Project Summary 2018-19

Yellingbo hydrology works MERI program

Project D4: Yellingbo

This project will support and inform adaptive management practices for the Cockatoo Swamp, Yellingbo Nature Conservation Reserve.

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This project aims to support a targeted monitoring, evaluation, reporting and improvement (MERI) program to accompany Melbourne Water hydrology works currently underway at the Cockatoo Swamp, Yellingbo Nature Conservation Reserve (YNCR). The capital works, which include partial levee bank removals and a four-year pumping trial, are aimed at naturalising water regimes within the Cockatoo Swamp, thus arresting tree dieback and improving the condition of vital habitat for the critically endangered Helmeted Honeyeater and lowland Leadbeater's Possum. The works were implemented this year, with three years of the pumping trial planned to follow (2019–2021).

A comprehensive hydrological and vegetation monitoring program has been implemented for the past four years, with much of this work funded through an ARC Linkage grant. This current proposal seeks funding to ensure monitoring can continue for the duration of the works program (the next three years) to inform adaptive management of this ecologically significant site.

Methods

The current vegetation condition monitoring program to assess of the efficacy of the hydrology works in naturalising water regimes within Cockatoo Swamp and improving vegetation condition includes:

- Surface water-level monitoring at important locations (8 sites) using water-level data recorders from which data are downloaded every two months.
- Annual individual tree condition assessments using The Living Murray (TLM) method (30 trees at each of 6 sites = 180 trees).
- Annual stand condition assessments at these sites using hemispherical photography (3 photos at each site = 18 photos).
- Annual surveys of permanent quadrats to monitor for seedling recruitment and mid-/under-storey vegetation change (annual survey of three 5m x 5m quadrats at each site = 18 quadrats).
- Monthly seedfall monitoring involving collection of seedfall trap material (5 traps x 5 sites = 20 samples) and processing of samples at the Burnley Campus nursery to determine seed counts.
- Seasonal photo-point monitoring.
- Annual landscape-scale surveys using a drone to capture multilevel LiDAR and multispectral imagery.

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