

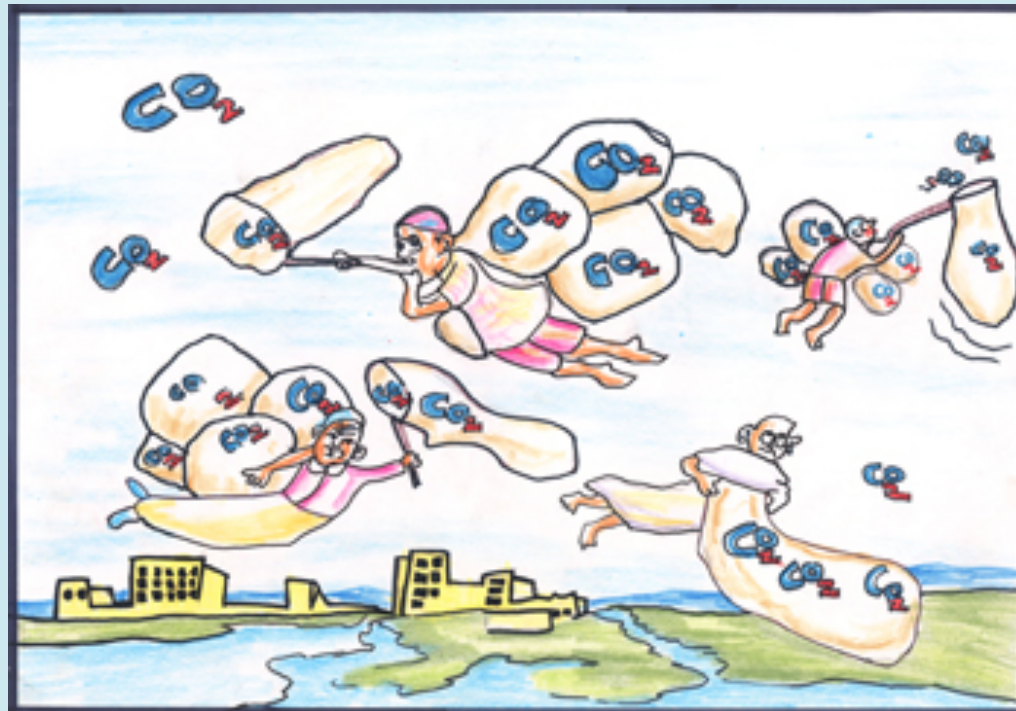
Teaching Climate Change

ASLE, June 2015

SueEllen Campbell

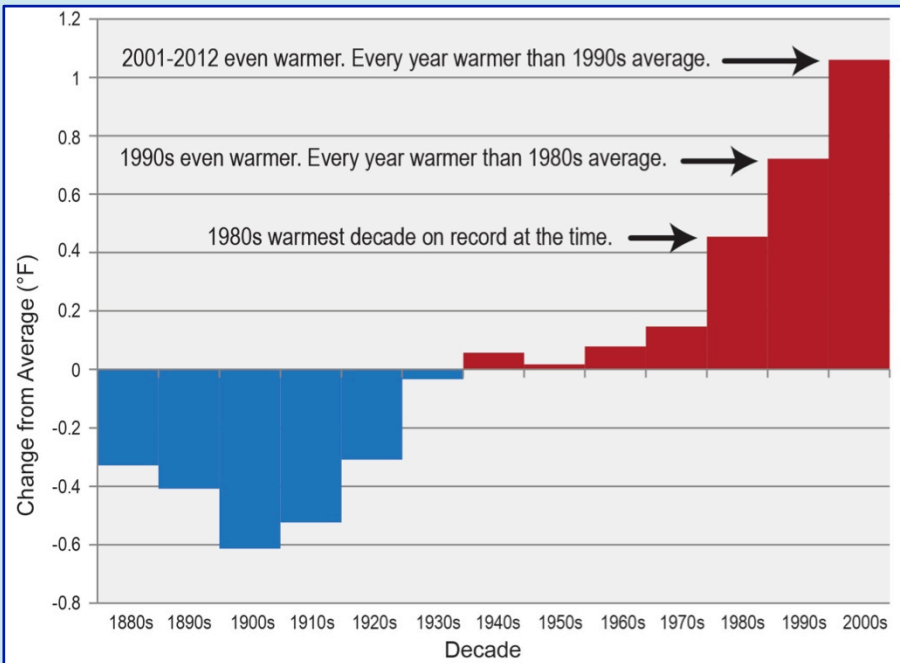
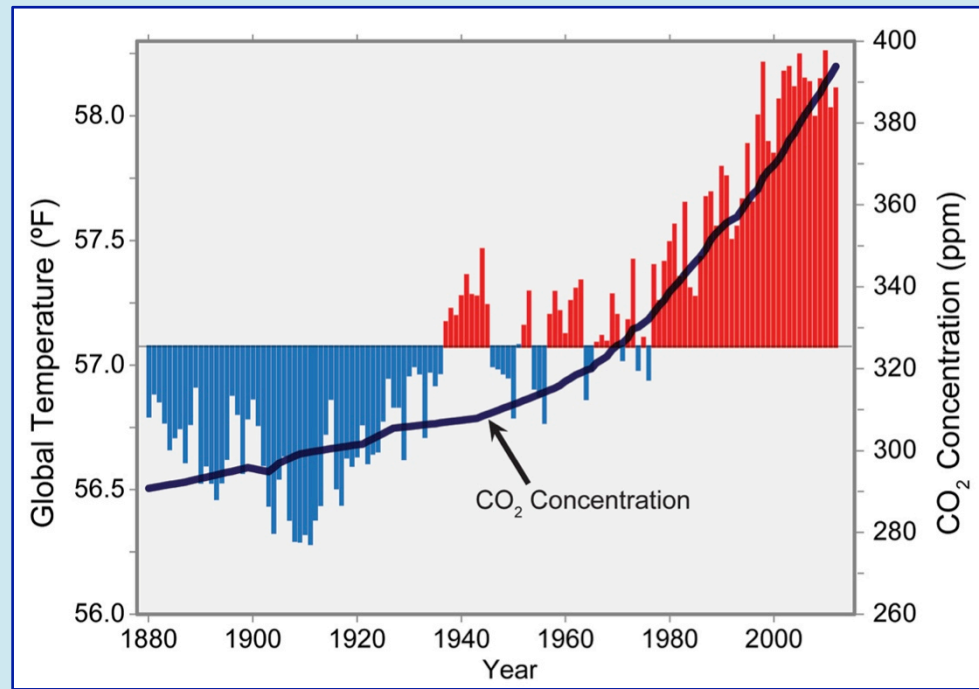
Changing Climates @ Colorado State University

(English & CMMAP)



Sonia R. Bhavani, 7, Kenya

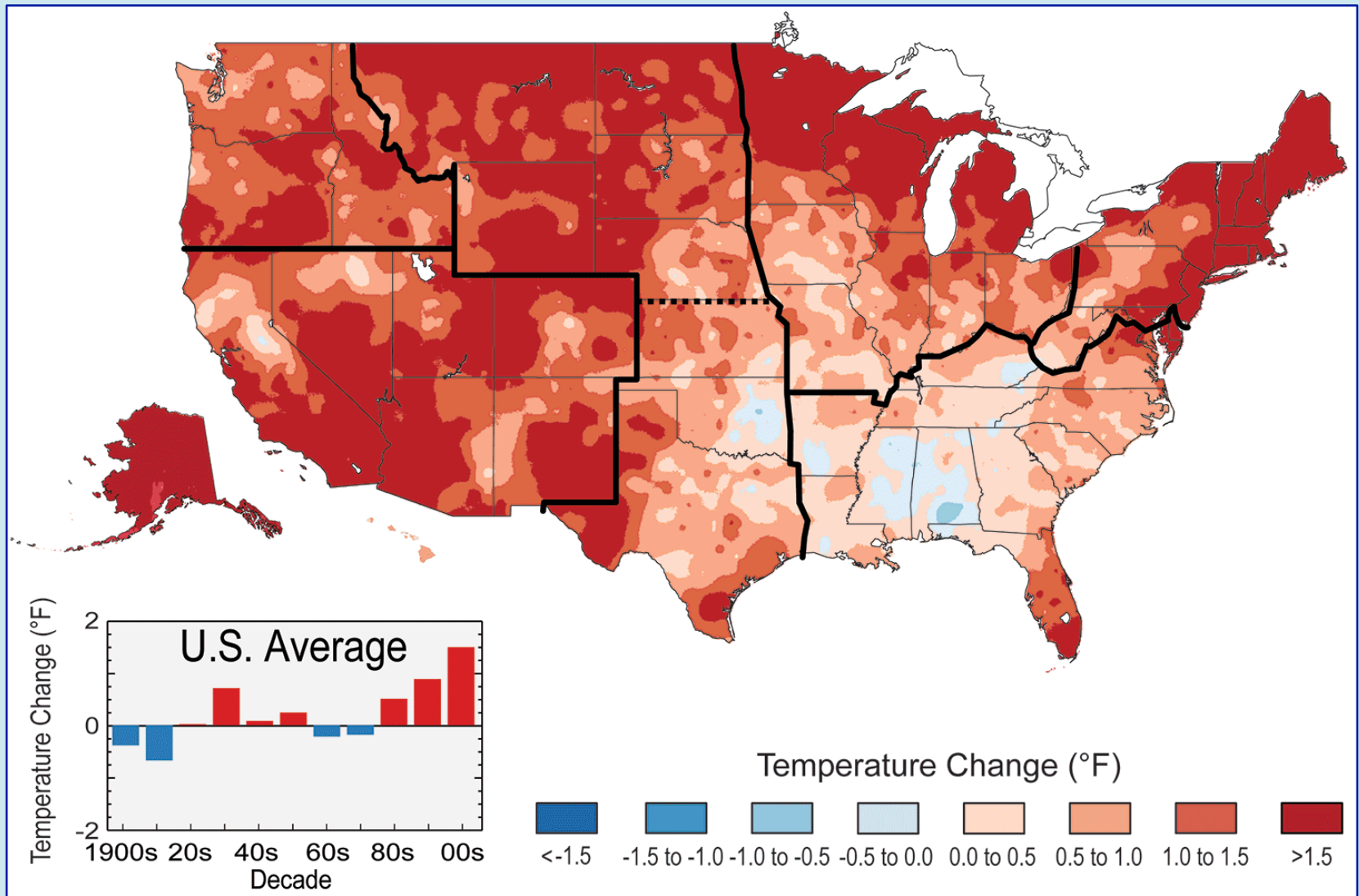
Global Temperature and Carbon Dioxide



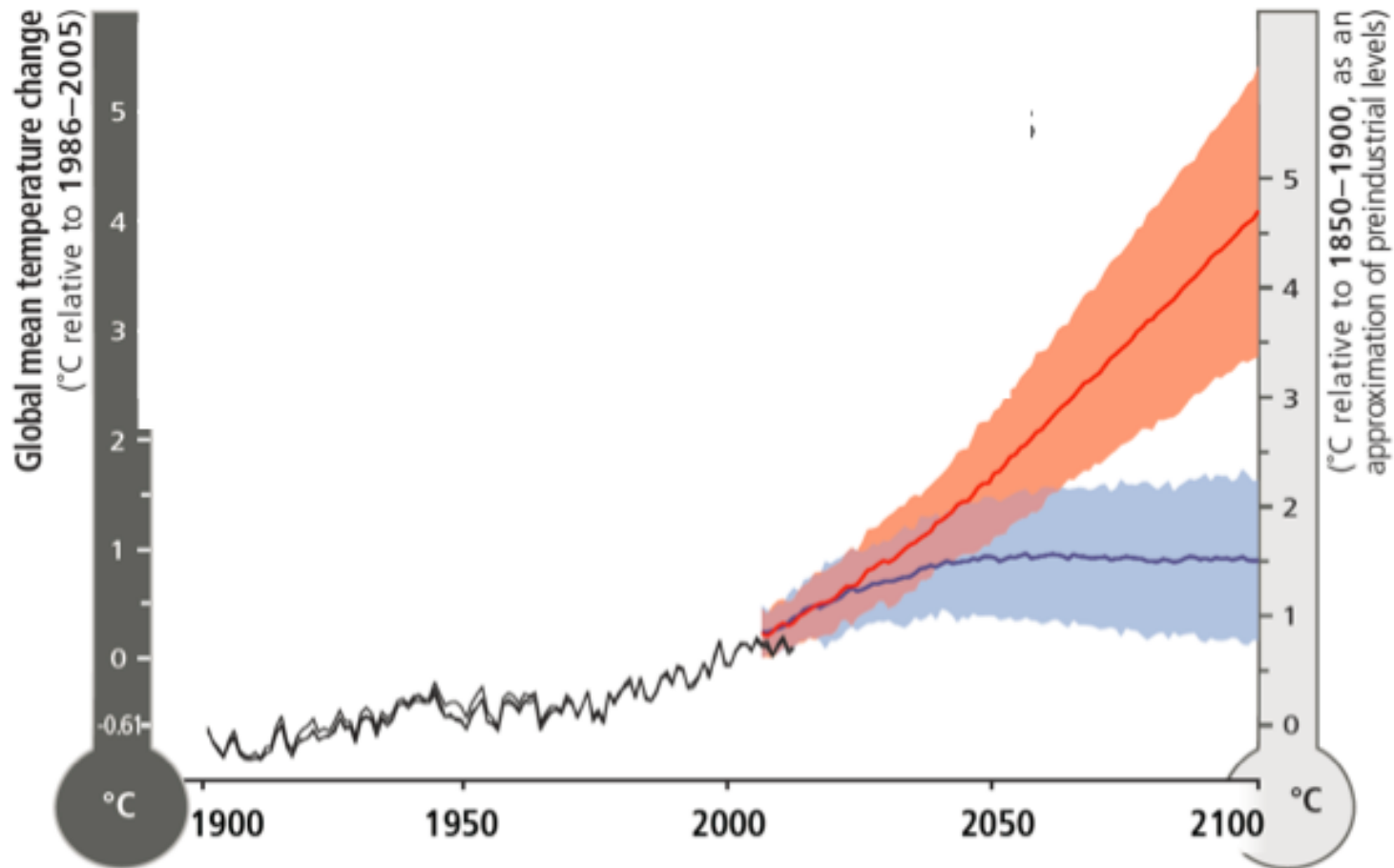
National Climate Assessment 2014

Temperature Change by Decade

Observed U.S. Temperature Change

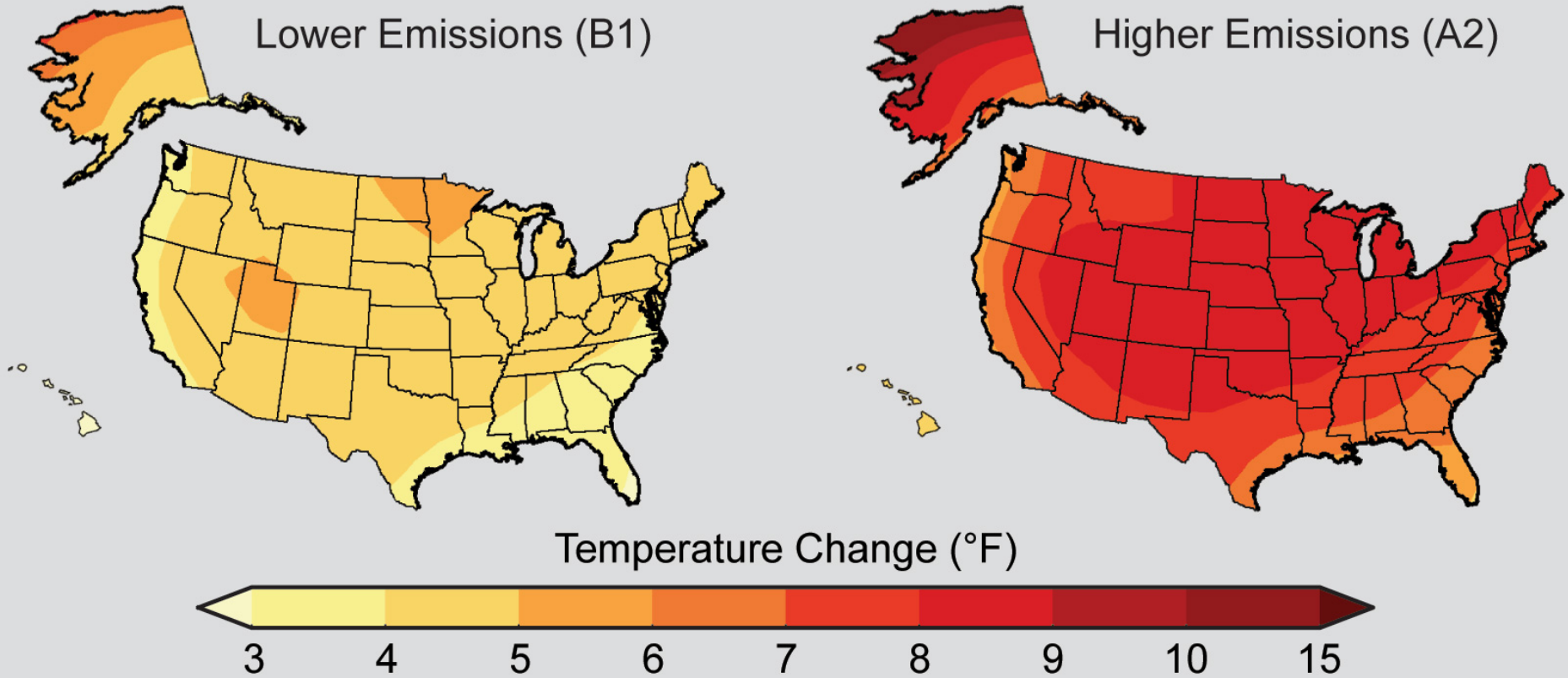


There's a BIG difference between doing a lot and doing nothing.

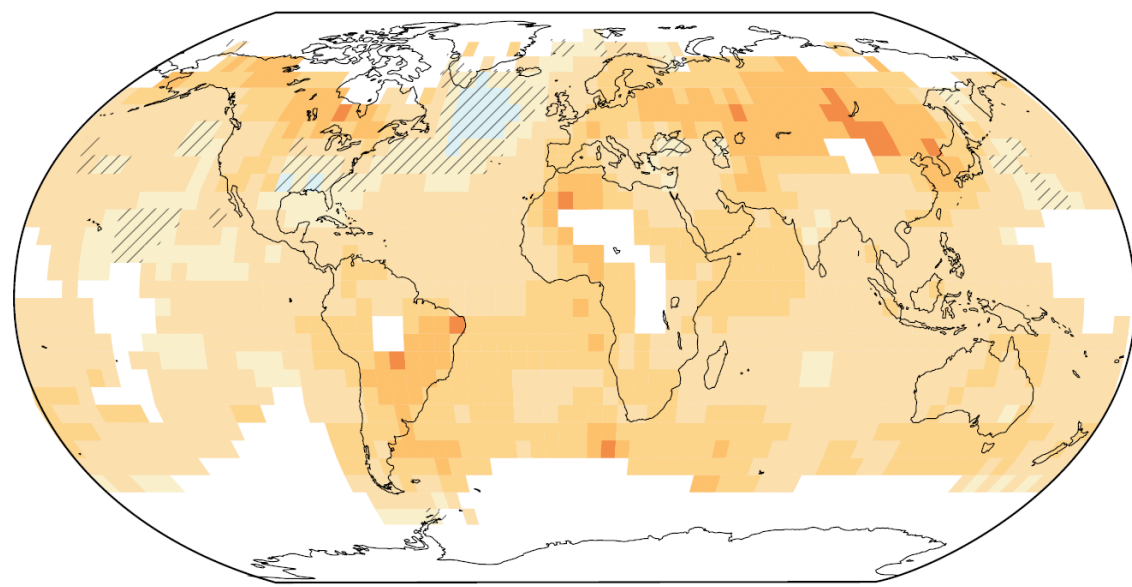


- Observed
- RCP8.5 (a high-emission scenario)
- Overlap
- RCP2.6 (a low-emission mitigation scenario)

doing a lot doing nothing



Observed Change 1901-2012



- ← changes to now
- ↙ if we do a lot
- ↓ if we do nothing

Projected Temperature Change



Difference from
1986-2005 mean (°C)

Solid Color

Very strong
agreement

White Dots

Strong
agreement

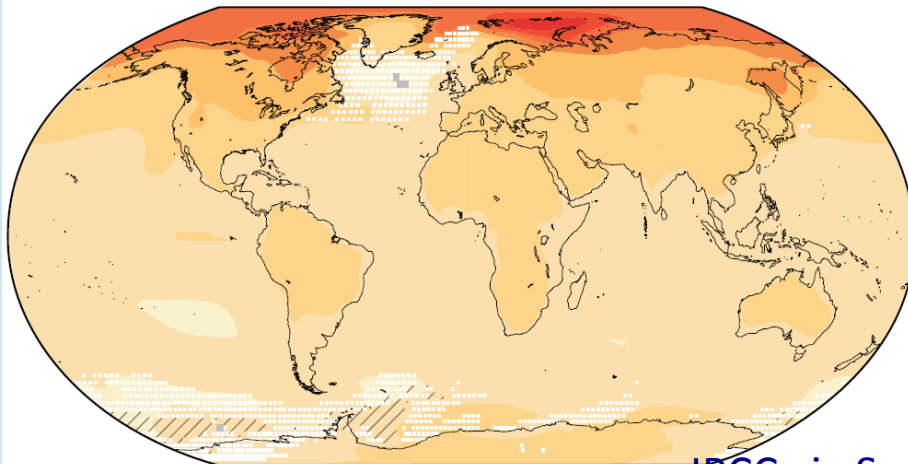
Gray

Divergent
changes

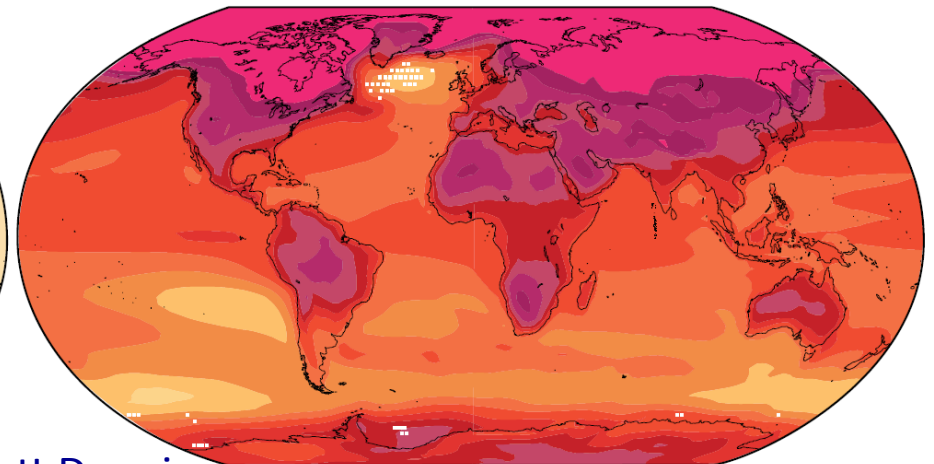
Diagonal Lines

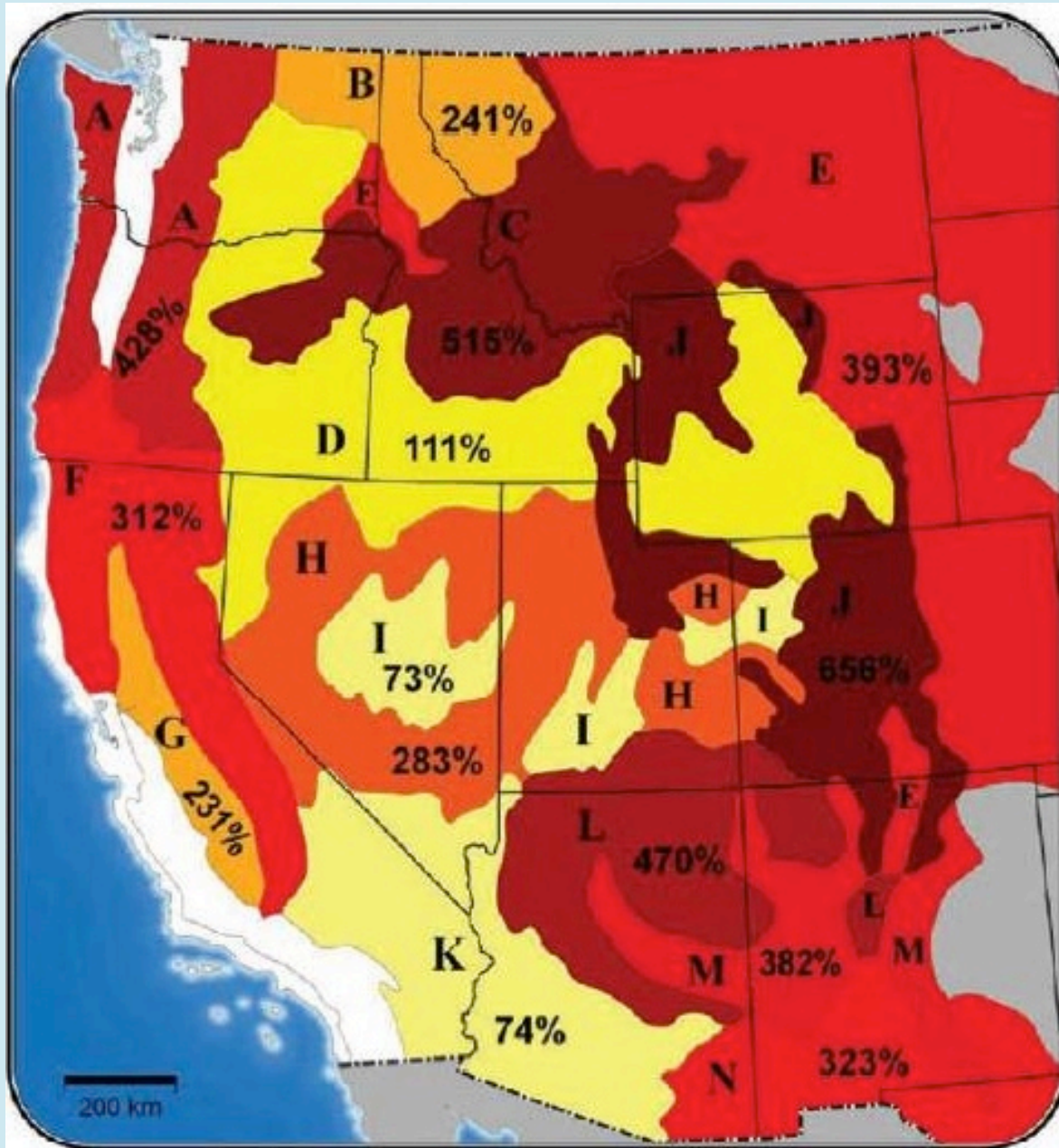
Little or
no change

RCP2.6 2081 - 2100



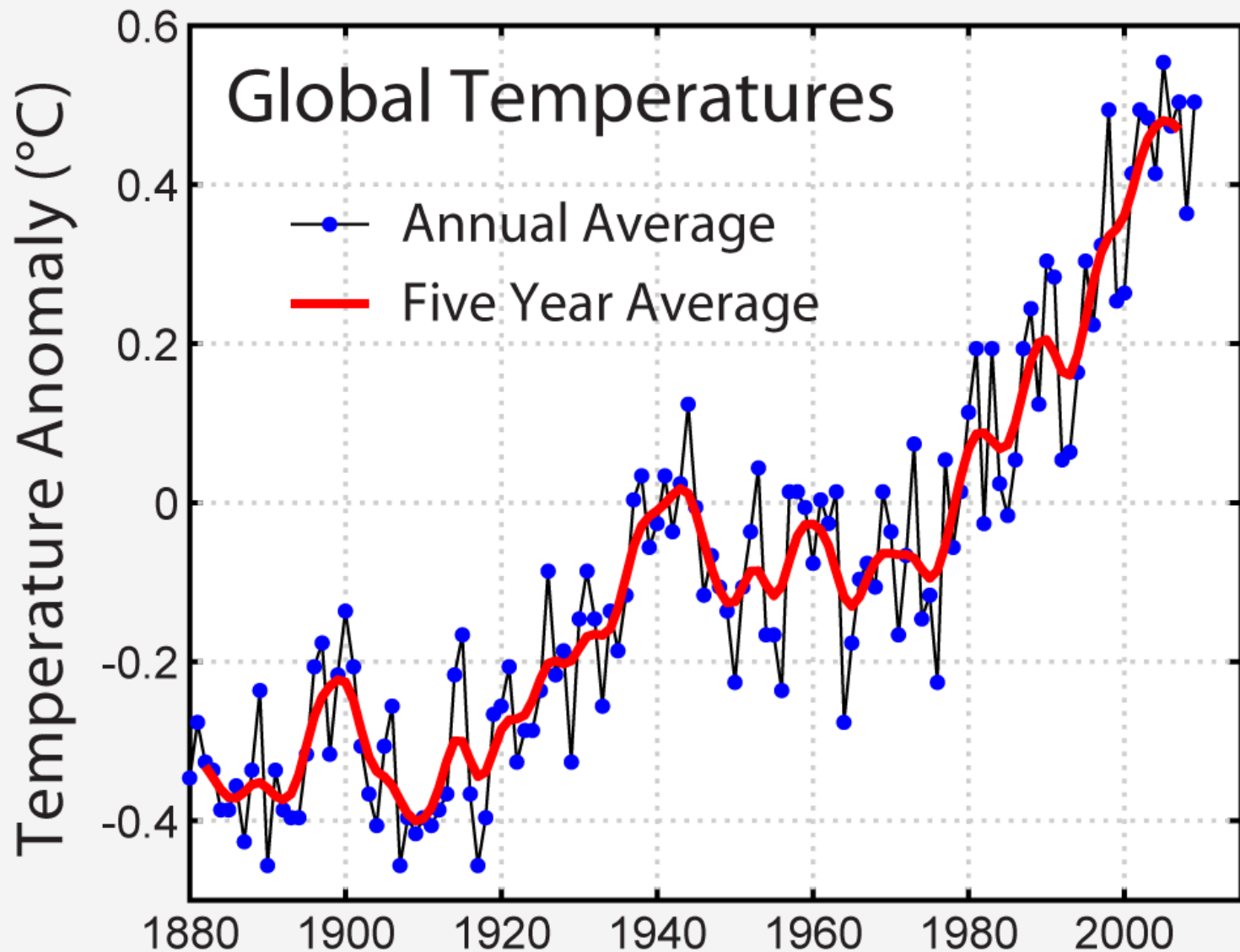
RCP8.5 2081 - 2100



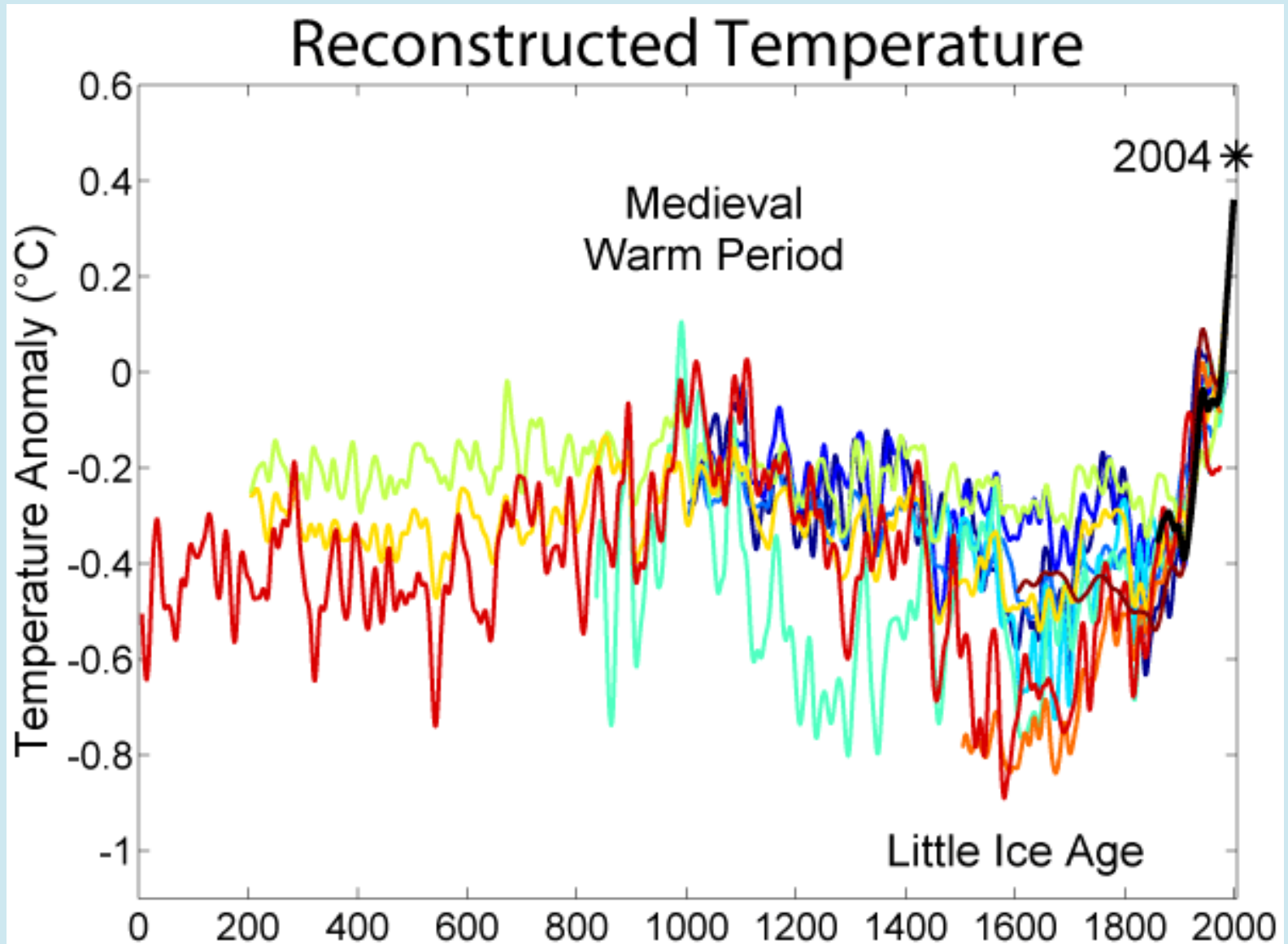


Projected % increase in area burned every year for a 1°C rise in global temperature, compared to 1950-2003.

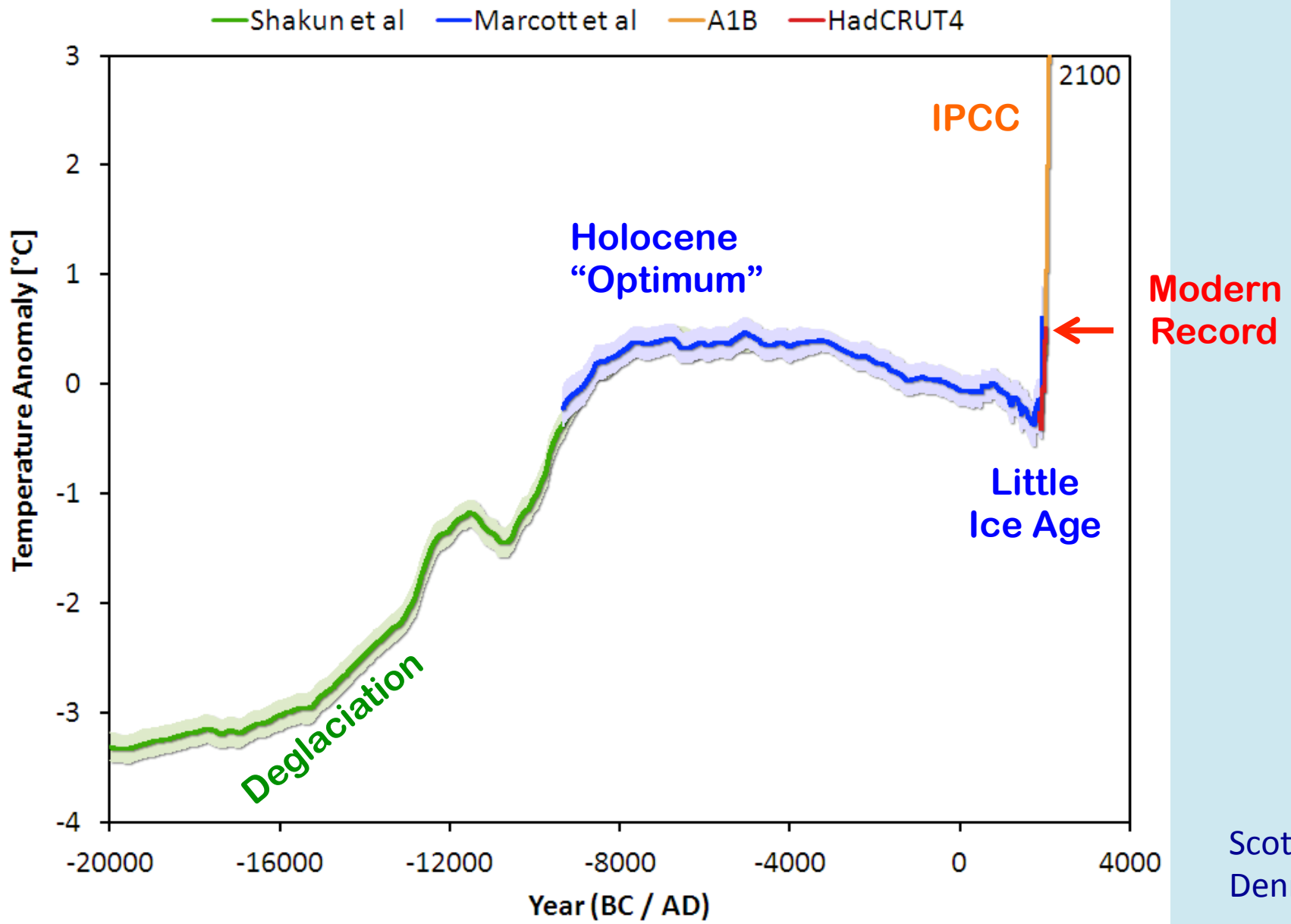
Historical Thermometer Records



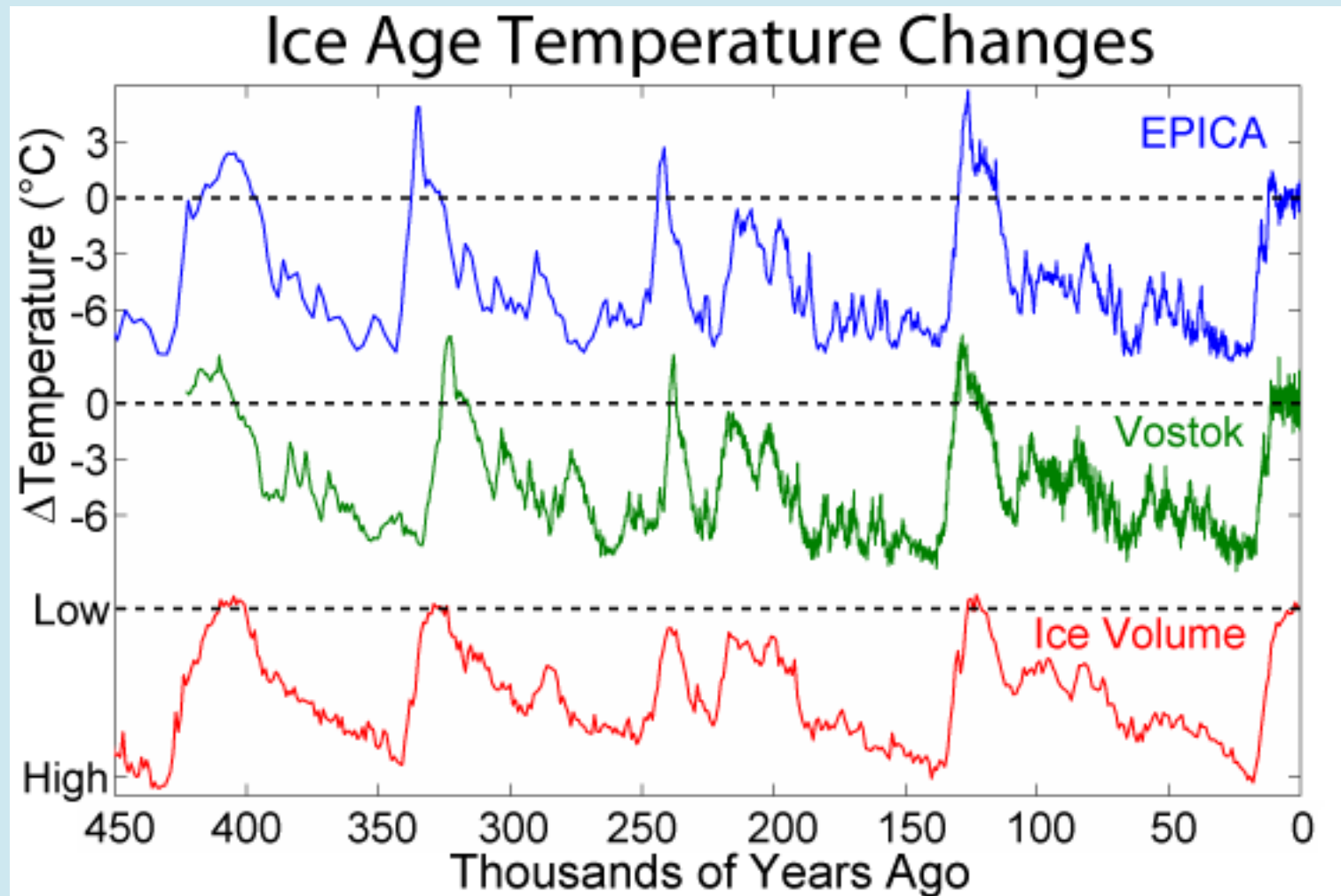
The Past 2000 Years



Since the Last Ice Age

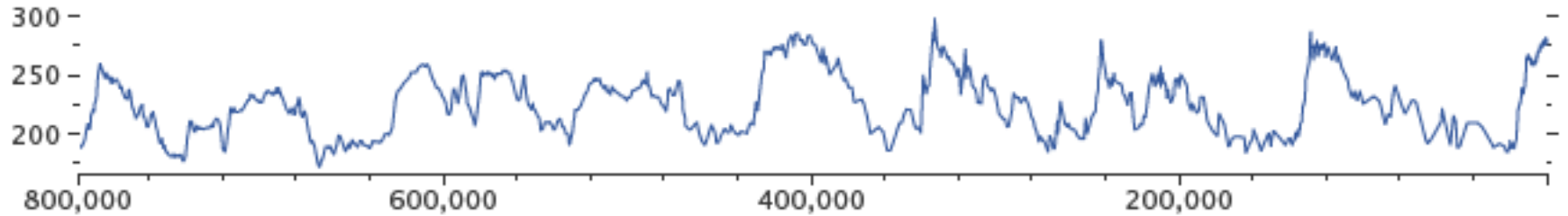


Reconstructions from Ice Cores

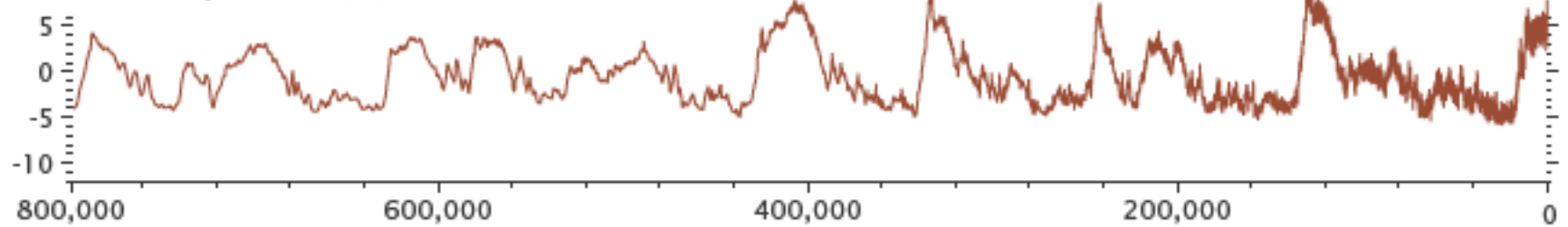


Natural Cycles

Carbon Dioxide (parts per million)



Antarctic Temperature ($^{\circ}$ C)



Date (Years Before Present)

NASA