

## **The development of interdisciplinary flow-ecology models for the wetlands of the northern Murray-Darling Basin**

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**Abstract** The purpose of eco-hydrological research within the Rivers Environmental Research Program is to inform decisions made about the application of environmental water over operation and planning timeframes within the northern segment of the Murray-Darling Basin, Australia. The Subprogram has acquired high resolution elevation data and inundation time-series to model the wetland hydraulic properties, and this modelling is forming the basis of wetland hydrological models being developed to link catchment inflows to wetland inundation over timescales ranging from the individual flow event to the 100-year planning horizon. Decision Support Systems are being developed which incorporate the hydrological and ecological response models to allow water resources planners and wetland managers to model the ecological outcomes of water resource planning and climate change scenarios.

**Key words** decision support; ecosystem response; modelling; wetlands; Australia