

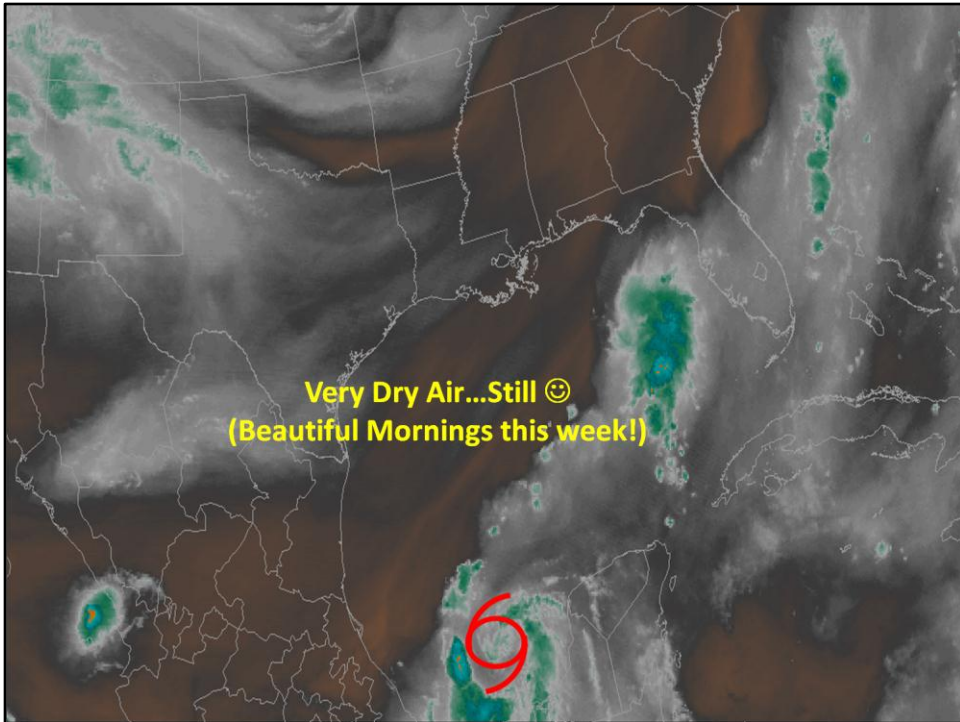
# Bubbye, Nate: Texas Needed Your Rain

September 9<sup>th</sup>, 2 PM Quick Update

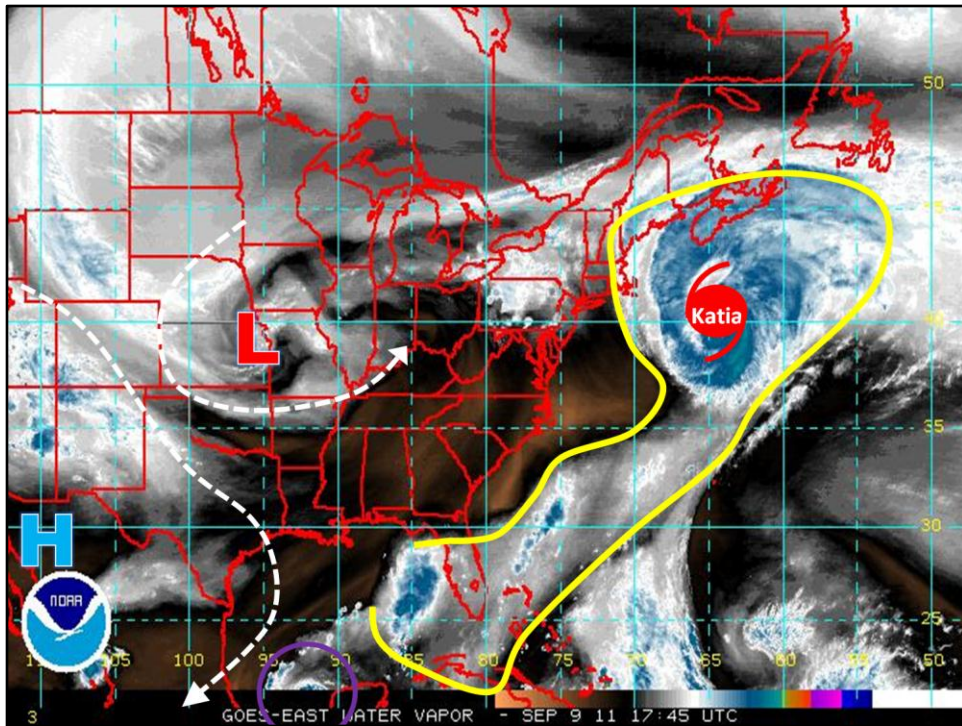


## Tale of the Tape

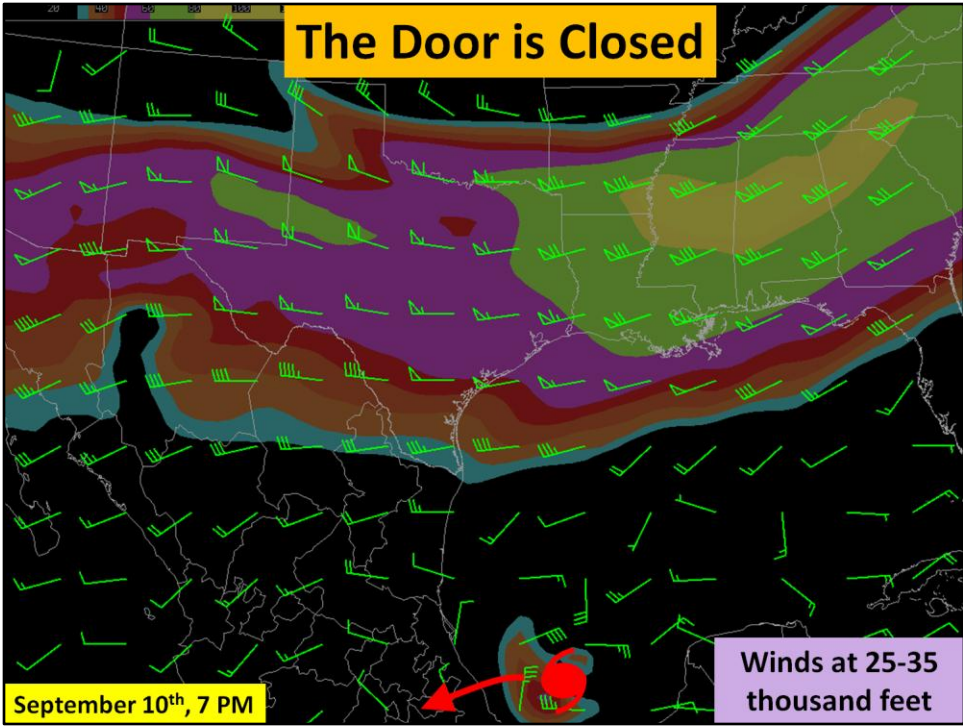
- At 2 PM September 9<sup>th</sup>:
  - Center Located 220 miles east northeast of Veracruz
  - Weakening as dry air continues to intrude into system. Speeds now down to 50 mph. 39 mph winds only extend out 100 miles from the center – a small cyclone.
  - Now drifting to the west
  - Has completely separated from surface low pressure trough that it formed at the bottom of
  - Hostile environment is taking a toll but some strengthening is forecast as it moves west
  - Now **only one** likely movement outcome (see next slides)

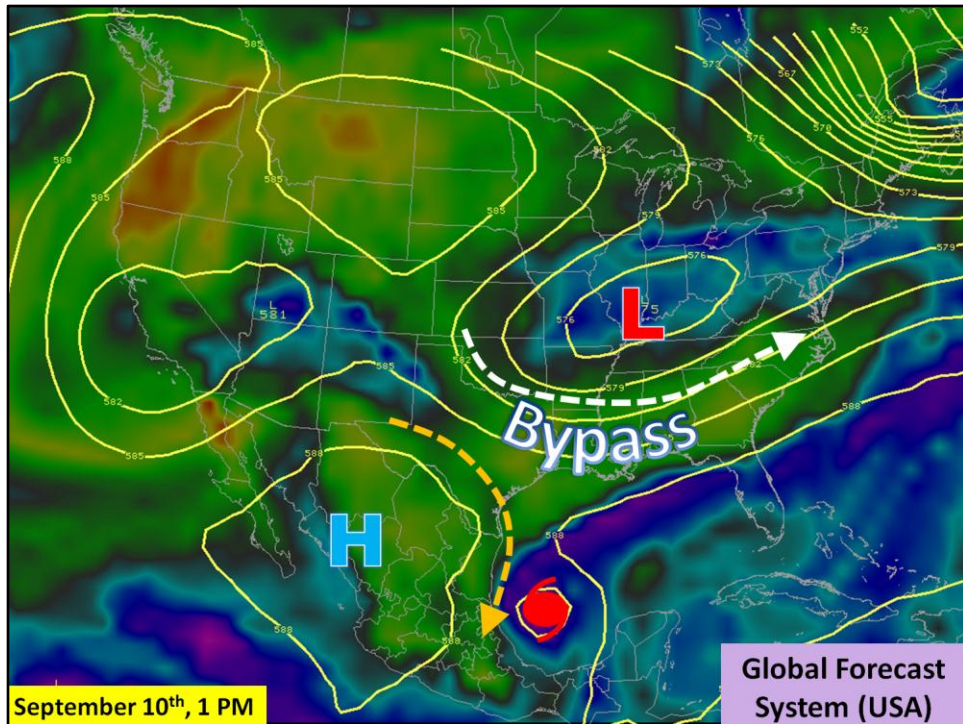


Nate is fighting off the dry air this afternoon but not doing a great job. Note the striations around the center, which is devoid of cold cloud tops.

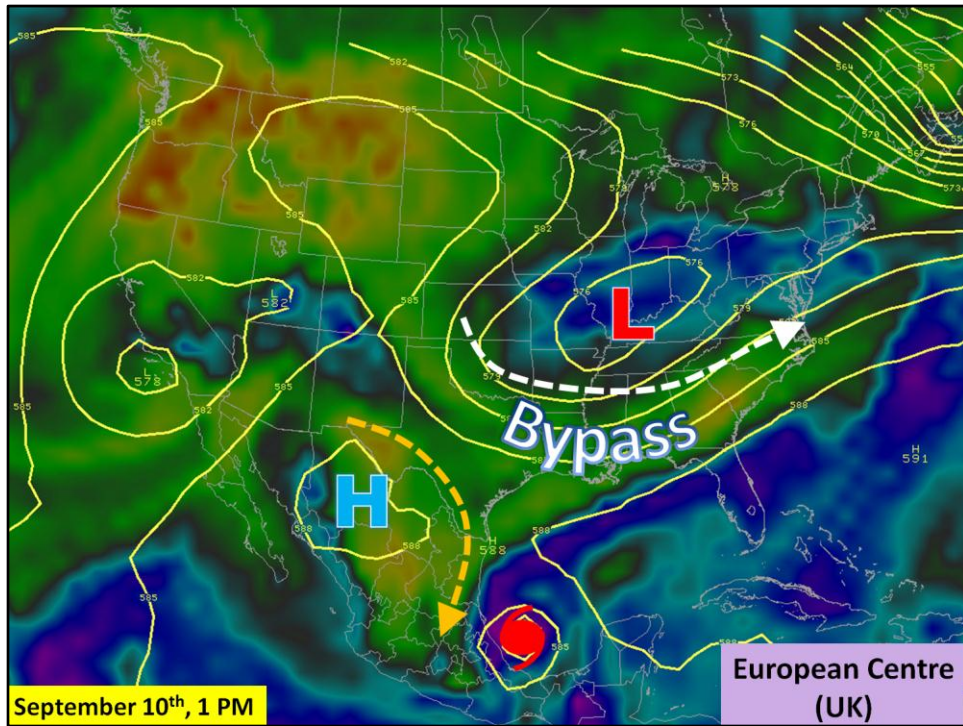


The midwestern low pressure system has separated from the tropical plume (yellow) and migrated west, separating from the source. Nate (purple) has separated as well, and is now being “pushed” west/west southwestward by the persistent Canicula ridge.

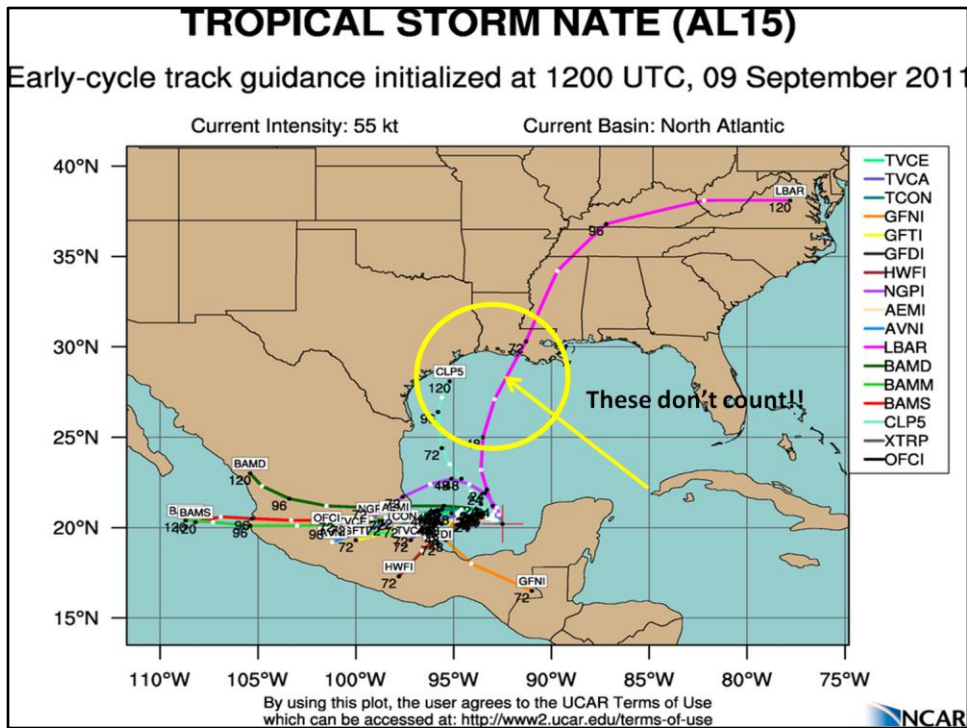




The Global Forecast System, which on Thursday was still taking Nate to the north as the midwestern United States trough of low pressure (Red L) “picked up” the cyclone, shifted to the more logical west/southwest movement under the influence of the northern Mexico High (blue H), shown by the orange arrow.

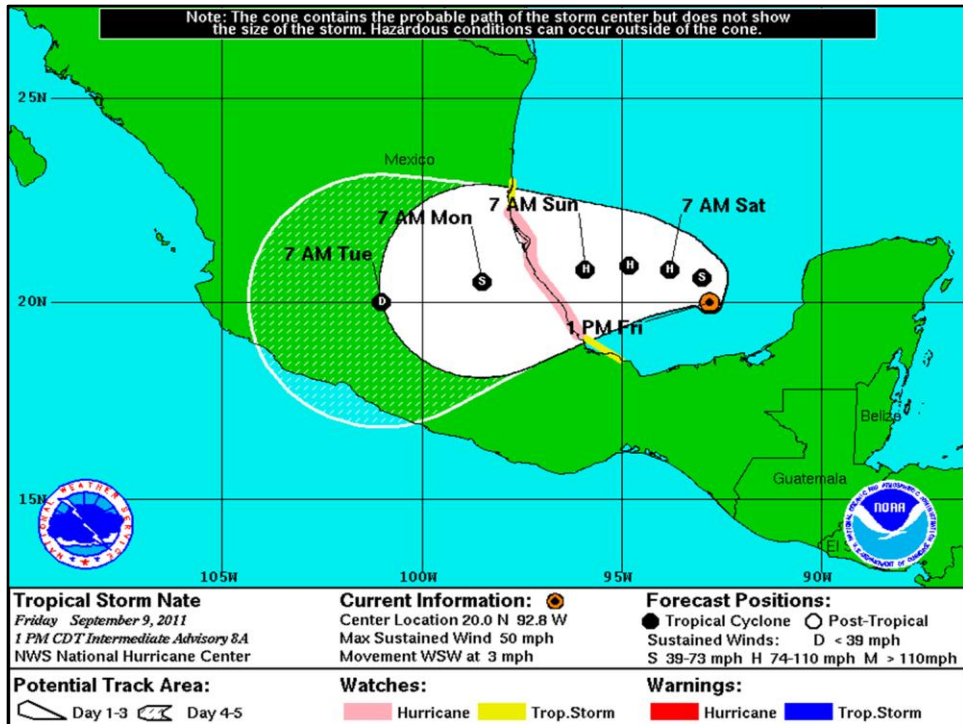


The European Center was more steadfast with its westerly movement on Thursday, changed little on Friday and is almost perfectly matched with the Global Forecast System. Such a match greatly increased confidence in the forecast.

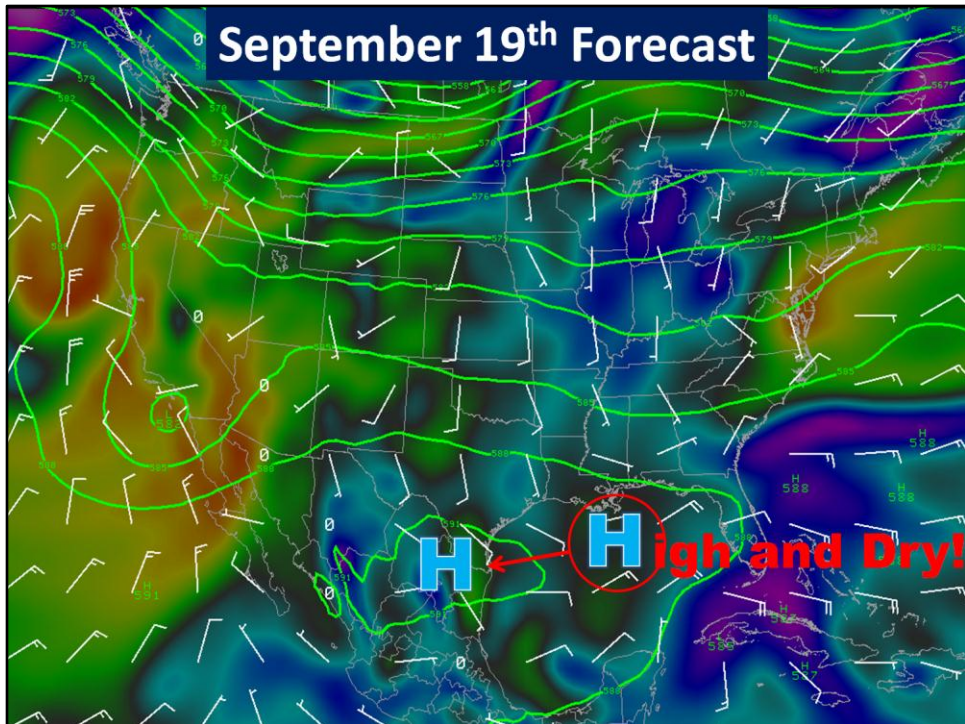


“Spaghetti” model plot initialized at 7 AM Friday, September 9<sup>th</sup>. All dynamic and advection models, each using the atmospheric flow pattern to generate forecasts, take Nate straight into the State of Veracruz. The “models” in the yellow circle include CLImate PERsistence, which is a statistical model that does not use real atmospheric data to produce a forecast track, and the “LBAR”, which is an older dynamic model that has a poor record with cyclones developing on frontal boundaries and near areas of significant wind shear, each which was a case at one time or another with Nate.





The Hurricane Center Forecast. Note the true cone shape on Friday morning, with Texas well outside of the cone, and likely outside of even most, if not all, of the final third (33%) of storms that track beyond the cone.



When will it rain again? Who knows! While the upper level ridge (Blue H) “flattens”, it parks over South Texas and northern Mexico into the latter half of September. This would continue to suppress any significant chance for rain in a month (September) known for it.

## Bottom Line

- Very high confidence on final track
- Strength of Ridge, Dry air aloft, and Speedy West winds well above the surface indeed “locked” the system around 20°N latitude)
- Potential Impacts:
  - Modest increase in rip currents and waves, slight tide increase. The “look” of the water may be deceptive and folks need to be safe in the surf this weekend!!
  - Rain free and hot weather the most likely outcome for the next week for most areas
  - The drought worsens with no relief in sight