

University of Arizona (UA) Forecasts a Very Active Hurricane Season
Kyle Davis and Xubin Zeng
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The University of Arizona (UA) forecasting team updated their April predictions and still forecast an above average year. Our updates are as follows:

	2023 June Prediction	70% Probability Range	2023 April Prediction	Median Since 1980
Hurricanes	12	10 to 14	9	7
Major Hurricanes	6	5 to 7	5	2
Named Storms	25	22 to 28	19	13
ACE	260	218 to 302	163	103

Our June total predicted tropical activity is higher in all categories than our April forecast.

March/April/May tropical sea surface temperatures are the most significant factor in our June model. Temperatures are running very warm with only 2010 registering higher May values in the tropical Atlantic where we measure.

The April/May Multivariate ENSO Index (MEI) is slightly negative. Though El Niño has recently rapidly onset, the MEI values did not get high enough by the end of May to be included in our model. We only use an ENSO factor if the May tropical Atlantic SSTs are cooler than average or the MEI was greater than 1 by April/May (with neutral/cool SSTs in the Atlantic). Through our research we found that ENSO factors less significantly into overall activity when Atlantic SSTs are warm. With such warm tropical Atlantic SSTs we believe it will be difficult for ENSO to substantially limit the season, though 2023 will be an interesting test with a potential strong El Niño combatting the very warm tropical Atlantic.

We also look at the Atlantic zonal pseudo-wind stress (PSU) in the North Atlantic. The values this year will provide a small dampening effect on total activity.

Our average errors for our hurricane outlooks since we first started issuing them in 2014 has stayed very close to what we reported in both Davis et al. 2015 and Davis and Zeng 2019. For hurricane, our average prediction error is 1.8 hurricanes. Since 2017, when we started issuing forecasts for ACE and major hurricanes, our average error has been 31.0 units and 0.5 major hurricanes. For named storms, for which we started issuing predictions in 2019, our average error has been 4.5 named storms. This number is so high because of the record-breaking 2020 season that had 30 named storms. If we excluded that year, our average error would be 1.7 named storms.

Reference: Kyle Davis, Xubin Zeng, and Elizabeth A. Ritchie, 2015: A New Statistical Model for Predicting Seasonal North Atlantic Hurricane Activity. *Wea. Forecasting*, 30, 730–741, doi: 10.1175/WAF-D-14-00156.1

Davis, K. and X. Zeng, 2019: Seasonal Prediction of North Atlantic Accumulated Cyclone Energy and Major Hurricane Activity. *Wea. Forecasting*, 34, 221–232, <https://doi.org/10.1175/WAF-D-18-0125.1>

Researcher contact: Mr. Kyle Davis (email: davis7000@gmail.com); Prof. Xubin Zeng (email: xubin@email.arizona.edu; Tel: 520-621-4782)