

Global Change Basics



Intro to Environmental Science
DartmouthX

Global change:

change that occurs in the
chemical, biological and physical
properties of Earth

Intergovernmental Panel on Climate Change (IPCC):

an international group of scientists
working under the United Nations
to research climate change

"Warming of the climate system
is unequivocal, and since the 1950s,
many of the observed changes are
unprecedented over decades to millennia."

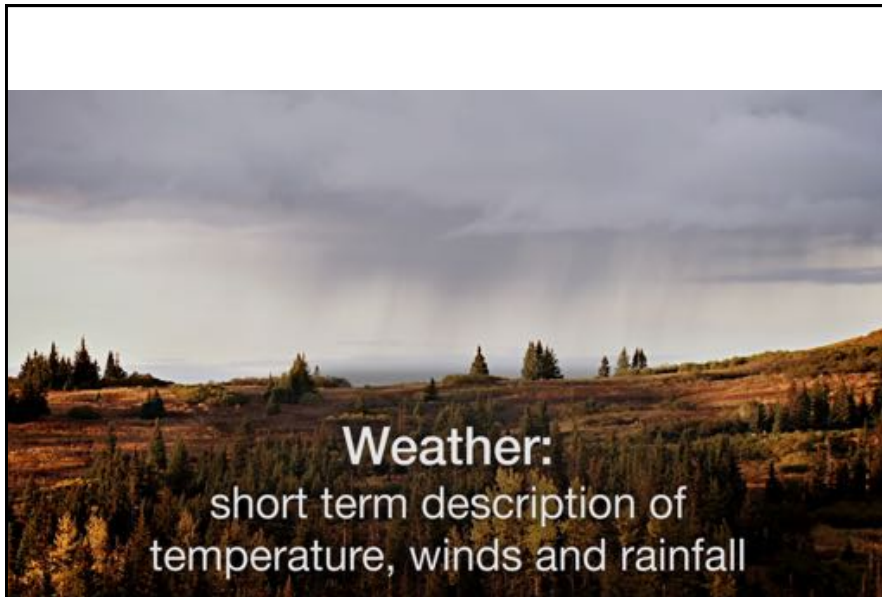
IPCC, 2013

"The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased."

IPCC, 2013

"It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century."

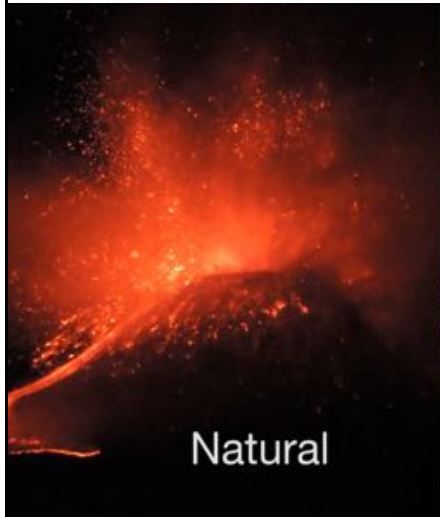
IPCC, 2013



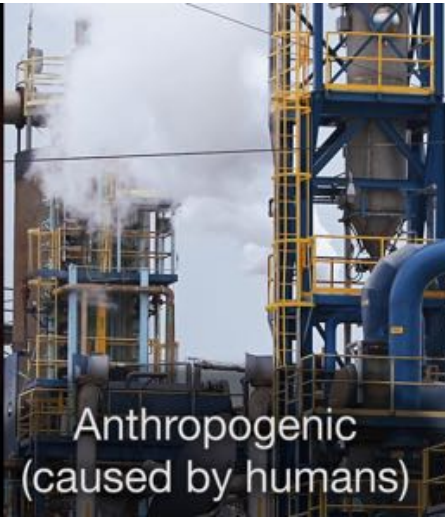
Weather:
short term description of
temperature, winds and rainfall

Climate:

average weather that occurs in a
given region over a longer time period



Natural



Anthropogenic
(caused by humans)

Global warming:

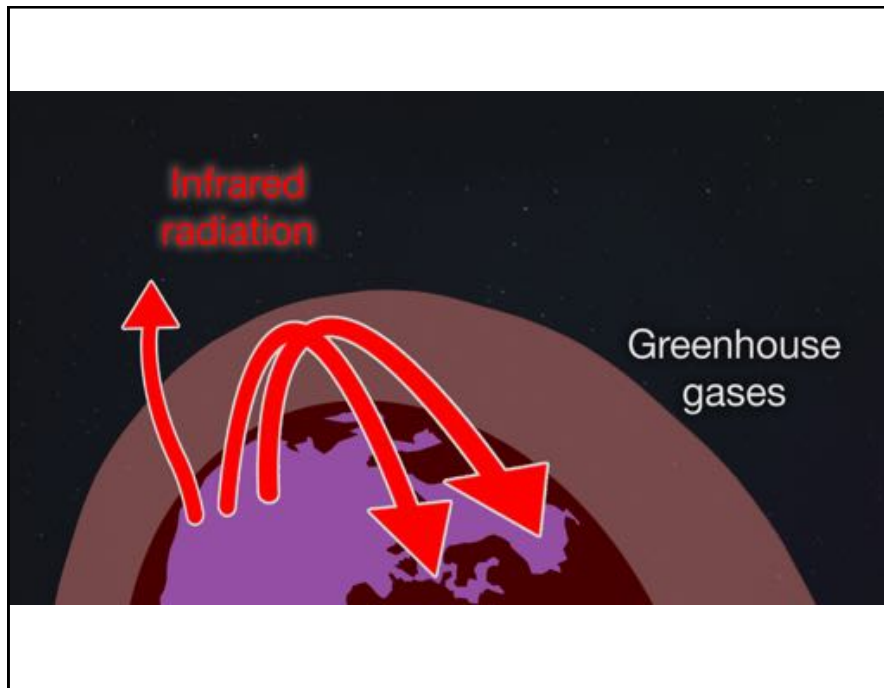
warming of oceans, landmasses
and atmosphere of Earth

Incoming solar radiation:
Earth's only energy source, consists
of ultraviolet and visible light



About 1/3 of energy from the sun
is reflected back into space





Radiative forcing:
quantifies the energy
flux to and from the earth

