflect the climate record for tropical storms and hurricanes and use the most recent 3 decades as the period of reference. More at: <http://bit.ly/NOAAHurricaneSeasonAverages>



Be prepared: Visit [hurricanes.gov](http://hurricanes.gov) and follow @NWS and @NHC\_Atlantic on Twitter.

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## IMPORTANT:

Number of major hurricanes up 14% from 2.8 to 3.2 /year

(and up by 60% compared to 1961-1990)

# What changes to bear in mind?

- The WMO **no longer uses the Greek alphabet** as additional list of named storms in the Atlantic basin to avoid a few communication problems.
- Instead, from 2021 onwards, the WMO has started using a [Supplemental list of tropical cyclone names in RA IV](#) once the regular list is exhausted.
- Keep in mind that what determines an **active season** may have changed by using the new norms.
- NHC daily Tropical Weather Outlooks now starting 15 May.

## NOTE

- ▶ Authorities and interests are advised to **constantly monitor and abide by official weather advisories** issued by the **National Meteorological Services** and.
- ▶ They should also **constantly monitor** other information provided by the **Caribbean Disaster Emergency Management Agency** (<http://cdema.org/>) and the **US National Hurricane Center** (<https://www.nhc.noaa.gov/>).

## DISCLAIMER

- ▶ CIMH provides special weather and climate interpretation of the current and forecasted tropical weather and climate conditions affecting the Caribbean region.
- ▶ CIMH is not an official forecasting authority.





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**[rcc.cimh.edu.bb](http://rcc.cimh.edu.bb)**

**Additional early warning tools are found at**

**[www.cimh.edu.bb](http://www.cimh.edu.bb)**

*Thank you*