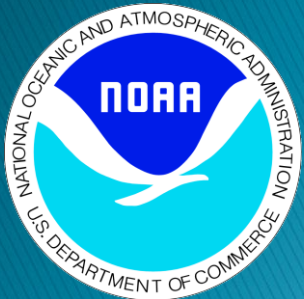


Subcommittee on Disaster Reduction

John D. Murphy
Chief Operating Officer
National Weather Service

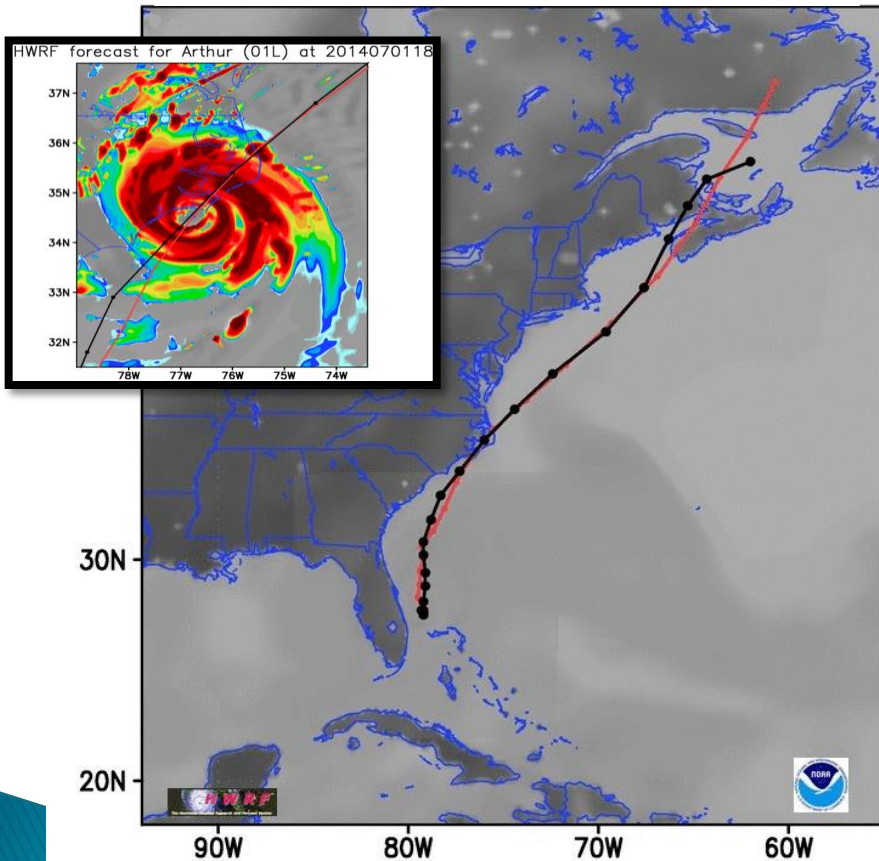


Hurricane Arthur

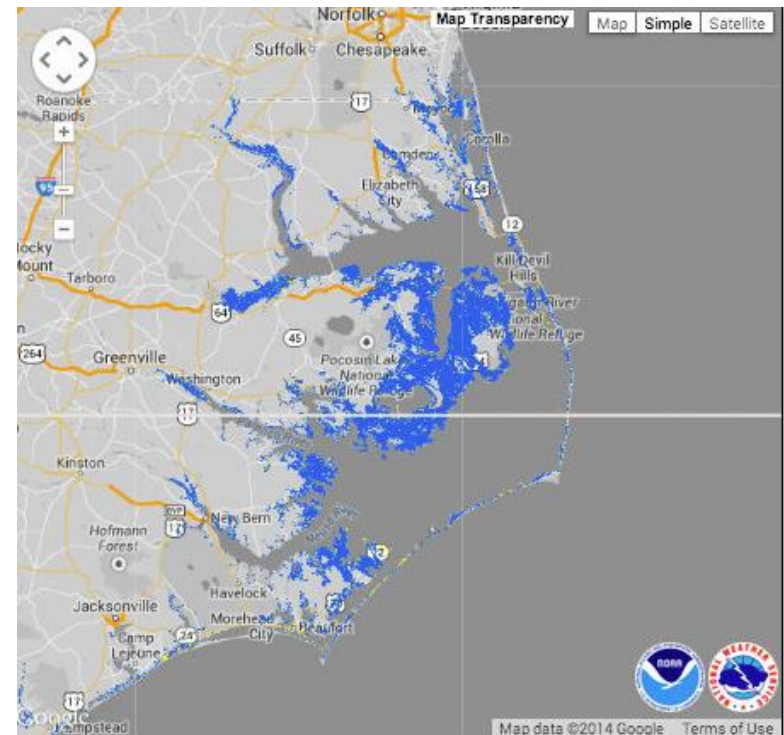
July 3-4, 2014

HWRF Forecast Track & Forecast

HWRF *Radar Reflectivity (18z 01 JUL '14)* 70118



Hurricane Arthur
Potential Storm Surge Mapping
'Best Guess, Worst Case Scenario'



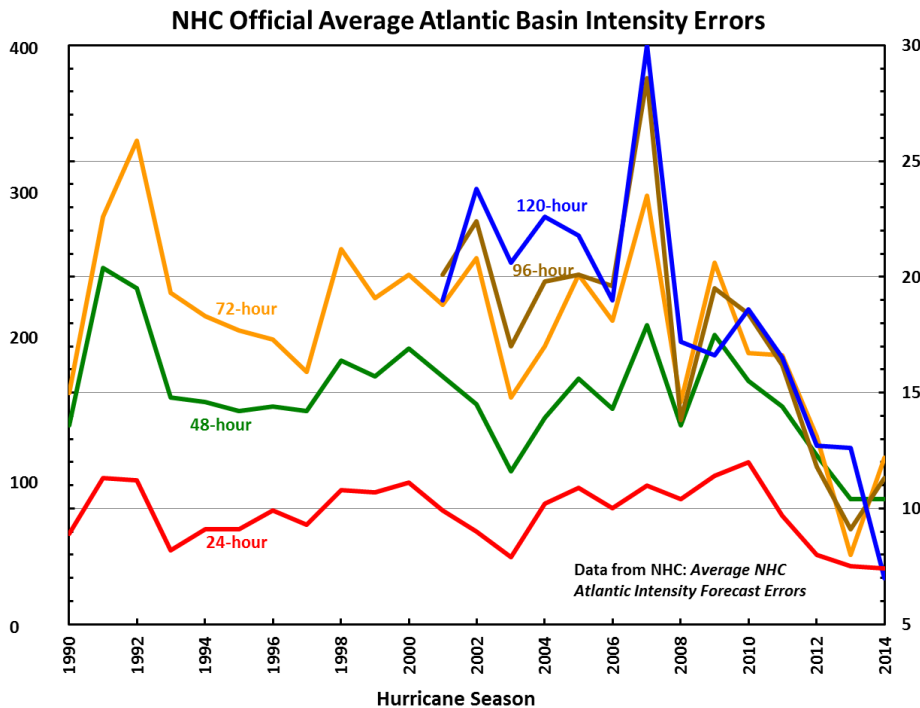
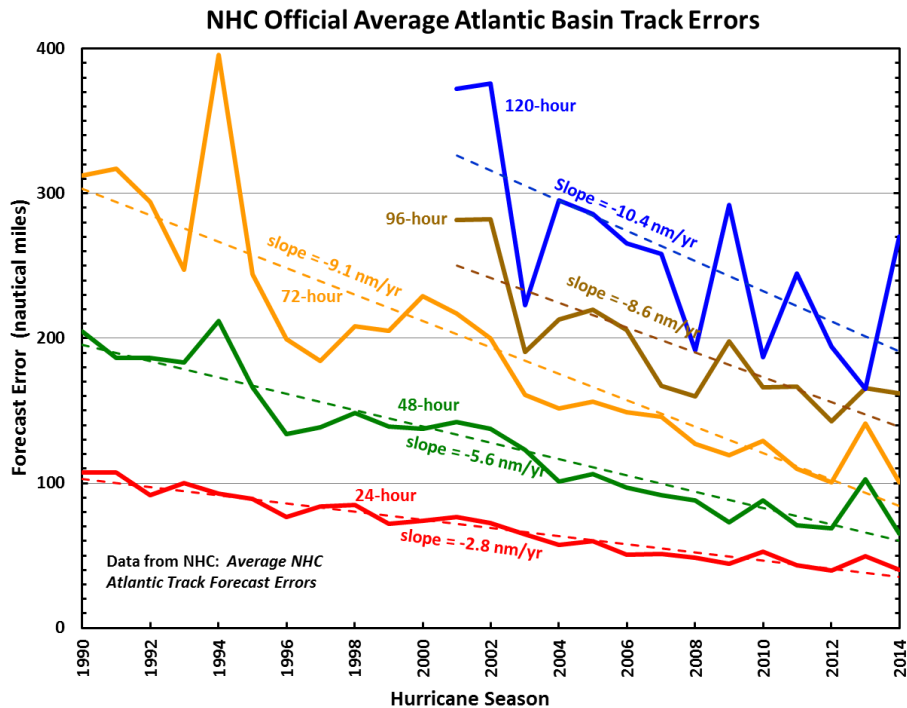


Progress & Accomplishments

Operational Forecast Performance

Good – track forecast improvements

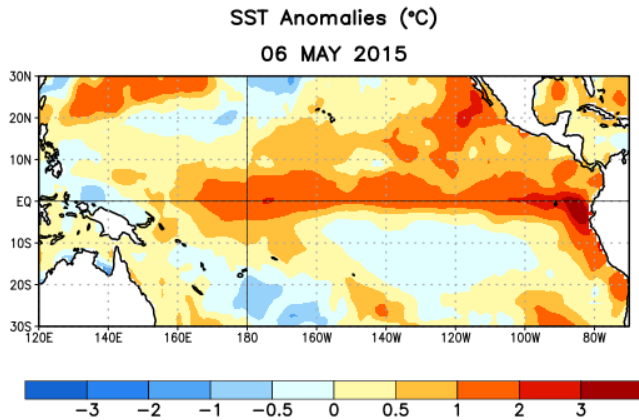
Not so Good – however, recent trend hopefully persists



- Errors cut in half over past 15 yrs
- 10-yr improvement – As accurate at 48 hrs as we were at 24 hrs in 2000

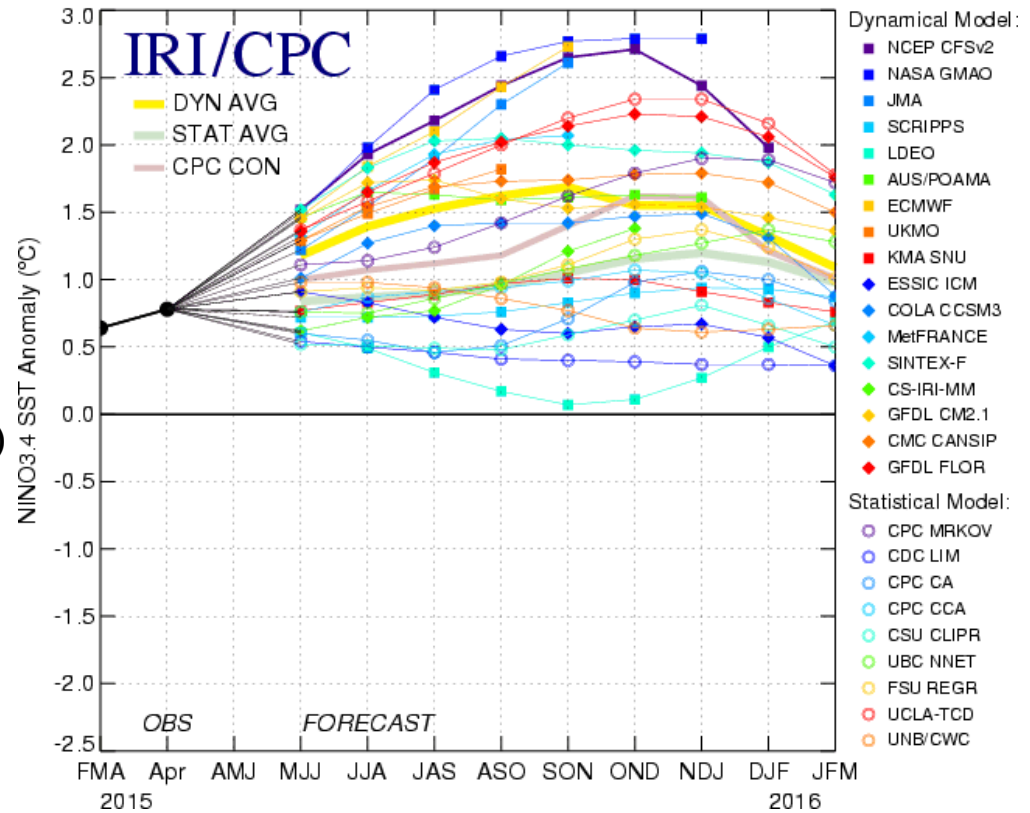
- 24–48h intensity forecast historically off by 1 category (2 categories perhaps 5–10% of time)

El Nino Status



Average Sea Surface Temperature (SST) anomalies (°C) for week of 6 May 2015 Anomalies computed with respect to 1981–2010 base period weekly means

Mid-May 2015 Plume of Model ENSO Predictions



Sea Surface Temperature (SST) forecast anomalies Niño 3.4 region (5°N–5°S, 120°W– 170°W)

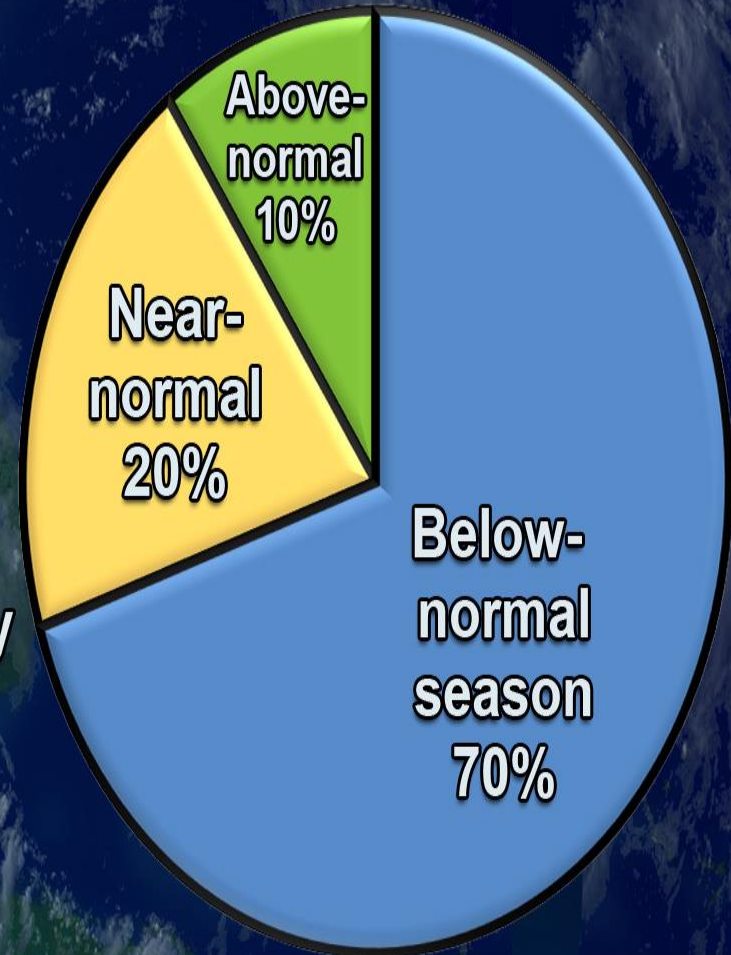
2015 Atlantic Hurricane Season Outlook

Named storms: 6 – 11

Hurricanes: 3 – 6

Major hurricanes: 0 – 2

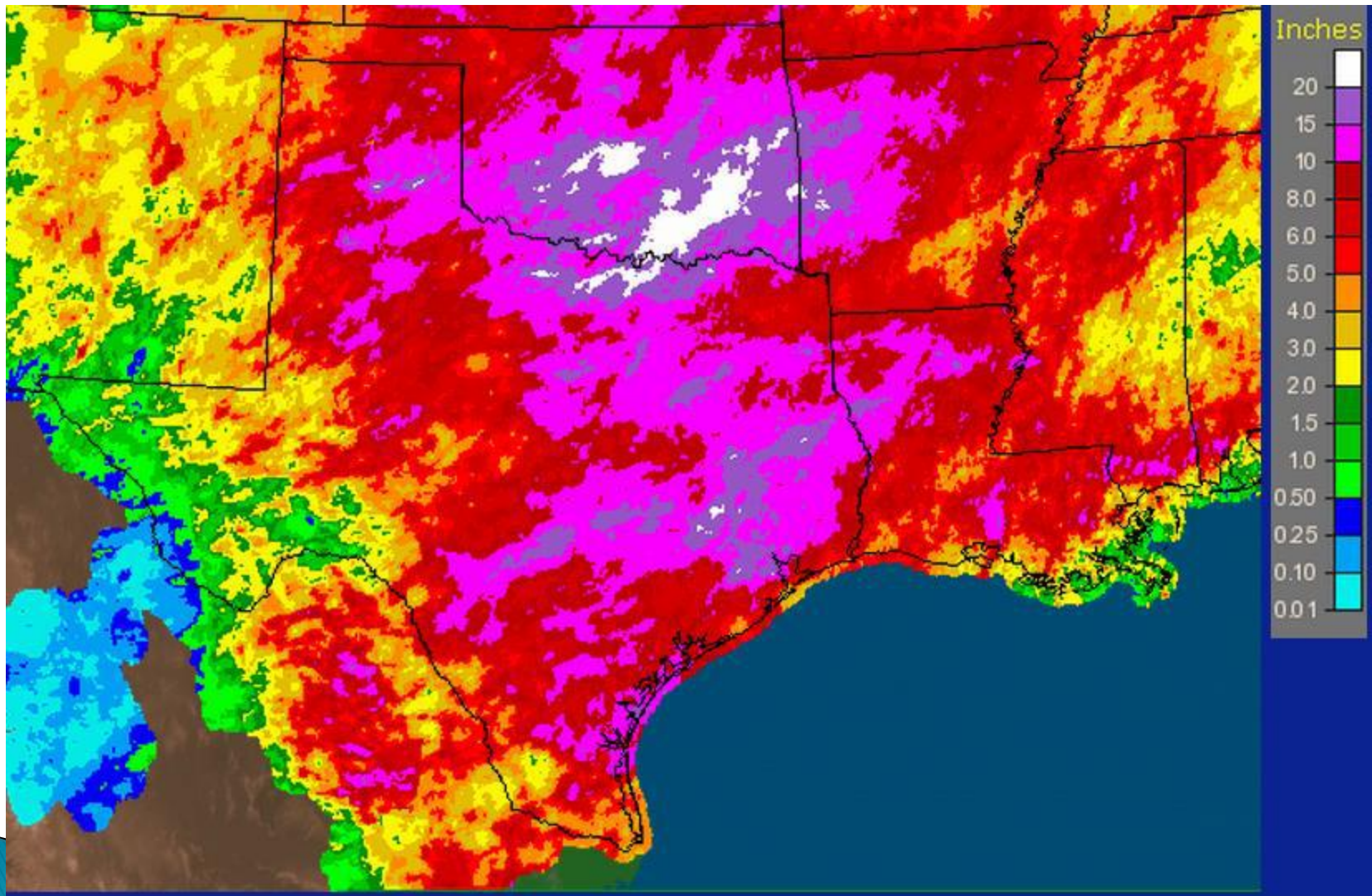
Outlook
probability



Be prepared: Visit hurricanes.gov

and follow @NWS and @NHC_Atlantic on Twitter

TX/OK Flooding



Monthly Rainfall

The Good (1)



U.S. Drought Monitor

May 26, 2015
(Released Thursday, May 26, 2015)
Valid 7 a.m. EST



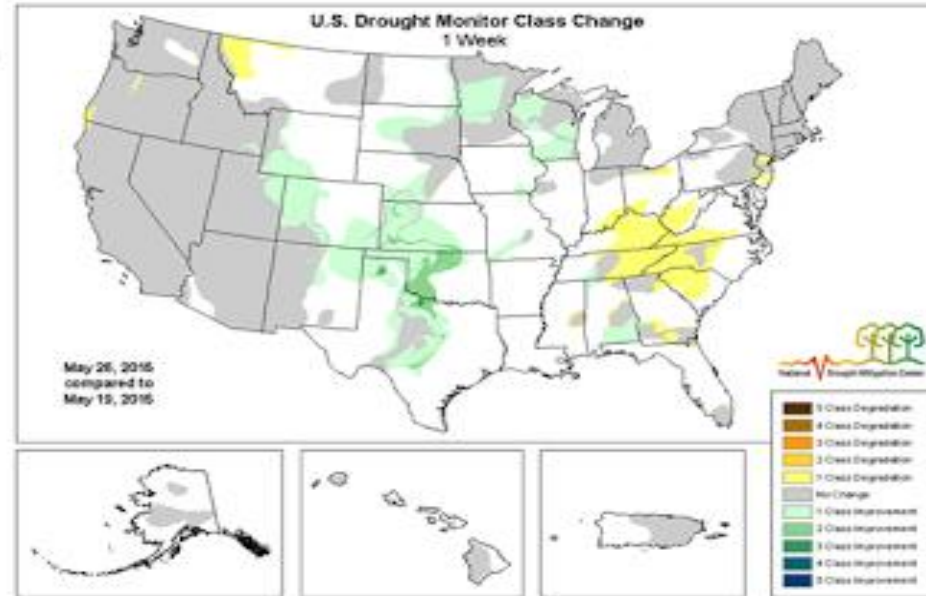
Author:
Brad Rippey
U.S. Department of Agriculture

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

USDA
<http://droughtmonitor.unl.edu/>

Severe drought down to 14.2%.
 18% - 2 weeks ago
 20% - 4 weeks ago

Approximately 5 million less people impacted by severe drought.
 – National Drought Mitigation Center

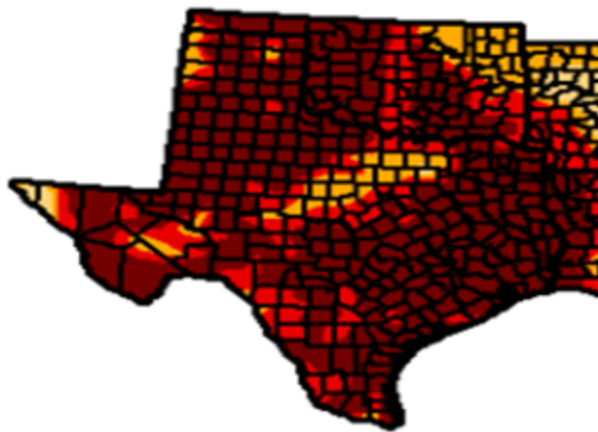


<http://droughtmonitor.unl.edu/>

The Good (2)

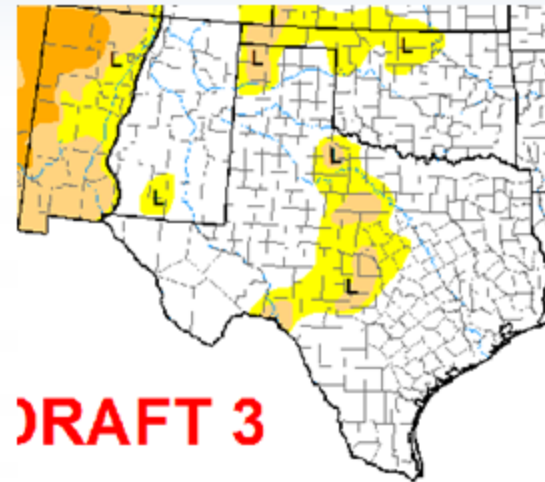
TX/OK drought comparison from peak October 2011 to May 2015.

October 11, 2011



99% of TX in severe drought
100% of OK in severe drought.

May 26, 2015



DRAFT 3

None of TX or OK in severe drought.

Severe Drought Erased



The Bad (1)

- **Austin/San Antonio:** A large flash flood event (10+ inches) occurred over portions of the Texas Hill Country on May 23–24, 2015 which caused massive runoff into the Blanco River.
- The Blanco River at Wimberley in Hays County, Texas (southwest of Austin) reached an all-time record height of 40.21 feet before the gauge was lost.
- The Blanco River rose 31 feet in 2 1/2 hours which resulted in several fatalities, a massive search and rescue effort, and approximately 300 homes damaged or destroyed in Wimberley.
- Interstate 35 was closed at San Marcos early on May 24th as water overtopped the Blanco River bridge.
- **Houston:** 10+ inches of rain fell in less than 6 hours in the Houston metro area in the late hours of May 24, 2015 into the early morning of May 25th. Massive urban flooding occurred with at least six fatalities reported. Numerous roads, including major interstates, were closed at the height of the flooding. Early reports estimated that perhaps 1,000s of homes near bayous have flood damage.



The Bad (2)

- **Dallas/Fort Worth:** The Trinity River (a major Dallas–Fort Worth river system) was at or near major flood stage several times due to repeated rounds of heavy rainfall. This impacted, and continues to impact, major interstates in and around Dallas as well as industrial areas within the city.
- **Oklahoma City and Tulsa:** Several days of excessive rain have caused major flooding along the Red and Arkansas Rivers from the Texas border northeast across Oklahoma. Lake Texoma, along the Texas/Oklahoma border, continues to reach record levels with water flowing over its spillway for only the fourth time in its history. WFO Norman issued three Flash Flood Emergencies, the first they have ever issued within their County Warning Area. Numerous water rescues, closed roads, homes flooding and record rainfall reports occurred throughout the state during this period.
- **Wichita Falls, TX:** A near flood of record occurred at Wichita River in Wichita Falls, TX the weekend of the 23rd and 24th.
- **Arkansas:** Multiple days of heavy rain caused moderate to major flooding on the Arkansas River and other tributaries in western and central parts of the state. Numerous road closures were reported and farmland flooded.



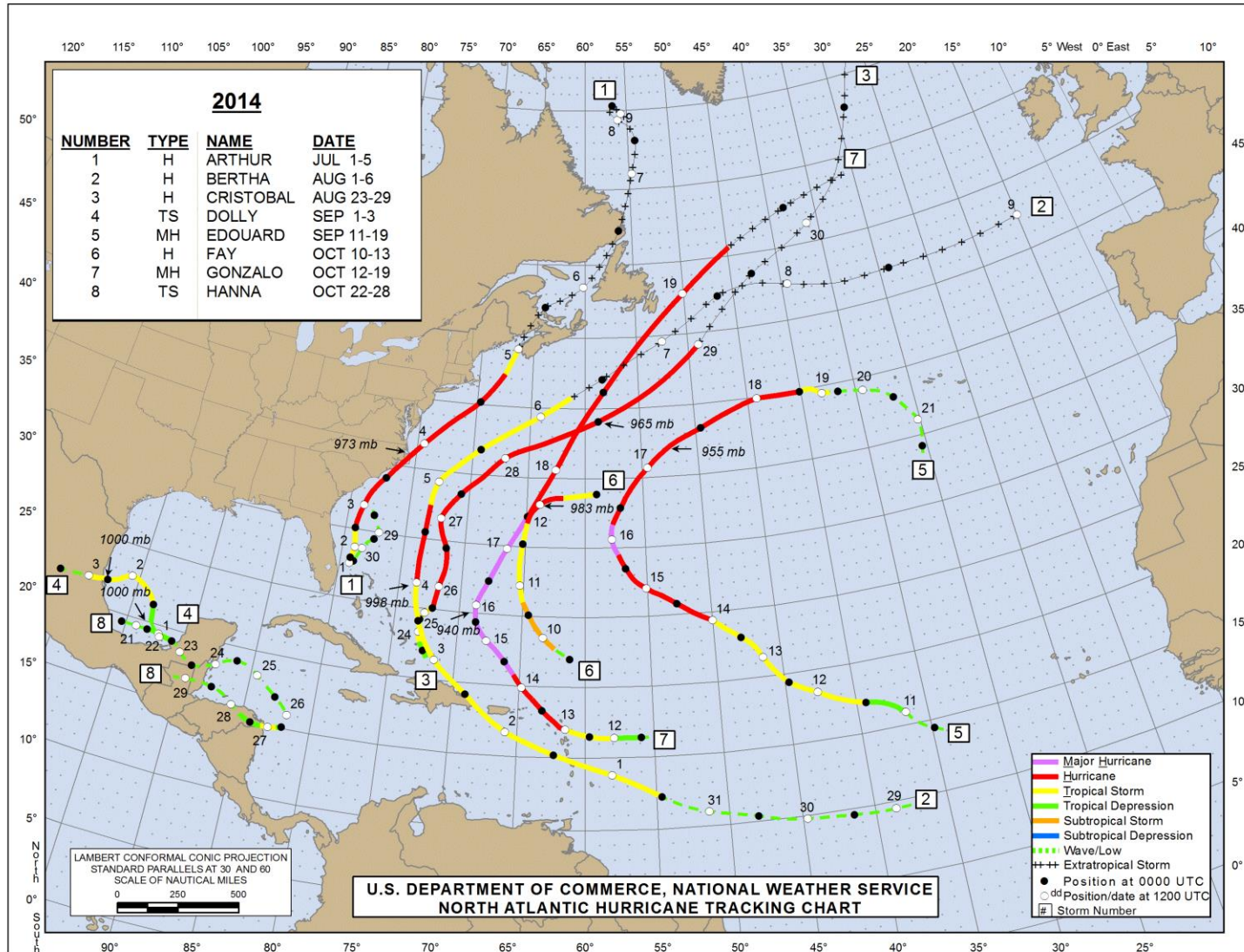
Decision Support

- ▶ All offices in and around these impacted areas have been sending email briefings, conducting routine and special webinars, handling countless verbal (phone) briefings with emergency management and first responders, and also doing countless media interviews and inquiries. They have all been very active on social media and our NWSChat accounts throughout the event
- ▶ Involved in daily conference calls with the USGS, USACE and River Authorities to coordinate water releases from dams and lakes, as well as provide the State of Texas with a complete water picture

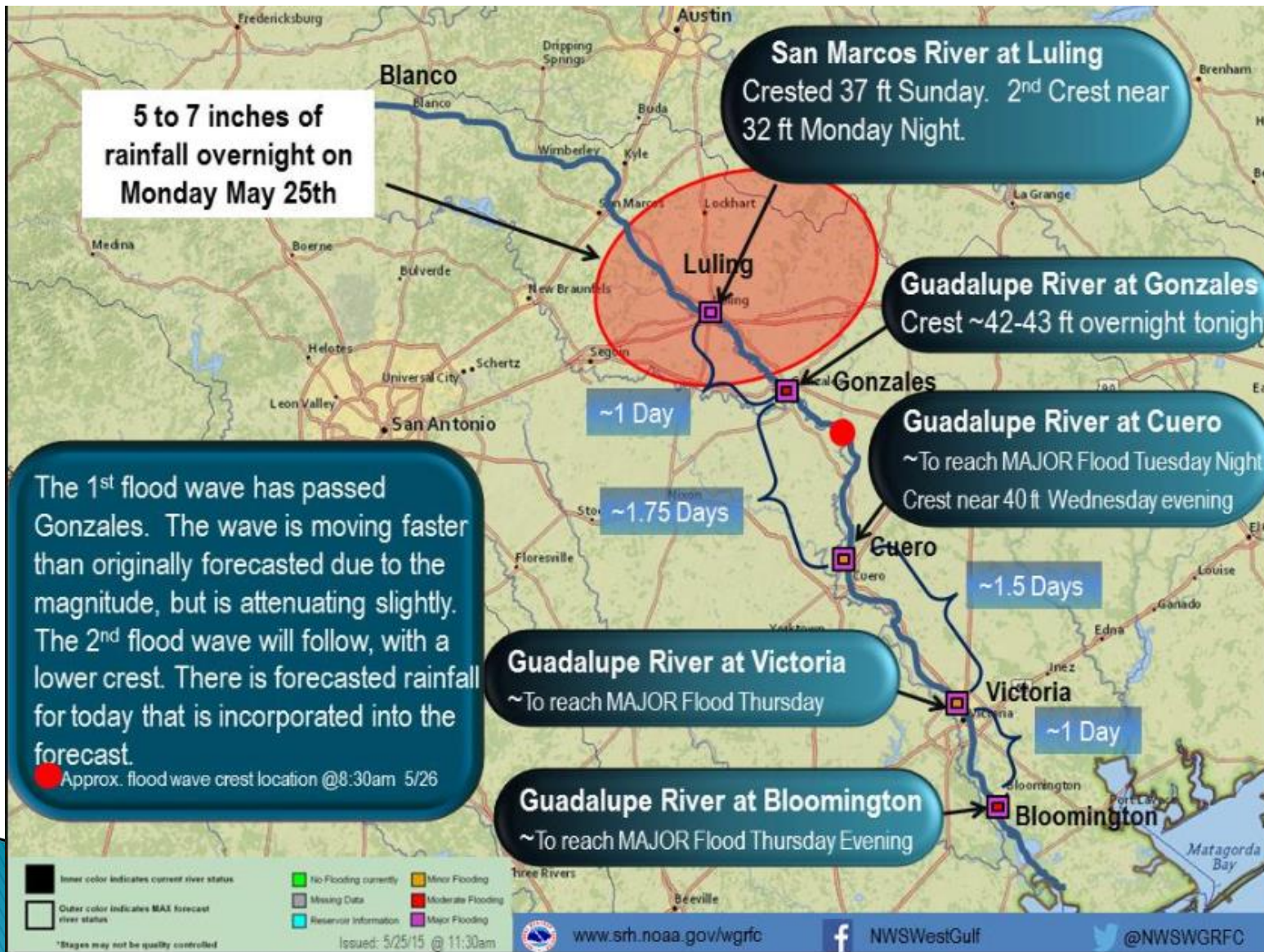
Questions



2014 Hurricane Season



Example of Decision Support Graphic





May 2015 for Arkansas, Oklahoma and Texas

<u>State</u>	<u>Tornado Warnings</u>	<u>Severe Thunderstorm Warnings</u>	<u>Flash Flood Warnings</u>	<u>Flood Warnings</u>	<u>Total Warnings</u>
TX	273	1015	1130	192	2610
OK	154	334	663	77	1228
AR	32	129	287	35	483
Totals	459	1478	2080	304	4321

