

Australian Rail Track Corporation Ltd
ABN: 75 081 455 754

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ARTC REF: 2-0055-110-EAP-00-
RP-0001

Inland Rail - Beveridge to Albury

EPBC Act Offset
Management Plan
EPBC 2020/8721

wsp



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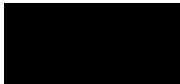


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Rev	Date	Details
A	24/11/2023	Draft adaption
B	28/11/2023	Draft adaption, comments received from DCCEEW
C	18/12/2023	Draft adaption, comments received from DCCEEW
D	23/12/2023	Final adaption

	Name	Date	Signature
Originally prepared by:	AECOM	July 2022	n/a
Adapted by:		15/11/2023	
Reviewed and approved by:		23/11/2023	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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DISCLAIMER

This EPBC Act Offset Management Plan was originally prepared by AECOM Australia titled: Inland Rail - Beveridge to Albury EPBC Act Offset Management Plan (July 2022) (2-0055-110-EAP-00-RP-0001 - T2A | Inland Rail - Act Offset Management Plan EPBC (2020/8721) and is largely unchanged with exception to the following changes:

- Placed into the WSP report template
- Added offset areas
- Figure 1 updated to include revised management areas
- Sections 3.2, 4.2.2 and Table 6 (MA-03) updated to include changes to the weed management targets
- Incorporation of guidance in *Environmental Management Plan Guidelines* (DOE 2014)
- Added text to Section 4 and M-02 and Section 5 and M-02
- Section 6.1 and 6.2

AECOM have provided full permission to adapt their report in this way for the purpose of obtaining approval from the Department of Climate Change, Energy, the Environment and Water (DCCEEW) on behalf of ARTC.

DECLARATION OF ACCURACY

In making this declaration, I:

- a am aware that section 491 of the **Environment Protection and Biodiversity Conservation Act 1999** (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the **Environment Protection and Biodiversity Conservation Regulations 2000** (EPBC Regulations). The offence is punishable on conviction imprisonment or a fine, or both.
- b am authorised to bind Australian Rail Track Corporation Limited (ABN: 75 081 455 754) to this declaration and have no knowledge of that authorisation being revoked at the time of making this declaration.

Signature

[Redacted Signature]

Full name (please print)

[Redacted Full Name]

Organisation (please print)

Australian Rail Track Corporation Limited

Date:

[Redacted Date]

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1 Introduction

The Inland Rail – Beveridge to Albury Project (the Project) is the Victorian component of the wider Inland Rail project which aims to enable the use of double-stacked freight trains between Melbourne and Brisbane, including a critical pathway through regional Victoria. Inland Rail will transform the way freight is moved around the country, connecting regional Australia to its markets more efficiently, driving substantial cost savings for producers and consumers, and delivering significant economic benefits. The proponent for the Project is the Australian Rail Track Corporation Ltd (ARTC).

Assessment of the Project by the Victorian and Australian Governments is being undertaken through preparation of an Environment Report by ARTC. The Victorian Minister for Planning determined that an Environment Effects Statement (EES) was not required for the project but that an Environment Report is prepared to enable assessment of potential impacts. The project was also deemed to be a controlled action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requiring assessment of a number of potential ecological impacts. It was agreed that the Environment Report would form the basis of assessment by both levels of government using a Bilateral Agreement established between the Commonwealth of Australia and The State of Victoria in 2014 relating to environmental assessment. The primary focus of the Environment Report is to address the scoping requirements contained within *Scope for the Environment Report under EPBC Act Bilateral (Assessment) Agreement 2014 and the Environment Effects Act 1978* (the ‘scoping document’) by examining the impacts of the Project on native vegetation, habitat and biodiversity values associated with listed threatened species and communities, as well as describe any feasible alternatives and mitigation measures that could avoid or reduce relevant impacts.

One of the requirements of the Environment Report scoping document (Scoping Requirement 8h) relates to the preparation of an offset package to compensate for significant residual impacts on matters of state or national environmental significance.

Significant residual impacts are anticipated as a result of the project through the loss of 6.32 ha of Grey Box *Eucalyptus microcarpa* Grassy Woodland and derived Native Grasslands (GBGW) which is listed as endangered under the EPBC Act. This loss is likely to result in significant impacts to the GBGW in the impacted area due to reduction in extent of the ecological community and fragmentation or increased fragmentation of some patches that will remain. As such, these impacts on GBGW need to be offset and an offset package to compensate for these significant residual impacts has been prepared for the project to meet the EPBC Act related requirements of Scoping Requirement 8h:

Any offset package to compensate for significant residual impacts on matters of state or national environmental significance consistent with EPBC Act Environmental Offsets Policy (October 2012) and to meet Victorian native vegetation offset requirements including:

- i. *an offset proposal (an offset strategy) - a description of the offset site(s) including location, size, condition and evidence of MNES and other environmental values present, justification of how the offsets meet the EPBC Act Environmental Offsets Policy and the Victorian Guidelines for the removal, destruction or lopping of native vegetation, and an assessment (and justification for each input used) of the offset site(s) using [DCCEEWS] Offset Assessment Guide available at: www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy;*
- ii. *key commitments and management actions for delivering and implementing proposed offsets (an offset management plan) - details on how the offset will be secured, managed, monitored, including management actions, responsibility, timing and performance criteria, and specific environmental outcomes to be achieved from management measures.*

This document is the EPBC Act Offset Management Plan (OMP) for the offset site at [REDACTED] identified for the project in the EPBC Act Offset Strategy (AECOM, 2021). This OMP has been prepared to outline the key commitments and management actions for delivering and implementing proposed offsets for the Inland Rail – Beveridge to Albury project

for Matters of National Environmental Significance (MNES) protected under the EPBC Act (Scoping Requirement 8h-ii) and as a part of EPBC Act approval EPBC 2020/8721.

2 Description of Offset Site: [REDACTED]

The proposed offset site is on a [REDACTED] property on [REDACTED], approximately [REDACTED] (Figure 1). The offset property is located within the distribution of GBGW (DSEWPaC, 2012a) and has been recently acquired for the purpose of providing offsets.

At least 20 hectares of the property comprises GBGW patches, and an undetermined amount (but significantly greater than 20 hectares) is derived native grassland. Four patches of GBGW have been identified for achieving the offset requirements for the Inland Rail – Beveridge to Albury project (Figure 1). The patches are at least 2 hectares in size and contain at least 8 trees per hectare which contain hollows or have a diameter at breast height (DBH) of >60cm. At least 10% of plant cover is made up of perennial native grass species. On this basis, the patches meet the criteria for being classed as GBGW threatened ecological community under the EPBC Act. The corresponding Victorian Ecological Vegetation Class (or EVC) is EVC 175_61 Low Rises Grassy Woodland for the Goldfields bioregion (DSE, 2004).

The patches of GBGW are comprised of two distinct structural forms: grassy woodland dominated by Grey Box *Eucalyptus microcarpa* and areas where trees have been historically cleared, leaving a native ground layer known as derived native grassland. In the derived native grassland, the diversity of indigenous species is high and includes Spear grass *Austrostipa* spp., Wallaby-grass *Rytidosperma* and Wheat-grass *Anthosachne scabra*.

The remainder of the property beyond the four patches supports extensive areas of grassland habitat (a significant proportion of which is native) and other patches of woodland (Figure 1). The other patches of woodland vegetation are more of a forest structure and/or associated with drainage lines and the dominant tree species are not Grey Box. As such, those patches were not included in the mapping of GBGW.

Historical land use on the property has been sheep grazing and the condition of some of the patches of native vegetation reflects the influence of the property's long-term agricultural history.

Current threats to native vegetation condition include:

- High threat weeds
- Grazing by introduced animals (domestic sheep)
- Grazing by native herbivores (kangaroos, wallabies and possums)

The extent of Grey Box Grassy Woodland patches proposed as offsets from the Offset Strategy (AECOM 2021) is presented below (Table 2.1), with some minor updates to provide allowances of 6m buffers on external fences and 4m buffers on internal fences to be compliant with state Section 69 covenant requirements.

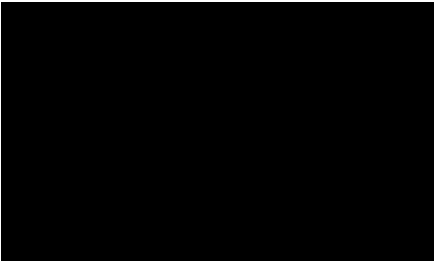
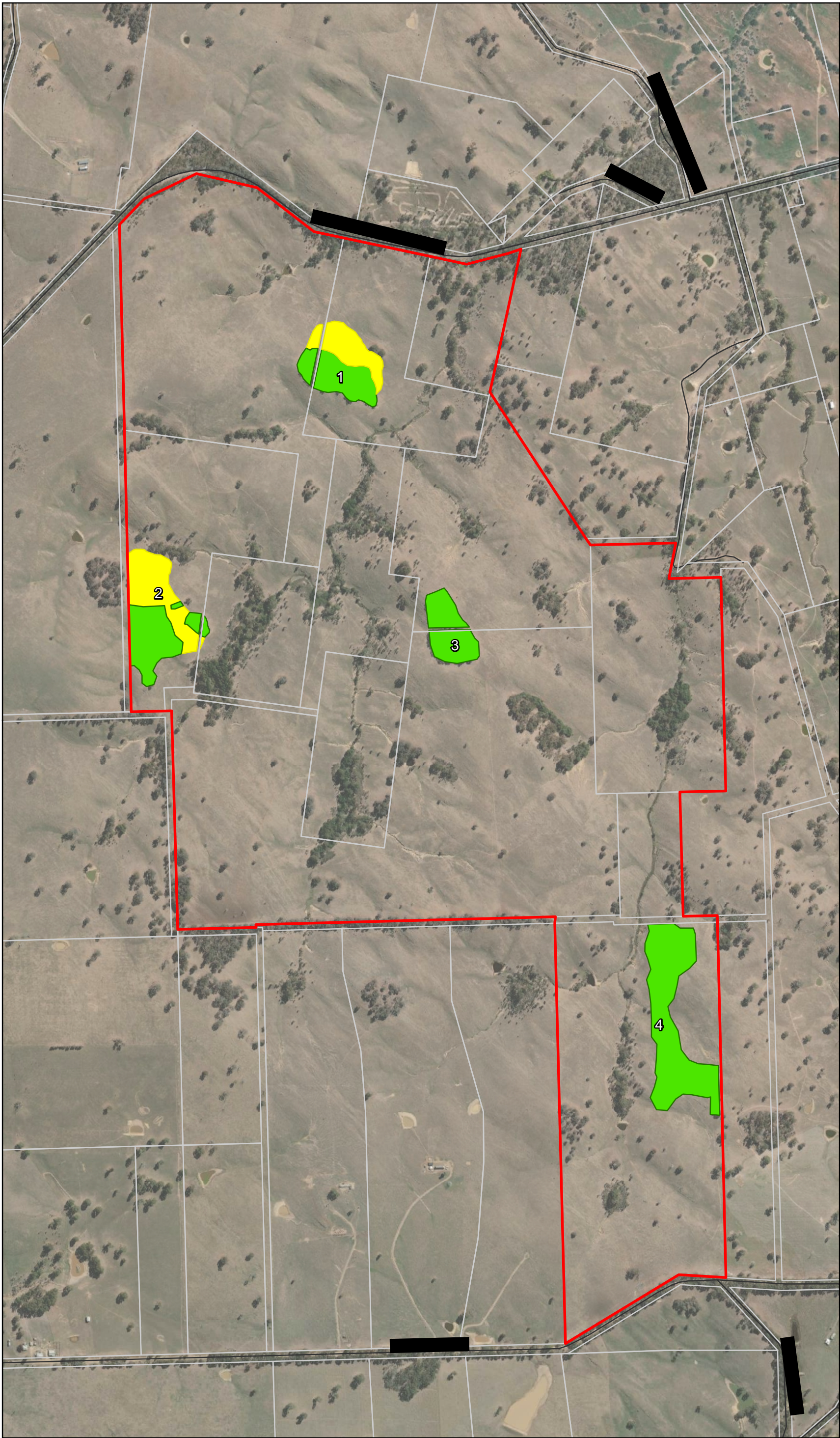
Table 2.1 Extent of Grey Box Grassy Woodland patches proposed as offsets

Patch #	Grey Box Grassy Woodland extent (hectares)		Total
	Grey Box Grassy Woodland	Derived native grassland	
1	2.67	2.11	4.78
2	3.36	3.31	6.68
3	2.63		2.63
4	7.33		7.33
Total	15.99	5.43	21.42



PS134224
Figure 1
EPBC Offset Management
Plan for Inland Rail
EPBC 2020/8721

- Legend**
- Roads
 - Cadastre
 - ▣ Site Boundary
 - EPBC Threatened Ecological Communities**
 - Derived native grassland
 - Grey Box Grassy Woodland



Coordinate system: GDA 1994 MGA Zone 55
Scale ratio correct when printed at A3
1:12,000 Date: 22/11/2023

Data sources: DELWP, Geoscience Australia, Vic Gov
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3 Offset Security and Management Responsibilities

The landowner will enter into a Section 69 agreement *under the Conservation, Forest and Lands Act 1987* with the Secretary to the Department of Energy, Environment and Climate Action (DEECA) (previously Department of Environment, Land, Water and Planning (DELWP)) to protect and improve the extent and quality of native vegetation on the site. The agreement will be recorded on the title of the subject land.

A memorandum of understanding has been signed by ARTC and the offset provider to commit the offset provider to holding these offsets specifically for the Inland Rail project. This will ensure that these offsets remain reserved for the project until such time as they are ratified through a Section 69 agreement and the project is approved to proceed under the EPBC Act by the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW).

Table 3.1 – Offset property details

	DETAIL *
Landowner of offset site	
Address	
Parish	
Allotment / Plan of Subdivision	
Volume / Folio	
Local Government Area	
Catchment Management Area	
SPI	
Council Property Number	
Bioregion	

*Note that numbers 1 to 4 relate to the numbering of patches on Figure 1

3.1 Land manager

[REDACTED]

As the land manager, [REDACTED] agrees to:

- manage the site for conservation; and
- achieve the management commitments outlined in this EPBC Act Offset Management Plan.

3.2 Ongoing management commitments

The offset site will be managed for the purposes of conservation. All works will be conducted by the land manager who is a suitably qualified and experienced native vegetation management contractor.

From commencement of the s69 agreement, the land manager agrees to undertake the following management commitments in the patches of GBGW in perpetuity:

- Prevent uncontrolled stock access
- Eliminate all woody weeds to <1% cover with no mature plants present
- Ensure herbaceous weeds are reduced to, and then maintained at, <25% projected foliage cover
- Monitor for any new and emerging high threat weeds
- Monitor and control pest animals (rabbits, hares and foxes)
- Retain all standing trees (dead or alive)
- Retain all logs, fallen timber and leaf litter.

3.3 Adaptive Management

This plan provides actions to manage the land for the purposes of conservation and achieving an improvement in condition for a period of 10 years. The plan is based on a premise of adaptive management whereby the implementation and timing of actions can be adjusted over time if a more appropriate approach is identified. Adjustments may be required in response to factors such as new information on the ecology of the vegetation community, the emergence of new management techniques or seasonal conditions which vary considerably from year to year. In recognition of the need for flexibility, timing of the actions will be at the discretion of the land manager, except where specific timing commitments have been specified in this OMP.

Management actions are described in Section 4 and summarised in Table 7.1. An assessment of risks to the successful implementation of those management commitments/actions is provided in Table 7.2.

4 Management Actions

This section presents the land management activities for the offset site to achieve vegetation improvement through on-ground actions. Commitments in this plan need to be achievable and practical. They also need to be measurable against the commitments made in the EPBC Act Offset Strategy (AECOM, 2021) in the calculation of improvement over time to achieve conservation gains. Performance targets for these management actions are set in Section 7.1.

Offsets will be achieved by:

- Fencing to control stock access
- Weed monitoring and control
- Retention of logs and native organic litter
- Management of tree regeneration, if required
- Overall management commitment is a gain of 2 points (from a start score of '4' to an improvement to '6' or 6/10) in the EPBC Act calculator as presented in the Offset Strategy (AECOM 2021). This means the gain needs to be achieved first 10 years and thereafter maintained in perpetuity, as per offset calculations in the Offset Strategy (AECOM 2021).
- Pest animal monitoring and control
- Monitoring condition of the native vegetation to continually assess the efficacy of the management actions in achieving the stated performance targets and to identify the need for adaptive management.

Management actions have been developed with reference to the following documents:

- *Management standards for native vegetation offset sites* (DELWP, 2019) which replace the BushBroker management standards for fencing, weeds, rabbits, scattered trees, supplementary planting and revegetation.
- *DELWP Output delivery standards – for the delivery of environmental activities* (DELWP, 2015)

4.1 Fencing

Livestock grazing and trampling are a threat to native vegetation through processes such as soil compaction, over-grazing, exposure of bare ground and increased nutrient levels promoting weed growth.

Uncontrolled stock access must be prevented.

4.1.1 *Timing of installation*

Fencing must be installed (or repaired in the case of existing fences) within 3 months of commencement of the Section 69 agreement.

Fencing to exclude stock will be completed before any other vegetation management works are undertaken.

4.1.2 *Location*

Where an offset patch is woodland only, and does not include derived native grassland, then fencing will be installed 20 m distance from tree drip line to allow recruitment of tree canopy within 20m of the existing patch but to not substantially encroach on adjacent derived native grassland habitat.

Where an offset patch is comprised of woodland and derived native grassland, then fencing will be placed at the edge of the grassland component of the patch or at the perimeter of the pre-determined area of the patch needed to compensate for the losses.

4.1.3 *Design*

Stock-proof fencing will be installed as per DEECA approved standards (DELWP, 2019).

To prevent adverse impacts on wildlife, plain strand wire will be used, and the top wire will be white to increase visibility. A gap will be retained at the bottom to allow native animals to pass underneath.

The fence cannot include barbed wire or be electrified on the bottom strand.

Fencing in the broader property, beyond the GBGW offset patches, should have barbed wire and/or any electrified wires in the bottom strand removed to reduce risks to wildlife. This is a requirement of DELWP (2019).

4.1.4 *Gates*

Gates will be installed for each exclusion area to:

- Allow efficient removal of any stock which may stray into the area
- Facilitate livestock access for pulse grazing as a management tool
- Access for spot spraying weeds or firefighting.

4.1.5 *Maintenance*

Fencing will be maintained to the required standard in perpetuity.

Fencing will be monitored quarterly (each season) to ensure the integrity is maintained.

Portions of the fence that are no longer effective in managing threats to the offset site will be repaired or replaced.

4.2 Weed monitoring and control

Noxious weeds are listed under the *Catchment and Land Protection Act 1994* (CaLP Act). All landowners are required to take reasonable steps to prevent the growth and spread of weeds and to eradicate and/or control noxious weeds on their land.

Control of high threat weeds is a key management action for the offset site.

DEECA management standards require weed cover to not exceed current levels and for monitoring to be undertaken to identify new and emerging weed threats.

Table 4.1 – Weed management terminology (from DELWP, 2019)

TERM	DESCRIPTION
Eliminate	To reduce weed cover to <1% with no mature individuals present.
New and emerging weeds	Any weed not detailed in the management plan tables.
High threat weeds	Any introduced species (including non-indigenous natives) which may outcompete and substantially reduce one or more indigenous life forms in the longer term. High threat weeds include all perennial weeds (including woody weeds), weeds listed as high impact on EVC benchmarks, weeds listed under the CaLP Act.

None of the patches support significant populations of high threat weed species. While very occasional African Boxthorn *Lycium ferocissimum* and Bridal Creeper *Asparagus asparagoides* were observed, these plants were isolated, and will be easy to eradicate from the site. The exotic species present in the ground layer were typically pasture grass species such as Brome *Bromus* spp., Barley Grass *Hordeum* sp, Rye-grass *Lolium* spp., and Panic Veldt Grass *Ehrharta erecta* and broad-leaf weeds such as Flatweed *Hypochaeris radicata*. None of these species are listed under the CaLP Act or are considered highly invasive. All are easily managed.

Overabundant Scrub Nettle *Urtica* sp. (a native species) makes up a significant proportion of the broad-leaf plants in the understorey of two of the patches.

4.2.1 Woody weeds

Existing woody weed cover is low within the offset site and there are scattered occurrences of African Boxthorn.

Woody weeds must be eliminated in a manner which avoids impacts to indigenous plants. Timing and method for control of woody weeds within the offset site are outlined in Table 4.2.

Table 4.2 – Woody weeds to be control including method and timing for control

COMMON NAME	SCIENTIFIC NAME	METHOD	TIMING
African Boxthorn*	<i>Lycium ferocissimum</i>	Larger plants - cut and paint stump with full strength herbicide. Younger plants – hand pull	Year round

*Victorian noxious weed listed under the CaLP Act

New outbreaks of woody weeds must be eliminated as soon as they are detected.

4.2.2 Herbaceous weeds

Overall, the patches support a combined cover of ~60% herbaceous weeds. On this basis, a performance target of reducing the cover of herbaceous weeds to <25% projected foliage cover and no more than 50% of the weed cover would consist of high threat weeds (as defined in Table 2 of OMP). Herbaceous weeds are defined as herbaceous (broad leaf) weeds, annual grasses and perennial grasses. This target has been set for the patches overall by the end of the 10-year management period (Section 7.1).

All weeds to be reduced each year by approximately 5% for the first seven years then maintained <25% projected foliage cover in subsequent years.

Weed control will primarily be undertaken through spot spraying with an appropriate herbicide.

Hand weeding and chipping using a hoe will be undertaken where populations of weeds are small or in areas where herbicide use is inappropriate. Soil disturbance will be minimised to discourage growth of new seedlings of weed species.

In areas where there is a dense weed infestation, brush-cutting or mowing may be used to stop seed set and allow for easier herbicide application (DELWP, 2019).

Pulse grazing or burning may be appropriate if fallen timber precludes access for mowing and if the land manager deems brush-cutting unlikely to be effective at stopping seed set. The use of grazing in conjunction with herbicide control is effective at further reducing weed cover. Glyphosate or similar herbicide can be applied for initial control and then the site can be grazed to reduce the cover of any plants that survive herbicide application.

Table 4.3 – Herbaceous weeds to be controlled including method and timing for control

COMMON NAME	SCIENTIFIC NAME	METHOD	TIMING
Rye-grass	<i>Lolium</i> spp.	Spot spray with an appropriate herbicide	Winter to Spring
Panic Veldt Grass	<i>Ehrharta erecta</i>	Spot spray with an appropriate herbicide	Winter to Spring
Flatweed (Cat's Ear)	<i>Hypochaeris radicata</i>	Spot spray or chip/hand pull – ensure tap root is removed	Winter to Spring
Bridal Creeper*	<i>Asparagus asparagoides</i>	Spot spray with an appropriate herbicide	Winter to Spring
Capeweed	<i>Arctotheca calendula</i>	Spot spray with an appropriate herbicide	Winter to Spring
Clovers	<i>Trifolium</i> spp.	Spot spray with an appropriate herbicide	Winter to Spring
Onion Grass	<i>Romulea rosea</i> .	Spot spray with an appropriate herbicide	Winter to Spring
Pattersons Curse*	<i>Echium plantagineum</i>	Spot spray with an appropriate herbicide	Winter and Spring
Annual grasses	<i>Avena</i> spp., <i>Bromus</i> spp., <i>Hordeum</i> sp., <i>Vulpia</i> spp.	Spot spray with an appropriate herbicide Pulse graze in Winter, burn in early spring	Winter to Spring
Spear Thistle*	<i>Cirsium vulgare</i>	Chip out or spot spray with an appropriate herbicide.	Winter and Spring
Stork's Bill	<i>Erodium</i> spp.	Spot spray with an appropriate herbicide	Winter and Spring

*Victorian noxious weeds listed under the CaLP Act

4.3 Pest animal monitoring and control

Landowners are required under the *Catchment and Land Protection Act 1994* (CaLP Act) to take reasonable steps to prevent the spread of established pest animals on their land and eradicate if possible.

European rabbits and hares are listed as an established pest under the CaLP Act and are the primary threat to the EPBC Act values of the offset site. Rabbits will be monitored and controlled.

Pest animals to be controlled and the method and timing of control is outlined in Table 4.4.

Table 4.4 – Pest animals to be controlled including method and timing for control

COMMON NAME	METHOD	TIMING
Rabbits	Spotlight shooting over a minimum period of 3 hours Site walkover to identify location of any warrens or other harbour. Warrens will be targeted for fumigation while non-destructive control works will be used for other harbour to avoid impacts to habitat for native fauna.	Once every 3 months
Hares	Spotlight shooting over a minimum period of 3 hours.	Once every 3 months

Fumigation of rabbit warrens will only be undertaken by an Agricultural Chemical Users Permit (ACUP) or persons directly supervised by an ACUP holder.

Red Foxes will be controlled by the landowner in accordance with their obligations under the CaLP Act if they are identified as a new and emerging pest. Evidence of the presence of Red Fox was not noted, and the species is not a primary threat to the EPBC Act values of the offset site at this time.

4.4 Native vegetation condition

4.4.1 *Overabundant native species*

Overabundant Scrub Nettle (a native species) makes up a significant proportion of the broad-leaf plants in the understorey of two of the patches of GBGW. Feasibility of progressively replacing this species with native grasses will be considered as part of the management regime for understorey reestablishment in parallel with offset management actions.

4.4.2 *Regeneration and recruitment*

The patches of trees are surrounded by derived native grassland which is a treeless form of GBGW.

Prolific eucalypt regeneration can have a negative biodiversity outcome through shading and exclusion of native grassy ground cover species resulting in a localised decline in species richness. Although stands of regenerating eucalypts usually self-thin over time, the natural attrition rates are slow and may take many decades. As such, manual control of eucalypt regeneration will be undertaken where eucalypt regeneration establishes within 20 m of established mature trees and is at least 2 metres tall.

Individual saplings will be selected for retention to grow into mature trees. Saplings to be retained will be at least 10 m from existing established mature trees.

Other unwanted regeneration will be managed as woody weeds. The saplings will be cut close to the ground and the stump painted with an appropriate herbicide (undiluted).

Implementation of this management action can be altered if undesirable outcomes are identified by the land manager during the implementation of this plan. Examples of such undesirable outcomes may include, but are not limited to, the failure of retained saplings to survive, thereby jeopardising the potential for canopy recruits to form the necessary overstorey or the native vegetation does not meet the benchmark of 5% cover for immature canopy trees set for the corresponding Victorian EVC 175_61 Low Rises Grassy Woodland for the Goldfields bioregion (DSE, 2004).

4.4.3 *Biomass / organic litter control*

Biomass is a term used to describe accumulated live and dead plant material in the ground layer. High biomass can reduce floristic diversity and increase fuel loads and therefore fire risk. Biomass is generally measured as g/m² or tonnes/ha but this volume-based measurement can be a poor indicator of structure, particularly for grassland management. Openness of a grassland structure is directly related to conservation outcomes like floristic diversity or fauna habitat (Morgan, 2015; Schultz et al. 2017). As such, management of grassy understorey and derived native grassland must be based on plant cover.

Sheep grazing will continue on the broader property as a means of maintaining biomass and managing fire risk. Biomass within the offset areas will be monitored as part of vegetation condition monitoring. If biomass of the ground layer becomes too dense such that some native species struggle to flourish and/or are prevented from naturally recruiting, then biomass levels will be managed through low intensity, ‘pulse’ (or short-term) grazing. Timing of grazing can provide positive selection pressure for desired species. Perennial native grasses left ungrazed from spring to late summer will set seed and conserve energy which will encourage higher recruitment rates in autumn and winter. Grazing after annual grass stem elongation but before seed heads have emerged (prior to spring) will increase the amount of seed produced while also reducing seed production of undesirable annuals (Agriculture Victoria, 2021).

If biomass management is required, pulse grazing over a period of up to 2 weeks will be implemented prior to spring.

If biomass of the ground layer becomes too low (<30% cover of graminoids), then biomass management and the need to implement understorey re-establishment (Section 4.4.4) will be reviewed.

4.4.4 *Understorey re-establishment*

Extensive areas of derived native grasslands across the broader property present the land managers with an opportunity to collect seed for use in reinstating the understorey of the GBGW patches.

Specific details of the approach to seed collection, timing and use of the seed will be developed by the land manager as management of the site gets underway. The approach will be aligned with best practice at the time and will respond to local or seasonal conditions. Broadly the method will be to reduce weed load within the patch, harvest native grass seeds, then sow the seeds and monitor native cover.

Supplementary planting of indigenous species will also be considered.

5 Monitoring

Monitoring is an important component of implementing this OMP as it allows the effectiveness of management measures to be determined and any new or emerging management issues to be identified.

5.1 Fence condition

Fences will be inspected quarterly or after severe storm events. Any damage or fault in fencing will be promptly repaired if the damage or fault would allow uncontrolled stock access.

5.2 Vegetation condition

Condition of the native vegetation will be monitored to detect new and emerging threats. Overstorey condition monitoring will involve a visual inspection of the health of the canopy. The Vegetation Quality Assessment Manual (DSE, 2004) provides a repeatable, standardised approach for visually assessing tree canopy cover as a proxy for tree health. This approach involves standing at the edge of the crown (tree drip line) and measuring the projective foliage cover using the guide in Appendix 5 of the manual (DSE, 2004).

Understorey condition monitoring will include the use of photo points and will note any new or emerging woody or herbaceous weeds.

General vegetation condition will be measured against the 'site condition' metrics used in the Vegetation Quality Assessment Manual (DSE, 2004) using the corresponding Victorian Ecological Vegetation Class (or EVC) is EVC 175_61 Low Rises Grassy Woodland for the Goldfields bioregion (DSE, 2004). Other performance targets to measure vegetation condition are listed in Table 6 (MA-02).

Photo points

Permanent photo monitoring points will be established, stratified by weed cover and topography, with a minimum of one photo point per offset patch. Each photo point will comprise a square 5 m x 5 m plot which will be clearly marked and accurately located by GPS or similar. Each plot will be assessed for percentage total vegetation cover, percentage cover of native and exotic life-forms, inter-tussock space and average height of the vegetation. Using the north-east corner of the plot, a photo will be taken facing each of the four points of the compass (north, east, south and west).

Photo points will be monitored annually in Spring, and for the 10 year duration of this OMP.

5.3 Pest animals

If significant rabbit populations are observed during regular site management activities, the site will be walked to identify location of any warrens or any other harbour.

Evidence of a significant rabbit population is defined as >2 rabbits observed in 1 ha area and/or pellets in large clumps or latrines are present.

6 Reporting

The land manager must submit a report annually to DEECA and DCCEEW for each year of the ten years of this management plan. The purpose of the annual report is to assess progress of management against the commitments set out in this OMP. Reports are to be submitted at least 2 months prior to the anniversary date of the execution of the OMP to allow time for compliance to be assessed before the anniversary date.

The annual report must include:

- Details of management actions undertaken within the reporting period.
- Results of monitoring activities including fence condition, weeds, pest animals, understory biomass and overstorey condition.
- Site photographs.
- Assessment of compliance or non-compliance with the schedule of management actions, performance targets.
- Details of any new and emerging management issues, with recommendations for corrective action and plan review.

The results of the monitoring program is to be reported to ARTC for publication on the ARTC EPBC Compliance website or equivalent. Any incidents of non-compliance with the approved version of this OMP must be reported to ARTC so that ARTC can report them to DCCEEW within 2 business days in accordance with Condition 23 of EPBC 2020/8721.

6.1 Responsive / Adaptive Management

The monitoring program is required to report against all outcomes, performance targets and commitments made in the OMP, as is specified above in Section 6. It must also identify any incidents of non-compliance and/or significant failings in the implementation or outcomes of the OMP, and any new or emerging threats that require an immediate and adaptive response. The development of an appropriate and responsive addition or variation of the OMP will be developed in consultation with the landowner and ARTC, and, if necessary, is to be endorsed by DCCEEW. It may also be necessary to involve DEECA in any management variations that are likely to impact on the Section 69 covenant.

Examples of non-compliance and/or significant failings in the implementation or outcomes of the OMP would include bushfire, habitat and/or contamination due to chemical spills, major fence failures and/or stock impacts within offset areas, or events that are considered to be significant enough to warrant an adaptive management approach within the offset areas.

In the event of a significant detrimental impact within the offset area and/or failing of the OMP, the landowner will:

- promptly notify ARTC and DCCEEW
- develop responsive management plan to address impacts
- update the OMP and/or review implementation period (i.e. extend if required to address impacts).

6.2 Document review or variation

Any variations to this OMP both in the document and on-ground works must first pursue request by the regulator with consideration to Condition 6 of the EPBC approval which states:

“If the approval holder wishes to carry out any activity within the offset area other than in accordance with the Offset Management Plan, the approval holder must submit a revised version of the Offset Management Plan to

the department for the Minister's written approval. The approval holder must not commence the varied activity until the Minister has approved the revised Offset Management Plan in writing".

7 Implementation

7.1 Management and monitoring schedule

Table 7.1 – Offset management and monitoring actions

ACTION	OBJECTIVE	TIMING	PERFORMANCE TARGET	APPROACH
MANAGEMENT ACTIONS				
MA-01	Control stock	Within 3 months of implementation of this plan	Offset site is appropriately fenced from neighbouring land.	Install stock exclusion fencing in accordance with DEECA standards.
MA-02	Eliminate all woody weed infestations	Within 6 months of implementation of this plan	Cover of woody weeds does not exceed 1% within offset area and no mature plants present.	Eliminated woody weeds in a manner which avoids impacts to indigenous plants. Timing and method for control of woody weeds within the offset site are outlined in Table 4.2.
MA-03	Control herbaceous weeds	Annual	All weeds to be reduced each year by approximately 5% for the first seven years then maintained <25% projected foliage cover in subsequent years and no more than 50% of the weed cover would consist of high threat weeds.	Timing and method for control of herbaceous weeds are outlined in Table 4.3.
MA-04	Control new and emerging woody weeds	Ongoing	New outbreaks of woody weeds eliminated as soon as they are detected.	As per Action MA-02 and MA-03.
MA-05	Control rabbits and hares	Annual	Significant rabbit populations are not present.	Pest animals to be controlled and the method and timing of control is outlined in Table 4.4.
MA-06	Control new and emerging pest animals	Ongoing	New and emerging pests are identified and controlled.	As per Action MA-02 and MA-03 (weeds) and MA-05 (pest animals).

ACTION	OBJECTIVE	TIMING	PERFORMANCE TARGET	APPROACH
MA-07	Control tree and shrub regeneration	Annual – Autumn (if required)	Cover of immature canopy trees and shrubs <25% and >5%.	Select individual saplings for retention to grow into mature trees. Saplings to be retained at least 10 m from existing established mature trees. Manage other unwanted regeneration as woody weeds.
MA-08	Control biomass	Ongoing (if required)	Cover of grasses and herbs maintained at <80%	Pulse grazing, slashing or burning as outlined in Section 4.4.3.
			Cover of grasses and herbs maintained at >30%.	Direct seeding or revegetation as outlined in Section 4.4.4.
MA-09	Re-establish understorey	Annual (if required)	Understorey >50% native species.	Direct seeding or revegetation as outlined in Section 4.4.4.
MA-10	Establish photo monitoring points	Within 3 months of implementation of this plan	Photo monitoring points established.	Establish photo monitoring points as per the approach outlined in Section 5.2.
MA-11	Retain all standing trees (dead or alive)	Ongoing	All mature standing trees (dead or alive) retained.	Retain all mature standing trees unless these features will impede effective management
MA-12	Retain all logs, fallen timber and leaf litter	Ongoing	All logs, fallen timber and leaf litter retained unless retention of those features prevents other performance targets from being achieved.	Retain all logs unless these features will impede effective management
MONITORING				
M-01	Monitor fence condition	Quarterly (per season) or following severe storm events.	Fences monitored and maintained in functional condition.	Survey perimeter of the offset site to ensure fences are intact. Check for evidence of domestic stock access.

ACTION	OBJECTIVE	TIMING	PERFORMANCE TARGET	APPROACH
M-02	Monitor native vegetation condition and weeds	Annual (in Spring)	<p>Patches of GBGW continue to meet the definition of the threatened ecological community.</p> <p>Patches with overstorey trees continue to be dominated by Grey Box and/or the understorey remains at >10% cover native perennial grasses (or 50% perennial native species) and non-grass weeds remain <30% of the plant cover in the ground layer.</p> <p>Patches of derived nature grassland contain greater than 50% cover of perennial native species.</p> <p>Biomass cover of grasses and herbs remain <80% and >30% in the ground layer.</p> <p>General vegetation condition will be measured against the 'site condition' metrics used in the Vegetation Quality Assessment Manual (DSE, 2004) using the corresponding Victorian Ecological Vegetation Class (or EVC) is EVC 175_61 Low Rises Grassy Woodland for the Goldfields bioregion (DSE, 2004).</p> <p>Overall management commitment is a gain of 2 points (from a start score of '4' to an improvement to '6' or 6/10) in the EPBC Act calculator as presented in the Offset Strategy (AECOM 2021). This means the gain needs to be achieved first 10 years and thereafter maintained in perpetuity, as per offset</p>	<p>Monitor trees and shrub regeneration and overstorey condition.</p> <p>Monitor understorey condition through photo points established under MA-10.</p>

ACTION	OBJECTIVE	TIMING	PERFORMANCE TARGET	APPROACH
			calculations in the Offset Strategy (AECOM 2021).	
M-03	Monitor weeds	Annual (in Spring)	Cover of woody and herbaceous weeds does not exceed thresholds assigned in Action MA-02 and Action MA-03.	Monitor cover of woody and herbaceous weeds. Spring - at time of vegetation condition survey
M-04	Monitor pest animals	Annual (in Spring)	Significant pest animal (particularly rabbit) populations are not observed.	Monitor for the presence of pest animals or signs (scat, diggings, burrows, grazing pressure). Spring - at time of vegetation condition survey
REPORTING				
R-01	Annual reporting	Annual	Assess progress of management against the commitments set out in this OMP	Submit to DCCEEW by at least 2 months prior to the anniversary date of the execution of the OMP.

7.2 Risk assessment and contingency measures

Events may occur over time which have the potential to compromise the success of management of the offset site. Table 7.2 lists events which may occur and assigns a risk rating based on the likelihood of the event occurring and the consequence if it does occur using the following risk matrix:

		CONSEQUENCE		
		MINOR	MODERATE	MAJOR
LIKELIHOOD	UNLIKELY	Low	Low	Medium
	POSSIBLE	Low	Medium	High
	LIKELY	Medium	High	High

Contingency measures to address risks to management success are outlined.

Table 7.2 – Risks to offset management success and contingency measures

EVENT	OBJECTIVE COMPROMISED	LIKELIHOOD	CONSEQUENCE	RISK RATING	TRIGGER	CONTINGENCY MEASURES
Uncontrolled entry of domestic stock	MA-01	Unlikely	Minor	Low	Uncontrolled domestic stock sighted in offset sites. Signs of recent stock access. Grazing and trampling damage to vegetation and/or loss of juvenile trees or shrubs observed.	Remove stock. Repair fencing.
Woody weeds present in offset area (>1% cover)	MA-02	Unlikely	Minor	Low	Woody weed cover exceeds 1%	Increase weed control works.
Herbaceous weed cover exceeds 30%	MA-03	Possible	Minor	Low	Herbaceous weed cover exceeds 30%.	Increase weed control works.
Pest animals within offset site	MA-05	Possible	Moderate	Medium	Fresh ground disturbance or scats. Active rabbit warrens observed. Active fox dens observed New and emerging pest observed in offset area. Damage to understorey vegetation or limited recruitment of trees and shrubs observed.	Increase pest animal control works. Develop a fox control plan and incorporate into the management plan.
Tree and shrub recruitment substantially above EVC benchmark	MA-07	Possible	Minor	Low	Exclusion of understorey vegetation due to shading.	Increase regeneration control works.

EVENT	OBJECTIVE COMPROMISED	LIKELIHOOD	CONSEQUENCE	RISK RATING	TRIGGER	CONTINGENCY MEASURES
Tree and shrub recruitment substantially below EVC benchmark		Possible	Minor	Low	Inadequate recruitment as defined in the Vegetation Quality Assessment Manual (DSE 2004).	Implement understorey re-establishment measures (see Section 4.4.4.)
Biomass exceeds 80%	MA-08	Possible	Moderate	Medium	Cover of grasses and herbs >80%	Increase biomass control.
Biomass subceeds 30%		Possible	Moderate	Medium	Cover of grasses and herbs <30%	Decrease biomass control. Monitor native vegetation condition and weeds. Consider alternative understorey re-establishment measures such as seeding (see Section 4.4.4.)
Understorey cover of native species below 50%.	MA-09	Possible	Moderate	Medium	Understorey <50% native species.	Increase weed control works. Increase biomass control. Consider alternative understorey re-establishment measures such as seeding (see Section 4.4.4.)
Wildfire	n/a	Possible	Moderate	Medium	Permanent or temporary impact on overstorey condition.	Monitor vegetation condition and recruitment. Supplementary planting of overstorey species if regeneration does not occur naturally.
	n/a	Possible	Moderate	Medium	Permanent or temporary impact on understorey condition.	Monitor vegetation condition and recruitment. Implement understorey re-establishment measures.

EVENT	OBJECTIVE COMPROMISED	LIKELIHOOD	CONSEQUENCE	RISK RATING	TRIGGER	CONTINGENCY MEASURES
	MA-01	Possible	Moderate	Medium	Damage or loss of fencing.	Reinstatement of fencing
Severe storm	MA-01	Possible	Minor	Low	Damage or loss of fencing.	Reinstatement of fencing

8 References

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