NARCliM

Central Coast

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 Darkinyung Aboriginal people from the Central Coast region as having an intrinsic connection with the lands and waters. The landscape and its waters provide 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.

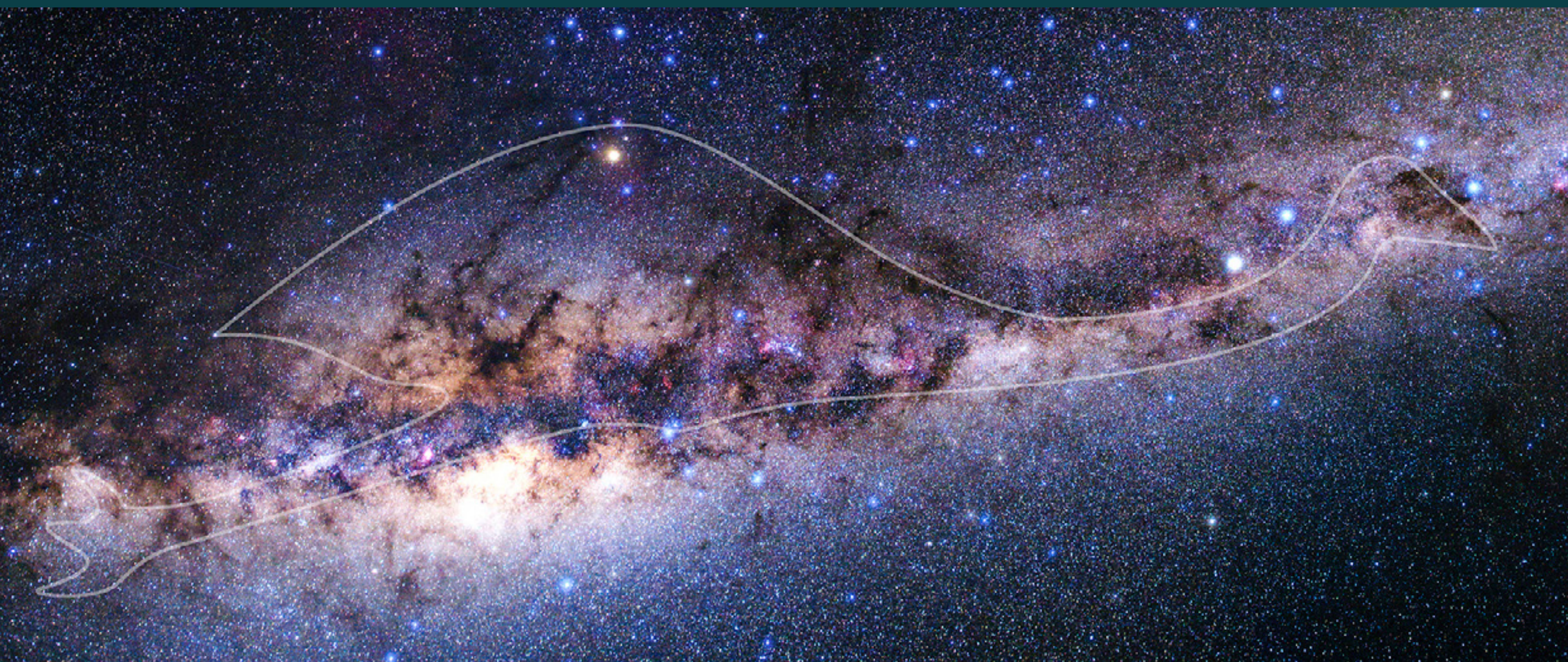

Photo caption:
The Emu in the Sky is an Aboriginal constellation that is made up of the dark clouds of the Milky Way. With the movement of the earth, the position of the Emu in the Sky changes throughout the year. Aboriginal people in some nations across NSW and Australia relate the position of the Emu 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. The snapshot also summarises the latest projections for sea-level rise, derived from the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report released in 2021.

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 the Central Coast region 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

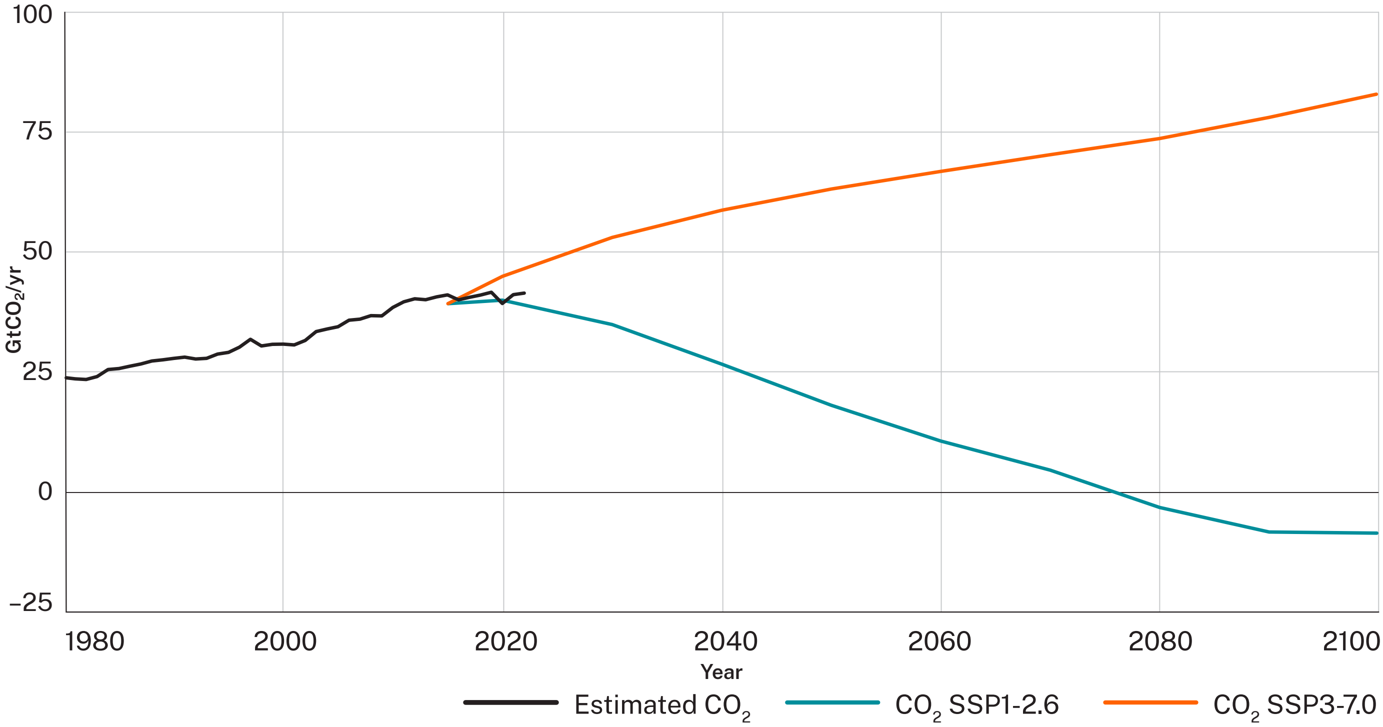
Shared Socioeconomic Pathways (SSPs) are the most recent emissions scenarios adopted in the IPCC's Sixth Assessment Report.

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.

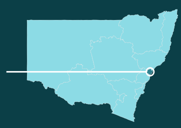
Figure 1. Human-caused global emissions of carbon dioxide – past and projected



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 Coast



Low-emissions scenario

Average temperature increase

↑ **1.0°C**
2050

↑ **1.2°C**
2090

Hot days per year will increase by:

4.3 2050 | **5.0** 2090

Sea level will rise by:

19cm 2050 | **39cm** 2090

Severe fire weather days per year will increase by:

0.7 2050 | **0.5** 2090

High-emissions scenario

Average temperature increase

↑ **1.7°C**
2050

↑ **3.3°C**
2090

Hot days per year will increase by:

6.3 2050 | **13.6** 2090

Sea level will rise by:

23cm 2050 | **59cm** 2090

Severe fire weather days per year will increase by:

0.9 2050 | **1.6** 2090

Regional impacts

Bushland

Increased severe fire weather

Estuarine settlements

Inundated by rising sea levels

Inundated by rising sea levels

Coastal settlements

Increased extreme heat

Urban areas

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. Sea-level rise data is from the IPCC's Sixth Assessment Report is presented relative to a baseline of 1995–2014.

Climate of the Central Coast

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

The Central Coast extends from Broken Bay in the south to Frazer Beach in the north. It contains the major town centres of Gosford and Wyong. The Central Coast's unique environments and proximity to the Hunter region and Sydney attract people to the region to live and work.

Current climate

The Central Coast region marks a transition zone for many plant and animal species between the subtropical influences of the north to the cooler, temperate conditions of the south. The region has a relatively uniform climate owing to its small size. It is wettest along the coast and drier inland. The temperature across the region is warm in summer. Winters are mild but temperatures are cooler away from the coast.

The Watagan Mountains create an area of high rainfall, providing sufficient moisture to support the major areas of wet sclerophyll forest and rainforest. The region's sandstone plateaux are largely covered in dry sclerophyll forest. The coastal plain supports large areas of freshwater and saline wetland ecosystems, including large coastal lakes such as Tuggerah Lake.

Table 1. Baseline climate for the Central Coast

	Average temperature	Hot days	Cold nights	Rainfall	Severe fire weather days
Observed	17.5°C	4.7	1.4	1109mm	0.9
Historical model	16.8°C	4.7	1.3	1099mm	1.1

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 Coast 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 Coast region was 2019, when average temperature was 1.1°C above the 1990–2009 average.[2]

Projections

Across the Central Coast 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 temperature increase of 1.6°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. Temperature increases are relatively uniform across the region due to the ocean's moderating influence. By 2090, Gosford is likely to experience an increase in temperature of 1.1°C under a low-emissions scenario and 3.3°C under a high-emissions scenario.

3.3°C

rise in average temperature across the Central Coast by 2090 under a high-emissions scenario

6 of 10

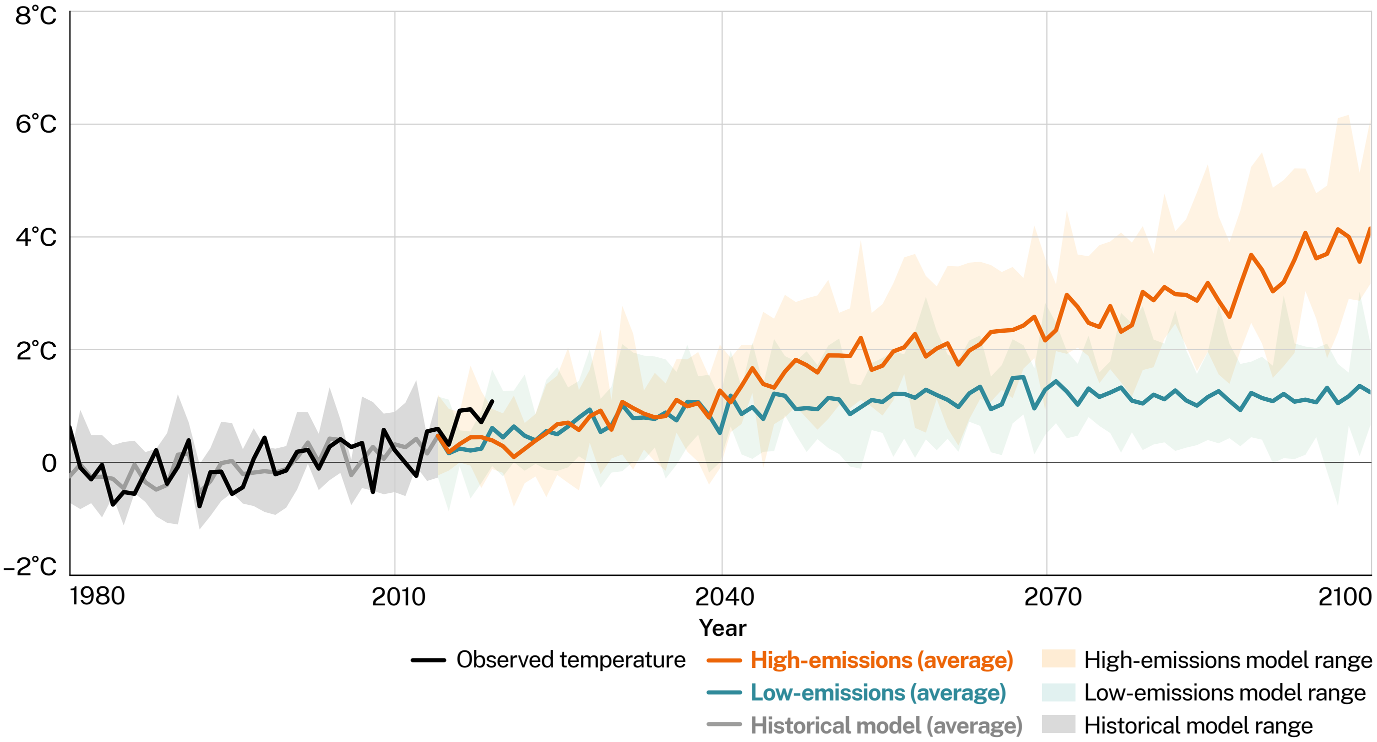
warmest years on record have occurred since 2013

Table 2. Projected average annual temperature increase – Central Coast

	2050		2090	
	Low-emissions	High-emissions	Low-emissions	High-emissions
Temperature	**1.0°C** (0.6–1.7°C)	**1.7°C** (0.9–2.7°C)	**1.2°C** (0.5–2.0°C)	**3.3°C** (2.3–4.9°C)
Maximum temperature	**1.1°C** (0.6–1.8°C)	**1.8°C** (1.1–2.9°C)	**1.2°C** (0.4–2.2°C)	**3.3°C** (2.3–5.0°C)
Minimum temperature	**1.0°C** (0.6–1.6°C)	**1.7°C** (0.9–2.5°C)	**1.2°C** (0.6–1.8°C)	**3.5°C** (2.4–5.0°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 Coast

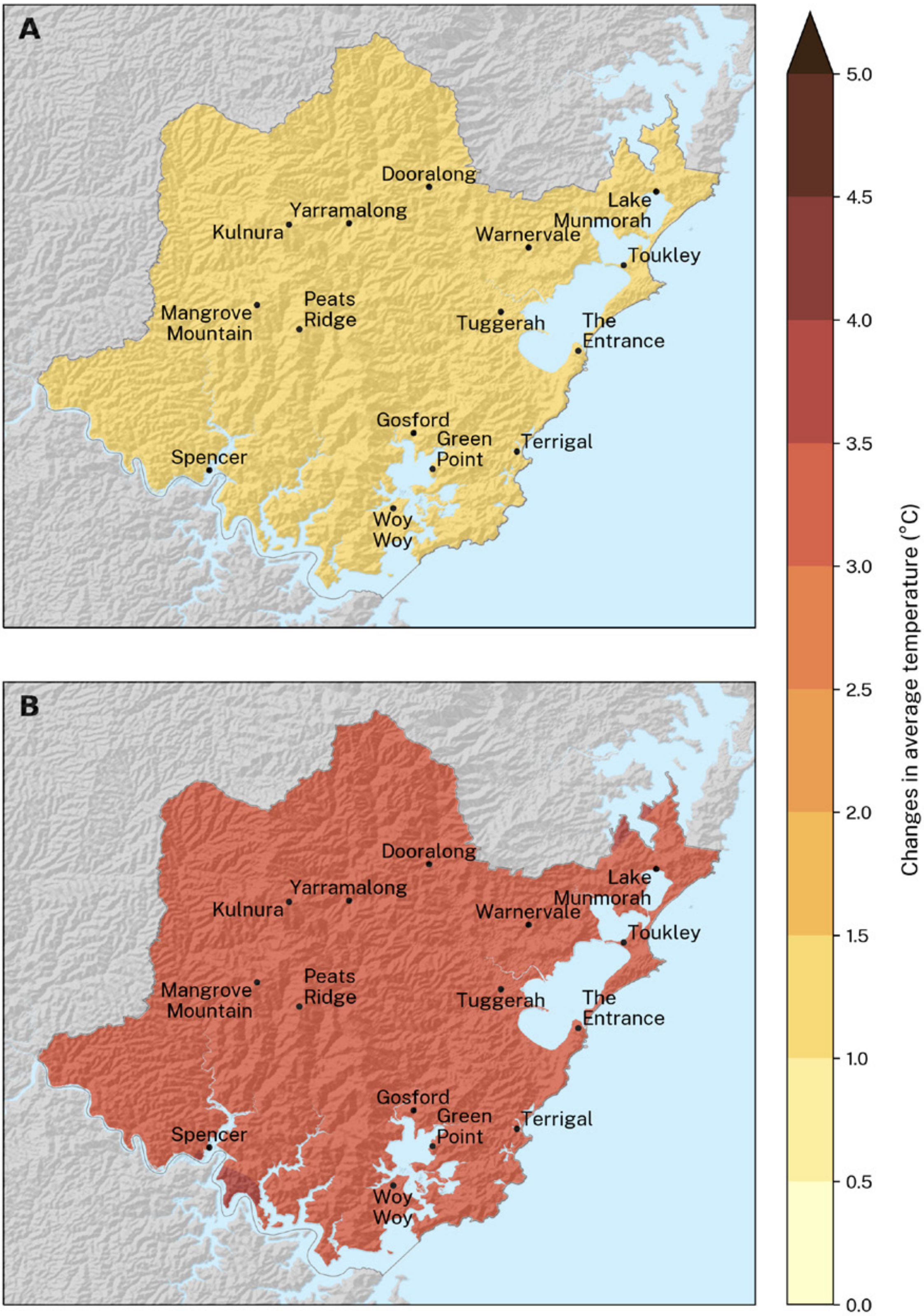


The shading around the graphs

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 Coast under A) a low-emissions scenario and B) a high-emissions scenario



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Hot days

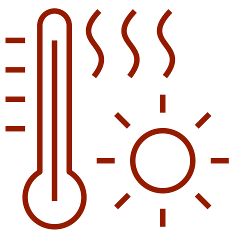
Hot days will become more frequent

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 Coast region increases further inland. Near the coast, there was on average 1 hot day per year during the baseline period. Locations further from the coast, such as Gosford and Mangrove Mountain, had fewer than 5 hot days per year.

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



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

The number of hot days will increase for the Central Coast 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 per year 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 less than 1 additional hot day per year projected across the region between 2050 and 2090 (Table 3). However, an increase of 7.3 additional hot days per year is projected under a high-emissions scenario during the same period.

By 2090, the Central Coast could experience nearly four times the number of hot days under a high-emissions scenario.

The changes will occur across all of the region, with slightly larger increases projected for inland areas such as Mangrove Mountain (Figure 5). By 2090, Gosford is projected to experience 4.9 additional hot days per year under a low-emissions scenario and 12.7 additional hot days per year under a high-emissions scenario. A high-emissions scenario is projected to more than triple Gosford's baseline period average of 4.9 hot days per year. The Entrance's baseline period average is 1.3 hot days per year. By 2090, The Entrance is projected to experience an additional 1 hot day per year under a low-emissions scenario and 2.6 additional hot days per year under a high-emissions scenario.

Table 3. Projected increase in average annual number of hot days – Central Coast

2050		2090	
Low-emissions	High-emissions	Low-emissions	High-emissions
4.3 days (2.1 to 7.7 days)	**6.3 days** (2.5 to 13.5 days)	**5.0 days** (1.4 to 11.5 days)	**13.6 days** (6.4 to 25.0 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 Coast

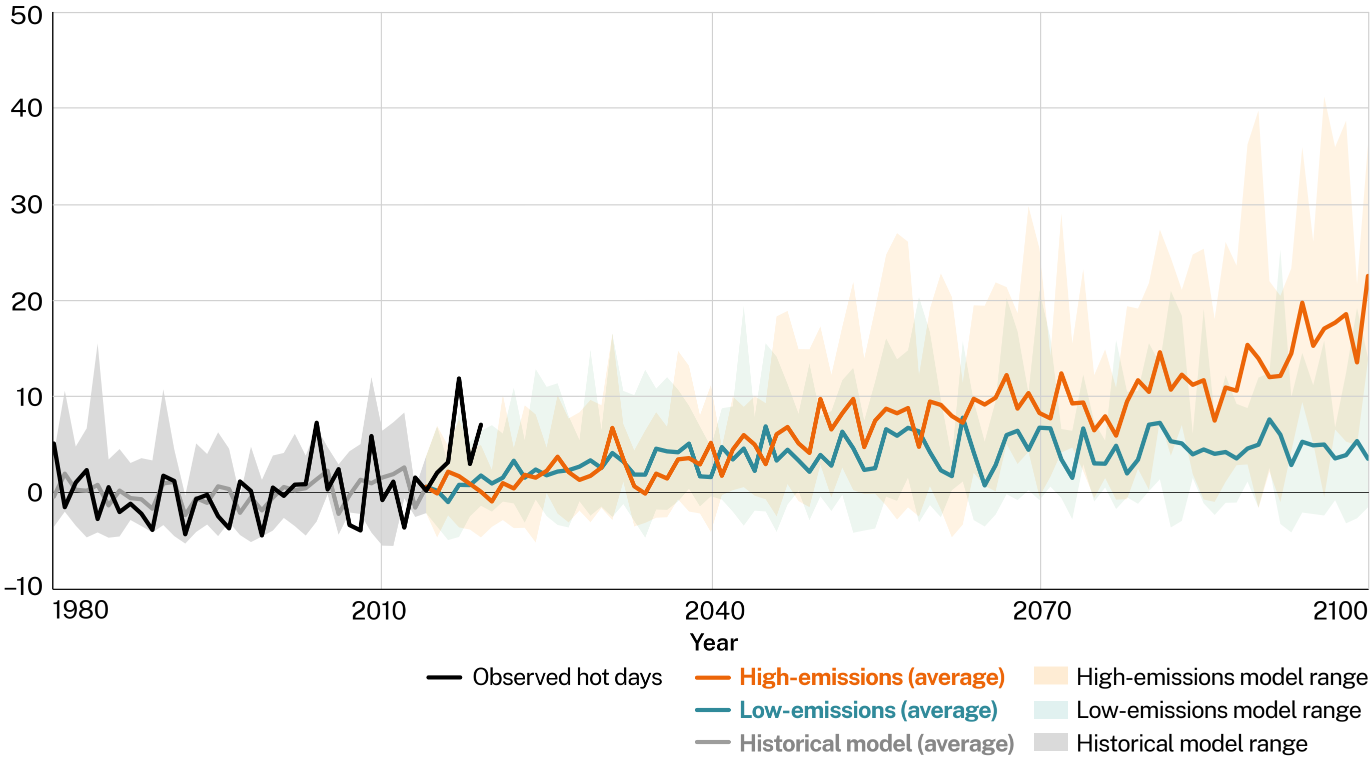
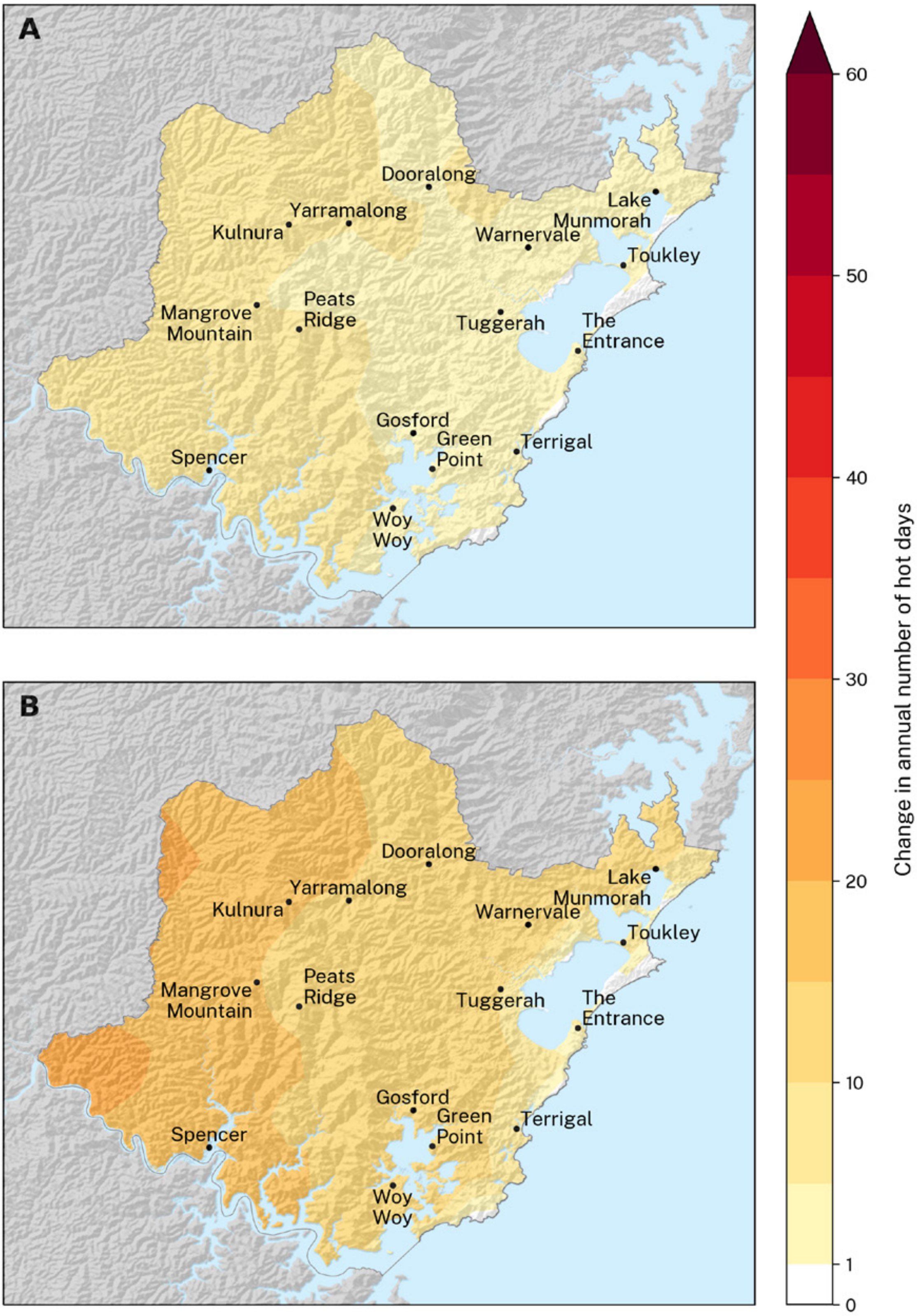


Figure 5. Projected change in annual number of hot days by 2090 for the Central Coast under A) a low-emissions scenario and B) a high-emissions scenario



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

Cold nights occur irregularly in the Central Coast region due to its proximity to the coast. Areas of the region further from the coast, such as Mangrove Mountain and Spencer, experienced on average 2–3 cold nights per year during the baseline period.

The number of cold nights will decrease for the Central Coast 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 in winter, where cold nights occur irregularly.

By 2090, areas of the Central Coast which experience cold nights could experience a greater than 95% reduction in the number of cold nights under a high-emissions scenario.

Cold nights will decrease across some of the region, particularly inland areas of the region that only experience cold nights irregularly (Figure 7). Coastal areas will not experience any changes, as they do not have cold nights below 2°C. Mangrove Mountain's baseline period average is 2.4 cold nights per year. By 2090, Mangrove Mountain is projected to experience 1.5 fewer cold nights per year under a low-emissions scenario and 2.3 fewer cold nights per year under a high-emissions scenario.

Cold nights

Table 4. Projected decrease in average annual number of cold nights – Central Coast

2050		2090	
Low-emissions	High-emissions	Low-emissions	High-emissions
0.8 days (0.4 to 1.2 days)	**1.0 days** (0.5 to 1.6 days)	**0.8 days** (0.4 to 1.3 days)	**1.2 days** (0.8 to 1.6 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 Coast

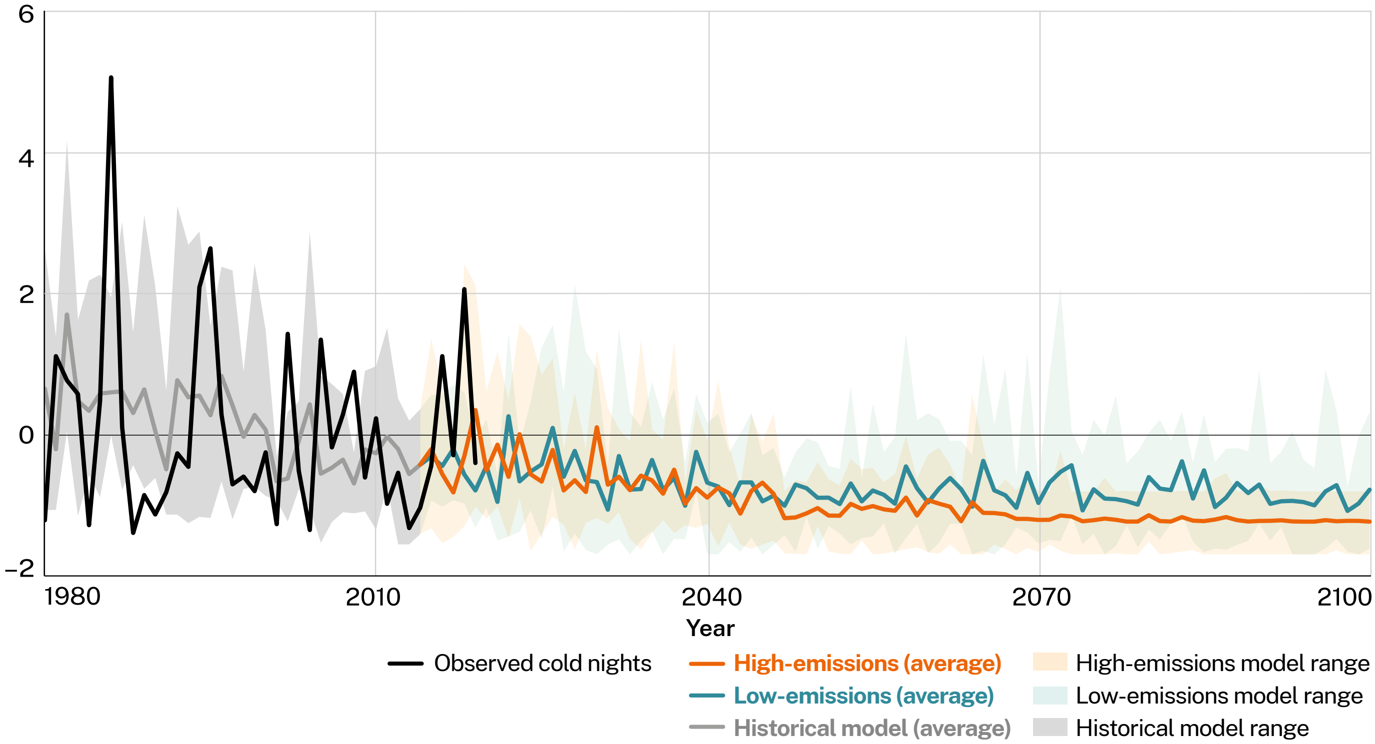
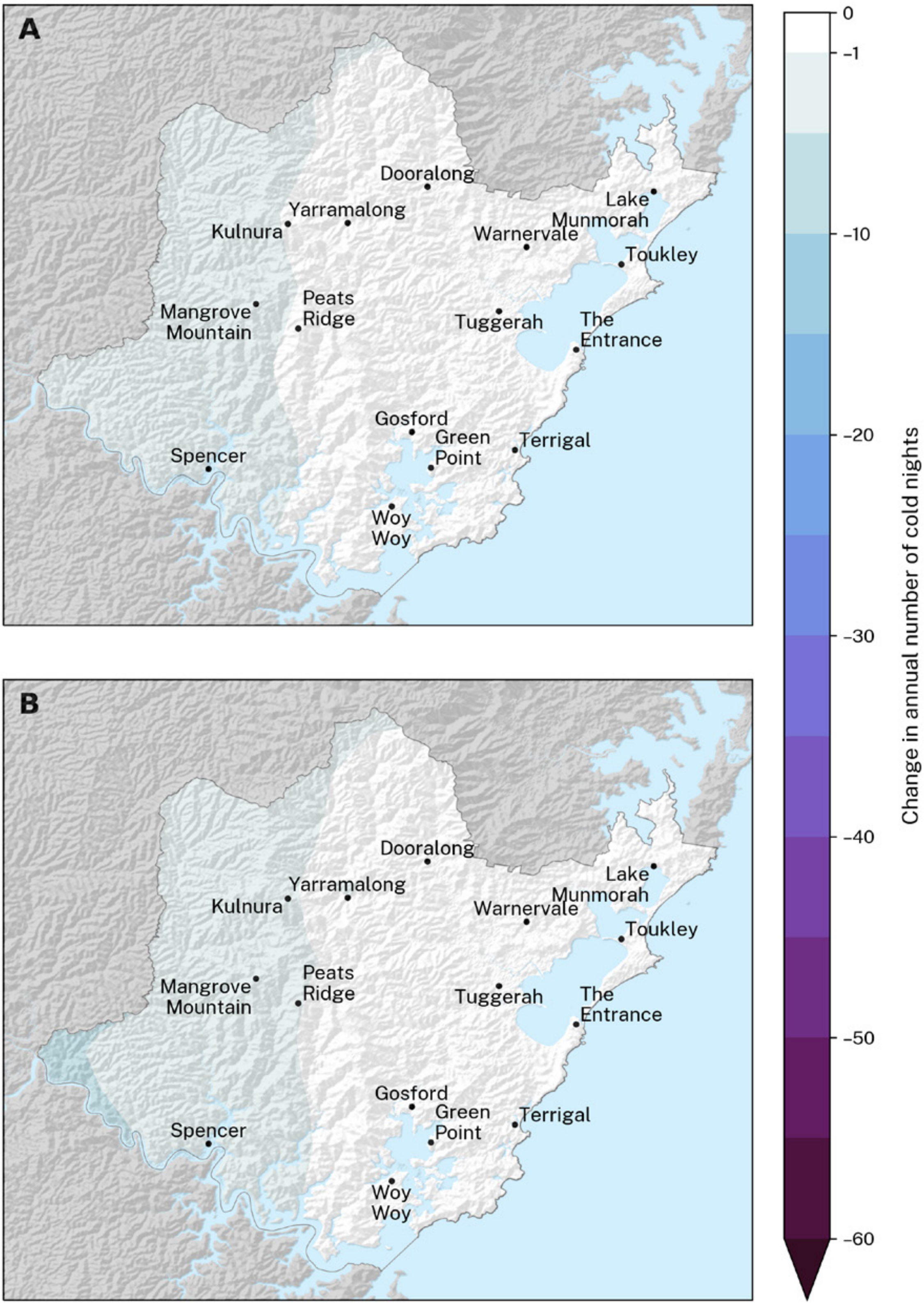


Figure 7. Projected change in annual number of cold nights by 2090 for the Central Coast under A) a low-emissions scenario and B) a high-emissions scenario



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.

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 Coast region averages about 1100mm.[2] Rainfall is greatest in summer and autumn, with a higher proportion of winter rainfall on the coast than inland. The driest year on record was 1944, with an average of only 620mm 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 7% under a low-emissions scenario and by 8% under a high-emissions scenario (Table 5). Changes to average rainfall will occur in all seasons, with the largest changes expected in winter.

By 2090, average winter rainfall is projected to decrease by 19% under a low-emissions scenario and by 30% under a high-emissions scenario (Table 5). Inland areas of the region such as Mangrove Mountain are projected to experience slightly greater decreases.

Average winter rainfall could decrease by 30% across the Central Coast under a high-emissions scenario.

Average autumn and spring rainfall is projected to change by 10% or less across the region by 2090 under both a low-emissions scenario and a high-emissions scenario. Average summer rainfall is projected to decrease by 10% under a low-emissions scenario and by 2% under a high-emissions scenario. Refer to the Interactive Map for further seasonal information.

Table 5. Projected change to average rainfall – Central Coast

	2050		2090	
	Low-emissions	High-emissions	Low-emissions	High-emissions
Annual	**–7.0%** (–17.7% to +5.5%)	**–16.1%** (–27.8% to +0.8%)	**–7.4%** (–22.9% to +6.5%)	**–8.4%** (–33.8% to +28.5%)
Summer	**–10.3%** (–22.2% to +2.7%)	**–18.7%** (–39.6% to +11.6%)	**–10.3%** (–34.4% to +28.8%)	**–1.9%** (–37.9% to +27.8%)
Autumn	**–0.4%** (–20.7% to +19.8%)	**–9.7%** (–27.3% to +14.4%)	**+1.9%** (–21.6% to +26.8%)	**–0.8%** (–19.4% to +50.6%)
Winter	**–14.2%** (–38.7% to +25.0%)	**–30.9%** (–49.2% to –9.0%)	**–18.7%** (–37.6% to –0.1%)	**–30.2%** (–68.6% to +8.7%)
Spring	**–4.7%** (–12.6% to +10.5%)	**–5.3%** (–21.5% to +17.5%)	**–5.8%** (–21.6% to +11.8%)	**–7.0%** (–25.5% to +24.9%)

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 Coast

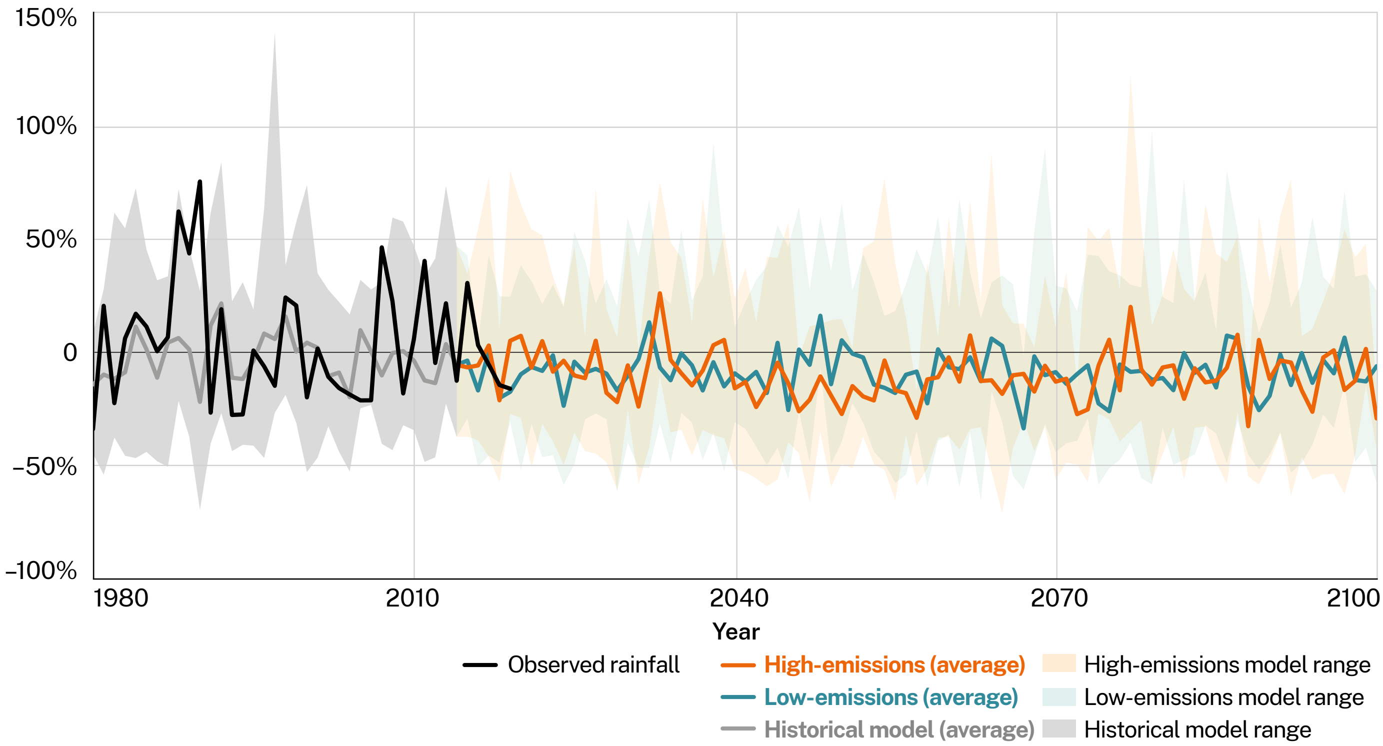
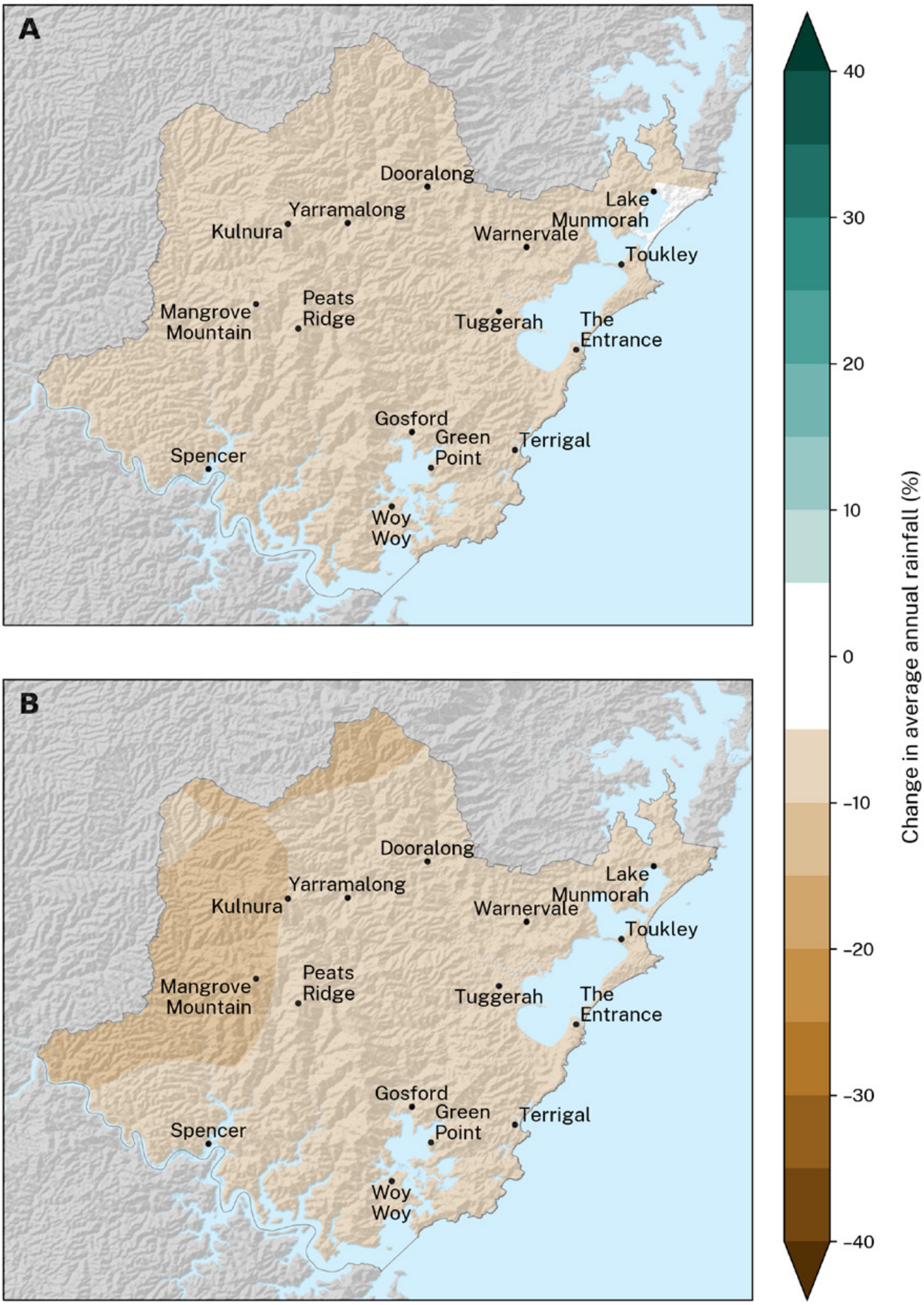


Figure 9. Projected change to average rainfall by 2090 for the Central Coast under A) a low-emissions scenario and B) a high-emissions scenario



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 Coast region is 0.9 days per year on average.[2] The number of severe fire danger days is generally uniform across the region, with slightly more severe fire danger days in some inland areas of the region and slightly fewer for some coastal areas of the region. The record number of severe fire danger days in a year was 2013 with 6.6 days on average across the region. Notable severe fire weather years were also recorded in 1994 and 2002, with approximately 2.8 days and 3.4 days on average across the region for each year, respectively.[2]

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 simulated 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 Coast region by 2050 under 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 spring.

Under a high-emissions scenario, the number of annual severe fire weather days across the Central Coast could more than double by 2090, with the largest increase in spring.

Increases to severe fire weather days are projected to occur across some areas of the region (Figure 11). The greatest increases are projected to occur for areas of the region further from the coast such as Mangrove Mountain, with only small increases projected in some coastal areas. Mangrove Mountain's baseline period average is 1 severe fire weather day. By 2090, Mangrove Mountain is projected to experience 0.6 additional severe fire weather days per year under a low-emissions scenario and 1.9 additional severe fire weather days under a high-emissions scenario per year. In the south, Gosford baseline period average is 0.9 severe fire weather days per year. By 2090, Gosford is projected to experience 0.4 additional fire weather days per year under a low-emissons scenario and 1.3 additional fire weather days per year under a high-emissions scenario.

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

2050		2090	
Low-emissions	High-emissions	Low-emissions	High-emissions
0.7 days (0.0 to 1.4 days)	**0.9 days** (0.0 to 2.3 days)	**0.5 days** (–0.4 to 1.8 days)	**1.6 days** (0.0 to 4.3 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 Coast

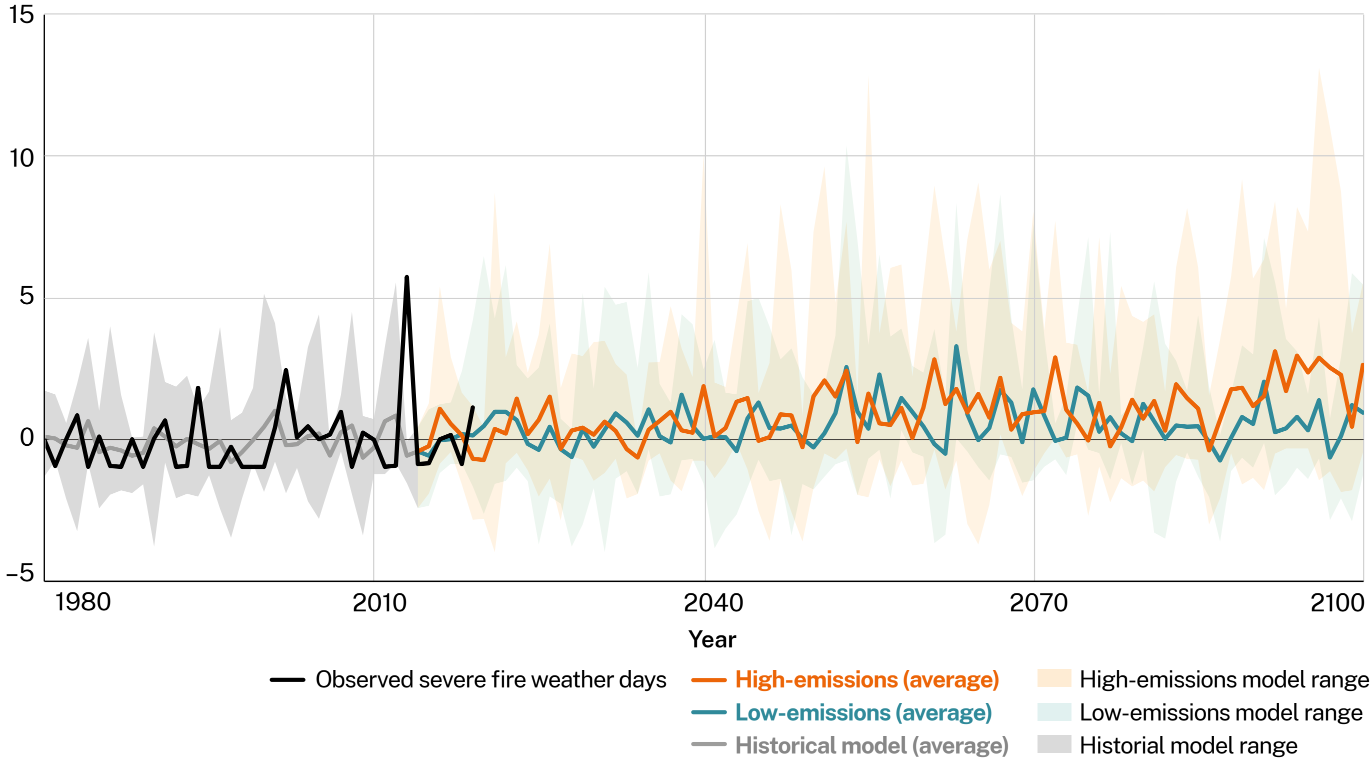
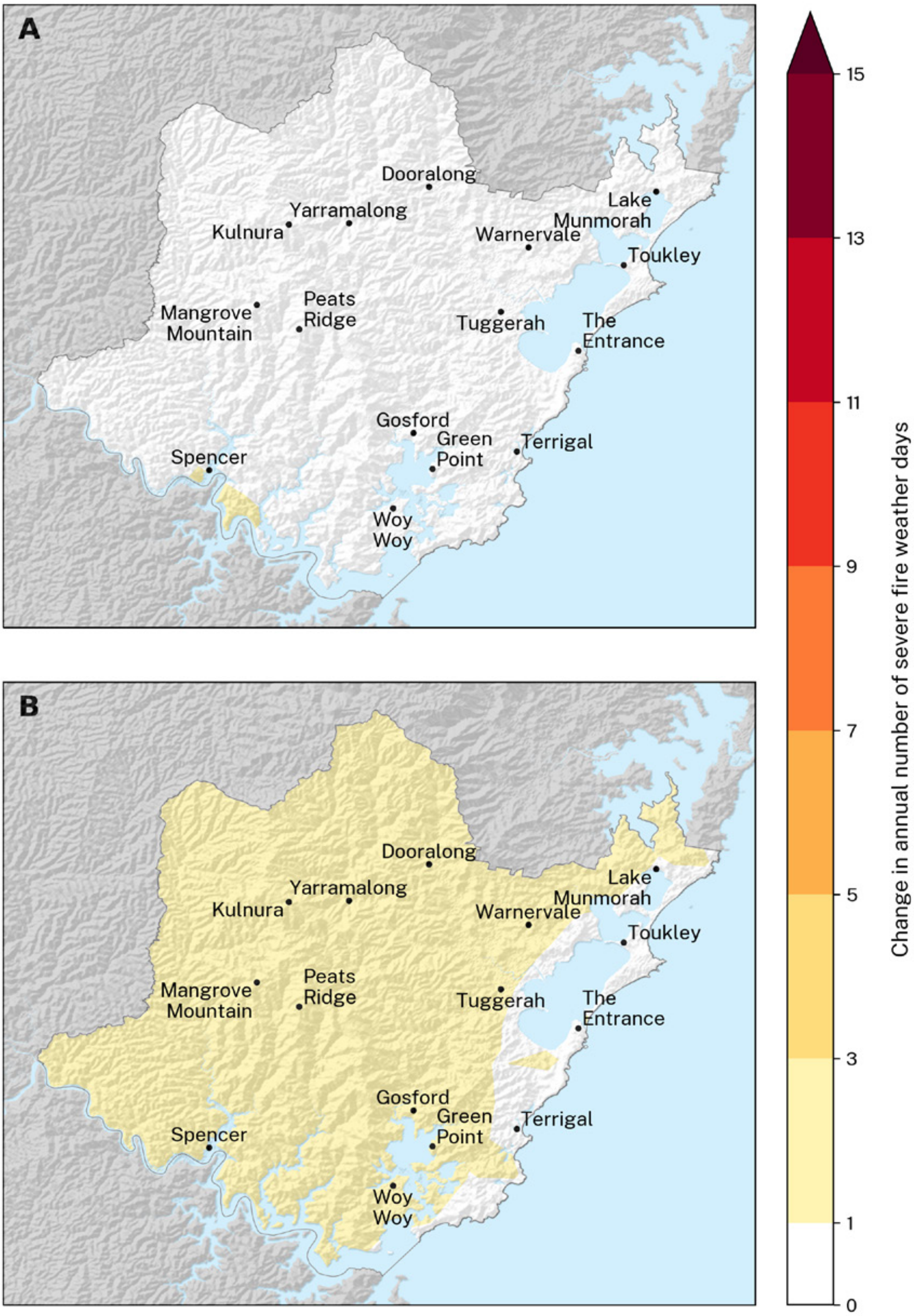


Figure 11. Projected change to annual number of severe fire weather days by 2090 for the Central Coast under A) a low-emissions scenario and B) a high-emissions scenario



Sea-level rise

Sea-level rise will accelerate

Sea levels are rising and are projected to have a major impact on coastal communities in NSW over the coming decades. At the NSW baseline sea-level monitoring gauge at Port Kembla, average sea level has been rising at a rate of approximately 3.7mm/year since 1991.

Sea-level rise of 3.7mm/year has already led to increases in inundation of streets in some NSW coastal communities.[4,5]

The 'likely' range of sea-level rise is presented here by the low (SSP1-2.6) and high (SSP3-7.0) emissions scenarios, to correspond with the NARCliM climate projections. This likely range was assessed by the IPCC as data within an uncertainty interval of 66%. A broader range of projections and uncertainty is available in the 2021 IPCC Sixth Assessment Report.

Sea level for the Central Coast is projected to continue rising under all emissions scenarios. At Newcastle, the nearest projection to the Central Coast, sea level is projected to rise by 14–27cm under a low-emissions scenario and by 18–31cm under a high-emissions scenario by 2050 relative to a baseline period of 1995–2014.

Later in the century, sea-level rise is projected to accelerate under both emissions scenarios, with significantly faster acceleration under a high-emissions scenario. Sea-level rise by 2100 is projected to be 30–62cm under a low-emissions scenario and 55–96cm under a high-emissions scenario. Even greater sea-level rise will occur by 2150, with a projected rise of 43–102cm under a low-emissions scenario and 90–174cm under a high-emissions scenario.

These projections do not factor in contributions from ice-sheet instability, which have high uncertainty. The IPCC addresses this uncertainty by providing modelling explained in a low-likelihood, high-impact storyline assessed as 'low-confidence'. At Newcastle, this low-confidence modelling indicates a potential upper limit of sea-level rise of 43cm by 2050, 1.7m by 2100 and 4.9m by 2150.

Sea-level rise will continue for centuries to millennia due to the longer-term response of the oceans and ice sheets to climate change.

In the longer term, the IPCC indicates sea level will rise for centuries to millennia due to continuing deep ocean warming and ice-sheet melt remaining elevated for thousands of years. If global warming is limited to 1.5°C, average sea level will rise by about 2–3m worldwide. For 2°C warming, sea-level rise of 2–6m is expected, and for 5°C warming, 19–22m is expected.

Climate change impacts on the Central Coast

Climate change is already impacting the Central Coast region, particularly through increased temperatures and sea-level rise. Climate change will continue impacting a variety of important economic, cultural and environmental values across the region.

Increased heat stress

Significant population growth is expected in the Central Coast region in the coming decades, from a population of around 347,500 people in 2021 to more than 404,250 people by 2041. The increasing urbanisation of the Central Coast presents a risk of amplifying the average temperature increase from climate change through new built structures, the materials used in the built structures and vegetation removal to accommodate urban growth. Climate change impacts on urban heat intensity will be worse under a high-emissions scenario.

Bushfires

The region also experienced significant impacts during the 2019–2020 bushfire season with extensive impacts on communities. While large-scale bushfires did not occur in the region itself, there were 16 premature deaths as well as 16 cardiovascular disease and 69 respiratory disease hospitalisations across the region from poor air quality caused by the bushfires.[6] Severe fire danger days, which create the underlying conditions for large-scale bushfires, are expected to become more common in the future, particularly under a high-emissions scenario.

Sea-level rise

Increasing urbanisation also presents a risk of increasing costs to respond to coastal erosion and inundation from sea-level rise across the region over the next 50–100 years. For coastal erosion, several areas around the region are highly vulnerable, including The Entrance, North Hargreaves Beach, Norah Head, Wamberal Beach and Terrigal Beach. For inundation, there are significant areas of development around tidal lakes such as Tuggerah Lakes and Brisbane Water, and along the coastline from Cockrone to Wamberal, which are only marginally above current high-tide levels and will be highly vulnerable to inundation from sea-level rise.[7]

References

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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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