

This Fact Sheet talks about the importance of climate change adaptation and the specific actions being taken in Banyule. By working together, we can create a more resilient and sustainable future for our community.

Definition of Climate Change Adaptation

ADAPTATION can be described as changing behaviours, increasing resilience and upgrading assets to better respond to the impacts of climate change such as extreme weather events. Regardless of how successful we are at mitigating climate change, we will continue to experience its impacts and need to adapt.

Progressing climate adaptation was identified as a priority in Council's Community Climate Action Plan (CAP), including assessing the vulnerability of Banyule and its community to climate change and reviewing and implementing regional actions of the NAGA Adaptation in the North report. The CAP also aims to identify priorities for strengthening Banyule's adaptation response.

To build and maintain a better Banyule, our adaptation efforts will capture a wide range of policies, actions and choices incorporating local knowledge and long-term thinking. Everyone has a role to play in adaptation including factoring current and future climate risks into decisions, supporting those who are more vulnerable, applying the best available science, involving those affected in decision making and regularly reviewing actions to look for flexible choices and opportunities.

Understanding Climate Change

Local government is on the frontline of dealing with the impacts of climate change.

Climate change refers to long-term shifts in weather patterns and global temperatures caused by human activities, primarily the emission of greenhouse gases. These changes can lead to more frequent and intense extreme weather events, rising sea levels, and other environmental challenges.

The Bureau of Meteorology (BoM) and CSIRO report State of the Climate report 2022 states:

...changes in weather and climate extremes — such as extreme heat, heavy rainfall and coastal inundation, fire weather and drought — have a large impact on the health and wellbeing of our communities and ecosystems.

These changes are happening at an increased pace — the past decade has seen record-breaking extremes leading to natural disasters that are exacerbated by anthropogenic (human-caused) climate change.

Australia needs to plan for, and adapt to, the changing nature of climate risk now and in the decades ahead. The severity of impacts on Australians and our environment will depend on the speed at which global greenhouse gas emissions can be reduced.

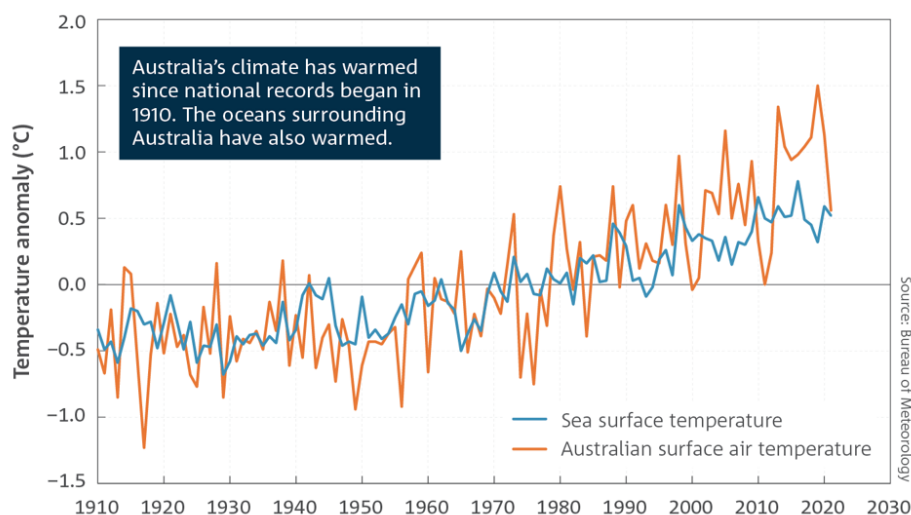


Figure 1 - Source – BoM and CSIRO State of the Climate Report 2022

Banyule Council's Efforts to Adapt to Climate Change

By adapting, we can protect our community, infrastructure and natural resources and ensure a sustainable and resilient future for Banyule.

We are now developing the **Climate Change Adaptation Framework** to strengthen Council's adaptation actions and would like your feedback to help shape a more resilient tomorrow.

We encourage you to participate in the community survey and forums workshops to share your ideas, concerns, and priorities to help us adapt to climate change.

Have your say by completing the survey, or register for a forum, by visiting shaping.banyule.vic.gov.au/CRF

Banyule's Vulnerabilities

Banyule faces unique vulnerabilities due to its geographical location and diverse ecosystems, including:

- heatwaves
- reduced water availability
- potential impacts on biodiversity and natural habitats.

We are experiencing the impacts of climate change today and will continue to do so. Here are some examples you might remember.

2009 South-eastern Australia heatwave

A heat wave that commenced in late January 2009 and led to record-breaking and prolonged high temperatures in the region¹. The heat wave is considered one of the most extreme in the region's history. 50 separate locations set various records for consecutive, highest daytime and overnight temperatures. Melbourne and Adelaide experienced record-breaking temperatures that continued for many days in a row. The event was also responsible for extremely high temperatures in Tasmania, as demonstrated in Figure 2.

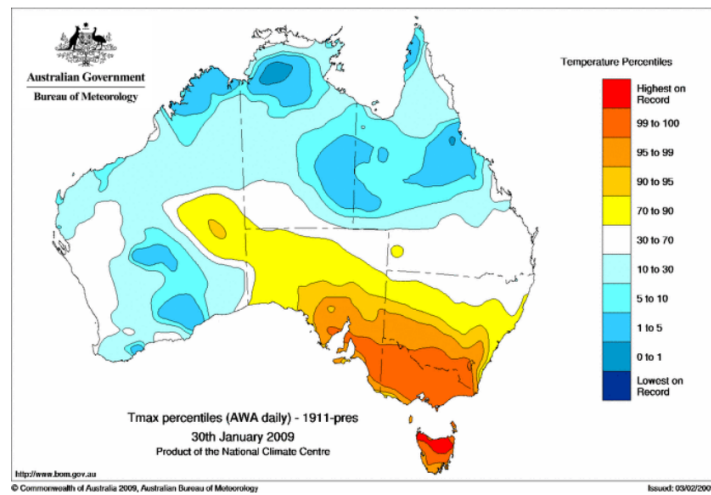


Figure 2 – Temperature Percentiles 30 January 2009. Source BoM.

2009 Black Saturday bushfires

A series of bushfires that burnt across Victoria on and around Saturday 7 February 2009.

This was one of Australia's all-time worst bushfire disasters. The fires occurred during extreme bushfire weather conditions and resulted in Australia's highest-ever loss of human life from a bushfireⁱⁱ, with 173 fatalities. More than twice as many people lost their lives in the preceding heatwaveⁱⁱⁱ. Many people were left homeless as a result. The fires, located at Kinglake, Strathewen and St Andrews, were in close proximity to Banyule, demonstrating that fire is a serious ongoing threat to the Banyule community.

2010 Victorian storms

A series of storms that passed through much of Victoria on 6 and 7 March 2010. One of the most severe storms passed directly over Greater Melbourne, bringing lightning, flash flooding, large hail stones and strong winds to the state's capital.

2010 Victorian floods

A widespread series of flood events across the state of Victoria. The floods, which followed heavy rain across south-eastern Australia in early September 2010, caused the inundation of about 250 homes, hundreds of evacuations, and millions of dollars of damage. Weather warnings were initially issued for Victoria on Thursday 2 September and rain began to fall on the Friday, continuing through the weekend to Tuesday. Heavy rain fell in most regions of the state, particularly at higher altitudes in the state's west and northeast, flooding the upper reaches of many of Victoria's major rivers.

2011 Victorian floods and Christmas Day floods 2011

High intensity rainfall between 12 and 14 January 2011 caused major flooding across much of the western and central parts of Victoria. Several follow-up heavy rainfall events, including Tropical Low Yasi, caused repeated flash flooding in affected areas in early February in many of the communities affected by the January floods.

Many of the towns affected in 2011 has been previously affected by floods in September 2010. The 2011 floods, however, affected at least four times as many properties, with thousands of evacuations being called for by the State Emergency Service.

Flood waters severely impacted some residents late in the afternoon of Christmas Day 2011 in Nillumbik and Banyule, and severe hail stones were also reported. Roads, drains, cars, homes and fences were, in some cases, destroyed by the level of water caused by the storm. Many long-term residents claimed that they had never seen anything like it.



Figure 3 – Hail covers a backyard in Macleod, 25 December 2011. Source: ABC News

2014 Heatwave

in January 2014, Melbourne recorded four consecutive days of temperatures exceeding 41 °C, two of which exceeded 43 °C ^{iv}.

2016 Local floods

In 2016, there were major thunderstorms in Melbourne. Thunderstorm asthma killed nine people and hospitalised hundreds. High heat and humidity caused thunderstorms to form northwest of the city. Due to excessive grass growth in the north and west of Melbourne, these storms sent pollen into Melbourne and its suburbs, raising pollen counts and triggering thousands of severe asthma attacks. The massive number of attacks overloaded emergency services and contributed to the fatalities. Areas of Melbourne, including within Banyule, experienced flood conditions after heavy rainfall.



Figure 4 - Flooding at Rosanna 2016 Source – Youtube

2019-2020 Bushfire season

The 2019–20 Australian bushfire season, or Black Summer, was one of the most intense and catastrophic fire seasons on record in Australia. It included a period of bushfires in many parts of Australia, which, due to their unusual intensity, size, duration, and uncontrollable dimension, was considered a megafire by media at the time.

In Victoria, this included the bushfires in Buchan, Orbost, and Mallacoota, and locally a bushfire as close as Bundoora which caused evacuations before being controlled.



Figure 5 - Bundoora Fire, flames leap from the Bundoora fire, behind Zara Close, 31 December 2019. Source: Herald-Sun

2022 Eastern Australia and south-eastern Australia floods

A series of floods that occurred in south-eastern Australia in October 2022^v Some towns experienced the highest river peaks in decades, and many places saw rivers peak multiple times. The floods were attributed to excess torrential rain caused by La Niña and a negative Indian Ocean Dipole.

The City of Maribyrnong was most affected by this flood, and Maribyrnong has been one of the worst-hit suburbs in Melbourne's flood history. Residents were evacuated and many homes were inundated. Lilydale also had flash flooding at this time.



Figure 6 – Maribyrnong floods, October 2022 Source: ABC News

Late 2023 /early 2024 – Eastern Australia and south-eastern Australia floods

In very recent memory, floods in New South Wales in late 2023 were followed by festive season floods in Queensland and Victoria. Severe thunderstorms on the Gold Coast and surrounds were followed by a heatwave, resulting in loss of homes, and lives.

Closer to home in Banyule, storms hit central Victoria in early January 2024, resulting in floods in Seymour, Yea, Shepparton, Mooroopna, Rochester and Murchison.



Figure 7 – Floodwaters in Seymour, January 2024. Source – The Age

The above examples are not intended to be inclusive of all events, these are examples only that are intended to show the potential vulnerabilities that may occur in the future in Banyule and surrounding areas.

Complete the survey now at shaping.banyule.vic.gov.au/CRF or scan the QR code.



ⁱ www.BOM.gov.au/climate/current/statements/scs17.pdf

ⁱⁱ https://en.wikipedia.org/wiki/Black_Saturday_bushfires#cite_note-11

ⁱⁱⁱ <https://www.health.vic.gov.au/environmental-health/research-and-reports-extreme-heat-and-heatwaves>

^{iv} [Extreme weather events in Melbourne - Wikipedia](#)

^v https://en.wikipedia.org/wiki/2022_south_eastern_Australia_floods#cite_note-7