

Birrarung's billabongs - vegetation response to environmental watering

project summary

Melbourne
Waterway
Research
Practice
Partnership

Project A2b

This project, in a collaboration with the Wurundjeri Woi-wurrung Corporation's Narrap Unit, aims to monitor and assess vegetation responses to natural and managed flooding at billabongs to refine recommended watering regimes and inform their adaptive management.

Expected outputs & impacts

Coordinated monitoring program established to assess the vegetation response to watering events of Yarra's billabongs to inform their adaptive management. Engagement with Wurundjeri's Narrap Unit and development of their capacity to monitor and manage wetlands. Improved environmental watering of Yarra River billabongs. Greater capacity within the Narrap Team to manage wetlands.

Background

The few remaining billabongs along the lower Birrarung retain important ecological, social and Indigenous cultural values. Melbourne Water has recently undertaken investigations to identify priority billabongs and develop management plans to support and enhance such values including environmental watering.

Floodplain wetlands (or billabongs) are reliant on connectivity with their parent waterway, and regular flooding to support their ecological function. However, many of Birrarung's billabongs have been artificially disconnected via channel modification and flow regulation. The resulting lack of flooding encourages invasion by terrestrial and exotic plant species.

While environmental watering of billabongs has the potential to suppress exotic plant species and promote native wetland vegetation, potential benefits of environmental watering in urban areas may be constrained by pressures such as habitat degradation, high weed loads and poor water quality.

Purpose

As part of Melbourne Water's 'Billabongs' program, several priority billabongs along the lower Birrarung have been identified and investigated for their potential rehabilitation.

Recommended watering regimes have been developed to meet these objectives based on broad understandings of the flooding requirement of the vegetation

communities. However, there is a recognised need to monitor the vegetation response to any watering events to inform the adaptive management of these significant sites.

This project entails the implementation of a coordinated monitoring program to assess the vegetation response to natural and managed flood events of Birrarung's billabongs to refine recommended water regimes and inform their adaptive management.

Methods

Seven priority billabongs have been selected with varying levels of connectivity to the Birrarung both with and without planned environmental watering events. Monitoring activities include:

- To assess understorey vegetation changes, 3–5 permanent 10m x 10m quadrats have been established at these sites.
- Large old River Red Gums growing along the billabongs have been identified, being mapped and surveyed for tree condition and flowering.
- Recording of frog activity using the Frog Census App; to be conducted at timing of spring and summer surveys of understorey vegetation surveys.
- eDNA samples; to be conducted at timing of spring and summer surveys of understorey vegetation surveys where water is present.

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