

AUSTRALIA'S INCONVENIENT TRUTH

An overview of climate trends and projected impacts
of climate change in Australia

167° C

Venus
457° C

Earth
15° C



THE CLIMATE
PROJECT.ORG



AUSTRALIAN
CONSERVATION
FOUNDATION

OUR CLIMATE IS ALREADY CHANGING

Climate change is having an enormous global, environmental and socio-economic impact already. Australia is no exception. Drought, water shortages and bushfires will become more frequent if we fail to address climate change. Former World Bank economist Sir Nicholas Stern gives the world ten years to take action to avoid the worst impacts of climate change.

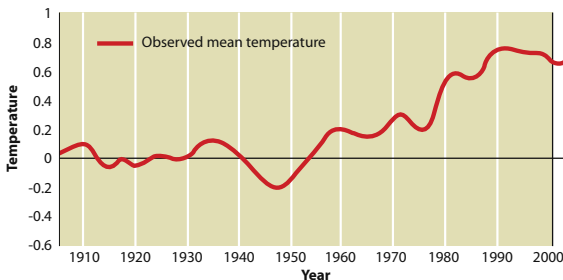
The Climate Project, led by former US vice-president Al Gore, is working with the Australian Conservation Foundation to train a broad cross section of Australians to promote awareness about climate change and the need for urgent and effective action.

The first 84 presenters are now actively engaged in educating the Australian community about the science, impacts and solutions to climate change using a slide show presentation adapted from the one made famous in the Oscar winning documentary *An Inconvenient Truth*. The vision is to mobilise the Australian community to massively reduce our greenhouse gases and stop dangerous climate change.

The ten hottest years on record have all occurred since 1994.

Temperatures have steadily increased this century
Variations Of Australian Mean Temperatures, 1910 – 2000

SOURCE: Karoly and Braganza 2004, *Journal of Climate*.



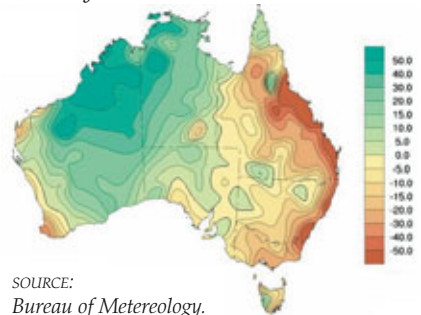
The 2003 drought cost 70,000 jobs, \$13 billion and cut 1.6% off GDP. Droughts are expected to become longer and harsher.



Australia's increase in temperature has been slightly higher than the global average. 2005 was our hottest year on record and there has been an increase of some 0.7°C over the last 100 years.

At the same time, all of Australia's major cities and most of our productive agricultural land have received less rain. Scientists predict that global warming will continue to intensify these patterns.

Rainfall has declined along Australia's east coast
Trend in Annual Total Rainfall 1950-2005 (mm/10yrs)



SOURCE: Bureau of Meteorology.

CLIMATE PROJECTIONS

If global emissions of greenhouse gases continue to rise as projected, the most comprehensive assessment by international scientists (released in February 2007) suggests that the average global temperatures will increase by 2.4 - 6.4°C by 2100.

To put this into perspective, during the last ice age global temperatures were only 5°C lower than today and much of Canada, Europe and northern Russia was covered in massive ice sheets several kilometres thick.

Recent research into some of the more complex climate interactions suggests that the magnitude, rate and timing of these changes may be worse than first thought.

On current emission trends, temperatures in Australia are projected to rise by up to another 6°C by 2070.

During the last ice age, the global average temperature was only 5°C cooler than today.

*CSIRO projects higher temperatures
Ranges of Annual Warming as Projected by
CSIRO, 2030 & 2070.*

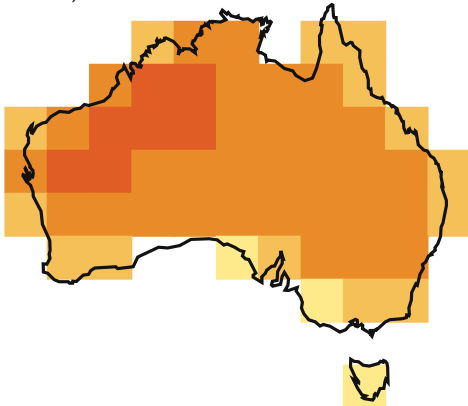
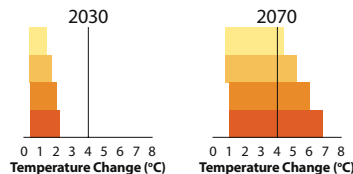


PHOTO: Simon McBeth

The 2003 Canberra bushfires cost \$342 million. Fire danger is likely to increase as temperatures rise.

As temperature and sea levels rise, there is a corresponding increase in the frequency and intensity of extreme weather events, like cyclones, floods and droughts.

Risk of bush fires is also expected to increase, with more intense fires – a consequence of hotter and drier weather.



WHEN TEMPERATURES RISE BY...

Up to 1°C

- 3-11% less water supply for Melbourne.
- **70% increase in droughts in NSW.**
- 3% more energy lost in electricity transmission infrastructure.
- 250-300 litres less milk produced each year for every cow in the Hunter Valley.
- Australian snow cover shrinks by 10-40%.

1-2°C

- \$12.4 million needed each year to manage the southward spread of the Queensland fruit fly.
- **Coral bleaching devastates 60-80% of the Great Barrier Reef each year.**
- 40% loss of core habitat for Eucalyptus and 100% of Acacia species eliminated in SW Australia.
- Twice the current number of people are exposed to flooding.

2-3°C

- Coral bleaching devastates up to 97% of the Great Barrier Reef each year.
- **10% increase in forest fire danger across Australia.**
- 20-30% increase in tropical cyclone rainfall.
- 17% increase in road maintenance costs across most of Australia.
- **80% of Kakadu wetlands lost.**

3-4°C

- **Up to 48% less water flow in the Murray Darling Basin.**
- 20% less rain leads to 6% decline in agricultural production.
- 8,000-15,000 more elderly people die each year from heat related causes.
- Half of the 65 species unique to the Wet Tropics will become extinct with a 3.5°C increase in temperature.

PHOTO: Cameron Laird



Cyclone Larry cost more than \$1 billion, destroyed the Queensland banana crop and damaged 55% of homes in Innisfail.

Climate refugees

4-5°C

- 60-90% loss of core habitat for Victoria and tropical mountain areas.
- 180 days a year above 35°C in South Australia and Northern Territory.

Above 5°C

- **90-100% loss of core habitat for most Australian vertebrates.**
- 25% increase in extreme rainfall and 30% increase in extreme storm tides in Victoria.



One of thousands of species facing extinction from climate change, the mountain pygmy possum is the only marsupial in the world that hibernates during winter.

PHOTO: Dr Julian Ash



Millions of people in low lying countries will be affected as sea level rises.

20 million people in Bangladesh alone are expected to lose their homes. By mid century, it is anticipated that 60,000 to 90,000 of our near neighbours in the Pacific islands will be exposed to annual flooding as sea level rises.

PHOTO: Greenpeace

PHOTO: Ove Hoegh-Guldberg



With increases of less than 3°C, coral bleaching is expected to devastate almost the entire Great Barrier Reef.

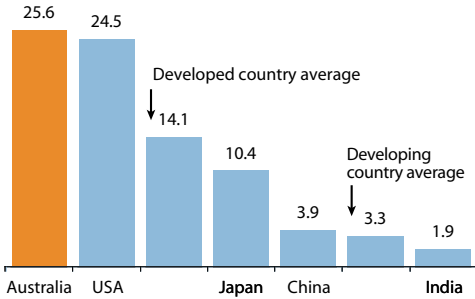
AUSTRALIA'S EMISSIONS ON THE RISE

Australian greenhouse gas emissions are among the highest per capita in the world.

Australia is one of the world's top 20 emitters with pollution levels comparable to France, South Africa and Mexico and among the highest emissions per person in the developed world.

Annual emissions per person (t CO₂e)

SOURCE: World Resources Institute 2005



Not only is our energy more emissions intensive because of our high proportion of coal use for electricity generation, but we also consume ten times more energy per capita than the average Indian, five times more than the average Chinese, and 50% more than the European average.

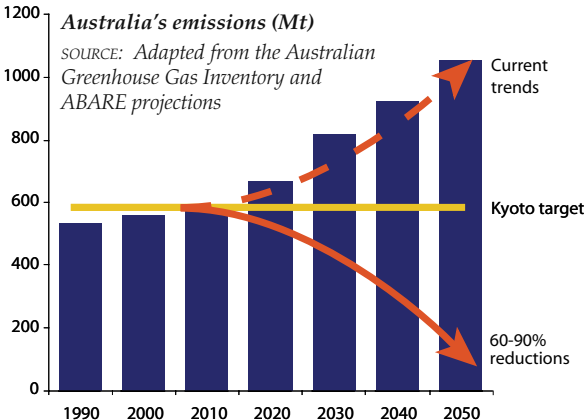


PHOTO: Australian Greenhouse Office

Almost two thirds of Australia's emissions are from burning fossil fuels such as coal. These emissions are projected to double by 2030.

Emissions from agriculture, waste and industrial processes are also increasing, but at a slower rate, and emissions from land clearing are decreasing.

No country can avoid its responsibility to reduce greenhouse pollution.

In order to play its part, Australia must set firm targets to reduce emissions by: 20-30% by 2020 and 60-90% by 2050.

Meeting these targets is affordable, with a minimal impact on the economy.

The UK Stern Review estimates that not taking action will cost between 5 to 20 times as much as taking action.

A SAFE RENEWABLE FUTURE

Australia has some of the best renewable energy resources in the world and could be a leader in creating a vibrant and job-rich clean energy industry. Yet because of current policy settings, our renewable companies are moving investments offshore.

Australian wind farms already generate enough energy to power 250,000 homes with the potential to supply at least 10% of Australia's electricity in the short term. Bioenergy from plants could provide a third of our electricity needs, creating a quarter of a million regional jobs. Our exceptional solar resources could provide all our energy needs.

Wind and solar energy use is growing at 30% each year, and every time the capacity doubles, the costs fall around 20%.

More efficient appliances and smarter industrial processes can save money and energy. Government research estimated that if half the economic potential for energy efficiency was realised, energy use and greenhouse gases would be cut by almost 10%, \$1.8 million would be added to the economy and 9000 jobs would be created.

The ACF-convened Australian Business Roundtable on Climate Change (BP, Origin Energy, Swiss Re, IAG, Westpac and Visy) has called for action now to avoid more costly shocks to the economy and drive innovation and investment in energy efficiency, renewable energy and other low emission technologies.

Australia can be a world leader in renewable energy and create a clean economy. We must reduce emissions by 60-90% and:

Commit to dramatic cuts in greenhouse pollution

Lead the world's efforts to combat climate change

Extend renewable sources of electricity to industry & homes

Adopt major improvements in energy efficiency

New clean transport alternatives for all Australians

PHOTO: Courtesy of BP Solar



PHOTO: Courtesy of AusWIND



JOIN US IN TAKING ACTION



"This is an extraordinary opportunity for us to make a difference in this monumental battle to eliminate the threat of global warming."

The Hon. Al Gore

"Climate change is the greatest threat facing our planet. We are causing climate change, and humans can stop it getting worse. It is time to act now."

Professor
Ian Lowe,
ACF president



"We are the privileged generation: we have the opportunity to act. Our children won't have this privilege."

Don Henry,
ACF
executive
director



BE PART OF THE SOLUTION AND ACT NOW ON CLIMATE CHANGE

- **Take action today to reduce your own emissions.**
Visit www.acfonline.org.au/greenhome
- **Become an active citizen in your own community.**
Visit www.acfonline.org.au/climate to take action.
- **Support ACF and become an EarthVoice.**
FREECALL 1800 332 510.

Australian Conservation Foundation
www.acfonline.org.au

Australian Business Roundtable on Climate Change
www.businessroundtable.com.au

CSIRO www.csiro.au



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The Australian Conservation Foundation (ACF) is committed to inspiring people to achieve a healthy environment for all Australians.



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