OCTOBER-NOVEMBER FORECAST FOR CARIBBEAN BASIN HURRICANE ACTIVITY

We expect that October-November will have approximately average hurricane activity in the Caribbean basin. This forecast is due to contrasting signals from the two predictors utilized. Warm neutral ENSO conditions are currently occurring in the tropical Pacific (a somewhat detrimental factor), while Caribbean basin sea surface temperatures are relatively warm (a somewhat enhancing factor).

(as of 1 October 2012)

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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 a forecast for October-November Caribbean basin (10-20°N, 88-60°W) tropical cyclone (TC) activity. We have decided to issue this forecast, because Klotzbach (2011) has demonstrated that skill can be achieved in predicting late-season Caribbean basin activity using a simple two-predictor model. This particular forecast does not predict specific storm formation metrics such as named storms and hurricanes, but instead predicts both hurricane days and Accumulated Cyclone Energy (ACE). Typically, while activity in the Main Development Region (MDR) ends by early October, activity in the Caribbean can remain quite active into November. One of the predictors is closely related to ENSO, while the other predictor is closely related to the size of the Atlantic Warm Pool (AWP), which is defined to be the area of SST warmer than 28.5°C in the tropical Atlantic and Caribbean.

2 Forecast

This late-season Caribbean basin forecast model was developed over the period from 1982-2010 and then tested on independent data from 1900-1981 to entail that the predictors remained skillful on earlier-period data. Figure 1 displays the predictors selected for the forecast. More Caribbean activity typically occurs when predictor 1 is colder than normal, and predictor 2 is warmer than normal.

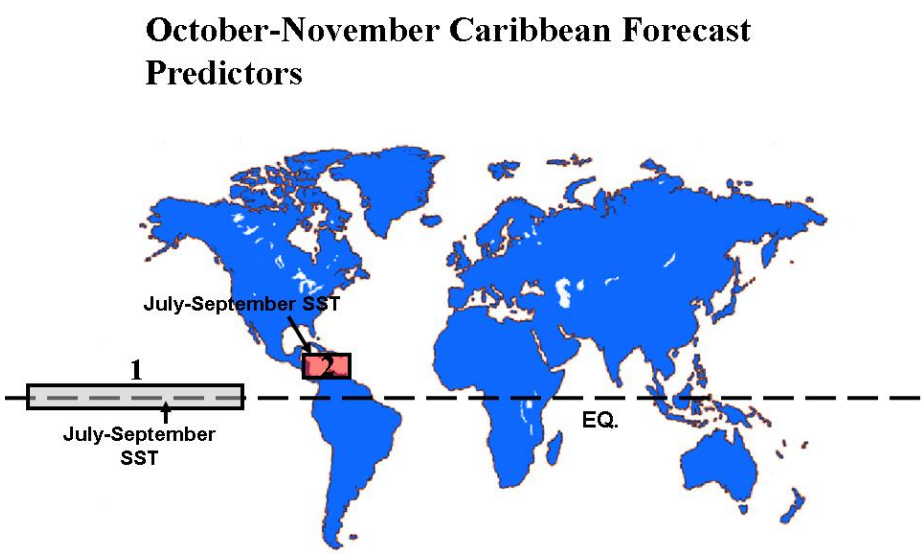

Figure 1: Predictors selected for forecasting October-November Caribbean basin hurricane activity.

Predictor 1 is calling for a somewhat below-average October-November, while Predictor 2 calls for above-average TC activity. Table 1 displays the locations of the two predictors along with their standardized values for the 2012 forecast. Figure 2 displays the hindcast skill of the forecast model over the period from 1982-2011.

Table 1: Listing of predictors for the October-November Caribbean basin hurricane forecast.

Predictor	2012 Forecast Value	Expected Impact on TC Activity
1) July-September SST (5°S-5°N, 170-120°W)	+0.6 SD	Suppress
2) July-September SST (10-20°N, 85-50°W)	+0.6 SD	**Enhance**

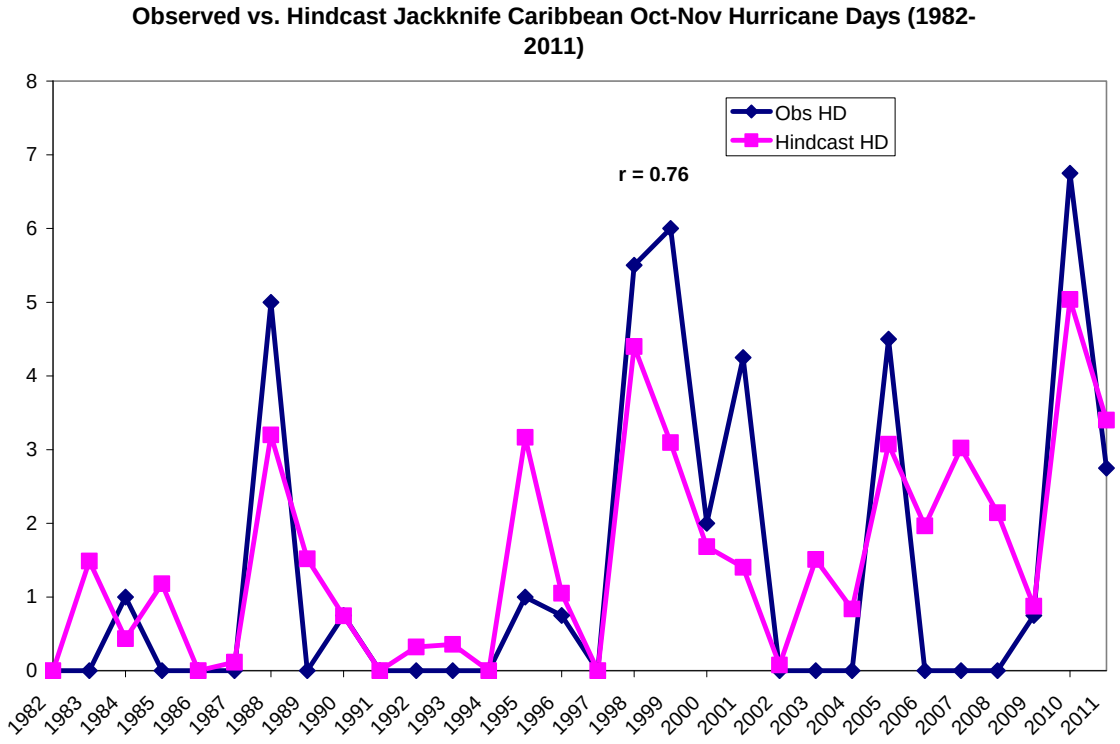

Figure 2: Observed versus October-November jackknifed hindcast values of hurricane days for 1982-2011. The hindcast model explains 58% of the variance from climatology.

Full details of the forecast development and model are available in Klotzbach (2011). In general, La Niña conditions are associated with reduced vertical wind shear across the Caribbean (more favorable dynamic conditions), while a warmer Caribbean is associated with a larger AWP (more favorable thermodynamic conditions). Table 2 displays the forecast for hurricane days and ACE.

Table 2: October-November forecast for Caribbean Basin tropical cyclone activity

Forecast Parameter and 1981-2010 Climatology (in parentheses)	Forecast Issued on October 1
Hurricane Days (1.25)	1.25
Accumulated Cyclone Energy Index (6.3)	6

Reference

Klotzbach, P. J., 2011: Forecasting October-November Caribbean hurricane days. *J. Geophys. Res.*, **116**, D18117, doi:10.1029/2011JD016146.