## Climate change knowledge and responses

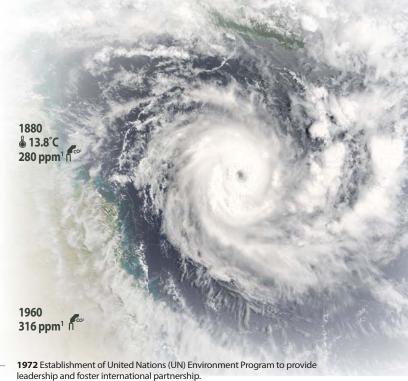
A timeline



## Milestones in Understanding Climate

## **Global and Australian Responses**

	Year
Understanding of the <b>relationship between the earth's</b>	1820 —
atmosphere and temperature	1830 —
	1840 —
	1850 —
Discovery that certain <b>gases block infra-red radiation</b> and prediction	1860 —
that changes in their concentration would lead to climate changes	1870 ——
	1880 —
Calculation that <b>human emissions of carbon dioxide (CO</b> <sub>2</sub> ) would	1890 —
lead to global warming.	1900 —
	1910 —
	1920 —
	1020
	1930 —
Warming trend since late 1800s documented	1940 —
	1950 —
Advances in <b>understanding of the global atmosphere</b>	
	1960
	-
Study of Man's Impact on Climate conference warns of rapid and	1970 ——
serious climate change <b>caused by humans</b> . This conference dramatically increased awareness of climate change.	
ardinationly increased awareness of climate change.	_
	1980 —
Scientists call for <b>international agreements</b> to reduce greenhouse gas emissions	_
g	
Intergovernmental Panel on Climate Change (IPCC) established to provide <b>clear scientific information</b> about potential	
environmental, social and economic impacts of climate change.	1990 ——
First IPCC Report showing <b>earth already warmed</b>	
Breaking up of Antarctic ice shelves	
Second IPCC report, <b>confirming human "signature" on warming</b> and predicting serious future warming	
Borehole data confirm warming trend	2000 —
Third IPCC report, predicting severe impacts of unprecedented global warming	
Fourth IPCC report showing h <b>igh economic, social and environmental costs</b> of climate change impacts	
Decline of Greenland and Antarctic ice sheets and	
Arctic ocean sea-ice	2010 —
Bureau of Meteorology (BOM) adds two colours to extreme temperature mapping because of new <b>record high temperatures</b>	
Fifth IPCC report, demonstrating <b>need for mitigation of</b>	
<b>greenhouse gas emissions</b> to avoid devastating climate change impacts	
Australian BOM and CSIRO release climate report showing warming temperatures and <b>projecting continued warming</b> , sea level rise	
and ocean acidification	
CSIRO and BOM publish downscaled climate projections for the Wet Tropics NRM cluster region	
p.:s. (min claster region)	2020 —



1978 US National Climate Program Act to co-ordinate climate programs and policies 1979 Scientific knowledge and concern building. World Climate Program launched within World Meteorological Organization to urgently improve understanding of global climate system.

1987 Montreal Protocol enables successful international action on reducing global emissions of ozone-damaging gases

1988 Scientific understanding being transformed into a policy issue. Toronto conference calls to reduce emissions of greenhouse gases by 20% by 2005. UK conservative Prime Minister Thatcher calls for action on climate change.

1992 Framework for Convention on Climate Change signed by 154 countries. A legally binding agreement on the need to stabilise levels of greenhouse gases.

1997 Kyoto protocol negotiated; 84 signatories.

1997 Australia chooses not to ratify Kyoto protocol 1997 Australia establishes Australian Greenhouse Office 1998 Australian National Greenhouse Strategy

2005 European Union Emissions Trading Scheme (ETS) commences. A market-based approach to controlling emissions of greenhouse gases which provides economic incentives to reduce emissions.

**2007** Australia ratifies Kyoto protocol

2009 Copenhagen Conference achieves an agreement on a two degree guardrail and 30 billion dollars in commitments from developed countries.

2011 Canada withdraws from Kyoto Protocol.

**2011** Australia introduces carbon price

2012 Doha Amendment adopted, starting the second commitment period of Kyoto protocol 2013-2020

2014 UN Climate Summit, New York.

**2014** Australia repeals carbon price legislation 2015 Australia introduces Emissions Reduction Fund

2014 **å** 14.6°C 398 ppm<sup>1</sup> n co

http://www.aip.org/history/climate/timeline.htm; www.skepticalscience.com; Edison M Salas (unpublished, James Cook University ); http://climate.nasa.gov/climate\_resources/28/; ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2\_annmean\_mlo.txt; http://www.noaanews.noaa.gov/stories2011/20111109\_greenhousegasindex.html

1) Figures are global averages; source www.noaa.gov Produced by the Wet Tropics Cluster Brokering Hub, November 2015