

A map of the Atlantic Ocean showing the paths of hurricanes. The map includes the eastern coasts of North and South America, and the western coasts of Europe and Africa. Grey lines represent the tracks of various hurricanes, showing their movement across the ocean. The text is overlaid on a semi-transparent white box.

# **2022 Atlantic Hurricane Season Outlooks**

## **ACTIVE SEASON**

compiled by CIMH  
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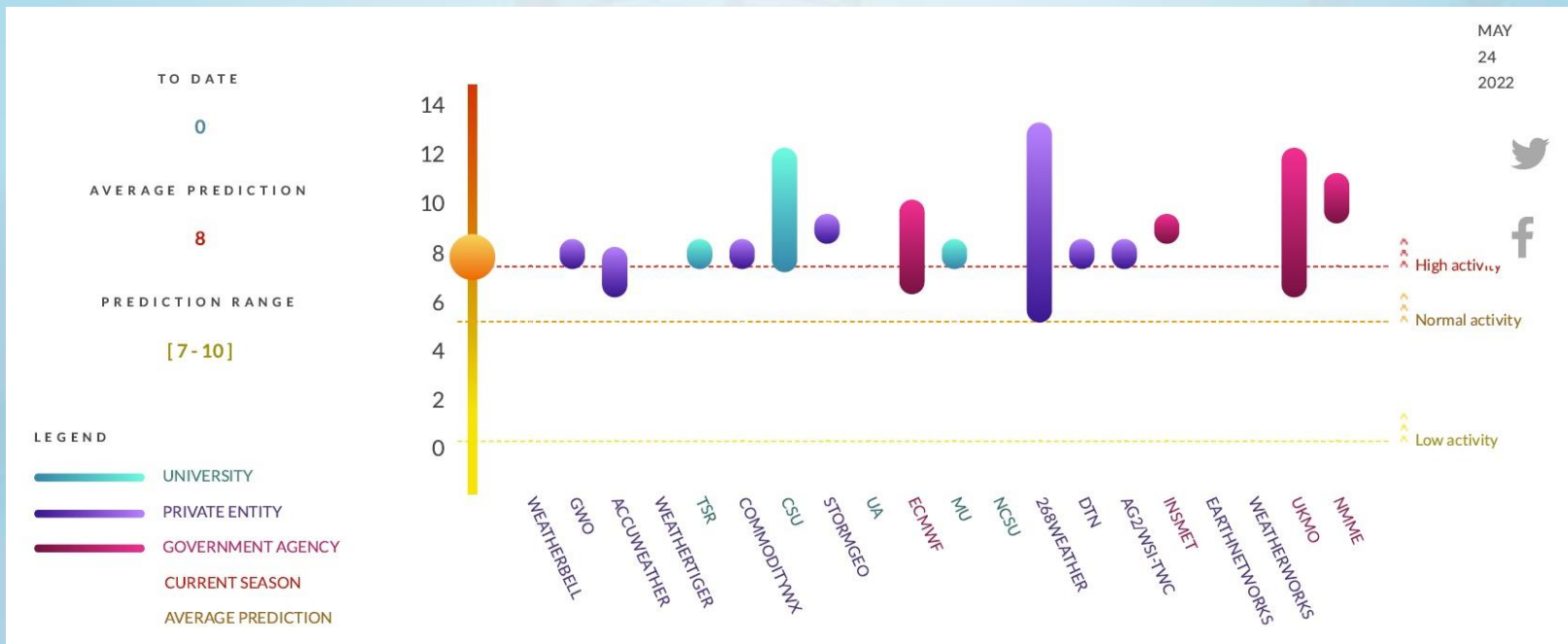
# 2022 Hurricane Season Forecasts

Forecast Parameter (1991-2020 Climatology in parentheses)	CSU 07 <sup>th</sup> April 2022	Tropical Storm Risk 06 <sup>th</sup> April 2022	NOAA Climate Prediction Center 70% confidence range 24 <sup>th</sup> May 2021	CIMH (70% confidence range) 25 <sup>th</sup> May 2022
Named Storms (NS) (14)	19	18	14-21	18 (10-21)
Hurricanes (H) (7)	9	8	6-10	-
Major Hurricanes (MH) (3)	4	4	3-6	-
Accumulated Cyclone Energy (ACE) (122)	160	138	115-200	155 (75-216)

# Comparing 2022 CSU Atlantic Hurricane Season outlook to the hyperactive 2020 and 2017 seasons

Forecast Parameter and 1991–2020 Average (in parentheses)	Issue Date 7 April 2022	2020 Obs.	2017 Obs.
Named Storms (NS) (14.4)	19	30	17
Named Storm Days (NSD) (69.4)	90	118	91.25
Hurricanes (H) (7.2)	9	13	10
Hurricane Days (HD) (27.0)	35	34.75	51.25
Major Hurricanes (MH) (3.2)	4	6	6
Major Hurricane Days (MHD) (7.4)	9	8.75	19.25
Accumulated Cyclone Energy (ACE) (123)	160	180	226
Net Tropical Cyclone Activity (NTC) (135%)	170	225	231

# Overview of forecasted number of Atlantic Hurricanes in 2022 (as of 25 May 2022)



# Caribbean Landfall probabilities

## ▶ CSU:

- ▶ **60% probability for at least one major hurricane** (Cat 3, 4 or 5), tracking into the Caribbean (10-20°N, 60-88°W).  
1901-2000 average probability for major hurricanes is 42%.
- ▶ 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 13 named storms, 6 hurricanes and **3 major hurricanes** tracking through the Tropical North Atlantic, Caribbean Sea and the Gulf of Mexico.



# NOAA/CPC Outlook – drivers of hurricane season activity in 2022 (simplified)



## Expected Atlantic Conditions During August-October 2022

Ongoing high-activity era conditions favor more hurricane activity. These conditions include:

- Above-average sea surface temperatures in the Main Development Region.
- Weaker trade winds, weaker vertical wind shear, and a stronger, wetter West African monsoon.

Additionally, with La Niña favored, there would be no suppression of, or potentially a reinforcement of, the high-activity era conditions.

Expected ongoing high-activity era conditions (warm phase of AMO) and La Niña

promoting activity

Above-average SSTs

Near- or weaker-than-average vertical wind shear

Weaker easterly trade winds and vertical wind shear

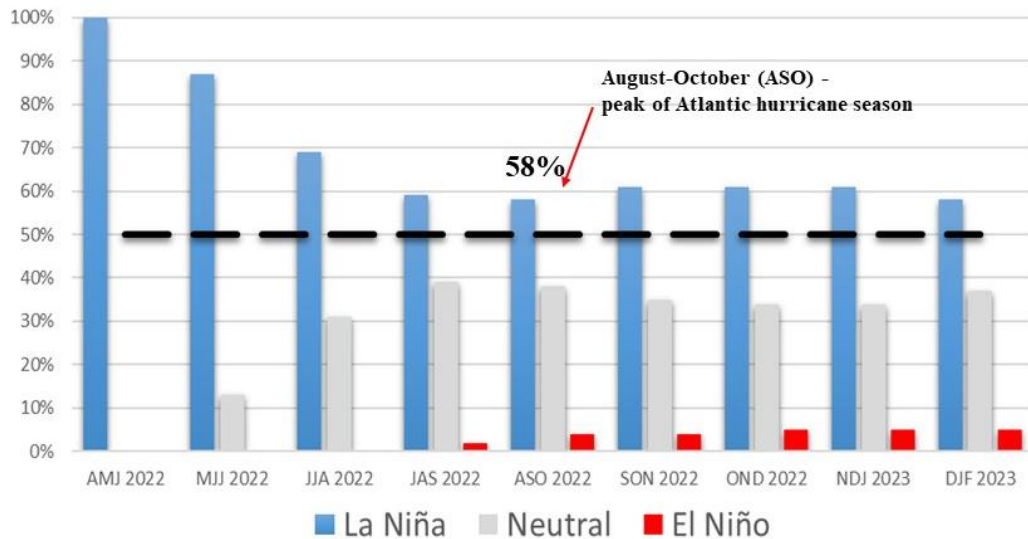
Atlantic Main Development Region

Stronger, wetter West African monsoon

# Continued **La Niña** conditions by October may boost activity during the 2<sup>nd</sup> half of the season



CPC/ IRI Probabilistic ENSO Forecast  
12 May 2022



Source: NOAA CPC / IRI – ENSO: Recent Evolution, Current Status and Predictions



# 2022 Atlantic Tropical Cyclone Names

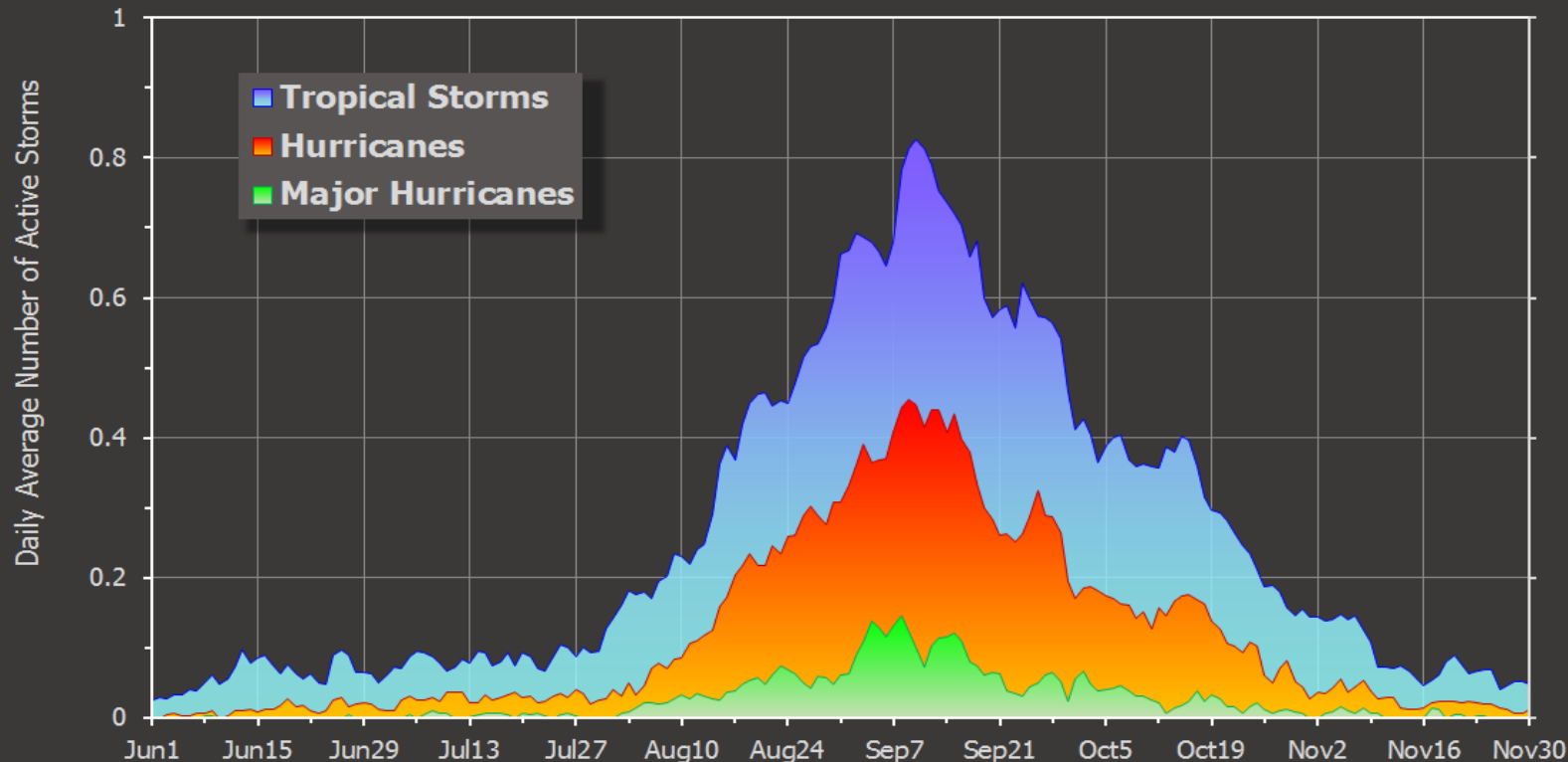
Alex  
Bonnie  
Colin  
Danielle  
Earl  
Fiona  
Gaston

Hermine  
Ian  
Julia  
Karl  
Lisa  
Martin  
Nicole

Owen  
Paula  
Richard  
Shary  
Tobias  
Virginie  
Walter



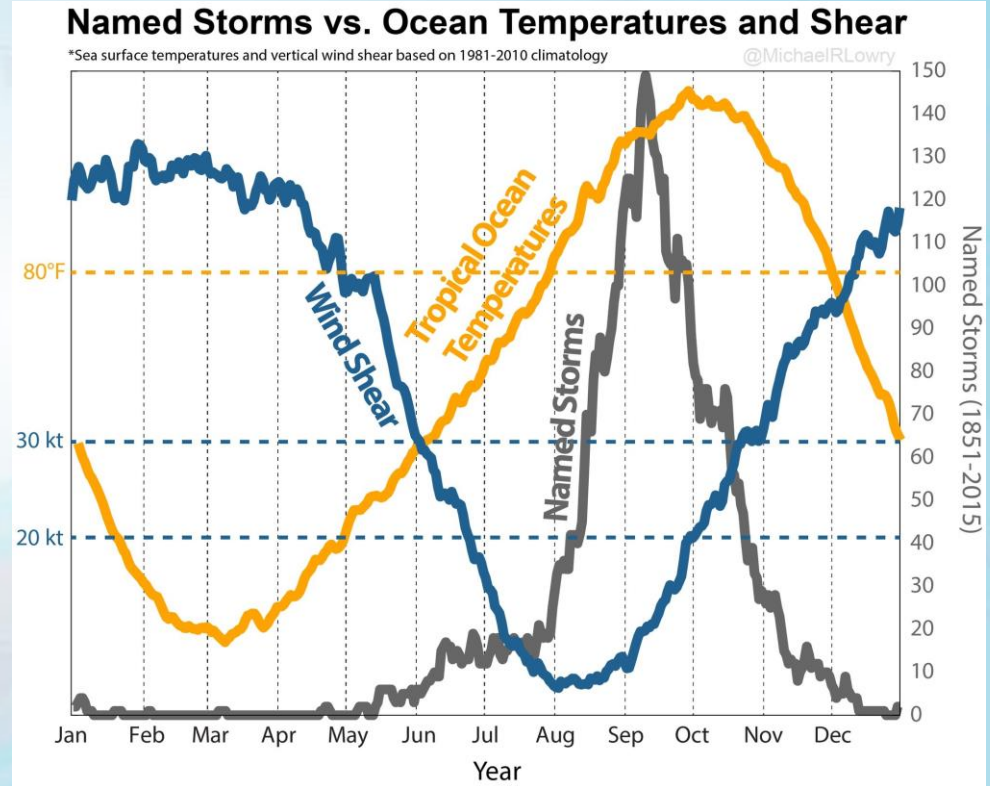
## Atlantic Tropical Cyclone Climatology (1851-2013)



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?
- ▶ CariCOF predicts 2 three-month periods each month  
➔ What could June to August and September to November look like?



Source: Michael Lowry/FEMA

# How good were the CIMH 2021 forecasts?

Period	Observed	Late May 2021		Early August 2021	
		Forecast	Range*	Forecast	Range*
Number of Named Storms					
2021 (entire season)	21	18	14-22	19	13-22
Jun.-Aug. (1 <sup>st</sup> half)	10	7	4-10		
Aug.-Oct. (peak)	16	13	10-17		
Sep.-Nov. (2 <sup>nd</sup> half)	10	10	7-13		
Aug.-Dec.	16			14	8-17
Accumulated Cyclone Energy (ACE)					
2021 (entire season)	147.0	155	100-215		



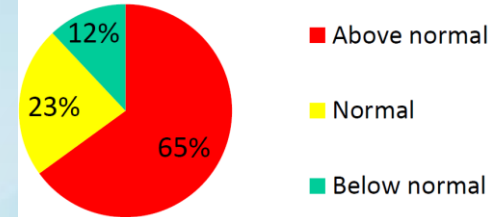
# 2022 Atlantic Hurricane Season Activity

## CIMH forecasts

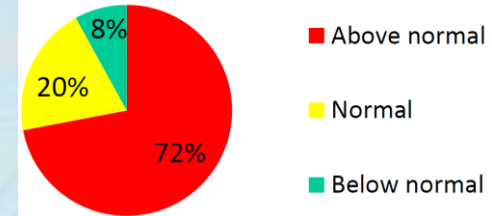
Period	1991-2020	Forecast	Range*	Confidence level
<b>Number of Named Storms</b>				
Entire season	14	<b>18</b>	10-21	High
First half (JJA)	5	<b>7</b>	3-10	Medium
Peak season (ASO)	11	<b>13</b>	8-16	High
Second half (SON)	7.8	<b>10</b>	6-12	Medium
<b>Accumulated Cyclone Energy (ACE)</b>				
Entire season	122	<b>155</b>	75-216	Medium
JJA 2020	29	<b>28</b>	6-54	Low
ASO 2020	114	<b>132</b>	62-192	Low to medium
SON 2020	87	<b>119</b>	56-179	Medium

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

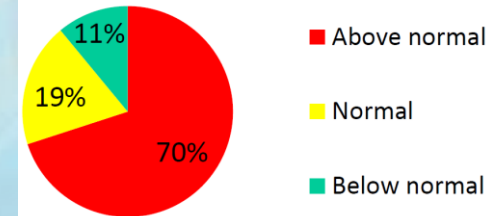
First half (June to August)



Peak (August to October)



Second half (September to October)



# 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](https://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. <https://yaleclimateconnections.org/2021/03/wmo-atlantic-hurricanes-no-longer-to-receive-names-from-greek-alphabet/>):
  - ➔ Eta and Iota retired -- alphabet with a decreasing number of letters?
  - ➔ Zeta, Eta, Theta too similar for successive storms
  - ➔ It was confusing people that some names (e.g. Zeta came so early on in the list)
- Instead, from last year (2021) onwards, the WMO uses a Supplemental list of tropical cyclone names in RAIV 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.