

Climate science: The basics

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Outreach Event on the IPCC Role, Activities and Findings

Event for students

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Kingston, Jamaica

**Why
Earth is a
good place
to live?**



1

Water
Gas, liquid & solid



2

**Moderate
temperature**



3

Energy
Sun



Why Earth?

Not Venus?



Nor Mars?





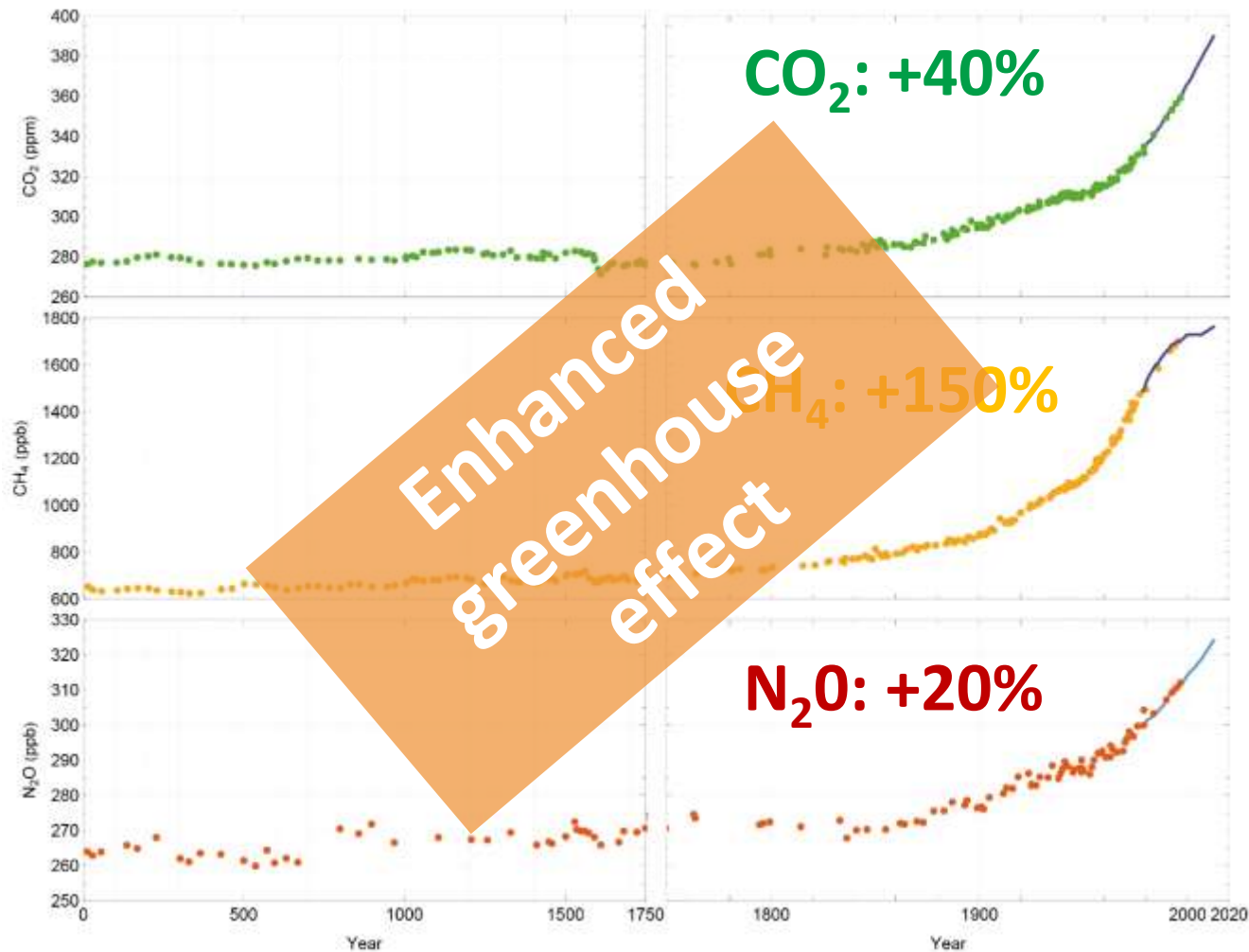
Earth's atmosphere

**Water vapor
Carbon dioxide
Methane
Nitrous oxide**

...

Greenhouse effect

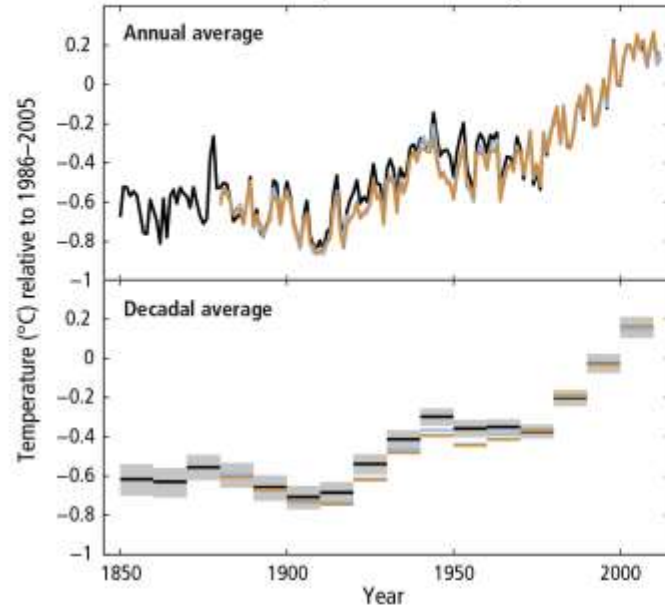
**Natural process that warms the Earth's surface and
the lower atmosphere.**



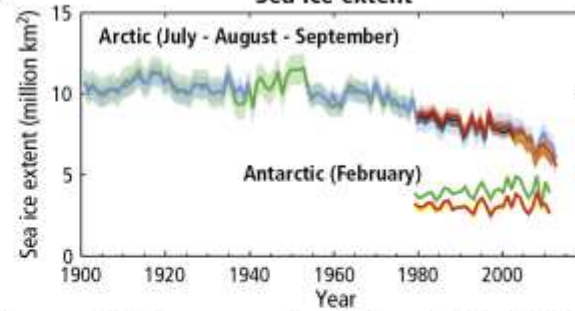
The atmospheric concentrations of carbon dioxide, methane and nitrous oxide have all increased since 1750 due to human activity

Evidences of climate change

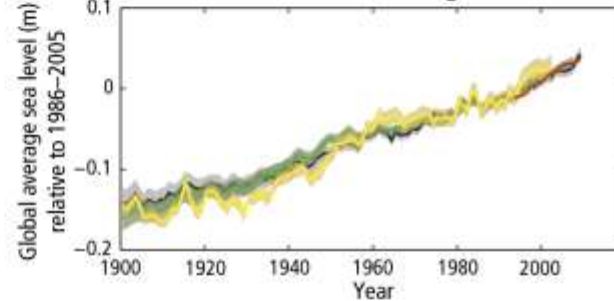
(a) Observed globally averaged combined land and ocean surface temperature anomaly 1850–2012



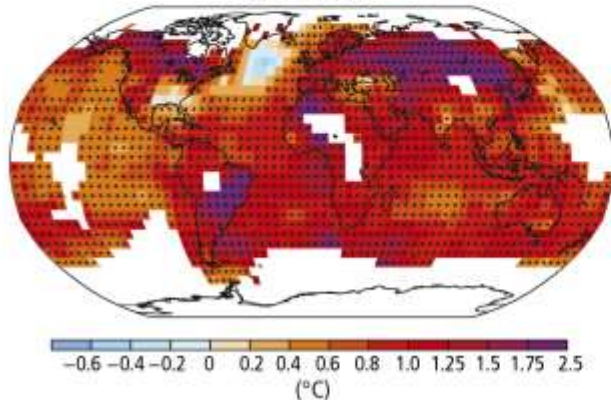
(c) Sea ice extent



(d) Global mean sea level change 1900–2010



(b) Observed change in surface temperature 1901–2012



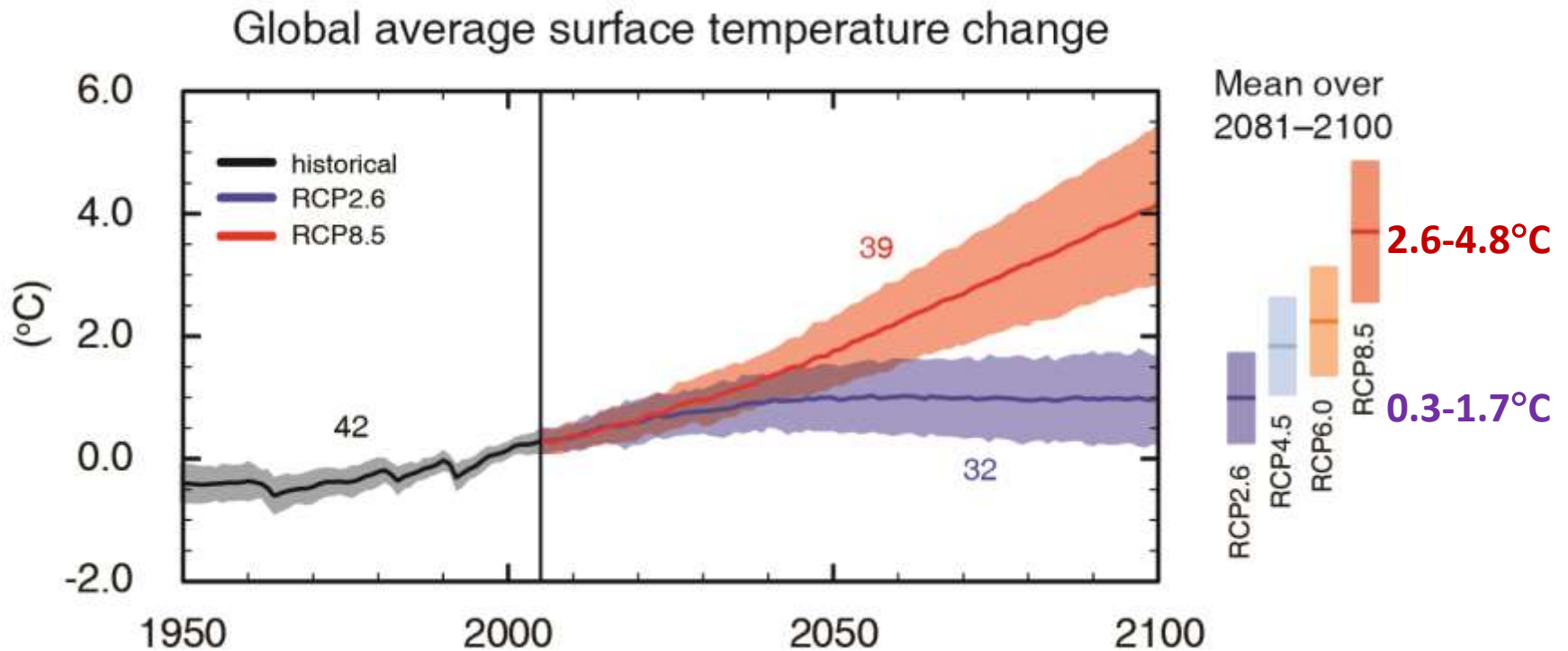
Many lines of evidence

Independent sources

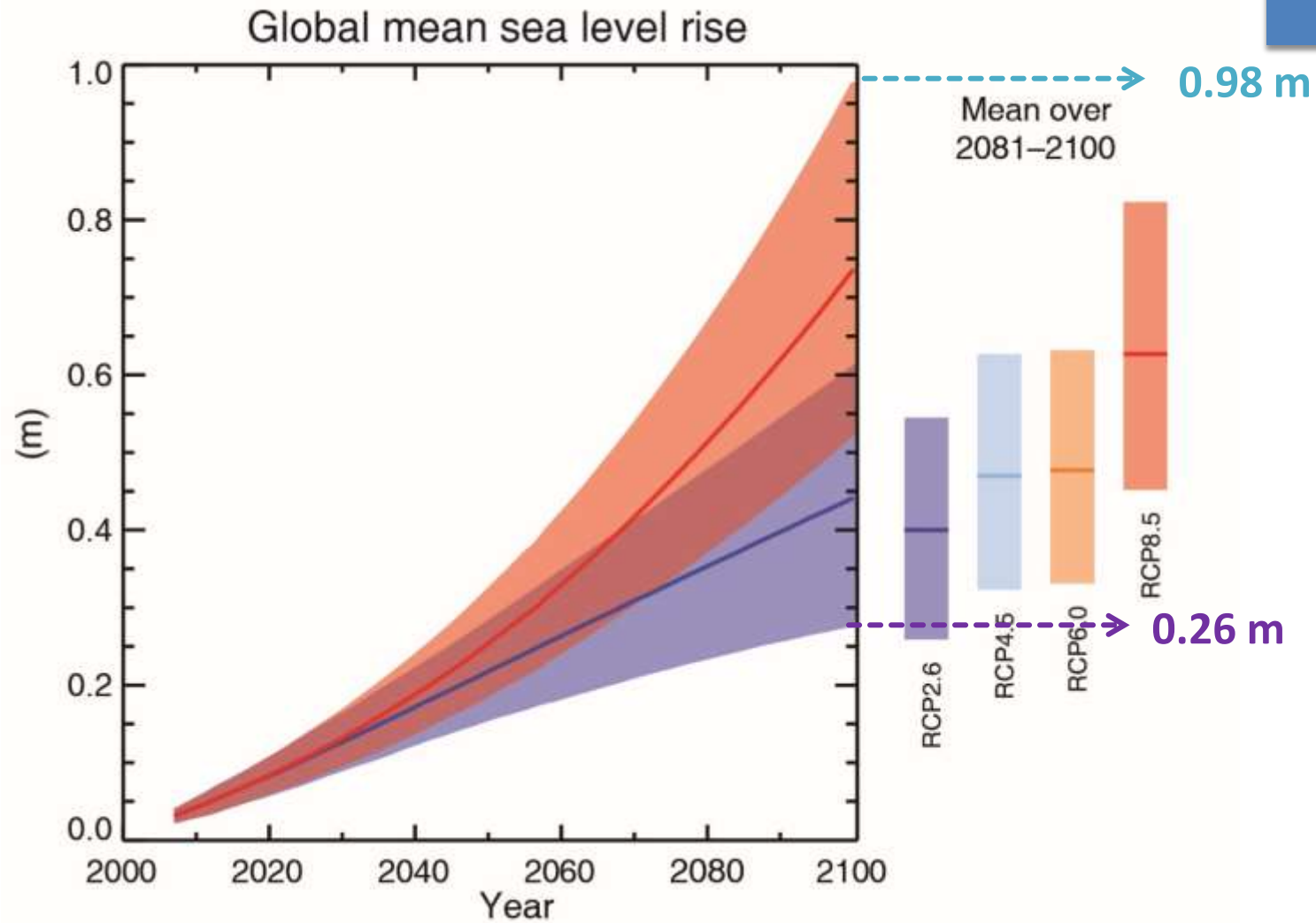
Warming of the climate system is unequivocal

The background is a dark blue gradient. In the top right corner, there is a vertical light blue bar. Several faint, semi-transparent circles of varying sizes are scattered across the background. The text "Future climate" is centered in the lower half of the image.

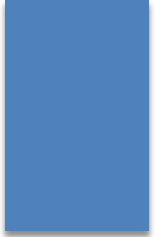
Future climate



Global temperature change for the end of the 21st century is likely to exceed 1.5°C relative to 1850 for all scenarios



Global mean sea level will continue to rise during the 21st century



Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.

Climate Change 2013: The Physical Science Basis

Working Group I contribution to the IPCC Fifth Assessment Report

Full Report and Background Information

www.climatechange2013.org

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IPCC AR5 Working Group I
Climate Change 2013: The Physical Science Basis

ipcc
INTERGOVERNMENTAL PANEL ON climate change

