

# Predicting water futures: art, science or modelling opinion?

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**Abstract:** There are many varied opinions on modelling climate change impact on water. Methods range from using outputs directly from global or regional climate models, using downscaled climate data to drive landscape or hydrological models and different approaches to model land surface hydrology. The different considerations, or lack of considerations, in potential changes in the climate inputs and in ecohydrology and land-atmosphere feedbacks often lead to different projections. Water projections for different applications and sectors are often derived for inappropriate hydroclimate metrics and using inconsistent methods resulting in dissimilar results that confuses and limits integrated planning in connected sectors. This presentation will discuss the above issues, highlight where climate and water projections science are informing impact-adaptation-vulnerability assessment and where models may be stretched beyond their current abilities. There is potential for the OzEWEX community to share learnings from the different approaches to describe what current science can tell us, and challenges in climate-water modelling and earth systems science to substantially improve prediction and knowledge of water futures.

**Keywords:** *Water futures, Climate change, Prediction, Modelling*