

**COLORADO STATE UNIVERSITY FORECAST OF ATLANTIC HURRICANE
ACTIVITY FROM AUGUST 31 – SEPTEMBER 13, 2011**

We expect that the next two weeks will be characterized by above-average amounts (greater than 130 percent) of activity relative to climatology. These new two-week forecasts have replaced the monthly forecasts that we have been issuing in recent years.

(as of 31 August 2011)

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This forecast as well as past forecasts and verifications are available online at
<http://hurricane.atmos.colostate.edu/Forecasts>

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1 Introduction

This is the third year that we have issued shorter-term forecasts of tropical cyclone activity starting in early August. We have decided to discontinue our individual monthly forecasts. These two-week forecasts are based on a combination of observational and modeling tools. The primary tools that are used for this forecast are as follows: 1) current storm activity, 2) National Hurricane Center Tropical Weather Outlooks, 3) forecast output from global models, 4) the current and projected state of the Madden-Julian Oscillation (MJO) and 5) the current seasonal forecast.

The metric that we are trying to predict with these two-week forecasts is the Accumulated Cyclone Energy (ACE) index, which is defined to be all of the named storm's maximum wind speeds (in 10^4 knots²) for each 6-hour period of its existence over the two-week period. These forecasts are too short in length to show significant skill for individual event parameters such as named storms and hurricanes. We issue forecasts for ACE using three categories as defined in Table 1.

Table 1: ACE forecast definition.

Parameter	Definition
Above-Average	Greater than 130% of Average ACE
Average	70% - 130% of Average ACE
Below-Average	Less than 70% of Average ACE

2 Forecast

We believe that the next two weeks will be characterized by activity at above-average levels (greater than 130 percent of climatology). The average ACE accrued during the period from 1950-2010 from August 31-September 13 was 28 units, and consequently, our forecast for the next two weeks is for greater than 37 ACE units to be generated.

The above-average forecast is due to several factors. One of the primary factors is that Tropical Storm Katia is predicted to intensify into a major hurricane and have a long westward track across the tropical Atlantic, which should accrue a significant amount of ACE. The National Hurricane Center is indicating that an area in the western Caribbean has a slight chance of development in the next 48 hours, but indications are that there might be development of this system in the Gulf several days in the future. Also, several global models hint at additional development in the eastern tropical Atlantic in the next 7-10 days.

The MJO amplified somewhat over the Indian Ocean over the past week and began propagating into the eastern part of the Indian Ocean over the past several days. Some models indicate that the MJO will weaken significantly, while other models

indicate that the MJO has the potential to retrograde back into Phase 2, which is typically a phase conducive for active periods in the Atlantic basin.

Figure 1 displays the tracks that tropical cyclones have taken during the period from August 31 – September 13 for the years from 1950-2008. Figure 2 displays the August 31 – September 13 forecast period with respect to climatology. The August 31 – September 13 period encompasses the climatological peak (September 10) of the hurricane season.

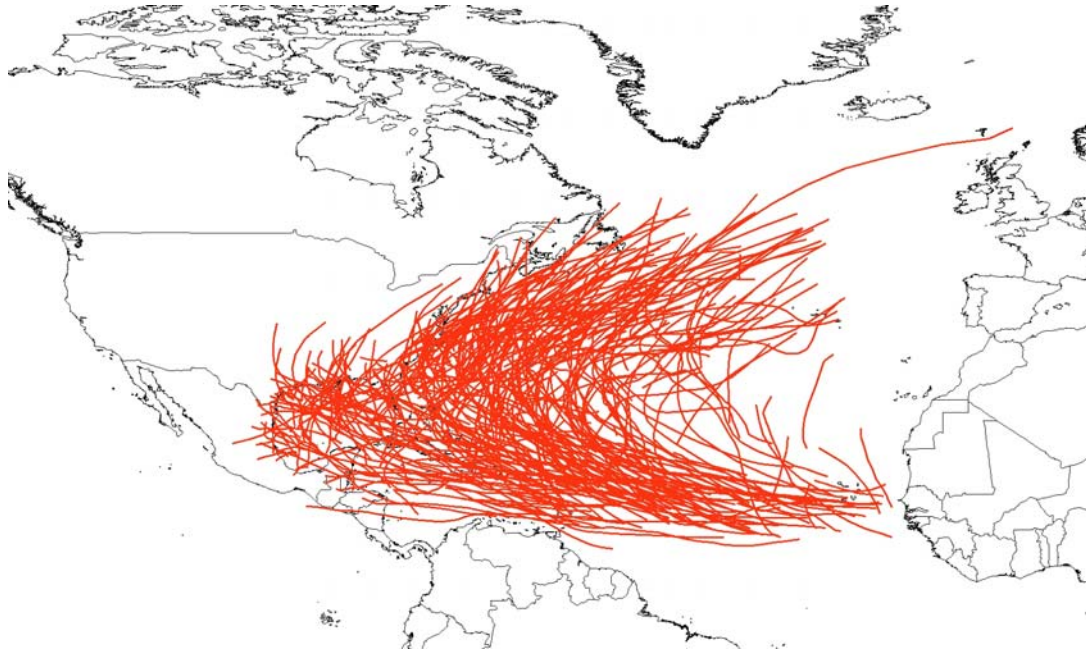


Figure 1: Tracks that named tropical cyclones have taken over the period from August 31 – September 13 for the years from 1950-2008.

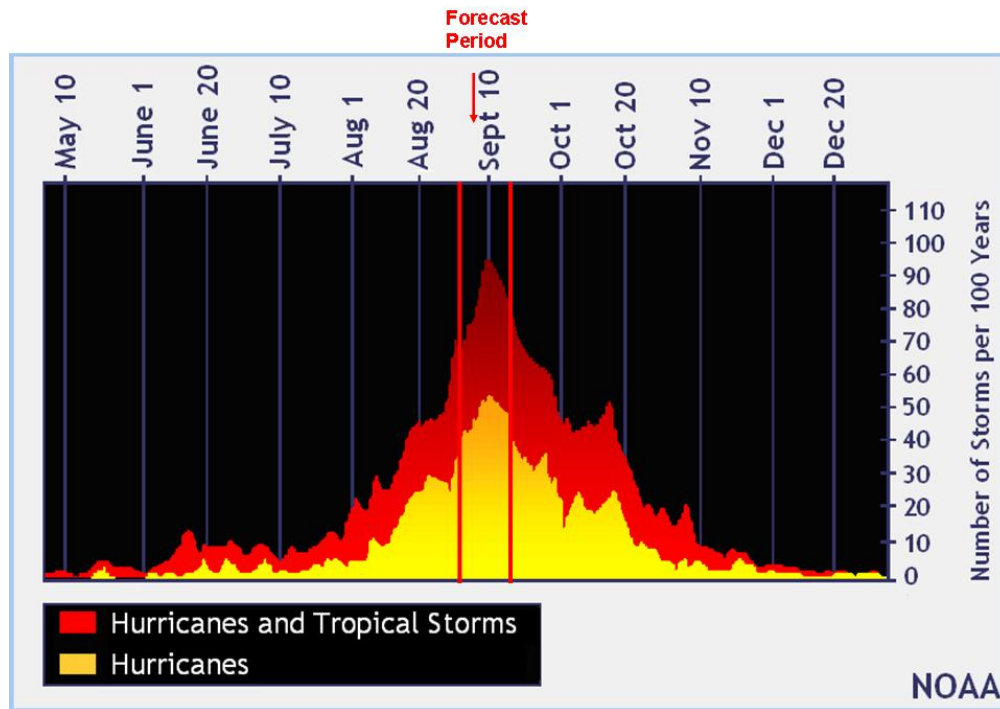


Figure 2: The current forecast period (August 31 – September 13) with respect to climatology. Figure courtesy of NOAA.

We now examine how we believe each of the five factors discussed in the introduction will impact Atlantic TC activity for the period from August 31 – September 13.

1) Current Storm Activity

Tropical Storm Katia has recently formed in the eastern tropical Atlantic and is predicted to take a long west-northwest track across the Atlantic basin. The system is forecast to intensify into a major hurricane, likely generating a considerable amount of ACE for this particular two-week timeframe.

2) National Hurricane Center Tropical Weather Outlook

The National Hurricane Center has a 10% chance of an area of disturbed weather in the Northwest Caribbean developing into a tropical cyclone in the next two days. They indicate that the area does have potential for development in the central or western Gulf of Mexico 3-5 days from now.

3) Global Model Analysis

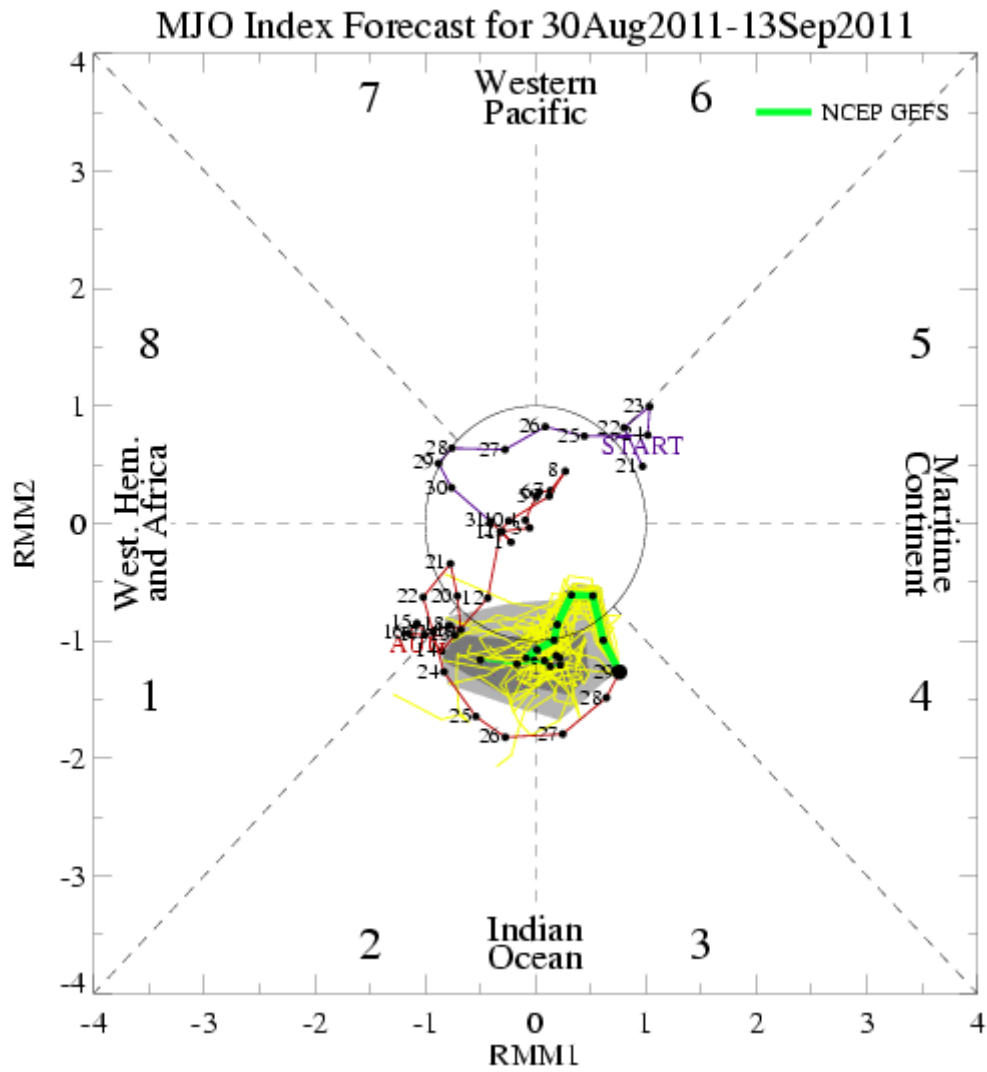


Figure 4: GFS model forecast for the MJO from August 30 through September 13.

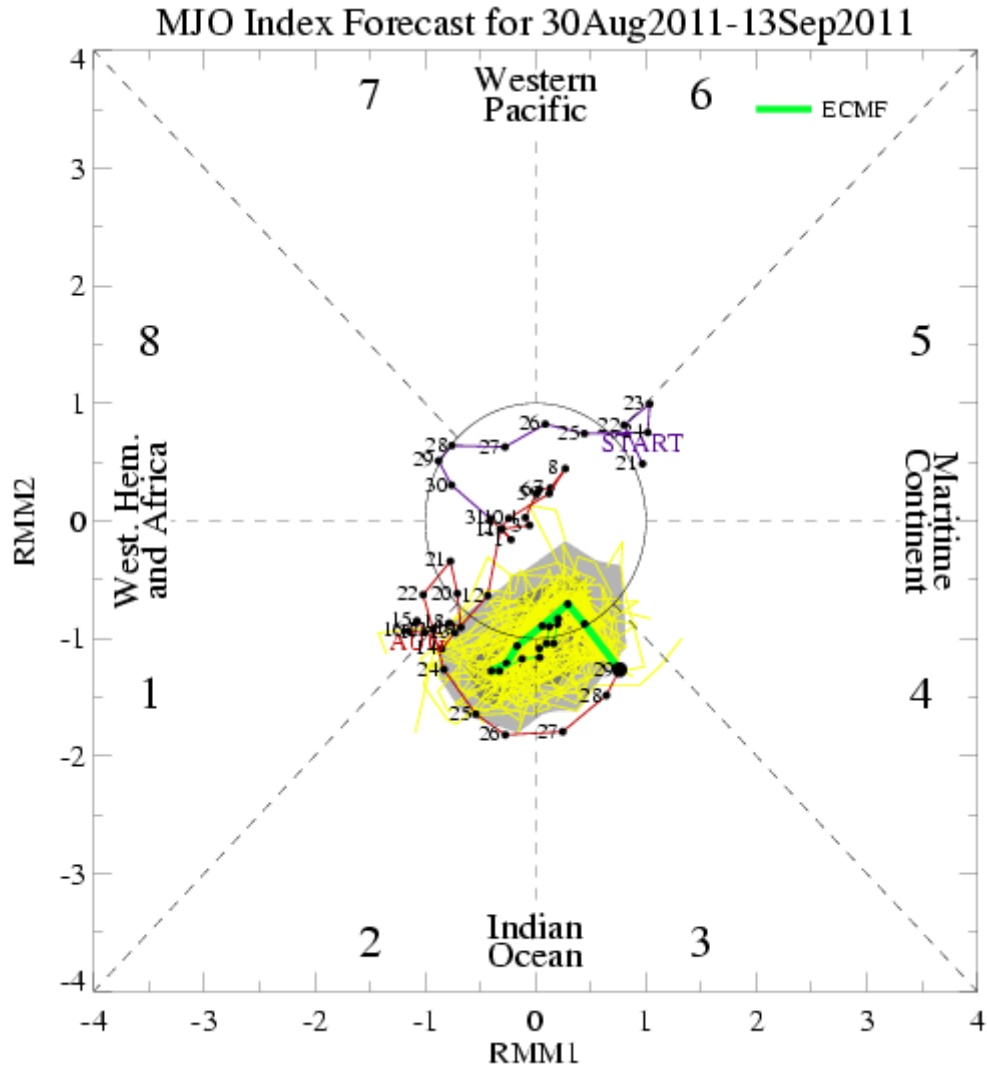


Figure 5: ECMWF model forecast for the MJO from August 30 through September 13.

Table 2: Normalized values of named storms (NS), named storm days (NSD), hurricanes (H), hurricane days (HD), major hurricanes (MH), major hurricane days (MHD) and Accumulated Cyclone Energy (ACE) generated by all tropical cyclones forming in each phase of the MJO over the period from 1974-2007. Normalized values are calculated by dividing storm activity by the number of days spent in each phase and then multiplying by 100. This basically provides the level of TC activity that would be expected for 100 days given a particular MJO phase.

MJO Phase	NS	NSD	H	HD	MH	MHD	ACE
Phase 1	6.4	35.9	3.7	17.9	1.8	5.3	76.2
Phase 2	7.5	43.0	5.0	18.4	2.1	4.6	76.7
Phase 3	6.3	30.8	3.0	14.7	1.4	2.8	56.0
Phase 4	5.1	25.5	3.5	12.3	1.0	2.8	49.4
Phase 5	5.1	22.6	2.9	9.5	1.2	2.1	40.0
Phase 6	5.3	24.4	3.2	7.8	0.8	1.1	35.7
Phase 7	3.6	18.1	1.8	7.2	1.1	2.0	33.2
Phase 8	6.2	27.0	3.3	10.4	0.9	2.6	46.8
Phase 1-2	7.0	39.4	4.3	18.1	1.9	4.9	76.5
Phase 6-7	4.5	21.5	2.5	7.5	1.0	1.5	34.6
Phase 1-2 / Phase 6-7	1.6	1.8	1.7	2.4	2.0	3.2	2.2

5) Seasonal Forecast

The most recent seasonal forecast calls for a well above-average season. We utilize the seasonal forecast as a baseline for our two-week forecasts. Since Katia looks to generate a significant amount of ACE and global models indicate that additional development in the next ten weeks is possible, we believe that an above-average two-week period for ACE generation is the most likely scenario.

3 Upcoming Forecasts

The next two-week forecast will be issued on September 14 for the September 14 – September 27 period. Additional two-week forecasts will be issued on September 28 and October 12.

