



Australian Government

Department of Climate Change

Fact Sheet

CLIMATE CHANGE – POTENTIAL IMPACT AND COSTS

NEW SOUTH WALES

For too long we have poured greenhouse pollution into the atmosphere – and we are continuing to do so at an alarming rate. Science tells us that this pollution is causing climate change.

We are already starting to feel the effects of this pollution. And projections show that if we don't act, it will only get worse with changing temperatures and rainfall patterns, more droughts, floods, water shortages, rising sea levels and extreme weather.

Australia – already the driest inhabited continent on Earth – is particularly vulnerable to climate change. The longer we wait to act on climate change, the more it will cost and the worse its effects will be.

Potential impact and costs

Around 6.7 million people, or 34 per cent of Australia's population, live in New South Wales. It is our most populous State.

With large population centres clustered along the coast line, and strong agricultural and tourism industries, New South Wales will feel the effects of a changing climate.

The following are just a few examples of the potential impacts and costs to the State's industries, infrastructure, environment and people*.

Extreme events

Hail storms may become more frequent and more severe in Sydney, with hailstones potentially reaching 17 centimetres in diameter. This would lead to extensive property damage and insured losses.

For example, the 1999 Sydney hailstorm (which had 9 centimetres hailstones) resulted in \$1.7 billion in insured losses, 1 death and 500 injuries. 500 people were made homeless, and 24,000 homes and 70,000 motor vehicles were damaged.

If the pre-industrial concentration of greenhouse gases in our atmosphere doubles over the coming decades, New South Wales could expect **more flooding**.

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For example, a 1-in-100 year flood would become a 1-in-44 year flood for the upper Parramatta River; a 1-in-35 year flood for the Hawkesbury-Nepean and a 1-in-10 year flood for Queanbeyan.

Industry losses

Uncontrolled climate change would put at risk the State's **agricultural production**, valued at \$7.3 billion in 2006-07.

Drought frequency is projected to increase by up to 40 per cent by 2070.

Comparing production under climate change relative to 'what would otherwise have been', and assuming no mitigation or adaptation, farm output from wheat could decline by 11.6 per cent by 2050; sheep by 13.2 per cent; beef by 3 per cent; and dairy by 11.3 per cent.

Coastal zone

Coastal flooding, erosion and other hazards currently cost New South Wales around \$200 million a year.

It is plausible that uncontrolled climate change could see global **sea level rise** of 1 metre or more by 2100 and more intense storms threatening coastal housing and infrastructure.



More than 200,000 buildings along the State's coast are vulnerable. For example a sea-level rise of just 20 centimetres together with a 1-in-50 year storm surge could push the coastline at Narrabeen back by 110 metres and cause local damage of around \$230 million.

If sea-levels rose by 0.9 metres, 4700 residential building lots along the Lake Macquarie waterway foreshore would be inundated. A 1-in-100 year flood, compounded by such sea-level rise, would inundate an additional 3700 lots along Lake Macquarie waterways.

Human health

As the number of very hot days (above 35°C) increases more people are likely to suffer heat-related illnesses and death, with the elderly particularly vulnerable.

Currently 176 people aged 65 and over die annually in Sydney from heat-related deaths. This could jump to between 364 and 417 a year by 2020, and 717 to 1312 by 2050.



Infrastructure

Drought – likely to become more frequent as a result of climate change – has the potential to disrupt electricity generation capacity and affect the reliability of electricity suppliers. Increases in temperatures, particularly in the summer months will increase energy demand.

The potential for increased extreme storm events from climate change may cause significant damage to coastal

infrastructure including ports and harbours, airports, and storm water and sewer infrastructure.

Tourist icons

Rising temperature and increased evaporation will increase the risk of bushfires. For example, the number of ‘very high’ to ‘extreme’ fire hazard days in the **Greater Blue Mountains World Heritage Area** could increase by up to 75 per cent by 2050, with up to a 25 per cent increase in area burned.

Renowned for its species diversity, this area includes 13 per cent of the world’s eucalypts.

The **Australian Alps**, which are home to highly vulnerable alpine flora and fauna, are highly susceptible to warming.

By 2050, the total alpine area with at least one day of snow cover is likely to decrease by 85 per cent; the area with at least 60 days of cover could shrink by 96 per cent. A reduced ski season and diminished area of snow cover could cost the \$550 million ski industry around \$225 million.

Species such as the Mountain Pygmy Possum which are adapted to highest elevations and coldest environments will have nowhere to retreat as the climate warms. A 1°C temperature rise would wipe-out the entire climatic habitat of the Mountain Pygmy-possum.

* Note: Much work still needs to be done to analyse regional climate change impacts, and determine which areas might be most vulnerable.



The Government is investing in this effort, through for example \$44 million to support the CSIRO Adaptation Flagship and \$50 million to support the Adaptation Research Facility.

Need for action

We must act now to reduce our greenhouse pollution to avoid the worst impacts of climate change and to protect our long-term prosperity, environment and way of life.

We must also act now to adapt to the impacts of climate change we are experiencing from the greenhouse pollution already in the atmosphere.

Tackling the problem will not be easy and there will be costs. But the longer we wait to act, the higher those costs will be.

The best way to minimise those costs is through our comprehensive Carbon Pollution Reduction Scheme. This is at the heart of the Government's comprehensive plan to tackle climate change through reducing emissions; helping regions, industries and communities adapt to climate change that we cannot avoid; and helping to shape a global solution.

Further information: <http://www.climatechange.gov.au>

This information has been sourced from a range of materials, including: Insurance Australian Group (2008) submission to the *Inquiry into Climate Change and Environmental Impacts on Coastal Communities*; Australian Bureau of Statistics (2008) *Value of Principal Agricultural Commodities Produced Australia, Preliminary 2006-07*; Australian Bureau of Agricultural Resource Economics (2007) *Australian Commodities December Quarter*; NSW Department of Resources (2006) *An Introduction to Natural Resource Management*; Church et al, (2008), *Antarctic Climate and Ecosystems CRC Briefing: a post-IPCC AR4 update on sea level rise*; Intergovernmental Panel on Climate Change (2007) *4th Assessment Report*; Lake Macquarie Council (2008) *Submission to the Inquiry into Climate Change and Environmental Impacts of Coastal Communities*; McMichael A. J. et al (2003) *Human health and Climate Change In Oceania: A Risk Assessment*; Australian Business Roundtable on Climate Change (2006) *The Business Case for Early Action*; Brereton, R. et al (1995) *Biological Conservation* 72, pp. 339-354; Australian Medical Association and Australian Conservation Foundation (2005), *Climate Change and Health Impacts in Australia*.