

# Freshwater Science

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### Stream Experiments at the Catchment Scale

Five papers in this BRIDGES cluster report on a catchment-scale stream restoration experiment in Melbourne, Australia, testing if multi-scale dispersed stormwater control measures can restore a stream ecosystem degraded by urban stormwater runoff. The papers describe experiences and offer lessons learned from researchers, natural resource managers, and the human community who represent the diverse range of actors in socioecological systems. Key points include:

- Catchment-scale experiments can help transform policy and practice, but their success requires substantial effort and time to build trust among the numerous, diverse stakeholders of human-dominated urban ecosystems ([Walsh and Fletcher 2015](#), [Walsh et al. 2015](#)).
- Researchers need to be prepared to adopt an adaptive approach in implementing catchment-scale experiments and to play the lead role in seeking funds for the implementation of the on-ground works ([Walsh et al. 2015](#)).
- Community participants need time to become familiar with and trusting of programs. Projects requiring behavior-change should have realistic expectations about community participation and expect that some of the population will remain unengaged ([Bos and Brown 2015](#)).
- The partnership with researchers increased the willingness and capacity of the local municipality to trial new approaches to stormwater management, leading to long-term commitment, trust, and a culture of learning ([Burns et al. 2015](#)).
- Critical to the success of this project was building institutional commitment through long-term relationships between researchers and practitioners, and risk sharing made possible by co-investment ([Prosser et al. 2015](#)).



**Examples of stormwater control measures installed as part of the research** (clockwise from top left: residential rainwater harvesting tanks; roadside infiltration basin; large scale infiltration basin; and residential rain garden).

### ABOUT THE AUTHORS:

The authors represent a range of disciplines and organizations involved in the research project.

**Christopher J. Walsh, Tim D. Fletcher, Darren G. Bos, Samantha J. Imberger and Matthew J. Burns** are all researchers in the Waterways Ecosystem Research Group (WERG) ([thewerg.org](http://thewerg.org)), in the School of Ecosystem and Forest Sciences at The University of Melbourne. The WERG is a multi-disciplinary group studying interactions between landscapes and running waters.

**Elizabeth Wallis** is, and **M.J. Burns** and **Vjekoslav Matic** were, employees of the Yarra Ranges Council, ([yarraranges.vic.gov.au](http://yarraranges.vic.gov.au)) the local municipality responsible for the management of stormwater drainage infrastructure.

**Toby Prosser, Peter J. Morison** and **Rhys A. Coleman** are employees of Melbourne Water ([melbournewater.com.au](http://melbournewater.com.au)), the state government corporation charged with management and protection of waterways in the Melbourne's catchment.

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