

## RESEARCH IN PROGRESS

### Ecosystem responses to the delivery of environmental water

#### Monitoring of ecosystem responses to the delivery of environmental water in the Murrumbidgee system (2010 – 2012)

**Funding:** Department of Sustainability, Environment, Water, Population and Communities

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The project team is working in close partnership with staff from the Department of Sustainability, Environment, Water, Population and Communities, NSW office of Environment and Heritage and NSW Office of Water and landholders.

**ILWS Strategic Research Area** Sustainable Water

#### Description:

The aim of this project is to assess the response of wetland communities and ecosystem processes in River Red Gum forests in the second year of flooding following a period of extended drought. This project will build on existing data for frog, vegetation, small bodied fish and wetland productivity. As well as providing statistically robust and defensible data on the response of wetland communities to this important flow event, this project will also allow for adaptive management of follow-up flow events or management interventions to ensure that the specific objectives of the 2011 event are met.

#### Key objectives

1. Quantify the rate of recovery of frog communities and aquatic and riparian plant communities by comparing the baseline pre-drying (1998-2005), immediately after natural flood events (2010/2011) and following the delivery of environmental water in mid 2011
2. Describe the relationship between tadpole and small bodied fishes communities
3. Quantify the exchange of dissolved organic carbon (DOC) and particulate organic carbon (POC) between riverine and wetland systems
4. Assess the changes in biofilm biomass and diversity and abundance and diversity of aquatic macroinvertebrates in reaches downstream of Burrinjuck and Blowering dams in response to the flow pulse.
5. To generate knowledge to assist environmental water managers and dam operators better predict future ecological responses to large releases of environmental water from dams.



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