# **Building NARCliM data**

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NARCliM data are designed and developed using world-leading science and methods coupled with stakeholder and user consultation. Each generation of **NARCliM** data are rigorously tested and quality assured making them the gold standard for regional climate modelling in Australia. As the science advances, our knowledge of the climate systems improves, and climate models are updated to incorporate this new information. Likewise, each new generation of NARCliM is built on the latest available science as well as ongoing user feedback to ensure scientific rigor and usability.

Inputs are defined by stakeholder and end-user needs, and obtained from highly reputable sources.

#### Stakeholder and end-user needs

Stakeholder and user needs are captured, for example through workshops, face-to-face meetings, codesign webinars and surveys.

## Latest global information and methodology

incorporates a subset of the same Global Climate Models (GCMs) and emissions scenarios as used by the Intergovernmental Panel on Climate Change (IPCC), the world-leading authority on climate change.

The NARCliM methodology

#### Research partnerships and collaborations

Through strategic partnerships and key collaborations, the NARCliM project brings together scientific expertise to deliver regional climate projections for NSW and the Australian continent.

### **Local information**

NARCliM dynamically downscales output from carefully selected GCMs. NARCliM utilises the Weather Research and Forecasting (WRF) Model as a Regional Climate Model (RCM) and is guided by the CORDEX framework. The downscaling is performed at a higher spatial resolution, to better resolve local features such as topography. The NARCliM output is therefore of more relevance for local users than the coarse GCM data.

> A large selection of GCMs are evaluated and tested by our climate scientists for their accuracy in simulating the Australian climate, their statistical independence and climate diversity. They also select, configure, and test RCMs to perform the downscaling.

Feedback from stakeholders and end-users as well as scientific advancements play a critical role in informing the design of the



A series of simulations are run using the selected GCM-RCMs combinations following the CORDEX methodology as closely as technically feasible.

Following extensive review and testing, NARCliM data are released to end-users through the NSW Climate Data Portal and through accessible downstream products published on the AdaptNSW website.

End-users from sectors including government, business and higher education access and use the data and downstream products for a range of purposes including risk and vulnerability assessments, research, policy and decision-making.

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**Build and** 

test

Run

simulations

**NARCIIM data** 

and products

https://www.climatechange.environment.nsw.gov.au/narclim