

# WHAT DOES CLIMATE CHANGE MEAN FOR YOUR LOCAL AREA?

## THE FEDERAL ELECTORATE OF MARIBYRNONG

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

[CLIMATECOUNCIL.ORG.AU](http://CLIMATECOUNCIL.ORG.AU)

**WHAT DOES CLIMATE CHANGE MEAN FOR YOUR LOCAL AREA:  
THE FEDERAL ELECTORATE OF MARIBYRNONG**

Published by the Climate Council of Australia  
Limited

© Climate Council of Australia Ltd 2014

This work is copyright the Climate Council  
of Australia Ltd. All material contained in  
this work is copyright the Climate Council of  
Australia Ltd except where a third party source  
is indicated.

Climate Council of Australia Ltd copyright  
material is licensed under the Creative  
Commons Attribution 3.0 Australia License.  
To view a copy of this license visit [http://  
creativecommons.org.au](http://creativecommons.org.au)

You are free to copy, communicate and adapt  
the Climate Council of Australia Ltd copyright  
material so long as you attribute the Climate  
Council of Australia Ltd and the authors in the  
following manner:

What Does Climate Change Mean for Your  
Local Area? by The Climate Council of  
Australia



© Climate Council of Australia Limited 2014

Permission to use third party copyright  
content in this publication can be sought  
from the relevant third party copyright  
owner/s.

Australia is getting hotter. The ten hottest years on record have all happened since 1980.<sup>1</sup> 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.<sup>2</sup>

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.<sup>3</sup>

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.<sup>4</sup>

## Heatwaves

Heatwaves are becoming hotter, lasting longer and occurring more often, with significant impacts for Victorian's health, infrastructure and environment.

*Figure one (overpage) shows the warming trend being experienced in Victoria. Heatwaves in Victoria are also becoming more intense, with the average intensity of heatwaves increasing in Melbourne by 1.5°C. Heatwaves in Melbourne are also starting on average 17 days earlier than they used to.<sup>5</sup>*

**Health:** More record hot days and associated heatwaves increase the risk of heat-related illnesses and death, particularly in the elderly. Accounts of the January heatwave in Victoria point to significant health impacts, 203 heat-related deaths, a 20-fold increase in ambulance call-outs, a four-fold increase in calls to nurses-on-call, and a four-fold increase in calls to locum doctors.<sup>6</sup>

**Infrastructure:** Increased demand for electricity during the 2009 heatwave broke previous records. During this heatwave the Basslink electricity cable between Tasmania and Victoria reached maximum operating temperature and was automatically shut down for safety reasons. This shutdown, combined with faults at a number of transformers, caused widespread blackouts across Melbourne; on the evening of 30 January 2009, an estimated 500,000 residents were without power. In January 2014, Victorian electricity consumption topped 10,300 megawatts (MW), with the highest level of electricity use occurring during the heatwave.<sup>7</sup>

**Environment:** Heatwaves are also impacting Victoria's ecosystems, for example heatwaves in 2009 killed nearly 5,000 flying foxes in Yarra Bend Park.<sup>8</sup>

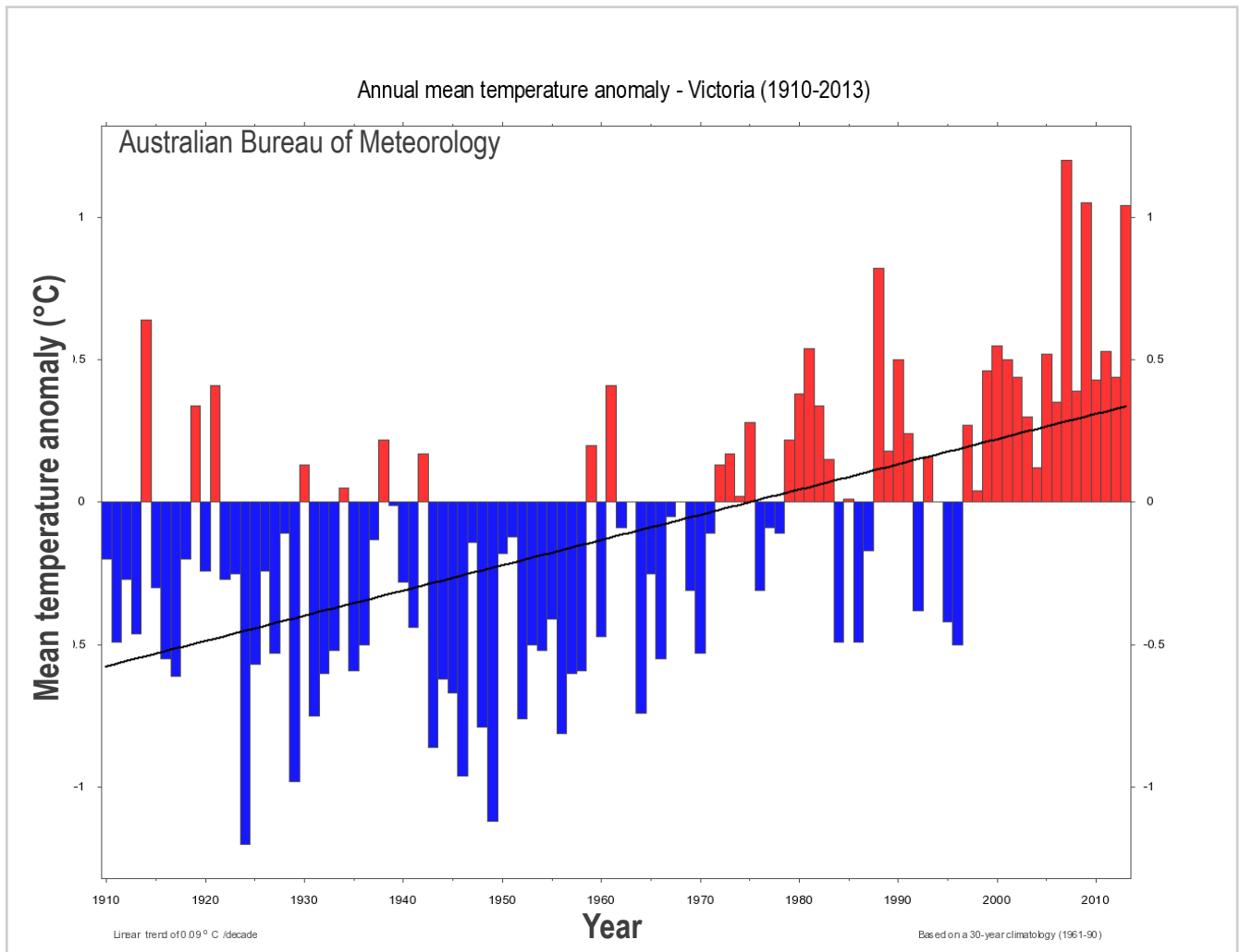


Figure One: Victoria's increasing heat (Australian Bureau of Meteorology)

## Reduced Rainfall:

### Increasing pressure on urban water supplies.

Average rainfall in southern Australia is projected to continue to decrease with implications for urban water supplies, particularly in major cities such as Melbourne.

Rainfall declines will intensify pressure on Melbourne's water supplies as droughts increase in frequency and severity.<sup>9</sup>

From 2007-2010 Melbourne was placed on Stage 3 restrictions and in 2009 Melbourne's water storage levels fell to their minimum of 25.6%.<sup>10</sup>

This significantly limited residential water use in electorates such as Maribyrnong, as well as requiring industry to adhere to targets and restricting the use of water in the agriculture sector—leading to a decline in crop yields.<sup>11</sup>

## Bushfires:

### Devastating Victoria.

Hotter, drier weather in Victoria is already driving up bushfire danger weather.

The Black Saturday bushfires killed 173 people, injured 414 people, destroyed 2,100 homes, displaced 7,562 people and burnt over 1,100,000 acres.<sup>12</sup>

The impact of Black Saturday was felt throughout the state and climate change is likely to increase conditions for large and intense bushfires.<sup>13</sup>

In February 2014, prolonged heatwaves and near-record temperatures created dangerous conditions that lead to 150 bushfires burning throughout Victoria. Dubbed 'the worst since Black Saturday', these fires destroyed thousands of acres of land as well as properties.<sup>14</sup>

One estimate of the future economic costs of bushfires indicates that with no adaptive change, increased damage to the agricultural industry in Victoria by 2050 could add \$1.4 billion to existing costs.<sup>15</sup>

## Coastal Flooding:

### Billions of dollars worth of damage.

Victoria is one of the states with the most commercial buildings exposed to a 1.1 metre rise in sea level, with 1,500-2,000 buildings at risk, at a cost of \$8billion-\$12billion. The number of light industrial buildings exposed in the state range from 600-1000 at a cost of between \$500 and \$800 million.

In Melbourne over 50 commercial buildings are exposed to sea level rise.

The City of Melbourne has the greatest length of rail exposed, with between 27 and 39km of rail line at risk. A sea level rise of 1.1 metres is anticipated to cause damages to rail and tramlines of between \$100 and \$500 million.

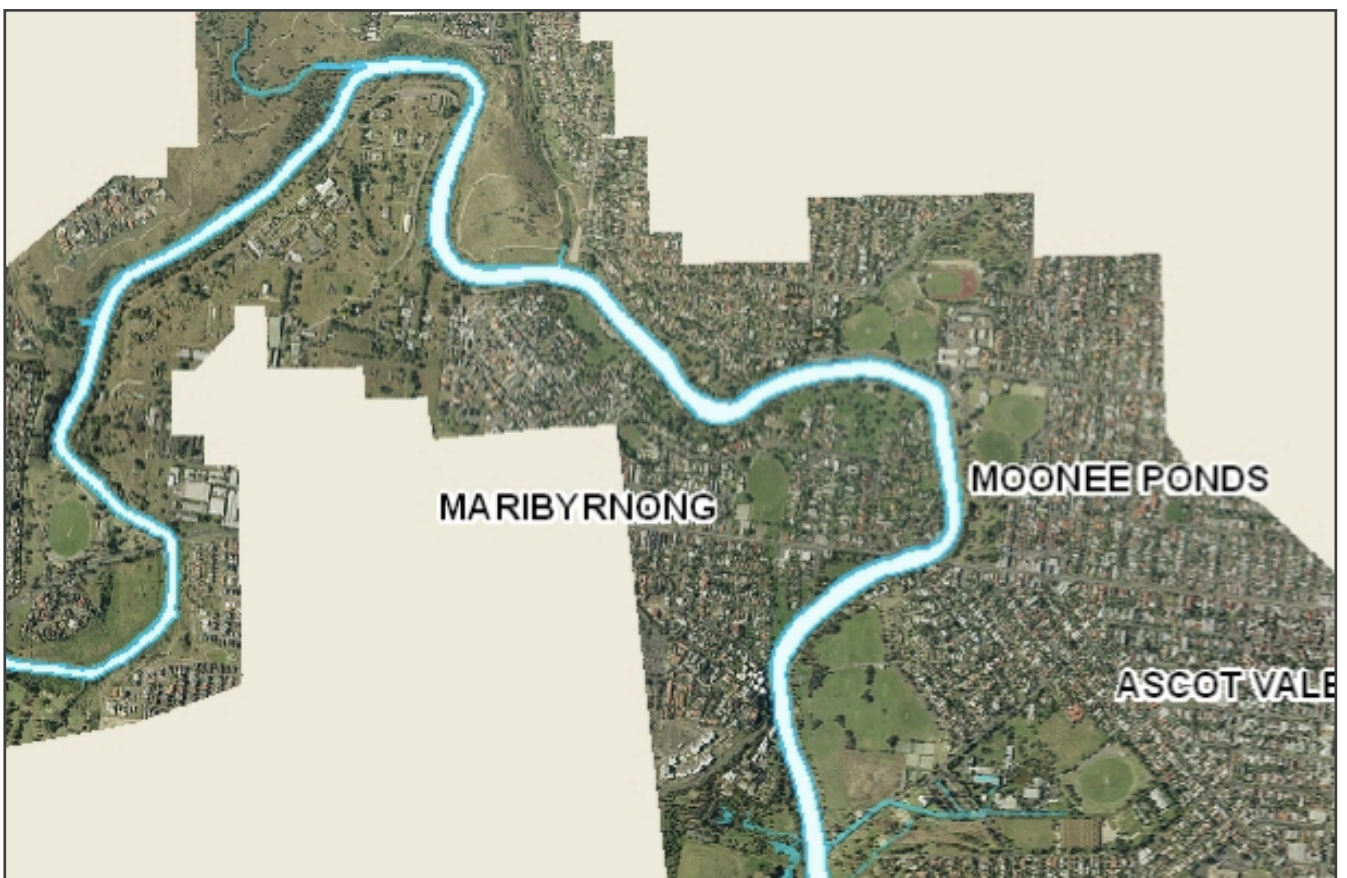
There are 31,000-48,000 residential houses threatened by sea level rise in Victoria.<sup>16</sup>

The Maribyrnong electorate is also home to the Maribyrnong river, which will be prone to flooding as a result of sea level rise, as outlined in *figure two*.

**WHAT DOES CLIMATE CHANGE MEAN FOR YOUR LOCAL AREA:  
THE FEDERAL ELECTORATE OF MARIBYRNONG**

*Figure Two:*

The image below shows simulated coastal flooding from a sea-level rise of 80cm in the federal electorate of Maribyrnong (a medium scenario for 2100 time period). (Geoscience Australia).



© Commonwealth of Australia (Geoscience Australia) 2014. This product is released under the Creative Commons Attribution 3.0



# This is the Critical Decade for Maribyrnong

Maribyrnong, and Victoria 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 18 January 2014; The Age 11 February 2014

[www.climatecouncil.org.au](http://www.climatecouncil.org.au)

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

## References

- 1) BoM 2014. Annual mean temp anomaly: Australia (1910-2013). Accessed at <http://www.bom.gov.au/climate/change/index.shtml#tabs=Tracker&tracker=timeseries>
- 2) Climate Council (2014) Heatwaves: hotter, longer and more often. Accessed at: <http://www.climatecouncil.org.au/uploads/9901f6614a2cac7b2b-888f55b4dff9cc.pdf>
- 3) Climate Council (2014) Unpacking the Fifth Assessment Report. Accessed at <http://www.climatecouncil.org.au/uploads/cd929c5cfed40f6d7c508d-d6c1f930cf.pdf>
- 4) DCCEE (Department of Climate Change and Energy Efficiency) (2011) 'Climate Change Risks to Coastal Buildings and Infrastructure, DCC, Canberra, Accessed at [http://www.climatechange.gov.au/sites/climatechange/files/documents/03\\_2013/risks-coastal-buildings.pdf](http://www.climatechange.gov.au/sites/climatechange/files/documents/03_2013/risks-coastal-buildings.pdf)
- 5) Climate Council (2014) Heatwaves: hotter, longer and more often. Accessed at: <http://www.climatecouncil.org.au/uploads/9901f6614a2cac7b2b-888f55b4dff9cc.pdf>
- 6) Climate Council (2014) Heatwaves: hotter, longer and more often. Accessed at: <http://www.climatecouncil.org.au/uploads/9901f6614a2cac7b2b-888f55b4dff9cc.pdf>
- 7) Climate Council (2014) Heatwaves: hotter, longer and more often. Accessed at: <http://www.climatecouncil.org.au/uploads/9901f6614a2cac7b2b-888f55b4dff9cc.pdf>
- 8) Climate Council (2014) Heatwaves: hotter, longer and more often. Accessed at: <http://www.climatecouncil.org.au/uploads/9901f6614a2cac7b2b-888f55b4dff9cc.pdf>
- 9) Collett B and Henry N (2011) Urban Water Supply Use. The Australian Collaboration. Accessed at <http://www.australiancollaboration.com.au/pdf/FactSheets/Urban-water-FactSheet.pdf>
- 10) Melbourne Water (2013) Annual Report 2012-13. Accessed at [http://www.melbournewater.com.au/aboutus/reportsandpublications/Annual-Report/Documents/2013\\_Annual\\_Report.pdf](http://www.melbournewater.com.au/aboutus/reportsandpublications/Annual-Report/Documents/2013_Annual_Report.pdf) ; Melbourne Water (2014) Melbourne Water Use. The Victorian Government. Accessed at <http://www.melbournewater.com.au/waterdata/wateruse/Pages/default.aspx>
- 11) Grant, BS, Fletcher DT, Feldman D, Saphores JD, Cook LM, Stewardson M, Low K, Burry K and Hamilton JA (2013) Adapting Urban Water Systems to a Changing Climate: Lessons from the Millennium Drought in Southeast Australia. Environment: science & technology; Melbourne Water (2014) Melbourne Water Use. The Victorian Government. Accessed at <http://www.melbournewater.com.au/waterdata/wateruse/Pages/default.aspx>
- 12) ABC (2009) The Black Saturday Bushfires. Accessed at <http://www.abc.net.au/innovation/blacksaturday/#/stories/mosaic>
- 13) Climate Council (2014) Be Prepared: climate change and the Australian bushfire threat.
- 14) Sydney Morning Herald (9th February 2014) Bushfire threat worst since Black Saturday. Accessed at: <http://www.smh.com.au/environment/weather/bushfire-threat-worst-since-black-saturday-20140209-329dq.html>
- 15) Climate Council (2014) Be Prepared: climate change and the Australian bushfire threat.
- 16) DCCEE (Department of Climate Change and Energy Efficiency) (2011) 'Climate Change Risks to Coastal Buildings and Infrastructure, DCC, Canberra, Accessed at [http://www.climatechange.gov.au/sites/climatechange/files/documents/03\\_2013/risks-coastal-buildings.pdf](http://www.climatechange.gov.au/sites/climatechange/files/documents/03_2013/risks-coastal-buildings.pdf)



