



Selecting climate futures for NRM planning

Making the most of new and prior information

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In NRM, potential futures need to be built from 'climate futures' but also from associated impacts information, integrated across domains. To do this efficiently, it is critical that we make the best use of information that already exists and build on it into the future. We present a process for selecting climate futures to plan for that will achieve this.

Multiple futures

Climate adaptation depends on visioning and planning for multiple futures because we cannot be certain what the future will hold. In NRM, 'futures' need to integrate:

- climate information
- impacts information across domains
- potential human responses

Thus, impacts and response data for all domains (water, agriculture, biodiversity, etc.) must come from the same set of future climates.

A logical future cannot be constructed by combining water impacts for a wetter future with agricultural impacts for a drier future.

Info on impacts in water, agriculture, biodiversity, and human society is not simultaneously available for the same future climates.

Can we select a tractable number of future climates to plan for that will make the best use of the diversity of existing information?

Build on the Climate Futures tool

The Climate Futures tool generates tables that can synthesise hundreds of model projections into 20 general 'climate futures' with their associated likelihoods.

To make use of existing impacts and response information, it needs to be aligned with these climate futures.

How to align info & select climate futures for planning

- STEP 1** – Gather existing impacts info
- STEP 2** – Select future points in time to consider in planning
- STEP 3** – Explore the likelihood of the 20 different climate futures (Fig. 1)
- STEP 4** – Overlay existing information onto the climate futures table (Fig. 2)
- STEP 5** – Consider your approach to risk, and thus desire to consider less likely but more extreme futures in planning
- STEP 6** – Select 3-4 climate futures that allow you to use the most existing information, encompass your most likely future(s), and provide a diversity of futures consistent with your approach to risk (Fig. 3)

Complete guide available from Veronica Doerr: veronica.doerr@csiro.au

	Slightly Warmer	Warmer	Slightly Hotter	Much Hotter
Much Drier		2030 - very low	2050 - low 2070 - low	2070 - low
Drier		2030 - low 2050 - very low	2030 - very low 2050 - low 2070 - low	2070 - very low
Little Change	2030 - very low	2030 - moderate 2050 - low 2070 - very low	2030 - very low 2050 - low 2070 - low	2070 - very low
Wetter	2030 - very low	2030 - low 2050 - low 2070 - very low	2050 - very low 2070 - low	
Much Wetter		2030 - very low		



	Slightly Warmer	Warmer	Slightly Hotter	Much Hotter
Much Drier		EnSym	Water	Carbon
Drier		EnSym Water	Water Carbon	
Little Change		EnSym Water Carbon Biodiversity	Water	
Wetter		EnSym	Water	
Much Wetter				



	Slightly Warmer	Warmer	Slightly Hotter	Much Hotter
Much Drier			2050	2070
Drier			2030 2050 2070	
Little Change		2030 2050 2070		
Wetter				
Much Wetter				

Figure 1. Likelihoods of different climate futures for the Murray Basin Cluster of NRM regions, from the Climate Futures tool (soon to be publicly accessible on climatechangeinaustralia.gov.au)

Figure 2. Existing impacts information/tools available in the Murray Basin, mapped onto the climate futures table

Figure 3. Resulting simple set of climate futures chosen for integrated NRM planning in the Murray Basin Cluster