

2023 Atlantic Hurricane Season Outlooks

CLOSE TO NORMAL

compiled by CIMH
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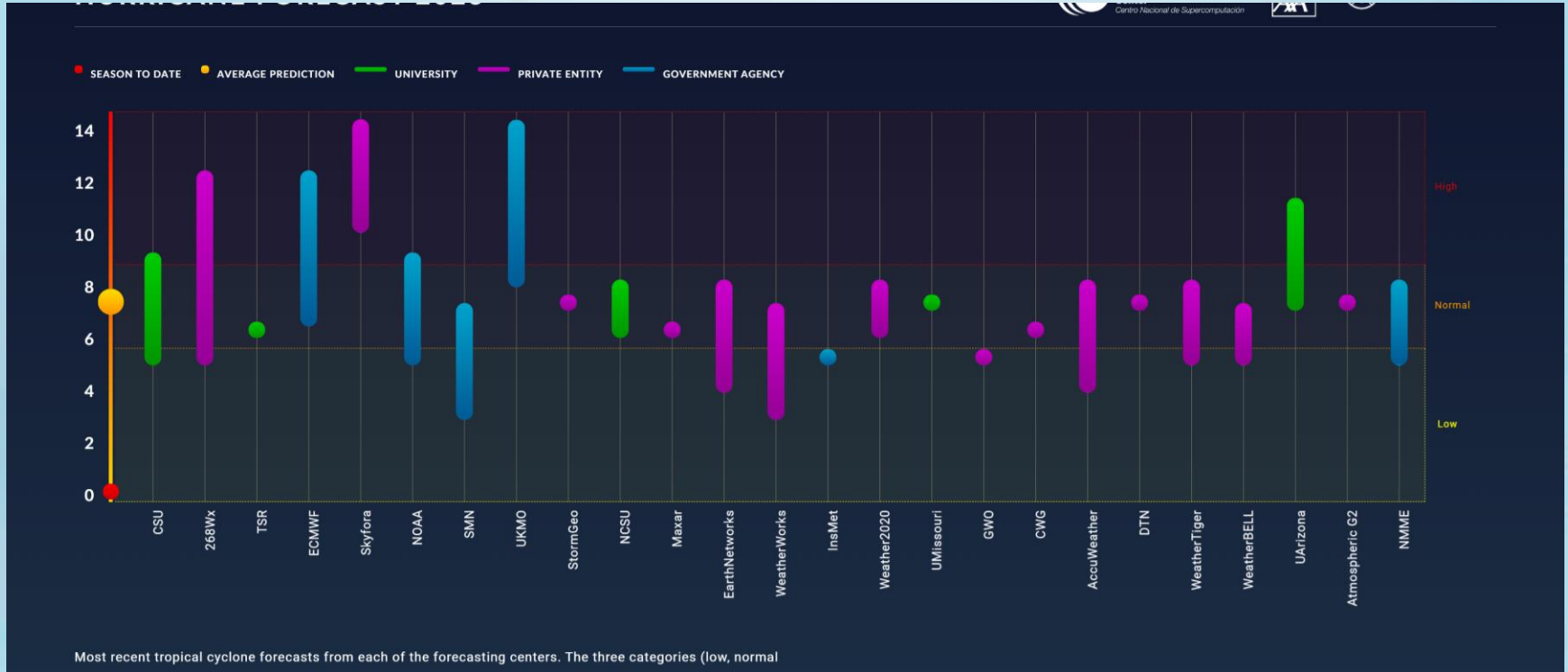
2023 Hurricane Season Forecasts – near normal and likely less active than in recent years

Forecast Parameter (1991-2020 average in parentheses)	CSU 1st June 2023	Tropical Storm Risk 31st May 2023	The Weather Co. 25th May 2023	NOAA CPC (70% confidence range) 25 May 2023	CIMH (70% confidence range) 15 May 2022
Named Storms (NS) (14)	15	13	16	12 – 17	17 (12-22)
Hurricanes (H) (7)	7	6	8	5 – 9	7 (3-10)
Major Hurricanes (MH) (3)	3	2	3	1 - 4	4 (1-6)
Accumulated Cyclone Energy (ACE) (123)	125	90	-	70 - 145	120 (41-179)

Comparing 2023 CSU Atlantic Hurricane Season outlook to the hyperactive 2020 and 2017 seasons

Forecast Parameter and 1991–2020 Average (in parentheses)	Total Seasonal Forecast (Includes Unnamed Storm*)	2020 Obs.	2017 Obs.
Named Storms (NS) (14.4)	15	30	17
Named Storm Days (NSD) (69.4)	60	118	91.25
Hurricanes (H) (7.2)	7	13	10
Hurricane Days (HD) (27.0)	30	34.75	51.25
Major Hurricanes (MH) (3.2)	3	6	6
Major Hurricane Days (MHD) (7.4)	7	8.75	19.25
Accumulated Cyclone Energy (ACE) (12.4)	125	180	226

Overview of forecasted number of Atlantic Hurricanes in 2023 (as of 14 May 2023)



Most recent tropical cyclone forecasts from each of the forecasting centers. The three categories (low, normal

Caribbean Landfall probabilities

▶ CSU:

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

▶ TSR:

- ▶ Possibly **7** named storms, **4** hurricanes and **2 major hurricanes** tracking through the Tropical North Atlantic, Caribbean Sea and the Gulf of Mexico.

Drivers of hurricane season activity in 2023

Unusually warm sea surface temperatures in the North Atlantic Ocean, and also expected in the Caribbean.

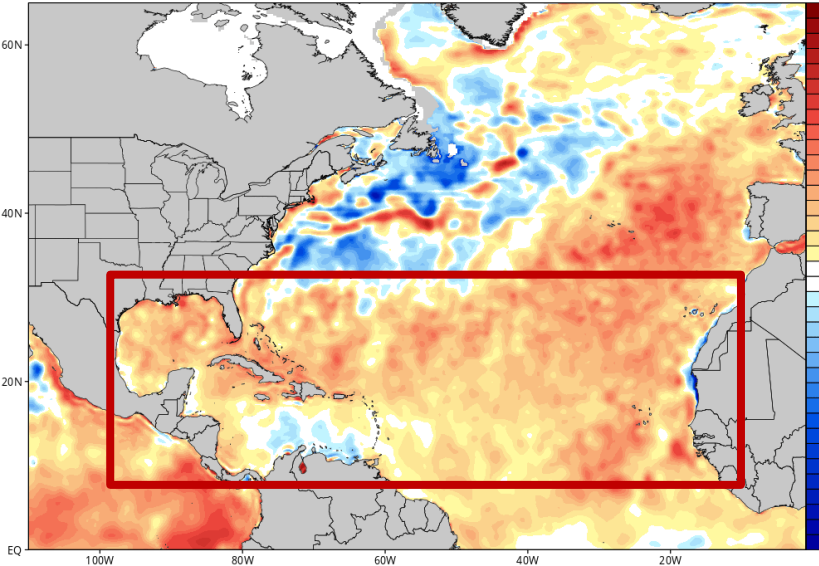
→ **boosts hurricane season activity**

In the Pacific, **El Niño** will very likely develop in coming months.

→ **reduces hurricane season activity (especially after August)**

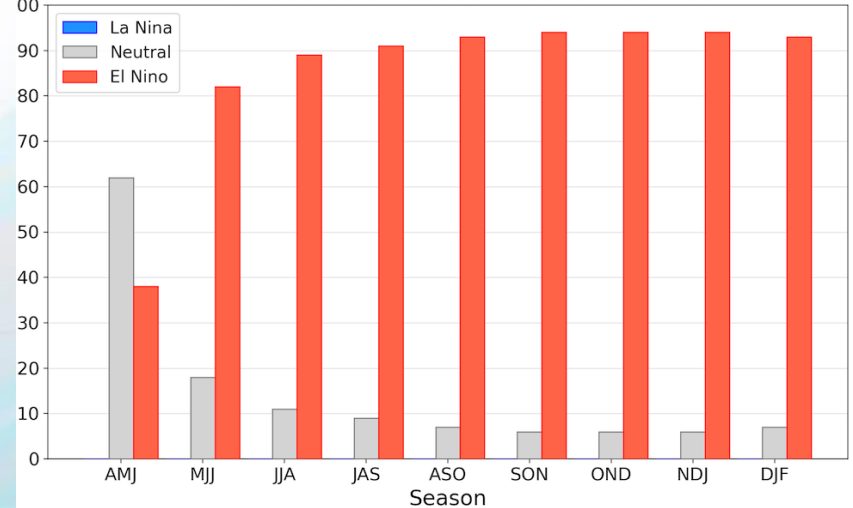
CDAS Sea Surface Temperature Anomaly (°C) (based on CFSR 1981-2010 Climatology)
Analysis Time: 06z May 19 2023

TROPICALTIDBITS.COM



Official NOAA CPC ENSO Probabilities (issued May 2023)

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





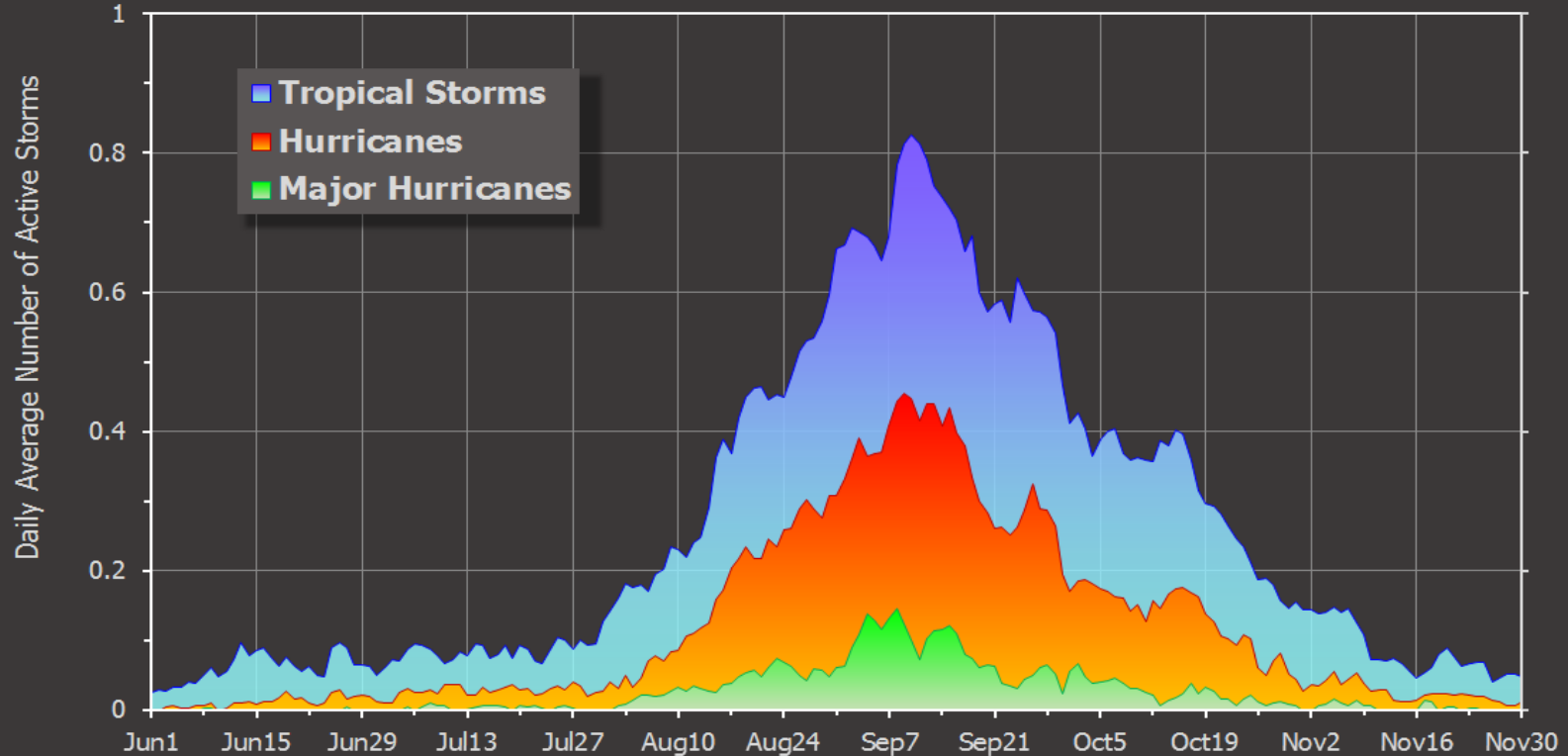
2023 Atlantic Tropical Cyclone Names

Arlene
Bret
Cindy
Don
Emily
Franklin
Gert

Harold
Idalia
Jose
Katia
Lee
Margot
Nigel

Ophelia
Philippe
Rina
Sean
Tammy
Vince
Whitney

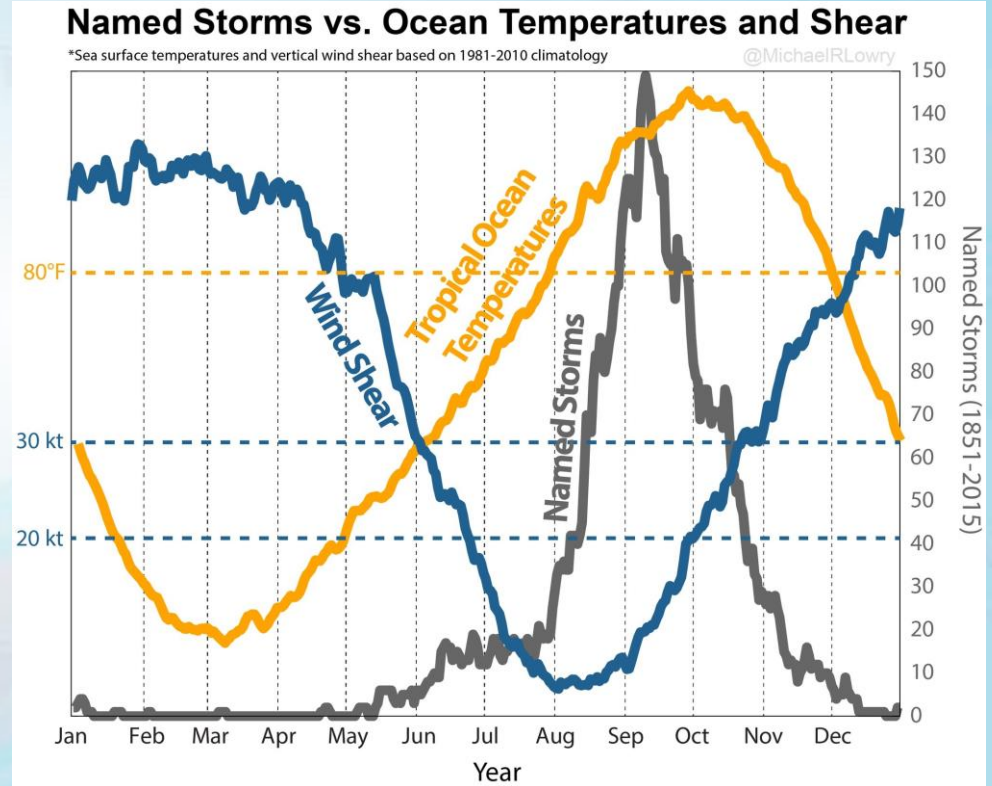
Atlantic Tropical Cyclone Climatology (1851-2013)



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 2022 forecasts?

Period	Observed	Late May 2022		Early August 2021	
		Forecast	Range*	Forecast	Range*
Number of Named Storms					
2022 (entire season)	14	18	10-21	20	16-23
Jun.-Aug. (1 st half)	3	7	3-10		
Aug.-Oct. (peak)	11	13	8-16		
Sep.-Nov. (2 nd half)	11	10	6-12		
Aug.-Dec.	11			17	13-20
Accumulated Cyclone Energy (ACE)					
2022 (entire season)	95.1	155	75-216		

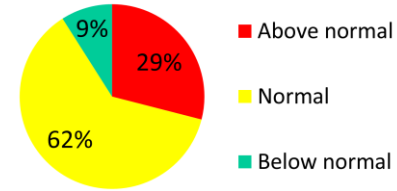


2023 Atlantic Hurricane Season Activity

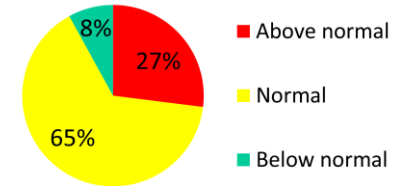
CIMH forecasts

Period	1991-2020	Forecast	Range*	Confidence level	
Entire season					
Named storms	14	17	12-22	High	
Hurricanes	7	7	3-10	Medium	
Major Hurricanes	3.2	4	1-6	Medium	
ACE	123	120	41-179	High	
1st half (JJA), peak (ASO) & 2nd half (SON) of the season					
Named storms	1st half	5	8	5-12	Medium
	Peak	11	13	9-17	Medium
	2nd half	7.8	8	5-11	Medium
ACE	1st half	29	30	9-69	Low
	Peak	114	104	38-154	Medium
	2nd half	87	63	22-115	Medium

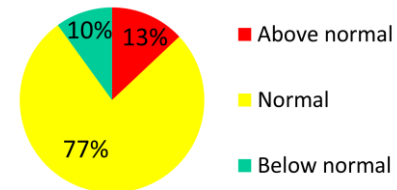
First half (June to August)



Peak (August to October)



Second half (September to October)



*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 and follow @NWS and @NHC_Atlantic on Twitter.

Issued 4/9/21

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 (see e.g.
- Instead, from last year (2021) onwards, the WMO uses 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 weather advisories issued by the National Meteorological Services.
- ▶ 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/>).
- ▶ All persons and entities should abide by any official advisories issued by the National Meteorological Service in their country.

DISCLAIMER

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