

# Geology and Reduction of Carbon Footprint

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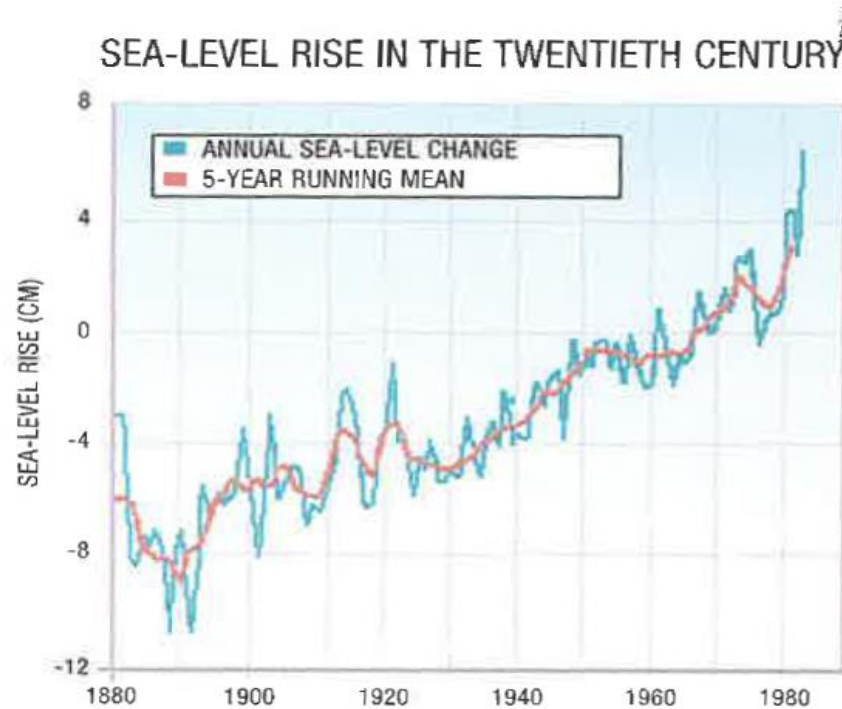


# Setting the scene

- What is Geology?
- Gaia (Gea) paradigm
- Global warming – interpretation of climate change
- Facts and Foes
- Greenhouse effect (GHG concentrations)
  - Geological evidence
  - Climatology



# Measurements



ABOVE *Despite fluctuations from year to year, this chart of sea-level change from 1880 to 1980 shows a long-term upward trend. The pattern of rising sea levels is expected to continue as the climate changes.*



# Testing the hypothesis

- Purpose of a scientist
  - Philosophy of nature
  - Exploration methods
  - Deduction and validation
  - Drawing conclusions ...
- Debate
  - With fellow scientists and other professionals
  - With the Humanity (Publication Strategy)



# Human-induced climate change – Paradigm or Misconception?

- Everyday walks and talks...
- Pre-historic evidence
  - 6200-5600 BCE Mini Ice Age
  - Farming and Building and the “The Great Flood”
  - 5600 BCE the Black Sea Flood
  - 15cm/day rise in the basin ... *Gilgamesh*
- Historic records
  - 1400-1800 Little Ice Age
  - Scientists – „Anthropocene”



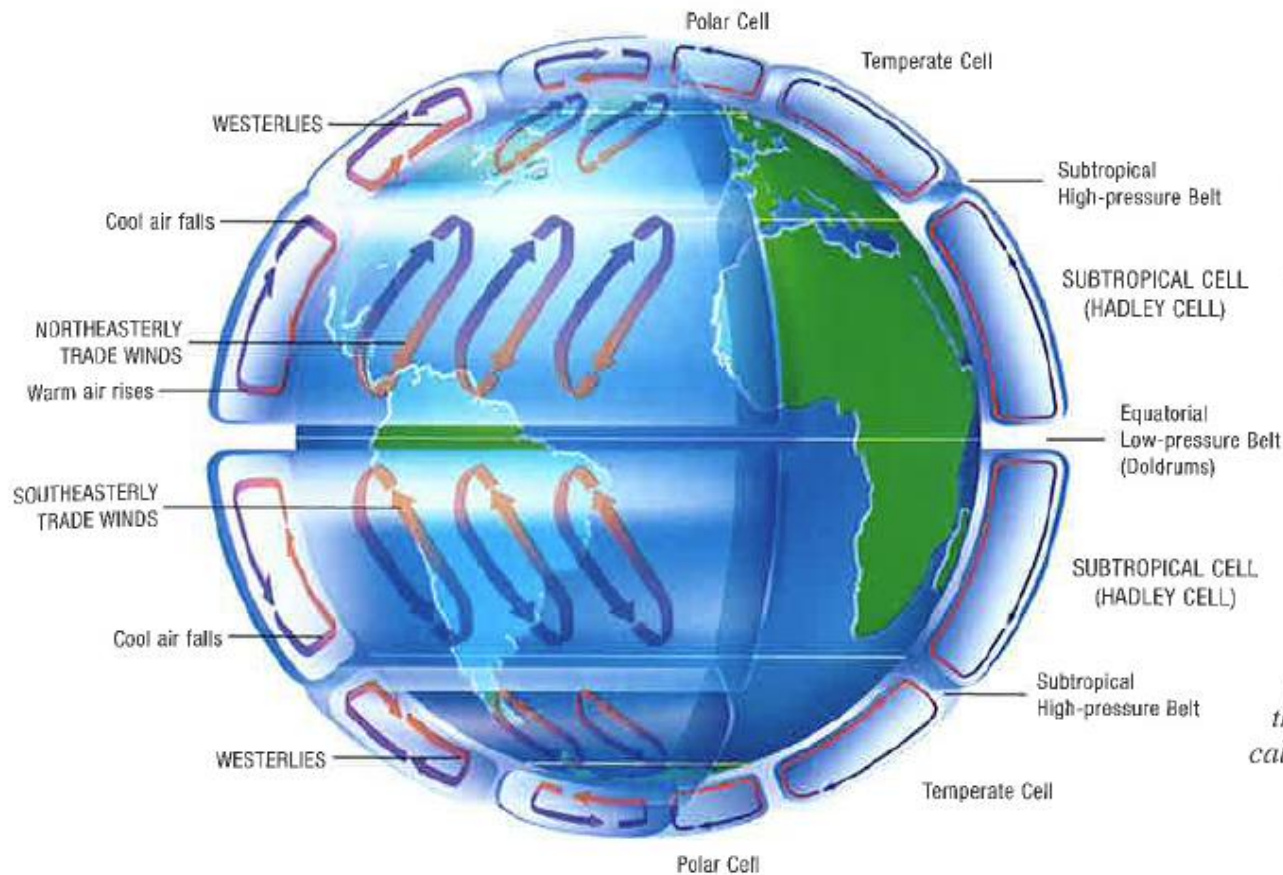
# Time for mitigation or adaptation

- It is not only carbon dioxide
  - CO<sub>2</sub>eq includes: CH<sub>4</sub> (23), NO<sub>x</sub> (300), H<sub>2</sub>O
- Geoengineering ideas vs. decarbonization
  - Early reports and ideas for solution
- Decarbonize while we still can
  - Carbon balance within Atmosphere, Hydrosphere and Biosphere

***„NATO syndrome”***



# Earth's climate system



LEFT *Global wind belts. Driven by solar radiation, winds such as the trades and westerlies circulate perpetually around the globe. Central to their movements are cells, circulations in which warm air rises, flows at high levels, then descends. For example, in the Hadley cell, hot equatorial air rises, spreads north and south, and descends to produce the high-pressure zones called subtropical highs.*



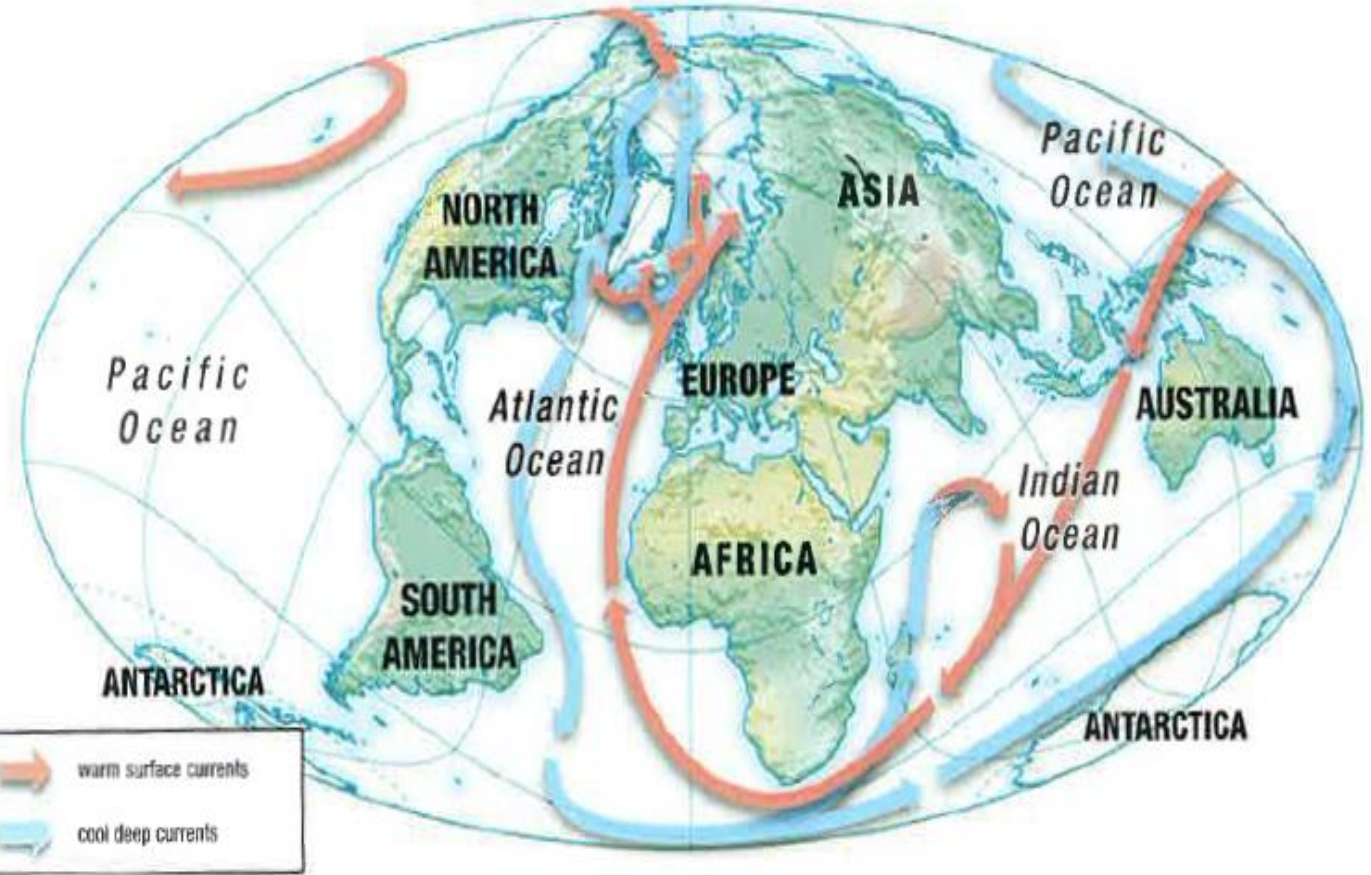


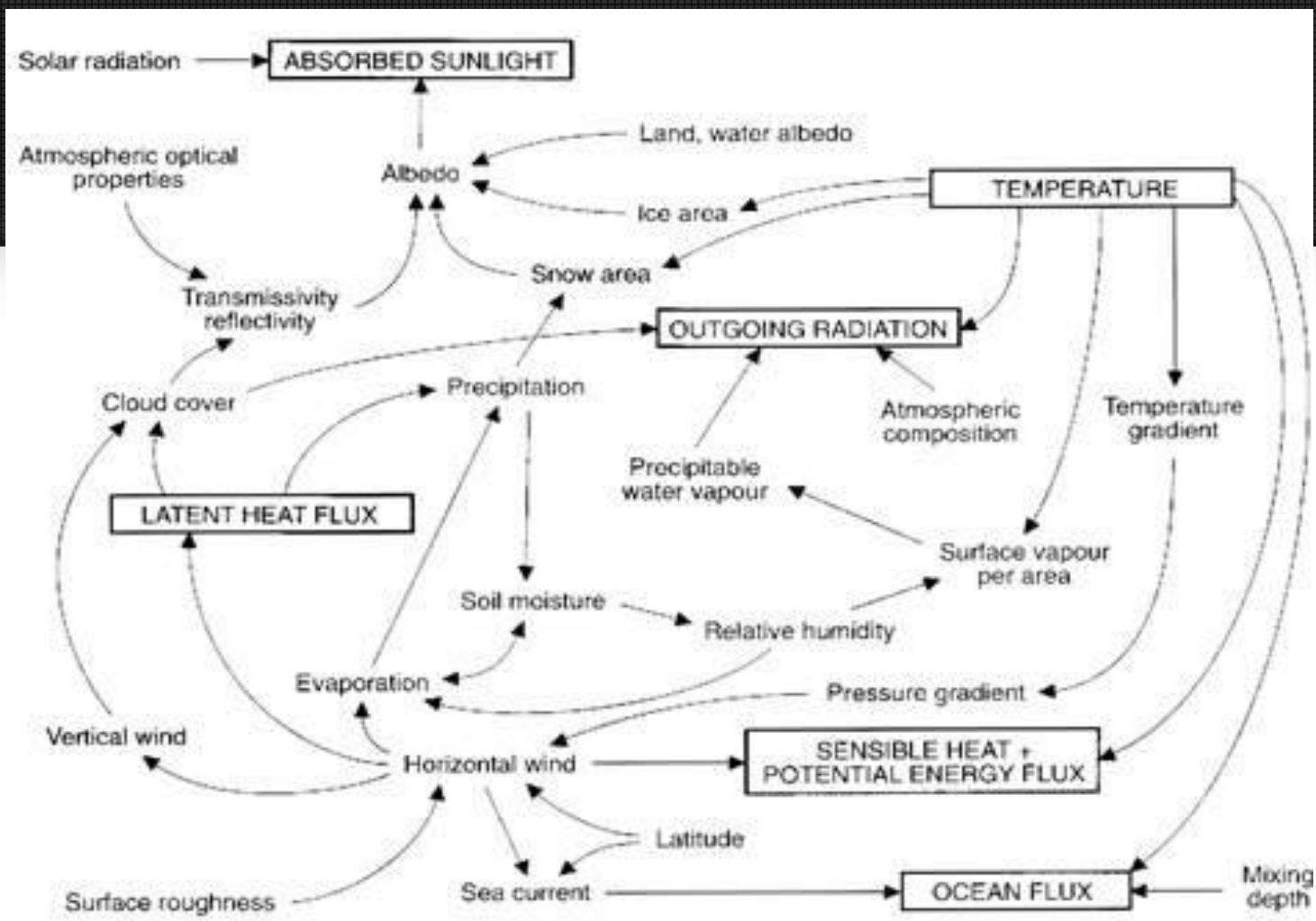
# „Full house”

- Enormous database acquired to interpret observations of Change
- Complex interactions between
  1. Geosphere
  2. Atmosphere
  3. Hydrosphere
  4. Biosphere
- ... **and then the Modelling (IPCC)**



# Oceanic conveyor

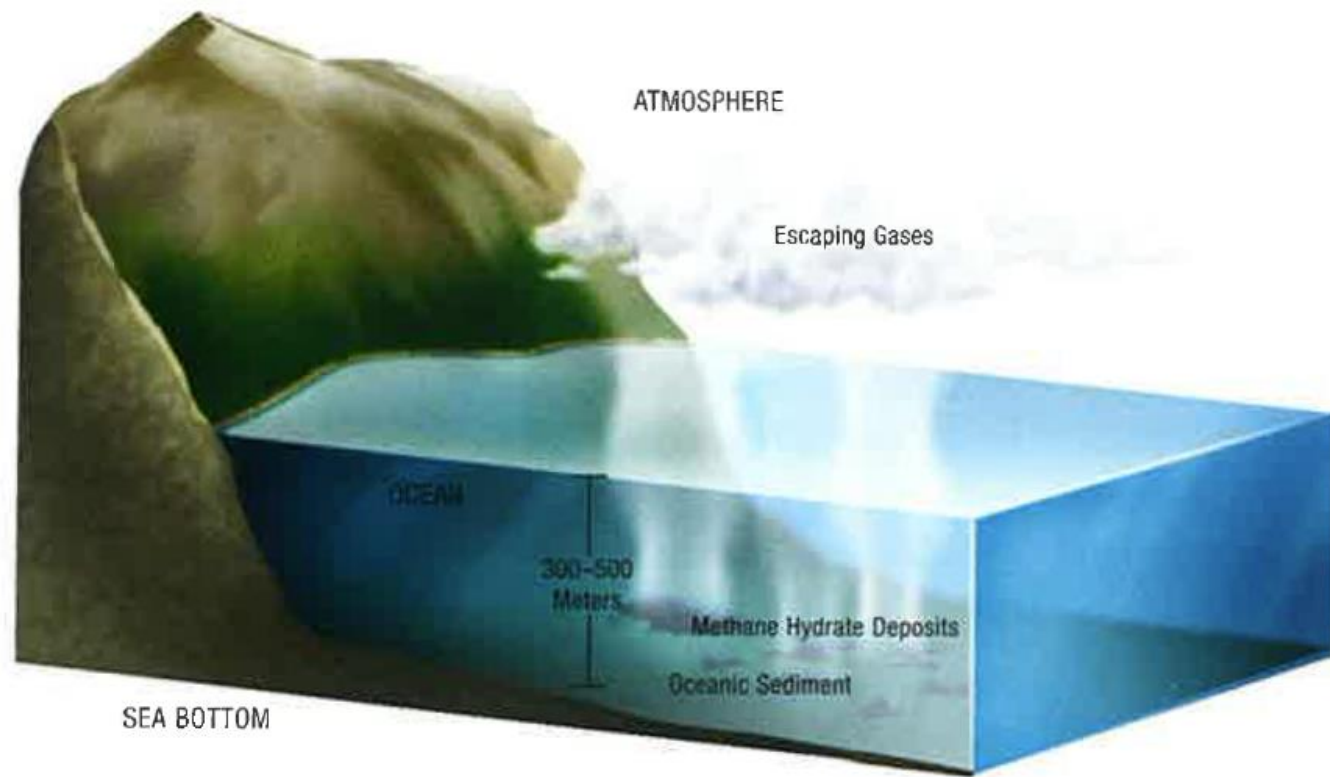




*After; Climate Stabilization: For Better or for Worse? William W. Kellogg and Stephen H. Schneider, Science, Volume 186, December 27, 1974*



# 55 m.y. ago

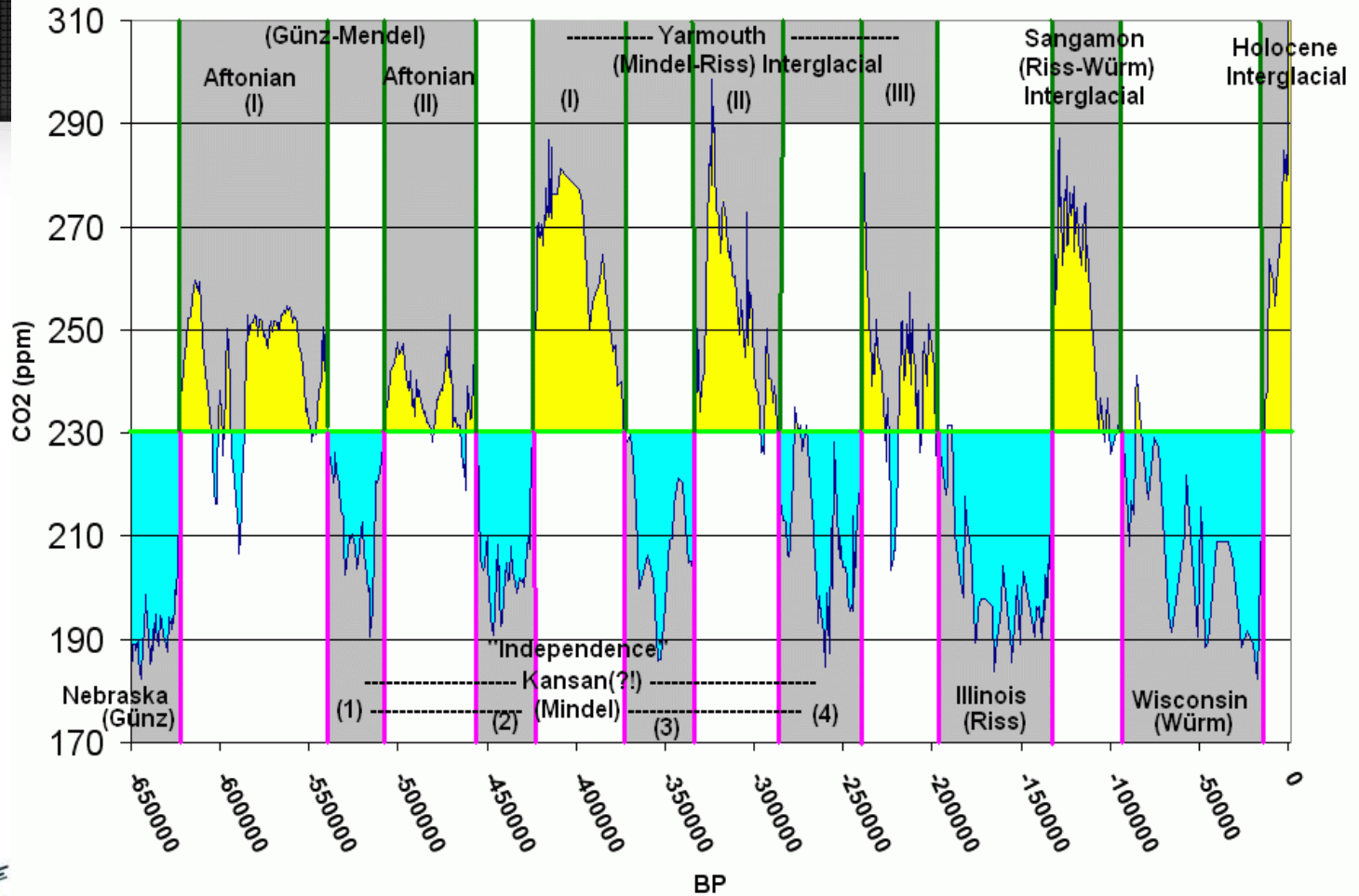


# Late Pleistocene: Atmospheric CO2 and the Glacial cycles

(650,000 - 0 years BP)

(ppm)

N.American & (Alpine) names

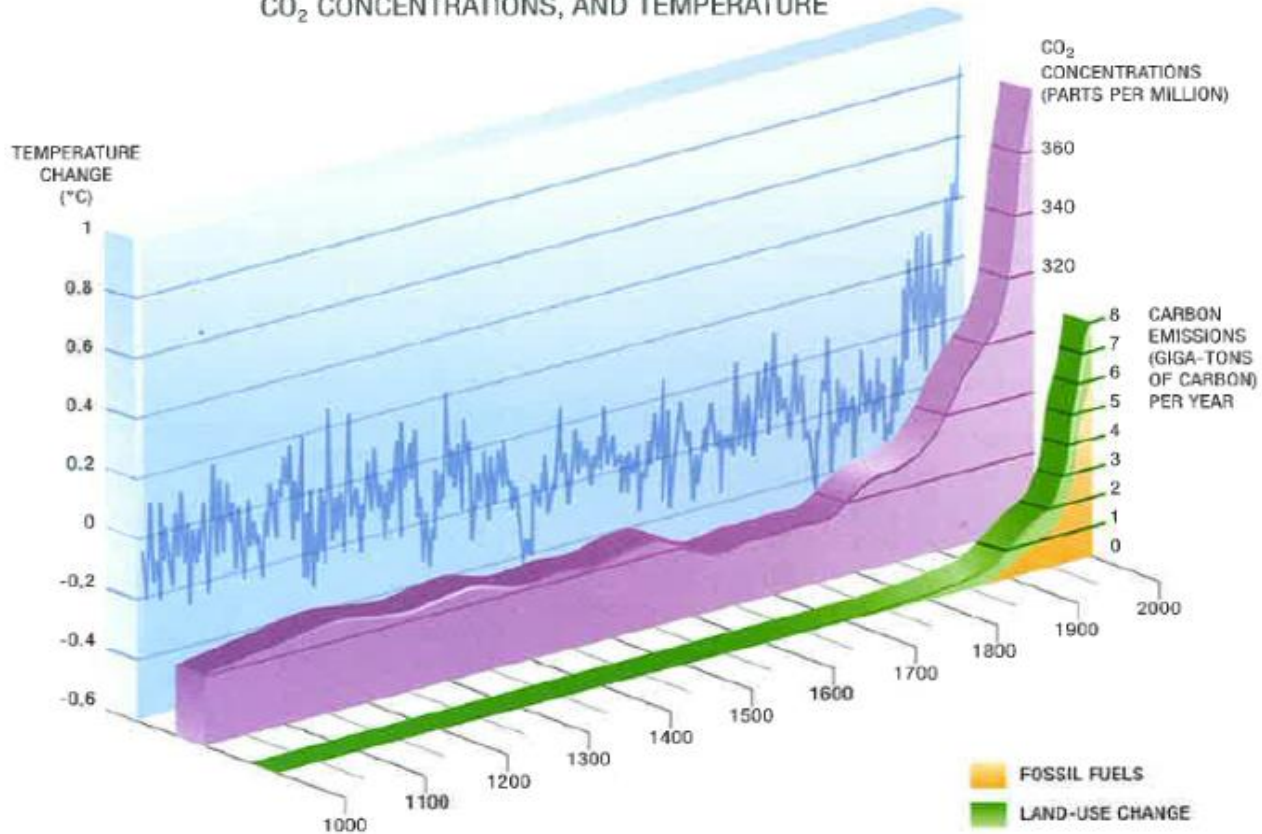


<http://www.manorweb.com/mankind/gif/co2.gif>



# A 1000-year record

1,000 YEARS OF CHANGES IN CARBON EMISSIONS,  
CO<sub>2</sub> CONCENTRATIONS, AND TEMPERATURE



# Questioning

Recently NASA GISS reported:

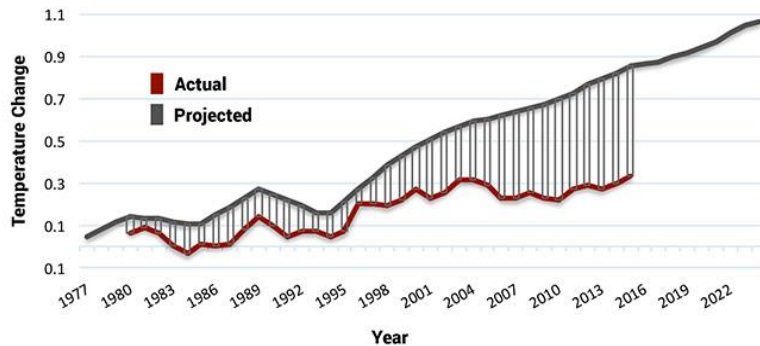
*“From February 2016 to February 2018 (the latest month available) global average temperatures dropped 0.56°C. You have to go back to 1982-84 for the next biggest two-year drop, 0.47°C - also during the global warming era.”*

<https://wattsupwiththat.com/2018/05/distortions-misdirections-and-lack-of-accountability-continue-to-plague-climate-science/>



## Climate Models Fail to Predict Warming Trends

If we cannot predict future weather then the probability of dangerous manmade climate change is beyond our comprehension.



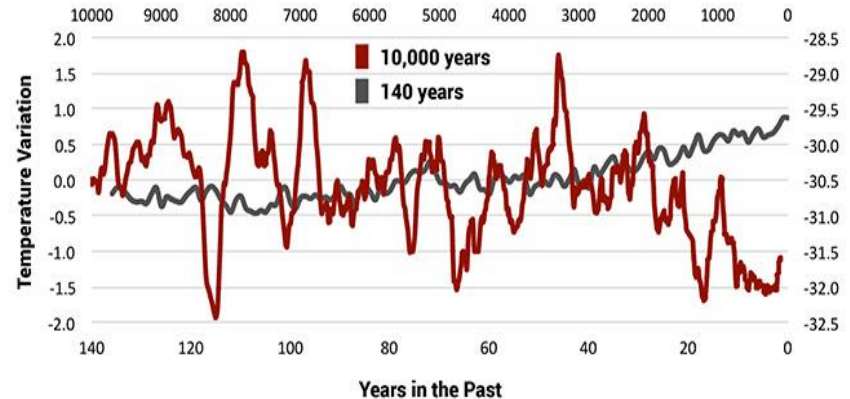
If the theory of dangerous manmade global warming predicts the future, and if weather models prove scientists cannot predict the future, then the alarmist theory about a dangerous future has been disproved as a scientific hypothesis. You cannot reasonably champion a scientific theory when your own work proves you do not have the expertise to make the claim.

Source & Notes:  
John R. Christy, Distinguished Professor of Atmospheric Science, Alabama's State Climatologist, and Director of the Earth System Science Center at The University of Alabama in Huntsville.  
Projected: Tropical average mid-tropospheric temperature variations (5-year averages) for 32 models (lines) representing 102 individual simulations.  
Actual: Satellite record is the average of three satellite datasets (green - UAH, RSS, NOAA).

Chart by Michael David White for The Right Track Magazine. Published October 11, 2016.

## The Banality of Climate Change

140 Years of Climate Change and 10,000 Years of Climate Change.



Changes in temperature in the 10,000-year record and the 140-year record show that recent temperature changes are normal in magnitude. The 10,000-year record has a range of 3.74 Centigrade. The 140-year record has a range of 1.34 Centigrade. The magnitude of change in the long record is almost three times greater than the range in the short record.

Source & Notes:  
A. 140-year record: Goddard Institute for Space Studies, National Aeronautics and Space Administration, Global Annual Mean Surface Air Temperature Change, Global Land-Ocean Temperature Index (C).  
B. 10,000 Year Record: GISP2 Ice Core Temperature and Accumulation Data, NOAA Paleoclimatology Program and World Data Center for Paleoclimatology (Boulder)

Chart by Michael David White for The Right Track Magazine. Published October 11, 2016.

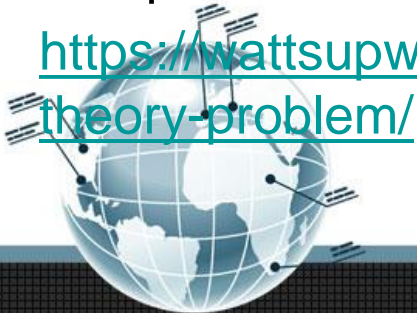




# Dr Tim Ball:

„The Intergovernmental Panel on Climate Change (IPCC) fails for many reasons, but, not least, is the problem of specialization. In fact, they have a much larger problem because there are crossovers and similarities within the specializations that are markedly different between the sciences. This is demonstrated in their Working Group I (WGI) The Physical Science Basis Report and those in Social Science Reports of Working Groups II and II. Then, they run into serious problems when they tried to integrate political and economic models. Integrating them with economic and social scenarios of WG II and III and calling them projections, supposedly masked failures of the scientific predictions of WGI. This goes a long way to explaining why a few people with a political objective were able to create the unrepresentative, unreal, Summary for Policymakers (SPM).”

<https://wattsupwiththat.com/2015/01/ipcc-climate-science-as-a-gestalt-theory-problem/>



# Humanity is Society

- Evolution of thought and preception
- Orthodox Darwinism (1) vs. Evidence (2)
  1. Adaptation and change
  2. Interaction – destabilization – events
- Civilization
  - Technology and Economy
  - Price of the progress
  - Population growth is **NATURAL**



# Geological storage of CO<sub>2</sub>

- Just a part of a portfolio of developing technologies
- Storage capacity – a new resource
- Large investment costs vs. future benefits
- Who is to pay anyway?
- “Antimining” concept
  - abstract and still unproven
  - time (and money) needed to develop and test the technology



# Why is it so hard to be liked?

- For “GreenPeaces”

“Bridging technology” – just buying time, massive developments of renewable economy reduce the prices and are at the same time more cost-efficient, more decentralized and Earth-friendly

- For “Industries”

Large additional investment costs and operational costs, new regulatory regime and connected additional expenditures, potential liabilities in the forthcoming decades (40 years)!!!



# Thank you!



# References

Lovelock, J. (1989): The ages of Gaia. Oxford Univ. Press, Croatian Ed. Izvori Zagreb, 1999. 285 pgs.

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A. Watts: Four Key Charts for a Climate Change Skeptic  
<https://wattsupwiththat.com/2017/01/four-key-charts-for-a-climate-change-skeptic/>

T. Ball: <https://wattsupwiththat.com/2015/01/ipcc-climate-science-as-a-gestalt-theory-problem/>

