

TRI-AGENCY FORECAST DISCUSSION FOR JULY 24, 2010

Tropical Areas of Interest Discussion: Created 1800 UTC July 24, 2010

David Zelinsky and Cerese English

Summary: Tropical Storm Bonnie was downgraded to a Tropical Depression at 2100UTC yesterday while over the western Florida peninsula. While TD Bonnie has since emerged into the Gulf, no re-intensification has occurred, and the National Hurricane Center has discontinued all tropical storm warnings for the Gulf coast. The depression is expected to move inland around 0600 UTC overnight. The upper level cold low in the Gulf of Mexico has continued to move westward and is now located just off the Texas coast. Elsewhere in the tropics, upper level diffluence in two areas, each south of an upper level low- the Gulf of Mexico low, and a second low located just NE of Cuba- is supporting continued convection in both areas. At 1200 UTC, the National Hurricane Center had a low probability of development associated with the Caribbean convection, but this has since been discontinued. A tropical wave, formerly PGI-18L, is located over the Leeward and Windward Islands, while PGI-19L associated with a second tropical wave continues to slowly progress westward through the central Atlantic. The Newfoundland low has moved eastward, bringing an associated front with it. The rest of the central and north Atlantic continues to be dominated by a pair of High pressure centers, with the one closest to the US moving back on a westward heading. The outlook for development in the tri-agency domain in the next 24-48 hours is very low.

Forecast:

The primary features of interest within the IFEX/PREDICT/GRIP domain are TD Bonnie, the convection south of Cuba and Hispaniola, convection over the Bay of Campeche, and a tropical wave over the Leeward and Windward Islands (ex-PGI-18L), *see 1*. PGI-19L is also of interest (*see 2*), though it is currently located outside of the domain, and there has also been interest in seeing what will happen when the next wave emerges from Africa, as some models are forecasting genesis within 5 days. This area of the world is not modeled well, and much remains to be seen about that system as it transitions over the East Atlantic. Elsewhere, the cold low east of Newfoundland and accompanying front continue to propagate westward. While the low and accompanying front are not expected to impact any systems of interest in the near future, they continue to represent a break in the large scale North Atlantic flow. While the focus remains on Bonnie today, it will shift to other features tomorrow as Bonnie moves inland.

At 1500UTC, Tropical Depression Bonnie was located at 86.7W, 28N (*see 3*). As has been the case throughout Bonnie's life, it is largely under the influence of an upper level cold low, now located off the Texas coast that can be seen well in water vapor imagery (*see 4*). For the last few days, Bonnie has been located in an area of moderate shear. However, shear has increased today, in part due to the combined influences of the upper level low and an upper level ridge over the eastern US (*see 5*). The effect on Bonnie is evident in visible satellite imagery (*see 6*). Several factors over the last 24 hours have contributed to Bonnie's lack of re-intensification over the Gulf of Mexico. These include the large region of high shear it has encountered, its weakened state yesterday as it moved back out over water, dry air on both sides of the system limiting its moisture supply (*see 4*), and its quick movement over water with relatively low ocean heat content. While a burst of convection occurred near the center at 0400UTC today, it was ripped apart by shear this morning, and the exposed center is now almost entirely devoid of any

deep convection (*see 6*). Convection is still occurring in bands to the northwest of the center of circulation, and total precipitable water remains high in Bonnie's immediate vicinity (*see 7*), however water vapor imagery shows that Bonnie is becoming separated from the moisture in the Caribbean (*see 4*). Weak upper level divergence and lower level convergence associated with the convection to the northwest of the center of circulation are present in CIMSS analysis, however lower level vorticity has decreased in magnitude since yesterday, and vorticity is not well stacked in the 850-500 hPa layer (*see 8*). The 1200 UTC model guidance is in very good agreement that no further development of Bonnie will occur. Even the statistical-dynamical models which had previously favored development throughout the life of the storm no longer predict any intensification (*see 9*). Therefore, the current intensity of 30 kts is expected to persist until it makes landfall later today near the Louisiana, Mississippi border (*see 10*).

Elsewhere, the global models do not favor the development of any other systems within the next 48 hours. The area of convection in the south Caribbean has been associated with a surface trough over Cuba and increasing low level vorticity (*see 8*), however the convection remains very unorganized, and most is displaced to the south of the surface trough and vorticity center. The ECMWF maintains the convection in the southern Caribbean for a day or two before dissipating it. While this area warrants continued monitoring, substantial development within the next 48 hours is unlikely. The Saharan Air Layer (*see 11*) strength over most of the basin is strong at present, and a lot of this dry air is indicated to be suppressing convection for the tropical wave over the Leeward Islands, and there is also dust ahead of and behind the tropical wave associated with PGI-19L. As these two waves progress westward it will be interesting to see if the SAL more interaction with either of these systems.

The global models are not predicting any genesis to occur throughout the entire basin during the next 24 hours (*see <http://moe.met.fsu.edu/tcgenqifs>*). The GFS does marginally develop an area of high 950mb vorticity in the Bay of Campeche, however it is limited spatially- slightly smaller than Bonnie's vorticity signature- and immediately moves inland. The global models also do not suggest any development will occur with ex-PGI-18L. Similarly, pouch tracking does not favor the immediate development of PGI-19L. No development of any other systems is expected within the next 48 hours. Looking farther ahead, a tropical wave is expected to emerge from Africa within the next couple days, which may eventually bear the title PGI-20L. The GFS maintains this wave as it crosses the Atlantic, and it has already caught the attention a few other models, however it will not approach the tri-agency domain until for another 5 or more days.

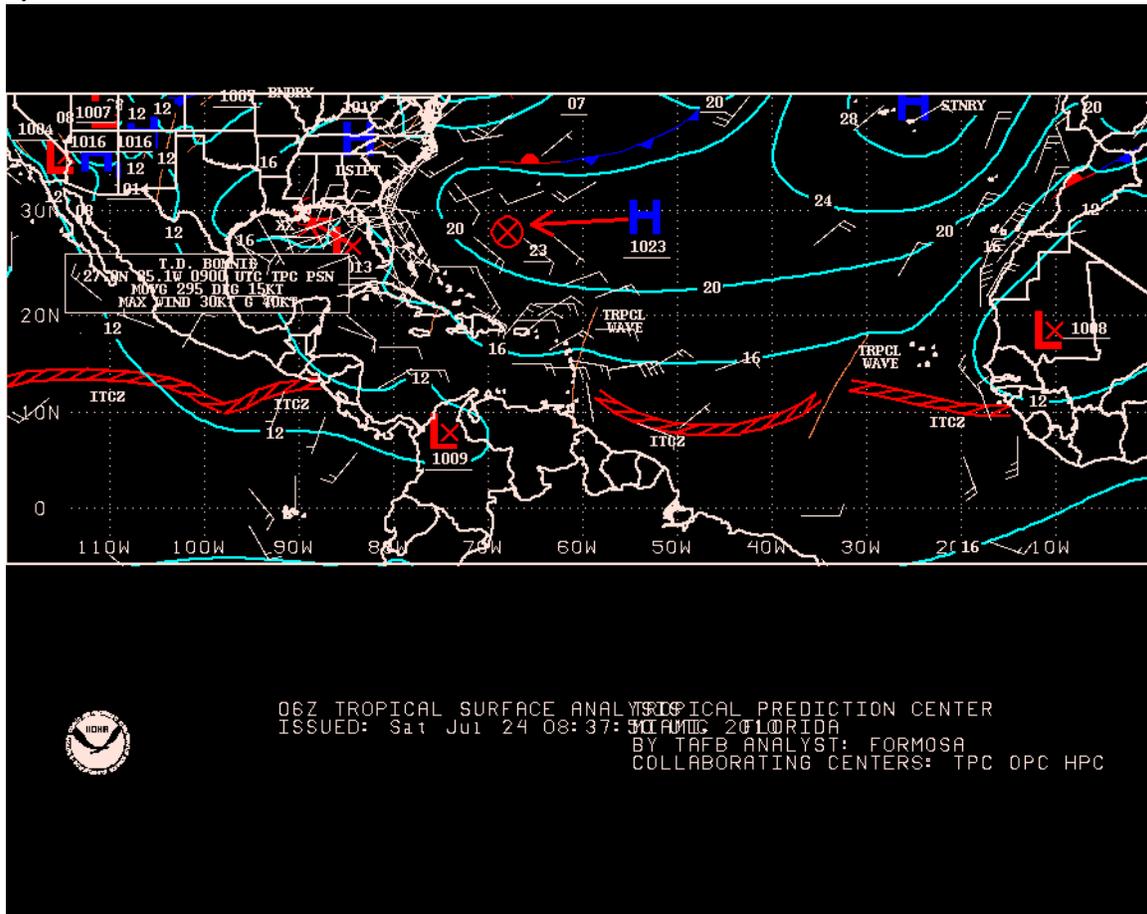
Links:

- 1) http://www.nhc.noaa.gov/tafb/ATSA_06Z.gif
- 2) <http://www.met.nps.edu/~mtmontgo/satanalat2010/TPW-2010072400.gif>
- 3) <http://www.nhc.noaa.gov/index.shtml>
- 4) <http://www.ssd.noaa.gov/goes/east/tatl/flash-wv.html>
- 5 & 8) [http://cimss.ssec.wisc.edu/tropic2/real-time/windmain.php?&basin=atlantic&sat=wg8\[\]=shr&zoom=&time=](http://cimss.ssec.wisc.edu/tropic2/real-time/windmain.php?&basin=atlantic&sat=wg8[]=shr&zoom=&time=)
- 6) <http://www.ssd.noaa.gov/goes/flt/t1/flash-vis.html>
- 7) <http://grip.jpl.nasa.gov/sgrip/>
- 9 & 10) <http://euler.atmos.colostate.edu/~vigh/guidance/>

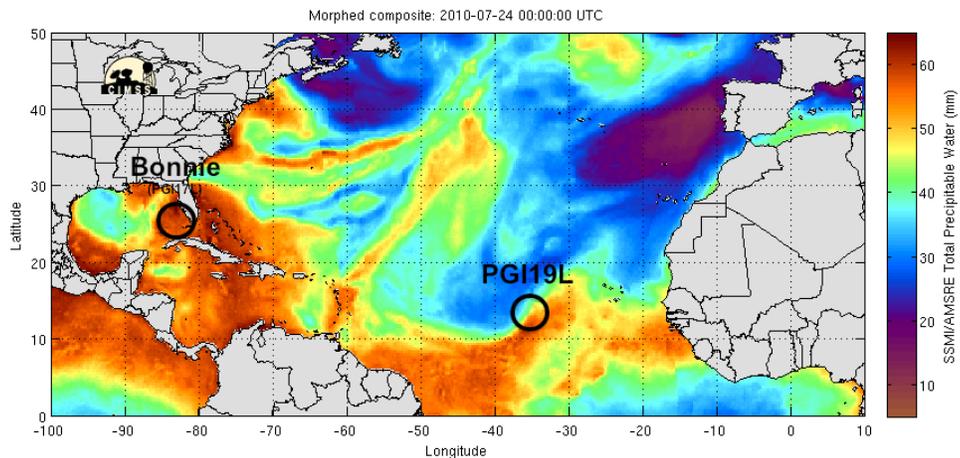
11) [http://cimss.ssec.wisc.edu/tropic2/real-time/salmain.php?\[\]=splitEW&time=](http://cimss.ssec.wisc.edu/tropic2/real-time/salmain.php?[]=splitEW&time=)

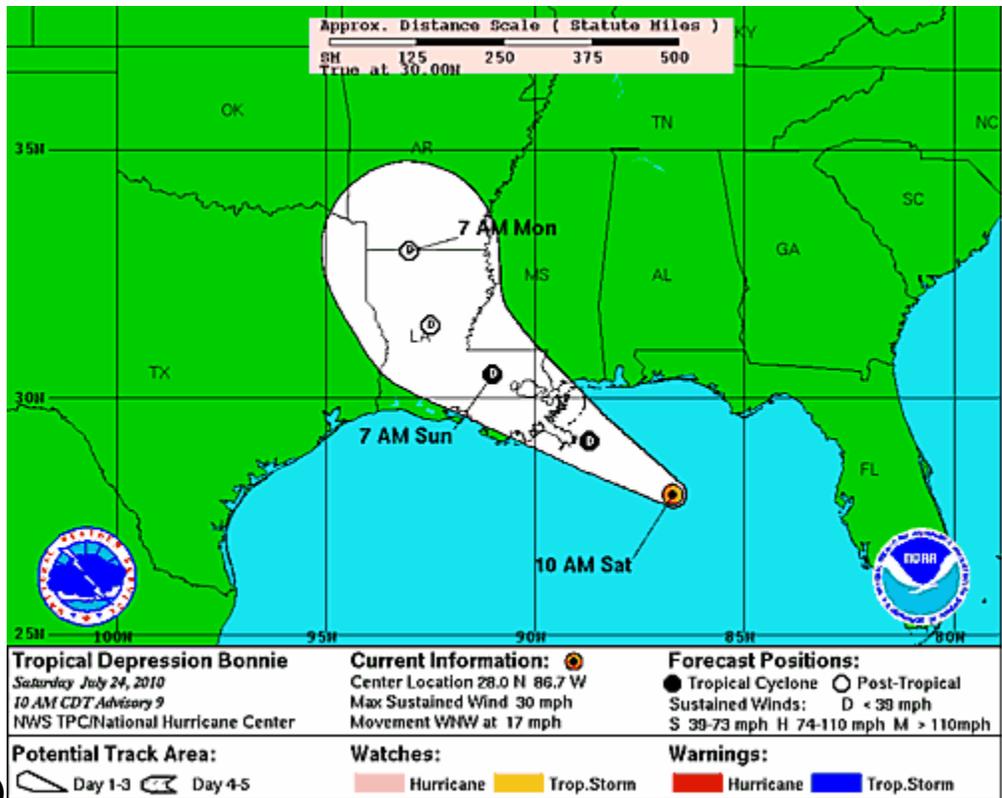
Static Images:

1)

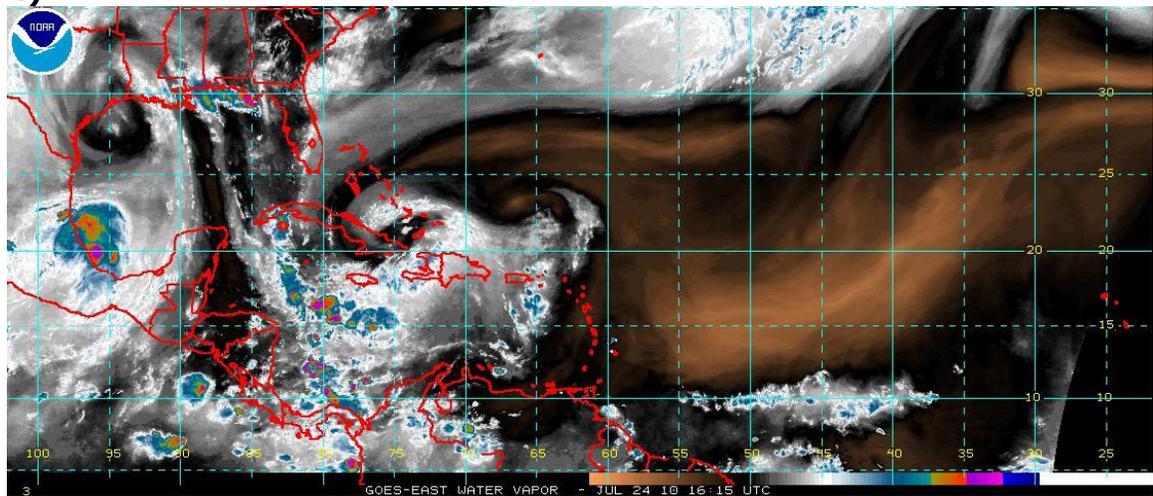


2)

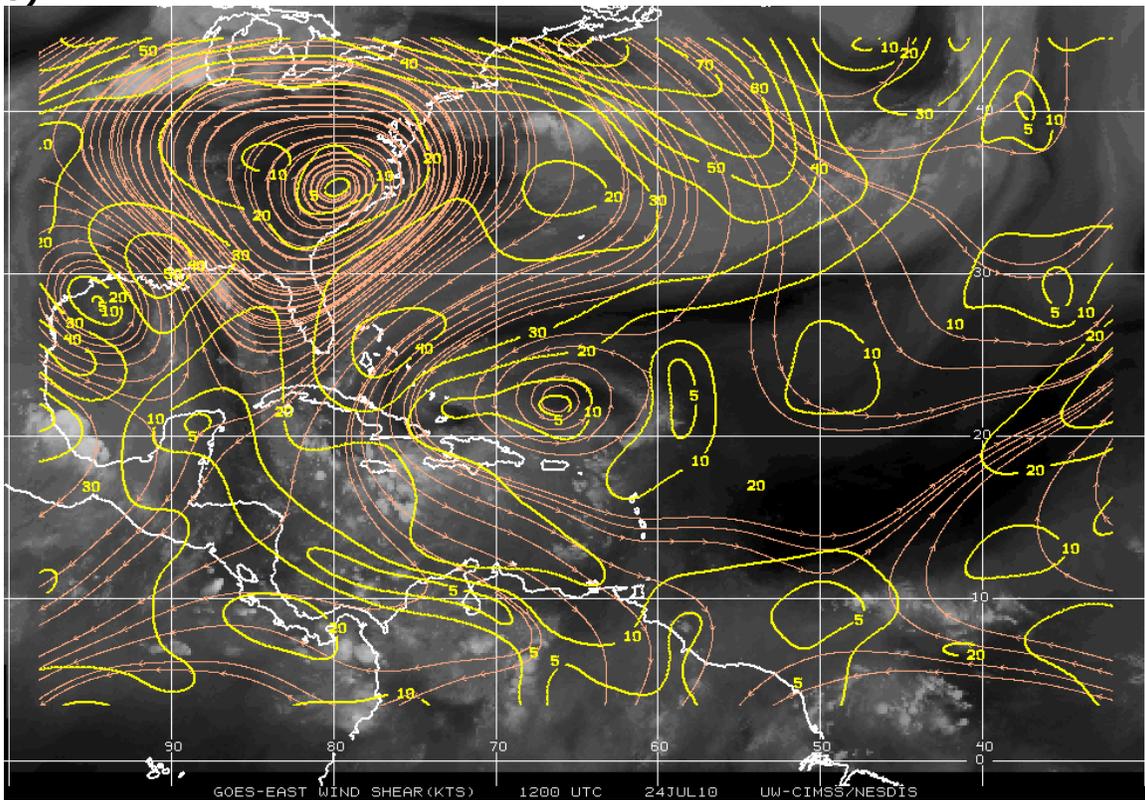




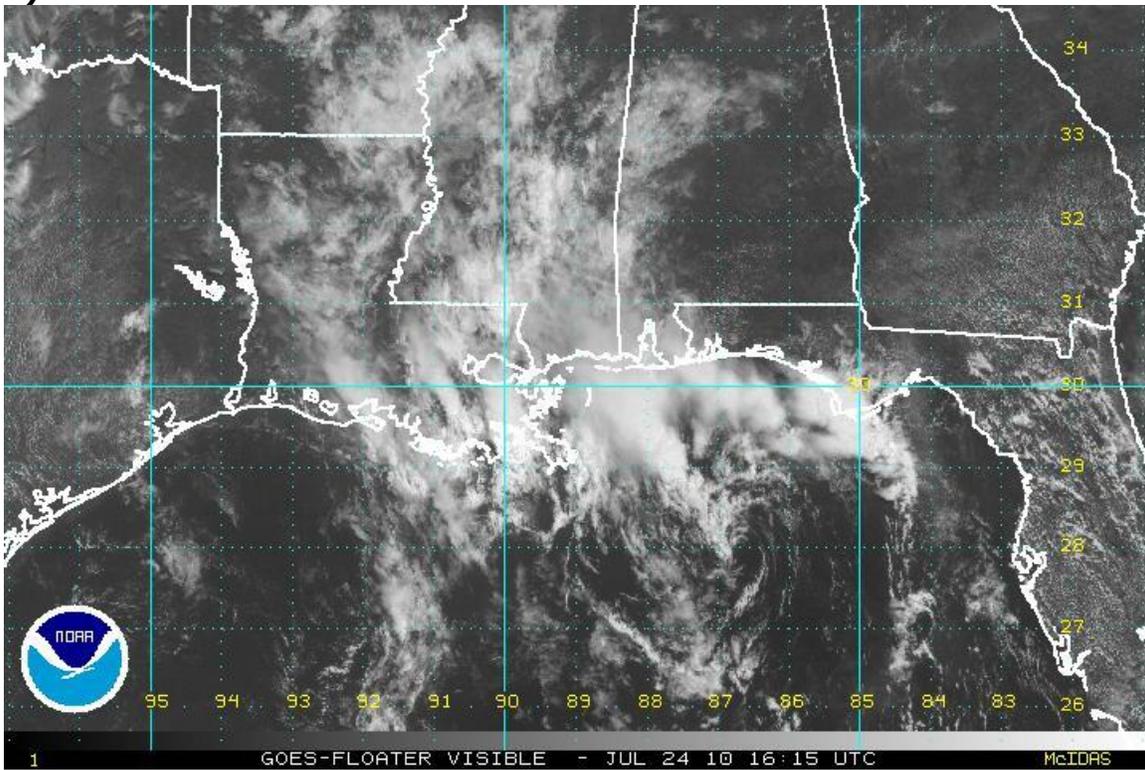
3)
4)



5)

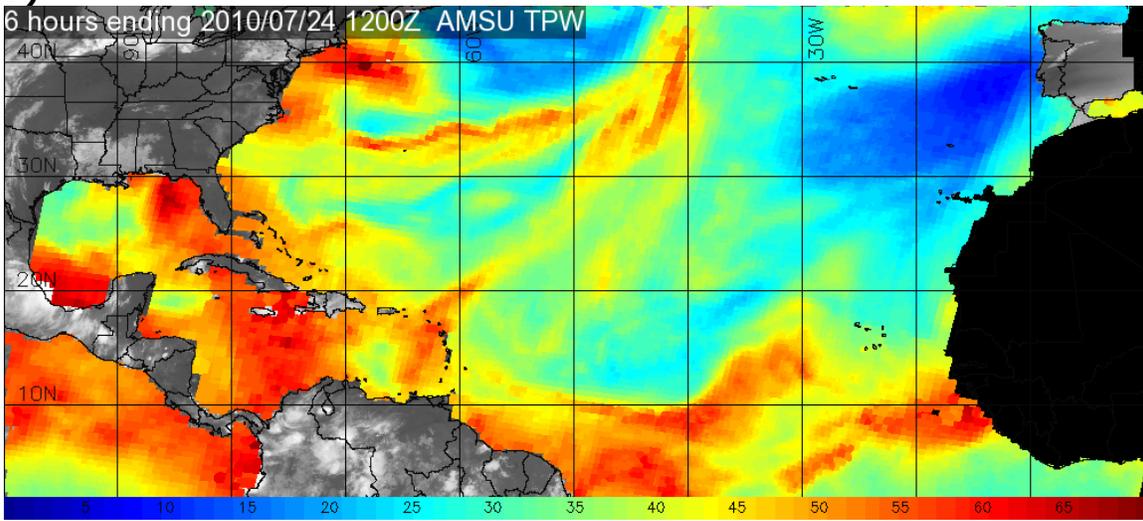


6)

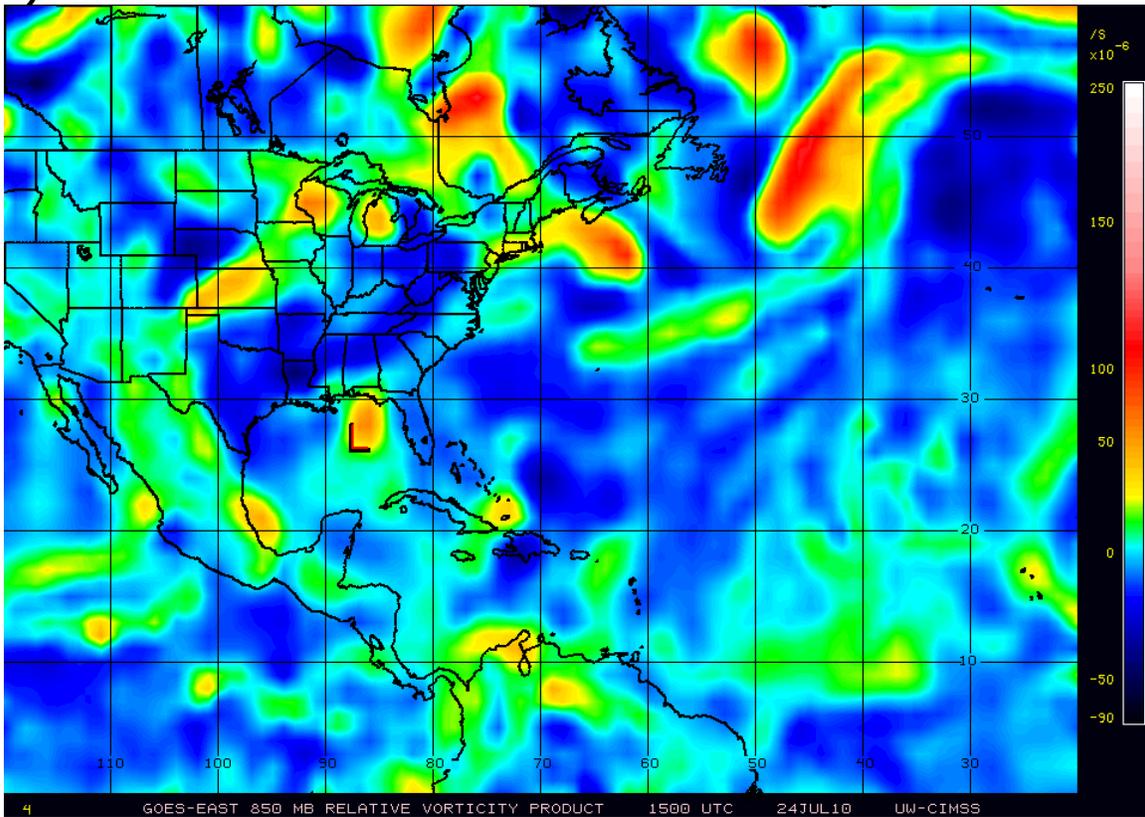


7)

6 hours ending 2010/07/24 1200Z AMSU TPW



8)

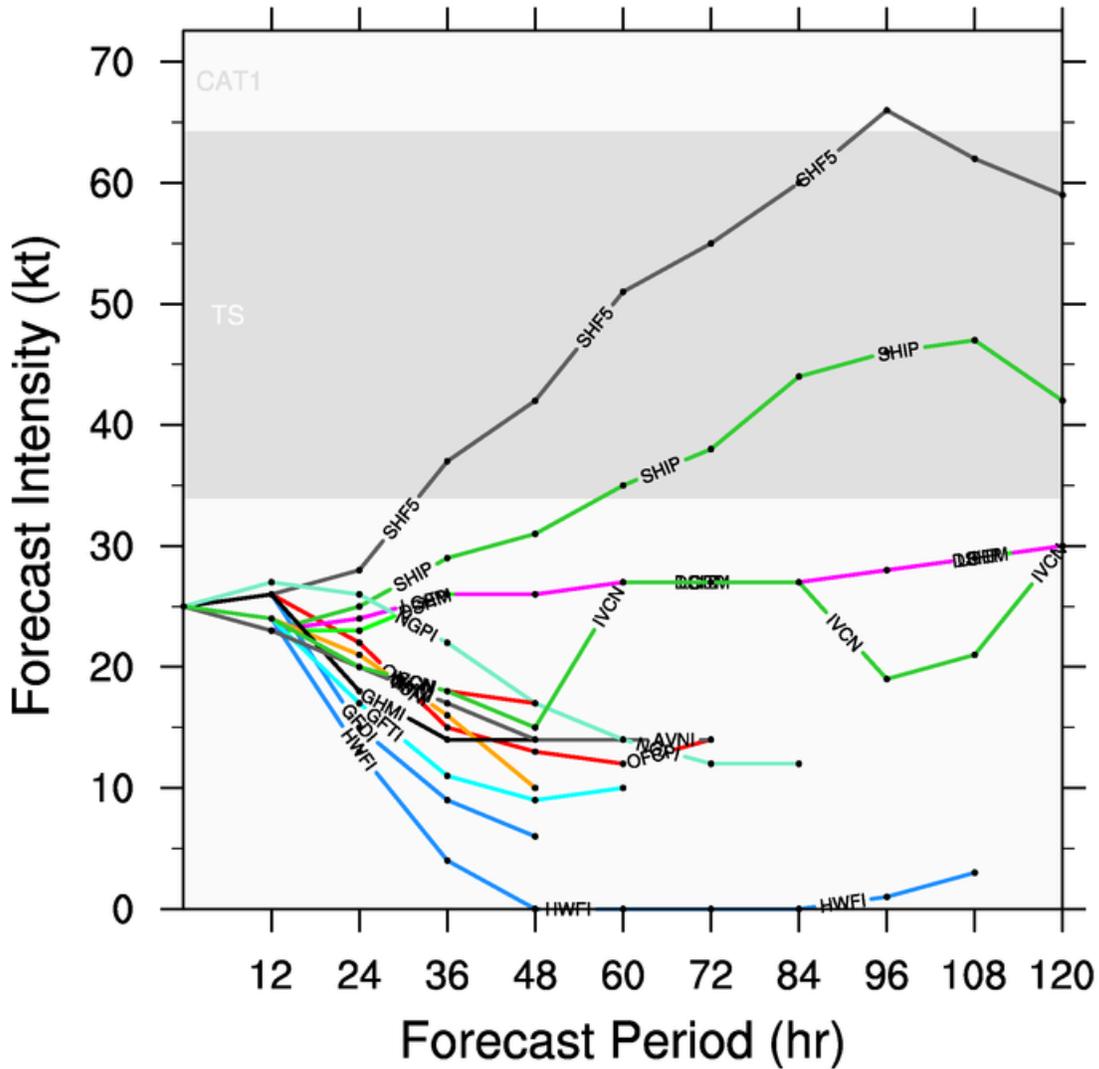


9)

TROPICAL DEPRESSION BONNIE (AL03)

Early-cycle intensity guidance

valid 1200 UTC, 24 July 2010

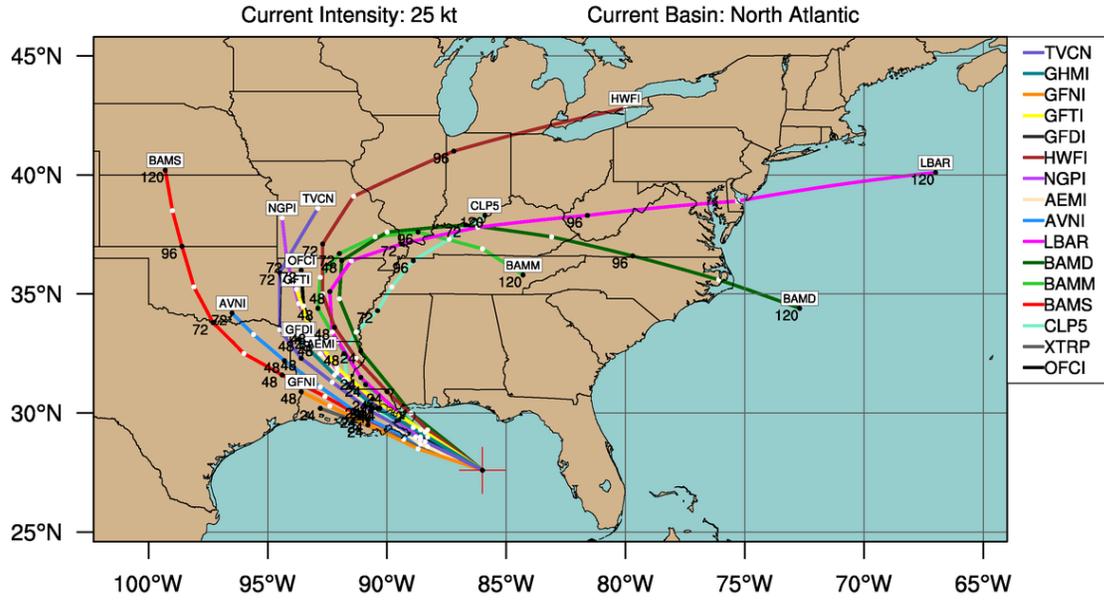


This plot does not display official storm information. Use for information purposes only.
DO NOT USE FOR LIFE AND DEATH DECISIONS!

10)

TROPICAL DEPRESSION BONNIE (AL03)

Early-cycle track guidance valid 1200 UTC, 24 July 2010



This plot does not display official storm information. Use for information purposes only.
DO NOT USE FOR LIFE AND DEATH DECISIONS!

11)

