

MOVING BEYOND TRANSITION  
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## ABSTRACT

### NARCLiM2.0 - Local scale CMIP6 regional climate projections for adaptation and resilience planning in Australia

To understand and plan for the likely impacts of climate change, we need trusted data and tools. For over a decade, the NSW and Australian Regional Climate Modelling (NARCLiM) project has provided robust climate change projections to support government, business and communities to plan for climate change. A new generation of NARCLiM is now available, with more detailed projections based on world-leading climate science. This new generation, known as NARCLiM2.0, provides more than 150 climate variables across 150 years of continuous climate-modelled data, spanning from 1951 to 2100. NARCLiM2.0 has adopted the latest global greenhouse gas emissions scenarios from the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, including low (SSP1-2.6), medium (SSP2-4.5) and high (SSP3-7.0) emission scenarios, and uses the latest IPCC global climate models (CMIP6). NARCLiM2.0 provides a higher resolution than previous generations of NARCLiM. For south-eastern Australia, the new data is 4km grid cell resolution, which is a major improvement on the 10km resolution available previously. This improved resolution means that data can better inform decision-making and planning at local and regional levels, such as climate risk assessments for individual suburbs or planning zones. Importantly, at this scale NARCLiM explicitly models convection, capturing storms and their impacts in more detail than ever before, and providing unprecedented information on our future storm climates. More broadly, over the Australasian domain (including New Zealand, PNG and much of Indonesia), NARCLiM provides data at 20km resolution, sufficient for many climate risk assessments across multiple sectors and regions. NARCLiM data is freely and openly available through a range of tools and portals and in a number of different formats. This presentation will outline the key outcomes of NARCLiM2.0, improvements in modelling and provide examples and case studies of how NARCLiM is helping adaptation planning and programs that build our climate resilience.

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### Three key takeaways

1. NARCLiM2.0 provides fine scale (4km) CMIP6 derived climate projections over a large part of SE Australia and at 20km resolution over the Australian continent, New Zealand, PNG and a large part of Indonesia.
2. NARCLiM2.0 provides unprecedented information on future climate change at scales relevant to local and regional decision making.
3. Environment professionals have access to a range of freely available data from NARCLiM2.0 to assist with environmental assessments, climate risk assessments and resilience planning.

## SPEAKER BIOGRAPHY

Matthew Riley is an experienced Science Director with a proven track record of delivering high impact environmental research and services that deliver significant public good. His work for the New South Wales Government delivering multi-million dollar programs in climate change impacts and adaptation, greenhouse gas emissions, air pollution, and energy and energy efficiency has led to significant benefits for the people and businesses of NSW. He leads a team of skilled climate and atmospheric researchers, technicians, software engineers and data analysts that study and observe our climate, urban air quality and meteorology, greenhouse gas emissions and energy systems. His team provides high quality policy advice for Government and produces data and information that protects public health through improved air quality and air pollution alerts, guides the transition to net zero emissions and supports communities and businesses to prepare for the impacts of climate change. Along with representation on numerous national advisory boards and committees, Matthew is a member of EIANZ, a Fellow of the Australian Institute of Energy, and on the national executive of the Clean Air Society of Australia and New Zealand