

WHAT DOES CLIMATE CHANGE MEAN FOR YOUR LOCAL AREA?

THE FEDERAL ELECTORATE OF WARRINGAH

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

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THE FEDERAL ELECTORATE OF WARRINGAH

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Australia is getting hotter. The ten hottest years on record have all happened since 1980.¹ 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

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 2070.³

Sea levels are rising around Australia. Currently sea levels have been rising at an average of 1.4mm 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.⁴

Heatwaves

Heatwaves are becoming hotter, lasting longer and occurring more often, with significant impacts for health and the environment.

Figure one shows the warming trend being experienced in NSW.

Heatwaves across NSW are becoming more intense. In Sydney, the average intensity of heatwaves has increased by 1.5 °C.⁵ Heatwaves in Sydney are also starting on average 19 days earlier than they used to.

More record hot days and associated heatwaves increase the risk of heat-related illnesses and death, particularly in the elderly. The heatwave of January 1994 in Sydney contributed to 110 excess heat-related deaths.⁶

In the future NSW is likely to experience an increase in hot days and heatwaves.

Reduced Rainfall:

Average rainfall in southern Australia is projected to continue to decrease with implications for urban water supplies.⁷ There will of course still be some wet years and some dry years, however, the long-term trend is a decline in rainfall.

In NSW, under a pessimistic emissions scenario, water inflows to key Sydney dams such as Warragamba and Shoalhaven could decrease by as much as 25% by 2070. These declines, coupled with a continued rise in annual demand for drinking water in the residential and commercial sectors, could increase the imposition of water restrictions in the state.⁸

This drying trend could lead to decreases in production in Australia's most important agricultural regions, including the largest catchment and most productive agricultural area in the country, the Murray-Darling basin, and southwest wheat belt.⁹

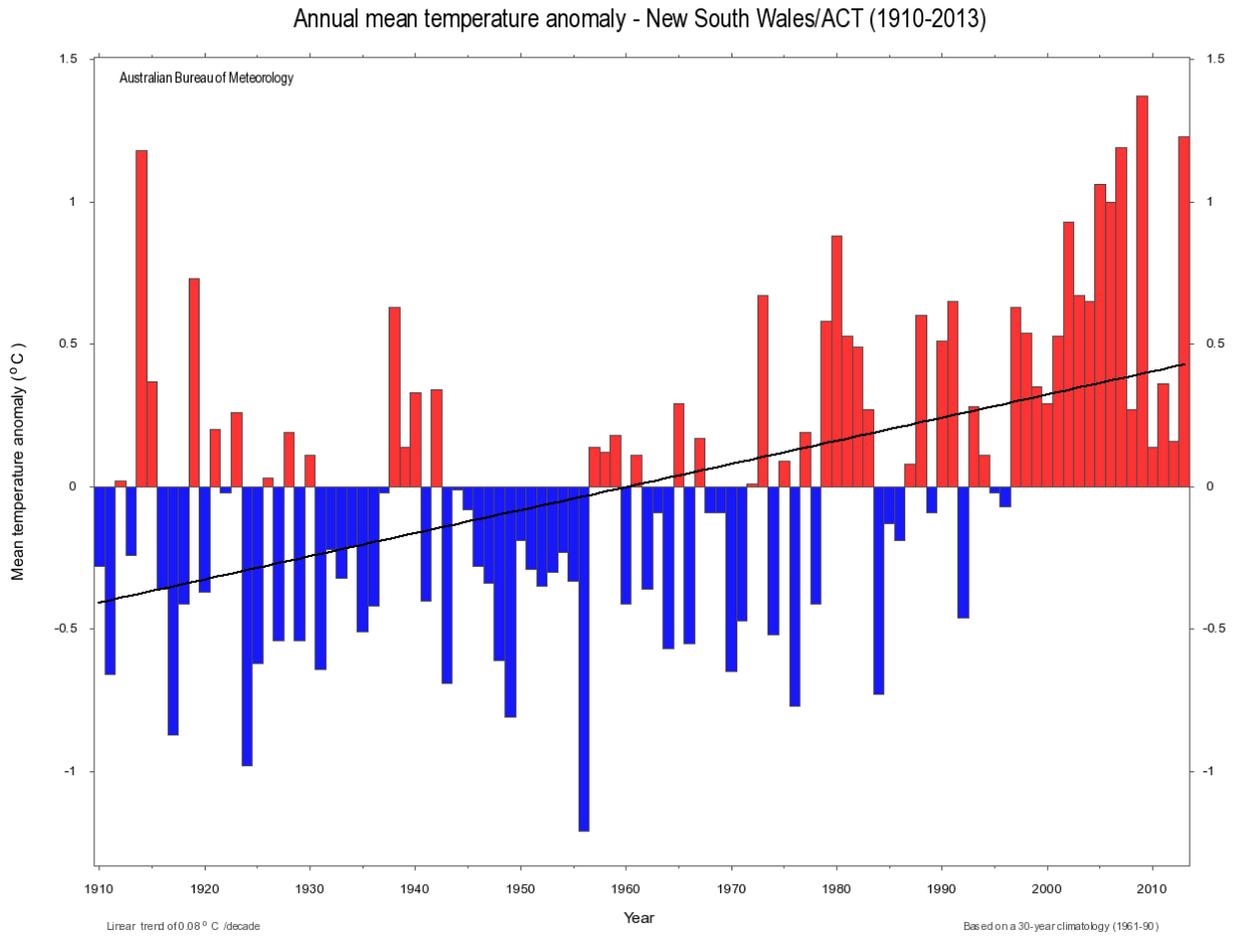


Figure One: NSW/ACT increasing heat (Australian Bureau of Meteorology)

Bushfires:

The Blue Mountains bushfires that occurred in October 2013 burnt over 118,000 hectares and destroyed over 222 homes with a further 168 houses damaged. Tragically there were two deaths and early figures put the cost of the fires at \$183.4m.¹⁰ The indirect effects of the bushfires were felt throughout the state and climate change is likely to increase conditions for large and intense bushfires, such as the ones experienced in the Blue Mountains.¹¹

This year, the bushfire season has started early in parts of NSW. The state's statutory Bush Fire Danger Period begins on the 1st of October, but this year 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.

At the beginning of August in 2014 volunteers were fighting 90 fires simultaneously and properties were destroyed.¹²

By 2030 it has been estimated that the number of professional firefighters will need to approximately double (compared to 2010) to keep pace with increased population, asset value and fire danger weather. This has implications for the capacity of fire fighting teams in Sydney, and across New South Wales.

Coastal flooding: Billions of dollars worth of damages

Sea level has already risen and continues to rise due to climate change. Climate change exacerbates coastal flooding from a storm surge as the storm rides on higher sea levels.

Over half the Australian coastline is vulnerable to recession from rising sea level, with 40% of the NSW coastline at risk.

Sydney is particularly vulnerable, it is likely that today's 1-in-100 year flood would occur every day or so by 2100.¹³

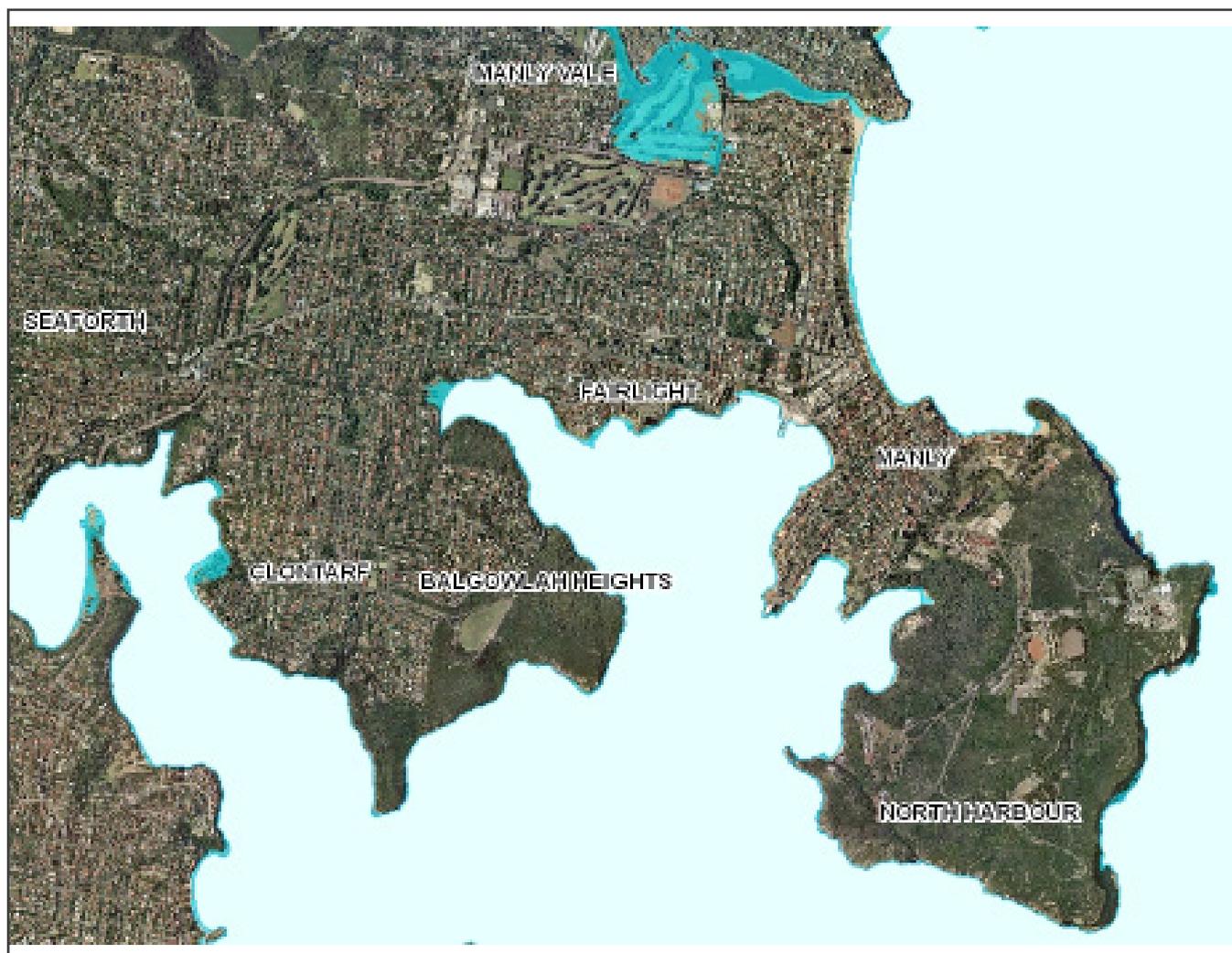
In New South Wales there are 700-1,200 commercial buildings at risk from a sea level rise of 1.1 metres, with replacement costs of between \$5-\$9 billion.

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 amount of residential buildings exposed to a sea level rise of 1.1 metres, with between 44,000 and 68,000 residential buildings at risk.¹⁴

The electorate of Warringah is particularly vulnerable to flooding and erosion due to its proximity to the coast (figure two).



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Figure Two:

Simulated coastal flooding from a sea-level rise of 80cm in the federal electorate of Warringah (a medium scenario for 2100 time period). (Geoscience Australia).

This is the Critical Decade for Warringah

Warringah, and NSW more broadly, will be seriously impacted by climate change. Heatwaves, bushfires, reduced rainfall 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 16 January 2014; The Age 11 February 2014

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

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