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Assessment of revegetation success at the Yellingbo Nature Conservation Reserve

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Technical Report

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Cover photo: Flooded *E. camphora* seedling on the Macclesfield Creek floodplain protected by a chicken wire guard.

Executive Summary

The Yellingbo Conservation Nature Reserve (YNCR) within the Yarra Valley provides habitat for the critically endangered Helmeted Honeyeater and lowland Leadbeater's Possum. Habitat values of the reserve are currently under threat from dieback of mature vegetation and a lack of natural regeneration. Much revegetation has been done previously, and much further revegetation is planned within the reserve and its surrounds, to improve areas of declining habitat and provide new habitat. This report provides a brief assessment of early and recent revegetation (including experimental trial plantings) to inform future revegetation programs at Yellingbo.

Summary of findings

- Much revegetation has been done within the Yellingbo area, primarily by volunteers from Friends of the Helmeted Honeyeater and other community groups, but also by a range of land management agencies including Parks Victoria and Melbourne Water.
- Unfortunately, few resources have been made available to monitor or assess the outcomes and trajectories of these revegetation efforts.
- Early plantings (e.g. prior to the 1990s) generally lack structural complexity, and a dense shrub stratum in particular. More recently, fenced plantings of high density and appropriate species mixes have proved mostly successful.
- Currently, unprotected plantings of eucalypts and myrtaceous shrub seedlings in cleared areas fail due to browsing (by deer and wallabies). In areas within remnant vegetation, susceptibility to browsing is dependent on plant palatability (with eucalypts particularly susceptible) and accessibility by browsers.
- Chicken wire tree guards and fenced plots (up to 40m x 20m) have been largely successful in protecting plants from damage from browsers (much larger areas of fencing are likely to fail without sufficient monitoring and maintenance). However, when fences are removed plants are often subsequently damaged by browsers, i.e. browsing, trampling, and rubbing.
- Preliminary evidence suggests the use of tree tubes to establish overstorey plants, i.e. eucalypts, even in areas of dense *Phragmites*, is likely to be successful.
- There is considerable need for greater resourcing of monitoring and maintenance of plantings/fences/etc.

Further research required

- Resurveys of the revegetation trial plantings should be done within the next six months to assess the success of trialled methods (weed control treatments and slashing) in controlling weeds and promoting plant establishment.
- Development of 'brushwood' and other alternative techniques for the rapid establishment of shrub thickets.
- Experimentation with methods to enable revegetation of wetter (e.g. dieback affected) areas of the reserve, e.g. through the use of coir logs.
- Determine the relative palatability of common midstorey species at Yellingbo.
- Continued monitoring of the deer population and at Yellingbo and determination of the spatial and temporal nature of browsing pressure within the reserve (especially given the current culling program).
- Assessment of fencing needs to protect plantings long-term.