

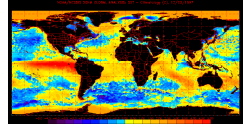
SIO 15 LECTURE 22: ANTHROPOGENIC CHANGES: ATMOSPHERE

Leftovers from Lecture 21

Short-Term Changes: a few to 10s of years

El Nino watch short video

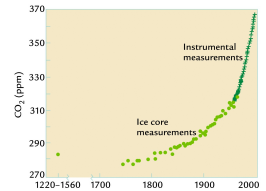
Volcanic Eruptions



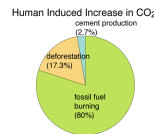
Recent Climate Observations



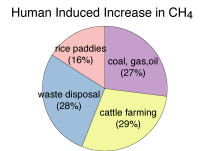
CO₂ - How Do we Know it's Us?



Anthropogenic CO₂

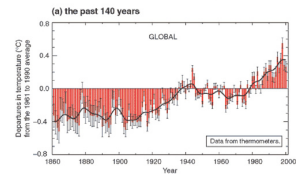


Anthropogenic CH₄

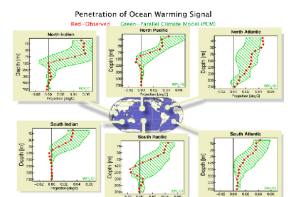


Causes for Recent Temperature Increase

Variations of the Earth's surface temperature for:



The Role of the Oceans - Temperature, CO₂



IPCC Reports - Predictions - Temperature

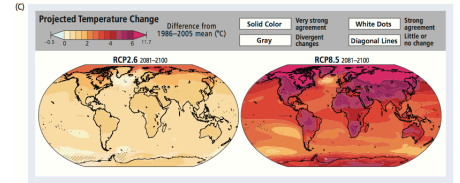
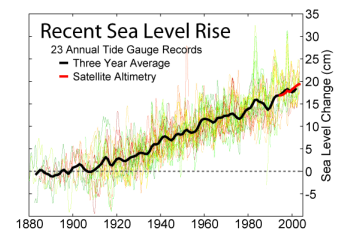
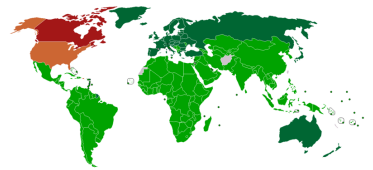


Figure SPM.4 | Observed and projected changes in annual average surface temperature. This figure informs understanding of climate-related risks in the WGI/AR5. It illustrates temperature change observed to date and projected warming under continued high emissions and under ambitious mitigation.

IPCC Reports - Predictions - Sea Level rise

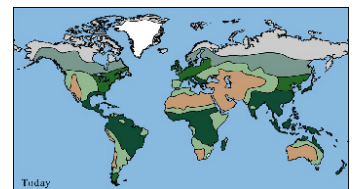


The Kyoto Protocol



The 2015 Paris Climate Agreement

Isn't Global Warming Good For Us? - Predictions



The Ozone Hole

watch short Video 22

