NARCliM

NSW GOVERNMENT

Central West and Orana

Climate Change Snapshot

environment.nsw.gov.au

Acknowledgement of Country

The NSW Government acknowledges First Nations people as the first Australian people and the traditional owners and custodians of the country's lands and water. The NSW Government acknowledges the Wiradjuri, Wongaibon, Wailwan (also known as Weilwan and Wayilwan), Gamilaroi (also known as Gamilaraay and Kamilaroi) and Ngiyampaa Aboriginal people from the Central West and Orana region as having an intrinsic connection with the lands and waters. The landscape and its waters provide the First Nations people with essential links to their history and help them to maintain and practise their traditional culture and lifestyle.

Australia's First Nations people have lived in NSW for over 60,000 years and have significant spiritual, cultural and economic connections with its lands, waters, seas and skies.

They are the first astronomers and scientists who have been listening to and caring for Country for generations.

We pay respects to Elders past and present and acknowledge the significance of their traditional knowledge in adapting to changes in climate over tens of thousands of years.

We recognise the importance of their wisdom at this pivotal moment in time.

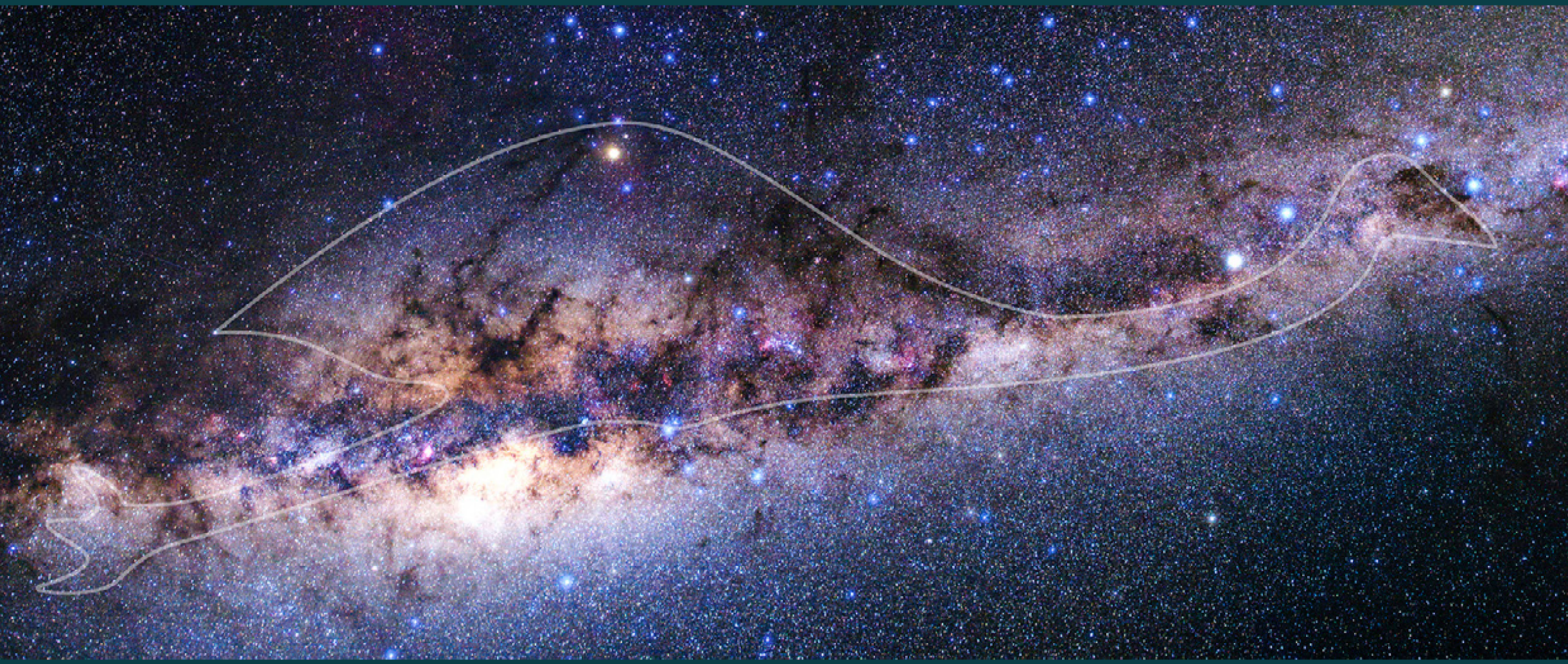

Photo caption:
The Emu in the Sky is an Aboriginal constellation that is made up of the dark clouds of the Milky Way. With the movement of the earth, the position of the Emu in the Sky changes throughout the year. Aboriginal people in some nations across NSW and Australia relate the position of the Emu in the Sky to the breeding behaviour of the emu on the land. Cultural astronomy teaches us about the relationship between the sky and land; and that we are all interconnected.

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About this snapshot

The New South Wales (NSW) and Australian Regional Climate Modelling (NARCliM) project delivers high-resolution climate change projections for NSW and south-east Australia.

This snapshot summarises the latest NARCliM2.0 projections for temperature, average rainfall, hot days 35°C and above, cold nights under 2°C and severe fire weather (Forest Fire Danger Index greater than 50) at a 4km resolution for NSW and the Australian Capital Territory (ACT). There is information for both a low-emissions scenario (SSP1-2.6), and a high-emissions scenario (SSP3-7.0) to the year 2100 to show the range of plausible climates that may be experienced, depending on our actions to reduce greenhouse gas emissions.

Understanding current warming

NSW and the ACT have already warmed by 1.4°C since national records began in 1910.[1] This local warming figure represents surface air temperature over land in NSW and is not directly comparable to average estimates of global warming which include surface air temperature over both land and ocean. Surface warming occurs faster over land than the ocean. Significant impacts from climate change are already occurring in NSW and are expected to be felt more widely in the future, particularly if concerted global effort is not taken to reduce greenhouse gas emissions and adapt to the expected impacts of climate change.

How to use this snapshot

This snapshot provides a summary of plausible future climate change in Central West and Orana relative to a baseline of average climate from 1990–2009. The projections for 2050 represent averaged data for 2040–2059 and projections for 2090 represent averaged data for 2080–2099. In translating the projections, it is important to consider the previous historical changes that occurred prior to 1990–2009. For example, national temperature records indicate that NSW has warmed by 0.84°C between 1910–1930 and the 1990–2009 baseline.[1]

Modelling climate change at a local level provides detailed insights into how NSW communities, built environments and natural environments will continue to be impacted by climate change. Information in this snapshot can be used in conjunction with detailed information that is available through the AdaptNSW Interactive Map and the Climate Data Portal.

NARCliM climate projections

NARCliM2.0 projections provide nation-leading climate model data that span the range of plausible future changes in climate for south-east Australia at a 4km resolution, and for the broader Australasian region at a 20km resolution. NARCliM2.0 projections are the next generation of NARCliM, building on previous generations delivered in 2014 and 2021. NARCliM is the NSW Government's trusted source of climate information and data for all audiences and sectors. Detailed information on NARCliM can be found at AdaptNSW.

Methods and uncertainty

To help address future uncertainty, NARCliM2.0 is built on a selection of emissions scenarios, global climate models and regional climate models that, together, capture a range of climates that could occur. This is referred to as the NARCliM model ensemble. The NARCliM2.0 model ensemble is made up of different combinations of 5 selected global climate models and 2 regional climate models, giving 10 model combinations in total. Unless otherwise specified, the presentation of data in this snapshot is averaged across a 20-year period from the NARCliM model ensemble.

Combining multiple models through averaging and other statistical methods produces better projections by providing a comprehensive range of possible future climate scenarios. To ensure that NARCliM models adequately simulate regional climate, scientists use them to simulate the past climate and compare the results with actual observations. Outputs undergo rigorous quality control and scientific technical peer review. There is more information on the modelling project and scientific methods at AdaptNSW.

Shared Socioeconomic Pathways

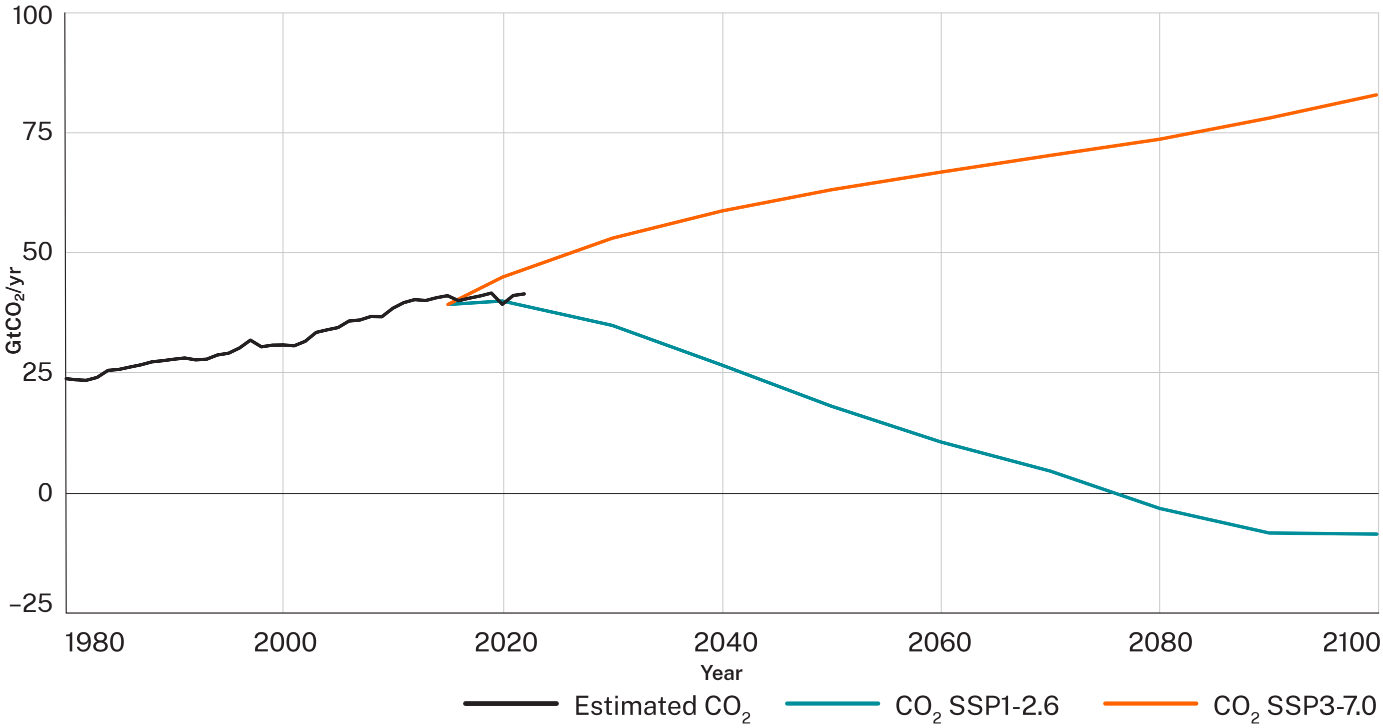
Shared Socioeconomic Pathways (SSPs) are the most recent emissions scenarios adopted in the IPCC's Sixth Assessment Report.

The SSPs describe how greenhouse gas emissions and socioeconomic factors – such as population, economic growth, education, urbanisation and land use – may change in the future. Global carbon dioxide emissions modelled for a low-emissions scenario and a high-emissions scenario are displayed below (Figure 1). For more information on emissions scenarios, visit AdaptNSW.

SSP1-2.6 describes a low-emissions future with a global transition towards sustainable and equitable development.

SSP3-7.0 describes a high-emissions future of regional conflict and development where countries do not collaborate on tackling climate change and do not focus on sustainable and equitable development.

Figure 1. Human-caused global emissions of carbon dioxide – past and projected



Mental health support

Climate change information can be distressing for some readers, with many Australians of all ages experiencing significant eco-anxiety. For supporting information, please visit the Black Dog Institute or Australian Psychological Society or speak with your local healthcare provider.

Projected changes
Central West and Orana

Low-emissions scenario

Average temperature increase

↑ **1.2°C**
2050

↑ **1.4°C**
2090

Hot days per year will increase by:

15.9	17.1
2050	2090

Cold nights per year will decrease by:

11.8	14.0
2050	2090

Severe fire weather days per year will increase by:

2.4	2.7
2050	2090

High-emissions scenario

Average temperature increase

↑ **2.1°C**
2050

↑ **4.1°C**
2090

Hot days per year will increase by:

24.7	49.4
2050	2090

Cold nights per year will decrease by:

19.6	33.5
2050	2090

Severe fire weather days per year will increase by:

3.8	7.5
2050	2090

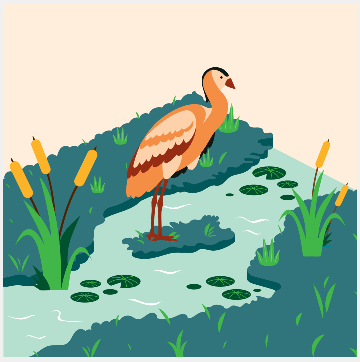
Regional impacts

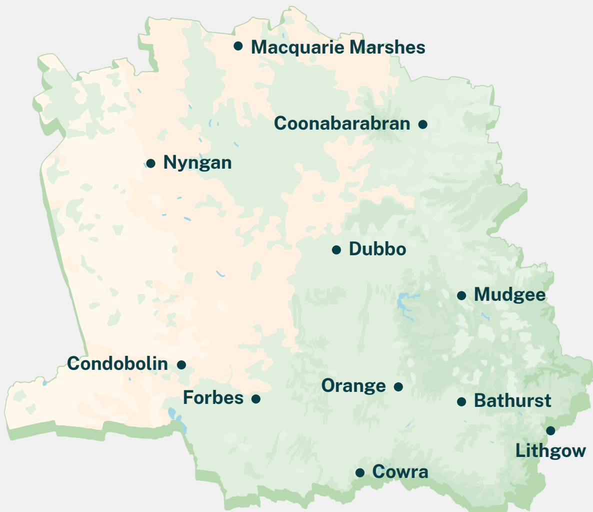
Viticulture

Changes to rainfall

Inland wetlands

Changes to rainfall





Increased extreme heat

Agriculture

Increased extreme heat

Regional towns

Data is based on NARCliM2.0 (2024) projections for SSP1-2.6 (low-emissions) and SSP3-7.0 (high-emissions) and is presented relative to the historical climate baseline of 1990–2009. The projections for 2050 represent averaged data for 2040–2059 and projections for 2090 represent averaged data for 2080–2099. Values presented are averages across the NARCliM2.0 model ensemble, and do not represent the full range of plausible climate futures. Regional climate change impacts are used to highlight how the region is likely to be affected by climate change, and impacts are not limited to the examples provided.

Climate of Central West and Orana

The climate of NSW underpins a diverse array of important industries, lifestyles and natural ecosystems. A stable climate is critical to support a range of values in NSW, including our food systems, recreational activities and unique biodiversity.

The Central West and Orana region spans across an area of approximately 117,098km[2], including major towns like Dubbo, Bathurst, Orange, and Parkes and boasts a rich cultural heritage. Situated within the Murray-Darling Basin, the region contains iconic natural landscapes including parts of the Greater Blue Mountains World Heritage area and the internationally significant Macquarie Marshes.

Current climate

The landscape of the Central West and Orana is varied, characterised by its vast plains, hills and ranges to rugged mountains and expansive woodlands. It is home to the Blue Mountains, which dominate the eastern edge of the region. In contrast, the western part of the region is characterised by its fertile plains and agricultural lands, particularly around towns like Dubbo and Orange.

The topography of the Central West and Orana region results in a large range of climatic conditions and there are distinct seasonal variations in the climate of the region. Generally, the region experiences a temperate climate. It is relatively dry on the western plains compared to the Central Tablelands. Summers are warm to hot on the western plains and cooler on the Tablelands, which also experience cool to cold winters and snowfall at higher elevations. Temperatures are milder on the slopes, with summer temperatures cooler than the plains and winter conditions warmer than the Tablelands.

Table 1. Baseline climate for the Central West and Orana

	Average temperature	Hot days	Cold nights	Rainfall	Severe fire weather days
Observed	17.1°C	30.5	43.3	562mm	4.9
Historical model	17.2°C	29.9	42.1	467mm	6.4

Table 1 outlines the annual average values for the 1990–2009 baseline period in this snapshot. All observed data is calculated from Bureau of Meteorology products. Long-term temperature change data is from the long-term temperature record.[1] Observed information and data in graphs come from Australian Gridded Climate Data (AGCD).[2]

Temperature

The Central West and Orana is getting warmer

Temperature is the most robust indicator of climate change. In NSW, 6 of the 10 warmest years on record since 1910 have occurred since 2013. The warmest year on record for both average temperature and maximum temperature in the Central West and Orana region was 2019, when average temperature was 1.5°C above the 1990–2009 average.[2]

Projections

Across the Central West and Orana region, average temperatures will increase throughout this century (Figure 2).

Under a low-emissions scenario, the average temperature increase across the region is projected to be less than 0.2°C between 2050 and 2090 (Table 2). However, a major temperature increase of 2.0°C is expected during the same period under a high-emissions scenario. Notably, the temperature projections for 2050 under a high-emissions scenario are expected to exceed the projections for 2090 under a low-emissions scenario.

Temperature increases are expected in all parts of the region (Figure 3) and across all seasons. Northern areas of the region including towns such as Dubbo, Coonabarabran and Nyngan will see the greatest increases in temperature. By 2090, Dubbo is likely to experience an increase in temperature of 1.4°C under a low-emissions scenario and 4.1°C under a high-emissions scenario. Comparatively, Oberon is likely to experience an increase in temperature of 1.2°C under a low-emissions scenario and 3.6°C under a high-emissions scenario.

4.1°C

rise in temperature across the Central West and Orana by 2090 under a high-emissions scenario

6 of 10

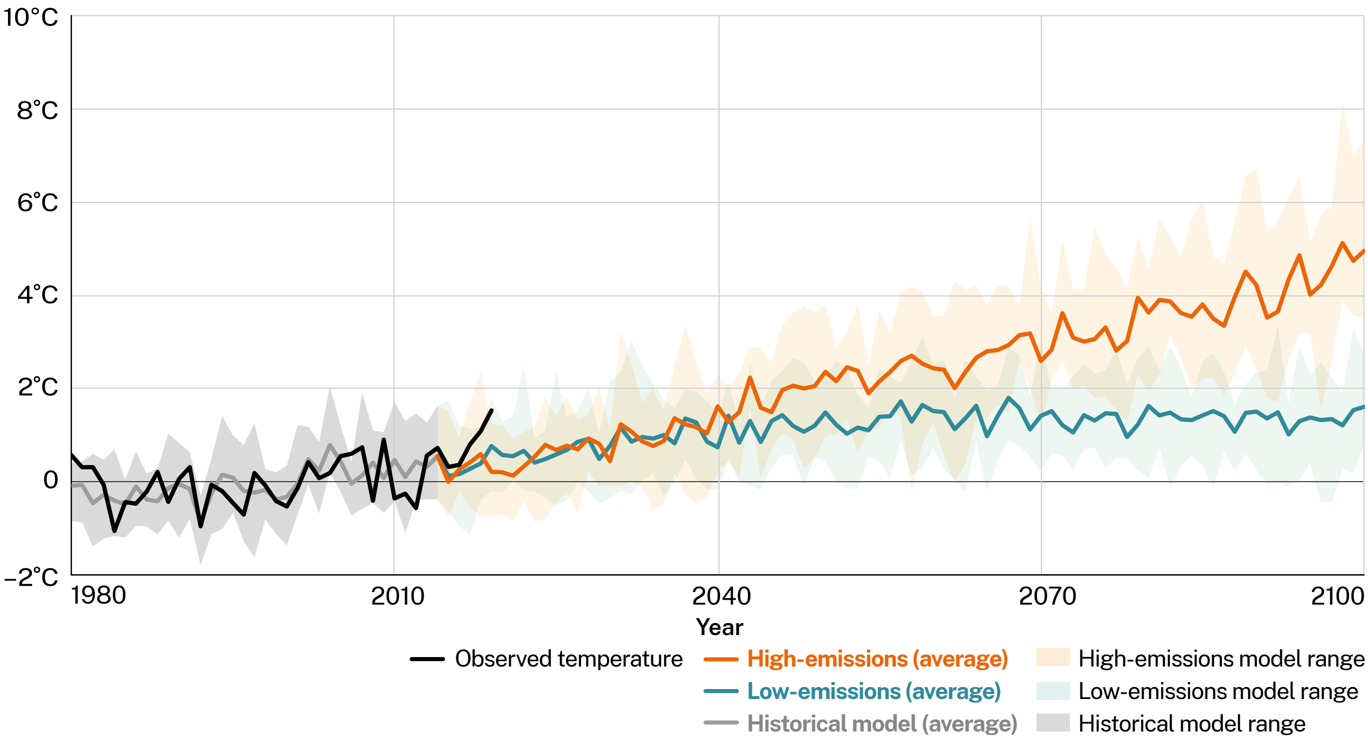
warmest years on record have occurred since 2013

Table 2. Projected annual average temperature increase – Central West and Orana

	2050		2090	
	Low-emissions	High-emissions	Low-emissions	High-emissions
Temperature	**1.2°C** (0.6–1.7°C)	**2.1°C** (1.1–2.9°C)	**1.4°C** (0.6–2.1°C)	**4.1°C** (2.9–5.7°C)
Maximum temperature	**1.3°C** (0.6–1.8°C)	**2.1°C** (1.2–3.0°C)	**1.4°C** (0.6–2.3°C)	**4.1°C** (3.0–5.8°C)
Minimum temperature	**1.2°C** (0.6–1.6°C)	**2.0°C** (1.0–2.7°C)	**1.3°C** (0.7–1.9°C)	**4.0°C** (2.8–5.5°C)

The bold number is the ensemble average for the period. Underneath the average is the ensemble range.

Figure 2. Historical and projected average temperature change – Central West and Orana

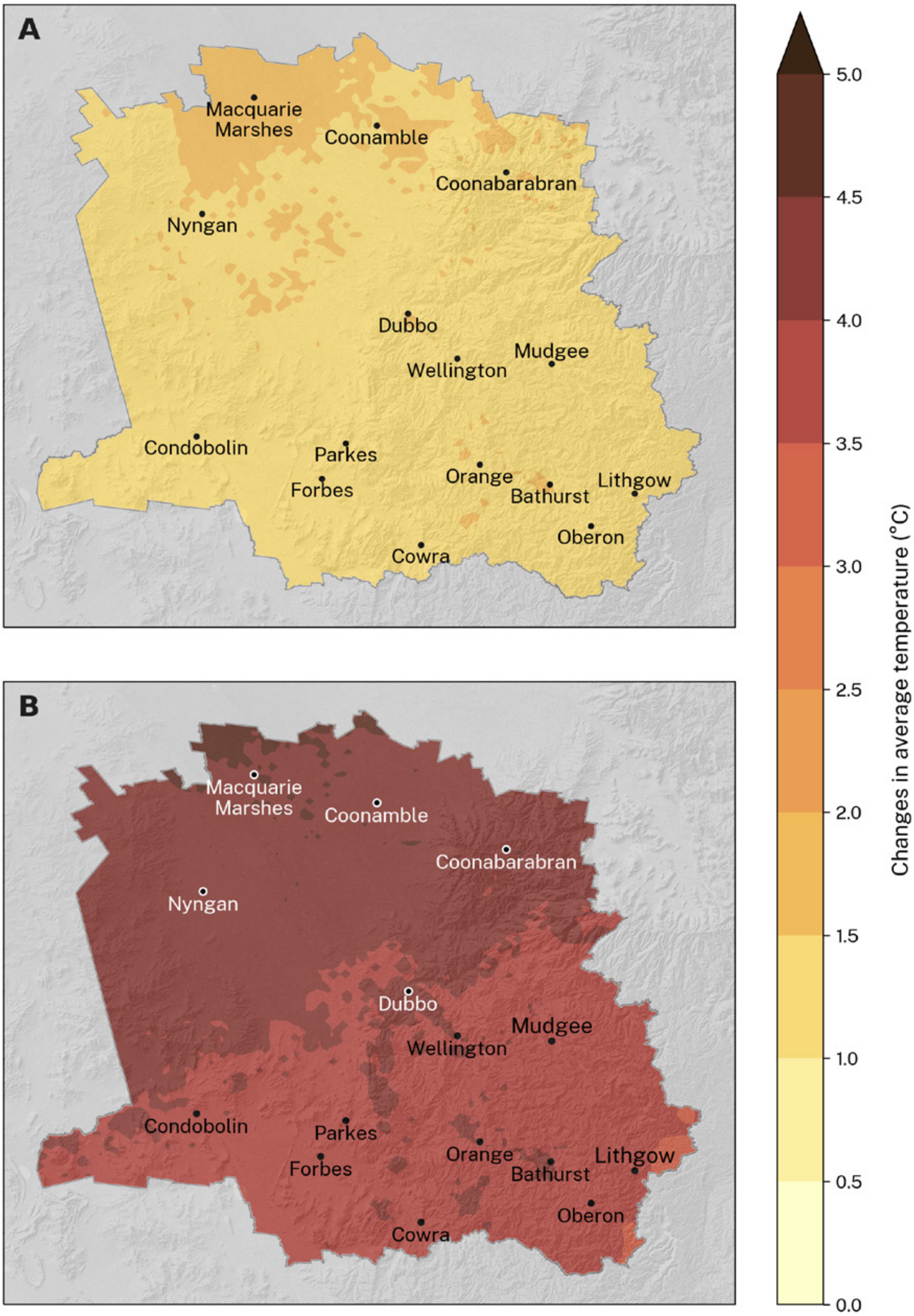


The shading around the graphs

The climate change projections presented in this snapshot are relative to the historical climate baseline of 1990–2009. The graphs provide a projected annual average for the 2 emissions scenarios.

The range of plausible climate futures across the NARCliM model ensemble is shown by light shading. For historical climate data, both recorded observational data (dark line) and modelling of the past climate in NARCliM2.0 (grey) are presented.

Figure 3. Projected change in average temperature by 2090 for the Central West and Orana under A) a low-emissions scenario and B) a high-emissions scenario



Hot days

Hot days will become more frequent

Prolonged hot days where maximum temperatures are 35°C or above increase the incidence of illness and death – particularly among vulnerable people. Seasonal changes in number of hot days could have significant impacts on bushfire danger, infrastructure and native species.

Projections

Generally, the number of hot days in the Central West and Orana region increases from the southeast to the northwest of the region.

Changes to **temperature extremes** often have **more pronounced impacts** than changes in average **temperature**.

Higher maximum temperatures affect health through **heat stress** and exacerbate existing health conditions.

During the baseline period, areas near Oberon and Lithgow had on average less than 1 hot day per year. Lower elevation areas of the Tablelands, such as Forbes, had on average 30 hot days per year, while higher elevation areas such as Mudgee and Parkes had on average 5–10 hot days per year. Areas in the northwest of the region, such as Nyngan, had on average 45–55 hot days per year.

The number of hot days will increase for the Central West and Orana region by 2050 for both a low-emissions and a high-emissions scenario, with an even greater increase by 2090 under a high-emissions scenario (Table 3). The number of hot days is projected to increase during spring, summer and autumn, with the largest increase in summer.

Under a low-emissions scenario, there is a small increase of 1.2 additional hot days per year projected across the region between 2050 and 2090 (Table 3). However, an increase of 24.7 additional hot days is projected under a high-emissions scenario during the same period.

By 2090, areas of the Central West and Orana, including Dubbo, could experience more than triple the number of hot days under a high-emissions scenario.

Increases to hot days will occur across all of the region (Figure 5). Northern and western areas of the region such as Dubbo and Coonamble are projected to experience larger increases in the number of hot days compared to southeastern areas of the region. By 2090, Dubbo is projected to experience 19.5 additional hot days per year under a low-emissions scenario and 56.7 additional hot days per year under a high-emissions scenario. A high-emissions scenario is projected to more than triple Dubbo's baseline period average of 29.7 hot days per year. Comparatively, in the southeast of the region, Bathurst's baseline period average is 3.8 hot days per year. By 2090, Bathurst is projected to experience an additional 6.7 hot days per year under a low-emissions scenario and 23.4 additional hot days per year under a high-emissions scenario.

Table 3. Projected increase in average annual number of hot days – Central West and Orana

2050		2090	
Low-emissions	High-emissions	Low-emissions	High-emissions
15.9 days (4.2 to 25.2 days)	**24.7 days** (8.6 to 40.4 days)	**17.1 days** (6.0 to 32.0 days)	**49.4 days** (30.1 to 76.7 days)

The bold number is the ensemble average for the period. Underneath the average is the ensemble range.

Figure 4. Historical and projected change in annual number of hot days – Central West and Orana

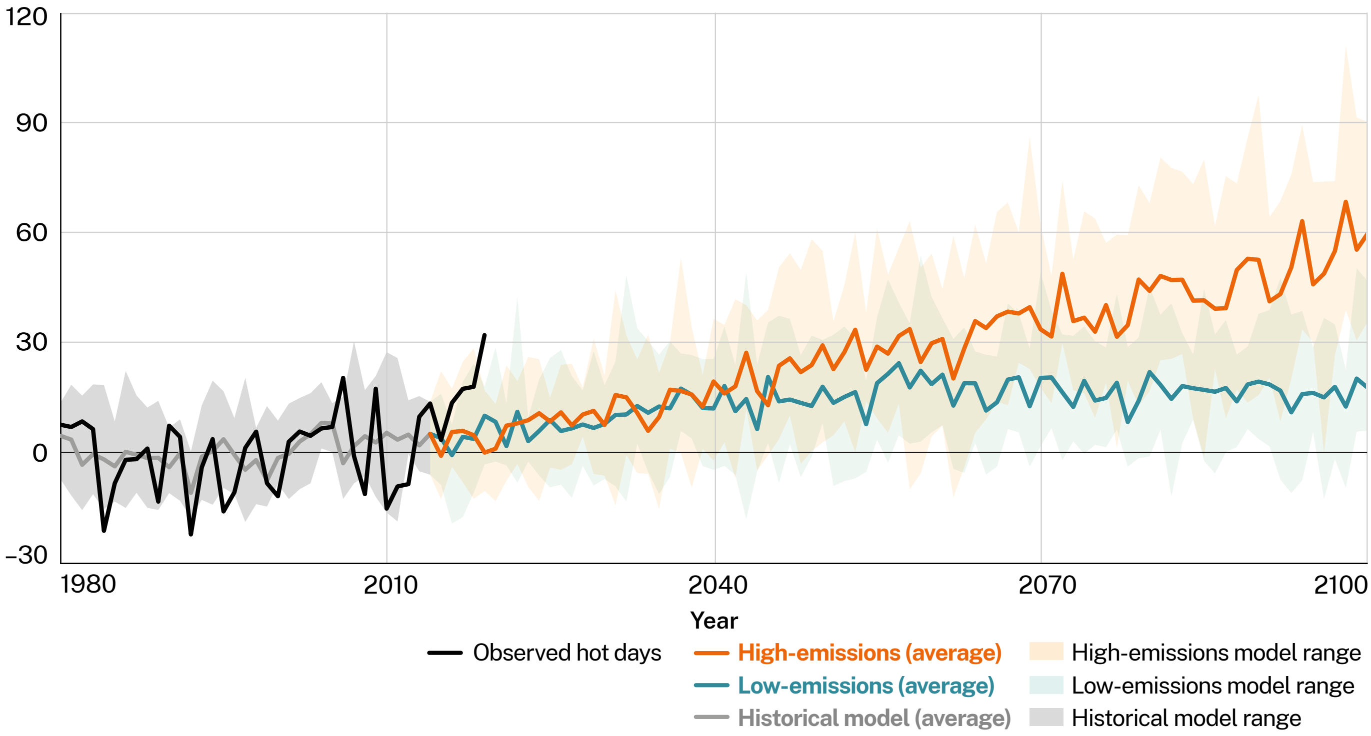
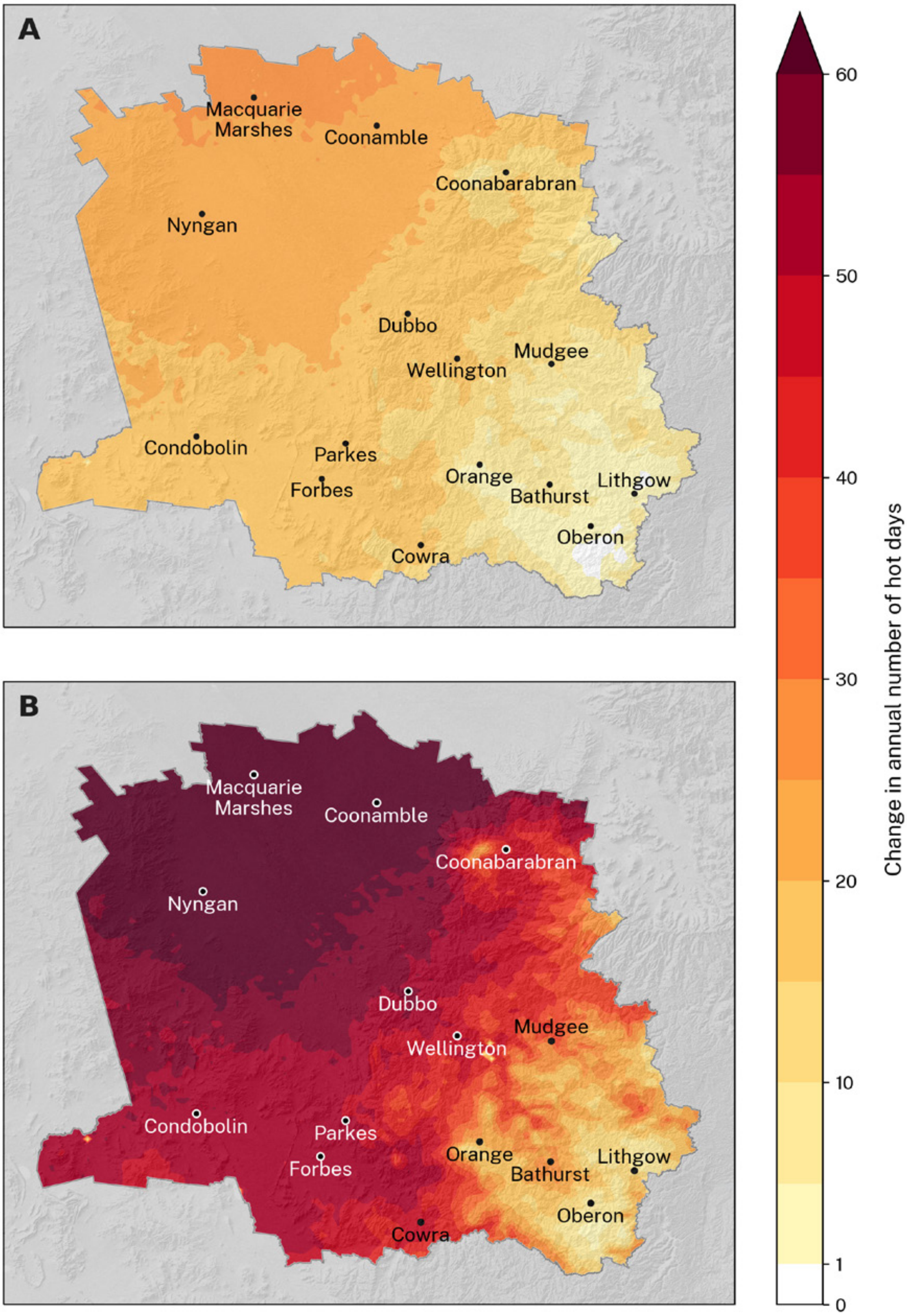


Figure 5. Projected change in annual number of hot days by 2090 for the Central West and Orana under A) a low-emissions scenario and B) a high-emissions scenario



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Cold nights

Cold nights will decrease

Cold nights are those where the minimum temperature drops below 2°C. These are important for the survival of some important plant species. For example, some common temperate fruit species require sufficiently cold winters to produce flower buds.

Projections

The number of cold nights varies widely across the Central West and Orana region, but generally decrease from the southeast to the northwest. During the baseline period, areas of higher elevation in the mountainous southeast of the region near Oberon had on average more than 100 cold nights per year. High elevation areas of the Tablelands such as Orange and Bathurst had on average 80–100 cold nights per year, while lower elevation areas such as Forbes and Dubbo had 40–50 cold nights per year. Northwestern areas of the region such as Nyngan had 10–15 cold nights per year.

The number of cold nights will decrease for the Central West and Orana region by 2050 for both a low-emissions and a high-emissions scenario, with an even greater decrease by 2090 under a high-emissions scenario (Table 4). The number of cold nights is projected to decrease across autumn, winter and spring, with the largest decreases in winter.

Under a high-emissions scenario, there could be an 80% reduction in the annual number of cold nights across the Central West and Orana by 2090.

Under a low-emissions scenario, there is a small decrease of 2.2 fewer cold nights per year projected across the region between 2050 and 2090 (Table 4). However, a decrease of 13.9 fewer cold nights per year is projected under a high-emissions scenario during the same period.

Cold nights will decrease across all of the region, particularly in higher elevation areas in the southeast of the region (Figure 7). The greatest decreases are projected to occur along the western edge of the Great Dividing Range including Bathurst and Lithgow, as well the area surrounding the Warrumbungle National Park. By 2090, Bathurst is projected to have 25.3 fewer cold nights per year under a low-emissions scenario and 64.8 fewer cold nights per year under a high-emissions scenario. A high-emissions scenario is projected to reduce Bathurst's 98.1 cold nights per year base period average by more than 65%.

Table 4. Projected decrease in average annual number of cold nights – Central West and Orana

2050		2090	
Low-emissions	High-emissions	Low-emissions	High-emissions
11.8 days (6.5 to 18.8 days)	**19.6 days** (9.7 to 25.1 days)	**14.0 days** (8.6 to 19.0 days)	**33.5 days** (25.9 to 39.8 days)

The bold number is the ensemble average for the period. Underneath the average is the ensemble range.

Figure 6. Historical and projected change in annual number of cold nights – Central West and Orana

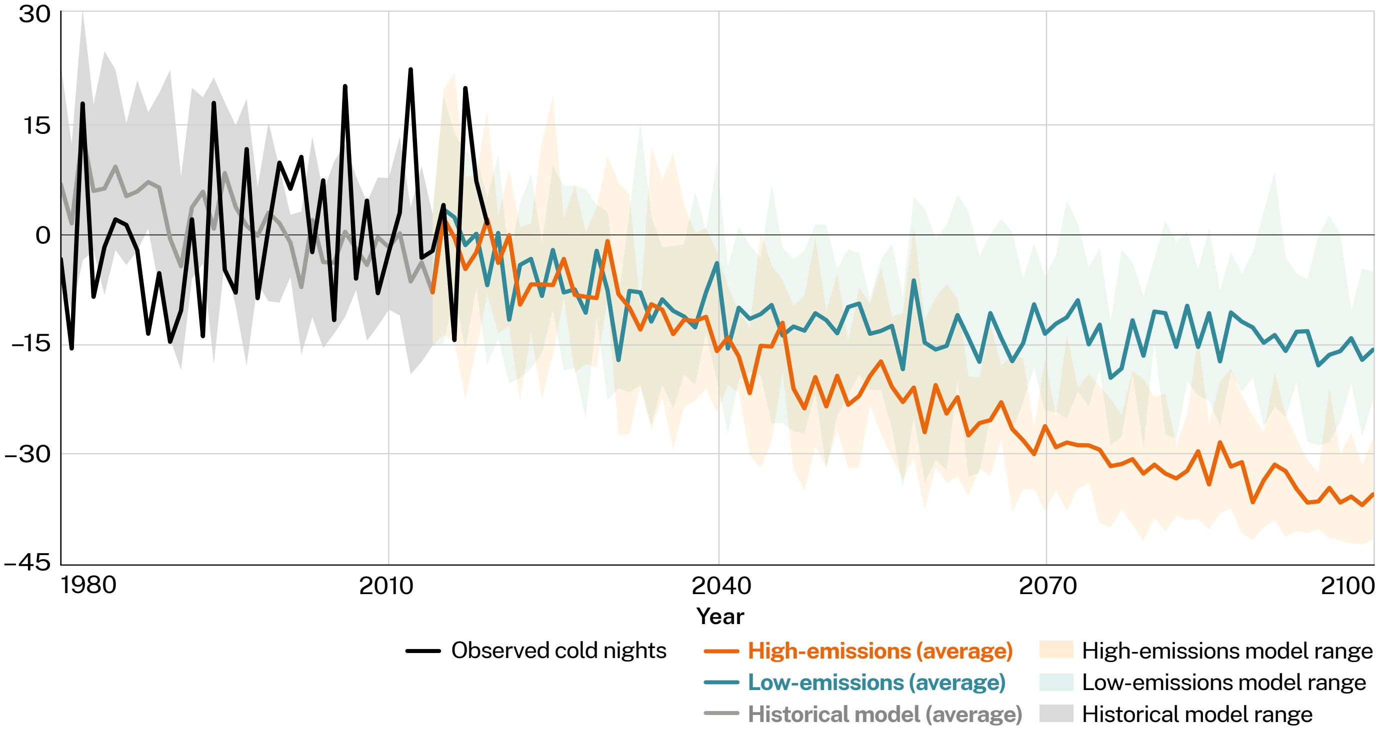
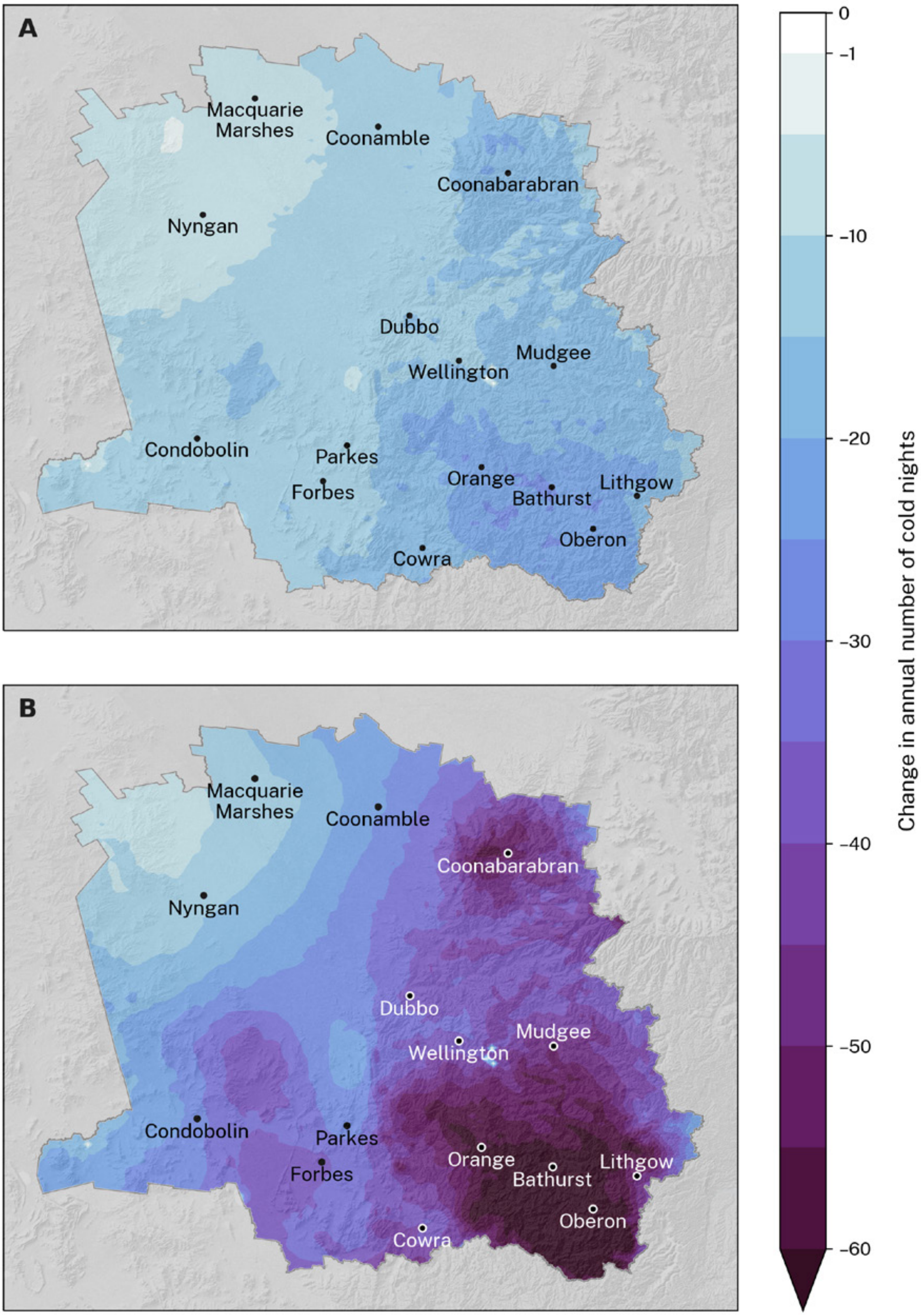


Figure 7. Projected change in annual number of cold nights by 2090 for the Central West and Orana under A) a low-emissions scenario and B) a high-emissions scenario



Rainfall

Rainfall is projected to remain variable

Climate change will influence rainfall patterns and the total amount of rainfall that NSW receives. These changes may have widespread impacts on water security, agricultural productivity and native species' reproductive cycles. Eucalypt woodlands and riverine plains in the interior west could struggle to cope with drier conditions.

NSW has experienced rainfall extremes in recent decades, with significant impacts on communities, infrastructure and natural ecosystems.

Modelling rainfall is more difficult than modelling temperature due to the complexities of the weather systems that generate rain. NARCliM projections capture a range of plausible climate futures under the 2 emissions scenarios, including wet and dry outcomes. This means that rainfall is inherently more variable in the NARCliM projections than temperature, and the full range of rainfall projections should be taken into account. This can be explored further on the AdaptNSW Interactive Map.

Annual rainfall across the Central West and Orana region averages about 560mm.[2] Rainfall generally decreases from the southeast to the northwest of the region, with rainfall highest in the Central Tablelands. Rainfall is generally uniformly distributed throughout the year across the region. The driest year on record was 2019, with an average of only 260mm across the region.[2]

Projections

This snapshot provides data on average rainfall change and does not provide data on rainfall extremes and the impacts of climate change on flooding.

Annual average rainfall in the region is projected to remain variable throughout this century (Figure 8). By 2090, on average, annual rainfall is projected to decrease by 10% under a low-emissions scenario and by 11% under a high-emissions scenario (Table 5).

By 2090, average winter rainfall in the southeast of the region near Lithgow and Oberon is projected to decrease by 5–15% under a low-emission scenario and by 25–35% under a high-emission scenario.

By 2090, on average, spring rainfall is projected to decrease across the region by 17% under a low-emissions scenario and by 21% under a high-emissions scenario, with a somewhat uniform decrease across the region (Table 5). Refer to the Interactive Map for further seasonal information.

Table 5. Projected change to average rainfall – Central West and Orana

	2050		2090	
	Low-emissions	High-emissions	Low-emissions	High-emissions
Annual	**–9.3%** (–23.2% to +17.5%)	**–15.7%** (–36.1% to +7.2%)	**–10.1%** (–22.3% to +23.9%)	**–10.9%** (–40.6% to +58.7%)
Summer	**–8.4%** (–28.3% to +32.1%)	**–19.4%** (–41.0% to +35.5%)	**–13.1%** (–36.1% to +59.3%)	**–0.8%** (–33.8% to +53.9%)
Autumn	**–12.3%** (–27.8% to +21.4%)	**–11.8%** (–38.3% to +30.3%)	**–6.9%** (–26.2% to +30.0%)	**–9.8%** (–33.3% to +65.6%)
Winter	**–7.0%** (–19.7% to +26.0%)	**–15.5%** (–43.7% to +26.0%)	**–1.8%** (–29.7% to +40.3%)	**–15.5%** (–52.7% to +76.0%)
Spring	**–10.0%** (–37.5% to +31.7%)	**–14.7%** (–46.5% to +19.7%)	**–17.4%** (–34.9% to +27.2%)	**–21.2%** (–52.3% to +45.6%)

The bold number is the ensemble average for the period. Underneath the average is the ensemble range.

Figure 8. Historical and projected change to average rainfall – Central West and Orana

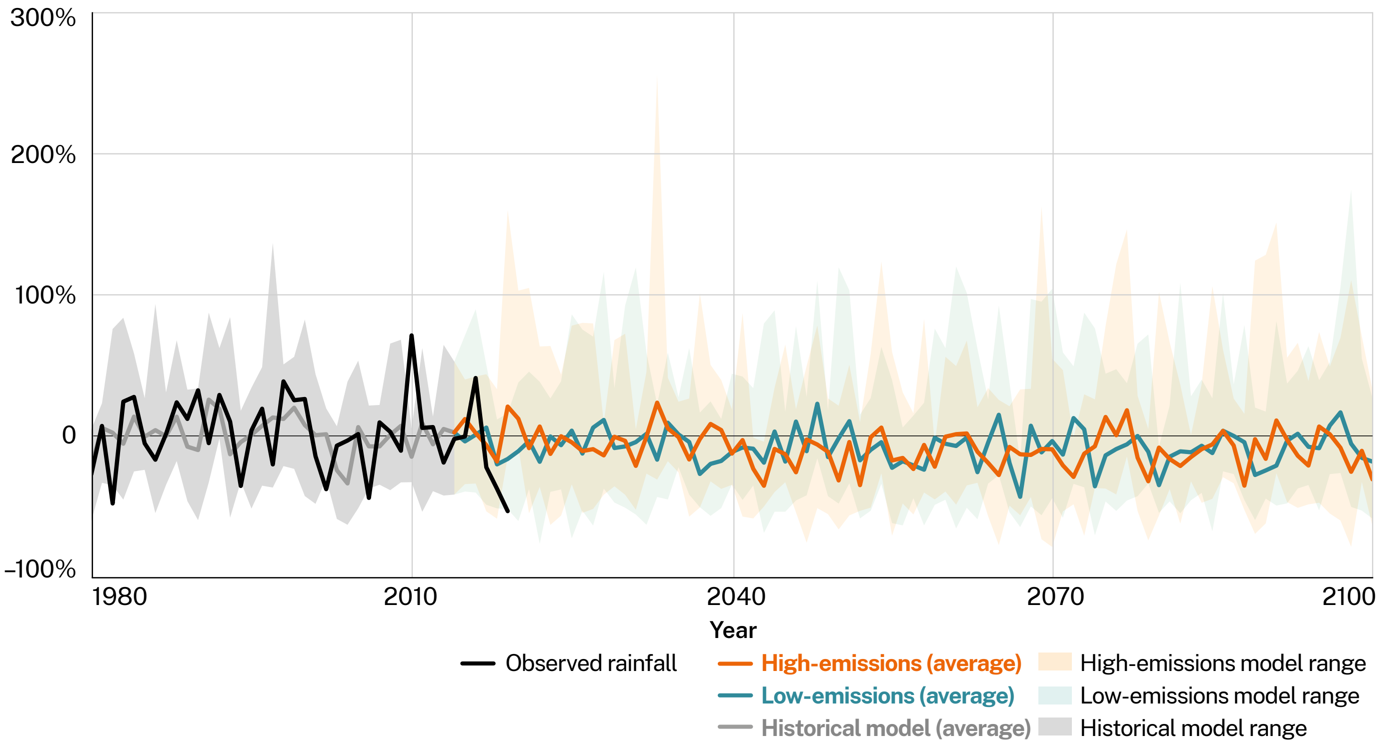
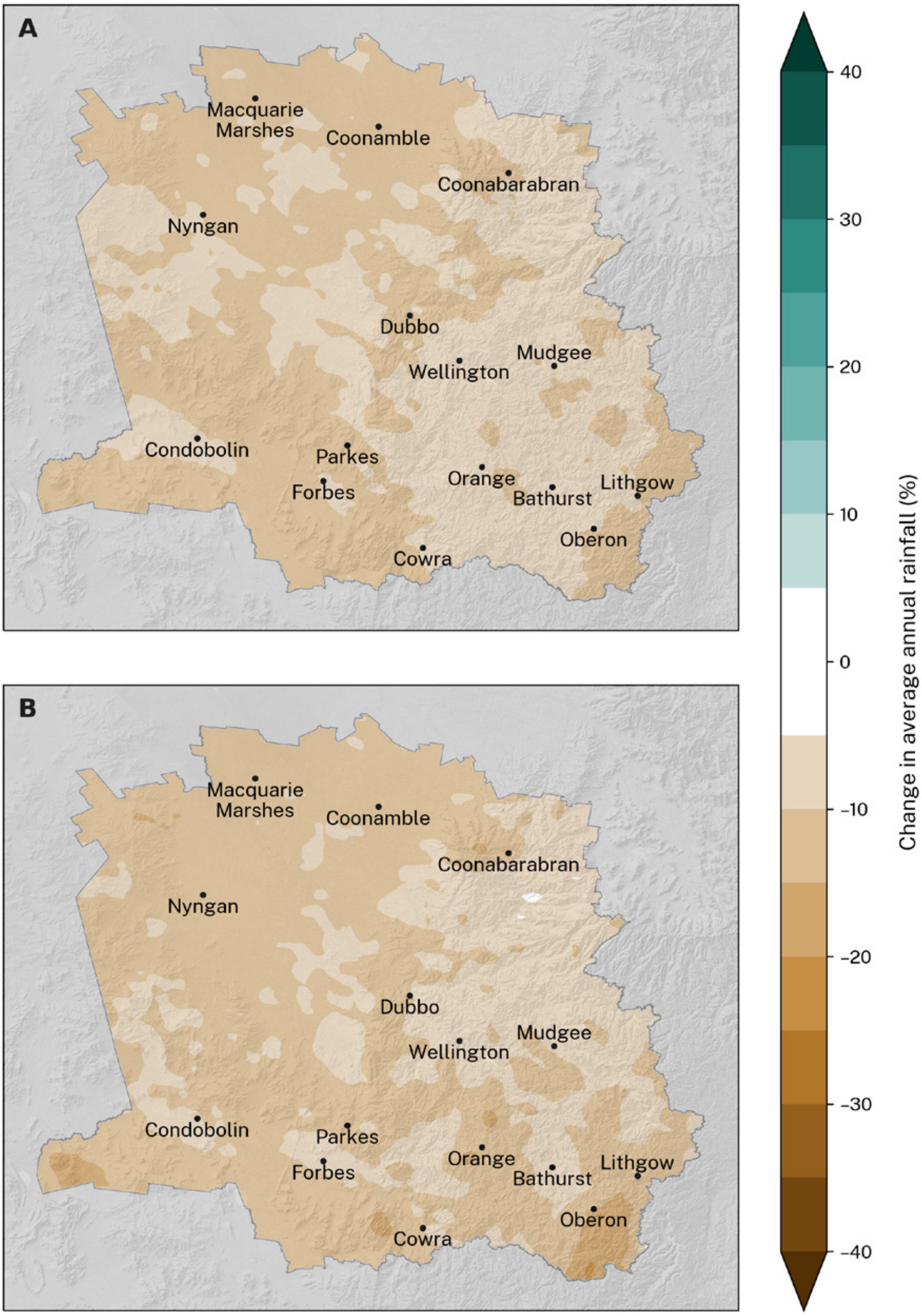


Figure 9. Projected change to average rainfall by 2090 for the Central West and Orana under A) a low-emissions scenario and B) a high-emissions scenario



Severe fire weather

Severe fire weather will increase

The Forest Fire Danger Index (FFDI) represents an estimate of fire weather risk. The FFDI is calculated from temperature, relative humidity and wind speed, as well as a number representing fuel dryness.

Severe fire weather (FFDI greater than 50) is most likely in summer and spring. Fire weather was the strongest determining factor of house loss during the Black Summer bushfires.[3] The number of severe fire danger days observed for the Central West and Orana region is 4.9 days per year on average.[2] The number of severe fire danger days generally increases from the southeast to the northwest of the region. The record number of severe fire danger days in a year was 2019 with approximately 18.4 days on average across the region, including 9 days recorded at the Bathurst station and 30 days recorded at the Dubbo station.[4]

Fire weather was the strongest determining factor of house loss during the Black Summer bushfires.[3]

FFDI was monitored by weather stations across NSW and the ACT until the introduction in 2022 of the Australian Fire Danger Rating System. FFDI is used in this snapshot as it can be calculated using the NARCliM projections, whereas data used by the Australian Fire Danger Rating System cannot. FFDI also provides a long history of data and gives context to the NARCliM projections.

Projections

The number of severe fire weather days will increase for the Central West and Orana region by 2050 for both a low-emissions and a high-emissions scenario, with an even greater increase projected by 2090 under a high-emissions scenario (Table 6). The number of severe fire weather days is projected to increase during spring and summer, with the largest increase in summer.

Under a high-emissions scenario, the number of annual severe fire weather days could more than double across the Central West and Orana by 2090.

Increases to severe fire weather days are projected to occur across most of the region (Figure 11). The greatest increases are projected to occur in the central and western areas of the region including Dubbo and Nyngan. By 2090, Dubbo is projected to experience 1.4 additional severe fire weather days under a low-emissions scenario and 4.4 additional severe fire weather days under a high-emissions scenario. A high-emissions scenario is projected to more than double Dubbo's baseline period average of 3 severe fire weather days per year. In the southeast of the region, Bathurst's baseline period average is 2.4 severe fire weather days. By 2090, Bathurst is projected to experience 1.5 additional severe fire weather days under a low-emissions scenario and 4.8 additional severe fire weather days under a high-emissions scenario.

Table 6. Projected increase in average annual number of severe fire weather days – Central West and Orana

2050		2090	
Low-emissions	High-emissions	Low-emissions	High-emissions
2.4 days (−0.4 to 5.8 days)	**3.8 days** (1.0 to 9.6 days)	**2.7 days** (−0.4 to 6.8 days)	**7.5 days** (1.9 to 16.6 days)

The bold number is the ensemble average for the period. Underneath the average is the ensemble range.

Figure 10. Historical and projected change to annual number of severe fire weather days – Central West and Orana

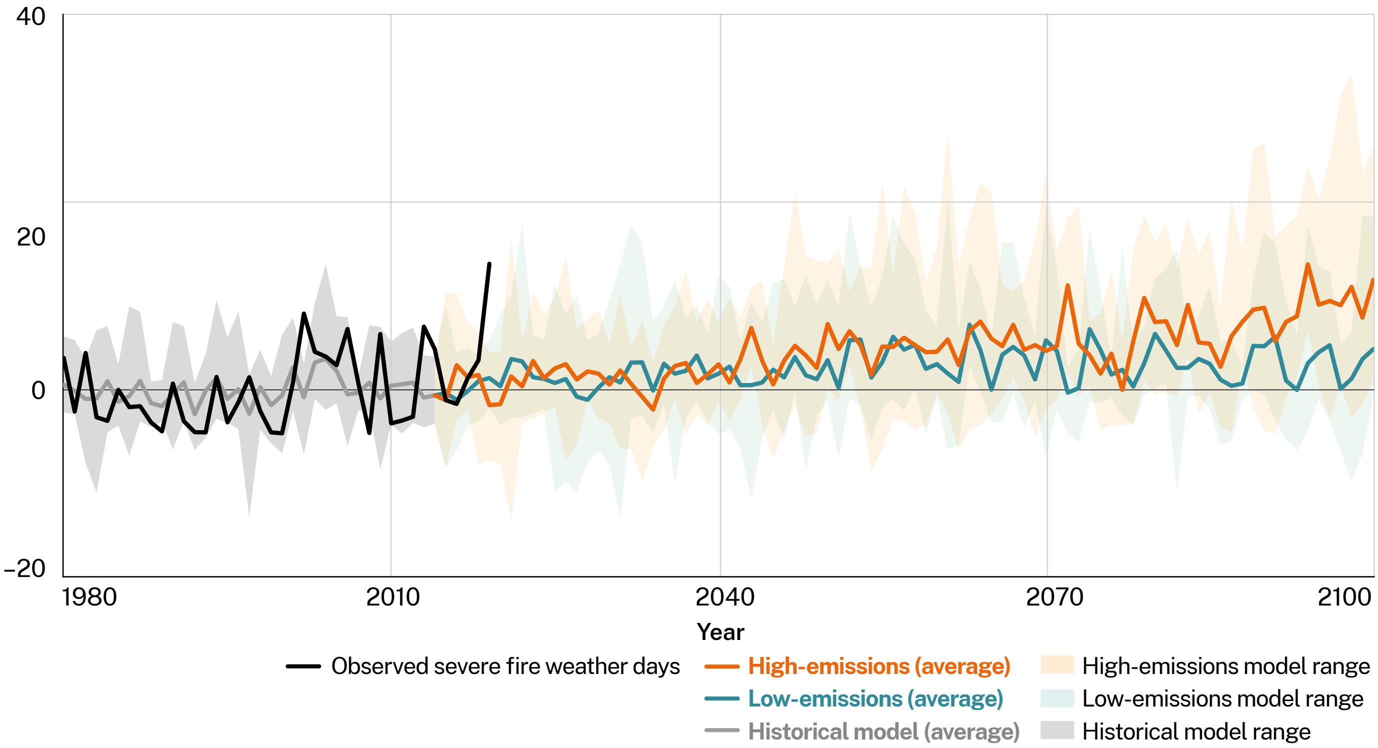
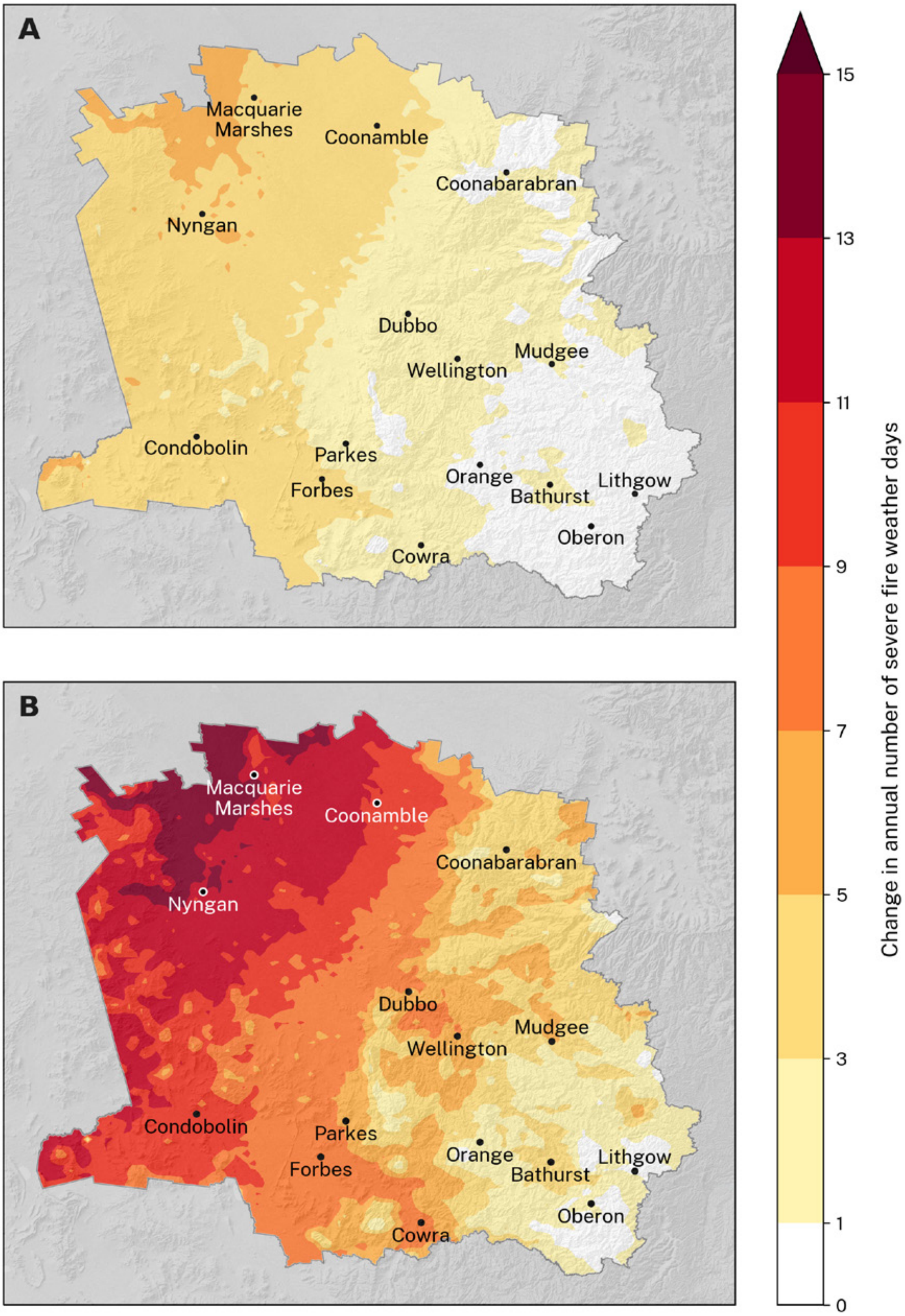


Figure 11. Projected change to annual number of severe fire weather days by 2090 for the Central West and Orana under A) a low-emissions scenario and B) a high-emissions scenario



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Climate change impacts on the Central West and Orana

Climate change is already impacting the Central West and Orana region, particularly through increased temperatures and changes to rainfall. Climate change will continue impacting a variety of important economic, cultural values and environmental values across the region.

Impacts on agriculture

The region's reliance on agriculture makes it particularly susceptible to changes in rainfall patterns, increased temperatures and extreme events. The drought of 2017–2020 was the driest 36-month period on record for the region. In contrast, the 2022 floods resulted in 18 of the region's 19 local government areas being subject to a natural disaster declaration. Pastures in the mixed cropping zone, which dominates this region, will likely experience a slight decline in climate suitability, particularly in the summer months. Water demand for all broadacre and horticultural crops is likely to increase due to increased temperatures.[5]

Communities and agricultural producers are also expected to be increasingly impacted by more hot days of 35°C and above, which is likely to cause increased heat stress for people and may decrease the suitability of some types of agriculture within the region such as mixed livestock-cropping.

Impacts on water supply and wetlands

Changes to rainfall and increased temperatures could also have significant impacts on water supplies and internationally significant wetlands throughout the region. This is due to increased evapotranspiration and a shift in seasonal patterns. There is the potential for an increased risk of significantly lower inflows in key river catchments such as the Macquarie and Castlereagh Rivers. A drought of the same severity and length as the 2017–2020 drought could go from a 1 in 1000-year event to a 1 in 50-year event.[6] The internationally significant Macquarie Marshes could be impacted by changes to rainfall and increased temperatures. These changes could cause enhanced evaporation, reductions in available water to plant communities and a reduction in waterbird breeding.[7]

References

[1] Long-term temperature record – webpage

[2] About Australian Gridded Climate Data maps and grids – webpage

[3] Price et al. 2020, Probability of house destruction. Theme 3A. People and Property Impacts, *Bushfire Risk Management Research Hub* for the NSW Bushfire Inquiry 2020 – webpage

[4] Bureau of Meteorology Station Data – webpage

[5] DRNSW 2024, Climate Vulnerability Assessment Summary Report, *Department of Primary Industries,* Sydney

[6] DPE 2023, 'Regional Water Strategy – Macquarie-Castlereagh', *Department of Planning and Environment,* Sydney

[7] OEH 2013, 'Macquarie Marshes Ramsar site Article 3.2 response strategy', *Office of Environment and Heritage,* Sydney

Climate action and information

Climate action

The NARCliM projections for the low-emissions scenario and the high-emissions scenario highlight the stark difference in climate change impacts that will be experienced under each scenario. The differences provide a reminder of the required action across the world to reduce emissions, and specifically within NSW to meet our legislated Net Zero by 2050 emissions reduction targets. This is our best chance at ensuring the future projections under the high-emissions scenario are avoided. The NARCliM projections highlight the importance of taking action to adapt to the impacts of climate change. For more resources on reducing emissions and adapting to the impacts of climate change, visit AdaptNSW.

Information

NARCliM projections are delivered with support from: the ACT, South Australian, Victorian and Western Australian governments; National Computational Infrastructure; Murdoch University; and the University of New South Wales. Detailed information on the methodology and application of the projections can be found on the AdaptNSW website.

Climate change information in this snapshot is delivered as part of the NSW Government's commitment to 'Publish regularly updated and improved local level climate change projections' under Action 3 of the NSW Climate Change Adaptation Strategy.

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Lone tree in farmlands between Dubbo and Orange, New South Wales, *Frédéric Grimaître/Alamy*

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