

## 3.2 Monitoring of stream response to catchment-scale interventions

### Summary

Urban stormwater runoff is a primary degrader of stream ecosystems. As urban land use grows, increased loss of healthy stream ecosystems will increase mitigation costs, unless stormwater is managed differently. This project will test the extent to which new approaches to stormwater management can protect and restore in-stream ecological structure and function, as well as providing co-benefits such as water supply augmentation, that are critical to development of sustainable urban water policy. The project will contribute critical scientific knowledge to the field of restoration ecology (incl. information on trajectories, thresholds and time lags) and inform the development of new urban water policies and management approaches.

### Deliverables

The project will contribute critical scientific knowledge to the field of restoration ecology (incl. information on trajectories, thresholds and time lags) and inform the development of new urban water policies and management approaches. This will be achieved via a variety of platforms including peer-reviewed publications, national and international conference presentations, industry seminars and industry practice notes.

### Background

This project builds on over 10 years of investment in hydrological/ecological monitoring and lot-/precinct-scale stormwater retention works (part of ARC Linkage grant LP0883610).

This project seeks to empirically investigate the following key questions:

- What are the trajectories of response to restoration of catchment hydrology and water quality, and do they differ between ecosystem components?
- Are there thresholds of response, time lags and interdependencies between ecosystem components?
- Which hydrologic variables are the most important drivers of ecological recovery resulting from hydrologic restoration?
- What are the costs of the dispersed stormwater retention works, and the co-benefits beyond stream protection (e.g. augmentation of water supply, flood mitigation)?

#### Research Theme

Catchment scale interventions

#### Timing

2013-2016

#### Project Team

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