

Testing critical assumptions of interventions and outcomes, and designing effective, efficient biodiversity monitoring to support strategy implementation

MERI
Project A2

This project will provide improved clarity and confidence in understanding what, where and when management interventions are likely to achieve the desired outcomes. Improved monitoring design and range of efficient & cost-effective monitoring techniques to properly support the HWS MERI and genuine adaptive management.

Project Team:

University of Melbourne

Yung En Chee

Chris Walsh

Joe Greet

Jasper Kunapo

Ryan Burrows

Sacha Jellinek

Tim Fletcher

Matt Burns

Melbourne Water

Rhys Coleman

Sharyn RossRakesh

Paul Rees

Al Danger

Marion Urrutiaguer

Will Steele

Belinda Lovell

Trish Grant

Vaughn Grey

Richard Akers

External

Mike Grace (Monash University)

This project is focussed on supporting Healthy Waterways Strategy implementation by undertaking an advisory and critical review role in the Monitoring, Evaluation, Reporting and Improvement (MERI) Framework.

In partnership with Melbourne Water, it will help identify critical assumptions between key management interventions, their relationships with environmental conditions, and subsequently, on the status/condition of key values of interest.

The focus will be on interventions where there is high investment by Melbourne Water and stakeholders, but uncertainty in the effectiveness, efficiency and/or consistency of achieving the desired outcomes. This will involve implementing studies specifically testing critical assumptions and outcomes of key interventions in a range of settings reflecting environmental and urban development gradients within the MW region. Two key interventions to be investigated:

1) **Riparian revegetation:** comprehensively revise riparian revegetation monitoring so that it is fit-for-purpose for MW's knowledge, management and reporting needs.

2) **Billabong environmental watering:** aims to develop and implement WERI program to assess vegetation responses to implemented watering events of Yarra's billabongs and inform their adaptive management .

Methodology

In the coming year, the project will focus on:

- Region-wide vegetation condition assessment and monitoring of riparian vegetation cover using Landsat time-series spectral data (in collaboration with RMIT).
- Development of impervious mapping and effective imperviousness estimation methods
- Yarra water quality sampling campaign and analysis, comparing results with those collected 20 years ago.
- Compilation of Melbourne Water abundance, diversity, and population health data for fish and platypus into central and easy-to-use databases.

Expected outcomes

- Advice on new metrics used for evaluation and reporting against objectives of the HWS
- Clear monitoring rationale, design, criteria for selecting sites and monitoring methods, and adaptive management
- Improved understanding of the positive and negative interactions of environmental conditions on riparian revegetation outcomes
- Coordinated monitoring program established to assess the vegetation response to watering events of lower Yarra billabongs to inform their adaptive management