BELLINGEN SHIRE COUNCIL

Community Climate Adaptation Workshop

Pre-workshop reading pack

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Introduction

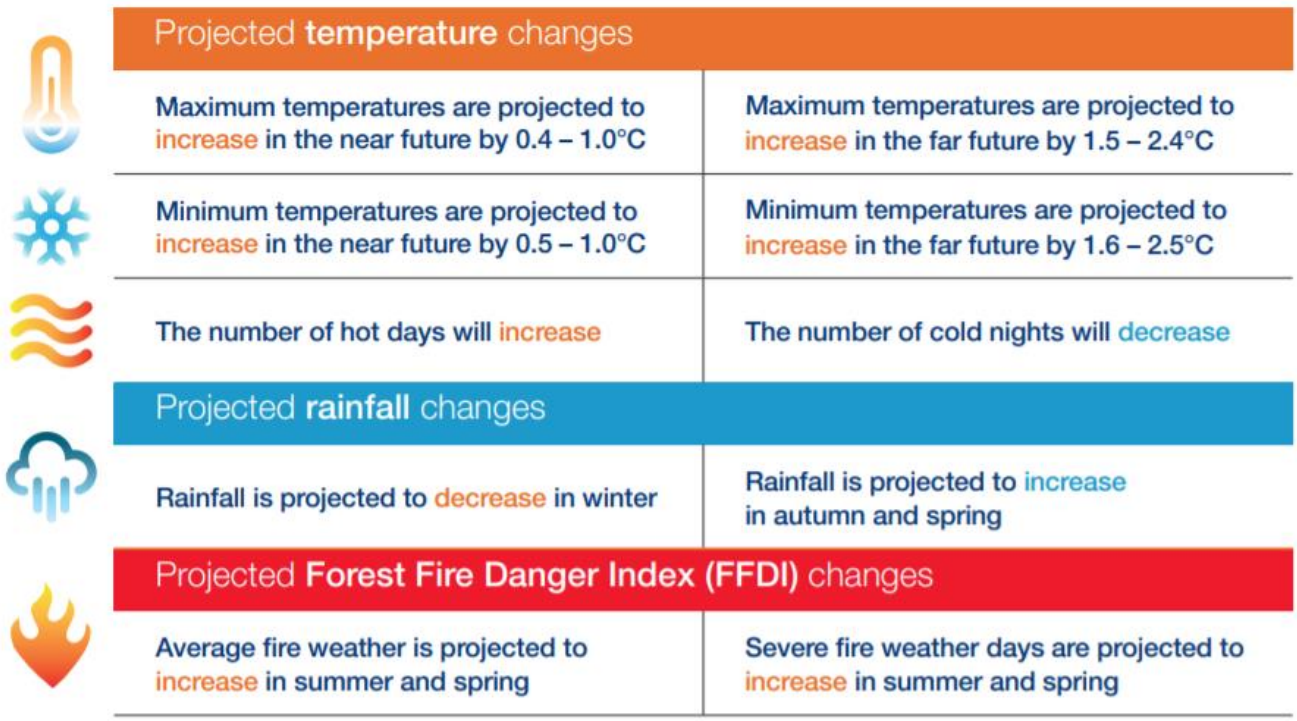
This pre-reading pack is to help community stakeholders prepare for the upcoming climate change workshop. Bellingen Shire Council has committed to strong actions to cut emissions and reduce its contribution to climate change from council buildings, infrastructure and operations. The Council also seeks to support our community do the same.

Unfortunately, we are already experiencing the impacts of climate-related events. Managing climate change-related risks is no longer a theoretical task limited to planning for the future. This information is aimed to get you thinking about what impacts climate change has on the Bellingen Shire and what it means for you and our community. We want to explore how the Council and community can best collaborate to help us all adapt to the changes already locked into the climate system, whilst at the same time working to prevent further global warming.

Snapshot of climate change for the North Coast

The snapshots of projected climate change impacts for the NSW North Coast in the table below were taken from the AdaptNSW website, which is the NSW Government's on-line portal for all climate science, policy and practical tools to support action on both climate change adaptation and mitigation. AdaptNSW uses the NARCliM climate model which represents the best available projections currently available to us and demonstrates a scenario based on the maintenance of current global emissions, known as Representative Concentration Pathway (RCP) 8.5. RCP is a greenhouse gas concentration (not emissions) trajectory. Four pathways have been selected for climate modelling and research, which describe different climate futures, all of which are considered possible depending on how much GHGs are emitted in the years to come.

Fig 1: Adapt NSW projections for North Coast NSW 2020-2039 (near future) and 2060-2079 (far future)



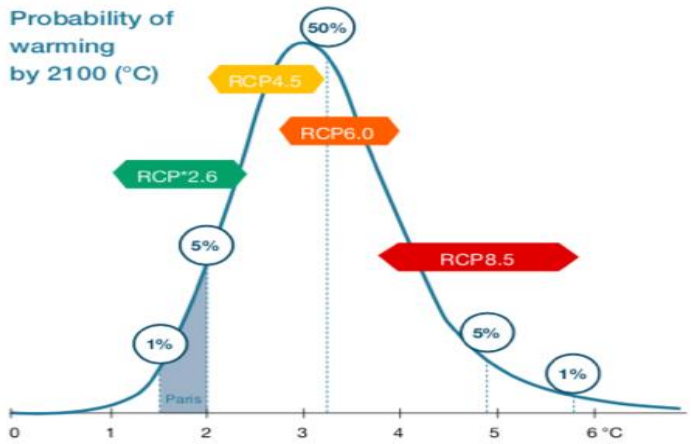
All data sourced from the AdaptNSW, North Coast Climate Change Snapshot.

Broader Context

The **Paris Agreement** is a legally binding international treaty on climate change that was adopted in December 2015 at the Conference of the Parties 21. It set out a global framework to avoid dangerous **climate** change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C. 196 members of the United Nations Framework Convention on Climate Change are parties to the agreement, including Australia which committed to a 26-28% reduction of greenhouse gas emissions by 2030 from a 2005 baseline. The Agreement aims to increase the ability of countries to deal with the impacts of climate change and to achieve climate-resilient pathways.

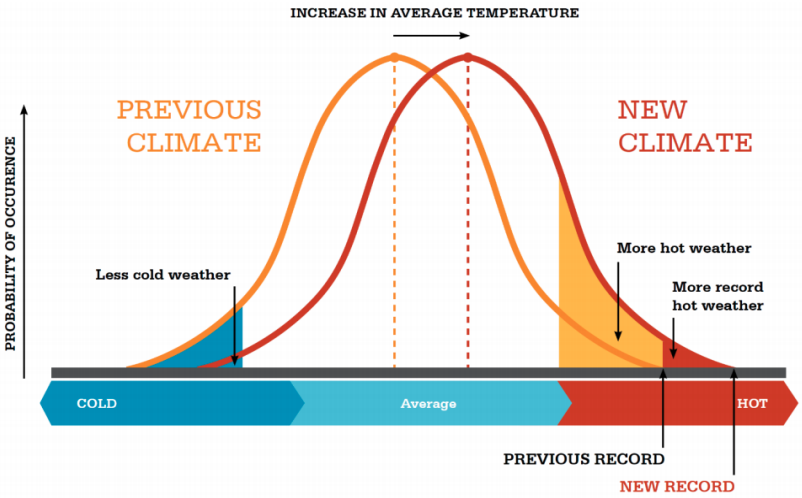
A report from the 2019 Chief Risk Officers Forum[1] (CRO Forum) shows the probability of achieving the Paris Agreement target of 1.5-2.0°C globally is slim and that 3-4°C is most likely. This highlights the importance for communities and all levels of government to prioritise climate risk mitigation, whilst simultaneously adapting to the impacts of the changing climate.

Fig 2: Chief Risk Officers Forum projections of global warming by 2100



It is important to note that the 'averages' discussed do not reflect extreme weather days or seasons. A 2°C increase in average temperature will have a significant impact on the number of hot weather days and potential extreme rainfall events in the region.

Fig 3: Why 2°C is sometimes more than it seems[2]



[1] https://www.thecroforum.org/tag/climate-change/

[2] https://wsroc.com.au/media-a-resources/reports/send/3-reports/306-wsroc-urban-heat-planning-toolkit

What will this mean for the Bellingen Shire?

The Bellingen Shire Council declared a climate emergency in March 2019. In response to the declaration the Council developed a Climate Emergency Response Framework (the Framework) that outlines how we will work together with our community to act on the climate emergency as quickly and as effectively as possible. We have already accelerated our corporate carbon emissions reduction targets and climate change initiatives as set out in our Corporate Carbon Plan. We have set ambitious targets and we are already well on track to do our part in meeting the key outcomes of the Conference of the Parties 26 held in Glasgow in November 2021. Our emissions targets include:

- 100% renewable energy by 2030
- 45% gross emissions reduction by 2030 (based on 2010 levels)
- Net zero emissions (carbon neutral) by 2040.

An important part of the Climate Emergency Response Framework was a commitment to developing a Community Adaptation Plan. The workshop being held in February 2022 will bring together leaders in our community to help us identify options for adaptation that will increase our community's resilience to future climate risks.

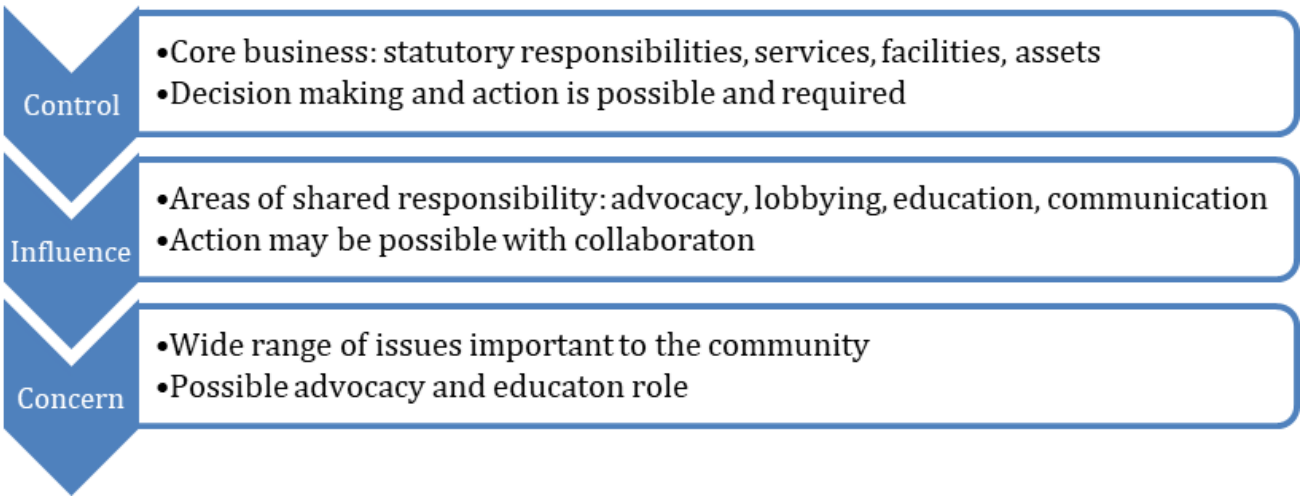
There are several *key potential climate impacts for consideration* at the workshop when prioritising options for community actions, including:

- **Rainfall and flooding**: the likelihood of flooding will increase with climate change resulting in risks to personal safety, damage to property, disruption and dislocation of community.
- **Water resilience:** overall rainfall is projected to decrease, so drought periods may occur impacting access to reliable water supplies.
- **Biodiversity**: local biodiversity is likely to come under pressure due to changes to seasonal and extreme temperatures and rainfall patterns.
- **Food security**: Future changes in climate may impact agricultural productivity affecting food security which will disproportionately impact lower socio-economic groups.
- **Heat**: prolonged hot periods are likely to impact the incidence of illness and death – particularly among vulnerable population groups The safety of outdoor workers, as wells as participants in outdoor events and activities, must also be considered.
- **Access to Energy:** extreme heat will lead to increased dependence on air conditioning at times when electricity is likely to be most expensive and when the grid is under the most strain.
- **Sea level rise (SLR) and storm tide inundation (STI)**: continued impacts from rising sea level are expected along coastal areas of the Shire. This will impact beaches, properties, infrastructure and estuaries.
- **Bushfire**: high fire danger days are expected to increase and, although bushfire is not a common risk in the Bellingen Shire, some level of disruption and periods of reduced air quality are likely.

Understanding Council's role and interdependencies

Working effectively together to develop options for climate action will require community understanding of the role Council is able to play in responding to future climate risk. It will be important to recognise that Council does not have control of all the factors that contribute to managing many climate risks or adaptation and mitigation actions. The diagram below may assist in understanding interdependent risks and opportunities.

Fig 4: Local Government Spheres of Influence
(adapted from "Adapting for Climate Change: A long term strategy for the City of Sydney")



Experts talk - climate change perspectives

Our understanding of climate science and the required response to it is constantly evolving. The links to talks below provide a range of expert perspectives on the data, challenges and opportunities.

1. Climate Change 2021 – Why we need action urgently
   Professor Will Steffen (ANU, Climate Council), webinar delivered to Renew, 21 September 2021. The talk covers the latest science delivered in the IPCC report on the Physical Science (AR6) and offers some positive stories from Australia on climate mitigation.

2. Christiana Figueres - The Future We Choose
   Christiana Figueres is a Costa Rican diplomat who led the UN Framework Convention on Climate Change at the 2016 Paris Agreement. Here she is in a light-hearted, yet serious conversation with Professor Emma Johnston, the UNSW Dean of Science, recorded live at UNSW on 9 April 2020. Figueres, who describes herself as a stubborn optimist, offers 10 practical steps to cut our climate impact that we can all take today. This talk is essential to transforming the climate change narrative from blame games and political rhetoric, to optimism and purpose-driven action.

Links to additional resources

- The NSW Government AdaptNSW portal provides many resources for government, business and the community, specific to local regions.
- To help local government staff manage potential risks arising from climate change, AdaptNSW has prepared the Guide to Climate Change Risk Assessment for NSW Local Government.
- Local Government NSW has resources to support councils address climate change, including case studies and surveys to understand where other councils stand on climate change risk management.
- The United Nations Sustainable Development Goals, in particular, number 13 Climate Action, sets out a series of targets around climate mitigation and adaptation.
- The Climate Council is an Australian not-for-profit climate change communications organisation providing authoritative, expert advice to the Australian public on climate change.
- Climate Change 2020 – Why we are facing an emergency
  Professor Will Steffen (ANU, Climate Council), webinar delivered to Renew, 22 April 2020. The talk covers lessons from the international response to Covid19 that could apply to how we tackle climate change.
- The Coalition for Community Energy (C4CE) is the peak body of the growing community energy sector in Australia. C4CE sees community energy as being cooperatively spirited, commercially driven and environmentally minded.
- United Nations Climate Action – Report on CoP 26, Glasgow, November 2021

Key Terminology

Term	Definition
Physical risk	The impact of climate hazards, both shocks such as flooding, extreme heat and bushfires, and stresses such as drought and habitat loss
Transition risk	The disruptive changes that will occur in the transition to the low carbon economy, eg stranded assets, changes to regulations, obtaining insurance
Liability risk	Risks for those associated with and responsible for contributing to, or not acting to address, climate change risks
Interdependent risks	Risks that are dependent on other organisations, systems and infrastructure
Mitigation	Reducing and soon eliminating emissions that contribute to climate change
Adaptation	Adjustment which moderates harm or exploits opportunities
Shocks	Acute events with direct impacts, such as extreme heat, bushfires and floods.
Stresses	Chronic phenomenon with longer-term and drawn-out impact, such as drought and changes in habitat.
Greenhouse gas	Greenhouse gases are gases in Earth's atmosphere that trap heat. They let sunlight pass through the atmosphere, but they prevent the heat from leaving the atmosphere. They include water vapour (H2O), carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4) and ozone (O3)
Scope 1 emissions	Direct emissions from owned or controlled sources
Scope 2 emissions	Indirect emissions from the generation of purchased energy
Scope 3 emissions	All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions, supply chain and embodied carbon
Carbon neutral	Carbon neutrality refers to achieving net-zero carbon dioxide emissions by balancing carbon emissions reductions and carbon removal (sequestration).

A further, more detailed glossary of climate change terms is available from the CSIRO at: https://www.climatechangeinaustralia.gov.au/en/support-and-guidance/glossary/#A