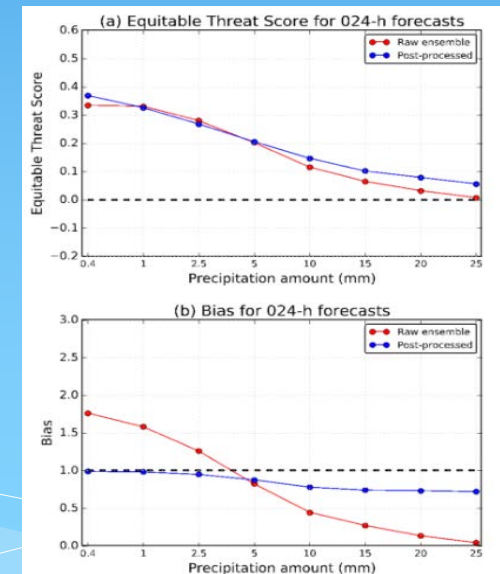
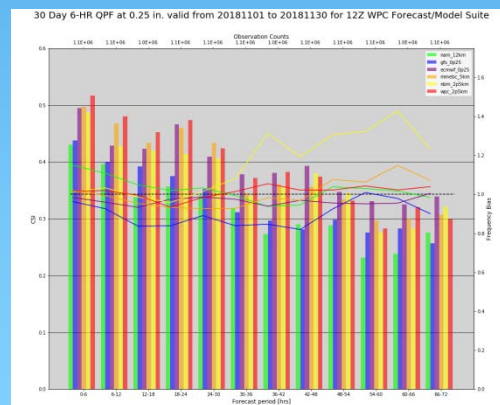
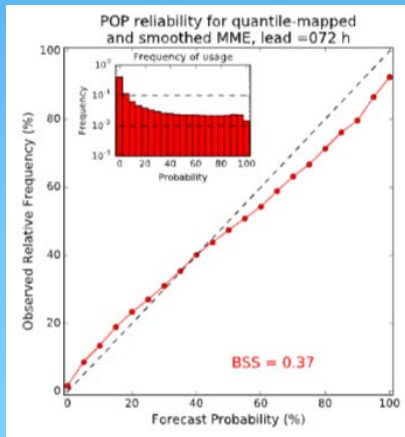


Attributes of Uncertainty Forecasts

- Accuracy
- Reliability
- Bias
- Sharpness

Understanding the probability forecast quality will strengthen your decision making

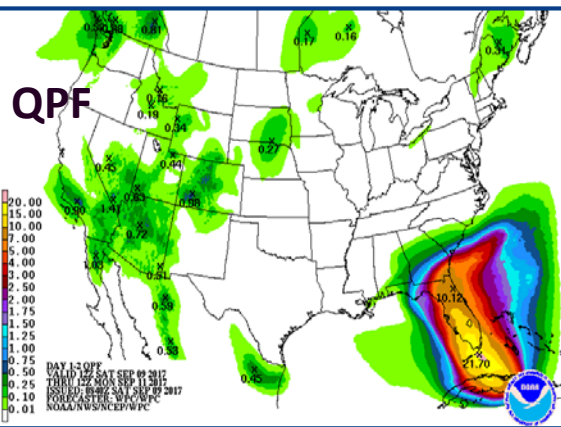


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National Weather Service
April 16, 2019

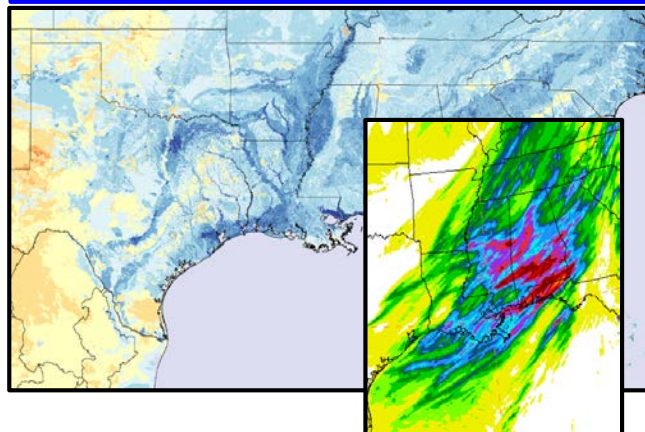
Communicating Low Probabilities for a High Impact Event

- FEMA trains emergency managers on the NWS Excessive Rainfall Outlook
- Greatest Challenge is communicating low probabilities for high impact events
- High Risk Days occur about 4% of days but about half the time there is a flood related casualty, and most have at least \$1 million in damages

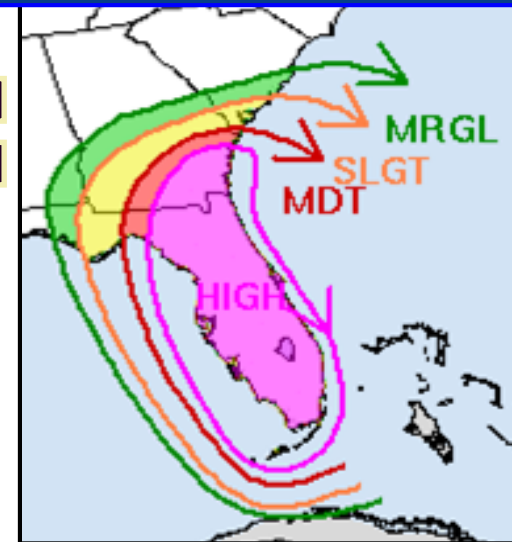
Forecaster expertise...



...analyzed in context with a host of atmospheric and hydro data...



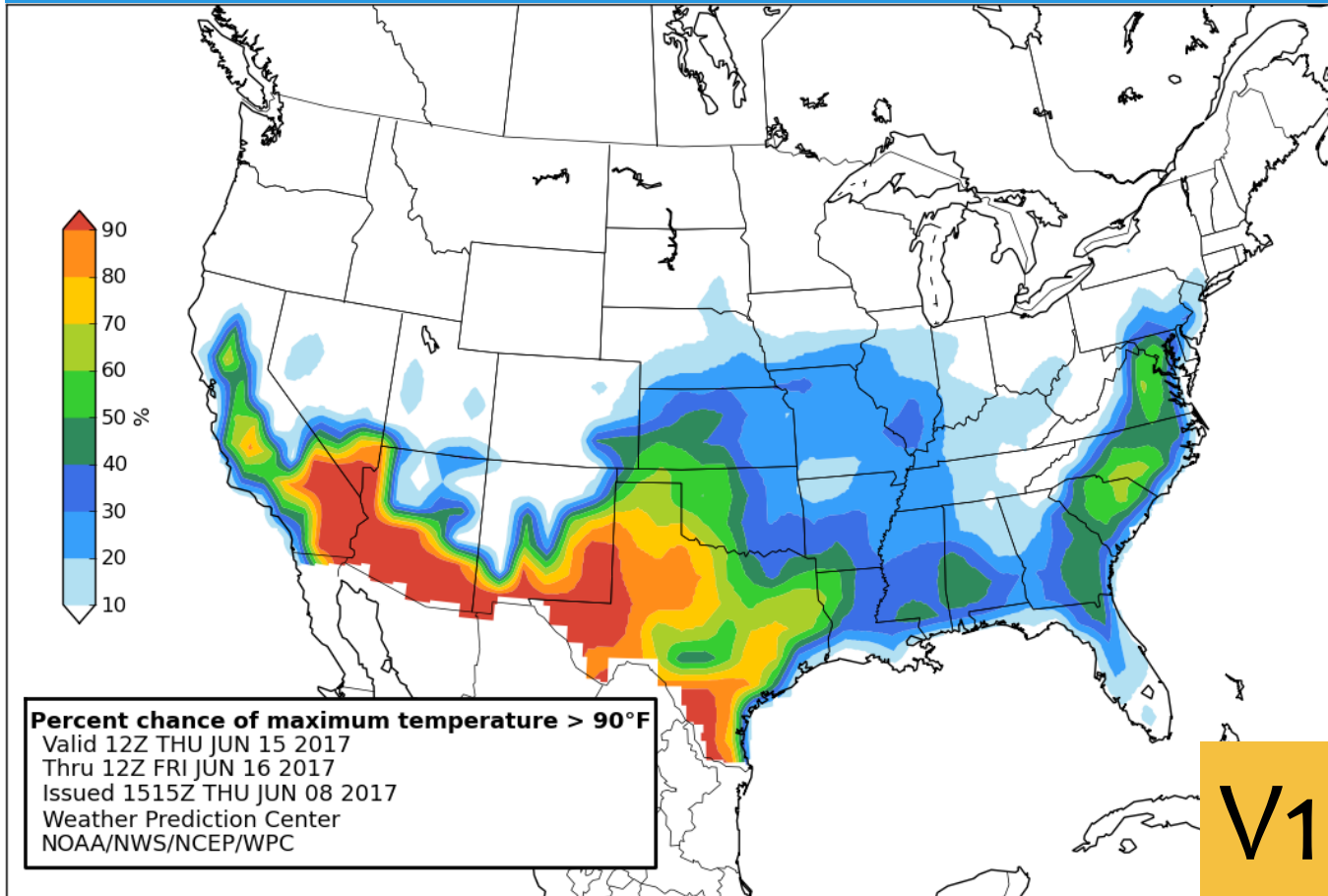
...result in probability-based and verified extreme rainfall forecasts.



...combined with ensembles for a quantifiable, probabilistic approach...

Deterministic forecasts never verify perfectly everywhere. Probabilistic forecasts inform us about a range of possible outcomes, incorporating sophisticated statistical post-processing.

Using Social and Behavioral Science to improve the way we communicate risk



Day 8 Probability
of maximum
temperature >90°F

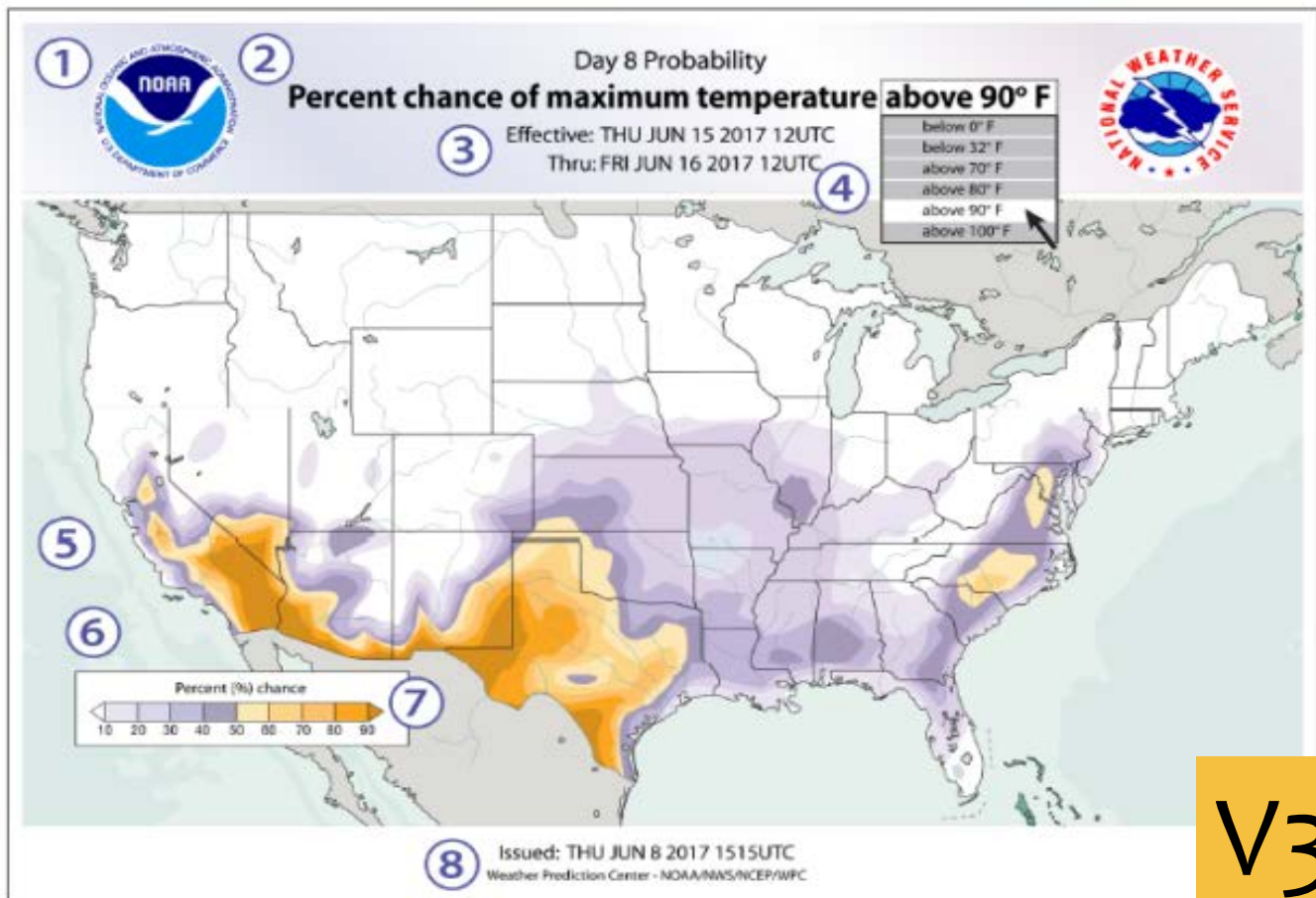
Note:

- No Logos
- Color Bar
- Title Location
- Single Threshold
- Water vs Land
- Time reference



Credit to the NWS Weather Prediction Center,
The Nurture Nature Center, East Carolina University and ECS Federal

Using Social and Behavioral Science to improve the way we communicate risk



Day 8 Probability of maximum temperature above 90°F

Note:

1. Logos
2. Title Location
3. Time
4. Thresholds
- 5,6 Water vs Land
7. Color Bar

V3



Credit to the NWS Weather Prediction Center, The Nurture Nature Center, East Carolina University and ECS Federal