

Global Warming

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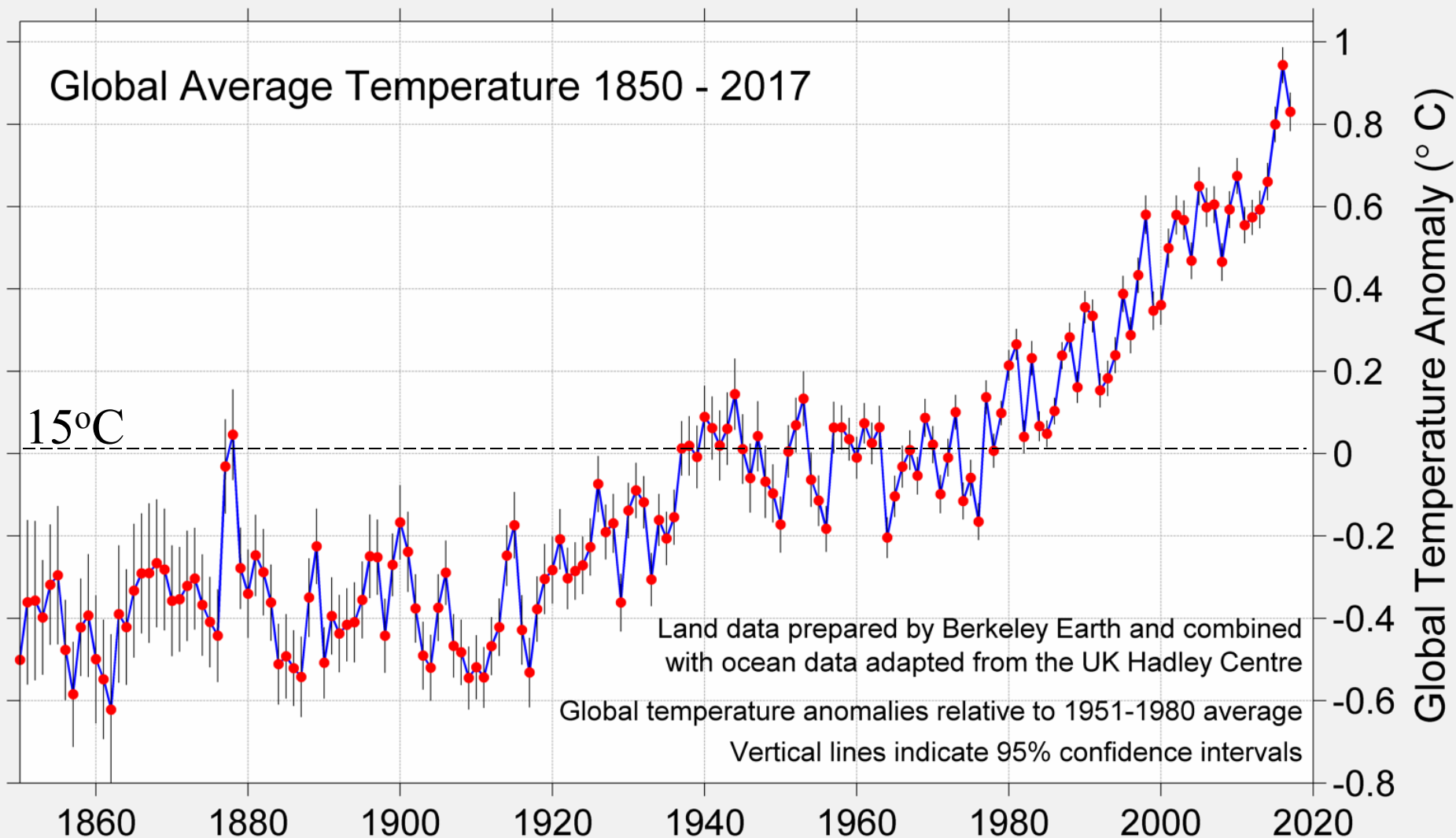
Global Average Temperature 1850 - 2017

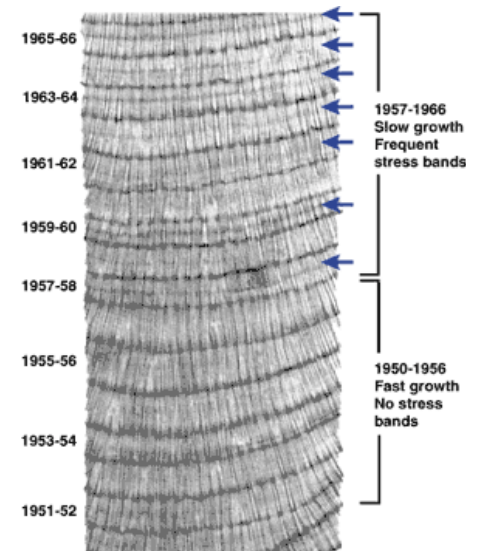
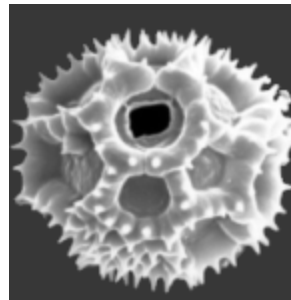
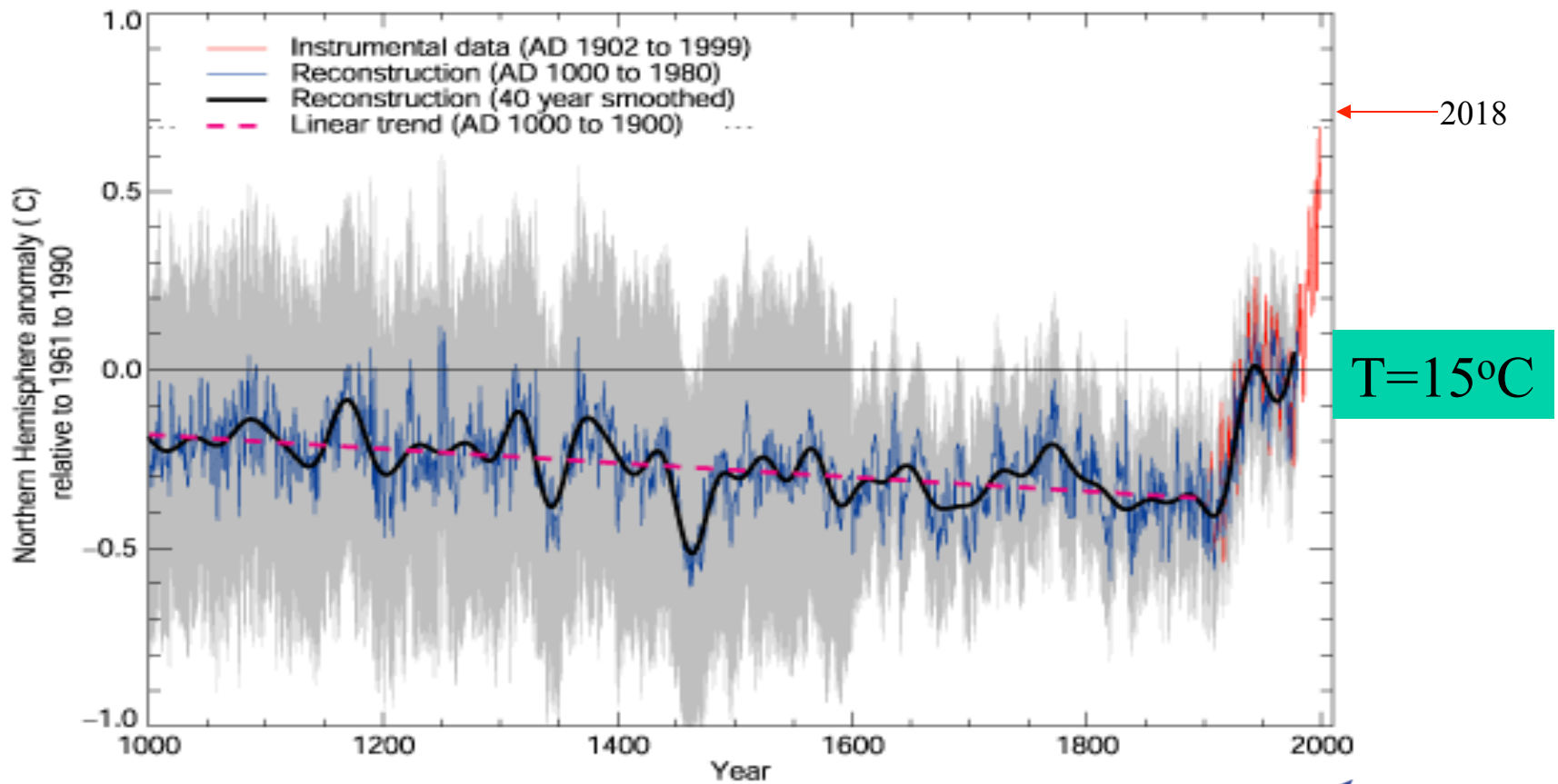
15°C

Global Temperature Anomaly (°C)

Land data prepared by Berkeley Earth and combined
with ocean data adapted from the UK Hadley Centre
Global temperature anomalies relative to 1951-1980 average
Vertical lines indicate 95% confidence intervals

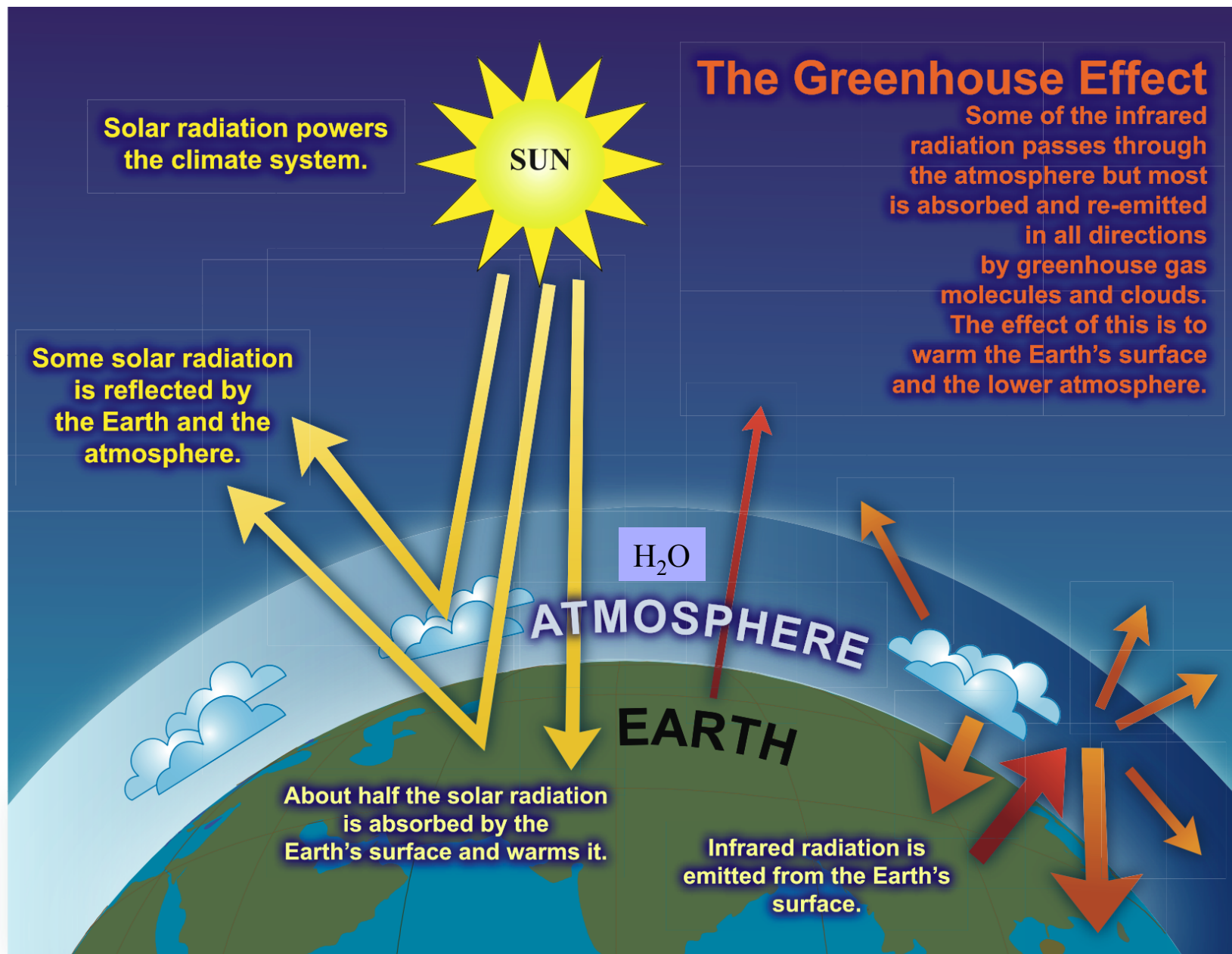
1860 1880 1900 1920 1940 1960 1980 2000 2020



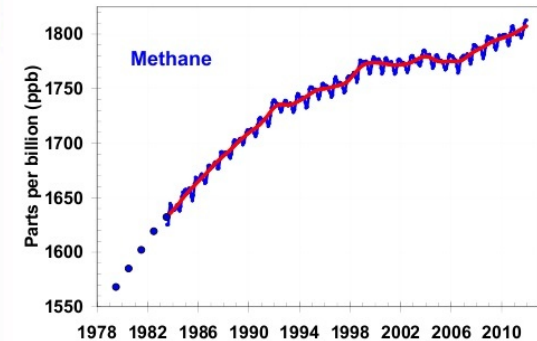
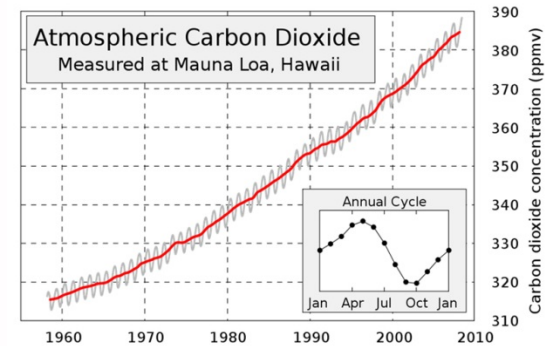
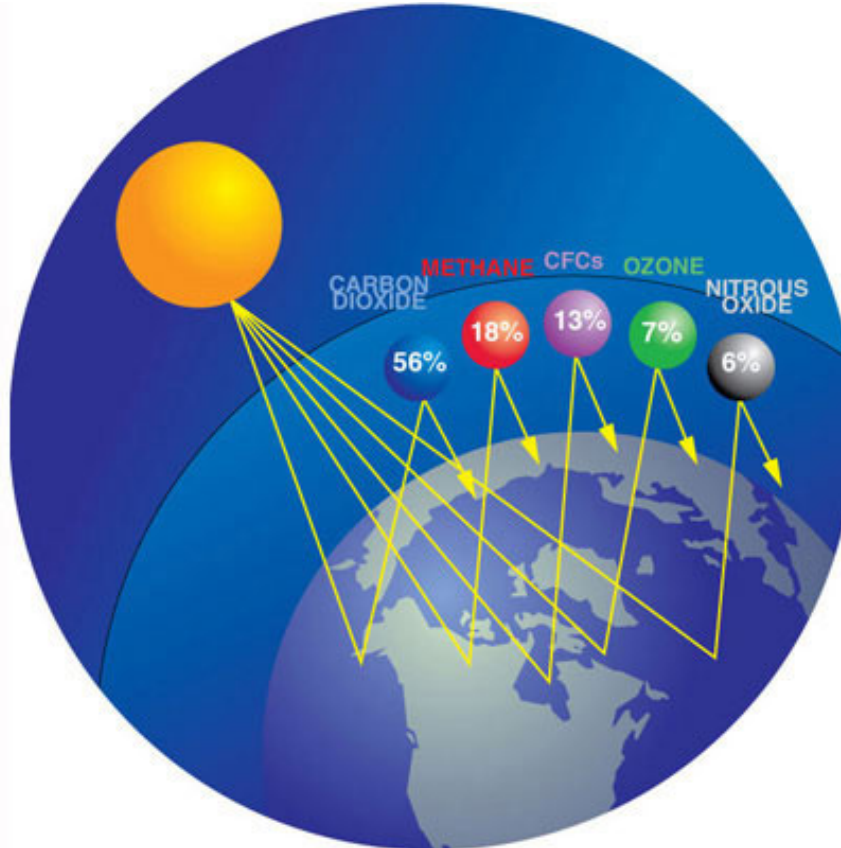
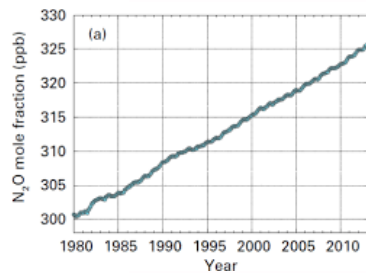
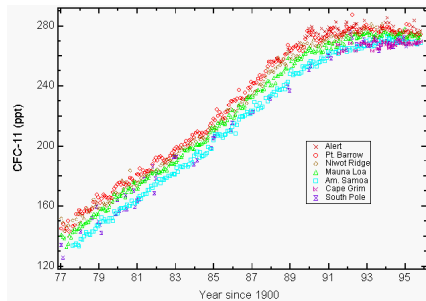


McCarty Glacier - Alaska





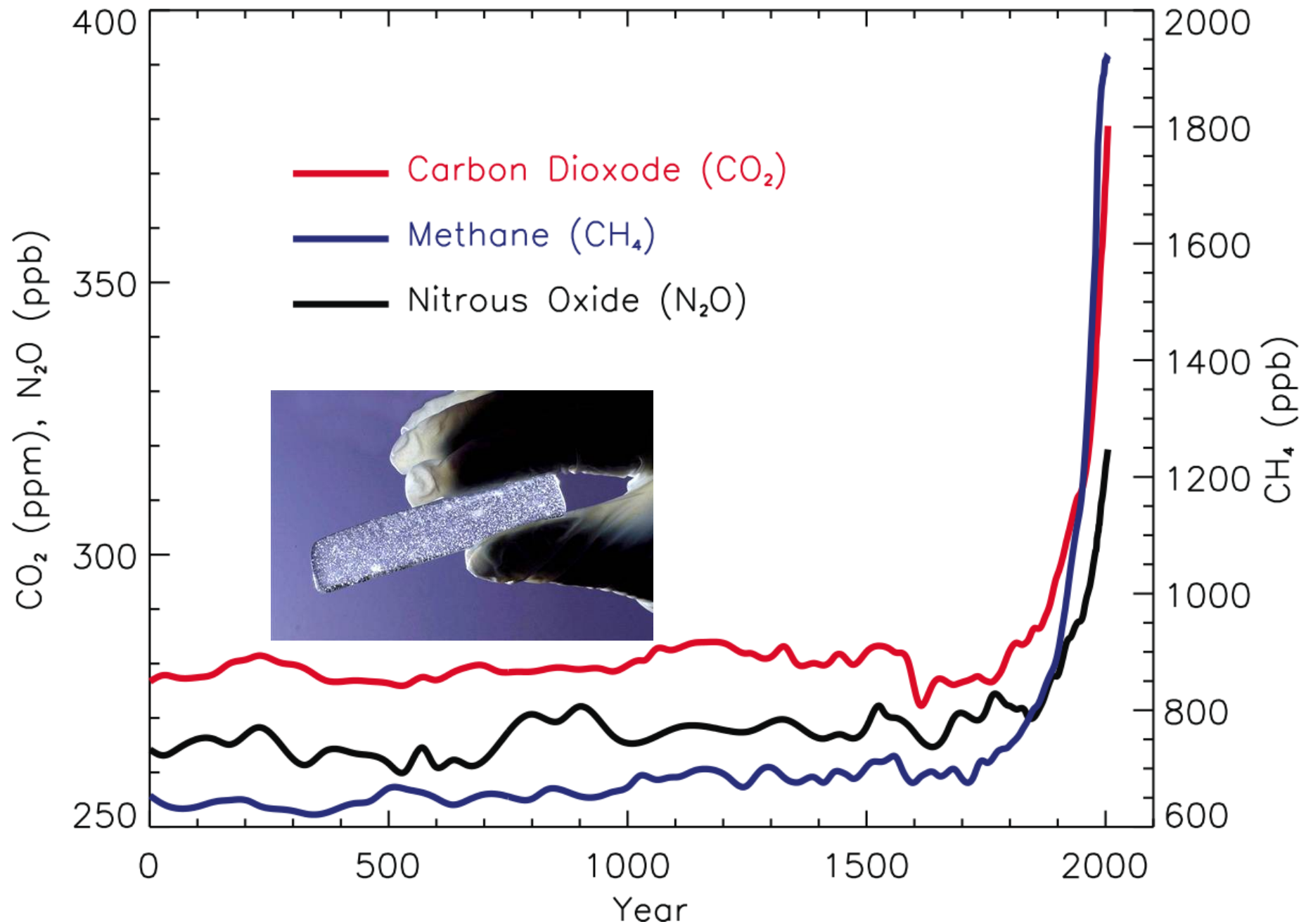
Human-induced Global Warming

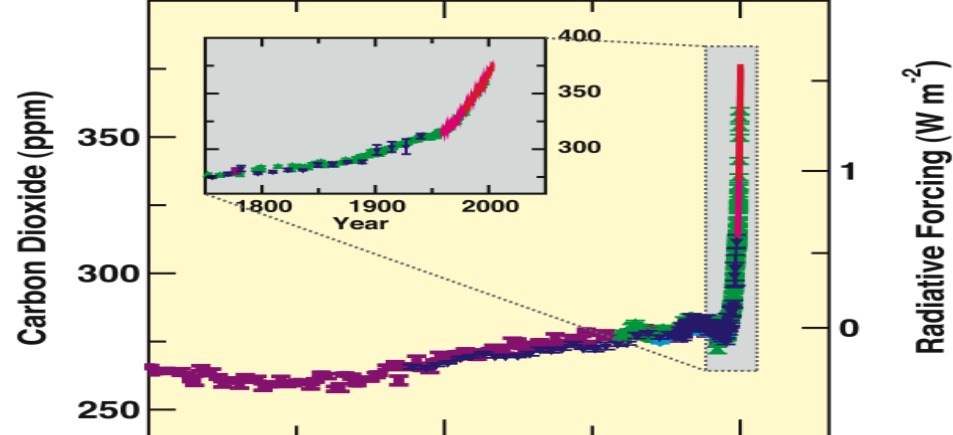
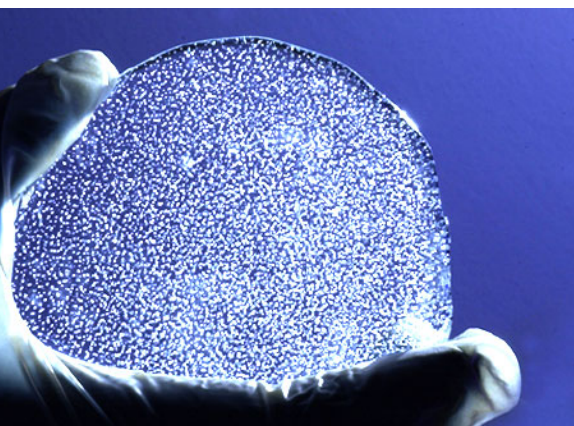


Do we know the concentrations 10,000 years ago?

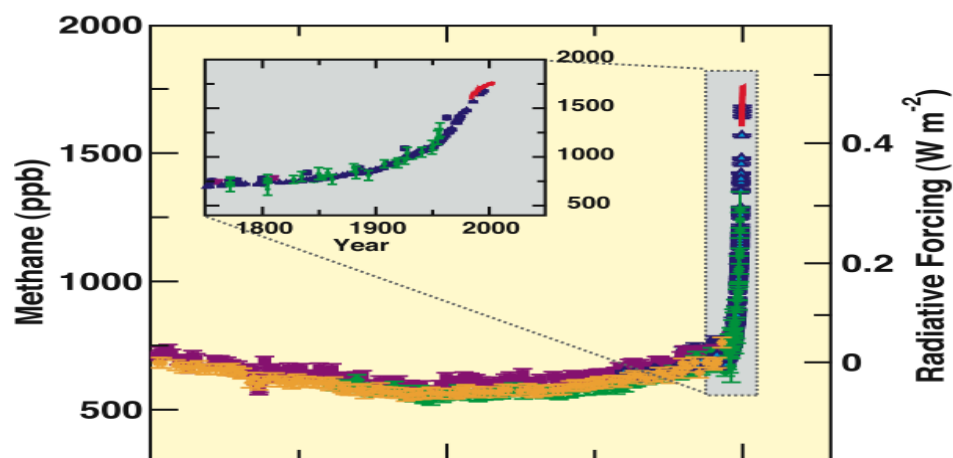


Concentrations of Greenhouse Gases from 0 to 2005

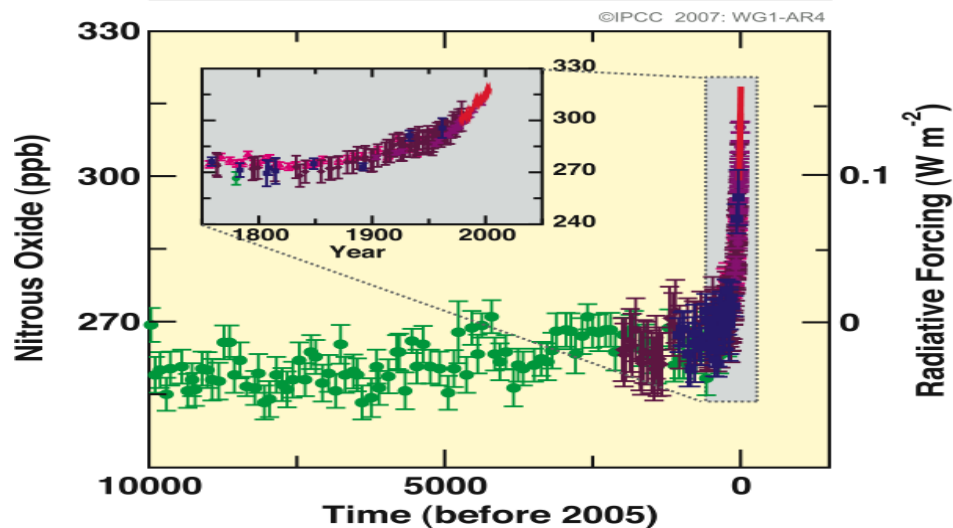




+36%



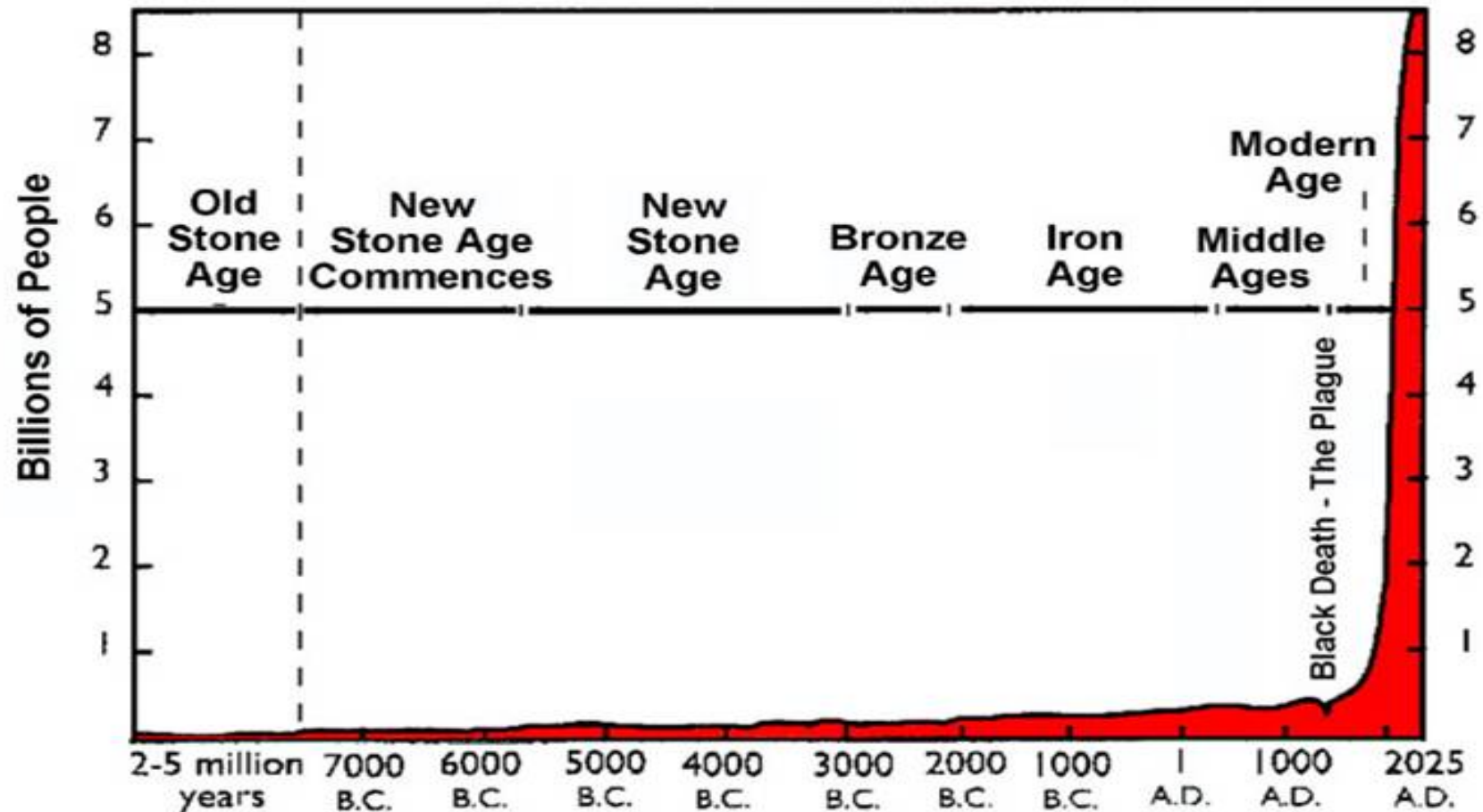
+192%



+25%

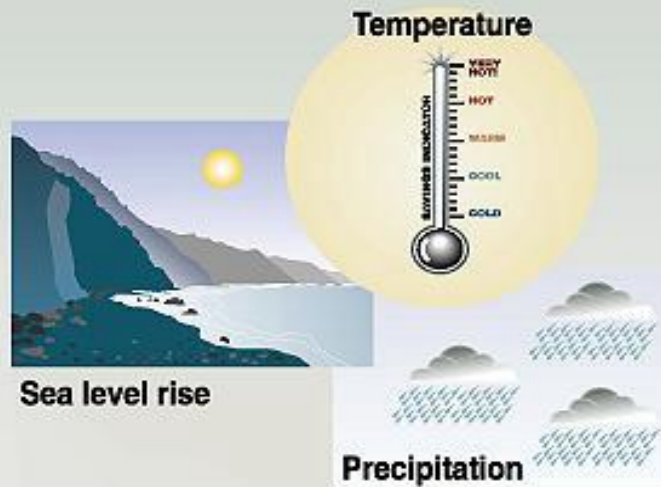
What's causing this rise in greenhouse gases?

World Population Growth Through History



From "World Population: Toward the Next Century," copyright 1994
by the Population Reference Bureau

Potential climate changes impact



Impacts on...

Health



Weather-related mortality
Infectious diseases
Air-quality respiratory illnesses

Agriculture



Crop yields
Irrigation demands

Forest



Forest composition
Geographic range of forest
Forest health and productivity

Water resources



Water supply
Water quality
Competition for water

coastal areas



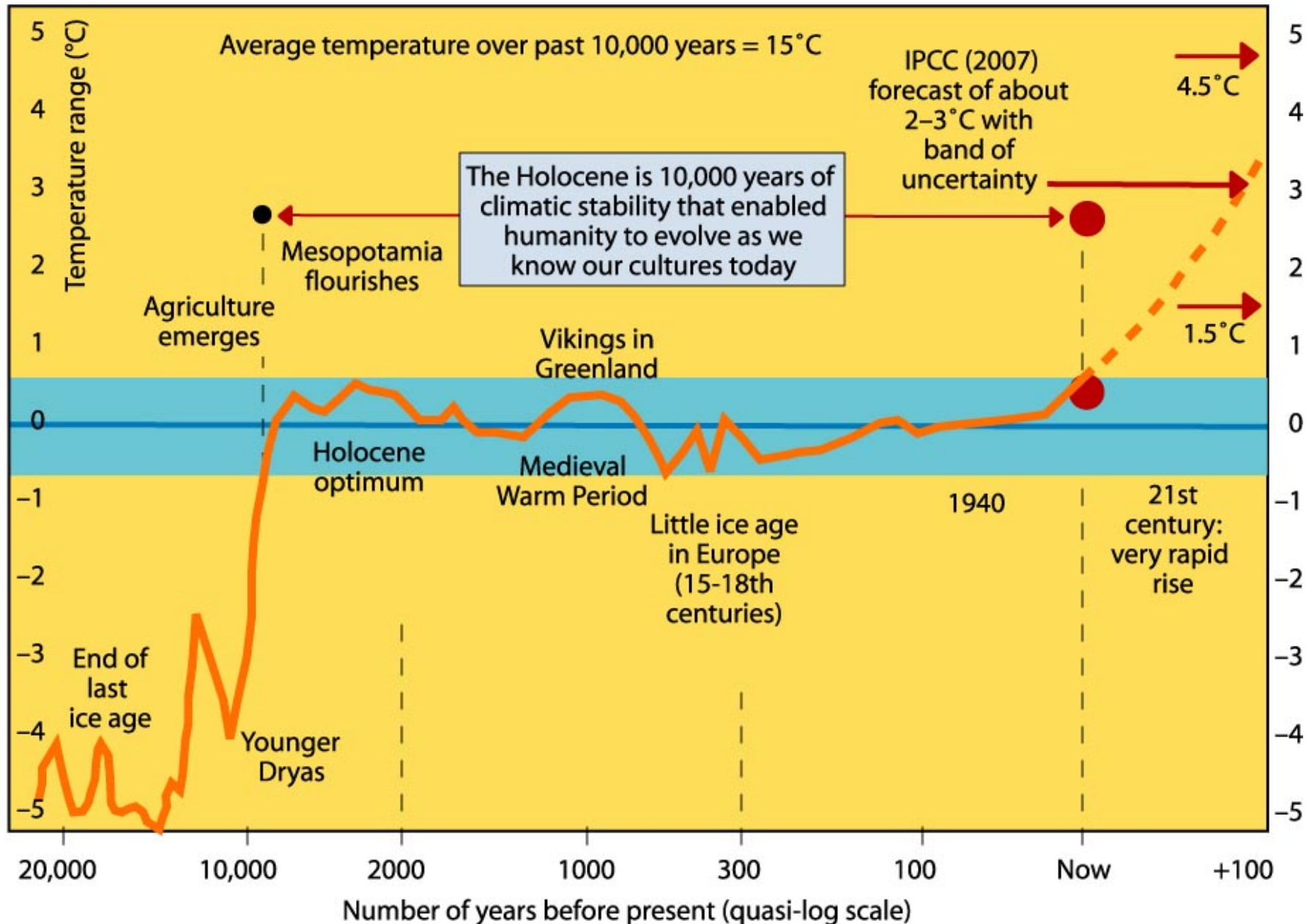
Erosion of beaches
Inundation of coastal lands
additional costs to protect coastal communities

Species and natural areas



Loss of habitat and species
Cryosphere: diminishing glaciers

Our civilizations have developed in the last 10,000 year....
when our climate was relatively stable



Are there solutions?

