

Greenhouse Gases

Intro to Environmental Science
DartmouthX

Global Warming Potential (GWP):

amount of infrared energy that
a given gas will absorb or retain

Carbon dioxide (CO₂):

main anthropogenic sources
are combustion of fossil fuels
and reduction in vegetation

Methane (CH₄):

main anthropogenic sources
are anaerobic (without oxygen)
decomposition



Methane
GWP:
25

Nitrous oxide (N₂O):
main anthropogenic sources
are nitrate-rich soils and other
flooded areas of land



Nitrous oxide
GWP:
125 - 300

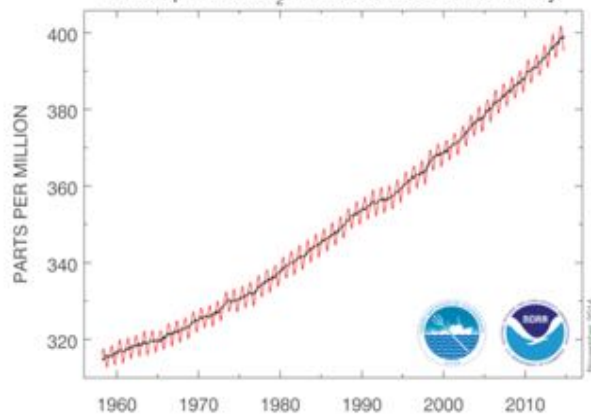
Chlorofluorocarbons (CFCs):
main anthropogenic source
is creation for use in refrigerators
and air conditioners

Chlorofluorocarbons
GWP

1,500
to
10,000

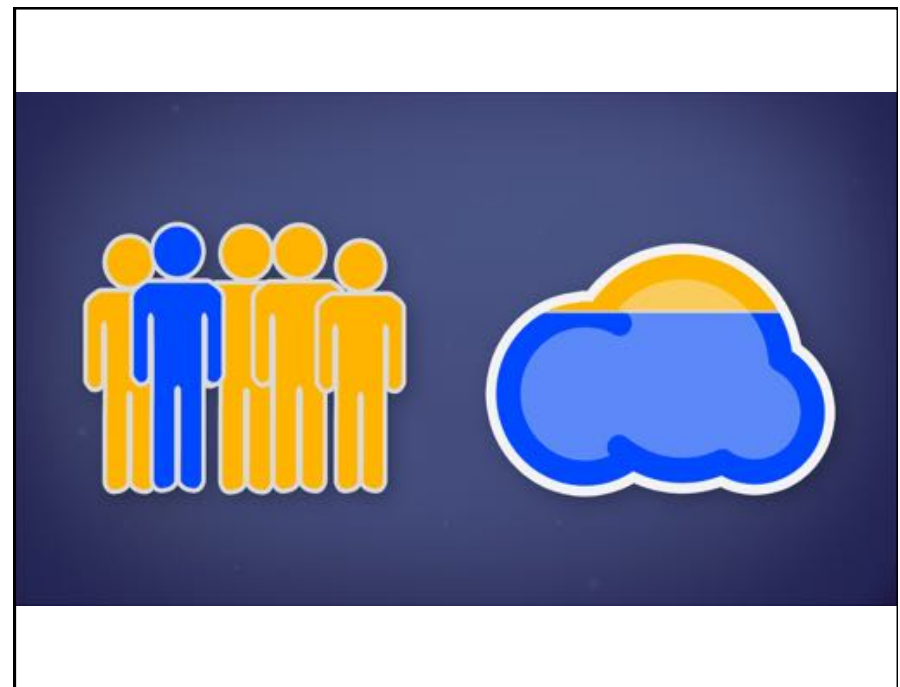
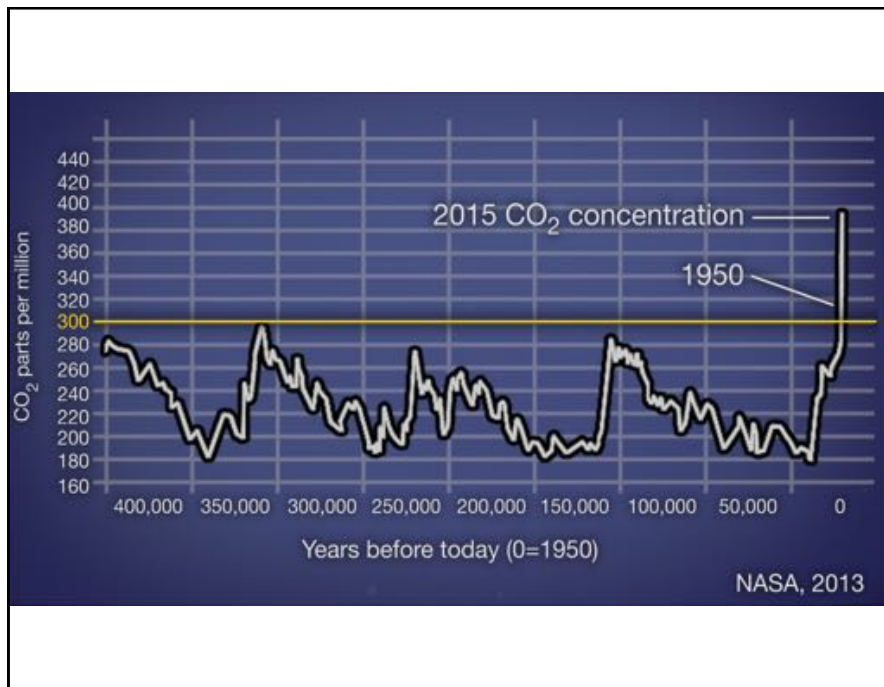
Water (H₂O):
main anthropogenic
source is increased
evapotranspiration

Atmospheric CO₂ at Mauna Loa Observatory



Scripps Institution of Oceanography
NOAA Earth System Research Laboratory

Current atmospheric
carbon dioxide concentration:
400 parts per million (ppm)



Global temperatures have increased by 0.85°C (~1.5°F) from 1880 through 2012

