

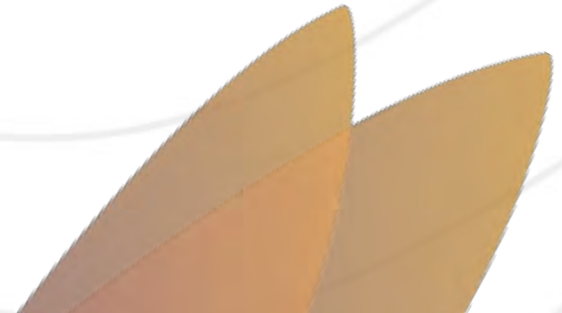


Future of Water


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Senior Program Leader, Climate Services

Goals for the Session

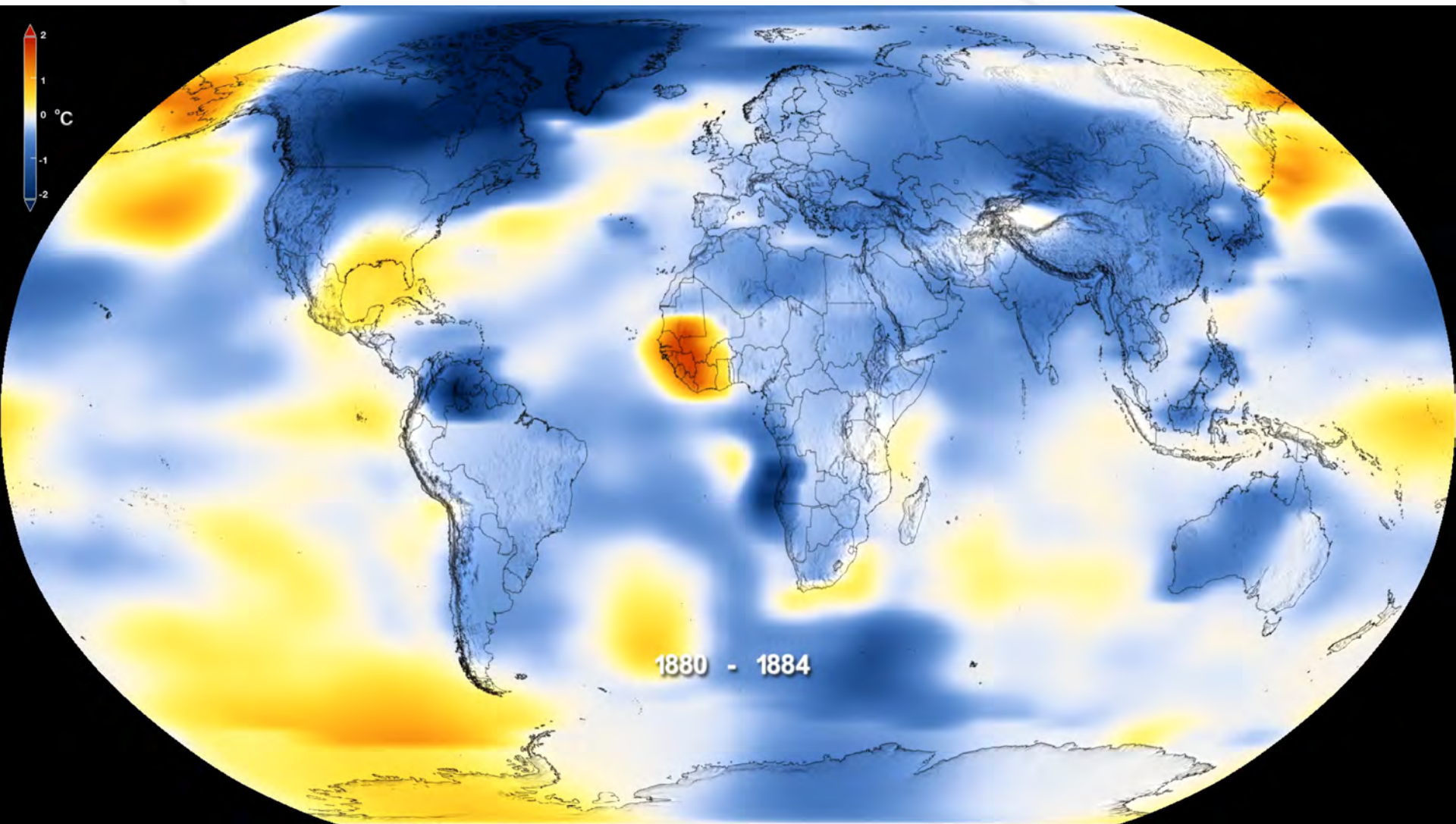
- Improve understanding of how the combined stressors of climate change and continued urbanization are likely to impact water resources and associated ecosystems
- Spark creative problem solving on how we respond to these challenges



Presentation Structure

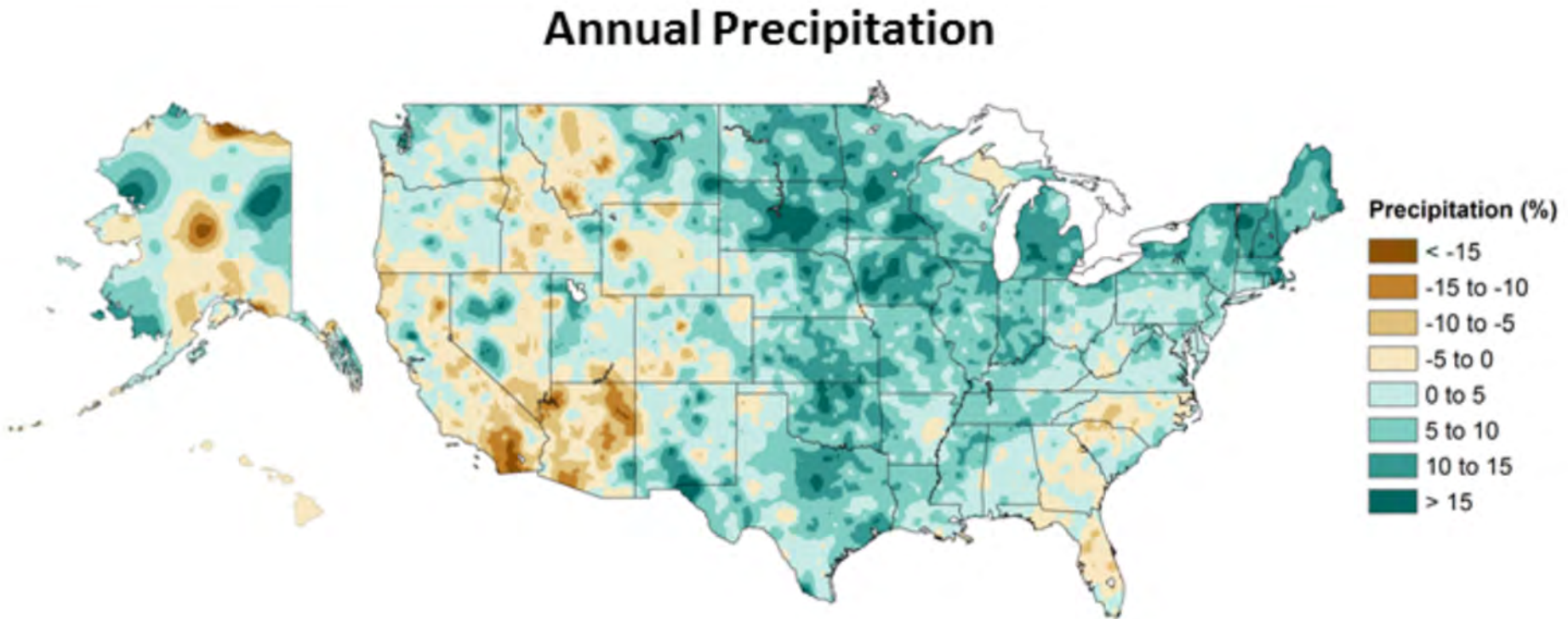
- Eric: Intro and Climate Change Overview
 - Heidi: Development trends and projections
 - Sara: Combined impacts of climate change and future development on water resources
 - Bill: MVP process as a vehicle for addressing these concerns
- 

Global Temperature Anomalies



Observed Precipitation Change

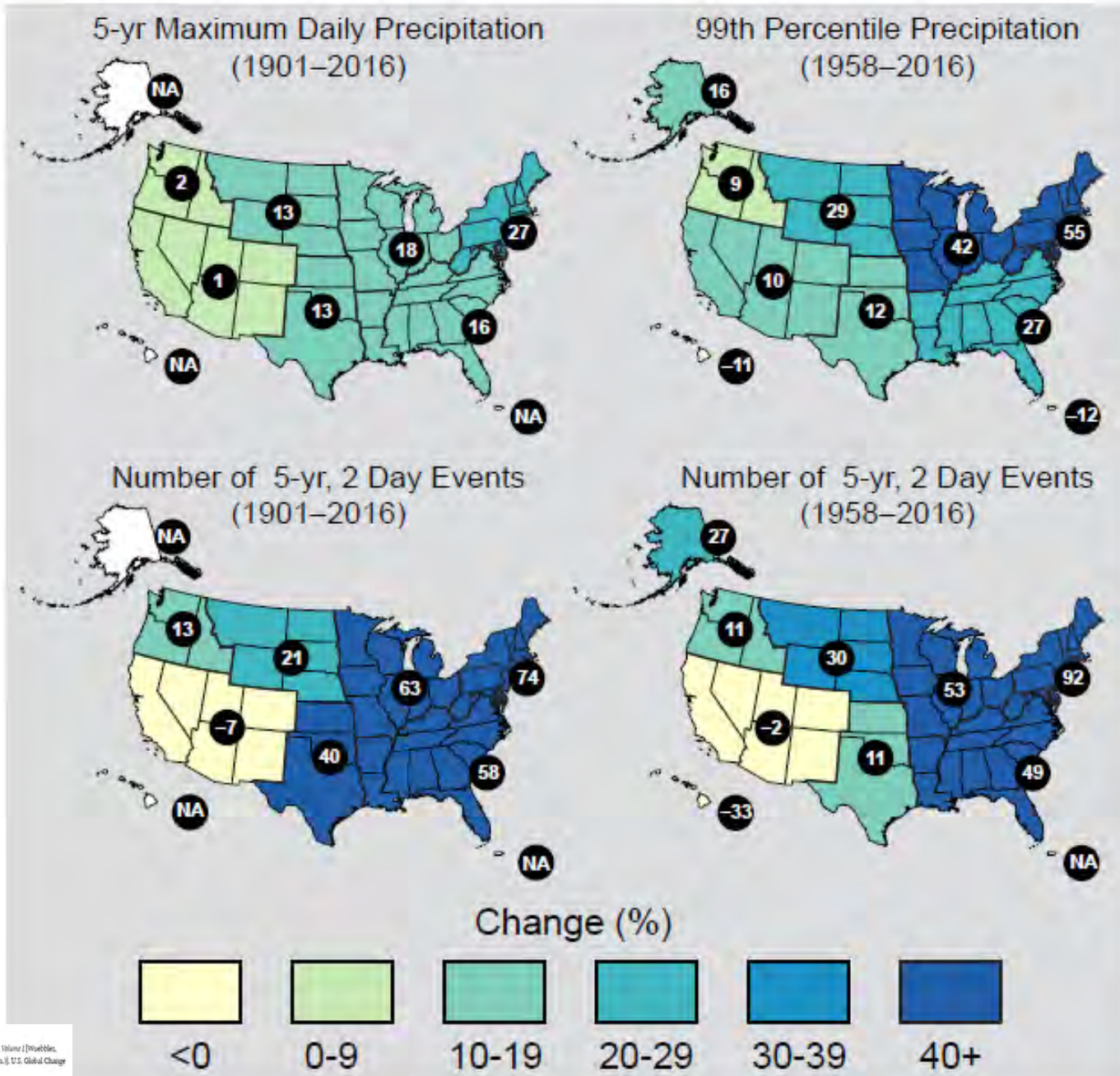
Current average compared to first half of previous century



Recommended Citation for Report

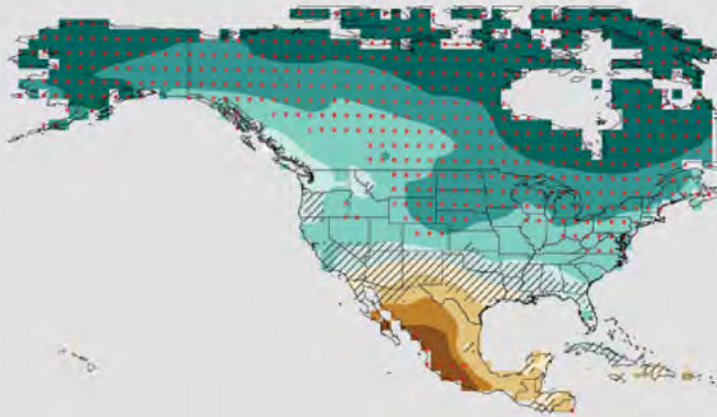
USGCRP, 2017: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964j6.

Observed Change in Heavy Precipitation

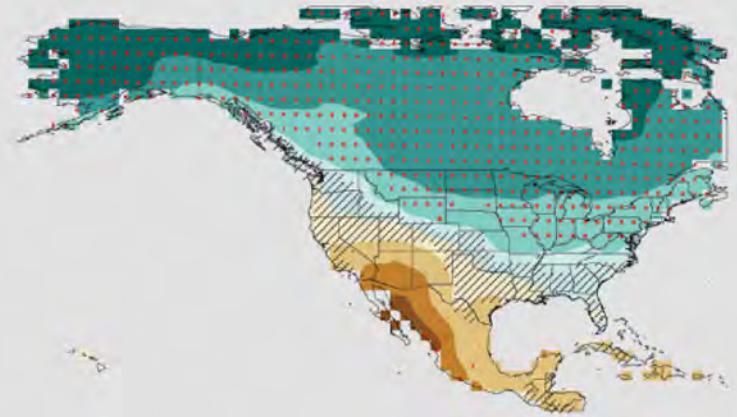


Projected Change (%) in Seasonal Precipitation

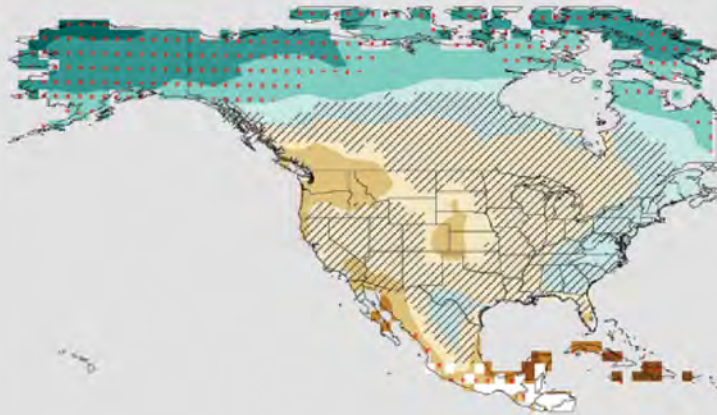
Winter



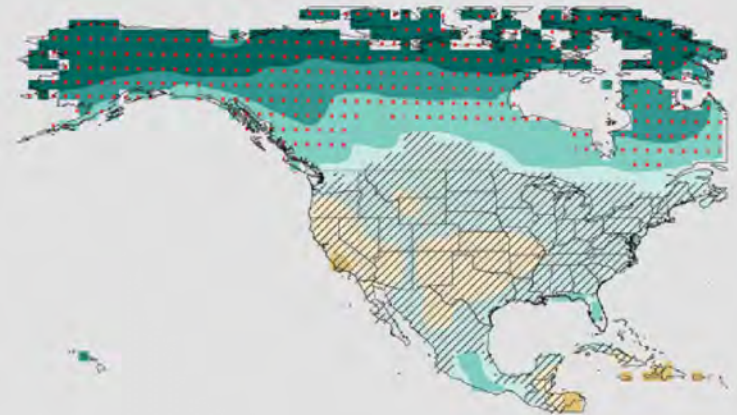
Spring



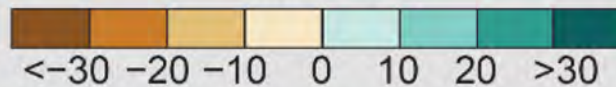
Summer



Fall



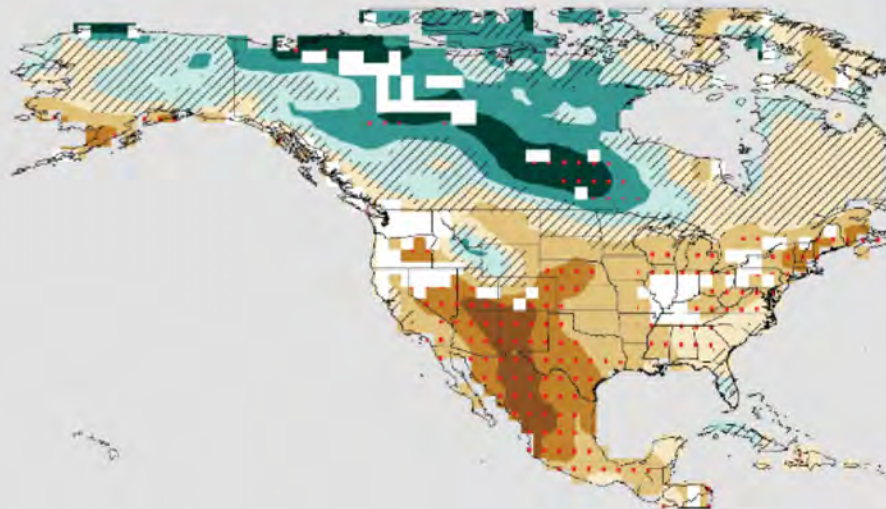
Change (%)



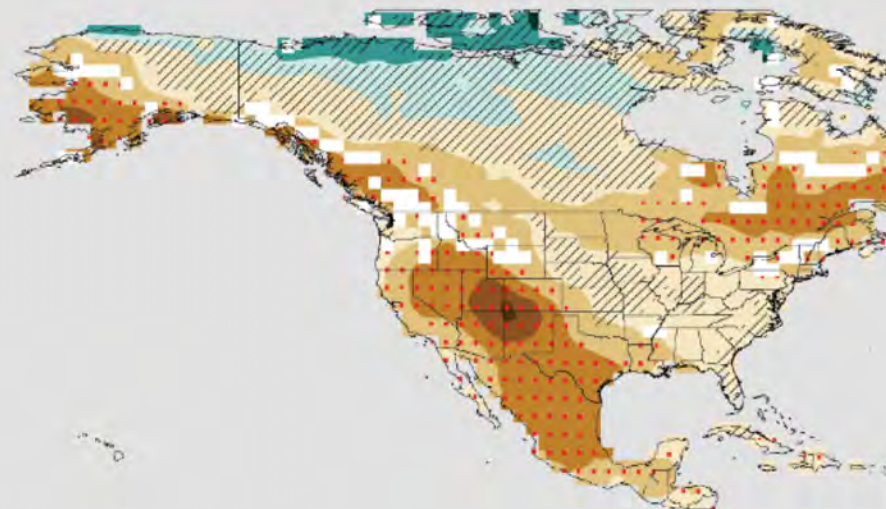
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Projected Change (mm) in Soil Moisture, End of Century, Higher Emissions

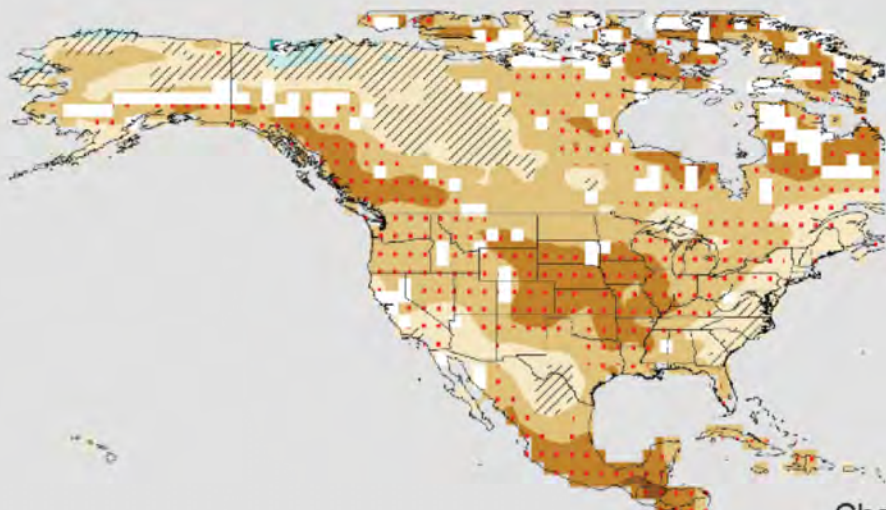
Winter



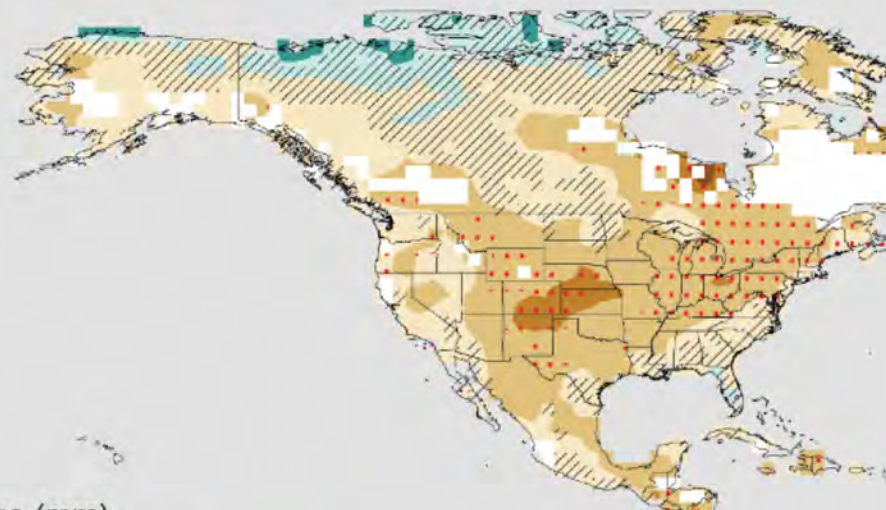
Spring



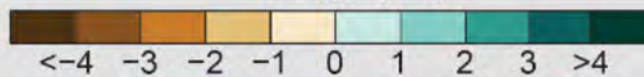
Summer



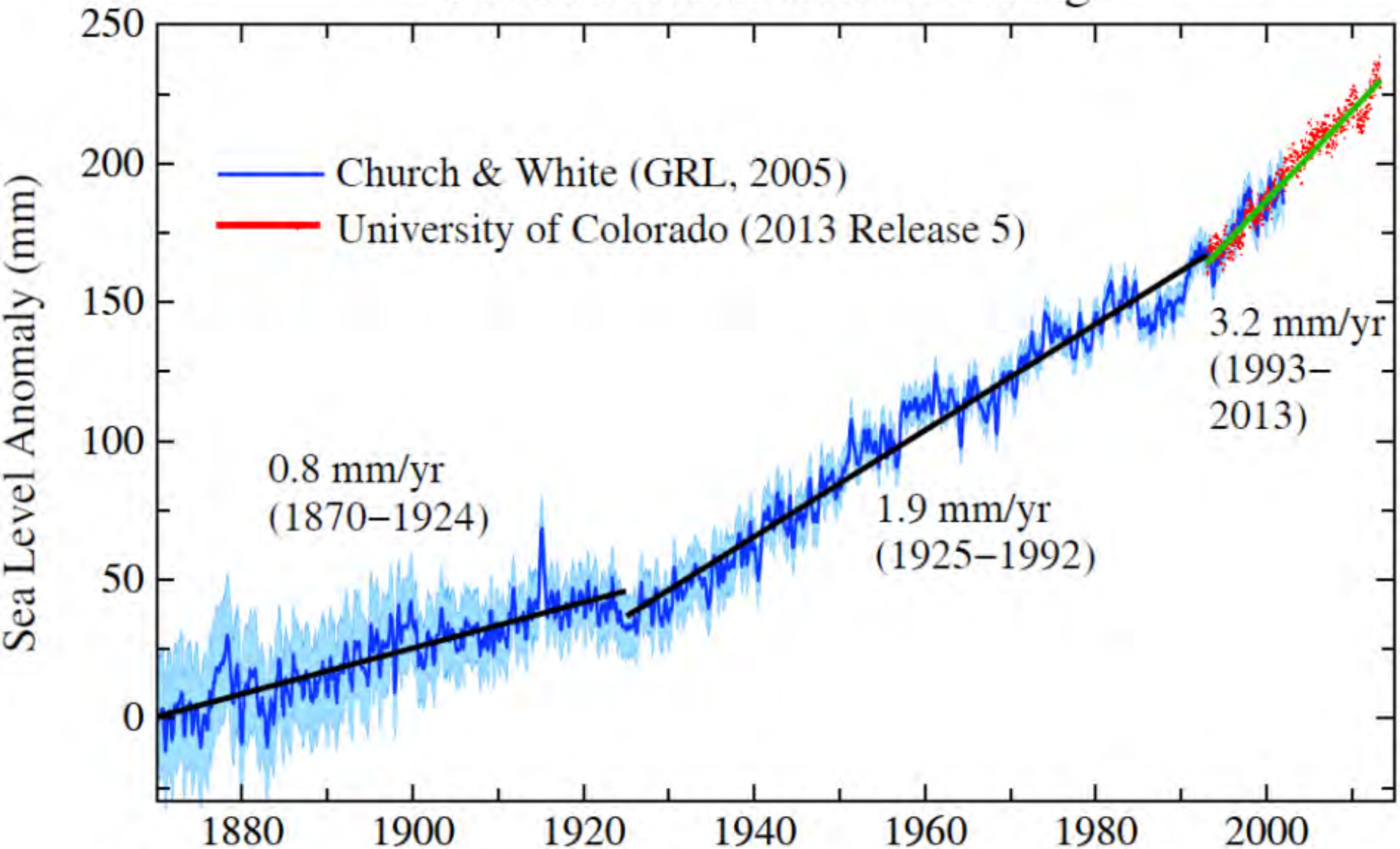
Fall



Change (mm)

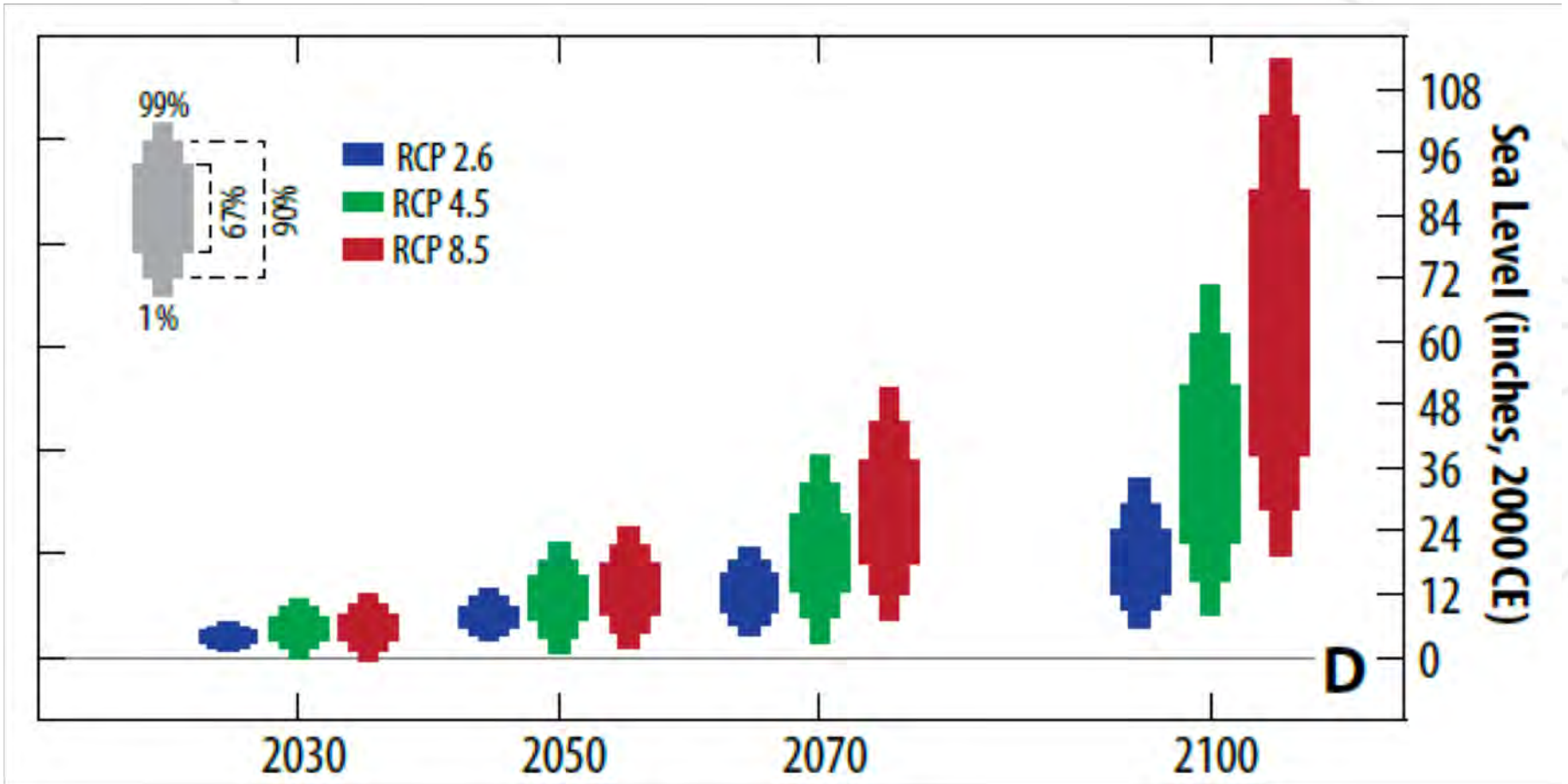


Global Mean Sea Level Change



Accelerating rate of sea level rise during the past century.

Projected Relative SLR Boston



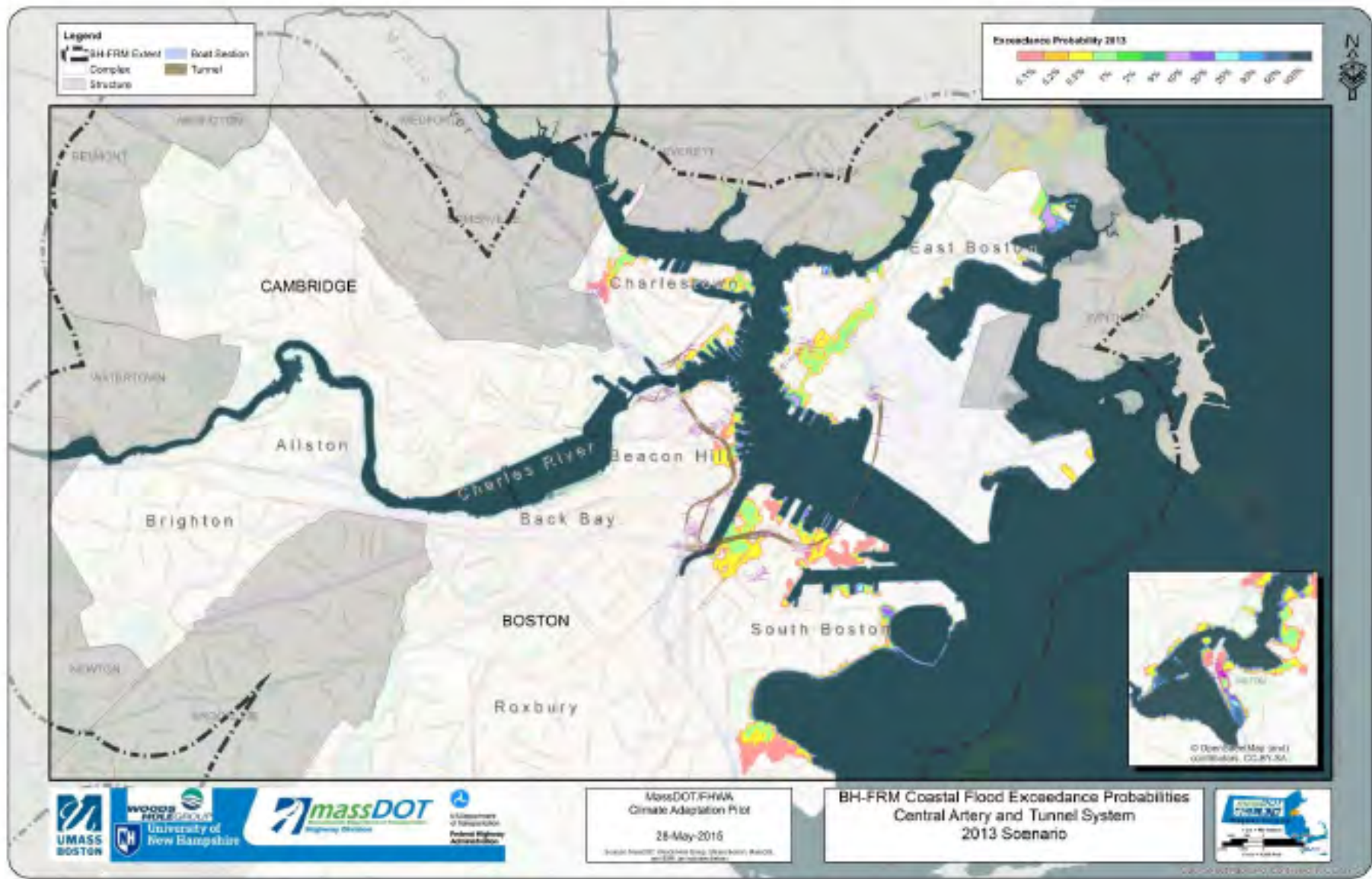


Figure 4-32. BH-FRM results showing probability of flooding in 2013.

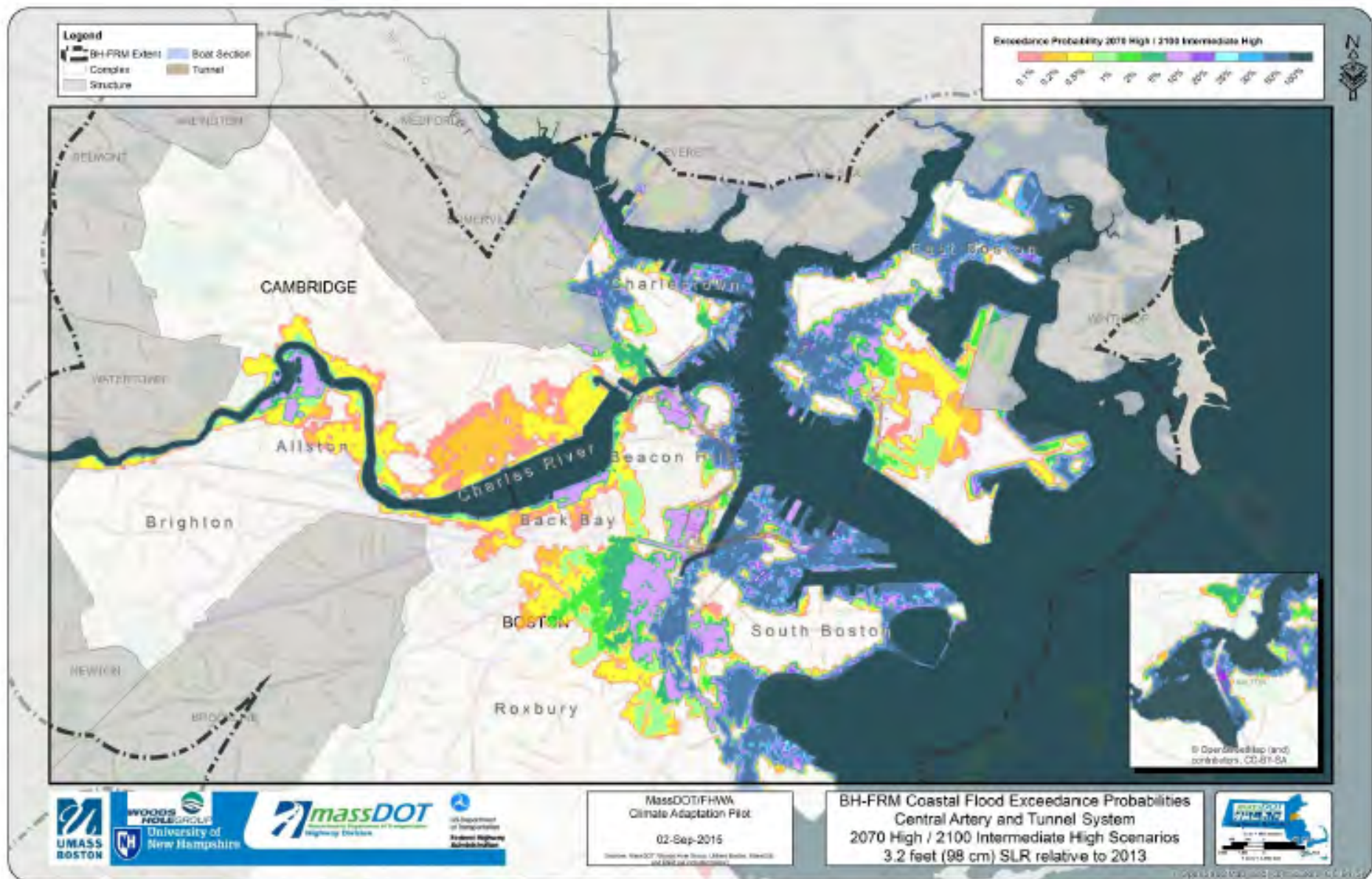


Figure 4-33b. BH-FRM results showing probability of flooding in 2070. An additional 2.5 in (6.3 cm) due to subsidence was added to the 3.2 feet SLR.

Key Concepts

- Consider both changing averages and changes in extremes
- Multiple sources of uncertainty in modeled projections:
 - Unknown future greenhouse gas emission rates
 - Feedback loops
 - Intersecting stressors
 - Tipping points
- Monitoring changing environmental conditions is increasingly important!



Thank You

