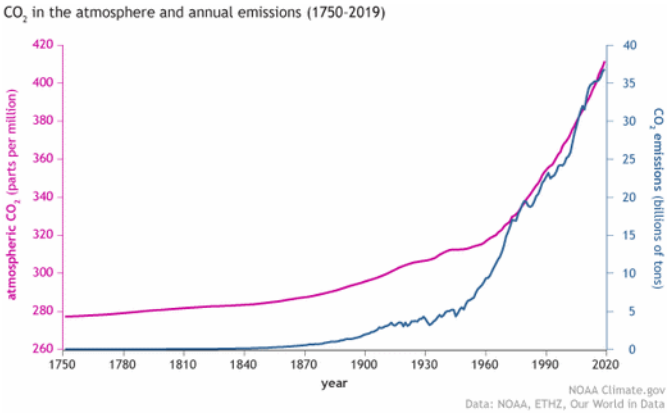
The Threat of Greenhouse Gas Emissions

1(2) The Climateers.

Gases and water vapour that trap heat in the atmosphere are accelerating rapidly

Carbon Dioxide (CO2) is much the most prominent gas and is measured in parts per million(ppm). Natural variations in atmospheric CO2 happen slowly but once we started burning fossil fuels industrially the level rose rapidly. Before the industrial revolution the level of CO2 in the atmosphere had been around 280ppm for thousands of years. For the next 200 years (1750-1950) it rose by 1ppm every 6 years, then at 1ppm every year (1950-2015) and now1ppm every 8 months.



The blue line tracks the tonnage of CO2 emitted (in billions of tonnes), the red line is the CO2 level. 1 Globally emissions continue to accelerate but some countries have reached 'peak emissions'

We have to limit the heating. Earth is slowly burning.

In August 2021 the UN's International Panel on Climate Change (IPCC) issued its 6th report summarising 14,000 peer-reviewed climate studies. The average temperature of the Earth at sea level is 1.1C above the pre-industrial average globally but the report estimates the target agreed in Paris (2015) of limiting that to 1.5C by 2050 will be reached in 14 years (2035) at best and in 6 years (2027) at worst. The UN Secretary General António Guterres said: " as today's report makes clear, there is no time for delay and no room for excuses. It is a code red for humanity".

Climate Changes

The report summarises the scientific community's view that the changes are certain to have been caused by human activity and the result will be that the Earth's climate will have: wetter wet seasons and events; more severe floods and droughts; some areas will dry out as warming over land increases evaporation; changes in climate patterns like winds and ocean circulation. The effects will vary by region.

The Consequences In the near future we could reach a 'tipping point' where changes become self-reinforcing e.g. methane from warming permafrost causing more permafrost to melt (methane heats the atmosphere much more than CO2); sea-ice decreasing and exposing more ocean to warming.
The IPCC Special Report (2019) warned that at 1.5C 'climate-related risks to human health, livelihoods, food security, human security, water supply and economic growth will all increase'. **In other words by 2035 there will be increased hunger, thirst, conflict, disease, poverty and deprivation.**
It gets worse at 2C. Additionally coral reefs will have gone, the Arctic will be ice-free every10 yrs, (no polar bears), 18% of pollinators will have had their range halved thus reducing crops and there will be more fires and floods.

Most people want action now. Globally 83% are willing to do more to become better "planetary stewards";73% of people in G20 countries believe we are approaching potentially abrupt or irreversible tipping points; 69% believe the benefits of action to protect the global commons outweigh the costs. https://globalcommonsalliance.org/wp-content/uploads/2021/08/Global-Commons-G20-Survey-full-report.pdf

We must each reduce emissions (no.2) but even more, join with others to call for changes (no.3)

1 https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide