

# Welcome to the Anthropocene

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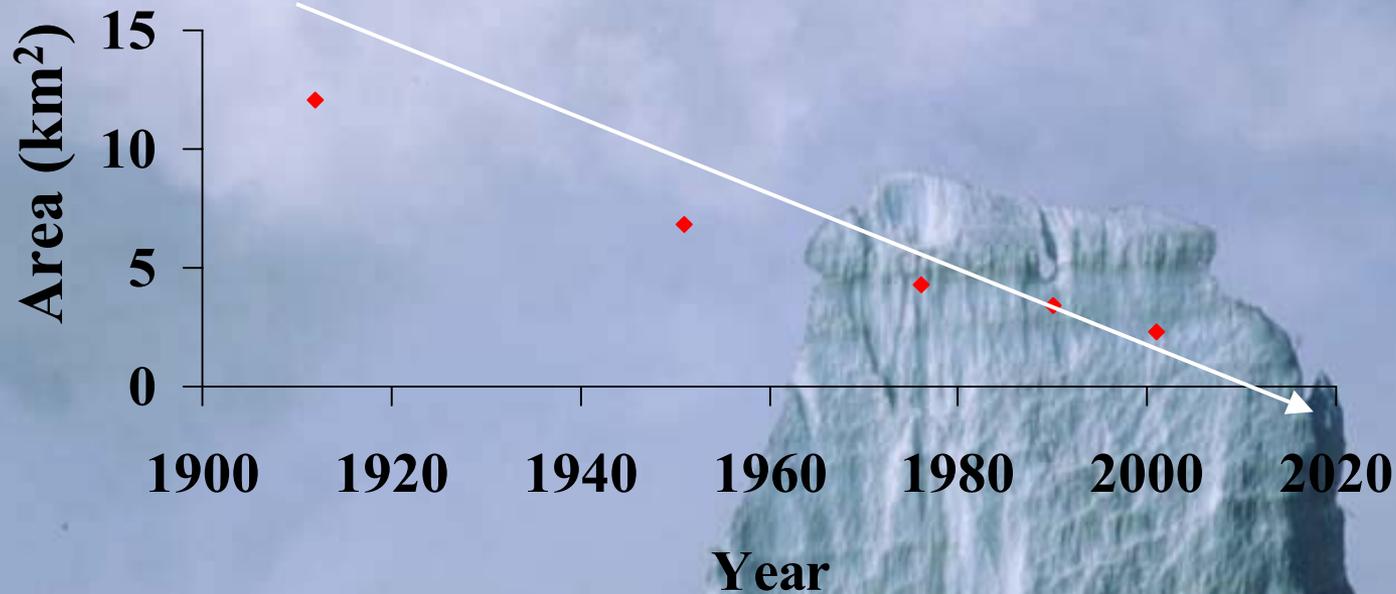
Kilimanjaro 1970



Kilimanjaro 2000

PAGES

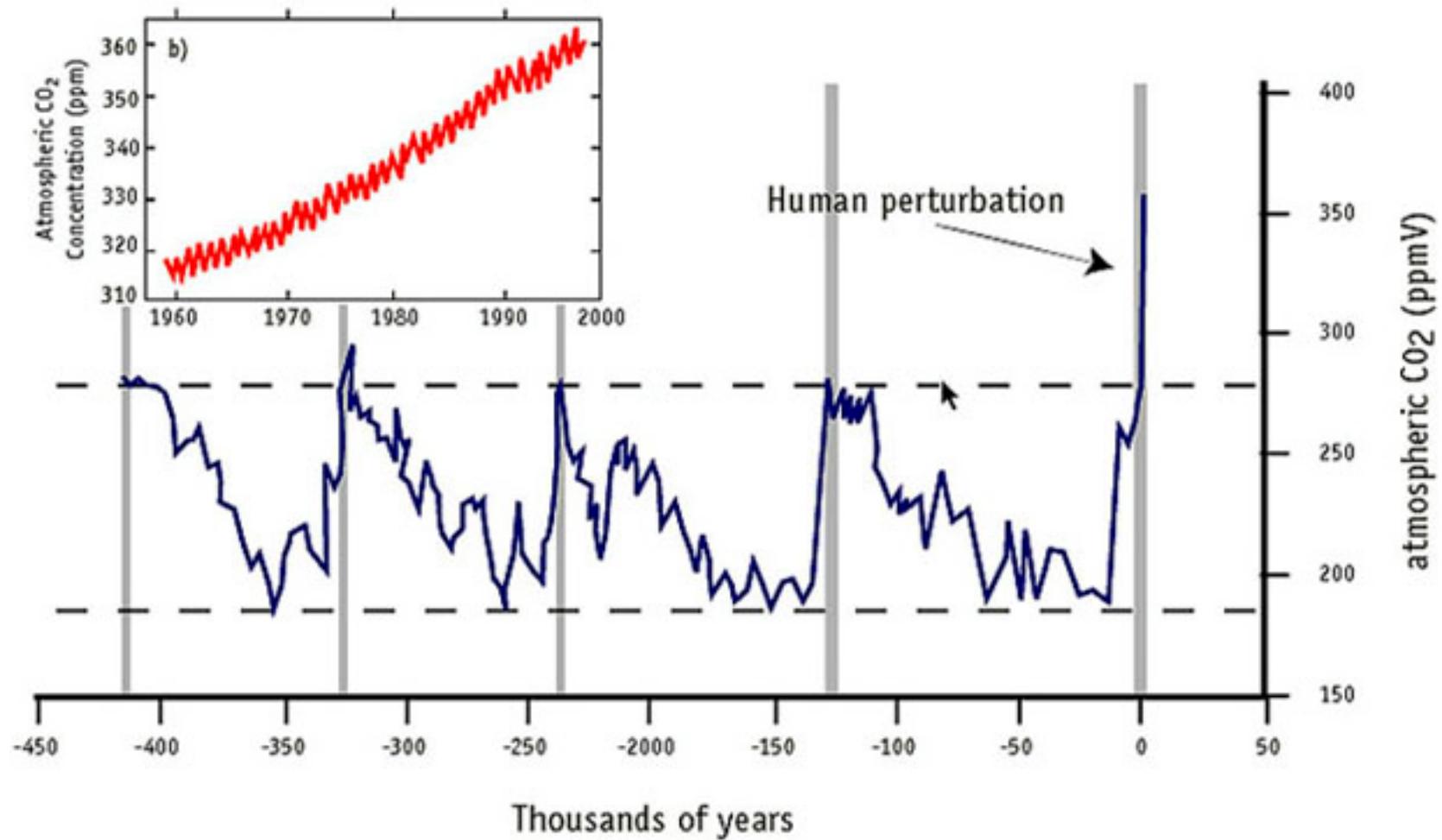
# Ice on Kilimanjaro



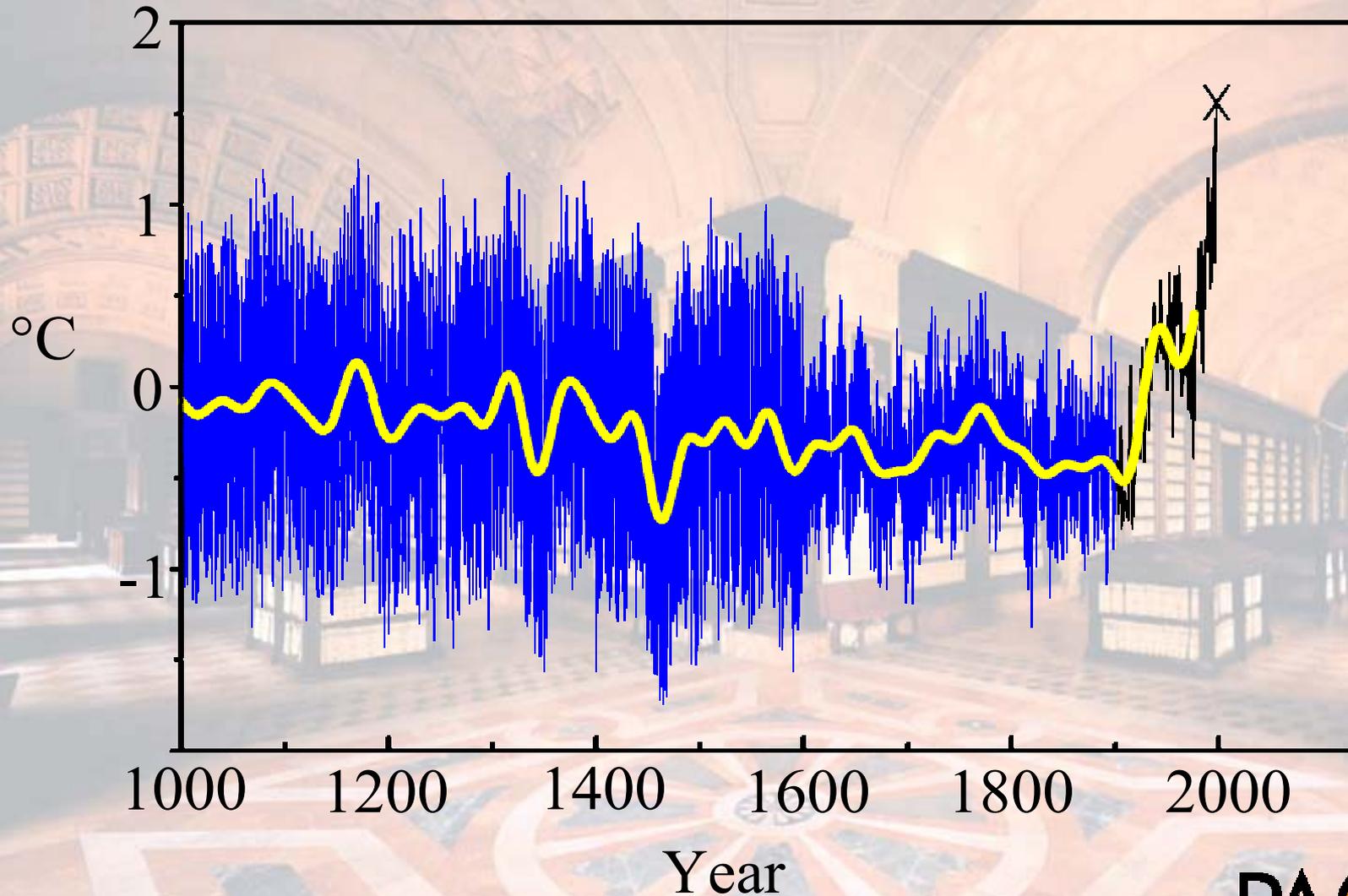
L.Thompson, in prep.

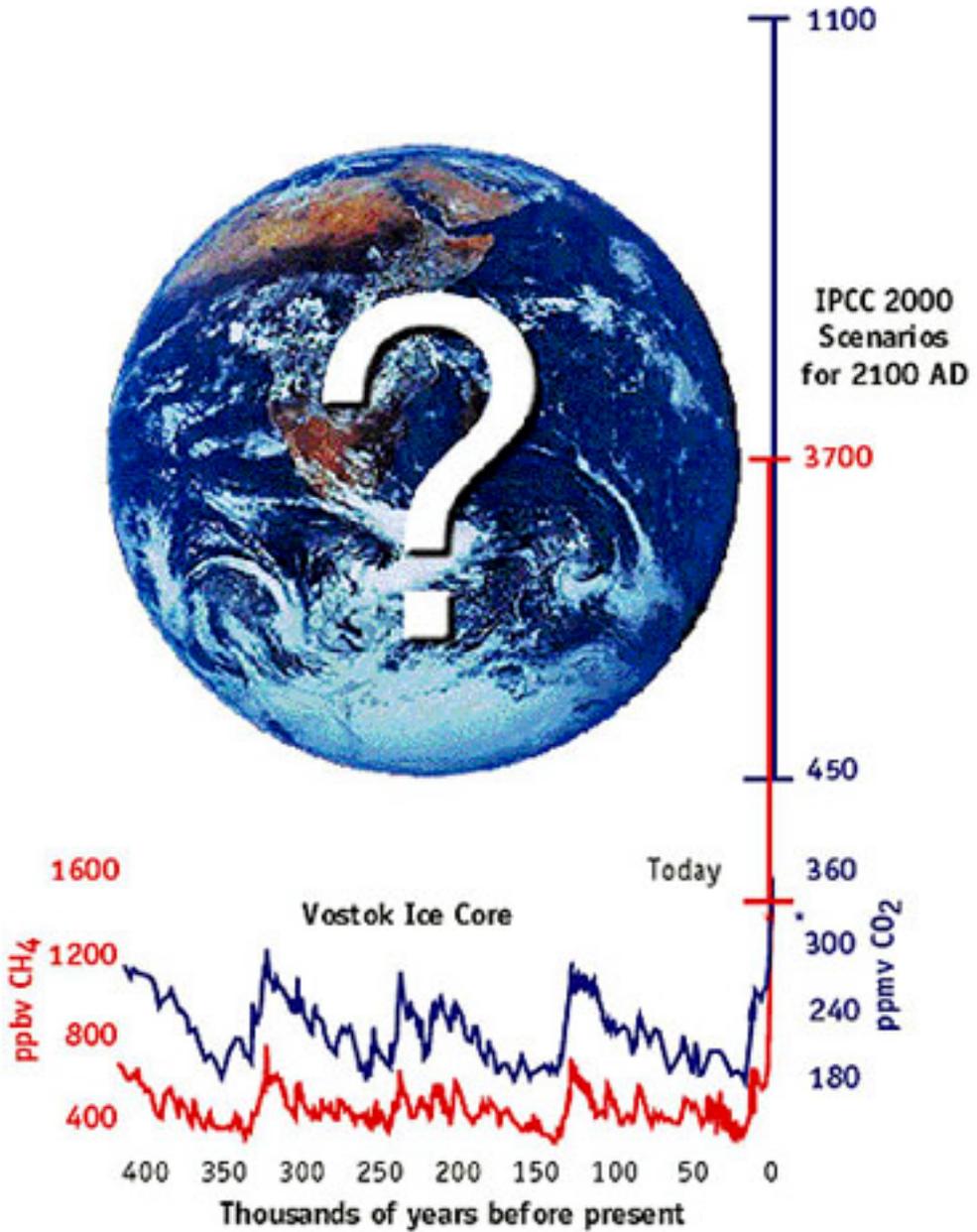
Kilimanjaro 2020?

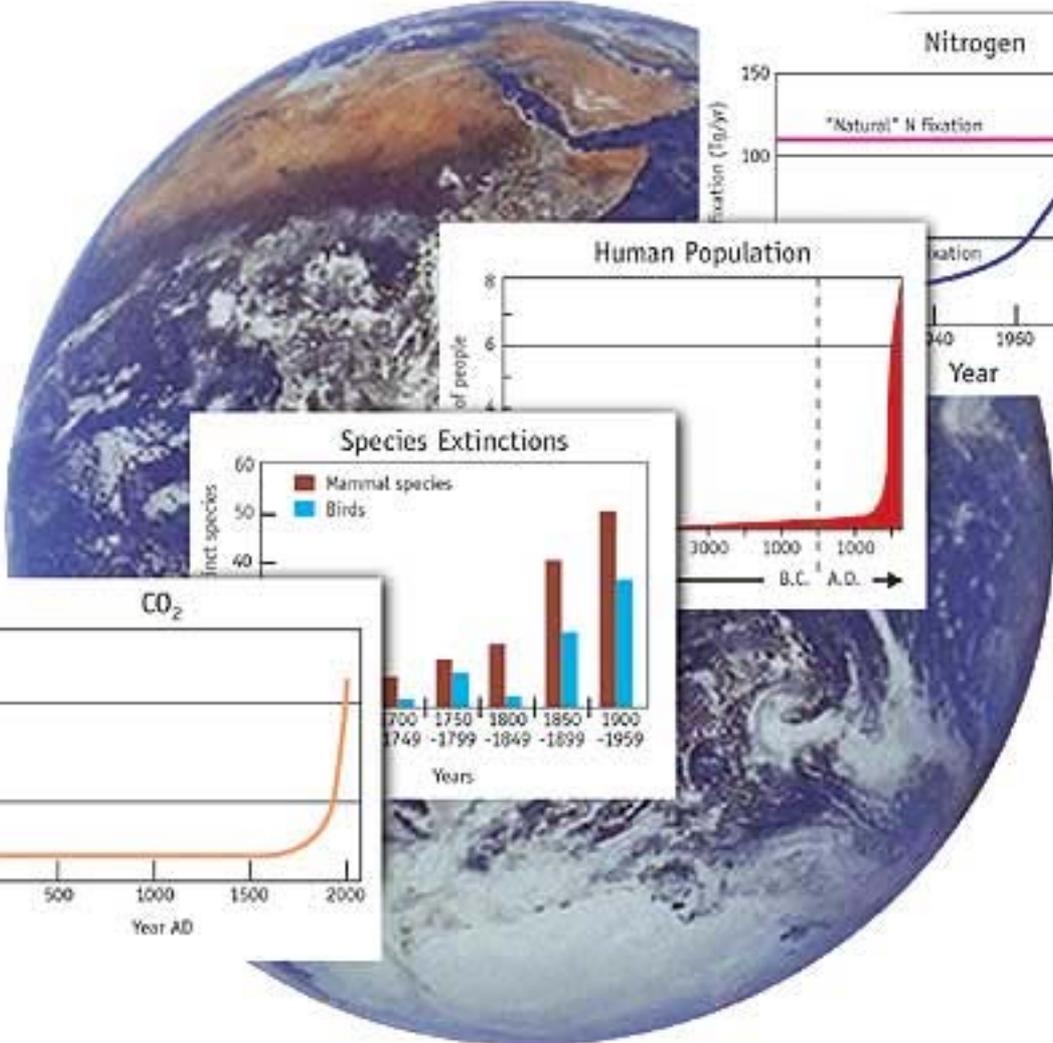




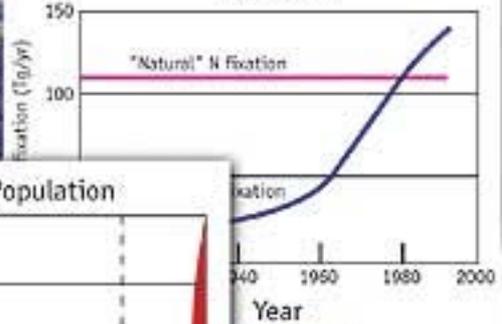
# Northern Hemisphere Average Surface Temperature



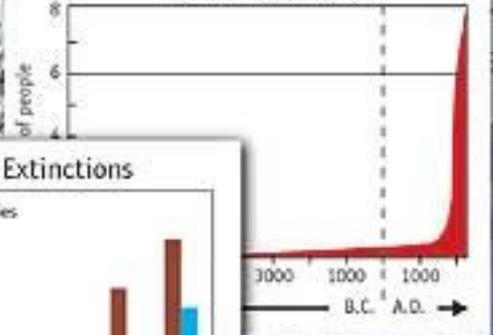




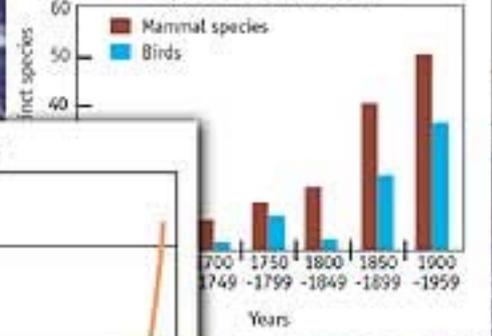
Nitrogen



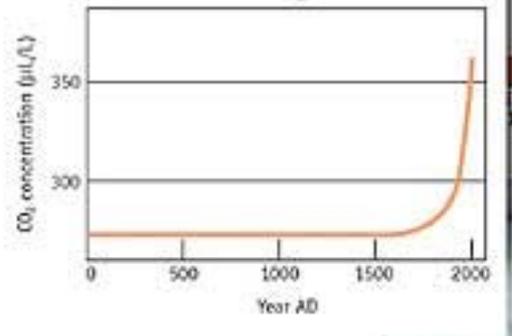
Human Population



Species Extinctions



CO<sub>2</sub>





Global  
Issues



Local  
Issues

aging affluent millions  
"global people"  
resource surpluses  
causes of global change  
technological knowledge  
theory driven research

*Digital divide*

poor, young billions  
poverty "local people"  
resource shortages  
impacts of global change  
traditional knowledge



# IGBP SYNTHESIS: Major Research Findings

- The Earth is a system that life itself helps to control.
- Global change is much more than climate change. It is real, it is happening now, and in many ways it is accelerating.
- The human enterprise drives multiple, interacting effects that cascade through the Earth System.
- The Earth's dynamics are characterised by critical thresholds and abrupt changes. Human activities could inadvertently trigger changes with catastrophic consequences for the Earth System.
- The Earth is currently operating in a no-analogue state.

# Coastlines Have Become the Primary Human Habitat

- Almost half the people on 15% of the inhabitable landspace
  - 75% projected by 2050
- 12 of the 15 largest cities
  - sprawling tropical coastal megalopoli with the majority in poverty by 2050

# Major Forces of Change in LMEs

- Results from 29 case studies
- overfishing principle driver of biomass yield (14)
- climate change principle driver (13)
- eutrophication (1)

# Generic Issues In LMEs

- incursion of industrial fleets into inshore artisanal grounds
- the need for improved forecasting of climate driven change
- increasing threat of eutrophication

# The Paradigm Shift

- Individual species
- Small spatial scale
- short-term perspective
- humans independent of ecosystem
- management divorced from research
- managing commodities
- Ecosystems
- Multiple scales
- long-term perspective
- Humans integral parts of ecosystems
- adaptive management
- sustained production of goods and services