

4.3 Supporting the MERI framework through improved NRM planning

Summary

With increasingly large-scale investment being directed toward restoring aquatic ecosystems, there has been a strong push towards greater monitoring to demonstrate restoration outcomes. This push has been extremely successful and there has been a recent surge in the desire to implement monitoring programs around a range of restoration interventions, including environmental flows, instream habitat and riparian replanting. However, such monitoring programs are often implemented at the local scale within restoration programs whose overall scope was set by practical constraints of time and money, rather than through an evidence based planning process. An unintended risk is that monitoring effort is directed toward restoration efforts that are too-small in scale, have been in place for too short a time, or are not sufficiently coordinated across sites to engender significant ecological change. Similar concerns have been identified and begun to be addressed in other parts of the world (Beechie et al. 2008; Roni et al. 2013) The aim of this project is to develop revisit the ecological underpinnings of restoration within an intervention planning framework that better draws on conceptual and quantitative physical and ecological models to inform the scale and time-lags implicit in successful

Deliverables

- Phase I. A restoration planning framework that embeds local scale interventions within a catchment context, and that explicitly addresses issues of scale and time-lags.
- Phase II. Planned surveys of restoration outcomes at selected sites. The aim of this will be to complement and otherwise value add to existing monitoring programs being undertaken by Melbourne Water and within the partnership.

Background

The project seeks to address two aspects of restoration; a) target setting, and b) assessing restoration outcomes in two phases.

Phase I of the project will evaluate existing restoration efforts in the Melbourne Water region in terms of both the types of interventions, the location and scale of various restoration activities, and the rates at which these have been applied. This scoping exercise will draw on current efforts within Melbourne water to build a database of recent on-ground works, and will provide a solid basis from which to estimate likely trends in river condition over time, and the scales and locations over which restoration outcomes have the greatest likelihood of being detected.

The second phase of the project will be to work with Melbourne Water in implementing monitoring around restoration activities and sites that have been deemed most appropriate based on the phase I activities. A specific aspect of phase II will be to consider emerging process based indicators of ecosystem health and restoration outcomes, that build on the structural metrics that have underpinned most monitoring efforts in the past.

Research Theme

Catchment scale interventions

Timing

2013-2018

Project Team

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