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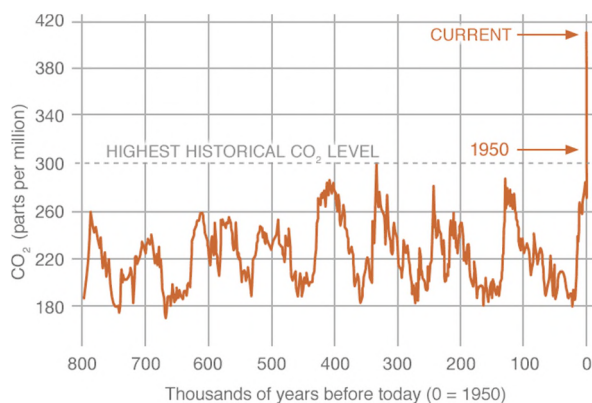
Climate change

What is climate change?

Greenhouse gases enhance the natural greenhouse effect by trapping more heat in the earth's atmosphere than would be the case without human activity, leading to changes in our climate.

Greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), and synthetic gases, such as chlorofluorocarbons (CFCs) and hydrofluorocarbons (HFCs).

Changes in carbon dioxide concentration



Source: National Oceanic and Atmospheric Administration, United States; NASA 2020.

The atmospheric carbon dioxide measurement for December 2020 was 415 parts per million. This is higher than at any time over the last 800,000 years.

The world is warming

Globally, temperatures are 1.2°C above pre-industrial levels and 2020 was one of the three warmest on record. (Source: World Meteorological Organisation)

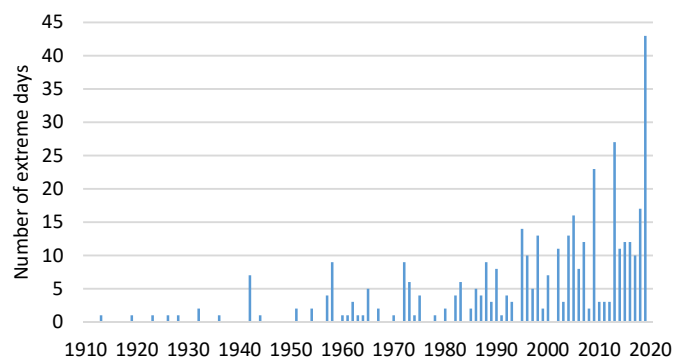
In Australia, the climate has warmed on average by 1.44 °C since national records began in 1910. The last ten years 2011-2020 were the hottest on record. (Source: Bureau of Meteorology)

Climate change is driving extreme weather events

RAIN: A greater proportion of annual rainfall is coming from heavy rain days, there is increased time between rain events and rainfall over southern Australia has declined.

HEAT: There has been an increase in extreme heat events in Australia, more days each year are in the top 1% of temperatures experienced.

Frequency of extreme heat days



Source: Number of days each year where the Australian area-averaged daily mean temperature for each month is extreme. Extreme daily mean temperatures are the warmest 1% of days for each month, calculated for the period from 1910 to 2019. Reproduced by permission of Bureau of Meteorology, © 2021 Commonwealth of Australia.

Significant impacts are expected

Impacts are expected on human health due to heat exposure and changing spread of disease.

The natural environment will be affected through changed distribution of species, loss of biodiversity and altered water and nutrient cycles.

Greater frequency of natural disasters will threaten human lives and lead to significant economic costs. Successful implementation of the Paris Agreement will minimise these impacts.

See our report, [Prospering in a low-emissions world](#) and our Paris Agreement [fact sheet](#).