

John Harrington, Jr.

- Professor and Former Head of Geography at K-State
- At K-State since 1994
- Climate science, physical geography, the human drivers of global change, and geography education
- Classes = Atmospheric Science, Climatology, Human Dimensions of Global Change, and a seminar on Geographic Thought



Climate Change and Mitigation



National Science Foundation
WHERE DISCOVERIES BEGIN

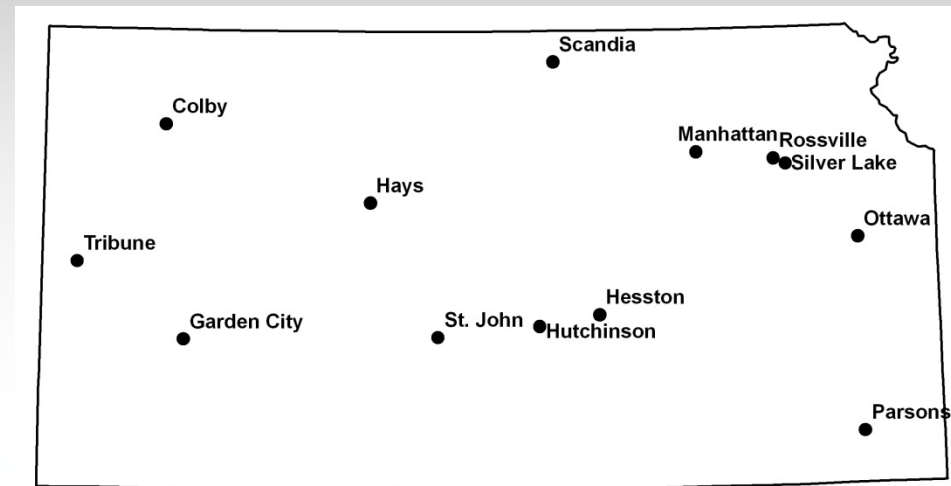


Central Great Plains Climate Education Partnership

Differences in Kansas soil temperatures between the 1990s and 2000s

Rhett Mohler and John Harrington, Jr

- Analysis of winter into spring warm up
- Date when soil temperature reached a threshold (e.g., 55°F)
- Western locations warmed more & faster in the 2000s for most thresholds
- Several central and eastern stations showed faster warming in the 1990s during winter



Transactions of the Kansas Academy of Science

Kansas Academy of Science

Historical Climate Variation and Agricultural Adaptations in Kansas and the Great Plains

Ian Howard and John Harrington, Jr

Emphasis on Droughts and Floods

Major river basin **flooding** in:

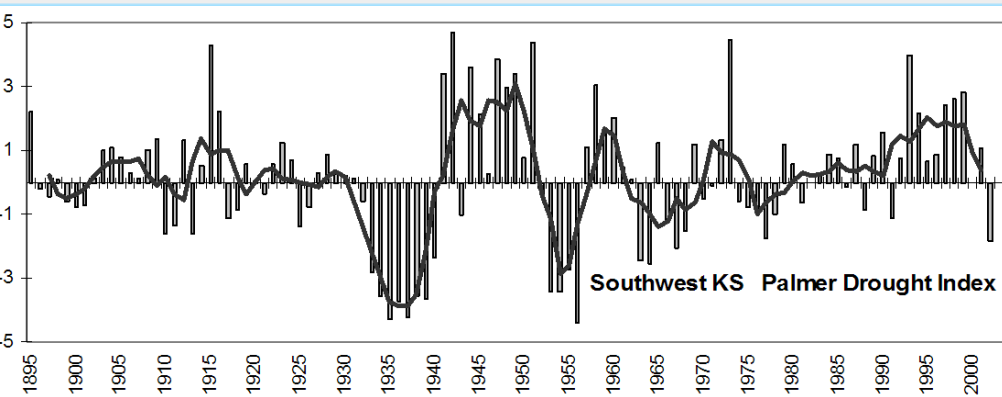
1844, 1903, 1935, 1951

Major **droughts** in:

1860, 1888-92, 1894, 1930s, 1950s



Rock Island railroad bridge and U.S. Hwy. 75 bridge (Topeka Boulevard, center), Melan bridge (Kansas Avenue, upper right), Santa Fe railroad bridge (top right) after washing out. Photo looking northeast (photo courtesy of G.L. Sardou, Topeka, Kansas).



Greater variability in the 1930s, 40s, & 50s

Oceanic teleconnections as the AMO was warm (+) and PDO switched from + to -

THE INTERNATIONAL
JOURNAL of **CLIMATE CHANGE**
Impacts and Responses

Next Steps: a climatic analysis of heat waves

Building on prior work of Dr. Erik Bowles (K-State PhD 2009)

No established definition of a heat wave

Hourly data availability enable a more robust stress assessment

How might the frequency, length, and magnitude, of heat waves change with ongoing global climate change?

Significant impacts on a number of sectors.

Intl J of Biometeorology

