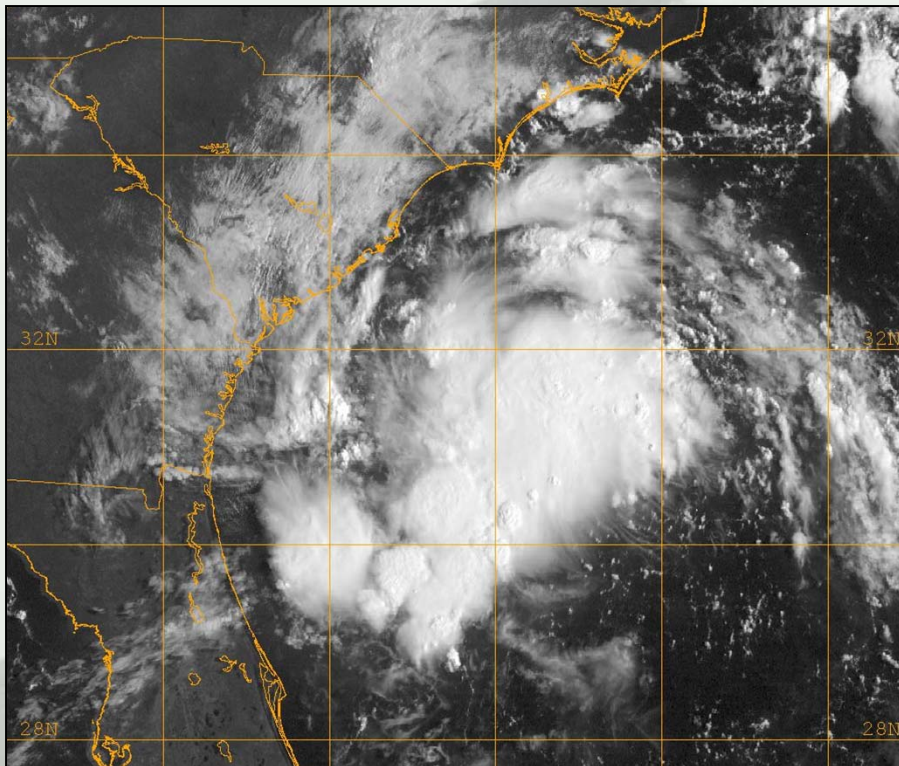
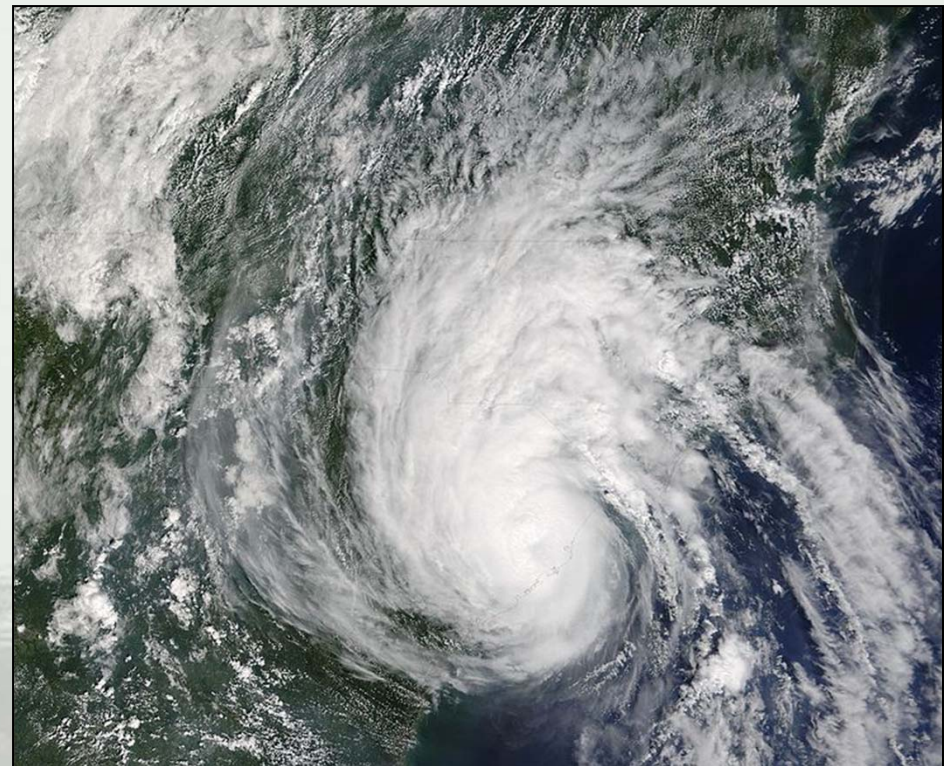


# Enhancing the Timeliness of Tropical Cyclone Watches & Warnings: Issuance of Watches/Warnings Prior to Genesis



First NHC advisory 5 pm Aug 27, 2004



Hurricane Gaston makes landfall less than 48 h later



**Daniel P. Brown**  
**Warning Coordination Meteorologist**  
**National Hurricane Center, Miami, FL**



# Recent Enhancements to the NHC Tropical Weather Outlook



- Began as a text only product that discusses areas of disturbed weather and their potential for formation into a tropical cyclone
- Graphical Tropical Weather Outlook introduced in 2007
- Color-coded probabilities of development added in 2008
- Time period covered by Outlook extended from 48 h to 5 days in 2013
- New 5-day graphic expected to be introduced in 2014

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TROPICAL WEATHER OUTLOOK  
NWS NATIONAL HURRICANE CENTER MIAMI FL  
200 AM EDT WED SEP 18 2013

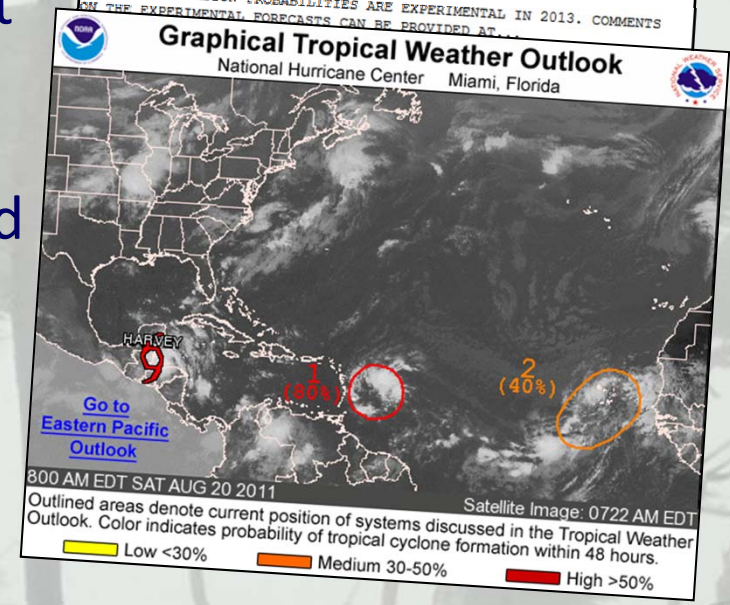
FOR THE NORTH ATLANTIC...CARIBBEAN SEA AND THE GULF OF MEXICO...

THE NATIONAL HURRICANE CENTER IS ISSUING ADVISORIES ON TROPICAL STORM HUMBERTO...LOCATED OVER THE EASTERN ATLANTIC WELL TO THE WEST-SOUTHWEST OF THE AZORES.

SATELLITE IMAGES AND RADAR DATA FROM MEXICO INDICATE THAT CLOUDINESS AND SHOWERS HAVE BECOME MORE CONCENTRATED NEAR THE CENTER OF AN AREA OF LOW PRESSURE LOCATED OVER THE YUCATAN PENINSULA. THE LOW IS FORECAST TO MOVE WEST-NORTHWESTWARD AND EMERGE OVER THE BAY OF CAMPECHE LATER TODAY...WHERE ENVIRONMENTAL CONDITIONS ARE EXPECTED TO BE CONDUCTIVE FOR THE FORMATION OF A TROPICAL DEPRESSION OVER THE NEXT DAY OR TWO. CONDITIONS SHOULD REMAIN CONDUCTIVE FOR ADDITIONAL DEVELOPMENT THROUGH THE WEEKEND WHILE THE LOW MEANDERS OVER THE SOUTHWESTERN GULF OF MEXICO. THIS SYSTEM HAS A HIGH CHANCE...70 PERCENT...OF BECOMING A TROPICAL CYCLONE DURING THE NEXT 48 HOURS AND A HIGH CHANCE...80 PERCENT...OF BECOMING A TROPICAL CYCLONE DURING THE NEXT 5 DAYS. THIS DISTURBANCE WILL LIKELY SPREAD HEAVY RAINS OVER PORTIONS OF EASTERN MEXICO AND COULD CAUSE LIFE-THREATENING FLOODS AND MUDSLIDES OVER AREAS ALREADY IMPACTED BY TORRENTIAL RAINS DURING THE PAST FEW DAYS.

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FIVE-DAY FORMATION PROBABILITIES ARE EXPERIMENTAL IN 2013. COMMENTS ON THE EXPERIMENTAL FORECASTS CAN BE PROVIDED AT...

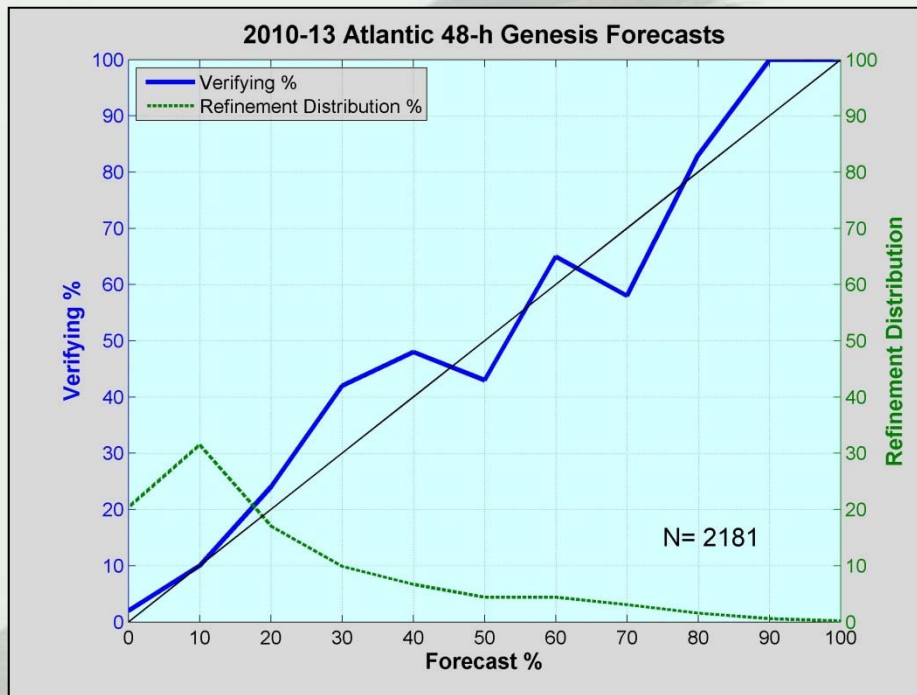




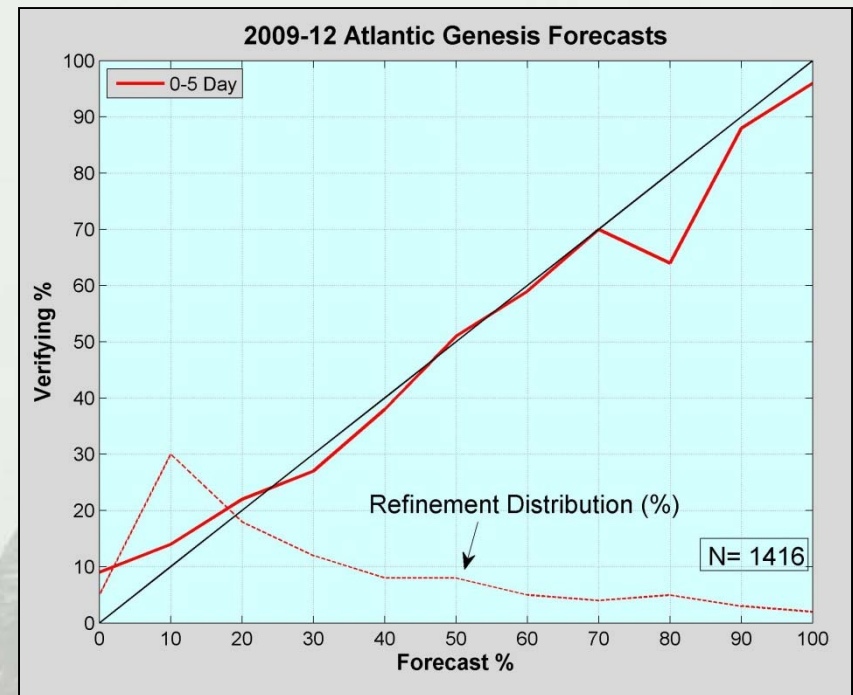
# Reliability of Genesis Probabilities



## 48-hour Genesis Forecast Reliability



## 5-day Genesis Forecast Reliability



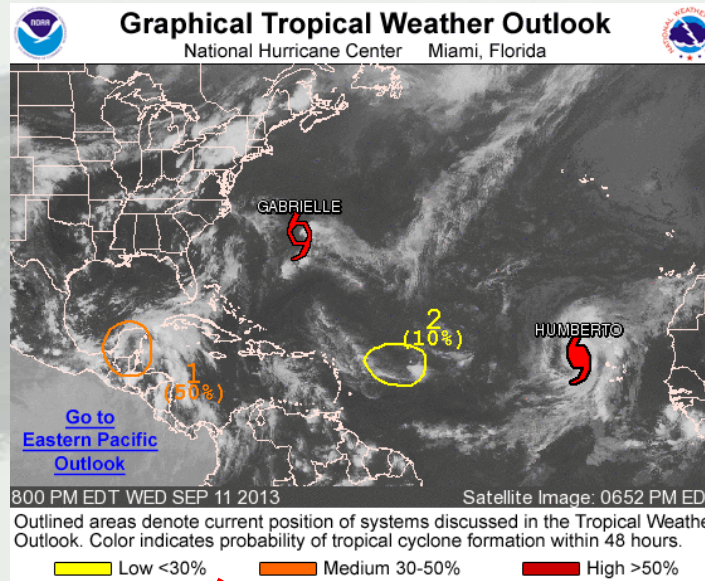
**Both the 48-hour and 5-day probabilities of formation are quite reliable**



# Graphical Tropical Weather Outlook: New Look in 2014

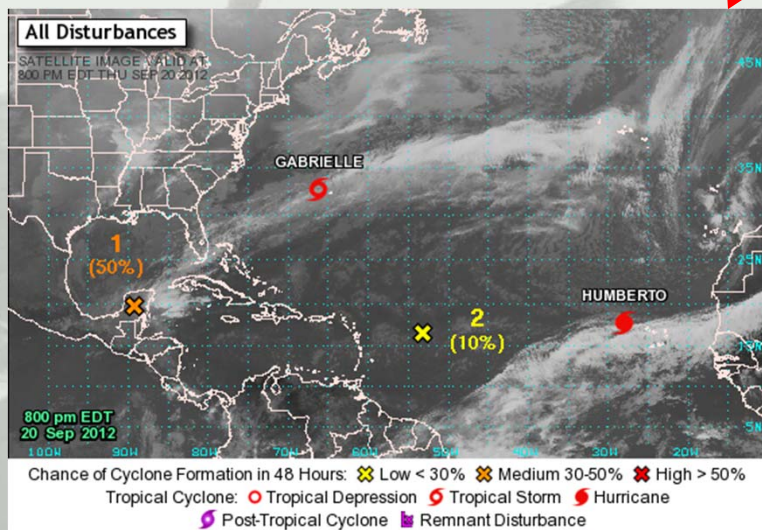


## Previous Graphical Outlook

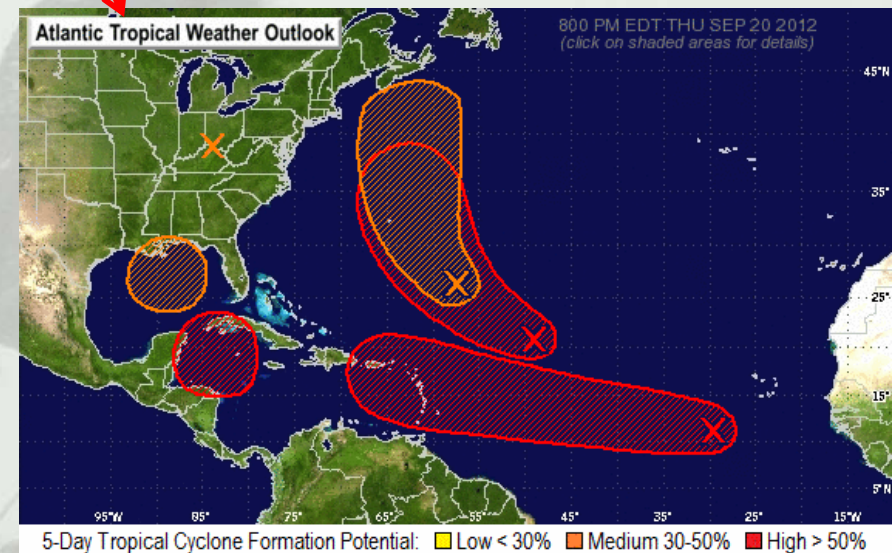


Corresponding text provided as mouse-over on web

## New 48 hour GTWO

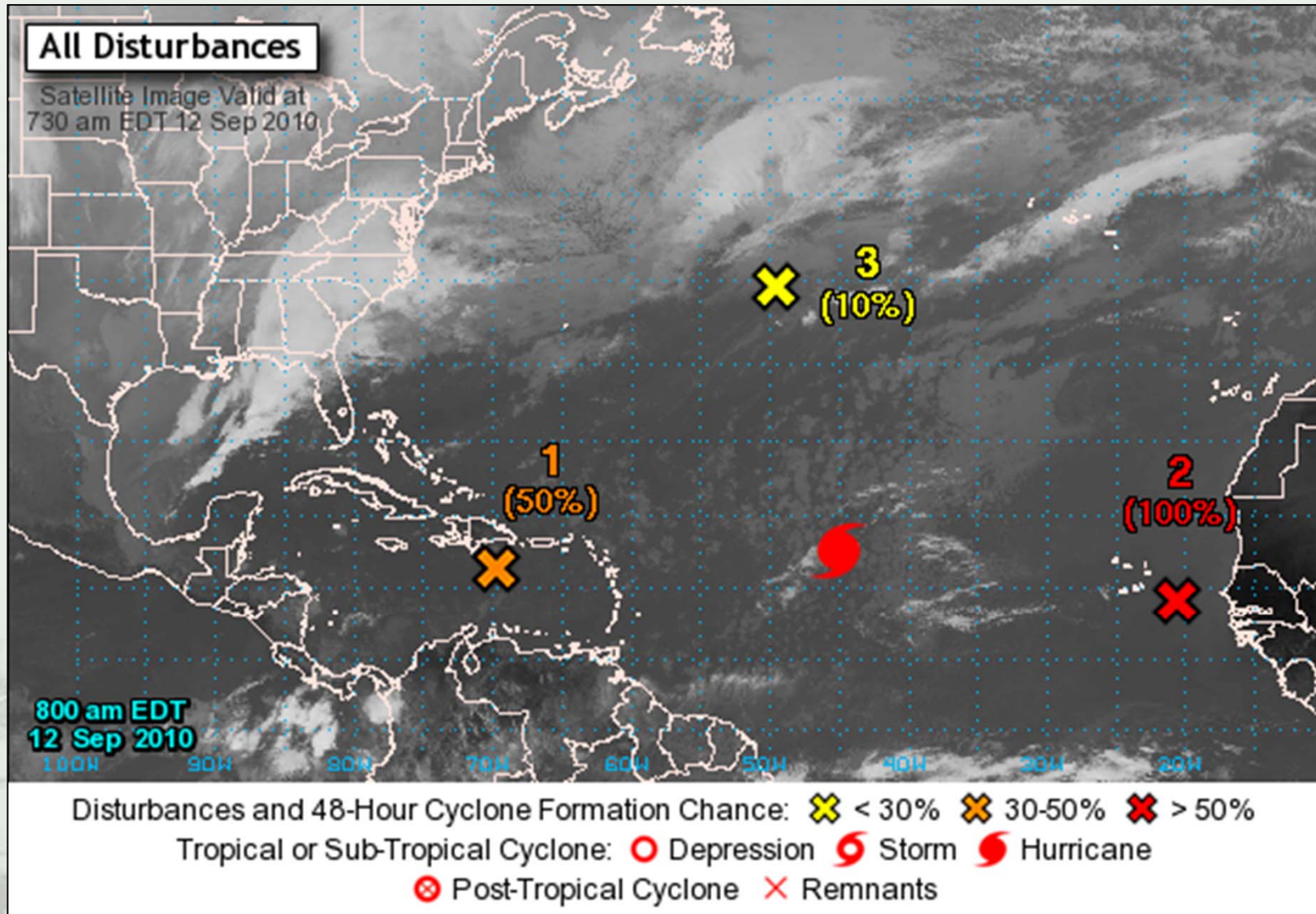


## New 5-day GTWO



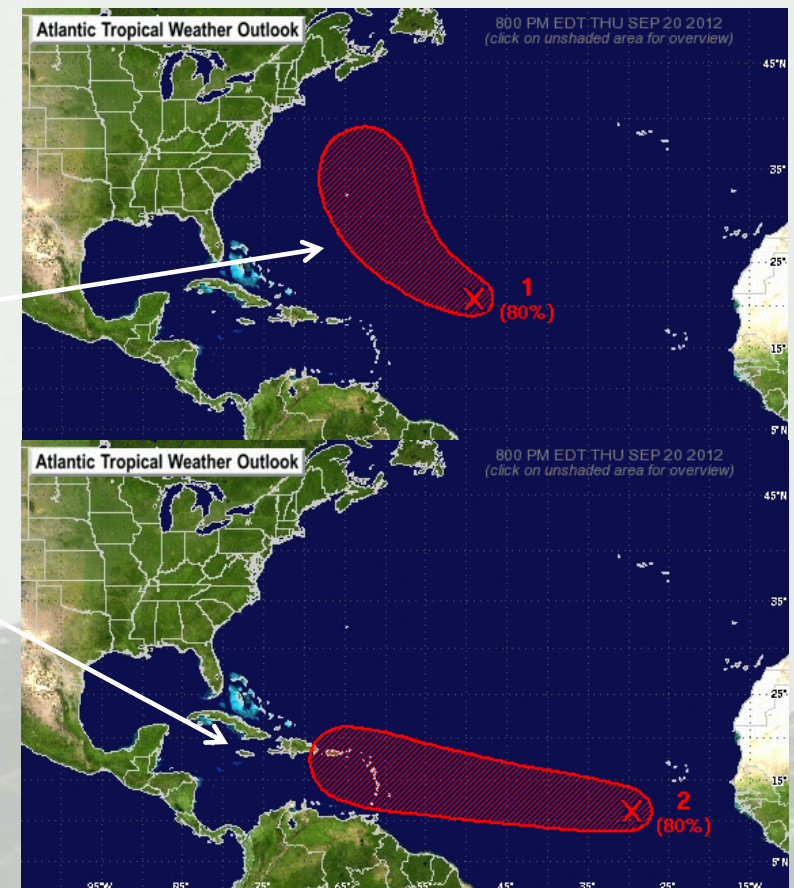
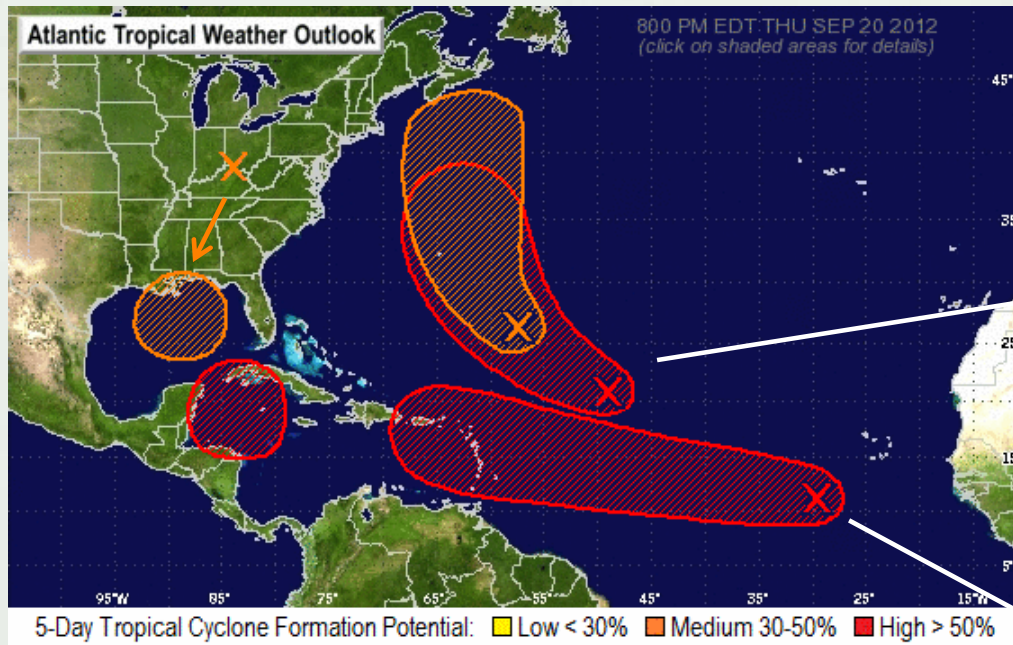


# New 48-hour Graphical Tropical Weather Outlook





# New 5-day Graphical Tropical Weather Outlook



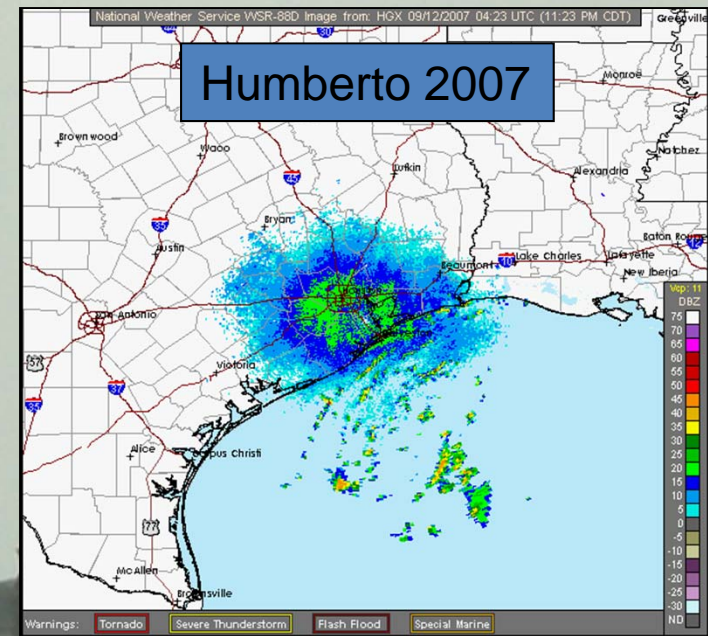
- Overview graphic shows entire basin, with single disturbance graphics to aid in display when overlapping areas
- Indicates formation potential during next 5 days
- Initial location of disturbance (X) indicated, if existing at issuance time
- Shading represents potential formation area
- Location of current storms are not shown



# Tropical Storm and Hurricane Watches and Warnings Before Formation



- Tropical Cyclones occasionally form, strengthen, and affect land within the 36- to 48-hour watch/warning lead time
- Tropical Storm and Hurricane Watches and Warnings are issued using NHC advisory products only
- NHC does not have the capability to issue tropical storm or hurricane watches or warnings before the formation of a tropical cyclone





# Current NHC Operational Practice- Issue Strongly Worded Tropical Weather Outlooks

TROPICAL WEATHER OUTLOOK  
NWS TPC/NATIONAL HURRICANE CENTER MIAMI FL  
530 PM EDT FRI SEP 7 2007

FOR THE NORTH ATLANTIC...CARIBBEAN SEA AND THE GULF OF MEXICO...

SATELLITE IMAGERY INDICATES THAT SHOWER ACTIVITY ASSOCIATED WITH THE LOW PRESSURE AREA BETWEEN BERMUDA AND THE SOUTHEASTERN COAST OF THE UNITED STATES IS GRADUALLY BECOMING BETTER ORGANIZED. HOWEVER...AN AIR FORCE RESERVE HURRICANE HUNTER AIRCRAFT CURRENTLY INVESTIGATING THE SYSTEM HAS NOT YET FOUND A WELL-DEFINED CIRCULATION. UPPER-LEVEL WINDS ARE BECOMING MORE FAVORABLE FOR DEVELOPMENT...AND

A TROPICAL OR SUBTROPICAL CYCLONE COULD FORM AT ANY TIME AS THE SYSTEM MOVES WEST-NORTHWEST AT ABOUT 10 MPH. INTERESTS ALONG THE SOUTHEASTERN AND MID-ATLANTIC COAST OF THE U. S. SHOULD CLOSELY MONITOR THE PROGRESS OF THIS SYSTEM...AND TROPICAL STORM WATCHES COULD BE ISSUED THIS EVENING.

ELSEWHERE...TROPICAL CYCLONE FORMATION IS NOT EXPECTED DURING THE NEXT 48 HOURS.

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**...TROPICAL STORM WATCHES  
COULD BE ISSUED THIS EVENING.**

- Formation at any time
- Mentions the possibility of short-fused tropical storm watches or warnings





# NHC Exploring Ways to Issue Watches/Warnings Before Formation

- NHC in-house experiment during the past two seasons documented potential watches/warnings before formation
- Pre-TC Watches/Warnings would likely be communicated using the Tropical Weather Outlook and/or a new advisory-like product
  - TWO could include warning section like the public advisory
  - TWO could include hazard section to discuss potential wind, rainfall, storm surge, and tornado threats

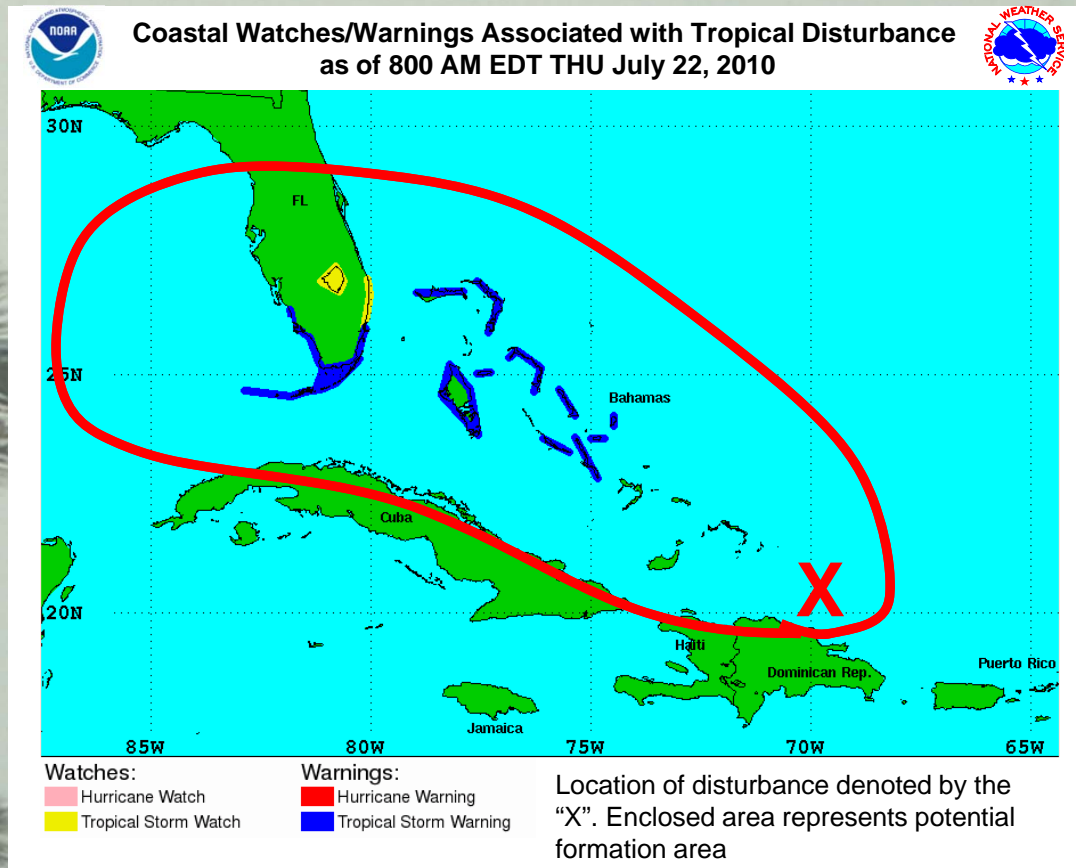




# Supporting Products/Graphics



- The 48-h and 5-day graphical Outlooks could be used to help convey watches/warnings
- New graphic may be needed to provide disturbance specific information



- There would be no specific track, intensity, and size forecast
- Limited timing information would be available
- Limited products/information in tracking software and HURREVAC



# NHC Requesting Feedback on Watch/Warning Before Formation Concept

- Ultimately NHC would like to issue track and intensity forecasts and watches/warnings for pre-tropical cyclone disturbances, however, it will likely be several years before these forecasts are skillful enough to issue publicly
- NHC believes the issuance of pre-tropical cyclone TS and hurricane watches/warnings would increase public awareness and response for these events even without an explicit track or intensity forecast



# NHC Requesting Feedback on Watch/Warning Before Formation Concept

## Questions to consider

1. Will TS and/or hurricane watches/warnings before formation improve response?
2. Can watches/warnings and potential hazards of pre-TC disturbances be effectively communicated without a full NHC advisory package?
3. Will lack of track and intensity forecast from NHC create confusion or distraction?



# Questions/Comments

e-mail: [Daniel.P.Brown@noaa.gov](mailto:Daniel.P.Brown@noaa.gov)

