



# Highett Plains Grassy Woodland Masterplan

March 2024

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## Acknowledgments

Bayside City Council proudly acknowledges the Bunurong People of the Kulin Nation as the Traditional Owners and Custodians of this land, and we pay our respects to their Elders, past, present and emerging. Council acknowledges the Bunurong's continuing relationship to the land and waterways and respects that their connection and spiritual identity is maintained through ancient ceremonies, songlines, dance, art and living culture.

Council pays tribute to the invaluable contributions of the Bunurong and other Aboriginal and Torres Strait Island elders who have guided and continue to guide the work we do.

Abzeco gratefully acknowledge the assistance and advice of the following people: Amy Weir, Damian Carr and Paul Gibbs (Bayside City Council); Cameron Ryder (Ryder Arboriculture and Environment); Jo Hurse and Julie Valentine (Citywide); Michael Norris and Pauline Reynolds (Friends of Highett Grassy Woodland); John Eichler (local naturalist); Louise Rodda, Richard Francis, David De Angelis and Michael Cirone (Abzeco); and Dr Lisa Jegathesan (Parks Victoria).

Note: The endorsement of the Highett Plains Grassy Woodlands by Council does not constitute as decision to proceed with any identified opportunities. It provides a long term concept to guide decision making and will be subject to future decisions and funding considerations by Council.



# Introduction & Background

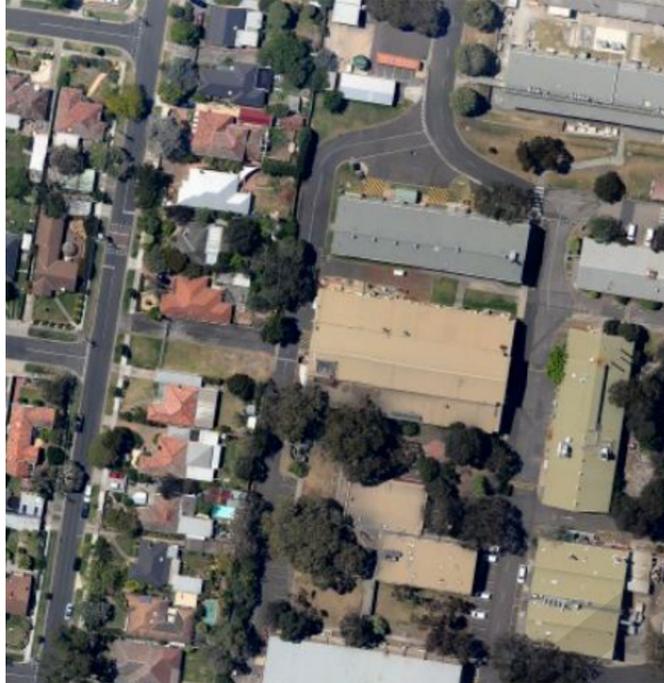


Figure 1 - CSIRO 2010

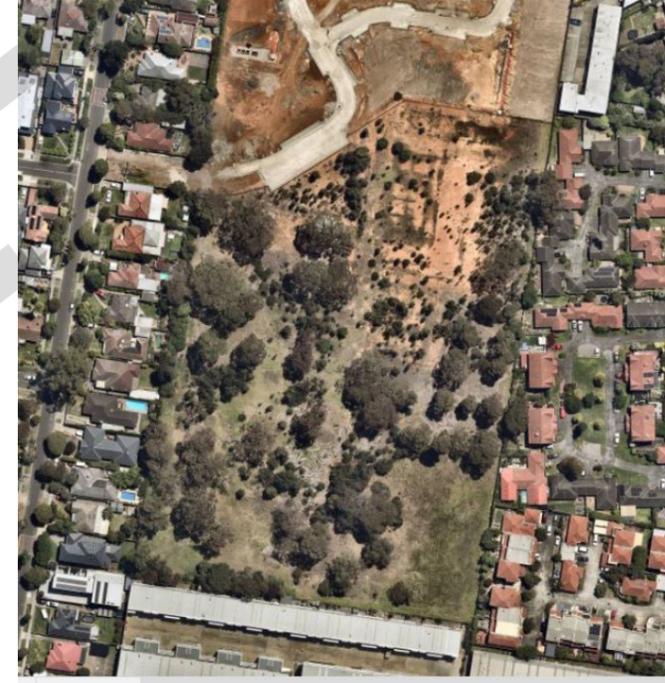


Figure 2 - Highett Plains Grassy Woodland site

## Introduction

Abzeco was engaged by Bayside City Council to prepare a Conservation Management Plan (CMP) and Masterplan of a 3-hectare area of land at 37 Graham Road, Highett. The site was formerly owned by the Federal Government and occupied by CSIRO, which was sold and transferred to Bayside City Council on 20 April 2023 to manage for conservation and public use. This Masterplan has been developed in consultation with Council and Friends of Highett Grassy Woodland. It documents the ecological values of the site, outlines the management issues and prescribes management actions over a 10-year period. This document is supported by the Conservation Management Plan, to be read in conjunction with this Masterplan.

## Site Background

The subject land was previously part of a 9.28 ha area of land occupied by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) where they operated a research and education facility from 1940-2012. The CSIRO site has long been known for supporting remnant indigenous vegetation and its considerable conservation significance. A number of more recent studies have been conducted documenting the flora and fauna. These studies have supported the assessment of high conservation values associated with the remnant indigenous grassy woodland vegetation, in particular the stands of River Red-gum *Eucalyptus camaldulensis* and Yellow Box *Eucalyptus melliodora*. Bayside City Council acquired the CSIRO site in April 2023 as a conservation reserve. The land to the north of the reserve, formerly owned by CSIRO, a much larger area than the conservation reserve, has no indigenous vegetation, and is being developed as a residential estate.

## Masterplan Objectives

- In conjunction with the CMP, Identify conservation areas for preservation and protection.
- Creation of management zones based on vegetation condition and unifying management requirements.
- Identification of the most appropriate methods to manage identified issues.
- Restoration of the Plains Grassy Woodland EVC as a protected and valuable community asset
- Create a management plan with a 10-year timeframe to guide the completion of specific restoration and management actions.
- Provide direction on the path networks and opportunities to develop the site through Council's capital works program.
- Align outcomes of the masterplan with other council strategic directives, such as the Urban Forest Strategy and the Bayside Biodiversity Action Plan.

# Identified Conservation Habitats



Figure 3 - Identified conservation zones

Based on pre-European modelling and mapping of the Ecological Vegetation Classes by DEECA, indigenous vegetation would have consisted of Heathy Woodland and Sand Heathland Mosaic (EVC 892) over the majority of the site, with Grassy Woodland and Damp Sands Herb-rich Woodland mosaic (EVC 716) in the north-east corner. However, based on the field assessment and floristics observed (particularly River Red-gum), the native vegetation in the study area is attributable to EVC 55 Plains Grassy Woodland, which has a Bioregional Conservation Status of 'endangered' (DEECA 2023) in the Gippsland Plain bioregion. The occurrence of Plains Grassy Woodland (EVC 55) is now very rare in the south-east of Melbourne.

Four patches (habitat zones 1-4) of Plains Grassy Woodland (EVC 55) and four scattered trees were mapped within the Reserve and results of the habitat hectare assessment are outlined in the CMP. The habitat zones range from 0.03 and 0.49 ha in size. They are characterised by a moderate cover of River Red-gum and/or Yellow Box in the canopy. Several trees are large and recruitment was observed in the vicinity of the mature trees.



Figure 4 - Habitat Zone 1

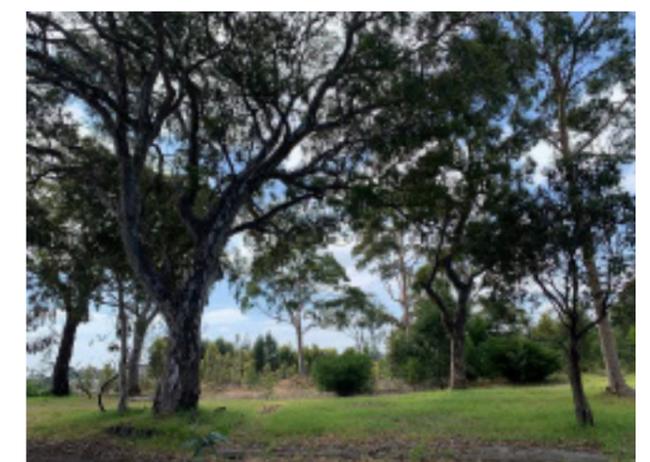


Figure 5 - Habitat Zone 2

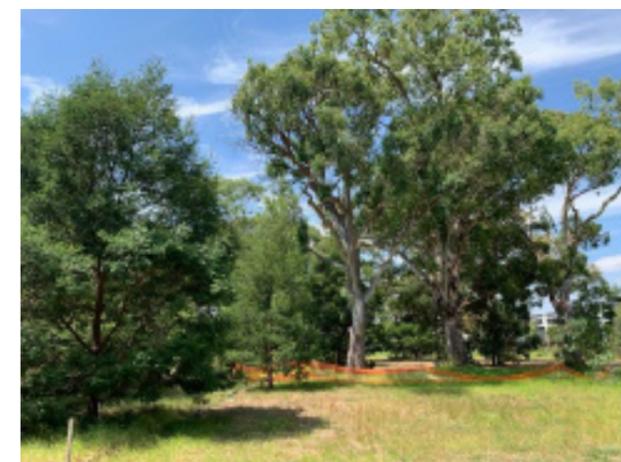


Figure 6 - Habitat Zone 3



Figure 7 - Habitat Zone 4

# Management Zones



Figure 8 - Management and revegetation zoning

Three zones are recognised and mapped (Figure 8) for the Hightt Plains Grassy Woodland site based on their current condition, vegetation and proposed revegetation treatments. These zones are further detailed within the CMP:

## Management Zone 3

Massive recruitment of exotic and indigenous eucalypts and many other plants occurred on the newly bared mineral soil of the site. Much of the area has significantly eroded, but growth of vegetation and the deposition of litter by the eucalypts has arrested much erosion. The initial treatment proposed is to fell the unwanted eucalypts, Acacias etc, and use them to cover any bare soil to stabilise the site. When this occurs revegetation can commence.



## Management Zone 1

Western side of this zone carries most of the remnant indigenous eucalypts – *Eucalyptus camaldulensis* subsp. *camaldulensis* River Red-gum and *Eucalyptus melliodora* Yellow Box. Many of the eucalypts especially Yellow Box are fine old specimens. The eastern side of the zone only has a number of mature planted eucalypts, including *Corymbia citriodora* subsp. *citriodora* Lemon scented Gum and *Corymbia maculata* Spotted Gum. This area will be fully revegetated by conventional planting of tubestock, divisions and direct seeding.



## Management Zone 2

Treeless (mostly) exotic grassland/dicot herbfields in the south-eastern corner of the site. This area is proposed for establishing grassland, including species such as *Themeda triandra* Kangaroo Grass. Direct seeding is most appropriate following thorough weed control.



# Weed Management and Removal

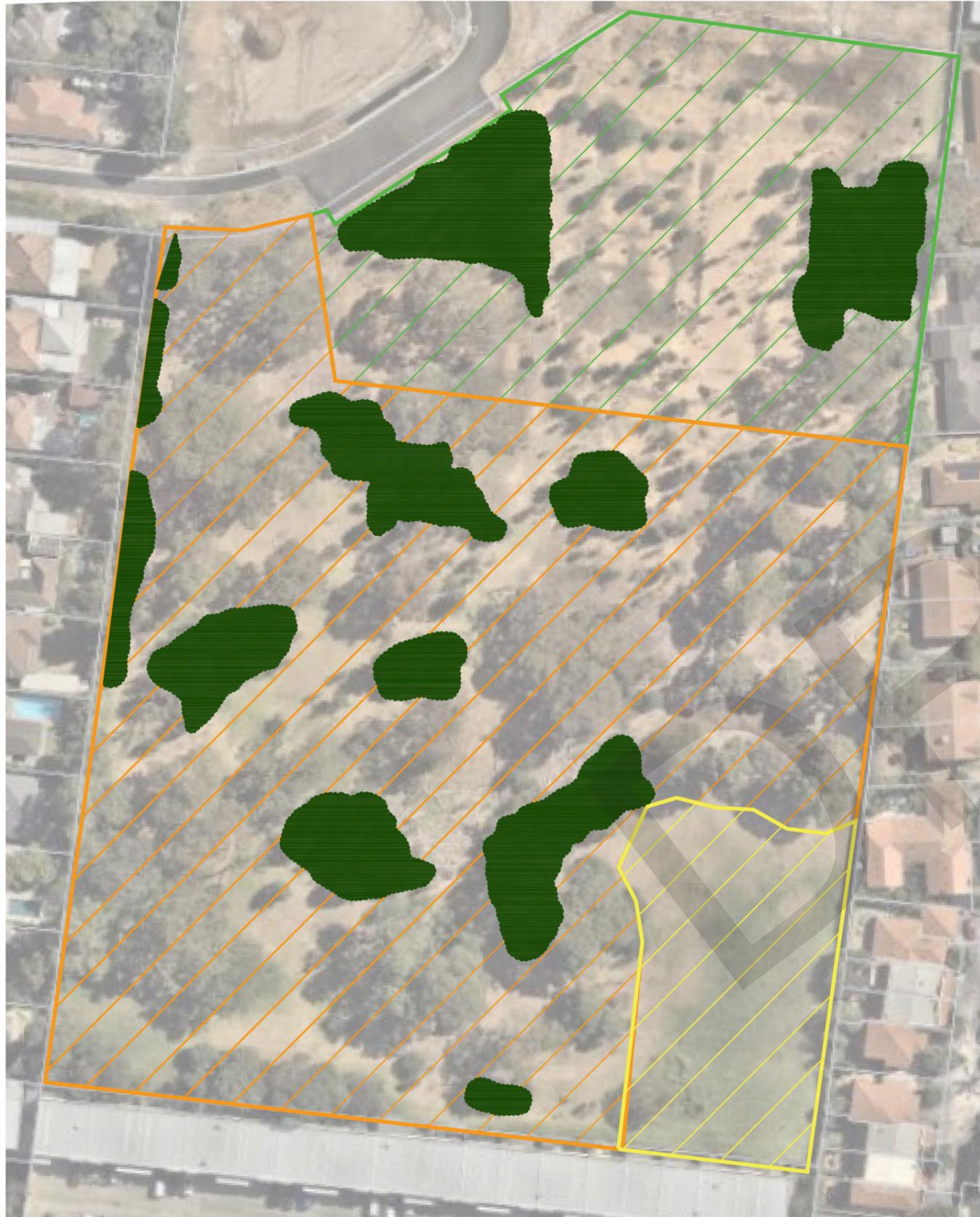


Figure 9 - Examples of dense vegetation copses that dominate the site.

Weed invasion is and will remain the most important and sometimes technically difficult management issue into the distant future. At no point in time will the recreated vegetation of the site become self-sustaining or resilient enough to resist weed invasion. At any time in the future weeds will again dominate the vegetation and destroy most indigenous plants that have been established if it is not managed to a high level.

The findings within the Conservation Management Plan demonstrated that exotic vegetation overwhelmingly predominates in the understorey (field layer) and comprises an estimated 95% of vegetation cover throughout the site. The most abundant herbaceous weed species in the understorey below the indigenous eucalypts, *Acacia implexa* Lightwood and *Acacia mearnsii* Black Wattle and the non-indigenous trees (mostly eucalypts) are listed below:

- *Aizoon pubescens* var. *pubescens* (Galenia)
- *Avena barbata* (Bearded Oat)
- *Bromus catharticus* var. *catharticus* (Prairie Grass)
- *Cenchrus clandestinus* (Kikuyu)
- *Cynodon dactylon* var. *dactylon* (Couch)
- *Dactylis glomerata* (Cocksfoot)
- *Ehrharta erecta* (Panic Veldt-grass)
- *Ehrharta longiflora* (Annual Veldt-grass)
- *Oxalis pes-caprae* (Soursob)
- *Paspalum dilatatum* (Paspalum)
- *Plantago lanceolata* (Ribwort)
- *Romulea rosea* var. *australis* (Common Onion-grass)
- *Setaria parviflora* (Slender Pigeon Grass)
- *Sonchus oleraceus* (Common Sow-thistle)
- *Tradescantia fluminensis* (Wandering Trad)
- *Vulpia* spp. (Fescue)

# Revegetation Species



*Allocasuarina verticillata* - Drooping Sheoak



*Hibbertia sericea* - Silky Guinea-flower



*Leptospermum continentale* - Prickly Tea-tree



*Thelymitra pauciflora* - Slender Sun Orchid



*Banksia marginata* - Silver Banksia



*Platylobium obtusangulum* - Common Flat Pea



*Rytidosperma racemosum* - Slender Wallaby-grass



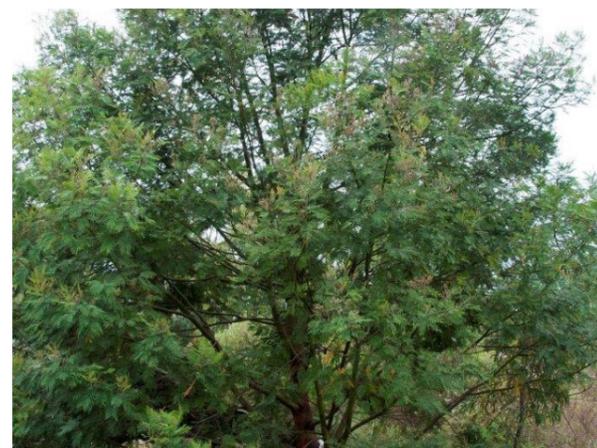
*Themeda triandra* - Kangaroo Grass



*Indigofera australis* - Austral Indigo



*Microlaena stipoides* var. *stipoides* - Weeping Grass



*Acacia mearnsii* - Black Wattle



*Tricoryne elatior* - Yellow Rush-lily

# Highett Plains Grassy Woodlands Masterplan



- ① Reserve entry via Estate
- ② Boardwalk pathway
- ③ Lookout platform
- ④ Fencing around path network
- ⑤ Central meeting place and shelter
- ⑥ Bush trail
- ⑦ Gravel path
- ⑧ Grassland reflection space
- ⑨ Bay Road connection

# Masterplan Elements - examples and precedents

## Path networks

Exploring paths through the reserve will allow the community an insight into the long term processes taking place to restore the Plains Grassy Woodland ecological vegetation class. These paths are designed, where possible, to be non-intrusive to the soil profile, limit any impact to the protected nature of the reserve and adapt to emerging conditions. The paths are also intended to link into larger connection corridors, such as the Bay Rd link shown with the bottom right image.



## Fencing

The CMP specifies that future management of Hightt Grassy Woodland will need to be adaptive and respond appropriately to ecological changes and/or conditions. It is proposed that in order to protect revegetated areas, a significant amount of the site will require fencing. As these areas throughout the reserve become more established, it is possible that initial areas of fencing can be reviewed and relocated/removed over time. Fencing also presents an opportunity to include signage that provides information on the ecological value of the reserve. Dogs will be prohibited from within fenced areas.



# Masterplan Elements - examples and precedents

## Meeting Places and lookouts

Minimal infrastructure has been proposed within the Hightt Plains Grassy Woodland, however meeting place locations are critical to path-finding and community value of the reserve. These pieces can provide signage and information around the significance and value of the vegetation within the reserve and the need to respect the natural processes underway, while also providing amenity value.



## Seating

The need for seating and amenity is expected to be highly required within the site, given the size and the significance of the natural environment at the Hightt Plains Grassy Woodland. Seating that is complementary to the natural environment will provide moments of reflection and appreciation to the value of the reserves unique ecology.



# Timeline

## Management plan timeline - Excerpt from Conservation Management Plan

The realization of the masterplan to return the reserve to its original EVC is presented in the Conservation Management Plan in great detail. Below is a snapshot summary of the length of time and the management practices that will need to be undertaken to achieve a unique and highly valued conservation reserve. This management plan does not provide for final outcomes of a “completed” site, but is adaptive and responds to the changeable nature of land management practices, and that environmental conditions and ecological responses cannot be predicted.

Years 1-2	Years 3-4	Years 5-10
<p>Plan the procedures for revegetation, type of planting, materials required and ensure optimal conditions.</p> <p>Fence and protect areas of significant vegetation relevant to the EVC development.</p> <p>Removal of weed species and exotic flora.</p> <p>Monitoring of pest animals and invasive plant species, take action to ensure undesirable species do not become dominant.</p> <p>Monitoring of tree health and maintenance to ensure healthy growth</p> <p>Commence capital works to deliver upon the masterplan</p>	<p>Begin monitoring of visitor impacts to the reserve</p> <p>Catalogue and identify protected and indigenous species, harvest seed specimens where viable.</p> <p>Continued removal of woody weed species and exotic flora.</p> <p>Continued monitoring of pest animals and invasive plant species, take action to ensure undesirable species do not become dominant.</p> <p>Continued monitoring of tree health and maintenance to ensure healthy growth</p>	<p>Long term planning for indigenous plant species recruitment and establishment</p> <p>Continued monitoring of visitor impacts to the reserve and assessment of path network performance in relation to ecological protections</p> <p>Identify and record the location of additional indigenous plant species that occur onsite</p> <p>Implement exotic gastropod monitoring on an ongoing basis and control as appropriate</p> <p>Ensure site fencing and protection measures are in good condition, fit for purpose and limiting impacts from pest animals and other fauna frequenting the reserve.</p> <p>Implement documentation and monitoring in accordance with CMP recommendations and respond with adaptive management in response to reported outcomes</p>

## Example Outcomes

The below images are an examples of the type of landscape that will be present once the management measures have begun to be implemented.



# References and Credits

Conservation Management Plan and Masterplan for Highett Plains Grassy Woodland (March 2024)

Prepared and delivered by ABZECO Applied Botany, Zoology & Ecological Consulting

Image Credits - Pauline Reynolds, Neri Brewer, Kylie Payze, Jarrod Fleming, Amy Weir