

**COLORADO STATE UNIVERSITY FORECAST OF ATLANTIC HURRICANE
ACTIVITY FROM AUGUST 18 – AUGUST 31, 2010**

We expect that the next two weeks will be characterized by heightened amounts (130 percent or more) 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 18 August 2010)

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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 second year that we have issued shorter-term forecasts of tropical cyclone (TC) 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 1950-2009 from August 4-August 17 was 14.5 units, and consequently, our forecast for the next two weeks is for 19 or more ACE units to be generated.

The above-average forecast is due to a combination of factors. The primary factor is that most of the global models are very enthusiastic about TC development over the next few days. Most of the models indicate that the wave currently moving off of the west coast of Africa will develop into a classic Cape Verde-type hurricane in the next few days. These systems typically propagate across the tropical Atlantic and generate large amounts of ACE in the process. Most of the models indicate that the system should be entering an environment favorable for storm intensification, and therefore, the likelihood of this system having a long lifespan across the basin looks good. Models also indicate that TC development in the western Caribbean as well as additional development in the tropical Atlantic also is possible over the next week or so. We do not expect the MJO to play much of a role in modulating storm activity, and since we overall have very favorable climate conditions for an active season, we believe that the next two weeks should be active.

Figure 1 displays the tracks that TCs have taken during the period from August 18 - August 31 for the years from 1950-2008. Figure 2 displays the August 18 - August 31 forecast period with respect to climatology. The August 18 - August 31 period is approaching the peak of the hurricane season.

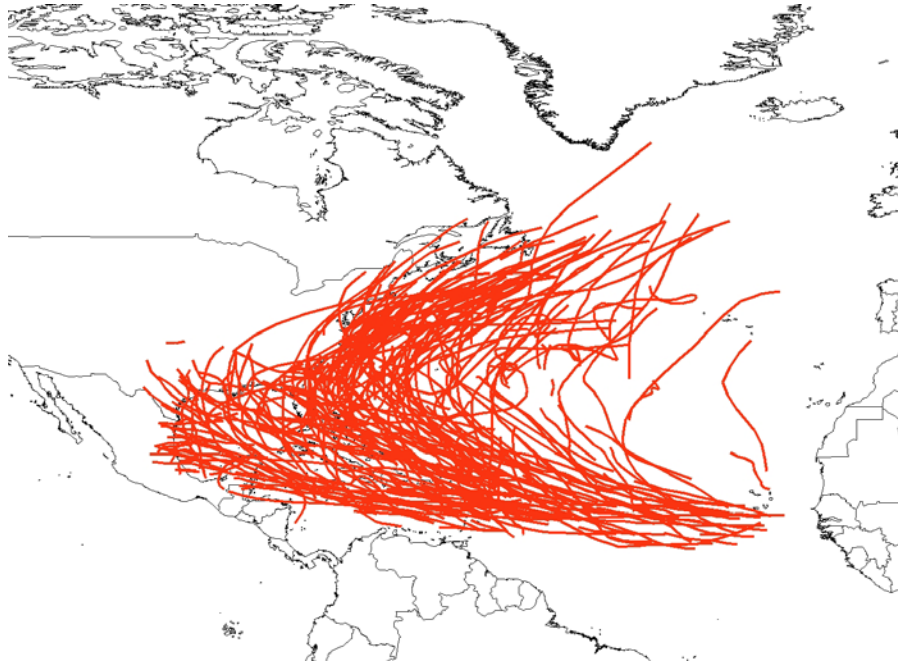


Figure 1: Tracks that named TCs have taken over the period from August 18 - August 31 for the years from 1950-2008.

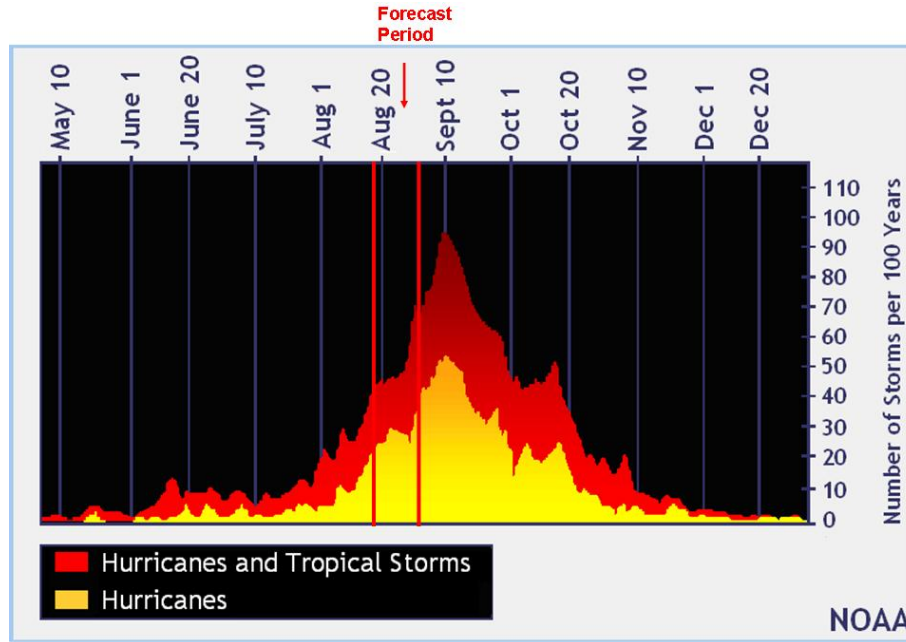


Figure 2: The current forecast period (August 18 – August 31) with respect to climatology. Figure courtesy of NOAA.

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 18 – August 31.

1) Current Storm Activity

There are currently no active TCs in the North Atlantic.

2) National Hurricane Center Tropical Weather Outlook

The latest NHC Tropical Weather Outlook does not foresee any areas with likely development potential in the next 48 hours.

3) Global Model Analysis

The global models are very enthusiastic about storm development in the next few days. The Global Forecast System (GFS) model, the European Centre for Medium Range Weather Forecasts (ECMWF) model, the Canadian model and the Navy NOGAPS model all predict the current easterly wave moving off of the coast of West Africa to develop into a classic Cape Verde hurricane. The NOGAPS is also hinting at additional development in the next several days in the tropical Atlantic as well as in the western Caribbean.

4) Madden-Julian Oscillation

The Madden-Julian Oscillation is currently very weak (Figure 3). Both the statistical models as well as the dynamical models tend to indicate that the MJO should remain weak. The ensemble Global Forecast System (GFS) is predicting that the MJO will amplify somewhat in week two, while the operational GFS is forecasting virtually no MJO signal over the next two weeks (Figure 4). The latest discussion from the Climate Prediction Center indicates that the MJO will likely be fairly weak over the next two weeks.

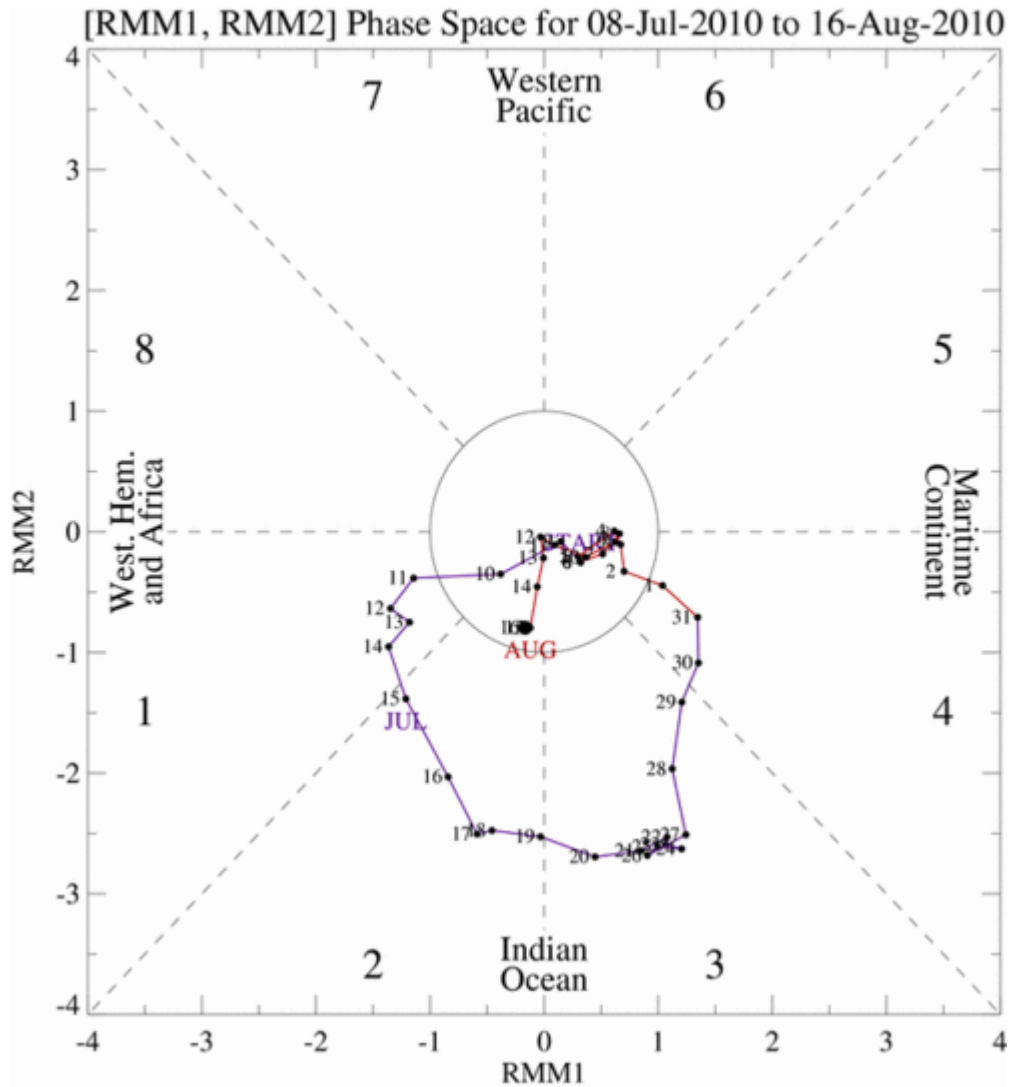


Figure 3: Estimated position of the MJO from July 8, 2010 through August 16, 2010.

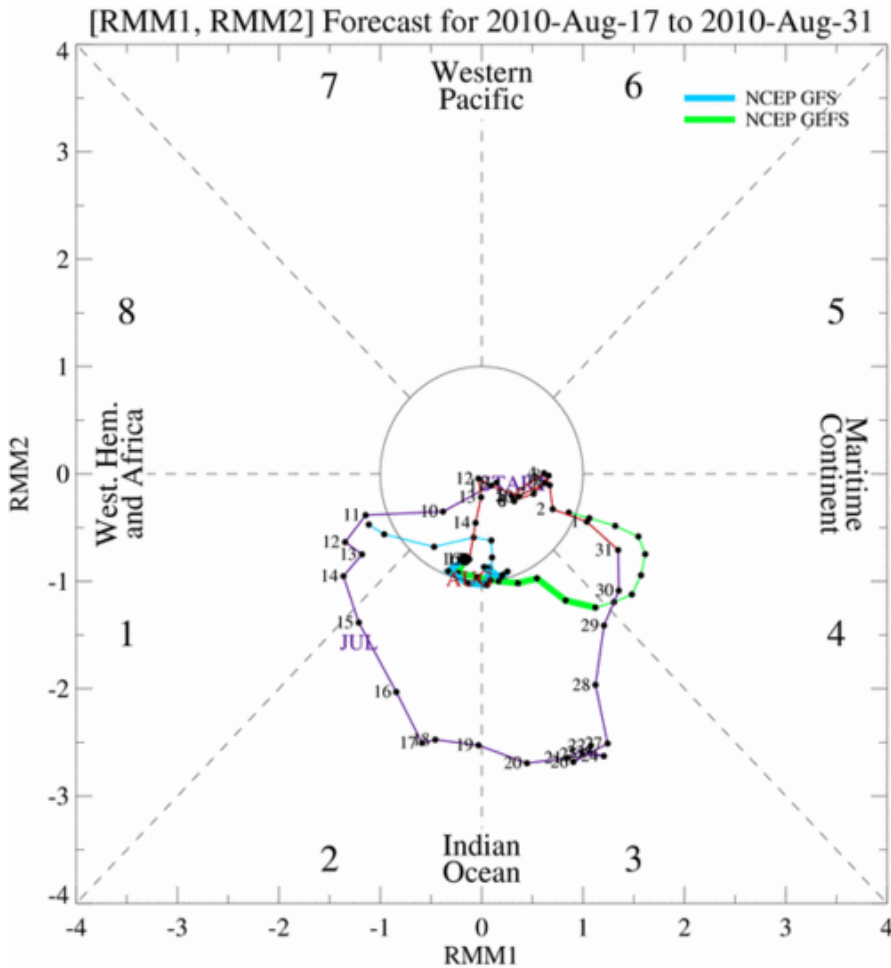


Figure 4: GFS model forecasts for the MJO from August 3 through August 17.

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 the MJO is predicted to be weak over the next two weeks, and forecast models are enthusiastic about storm development, we believe the next two weeks should be active.

3 Upcoming Forecasts

The next two-week forecast after this one will be issued on September 1 for the September 1 – September 14 period. Additional two-week forecasts will be issued on September 15, September 29 and October 13.

VERIFICATION OF AUGUST 4 – AUGUST 17, 2010 FORECAST

The two-week forecast of tropical cyclone activity from August 4 – August 17 did not verify well. Activity at above-average levels was predicted, while observed activity was at below-average levels. The primary reasons why we believe activity was reduced during the two-week period were due to dry mid levels in the atmosphere and increased vertical stability (Figures A and B). This dryness was not expected. Also, several upper-level cold lows intruded into the tropics during the period, imparting upper-level westerly shear and hindering storm formation. However, it is not unusual for the first half of August to be almost tropical cyclone-free.

The only ACE generated during the period was by the remnants of Tropical Storm Colin that regenerated on August 5 but was then torn apart by shearing from an upper-level low on August 8. Our forecast was for an above-average ACE value of 10 or more units (>130% of climatology), while a below-average ACE of 2 units (22%) occurred. The Madden-Julian Oscillation was of a fairly weak magnitude throughout the period and likely did not play much of a role in modulating TC activity (Figure C).

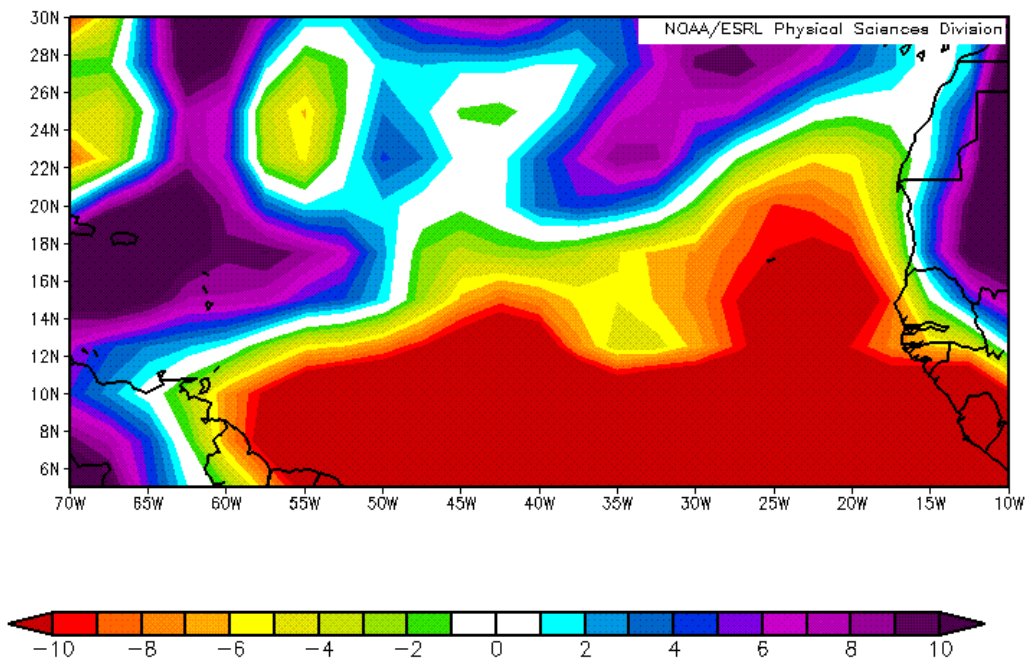


Figure A: 500-mb relative humidity anomalies in the tropical Atlantic from August 4 – August 16. Note that anomalies were generally below-average for most of the Main Development Region (10-20°N, 20-70°W).

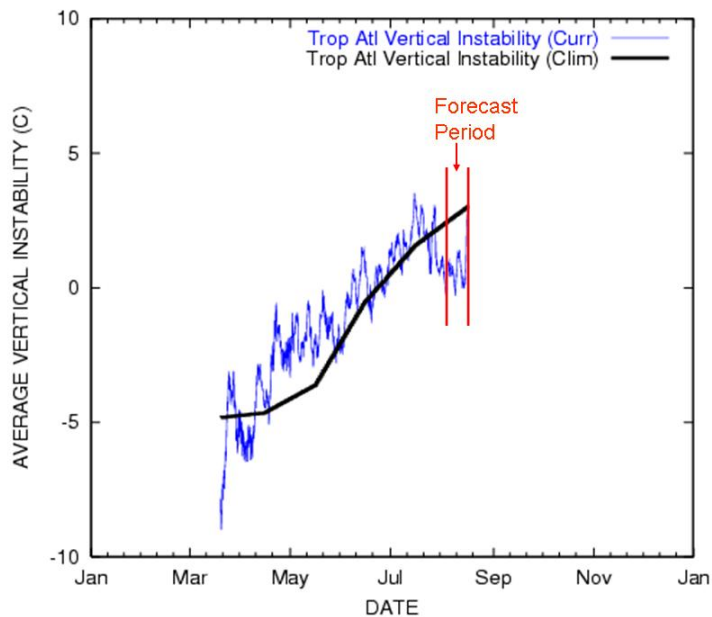


Figure B: Vertical instability over the tropical Atlantic. Note the sudden drop in vertical instability from above-average May-July conditions to below-average conditions during the past two weeks, indicating subsidence and a stable atmosphere. These conditions are not conducive for tropical cyclone formation. Figure courtesy of the Cooperative Institute for Research in the Atmosphere (CIRA).

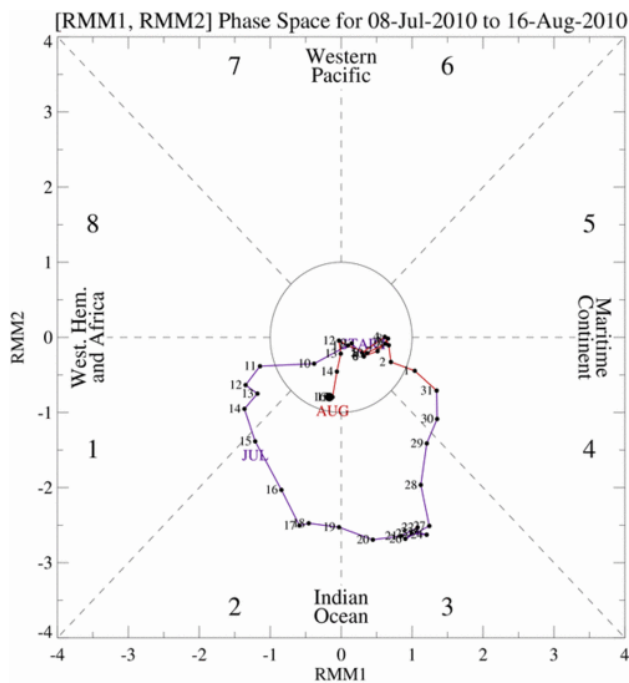


Figure C: Propagation of the MJO over the period from July 8 – August 16. Note that the MJO was generally in the inner-circle during the past two weeks, indicating that the MJO was of a weak magnitude during the period.