

The 557th Weather Wing

14 WS Evolution of the State of the Climate Product



**Ray Kiess, *Justyn Jackson*, Andy Lahr,
Patrick Johnston, Bob Falvey, Ryan Hunt, Bill Frey**



Motivation



Original State of the Climate

- 20 Page Narrative with some supporting graphics
- Issued monthly
- Described Temp, Precip, Drought
- Discussed climate oscillations
- No discussion of impacts
- Not predictive
- Hosted on the website
- Small user base
- Does it inform decisions?



Reimagined

- Instead of a narrative, how about a slide presentation?
- Can we issue weekly?
- Maps tell the story!
- Which climate oscillations?
- So what?
- Convey predictions?
- Interactive telcon presentation?
- Larger user base
- Why is this important?

Is it worth it?

Yes!

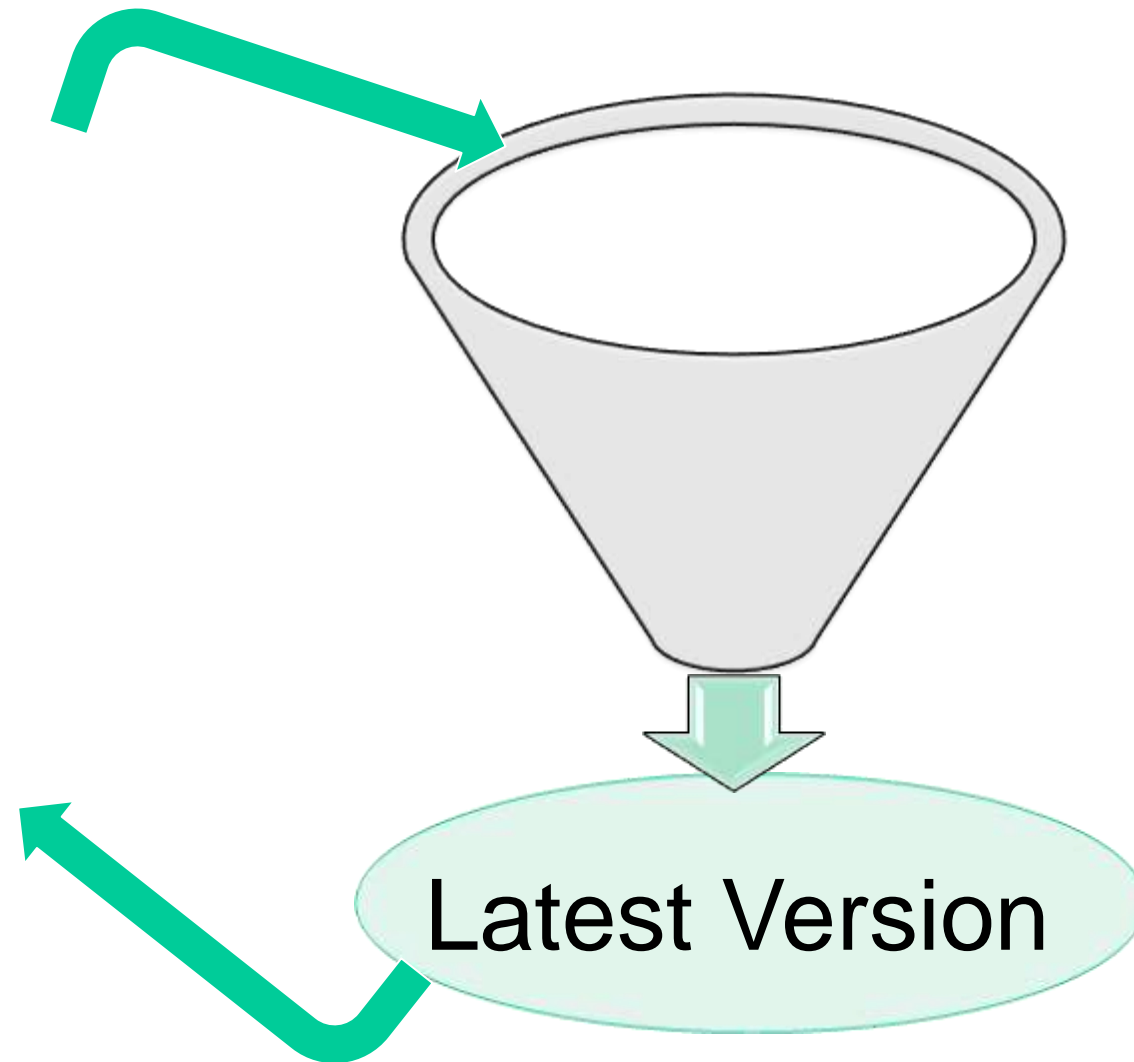
Let's transform it!



Evolution Path



- How do others convey climate information?
 - AMS, CDPW, CPC Stakeholder
- Hold internal presentations
 - Gain confidence, assess gaps
- Invite stakeholders
 - Incorporate feedback
- Go live!
 - Incorporate feedback
- Add new capabilities
 - Ex. Hazard charts

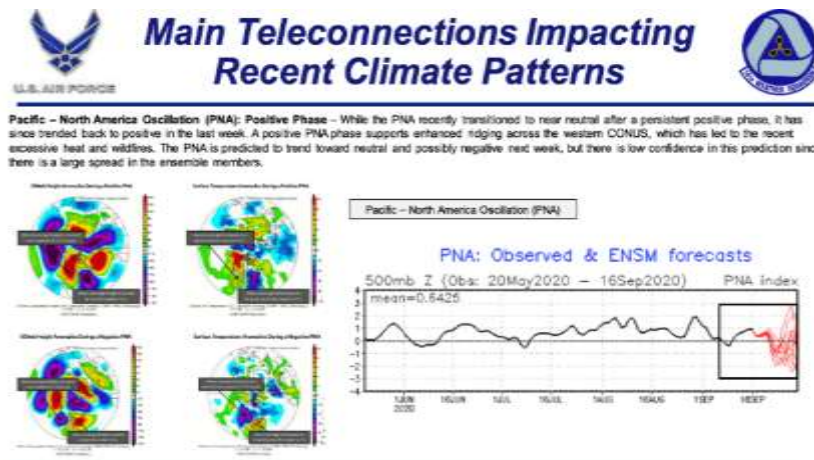




State of the Climate Brief Examples: Teleconnections, Analysis, & Impacts

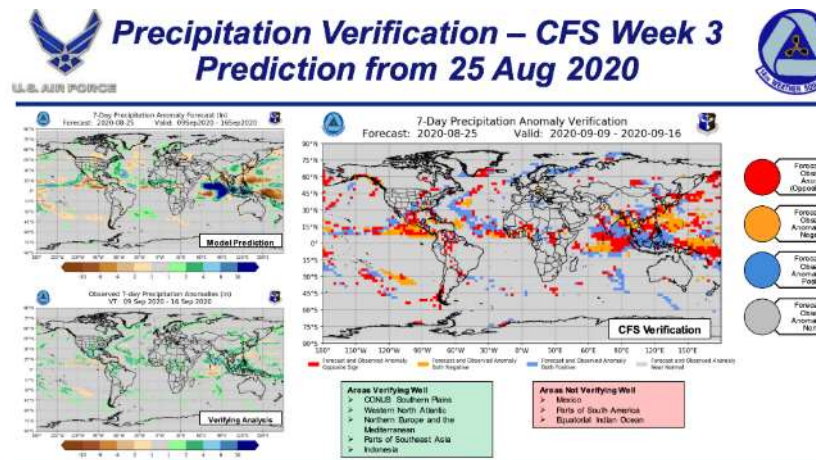


Climate Drivers



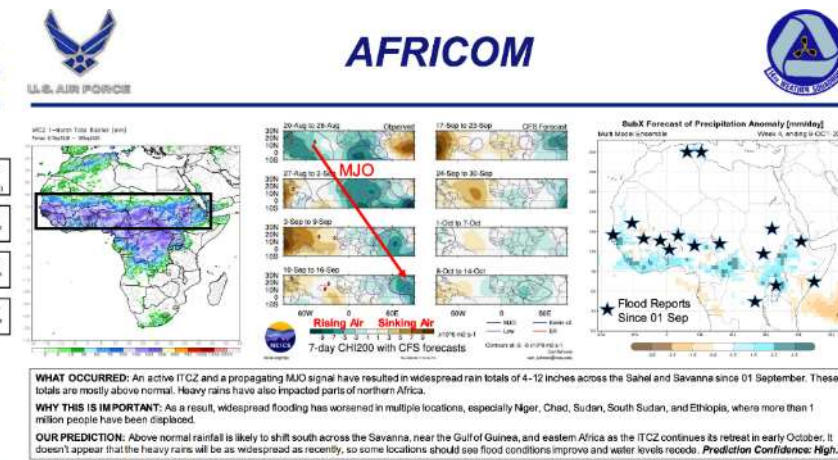
- We highlight climate modes of variability that have recently influenced regional precipitation and temperature patterns. We explain a teleconnection’s typical impacts and forecast how the relevant climate index will evolve in the future. This helps our users understand what may be driving climate patterns in their area of interest.

Verification



- An increasing emphasis is being placed on precipitation and temperature verification. Week 3 CFSv2 predictions are verified using CFSR data. We are postured to soon begin computing more rigorous quantitative verification statistics.

Climate Information → Intelligence



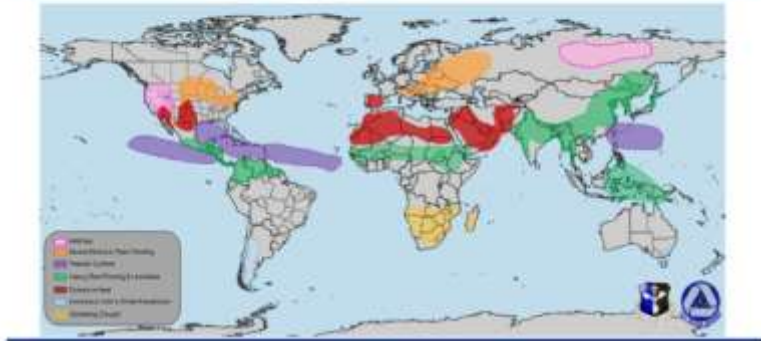
- We relate how climate drives hazardous impacts in regional areas. These slides describe what happened, why is it important, and our prediction and confidence level whether the impact will improve, worsen, or persist over the forecast period.



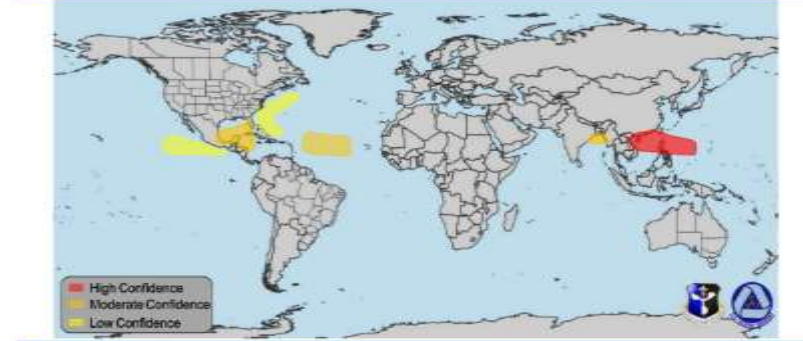
State of the Climate Brief Examples: Global Hazards



Global Hazards Assessment



Collaboration Effort



Regional Decision Aid



	AFRICOM	SEINTCOM	EUROM	INDOPACOM	NORTHCOM	SOUTHCOM
Main Hazards	Heavy Rain, Flooding, Drought, and Excessive Heat	Excessive Heat	Excessive Heat, Severe Thunderstorms, & Tornado Flooding	Tropical Cyclones, Heavy Rain and Flooding/Landslides	Severe Thunderstorms, Wildfires, Excessive Heat, and Tropical Cyclones	Heavy Rain, Flooding, Landslides, and Snow/Ice
Most Likely Locations	Heavy Rain/Flooding: Sahel region south of the equator Excessive Heat: Sahara Desert Drought: Southern Africa	Lower elevations of the Arabian Peninsula, Iraq, Iran, western Afghanistan, and Pakistan	Severe Thunderstorms and Flash Flooding: Central and eastern Europe, including western Russia Excessive Heat: Spain and Portugal	Tropical Cyclones: Western Pacific Flooding/Landslides: India, Bangladesh, Nepal, Brazil, Southeast Asia, eastern China, Taiwan, Philippines, northern Japan, and Indonesia	Severe Storms: Northern Plains, Upper Midwest, NE Canada Wildfires: Interior Western Canada Flooding: St. Lawrence Tropical Cyclones: Western Gulf of Mexico Excessive Heat, Desert SW, southern Russia, southern France	Heavy Rain, Flooding, & Landslides: Central America, Colombia, Venezuela, Guyana, Suriname, & French Guiana Tropical Cyclones: Caribbean, Central America Snow and Cold: Southern Andes Mountains (E. Argentina)
Confidence	Low to Moderate	Low	Moderate (All Hazards)	High, Tropical Cyclones Low - Flooding/Landslides	Moderate - Severe Storms, Tropical Cyclones High - Flooding/Landslides	High/Moderate, Tropical Cyclones Moderate: Tropical Cyclones, Snow & Cold

- A global hazards assessment identifies potential hazards in week 3, including wildfires, severe thunderstorms, heavy rain and flooding, excessive heat, anomalous cold and winter precipitation, and worsening drought.

- A weekly collaboration with the Joint Typhoon Warning Center has recently led to the development of a week 3 global tropical cyclone hazards outlook.

- A tabular overview of the hazards outlook graphics summarizes the hazards for each area of interest, identifies specific regions that may be impacted, and communicates our level of confidence in the predicted hazards that may impact these regions.



State of the Climate Brief



- **The State of the Climate brief is hosted every Friday – 80 email invites and growing**
- **Climate analysis and discussion**
 - **Dominant modes of climate variability**
 - **7- and 30-day analysis of temperature and precipitation**
 - **Week 3 prediction and verification**
 - **Global hazards assessments**
 - **Regional climate impacts**
- **The last Friday of every month is a monthly version of the State of the Climate that analyzes the last 30 days of regional temperature and precipitation patterns, provides a regional climatology for the upcoming month, and shows a 1-month prediction for the upcoming month.**