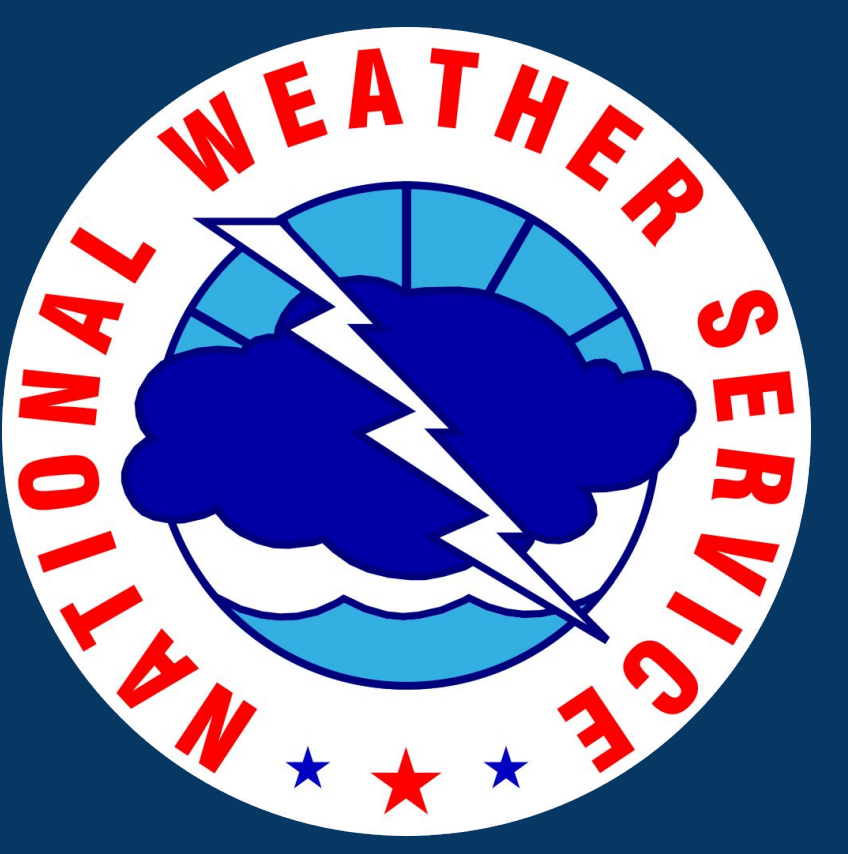




EVOLVING PROBABILISTIC IDSS AT THE NWS NATIONAL CENTERS: A PARTNER PROCESS



Poster Showcase #IAEM23

The last critical mile demands all hands on deck. Improving service delivery and communication of potential forecast outcomes requires a joint effort between NOAA NWS National Centers for Environmental Prediction (NCEP) and its partners. **How can we do better?**

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Method: A New Kind of Dialogue

Social Science + Key Communicators + National Centers

On Sep. 10, 2023 at the National Weather Association annual meeting, NCEP organized a workshop that brought together National Center leadership, leading social scientists, and broadcasters to dialog about probabilistic products and services. Presentations on Center thinking and state-of-the-art social science informed breakout groups to discuss how NWS and its partners could better work together to message forecast uncertainty for a variety of hazards. National Centers involved, and topics included:

- National Hurricane Center (NHC) - Beyond the Cone: Compound tropical threats
- Storm Prediction Center (SPC) - The Convective Outlook
- Weather Prediction Center (WPC) - The Winter Storm Severity Index

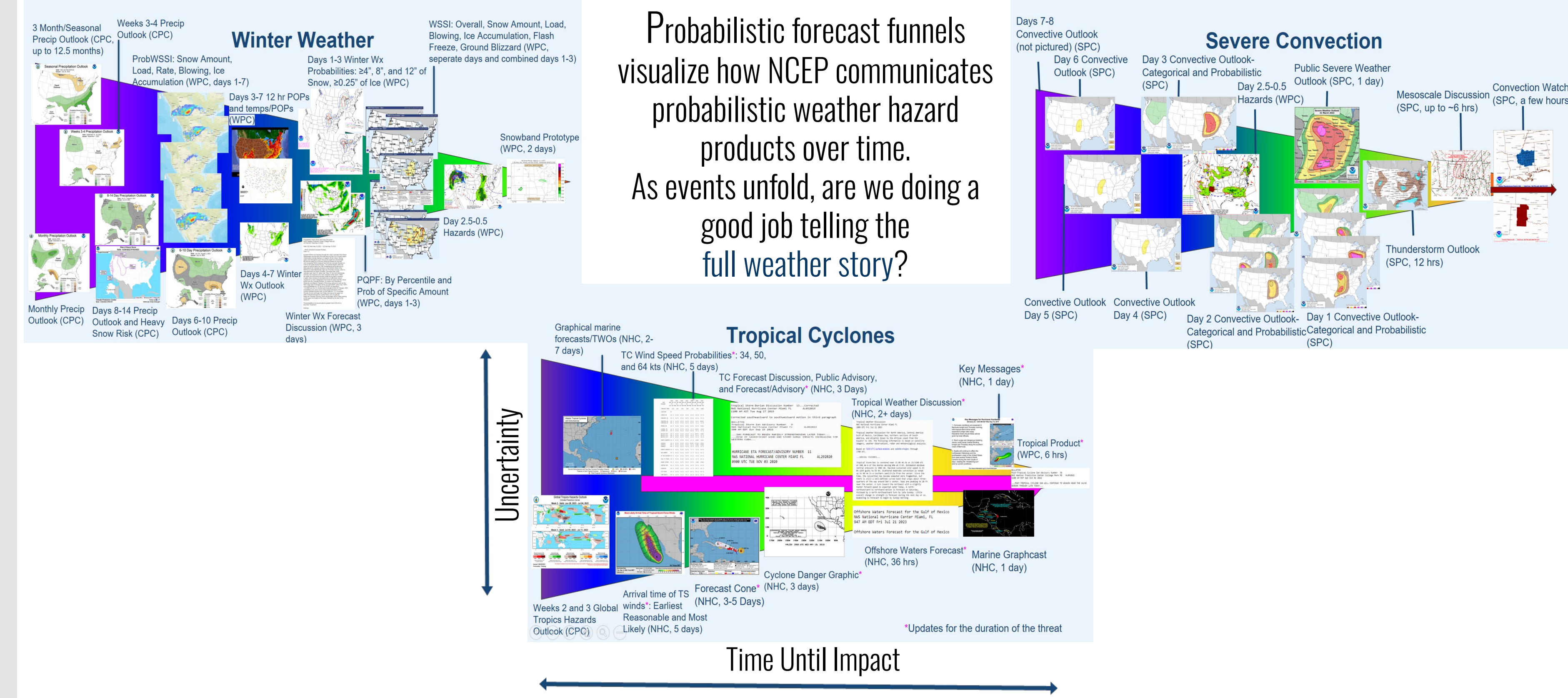
Input Needed!

How can we build a continuous dialog with the field of emergency management on these topics, and evolve the way we all use and communicate forecast probabilities?

We've heard from broadcasters - now we want to know what *you* think!

The Future: Holistic Perspective

Layers of Probability Information that Work Together Over Time



What We Learned About: NHC Beyond the Cone

Valuable NHC products aren't used as much as they could be, and targeted efforts will help bridge the gap

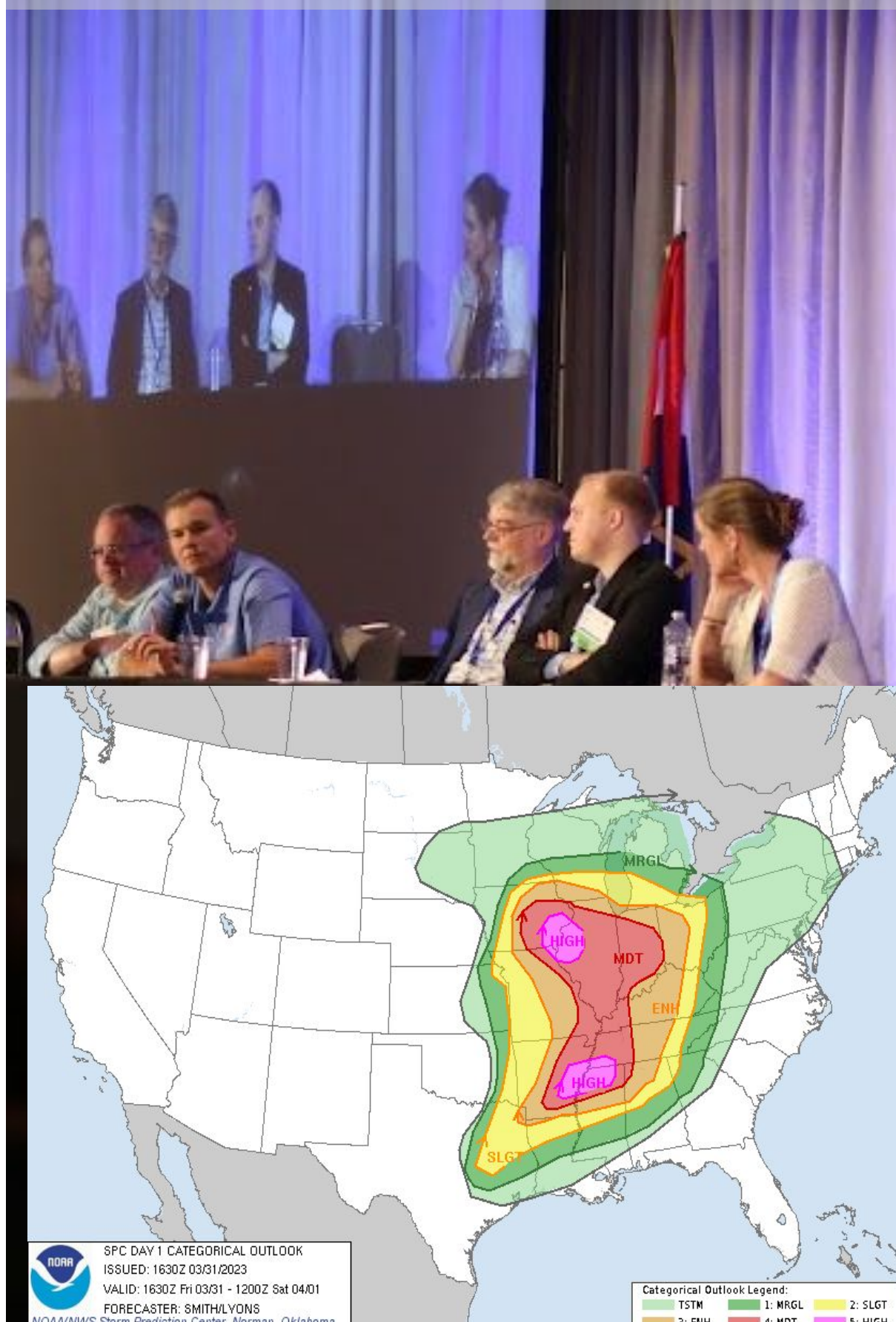
- Hurricanes generate compound hazards, and NHC has dedicated years of work to improve the communication of the **most lethal hazards, such as storm surge and inland flooding.**
- Social science research demonstrates that partners and public want this information to inform their decisions, and they want it to be as locally-scaled as possible, even if there's a lot of uncertainty
- Most broadcasters dedicate a vast majority of their coverage time to a **zoomed-out depiction of the forecast cone**, even though that does not depict the likely locations of compound hazard impacts - and broadcasters are the most-sought communicators when hurricanes threaten
- Broadcasters would like to do more, but experience a few barriers: NHC could help by **developing methods for layering newer risk-based products and training broadcasters on how to use them, and coordinating on best practices with broadcast directors and software vendors**, who shape much of what broadcasters put on air.
- **What do you think? How do you access NHC products? If there was a clear set of guidelines about how to put products together to get the big picture, would that help you use more of the information? How can NHC help you?**



What We Learned About: SPC Convective Outlook

Colors and words get all the attention, but what's under the hood of the scale may be much more important

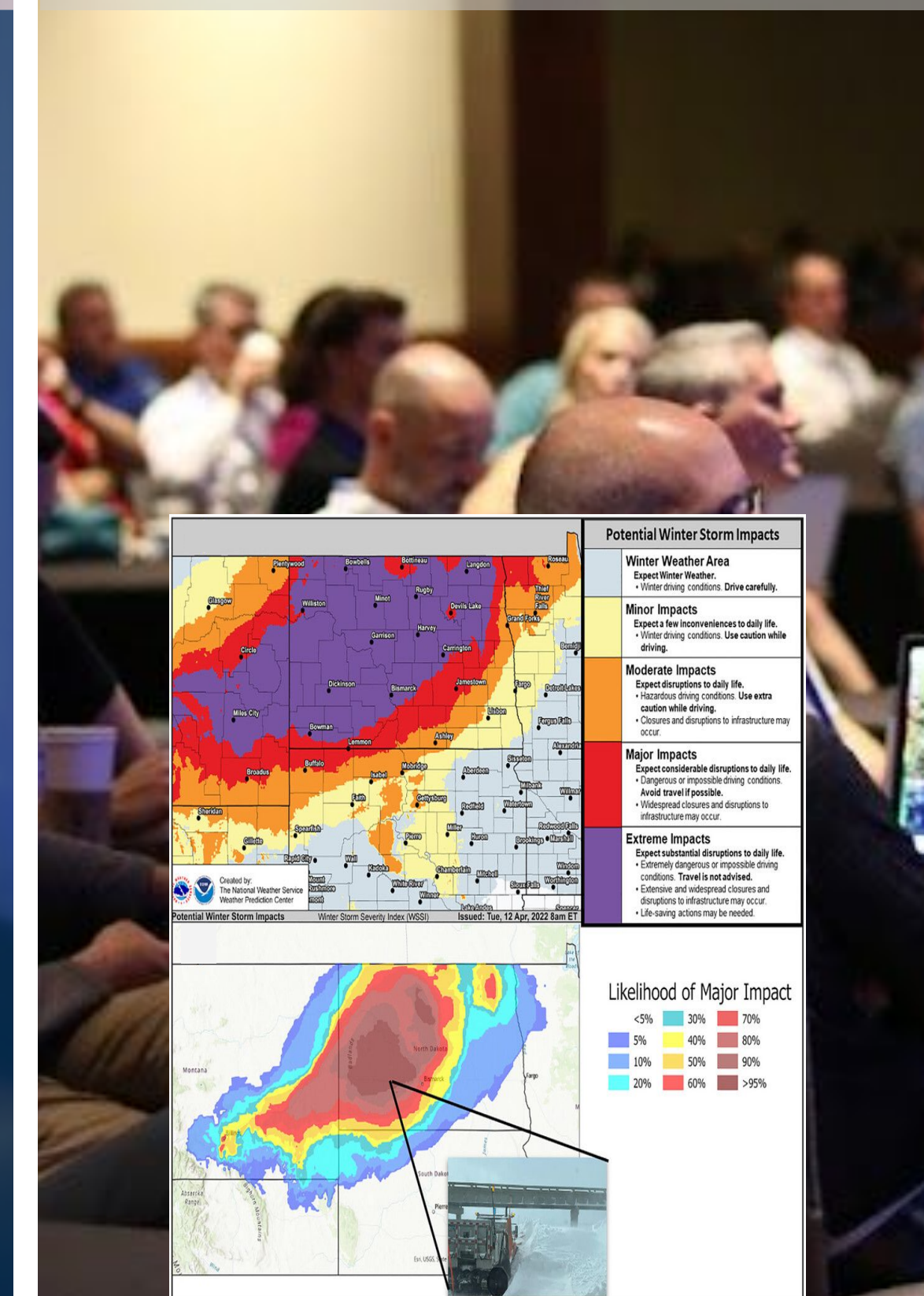
- SPC's Outlook grew from 3 to 5 categories ~10 years ago
 - An attempt to better discriminate events when coverage could be low and/or uncertainty of storms forming high, but storms that do form could be more intense - an "upper end" slight
- Broadcasters use only a portion of the SPC Convective Outlook consistently - **the numbers of the scale.** Most do not pass along the product in its entirety.
- **The SPC said this practice is fine**, especially because social scientists indicated that the numbers best promote public understanding. The words and colors aren't naturally ordered by the public, but intuitively, the numbers are.
- Instead of putting more effort into finding new colors and words, broadcasters were much more interested in SPC pursuing a **structural improvement to the scale** - to communicate coverage and intensity separately. Broadcasters liked this because, as one participant said, "it's what I'm trying to say! If this happens, THEN this could happen."
- **What do you think? If SPC pursued this, would you still want the original Outlook product as well? How do you use it?**



What We Learned About: WPC WSSI

The product has a lot of promise, but may be under-utilized as broadcasters figure out how to access and understand it

- The Winter Storm Severity Index (WSSI) is a first-of-its-kind NCEP product that not only delivers hazard information, but impact information. Impacts are notoriously difficult to estimate, and under the hood of this product, there's a lot of complexity
- WPC, supported by social science research, has revised the look and feel of its WSSI product to **support informed decision-making by users.**
- Now WPC is interested in understanding how communicators are accessing/using WSSI, and whether more detailed probabilities of various impacts, or frequent updates, could also be useful
- As with the NHC breakout, broadcasters noted challenges in accessing WPC data, and getting it in a useable GIS format: this currently limits some broadcast use of the product
- Broadcasters also noted that they want more historical products to be available - this would help them review, learn, and figure out how best to message winter storm impacts in their local area
- While broadcasters liked the idea of knowing how likely various impacts levels were, as it could help tell the forecast story, they weren't sure about rapid updates - they had concerns about decreasing public trust with forecasts that changed too often
- **What do you think? Do you access/use WSSI in your job? Would you like to know more about the likelihood of seeing different levels of winter storm impacts in your area?**



Current Repository of NWS GIS Services



Citations:
Schleinger, Kyra. (2023). *NCEP Forecast Funnels: Analysis of Probabilistic Products Across all NCEP Centers - All Forecast Funnels.*

National Weather Association. (2023). [Photographs].
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