CLIMATE COUNCIL

WHAT DOES CLIMATE CHANGE MEAN FOR YOUR LOCAL AREA?

THE FEDERAL ELECTORATE OF COWPER

The Climate Council is an independent, crowd-funded organisation providing quality information on climate change to the Australian public.

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Australia is getting hotter. Seven of Australia's ten warmest years on record have occurred in the 13 years from 2002.[1] The summer of 2012/2013 was our hottest on record, and the records kept tumbling in the summer of 2013/2014 when in just 90 days over 156 records for heat, bushfires and drought were broken around the country.[2]

Australia's record heat continued into 2014. Spring was the warmest on record and 2014 was the third warmest year since records began.[3]

Parts of Australia are getting drier. Climate change will play a role in increasing drought frequency in southern Australia, with decreases in the amount of rainfall potentially as high as 10% by 2030, and 30% by 2070.[4]

Sea levels are rising around Australia. Currently sea levels have been rising at an average of 1.4 mm per year, in future this is very likely to increase, with a 1.1 m sea level rise leaving $226 billion in commercial, industrial, road and rail, and residential assets exposed to coastal flooding.[5]

Heatwaves

Heatwaves are becoming hotter, lasting longer and occurring more often, with significant impacts for human health and natural ecosystems.

Figure 1 shows the warming trend being experienced in New South Wales. The summer of 2012/2013 was the hottest on record, and all time-high maximum temperatures were set in New South Wales. In central NSW and Sydney the number of heatwave days has increased 50% since 1950 and the number of heatwave events has almost doubled.[6]

More record hot days and associated heatwaves increase the risk of heat-related illnesses and death, particularly in the elderly. For example, over the past 100 years heatwaves have caused more deaths in Australia than any other natural hazard.[7]

Heatwaves can restrict work capacity and decrease the productivity of exposed workers.

Extreme heat can also damage infrastructure such as electricity distribution and transport systems, causing flow-on effects. Financial losses from the 2009 heatwave in southeast Australia, for example, have been estimated at $800 million,mainly due to power outages and disruptions to the transport system [8]

Heat stress can also reduce crop yields, decrease livestock productivity and trigger mass deaths of heat sensitive species such as flying foxes and birds.

The 2009 heatwave in southeast Australia, in conjunction with a shortage of irrigation water, caused significant heat-stress related crop losses in many vineyards (Webb et al. 2010). For example, wine grape production in 2008–09 is estimated to have been 1.7 million tonnes, around 7% (119,000 tonnes) lower than the 2007–08 harvest [9]

In addition to the direct impacts caused by heatwaves, intense heat often interacts with other stressors to increase the risks for human health, infrastructure, agriculture and ecosystems. For example, heatwaves can exacerbate drought and vice versa. This has implications for the electorate of Cowper that has a strong agricultural industry, including dairy.

In the future New South Wales is likely to experience an increase in hot days and heatwaves.[10]

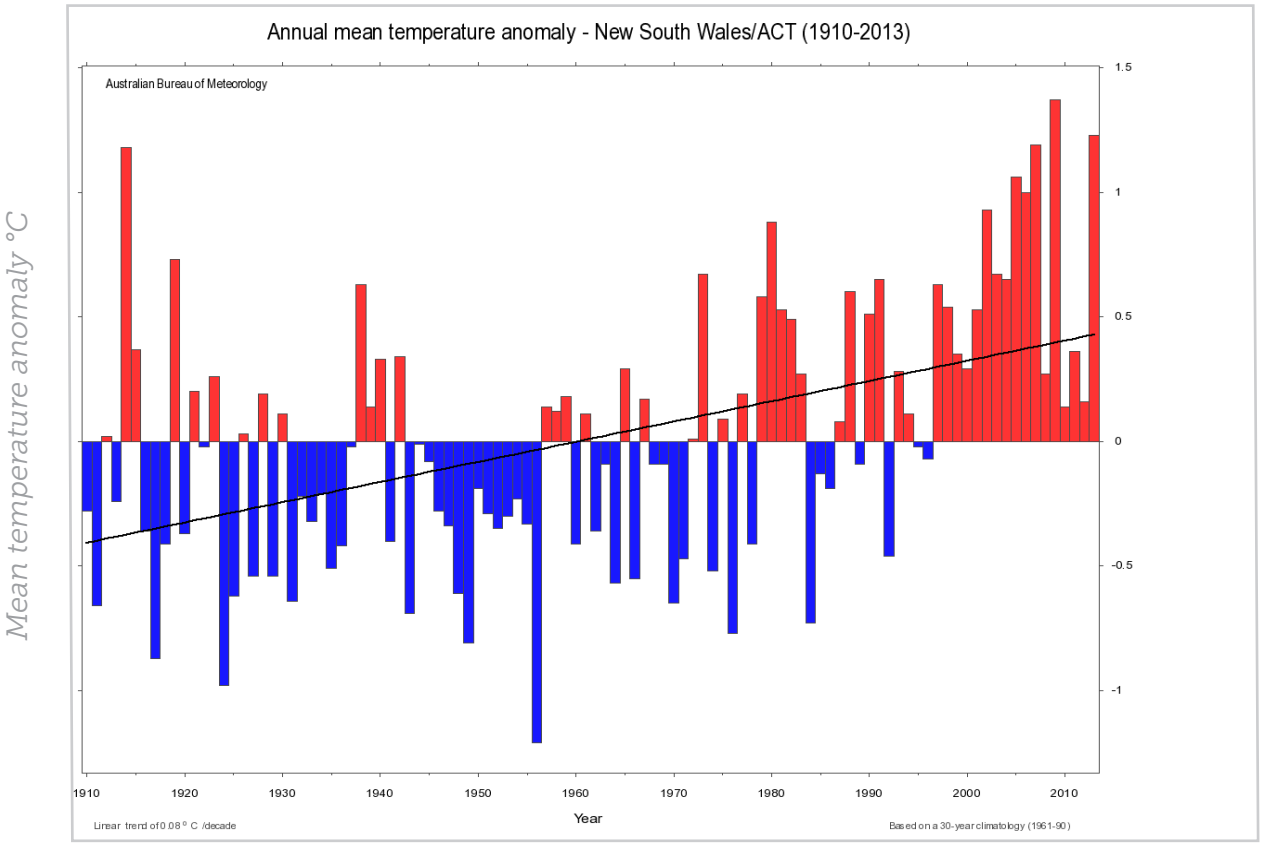


Figure 1: Increasing heat in New South Wales (Australian Bureau of Meteorology)

Bushfires:

Residents of New South Wales have often experienced the serious consequences of bushfires.

In 2013, bushfires in January and October burnt 768,000 hectares of land and destroyed 279 homes. Tragically, 2 people lost their lives and damages were in excess of an estimated $180 million.

Australians have always lived with fire and its consequences, but climate change is increasing fire danger weather and thus the risk of fires.

In NSW the fire season is starting earlier and lasting longer. Fire weather has been extending into Spring and Autumn. In 2014 the bushfire season started early in parts of NSW. The state's statutory Bush Fire Danger Period begins on the 1st of October, but in 2014 55 Local Government Areas have started the season early with some beginning the danger period on the 1st of August and others on the 1st of September.

The total economic costs of NSW bushfires in 2014 are expected to be $43 million. By around the middle of the century these costs will almost triple.[11]

Bushfires have caused significant economic damage, estimated at $337 million per year (2011$) in Australia. With a forecast growth in costs of 2.2% annually between 2014 and 2050, the total economic cost of bushfires is expected to reach $800 million annually by mid-century. These state and national projections do not incorporate climate change and could potentially be much higher.[12]

Increased resources for our emergency services and fire management agencies will be required as fire risk increases. By 2030 it is estimated that the number of professional firefighters in NSW will need to approximately double (compared to 2010) to keep pace with increased population, asset value, and fire danger weather.[13]

Coastal Flooding:

Billions of dollars worth of damages

In New South Wales there are 700-1,200 commercial buildings at risk from a sea level rise of 1.1 metres, with replacement costs of between $5-$9 billion.

There are 600-1,000 light industrial buildings exposed to coastal flooding, at a cost of $0.8 billion-$1.1 billion.

NSW also has between $0.6 billion and $1.3 billion worth of rail exposed to sea level rise.

New South Wales also has the highest number of residential buildings exposed to a sea level rise of 1.1 metres, with between 44,000 and 68,000 residential buildings at risk.

The electoral of Cowper is particularly vulnerable to flooding due to its proximity to the coast.[14]

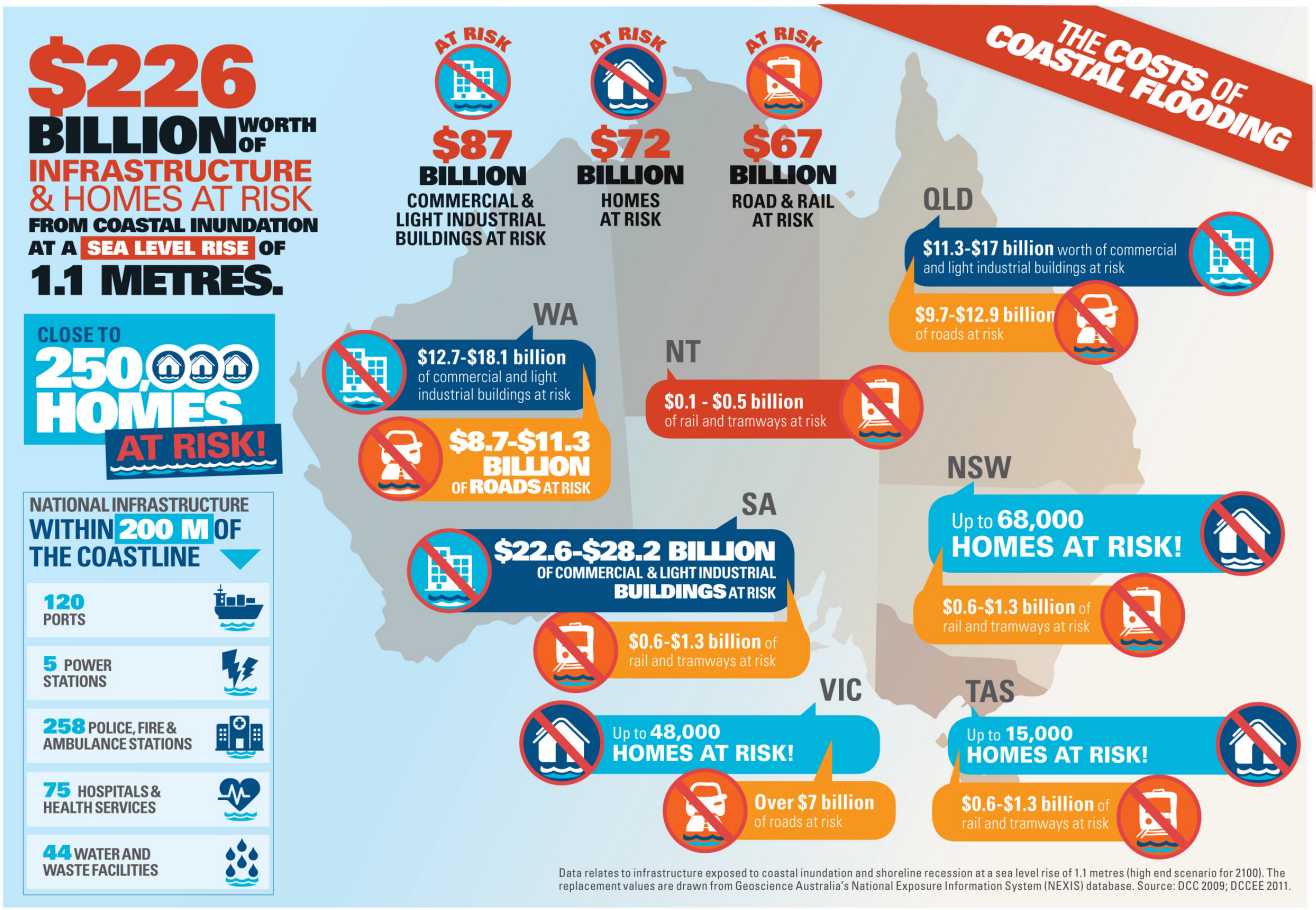


Figure 2: The Costs of Coastal Flooding

Source: *Climate Council (2014) Counting the costs: climate change and coastal flooding. Steffen W, Hunter J & Hughes L.*

Renewable Energy in New South Wales

NSW's annual greenhouse gas emissions are the largest of any state or territory, at 148.9 MtCO2e and New South Wales is responsible for over a quarter, 27.4 percent of Australia's national emissions.

NSW does not currently have targets for reducing emissions or expanding renewable energy. The State Government had previously set targets limiting greenhouse gas emissions to:

›› 2000 levels by 2025.

›› 60 percent below 2000 levels by 2050

New South Wales' emissions targets were removed in the process of drafting the new State Plan NSW 2021.

The vast majority of NSW's renewable energy capacity is from old hydroelectric facilities such as the Snowy Hydro Scheme.

New South Wales has the highest total installed renewable energy capacity. In 2013, NSW had 5,681 MW of installed renewable energy. However, only 599 MW of this total comes from new large scale renewable energy capacity installed since 2001 – placing New South Wales sixth lowest for installed renewable capacity per capita and last among the states.

In 2003, NSW led the world by introducing the first mandatory greenhouse gas trading scheme.

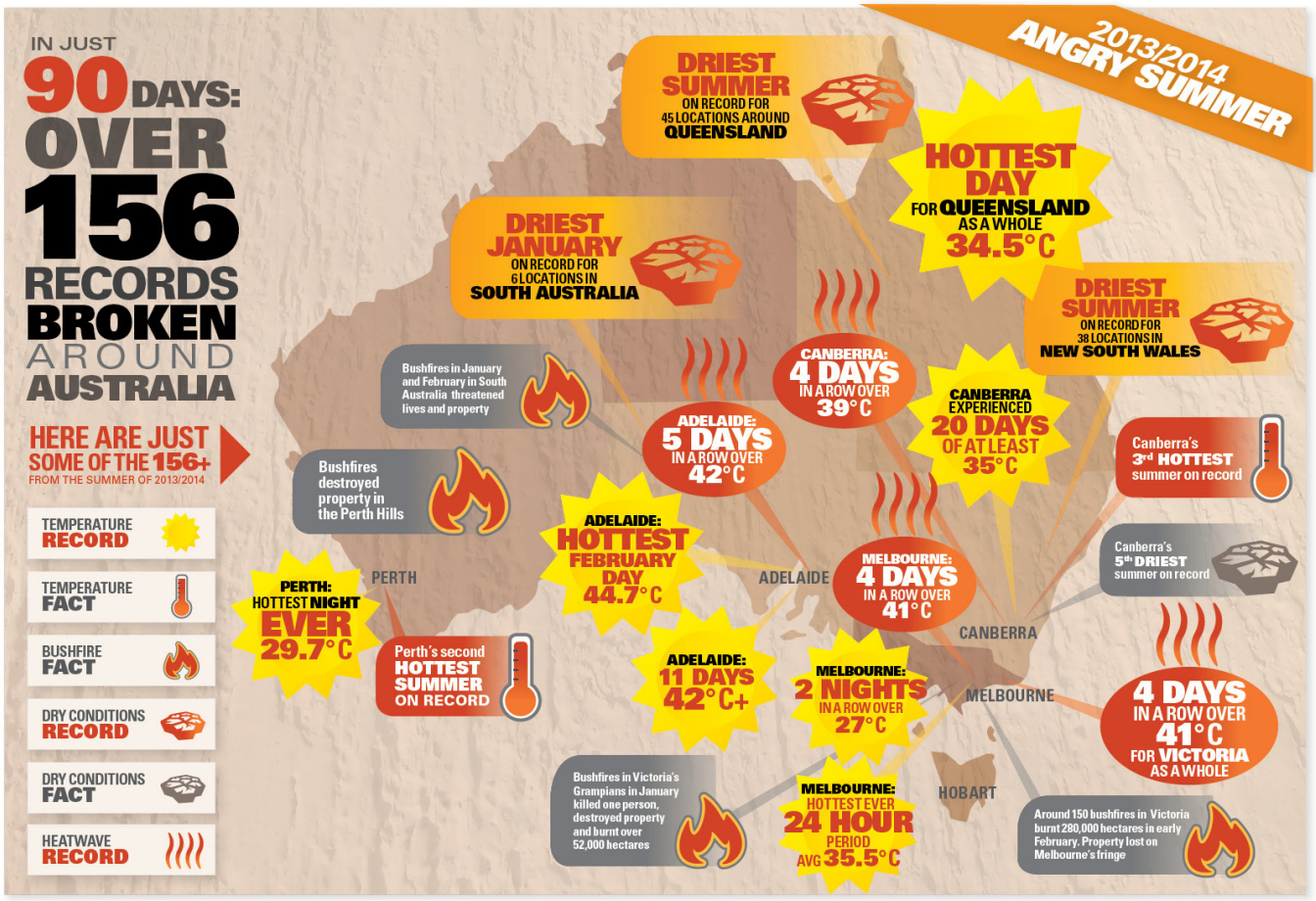
In Australia, the states have historically led the way on emissions and renewable energy policy, and in doing so have influenced action on a national level.

Australia's shift to competitive low emissions technology is fundemental to the country's long-term wealth creation and healthy future. NSW has a chance to lead the way in Australia's transition to renewable energy, helping to mitigate the impacts of climate change.[15]

This is the Critical Decade for Cowper

The electorate of Cowper, and New South Wales more broadly, will be seriously impacted by climate change. Heatwaves, bushfires and coastal flooding will contribute to declines in human health, slow the growth of the agricultural sector and cause billions of dollars in damages to vulnerable coastal infrastructure.

The impacts of climate change are already being observed. Australia must strive to cut its emissions rapidly and deeply to join global efforts to stabilise the world's climate and reduce the risk of even more extreme events, including bushfires, heatwaves and coastal flooding. This is the critical decade to get on with the job.



Source: BoM 2014a–h; The Age 18 January 2014; The Age 11 February 2014

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Figure 3: Australia's Angry Summer of 2013/14

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