

# Bioforum: Climate Change

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# Questions

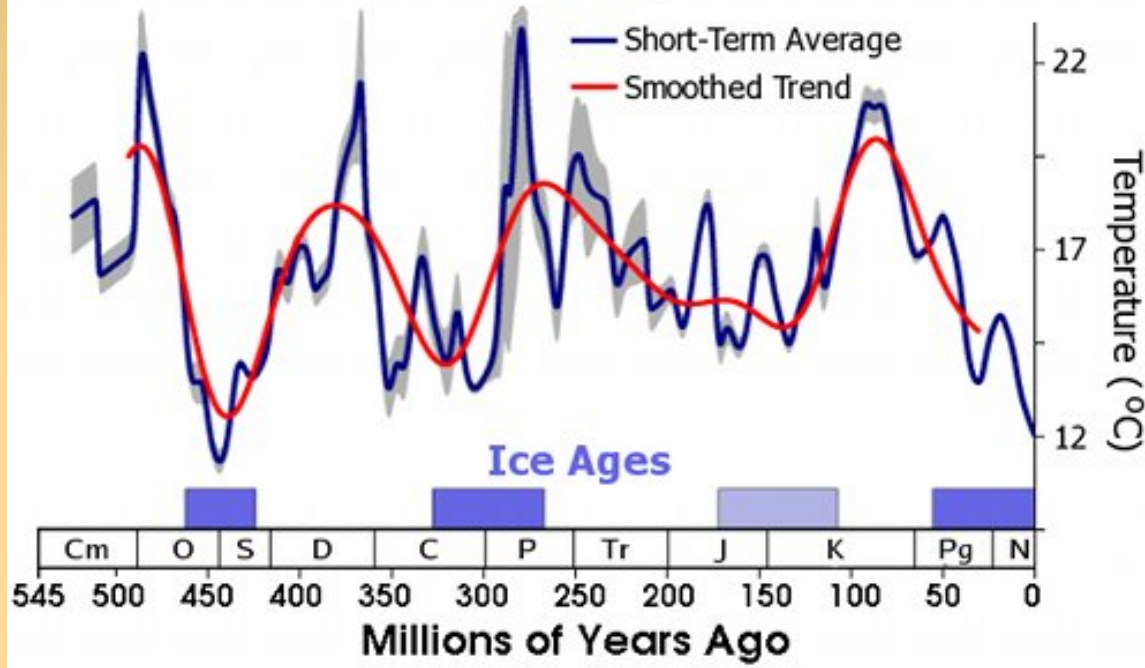
- What is climate?
- Is the Earth's climate changing?
- Why is it changing?
- What will the impacts be?
- What can be done about it?

# What is climate?

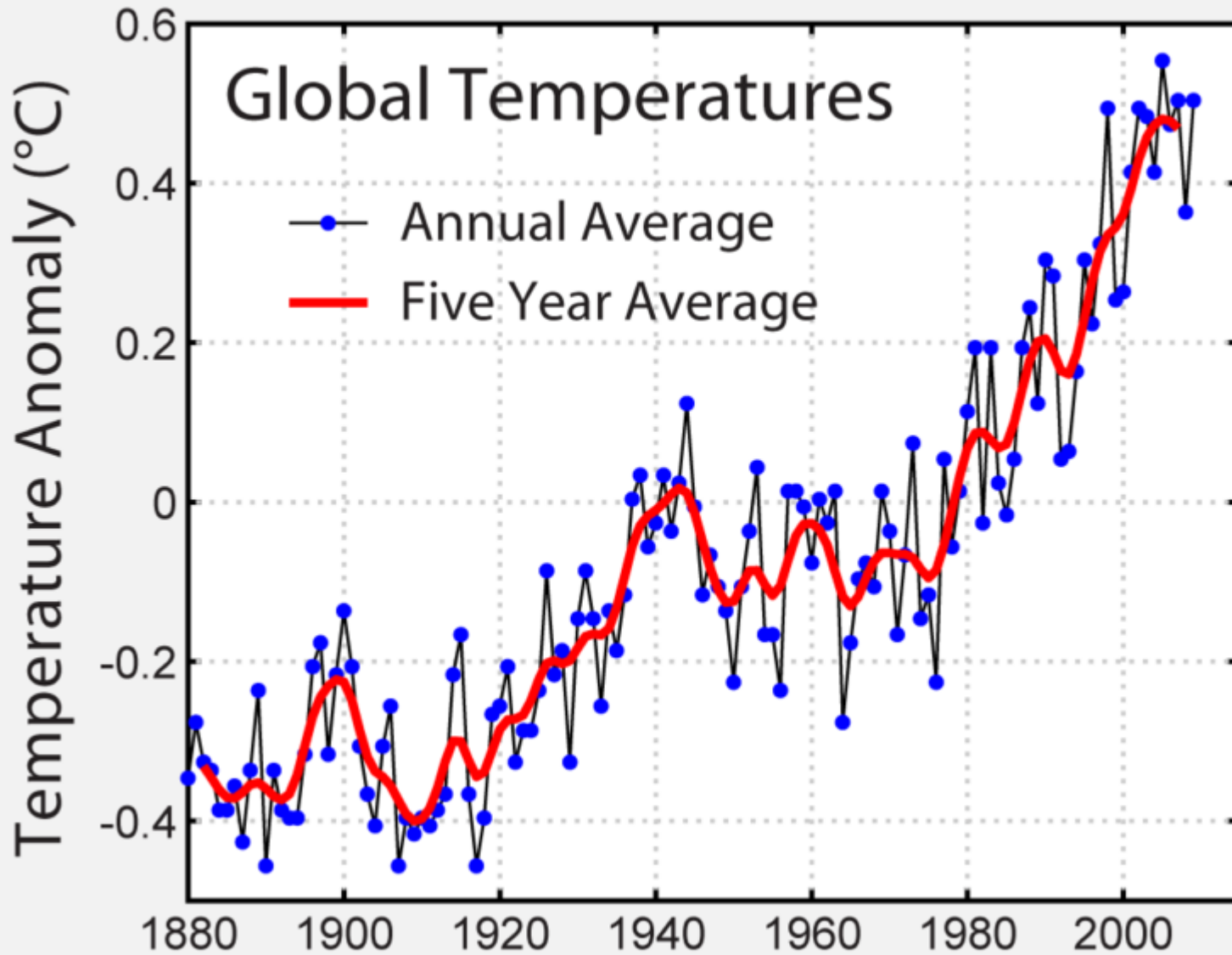
- Weather conditions prevailing over long periods of time.
  - Weather is NOT climate



### Phanerozoic Temperature



# Is the Earth's climate changing?

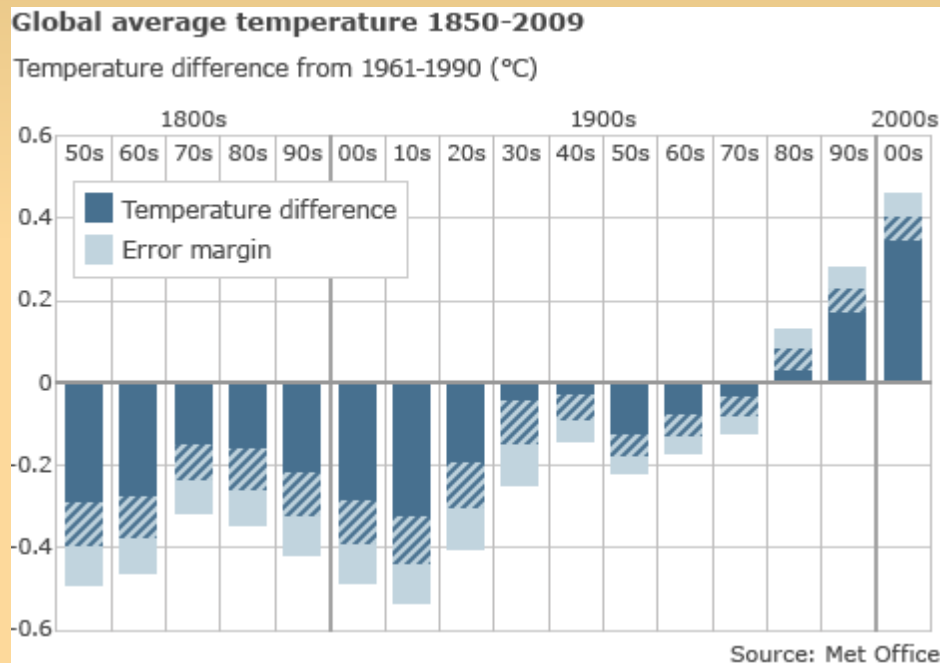


How do we know?

# How do we know?

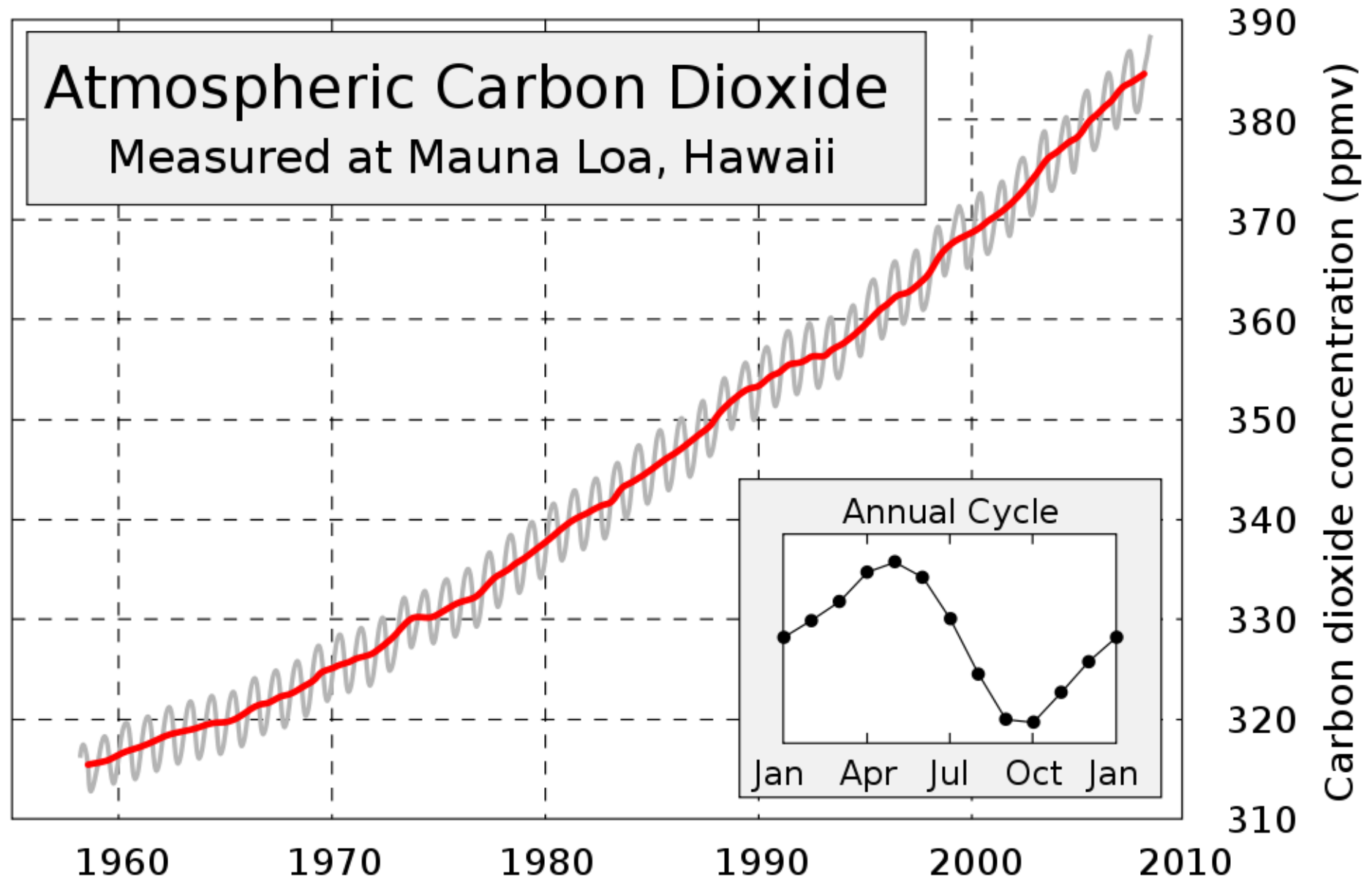


# How do we know?

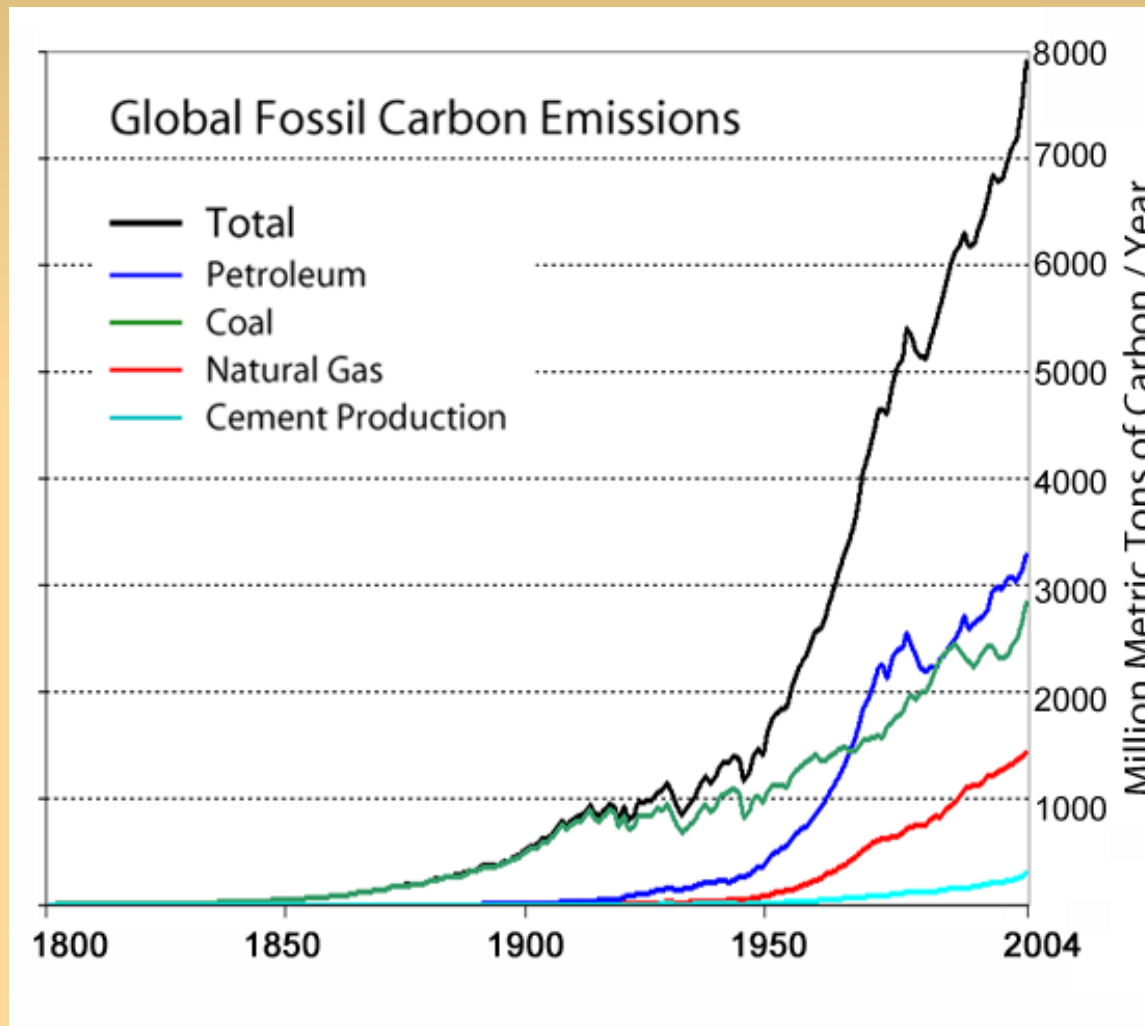


- 3,360 ways to arrange last 3 decades in record.
- 8 ways to arrange 3 decades among themselves.
- Probability? Less than 1 in 3,000.

# Why is climate warming?



# Why is climate warming?



# What will the impacts be?

- Physical impacts
  - Air temperature
  - Precipitation patterns
  - Sea level
  - Ocean acidification

# What will the impacts be?

- Biological impacts
  - Species distributions
  - Species reproduction
  - Food webs
- Human society
  - Agriculture
  - Health
  - Living space

# Can we mitigate and adapt?

- Individual and societal commitments required
- Energy
  - Conservation
  - Alternative, cleaner sources
- Economic changes
- Sequestration technologies

# Can we mitigate and adapt?

- Education, education, education
  - All societies desire a better world for their children
  - Education is an investment; the more educated a society, the better off the individual

# Can we be optimistic?

- Human cultures and societies are capable of very rapid change on sub-evolutionary timescales
  - Can we match the pace of climate change?
- Humans, like most social animals, are an evolutionary paradox of selfish and altruistic actions
  - Investment in society benefits the individual