

THE ROLE OF RESEARCH and ENVIRONMENTAL INTELLIGENCE in BUILDING PUBLIC HEALTH RESILIENCE

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PRIORITIZING RESEARCH





MISSION REQUIREMENTS

"Timely, actionable, reliable"

ENVIRONMENTAL INTELLIGENCE



Observations

Monitoring

Assessment

Modeling

Forecasts and Products

SCIENCE-BASED SERVICES AGENCY

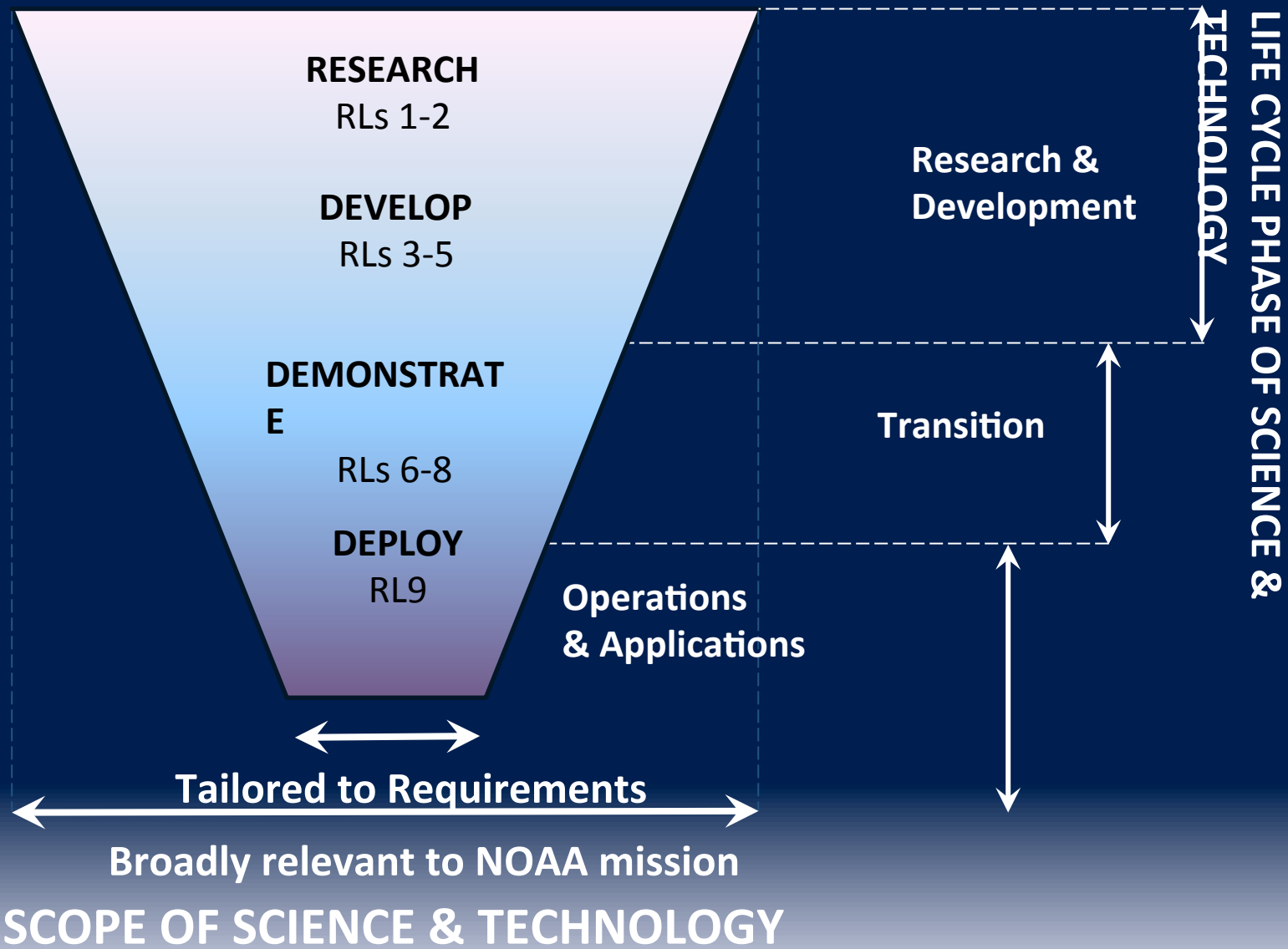
TOP PRIORITIES FOR 2014-2018

- 1 Make communities more resilient
- 2 Evolve the Weather Service
- 3 Invest in observational infrastructure

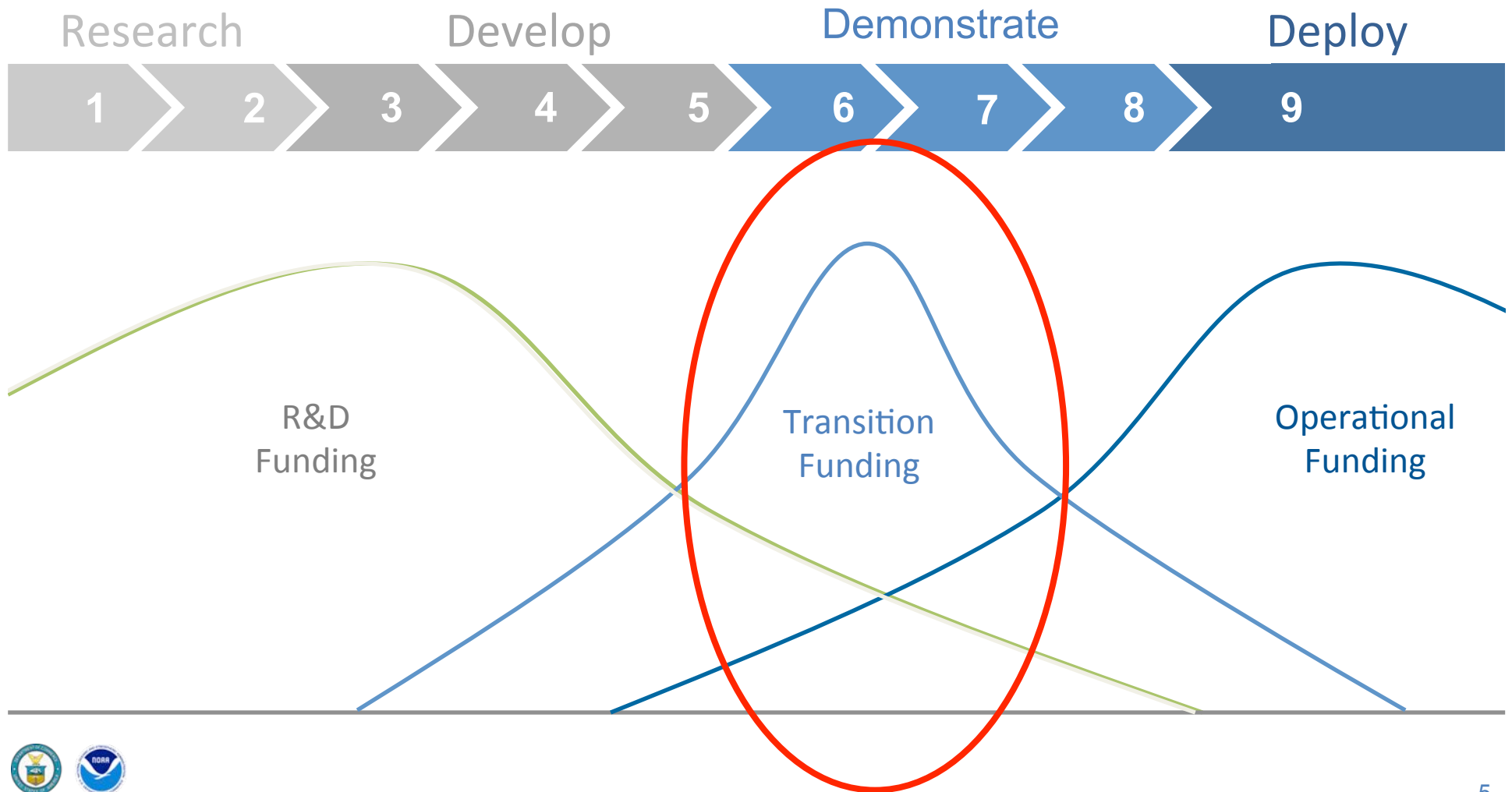


A predictive understanding of the Earth system

PROCESSES

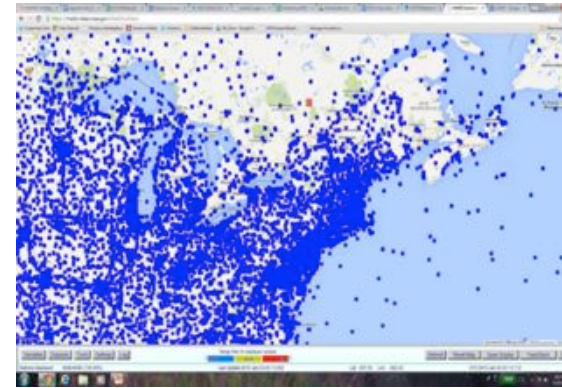
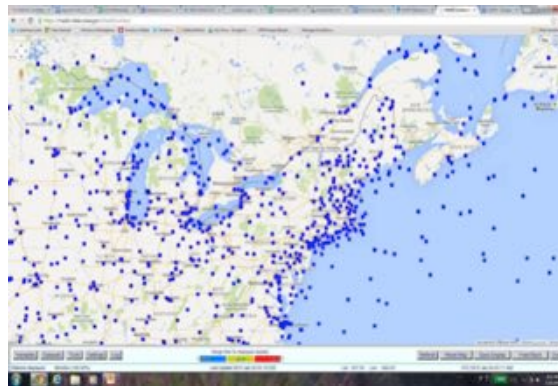


KEY COMPONENT OF PORTFOLIO LOGIC IS **ACCELERATING** “R2X”

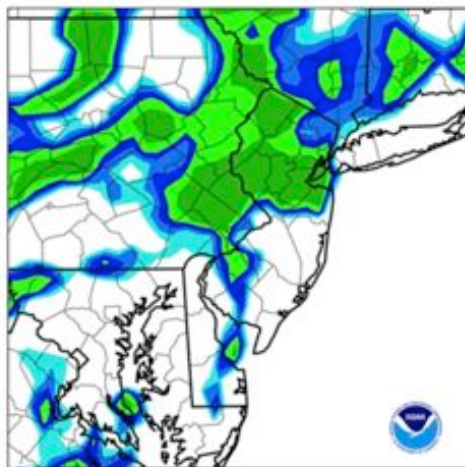


MOTIVATING R20 EXAMPLES

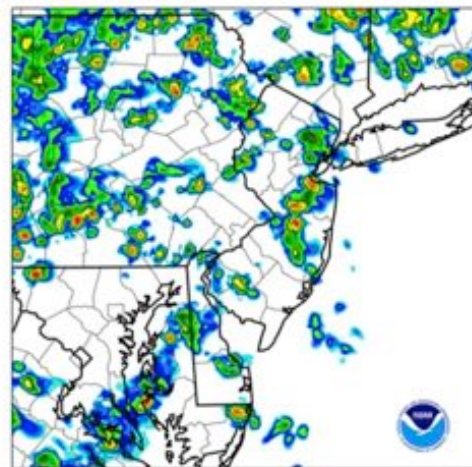
NOAA surface stations
without MADIS **with MADIS**



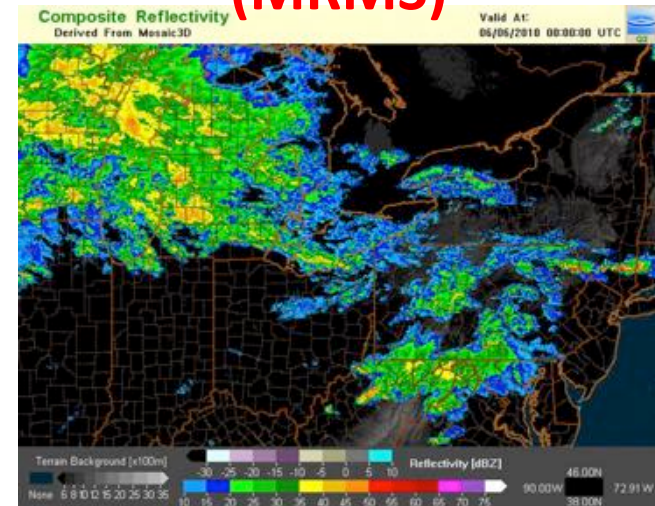
Existing weather
model



New HRRR
weather model



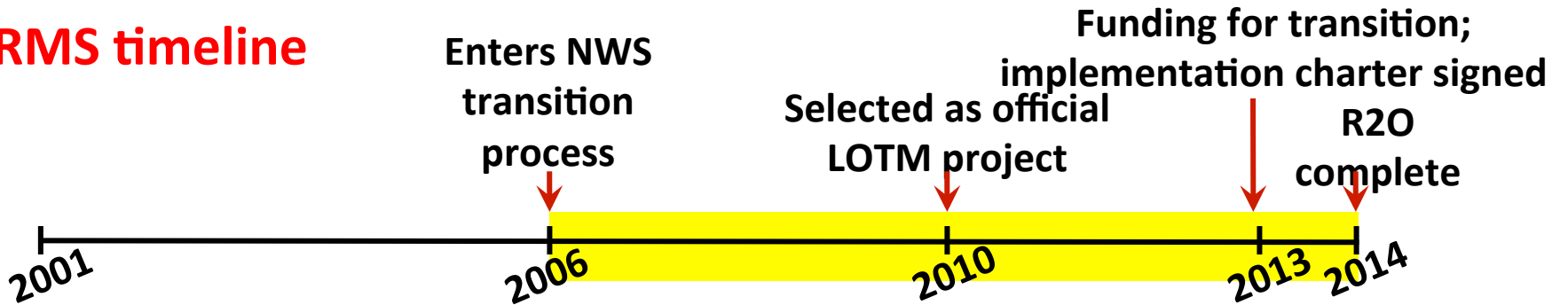
Multi-RADAR/Multi-sensor (MRMS)



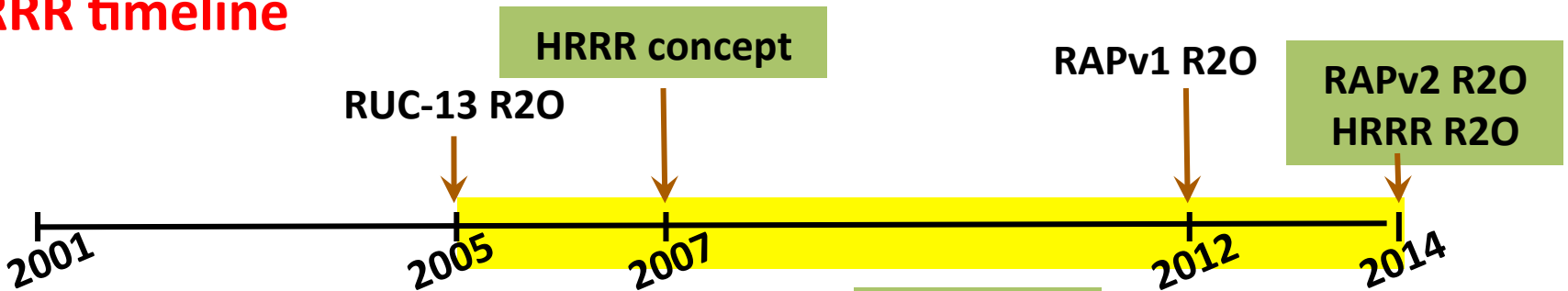
A comparison of two weather forecast models looking six hours ahead for the New Jersey area. Image on left shows the forecast which doesn't distinguish between hazardous weather. Image on right shows the new HRRR (High-Resolution Rapid Refresh) model that clearly depicts where local thunderstorms (yellow and orange) are likely. (Credit: NOAA)

MOTIVATING R2O EXAMPLES

MRMS timeline

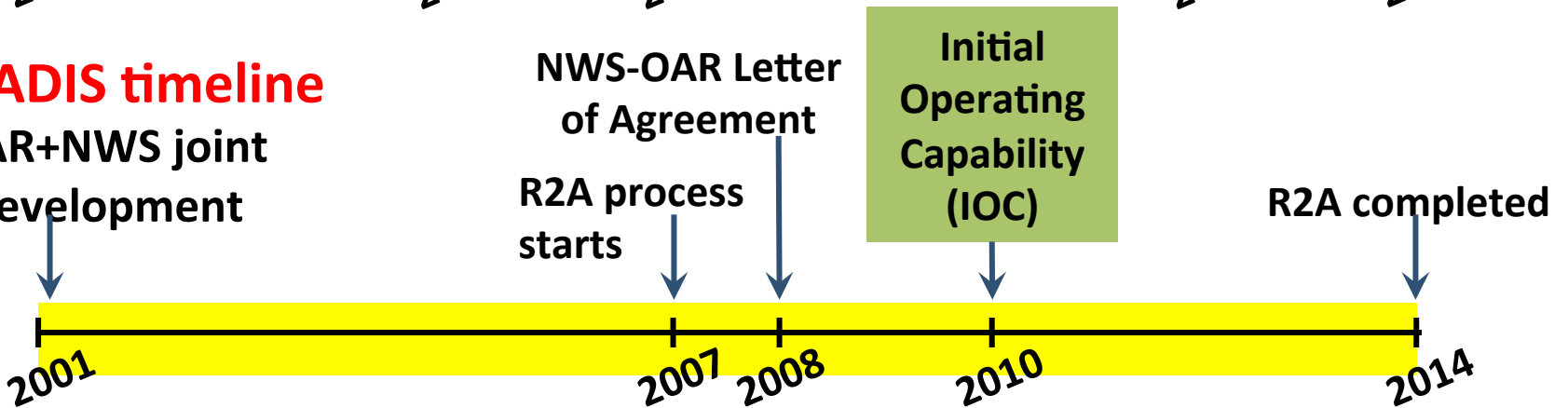


HRRR timeline



MADIS timeline

OAR+NWS joint development



PROCESS

RESOURCES

CULTURE

COORDINATED DEVELOPMENT OF PRODUCTS

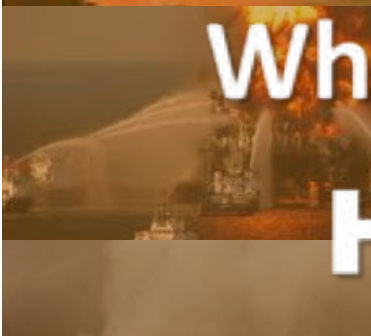


TESTBEDS

www.testbeds.noaa.gov

**Hazardous Weather Testbed
Norman, OK**





What does this mean for
HEALTH & CLIMATE?



HEAT HEALTH

PRIORITIZED NEEDS

- 2-week forecast with appropriate skill
- Sector-specific decision thresholds
- ...

CAPABILITIE S

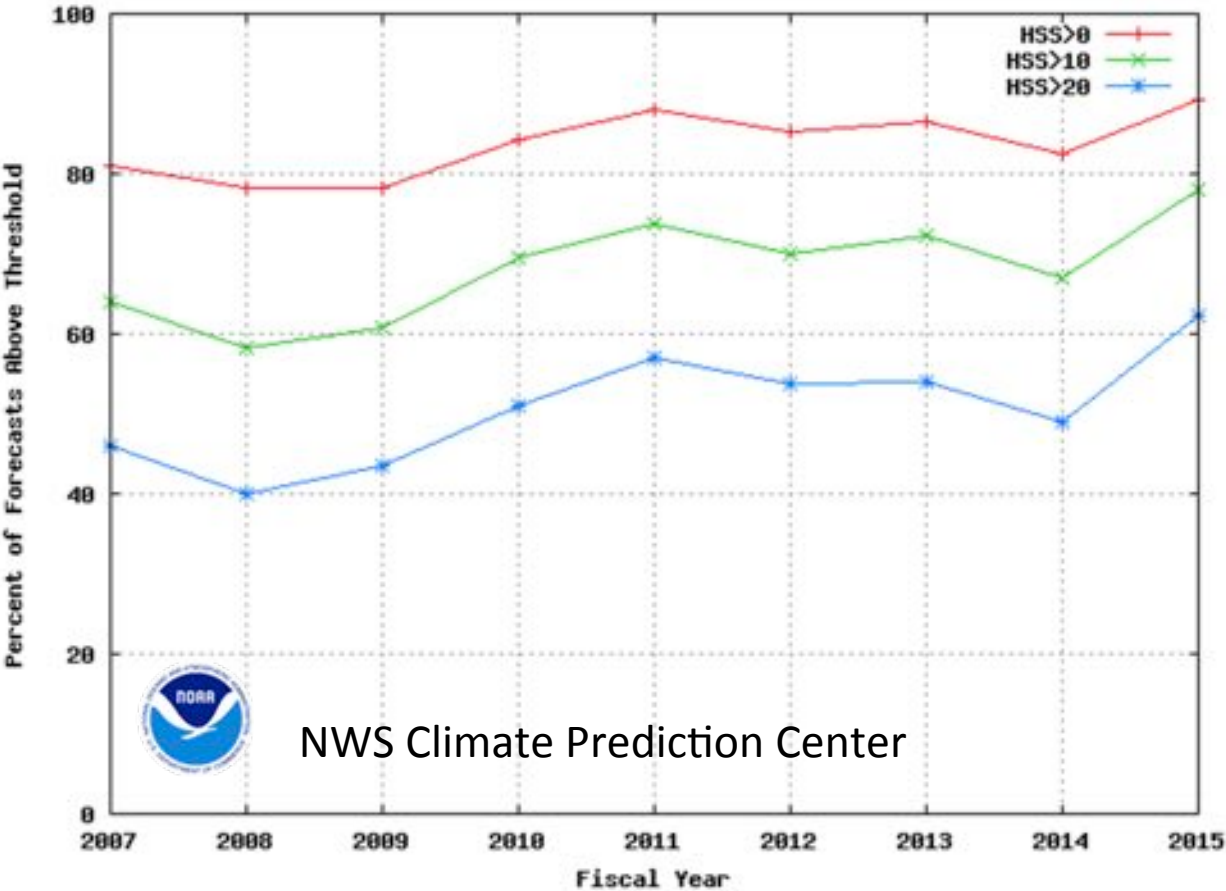
- Observations
- Modeling
- Data assimilation
- ...

GAPS

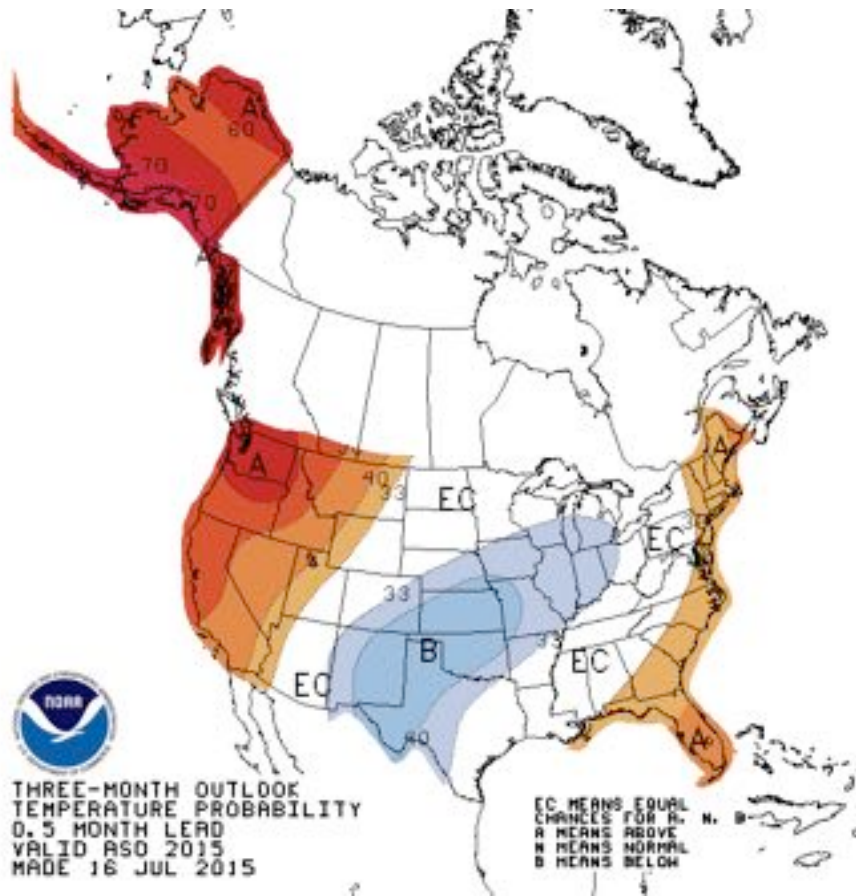
?

NOAA's sweet spot

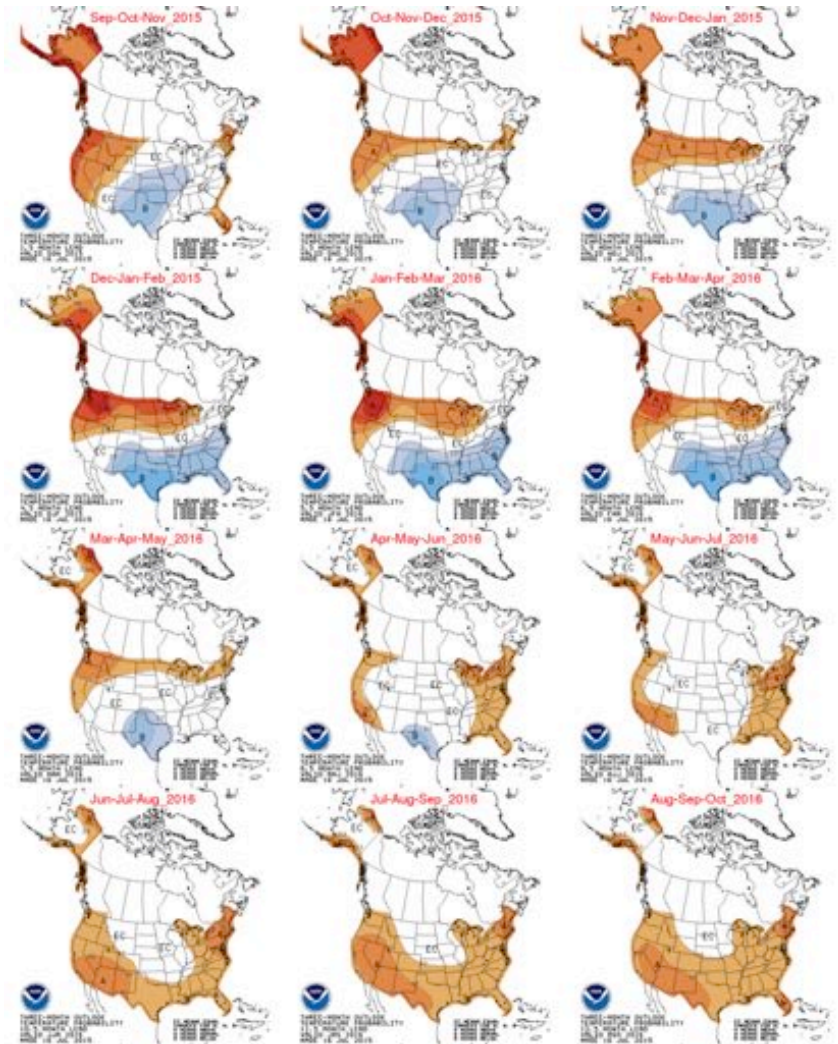
CLIMATE FORECAST SKILL 2007-2015



CURRENT HEAT-RELATED PRODUCT



Aug-Sep-Oct 2015 seasonal temperature outlook



3-month overlapping seasons through Aug-Sep-Oct 2016



COLLABORATION & DIALOGUE

Regional Integrated Sciences & Assessments (RISA)



Weather-Ready Nation National Dialogue



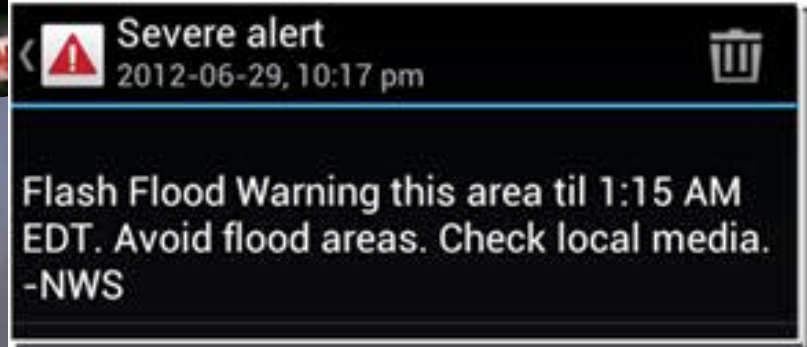
Stakeholders & scientists working together





RESEARCH GAPS

- Observations
- Sub-grid parameterization
- Risk communication

SOCIAL SCIENCE RESEARCH



- Enhanced Fujita scale for tornadoes
- Impact-based warnings

	Up to 3 feet above ground
	Greater than 3 feet above ground
	Greater than 6 feet above ground
	Greater than 9 feet above ground

User-centered tool design

NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM



STRATEGIC RESEARCH GUIDANCE OUTCOMES

“Better” products

Clearer direction of research
priorities

Coordinated priorities &
responsibilities



THANK YOU

