



Do you need to plan and adapt for climate change impacts on water?

Step-by-step, decision support tool:

Guide to future climate projections for water management in Western Australia

Describes a framework for a systematic climate impact assessment

Explains a contemporary approach to applying climate projections when evaluating water-related risks and opportunities

Navigates rapidly advancing climate science

Accommodates any set of climate projections

Explores climate projections modelling for WA's climate

Replaces *Selection of future climate projections for Western Australia* (Department of Water, 2015)

Enables water planners and decision-makers throughout WA to make locally relevant choices when assessing potential climate change impacts

Boost your confidence and abilities in:

- appropriately accounting for the range of plausible climate futures in water resource planning
- managing uncertainty in a climate-dependent water decision
- assessing key climate risks specific to a resource.

Available at
wa.gov.au/climate-projections-for-water-guide



Reviewed by experts – across hydroclimate, climate science and water management sectors – at the Bureau of Meteorology, CSIRO, Water Corporation, National Environmental Science Program Climate Systems Hub, and the Victorian Department of Energy, Environment and Climate Action.

Contemporary climate assessment framework – overview

Applying projections and making decisions in water management

Water system and climate context



Understand context

Understand the purpose and outcomes of an assessment by:

- understanding the context of your assessment or decision – know what question you are trying to answer
- considering future time periods and adaptive management options
- tailoring your assessment to meet your stakeholders' and users' needs.



Understand the water system

Build a picture of how the water system works by:

- looking at historical data to understand the resource
- identifying vulnerabilities, thresholds and system priorities
- identifying climate characteristics that drive the system.



Understand potential impacts and consequences

Assess how the drivers of the system are projected to change by:

- looking at the climate projections and summarising measures of climate important to the water resource
- deciding whether you need to choose a subset or use all the projections in a climate assessment
- considering possible impacts and consequences for the decision in the context of climate change.

The Guide to future climate projections for water management in Western Australia:

- helps manage our most precious resource using up-to-date climate projections and assessment strategies
- reinforces efforts to improve WA's future climate resilience
- facilitates choosing climate adaptation actions today that will likely best serve WA's water needs in future.

Future climate water assessment



Assess future climates

Explore the potential impacts of future climates by:

- using the chosen climate projections in a resource assessment
- undertaking an iterative process to exploring different parameters
- utilising existing modelling (e.g. hydrological) techniques.

Steps may be concurrent, iterative and/or redesigned depending on climate adaptation planning.



Evaluate potential climate impacts

Use knowledge of impacts and consequences to:

- assess the range of consequences across the plausible futures
- explore resilience of the water resource to impacts from different climate futures.



Treat potential climate impacts

Use the connections made between climate change and the water resource to:

- evaluate adaptation options and management strategies for mitigating high-risk outcomes
- assess the need for contingency plans
- decide whether to redesign and re-evaluate to move the outcome into the desired risk zone.

Communication



Communicate findings

Storylines help to explore potential outcomes and impacts of future climates by:

- linking a changing climate to modelling and assessment results
- identifying how different future climates will result in a range of impacts, risks and adaptation opportunities
- communicating how potential changes in future climate link to climate and system drivers – eventual outcomes will depend on the future climate that unfolds.