

# CLIMATE CHANGE: CAUSES, CONSEQUENCES & SOLUTION



Professor Richard Allan

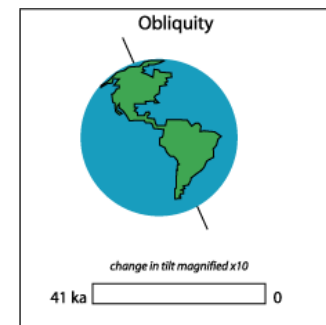
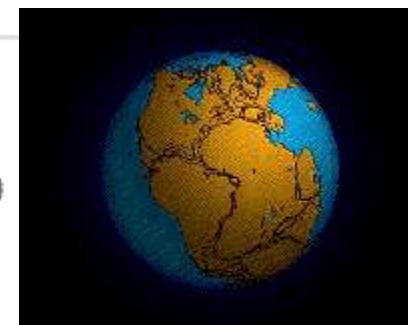
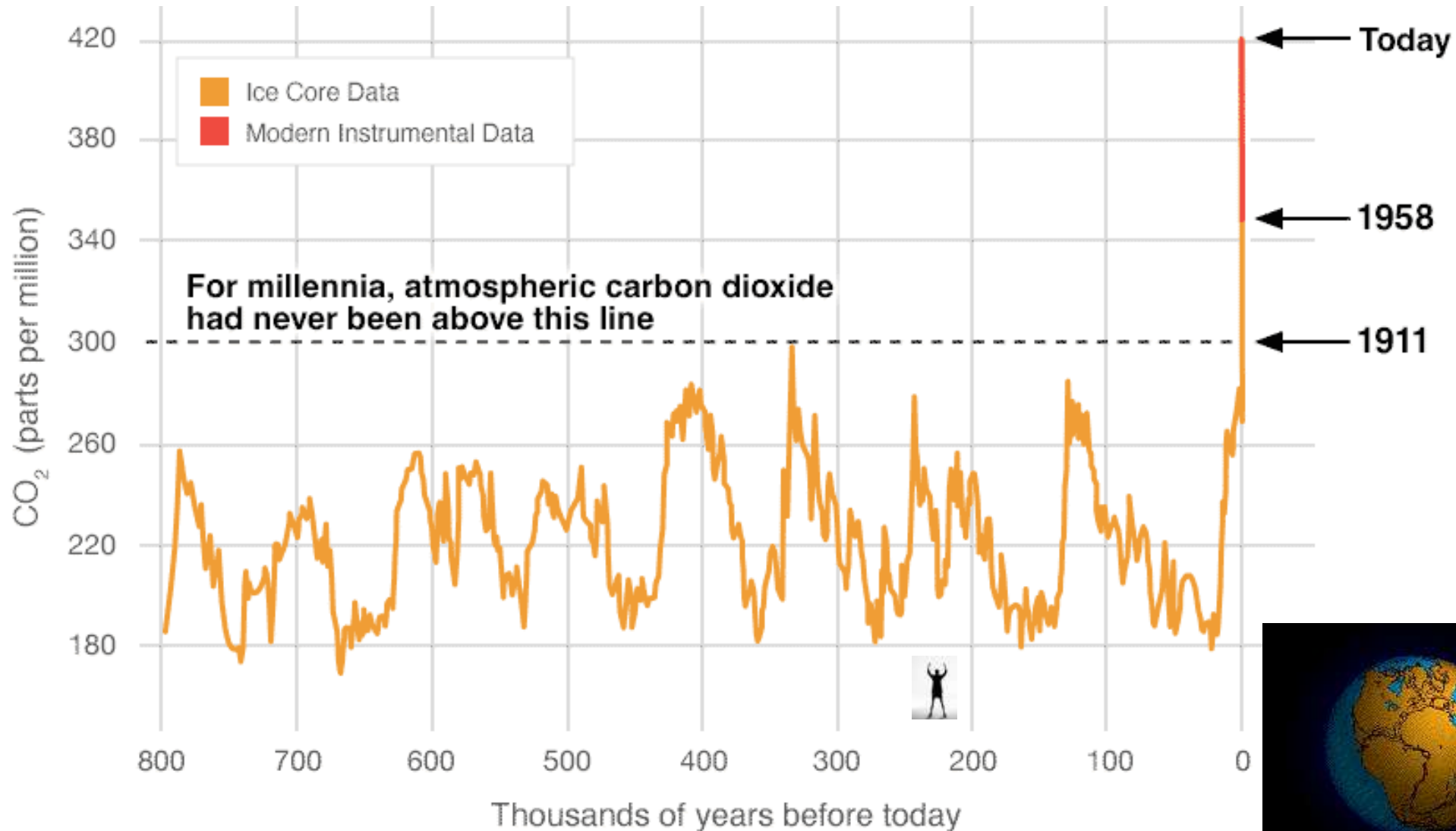
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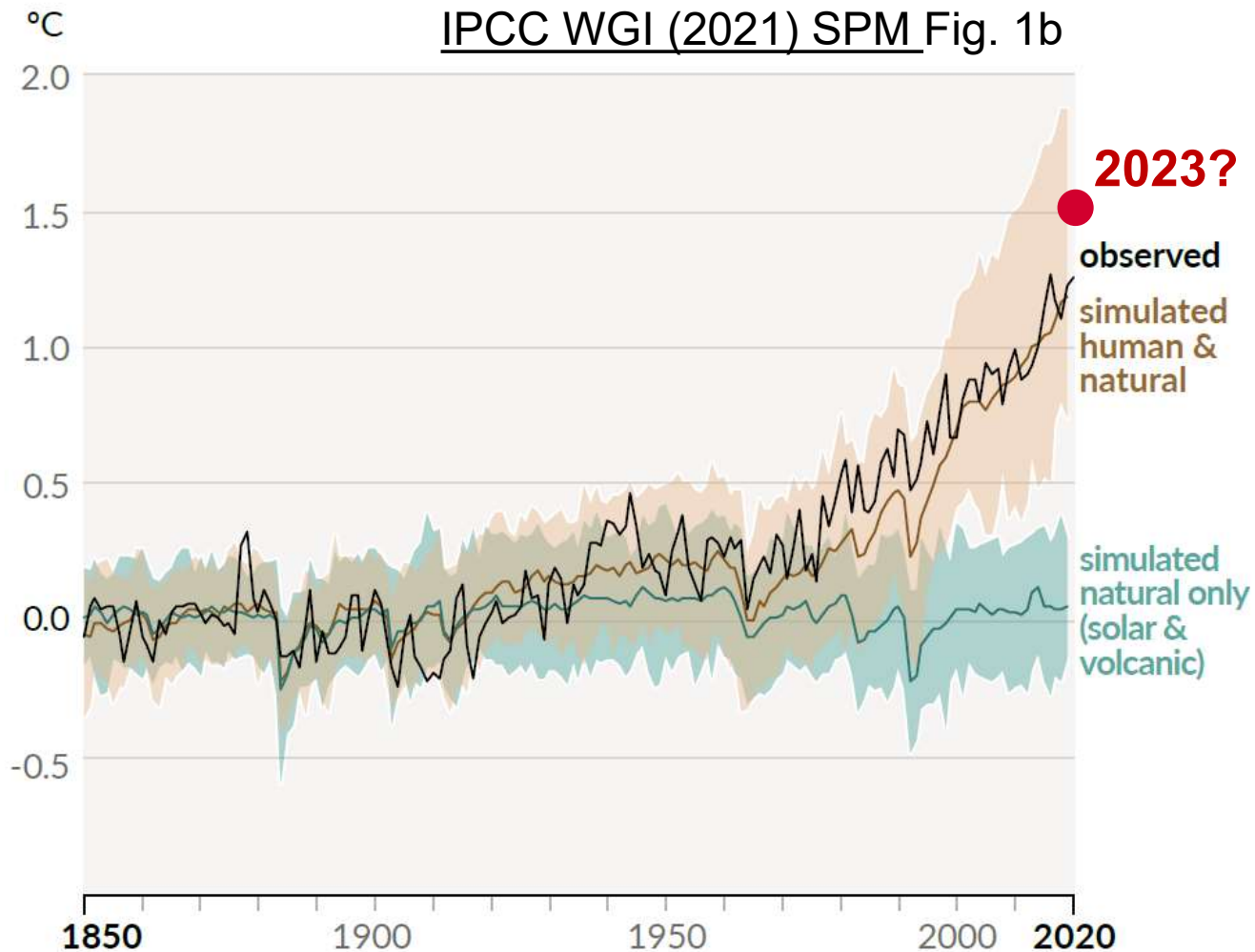
EV Café Webinar 'The case for EV's: People, Planet, Profit', 18th October 2023



# The climate has always changed. But...



# It is indisputable that human activities are causing climate change



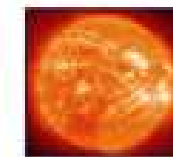
► Observed warming is driven by emissions from human activities



► Natural factors do not contribute to rapid warming over past 5 decades



► Greenhouse gas warming has been partly masked by aerosol cooling

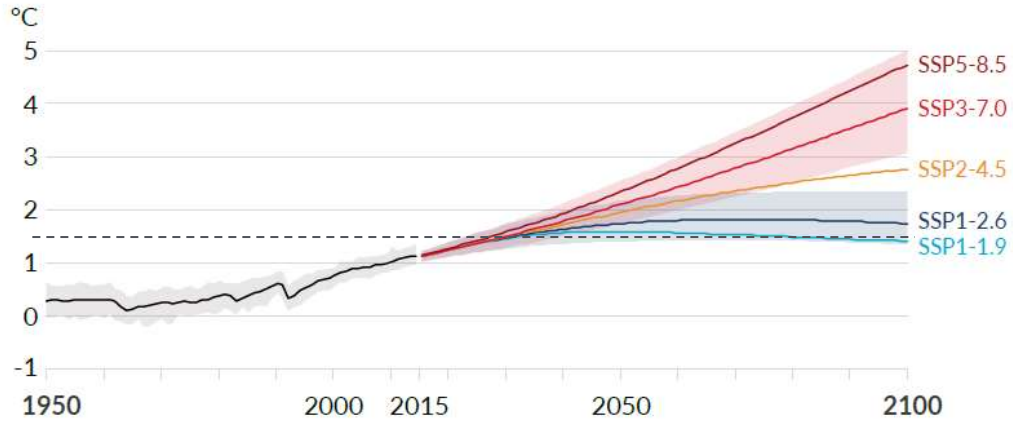


► Warming is amplified by feedback loops involving water vapour, ice & clouds

# Some changes in the climate system are irreversible but many changes can be slowed or stopped by limiting warming



a) Global surface temperature change relative to 1850-1900

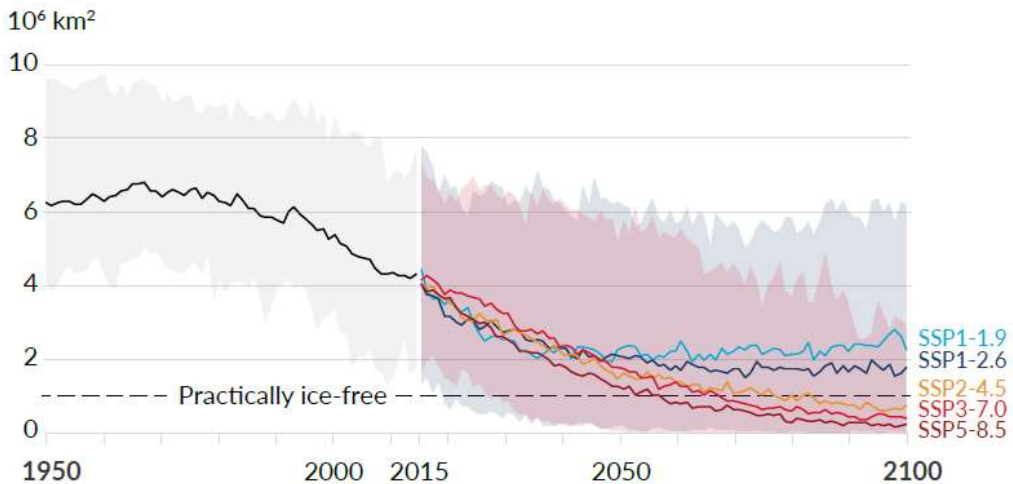


Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO<sub>2</sub> and other greenhouse gas emissions occur in the coming decades

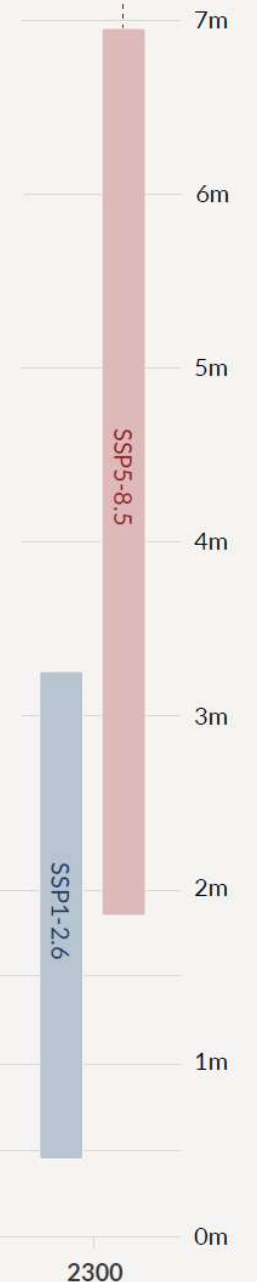
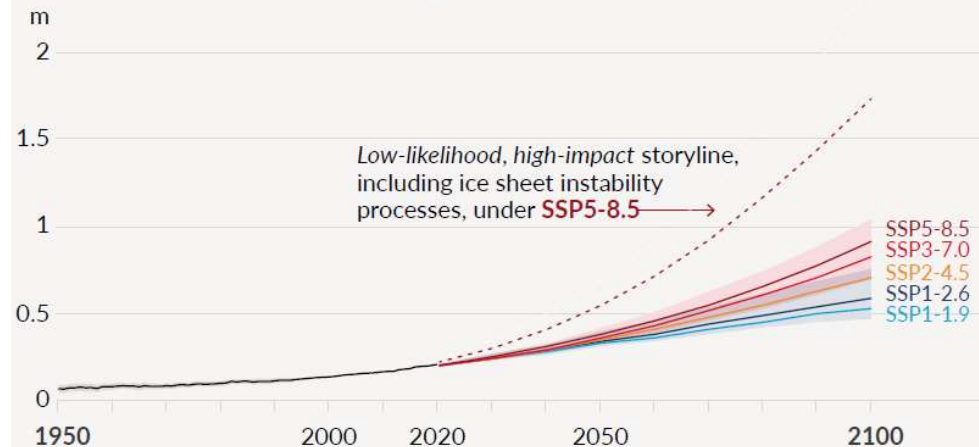
[IPCC (2021) WG1 SPM]

High emissions  
Low emissions

b) September Arctic sea ice area

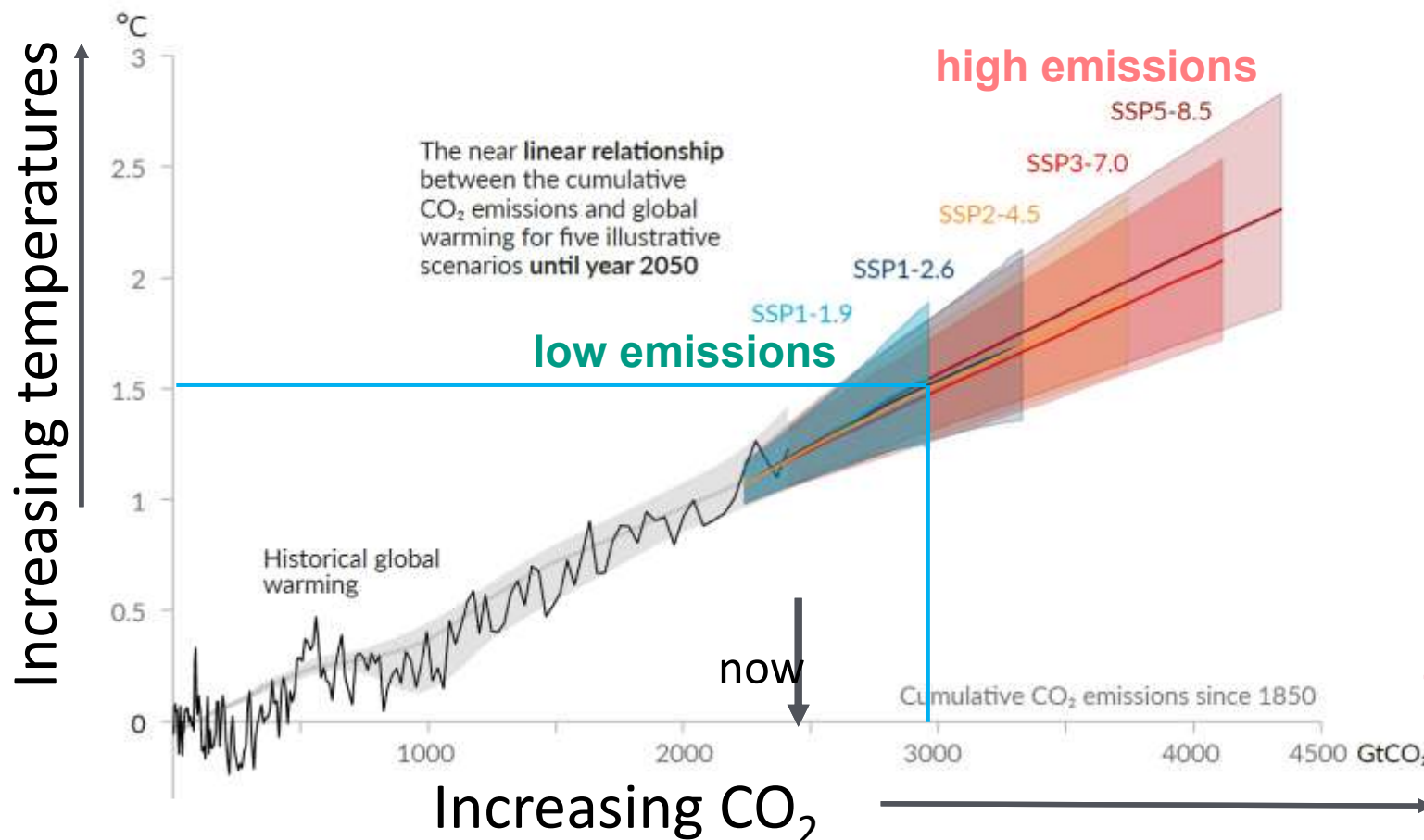


d) Global mean sea level change relative to 1900





# Limit Carbon Emissions to Avoid Dangerous Climate Change



[IPCC WGI 2021 SPM]

