[redacted]

EPBC 2019/8569 *Grassy Eucalypt Woodland of the Victorian Volcanic Plain* Offset Management Plan, [redacted], Dunkeld, Victoria.



[redacted]

[redacted]

on behalf of APT Management Services Pty Limited

[redacted]

[redacted]

Document Control

Report	*Grassy Eucalypt Woodland of the Victorian Volcanic Plain* Offset Management Plan, [redacted] Dunkeld, Victoria.		
EPBC Act Ref	EPBC 2019/8569		
Project	The Western Outer Ring Main (WORM) high pressure gas pipeline from Plumpton to Lindum Vale, Victoria.		
Proponent	APA VTS Australia (Operations) Pty Limited ABN 65 083 009 278		
Approved Action	The construction and operation of the Western Outer Ring Main (WORM) high pressure gas transmission pipeline between Plumpton and Lindum Vale, northwest of Melbourne CDB, Victoria.		
Report Author	[redacted]	**Project Number**	0426
Mapping	[redacted]		
File Name	[redacted]		
Version	[redacted]		
Date	[redacted]		

Cover Photos: Plains Grassy Woodland vegetation and native Chocolate Lily, [redacted], Dunkeld ([redacted])

Disclaimer

[redacted]

[redacted]

Declaration of accuracy

I declare that:

1. To the best of my knowledge, all the information contained in, or accompanying this Management Plan (*Grassy Eucalypt Woodland of the Victorian Volcanic Plain Offset Management Plan,* [redacted] *Dunkeld, Victoria,* [redacted]) is complete, current and correct.

2. I am duly authorised to sign this declaration on behalf of the approval holder.

3. I am aware that:

   a. Section 490 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.

   b. Section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) where the person knows the information or document is false or misleading.

   c. The above offences are punishable on conviction by imprisonment, a fine or both.

[redacted]

[redacted]

Contents

1 Introduction 5

1.1 Matter of National Environmental Significance 5

2 Impact 7

2.1 Location 7

2.2 Relevant Ecological Reports 7

2.3 Significant Impacts to Matters of National Environmental Significance 7

3 Offset 9

3.1 Location 9

3.2 Historical Land Use and Disturbance 9

3.3 Previous Ecological Assessments 10

3.4 Description 10

3.5 Grassy Eucalypt Woodland of the Victorian Volcanic Plain 18

3.6 In Perpetuity Security 20

3.7 Offset Management 20

4 Offset Management Plan (implementation) 21

4.1 Offset Objectives 21

4.2 Management Actions 25

4.3 12-Year Offset Management Plan 36

4.4 In Perpetuity Management 55

5 EPBC Act Environmental Offsets Policy 58

Figures 60

References 63

Appendices 66

[redacted]

[redacted]

1 Introduction

APA VTS Australia (Operations) Pty Limited (APA) proposes to construct and operate the Western Outer Ring Main (WORM), a high pressure gas transmission pipeline (the Project). The project will require the installation of 51km of 500 millimetre nominal diameter high pressure transmission pipeline from Plumpton to Lindum Vale, to provide high pressure connection between the eastern and western pipeline networks of the Victorian Transmission System (VTS).

The Project proposes impacts to *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed *Matters of National Environmental Significance* (MNES). The *Western Outer Ring Main Ecological Offset Strategy* summarises the offsets proposed to compensate for impacts to all relevant MNES (APA 2022). One of these offsets is a woodland site located at [redacted], Dunkeld, Victoria. The Dunkeld woodland offset is proposed to partially compensate for impacts to the EPBC Act listed ecological community *Grassy Eucalypt Woodland of the Victorian Volcanic Plain* (GEWVVP) (Table 1). Another woodland offset near Dobie, Victoria, has been approved to compensate for impacts to GEWVVP. One other grassland offset has been approved to compensate for impacts to three other MNES that are not associated with the Dunkeld offset. This Offset Management Plan (OMP) outlines the proposed Dunkeld offset, its ecological values, proposed in-perpetuity security arrangement and 12-year offset management plan.

Table 1. Proposed impact and offset for MNES relevant to the Dunkeld Offset.

Matter of Environmental Significance	Impact		Dunkeld Offset		Dobie Offset	
	Area	Quality	Area	Quality	Area	Quality
Grassy Eucalypt Woodland of the Victorian Volcanic Plains (GEWVVP)	2.09 ha	4/10	4.0709 ha	1-3/10	6.1 ha	6/10

1.1 Matter of National Environmental Significance

The MNES relevant to the impact and proposed offset at [redacted], Dunkeld, are described below.

1.1.1 Grassy Eucalypt Woodland of the Victorian Volcanic Plain

Grassy Eucalypt Woodland of the Victorian Volcanic Plains (GEWVVP) is an ecological community listed as critically endangered under the EPBC Act. GEWVVP is limited to quaternary basalt plain of the Victorian Volcanic Plain in south-western Victoria (TSSC 2009). It is an open eucalypt woodland with a predominantly grassy understorey. Its inherently dynamic and exhibits a degree of intrinsic variation across its range, due to variations in rainfall and landscape features, seasonally in response to rainfall and drought and with the annual growth and flowering periods of native herbs, grasses and lilies, and according to past and present land management practices, including grazing and fire regimes.

The tree canopy (>5% cover) of GEWVVP is typically up to 15m tall and may be dominated by River Red Gum *Eucalyptus camaldulensis*, or Swamp Gum *Eucalyptus ovata* and Manna Gum *Eucalyptus viminalis* at sites that

[redacted]

receive higher rainfall (>700mm pa), or Grey Box *Eucalyptus microcarpa* and Yellow Box *Eucalyptus melliodora* at sites that receive lower rainfall (<600mm pa). Understorey tree species and shrubs that may be present (<30% cover) include Wattles *Acacia* spp., Tree Violet *Melicytus dentatus*, Drooping Sheoak *Allocasuarina verticillata*, Sweet Bursaria *Bursaria spinosa* and Silver Banksia *Banksia marginata*. The ground layer is the dominant layer of the understorey and is dominated by native grasses, including Wallaby Grasses *Rytidosperma* spp., Spear Grasses *Austrostipa* spp., Weeping Grass *Microlaena stipoides*, Tussock Grasses *Poa* spp. and Kangaroo Grass *Themeda triandra*, and/or native herb genera, such as *Acaena*, *Arthropodium, Calocephalus, Chrysocephalum, Dianella, Dichondra, Geranium, Leptorhynchos* or *Solenogyne*. Small shrubs also may be present in the ground layer (TSSC 2009). Derived grasslands and regenerating woodlands that have been modified previously through tree and shrub removal, fire or management may also represent GEWVVP if the ground layer still meets GEWVVP characteristics and the regenerating (<5m) canopy trees do not exceed 70% cover.

GEWVVP has been listed as critically endangered under the EPBC Act, due to the severe decline in its geographic distribution, ongoing threats to the community and loss of integrity of remaining remnants (TSSC 2009). Since European settlement, it is estimated that GEWVVP has declined in extent by 91.8-97.5%, with losses of good quality remnants of GEWVVP assumed to be at the higher end of this range. Ongoing threats to the community include urban development (particularly around greater Melbourne), agricultural expansion and intensification, fragmentation and weed invasion. With few patches and high-quality remnants of GEWVVP now remaining, degraded patches that no longer meet the condition thresholds for GEWVVP may still retain important ecological values of the community, and should not be excluded from recovery and conservation management.

[redacted]

2 Impact

APA VTS Australia (Operations) Pty Limited (APA) proposes to construct and operate the Western Outer Ring Main (WORM): a 500-millimetre, high pressure gas transmission pipeline from Plumpton to Wollert (the Project). The Project will provide high pressure connection between the eastern and western pipeline networks of the Victorian Transmission System (VTS). The proposed development footprint is 51 kilometres in length and covers areas of native vegetation and habitat. It has been sited to avoid native vegetation and impacts to MNES where feasible (APA 2022). The project involves residual impacts to two EPBC Act listed ecological communities, GEWVVP and *Natural Temperate Grassland of the Victorian Volcanic Plains* (NTGVVP), and two EPBC Act listed species, Golden Sun Moth and Striped Legless Lizard (APA 2022). Impacts to GEWVVP are to be partially compensated through another approved offset near Dobie, Victoria, and impacts to NTGVVP, Golden Sun Moth and Striped Legless Lizard are to be compensated for through an approved offset in Cressy, Victoria. The proposed Dobie and Cressy offsets are not covered in this EPBC Act OMP.

2.1 Location

The development footprint is 51 kilometres in length, covering urban and agricultural land, waterways, and native and non-native vegetation and habitat, between APA's Plumpton Regulating Station and the Wollert Compressor Station (GHD 2021; Figure 1). The impact area is situated in the Port Phillip and Westernport Catchment Management Authority, the Victorian Volcanic Plain and Central Victorian Upland bioregions, and the Melton, Hume, Mitchell and Whittlesea municipalities.

2.2 Relevant Ecological Reports

The impact site has undergone a series of biodiversity assessments and threatened species surveys since 2019. The following ecological reports outline the methods and findings of these assessments, the targeted surveys undertaken for relevant MNES, the assessment of significant impacts to MNES, and proposed EPBC Act offsets:

1. *Western Outer Ring Main (WORM) Environment Effects Statement Technical Report A - Biodiversity and Habitats Report* (GHD 2021);
2. *Western Outer Ring Main Gas Pipeline Inquiry - Technical Note No. 15 – Ecology assessment of Revision 10 alignment changes* (APA 2021); and,
3. *Western Outer Ring Main Ecological Offset Strategy* (APA 2022).

2.3 Significant Impacts to Matters of National Environmental Significance

APA (2022) outlines the assessment of significant impacts to EPBC Act listed NTGVVP, GEWVVP, Golden Sun Moth and Striped Legless Lizard, and the steps taken to avoid and/or minimise impacts to MNES. The following residual impacts to MNES are proposed to be offset in accordance with the WORM Offset Strategy:

- 4.52 ha of NTGVVP;
- 2.09 ha of GEWVVP;
- 19.93 ha of Golden Sun Moth habitat; and,

[redacted]

- 39.92 ha of Striped Legless Lizard habitat (APA 2022).

No other MNES are proposed to be impacted through the construction and operation of the Project. This OMP outlines the proposed offset to partially compensate for the residual impacts above to GEWVVP.

3 Offset

An offset has been identified to partially compensate for the impacts to EPBC Act listed GEWVVP outlined in Section 2. Section 3 outlines the offset available and Section 4 details the offset management plan to be implemented at the offset site to achieve the offset required. Table 2 below summarises the current offset site, and the proposed security and management arrangement to secure the offset required.

Table 2. Offset Site Security and Management

Address	[redacted] Dunkeld VIC 3294
Allotment	[redacted]
Victorian Bioregion	Victorian Volcanic Plain
Catchment Management Authority	[redacted]
Local Government Area	[redacted]
Current Zoning	[redacted]
Planning Overlays	None
Current Security	None
Proposed Security	Trust for Nature Deed of Covenant
Offset Management Period	12 years (to commence following execution of the Trust for Nature Covenant)
Offset Site Management Responsibility	Landowner
Offset Monitoring Responsibility	Landowner, APA VTS Australia (Operations) Pty Limited and Trust for Nature (TfN)

3.1 Location

[redacted] on a sheep grazing property at [redacted] Dunkeld, Victoria [redacted] (Figure 1). The property is bordered by [redacted] along its western boundary, [redacted] along its northern boundary, and disused [redacted]

The offset site is located on freehold land adjacent to [redacted] near the western boundary of the property (Figure 2). [redacted]

3.2 Historic Land Use and Disturbance

The property has had a long history (more than 100 years) of sheep grazing, and the Landowner has advised that the offset site has undergone periodic grazing for the last 15 years or more. The offset site presents no

evidence of significant ground disturbance (ie. cropping or rock removal), nor recent fertiliser or broad acre herbicide application. However, the lack of logs present, particularly under the large old trees, suggests that log removal (eg. for firewood) has been a regular practice.

3.3 Ecological Assessments

The offset was assessed by [redacted] on 18 November 2022 for the purposes of assessing vegetation quality, qualification of GEWVVP, offset suitability and management requirements. The area under assessment is a fenced area comprising approximately 11.52 hectares of freehold land and crown frontage along either side of [redacted] (Figure 2). Victoria's Vegetation Quality (Habitat Hectare) Assessment (VQA) methodology was used to determine the quality of all native vegetation on site (Appendix 3; DSE 2004; Parkes et al 2003). VQA methodology is used to assess native vegetation that meets *Remnant Patch*[1] criteria in accordance *Victoria's Guidelines for the removal, destruction or lopping of native vegetation* ('2017 Guidelines') (DELWP 2017), however it may also be used to assess other native vegetation outside of the Victorian 2017 Guidelines policy to ensure a consistent quality assessment approach (*pers. comm*. Angela Robb, Native Vegetation Offset Management, DEECA, 17/1/2023). The findings of this assessment are outlined further below.

The vegetation at the site was previously assessed on 20 March and 8 May 2019, and a vegetation management plan was subsequently prepared but never enacted (Ecolink Consulting 2019). The previous vegetation assessment recorded 5.7 hectares of the Ecological Vegetation Class (EVC) 55 Plains Grassy Woodland remnant patch vegetation that also qualified for GEWVVP. The vegetation quality of the GEWVVP was assessed as 4/10, and comprised a sparse canopy of River Red-gums Eucalyptus camaldulensis, a sparse shrub layer and a ground layer dominated (>50%) by a variety of native grasses and some herbs.

The site underwent an updated vegetation assessment on 7 June 2021, with a draft offset management plan subsequently prepared but was not accepted by the landowner (Ecology and Heritage Partners 2021). This assessment recorded a total of 4.54 hectares EVC 55 Plains Grassy Woodland remnant patches, but only 0.69 hectares qualified for GEWVVP. The extent of remnant Plains Grassy Woodland vegetation and GEWVVP had therefore declined since the previous assessment in 2019. The vegetation quality of the 3.85 hectares of remnant patch Plains Grassy Woodland vegetation that did not qualify for GEWVVP was assessed as 3/10, with the quality of the 0.69 hectares of GEWVVP assessed as 6/10. The quality of remnant Plains Grassy Woodland vegetation had therefore also declined across the majority of the site since the previous assessment in 2019, with the exception of only 0.69 hectares that still qualified for GEWVVP.

3.4 Description

During the current offset site assessment undertaken on 18 November 2022, a total of 79 native flora species and 39 introduced flora species were recorded (Appendix 1).

DEECA Pre-1750 EVC mapping shows that the site likely supported both Plains Grassy Woodland (EVC 55) and Creekline Grassy Woodland (EVC 68) vegetation of the Victorian Volcanic Plain before European settlement

[1] An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native (DELWP 2017).

[redacted]

(DEECA 2023a). Plains Grassy Woodland vegetation is an open, eucalypt woodland to 15 metres tall, that occupies poorly drained, fertile soils on flat or gently undulating plains at low elevations. Its understorey consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer (DELWP 2022b). Plains Grassy Woodland vegetation can also qualify for GEWVVP where the vegetation meets the conditions thresholds for the listed ecological community (Table 4; TSSC 2009).

Creekline Grassy Woodland is a eucalypt-dominated woodland to 15 metres tall with scattered shrubs over a mostly grassy/sedgy to herbaceous ground layer. It occurs on low-gradient ephemeral to intermittent drainage lines, typically on fertile colluvial/alluvial soils, on a wide range of suitably fertile geological substrates. Due to the dominance of native graminoids and herb species tolerant to waterlogged soils, including Swamp Wallaby-grass *Amphibromus* spp., Sedges *Carex* spp. and Spike-sedge *Eleocharis* spp., Creekline Grassy Woodland vegetation does not typically qualify for GEWVVP (TSSC 2009).

Plains Grassy Woodland Remnants

A total of 5.4764 hectares comprising poor to moderate quality Plains Grassy Woodland vegetation of the Victorian Volcanic Plain was recorded during the current site assessment. This vegetation community was generally found on higher lying, some rocky, areas above the floodplain of [redacted] (Plates 1-7; Figure 2). 1.3608 hectares (includes offset habitat zones 1B, 1C, 1E and 2A) of this Plains Grassy Woodland vegetation meets *Remnant Patch* criteria in accordance with the Victorian 2017 Guidelines, and 4.1156 hectares (includes offset habitat zones 1A, 1D and 3A) does not due to the low (<25%) cover of native perennial Plains Grassy Woodland vegetation present. No remnant Plains Grassy Woodland vegetation currently qualifies for GEWVVP (Table 4; TSSC 2009).

Plains Grassy Woodland vegetation comprised scattered River Red-gum *Eucalyptus camaldulensis* canopy trees, newly recruiting River Red-gums, and a large variety of native grasses, small sedges and herbs, including Common Wheat-grass *Anthosachne scabra*, Spear-grass *Austrostipa* spp., Common Blown-grass *Lachnagrostis filiformis*, Weeping Grass *Microleana stipoides*, Grey Tussock-grass *Poa sieberiana*, Wallaby-grass *Rytidosperma* spp., Club Sedge *Isolepis* spp., Rush *Juncus* spp., Common Woodrush *Luzula meridionalis* var. *densiflora*, Common Bog-sedge *Schoenus apogon*, Sheep's Burr *Acaena* spp., Chocolate Lily *Arthropodium strictum*, Common Woodruff *Asperula conferta*, Bulbine Lily *Bulbine bulbosa*, Blushing Bindweed *Convolvulus angustissimus* subsp. *angustissimus*, Kidney-weed *Dichondra repens*, Pale Sundew *Drosera peltata*, Blue Devil *Eryngium ovinum*, Willow-herb *Epilobium* spp., Bedstraw *Galium* spp., Crane's-bill *Geranium* spp., Rough Raspwort *Haloragis aspera*, Pennywort *Hydrocotyle* spp., Scaly Buttons *Leptorhynchos squamatus*, Onion Orchid *Microtis* spp., Grassland Wood-sorrel *Oxalis perennans*, Narrow Plantain *Plantago gaudichaudii*, Sun Orchid *Thelymitra* spp., Yellow Rush-lily *Tricoryne elatior*, Slender Speedwell *Veronica gracilis* and Bluebell *Wahlenbergia* spp (Appendix 1).

While Plains Grassy Woodland vegetation comprised a high diversity of native groundcover species, they were largely dominated (50-95% cover) by introduced grasses and herbaceous weeds, in particular Hair grass *Aira* spp., Sweet Vernal-grass *Anthoxanthum odoratum*, Bearded Oat *Avena barbata*, Brome *Bromus* spp., Rough Dog's-tail *Cynosurus echinatus*, Yorkshire Fog *Holcus lanatus*, Tiny Flat-sedge *Isolepis levynsiana*, Toowoomba Canary-grass *Phalaris aquatica*, Squirrel-tail Fescue *Vulpia bromoides*, Sheep Sorrel *Acetosella vulgaris*,

[redacted]

Flatweed *Hypochaeris radicata*, Plaintain *Plantago* spp., Sow-thistle *Sonchus* spp. and Clover *Trifolium* spp. Two declared noxious weeds of Victoria, Slender Thistle *Carduus pycnocephals* and Spear Thistle *Cirsium vulgare*, and one new emergent weed in Victoria, South African Orchid *Disa bracteata*, were recorded in Plains Grassy Woodland remnants.

Remnant patches (includes offset habitat zones 1B, 1C, 1E and 2A) of Plains Grassy Woodland vegetation comprised a 25-50% cover of native perennial species. The vegetation quality in the offset habitat zones 1B, 1C, 1E and 2A scored 3/10 (Table 3, Figure 2). The remaining area (includes offset habitat zones 1A, 1D and 3A) of Plains Grassy Woodland vegetation that does not meet Victorian patch criteria comprised less than 25% cover of native perennial species. The vegetation quality in the offset habitat zones 1A, 1D and 3A scored 1/10. These non-patch areas still comprise a similar diversity of native understorey species to the remnant patches of Plains Grassy Woodland vegetation, including native grasses, sedges and herbs, albeit at very low cover. These persisting ecological values can however be retained and enhanced through targeted conservation management.

No evidence of rabbits and foxes, including warrens or dens, were observed during the offset site assessment, however they are known to occur in the offset (*pers. comm.* Landowner). Mobs of kangaroos also frequent the site, and preferential browsing by kangaroos of native flora has been identified by an experienced grassland management contractor due to the high cover of Sweet Vernal-grass across the offset site (*pers. comm.* [redacted] 24 October 2023). Sweet Vernal-grass is an introduced species not typically browsed by kangaroos due to its strong odour.

[redacted]

Table 3. Vegetation Quality Assessment, Plains Grassy Woodland vegetation, 18 November 2022 (Appendix 3; DSE 2004).

Vegetation Quality (Habitat Hectare) Assessment			HZ1A	HZ1B	HZ1C	HZ1D	HZ1E	HZ2A	HZ3A
Area (ha)			1.0236	0.2398	0.2055	1.079	0.1813	0.6393	0.7024
EVC name			PGW	PGW	PGW	PGW	PGW	PGW	PGW
EVC Number			55_61	55_61	55_61	55_61	55_61	55_61	55_61
Bioregion			VVP	VVP	VVP	VVP	VVP	VVP	VVP
		Max Score	Score	Score	Score	Score	Score	Score	Score
Site Condition Score	Large Old Trees	10	3	0	0	2	0	0	2
	Canopy Cover	5	0	4	2	0	5	2	0
	Understorey	25	5	10	15	5	15	15	5
	Lack of Weeds	15	0	0	0	0	0	0	0
	Recruitment	10	0	5	5	0	5	3	0
	Organic Matter	5	2	4	4	2	4	4	2
	Logs	5	0	2	0	0	2	0	0
	Total Site Condition Score	**75**	10	25	26	9	31	24	9
Landscape value	Patch Size	10	1	1	1	1	1	1	1
	Neighbourhood	10	1	1	1	1	1	1	1
	Distance to Core	5	0	0	0	0	0	0	0
	Total Landscape Score	**25**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Habitat points out of 100		**100**	**12**	**27**	**28**	**11**	**33**	**26**	**11**
Habitat (Quality) Score out of 10		**10**	**1**	**3**	**3**	**1**	**3**	**3**	**1**
Number of Large Trees in zone		**-**	**3**	**0**	**0**	**2**	**0**	**0**	**1**

Notes: PGW – Plains Grassy Woodland; VVP – Victorian Volcanic Plain



Plate 1 Remnant Plains Grassy Woodland vegetation, Habitat Zone 3A (, 18/11/2022)



Plate 2 Native Chocolate Lily amongst introduced Sweet Vernal-grass and Flatweed, Plains Grassy Woodland vegetation, Habitat Zone 1E ( )



Plate 3 Naturally recruiting River Redgums over a groundcover dominated by introduced grasses and herbaceous weeds, with scattered native grasses and herbs, Plains Grassy Woodland vegetation, Habitat Zone 1B (photo taken by [redacted], 18/11/2022)



Plate 4 Large River Redgum canopy trees over a groundcover dominated by introduced grasses and herbaceous weeds, with scattered native grasses and herbs, Plains Grassy Woodland vegetation, Habitat Zone 1A (photo taken by [redacted] 18/11/2022)



Plate 5 Native Wallaby-grass in remnant Plains Grassy Woodland vegetation, Habitat Zone 1E (photo taken by [redacted] 18/11/2022)



Plate 6 South African Orchid (introduced), adjacent to site (photo taken by [redacted] 18/11/2022)





Plate 7 Native Slender Speedwell (top), HZ4A, and native Bulbine Lily (bottom), HZ3A (photos taken by [redacted], 18/11/2022)

Creekline Grassy Woodland vegetation

The remaining 6.0436 hectares of the proposed offset site comprises poor to moderate quality Creekline Grassy Woodland vegetation of the Victorian Volcanic Plain. This vegetation was generally located on the lower lying floodplain zones adjacent to [redacted] Where overstorey was present, this vegetation comprised large

[redacted]

remnant River Red-gum *Eucalyptus camaldulensis* canopy trees, self-recruiting River Red-gums, and planted (>10 years ago) River Red-gum, Swamp Gum *Eucalyptus ovata*, Manna Gum *Eucalyptus viminalis* and Black Wattle *Acacia mearnsii*. Creekline Grassy Woodland understorey vegetation comprised scattered native grasses, sedges, rushes and herbs, such as Swamp Wallaby-grass *Amphibromus* spp., Fibrous Spear-grass *Austrostipa semibarbata*, Sedge *Carex* spp., Marsh Club-sedge *Bolboschoenus medianus*, Common Water-ribbons *Cycnogeton procerum*, Common Spike-sedge *Eleocharis acuta*, Slender Knotweed *Persicaria decipiens*, Weeping Grass, Tussock-grass *Poa* spp., Rush, Sharp Club-rush *Schoenoplectus pungens*, Sheep's Burr, Chocolate Lily, Pale Sundew, Willow-herb, Grassland Wood-sorrel, White Sebaea *Sebaea albidiflora* and Slender Speedwell (Appendix 1).

Remnant Creekline Grassy Woodland was also largely dominated (50-95% cover) by introduced grasses and herbaceous weeds, in particular Bearded Oat, Brome, Yorkshire Fog, Perennial Rye-grass *Lolium perenne*, Paspalum *Paspalum dilatatum*, Toowoomba Canary-grass, Squirrel-tail Fescue, Flatweed, Dock *Rumex* spp., Sow-thistle and Common Vetch *Vicia sativa*. One declared noxious weed of Victoria, Spear Thistle, two woody weeds, White Poplar *Populus alba* and Lombardy Poplar *Populus nigra 'Italica'*, and two emergent weeds, Asparagus *Asparagus officinalis* and South African Orchid, were recorded in Creekline Grassy Woodland remnants.

As the cover of native understorey species in Creekline Grassy Woodland vegetation predominantly comprised native grasses, sedge and rushes tolerant to waterlogged soils, this vegetation community would not qualify for GEWVVP (TSSC 2009), and has been excluded from the proposed offset. However, given its close proximity to the offset, high threat weed species recorded in Creekline Grassy Woodland vegetation will also require control to prevent encroachment into the proposed offset area.

[redacted]



Plate 8 Remnant Creekline Grassy Woodland vegetation with native Swamp Wallaby-grass [redacted]



Plate 9 Remnant Creekline Grassy Woodland vegetation with native Sharp Club-Rush [redacted]



Plate 10 Large River Redgum amongst planted eucalypt trees, over a groundcover dominated by introduced grasses and herbaceous weeds, with scattered native herbs, Creekline Grassy Woodland vegetation [redacted]



Plate 11 Lombardy Poplar, Creekline Grassy Woodland vegetation [redacted]

3.5 Grassy Eucalypt Woodland of the Victorian Volcanic Plain

Table 4 summarises the conditions thresholds for GEWVVP in accordance with the EPBC Act listing advice (TSSC 2009), and compares the ecological attributes of the Dunkeld offset site. Remnant Plains Grassy Woodland vegetation has the potential to qualify for GEWVVP if all other conditions thresholds can be met, including minimum patch size and cover requirements for native ground layer vegetation. While Creekline Grassy Woodland vegetation of the Victorian Volcanic Plain shares some characteristics with Plains Grassy Woodland vegetation, it does not qualify for GEWVVP as it is associated with the riparian zone and comprises native understorey species characteristic of inundated sites, including Swamp Wallaby-grass and Sharp Club-Rush, which excludes it from the listed community (TSSC 2009).

Although 5.7 hectares of GEWVVP was recorded in the Dunkeld offset site in 2019 and 0.69 hectares in 2021, Table 4 confirms that Plains Grassy Woodland remnants recorded during the current site assessment (18 November 2022) do not qualify for GEWVVP, primarily due to the dominance of introduced grasses and herbaceous weeds in the ground layer and the small patch size of some Plains Grassy Woodland vegetation.

These findings show that since 2019, Plains Grassy Woodland vegetation throughout the proposed offset site, including areas that once qualified for GEWVVP, has declined in quality and extent. This decline in quality varies across the site from 25-75%, with an average decline in quality of 39%, and in extent of 4%, over 2 ½ years. The landowner advised that they did not alter their management of the site in the last 2 ½ years since its first assessment, however the recent succession of wet years has contributed to a significant spread of weeds. This decline in only 2 ½ years is significant, and illustrates the vulnerability of this ecological community to climatic variability and a "business-as-usual" management approach. Protecting these remaining areas which retain important GEWVVP values to prevent further decline and/or permanent loss, and undertaking targeted conservation management to control threats to the community and improve its quality, are essential to the long-term conservation of the critically endangered GEWVVP (DEWHA 2009).

Accordingly, APA propose to permanently protect the Dunkeld offset site and its remaining GEWVVP values to prevent further decline. Through targeted conservation management, APA proposes to improve the quality of Plains Grassy Woodland vegetation to restore a total of 4.0709 hectares of GEWVVP in the offset site (Figure 2).

Table 4. Response to Condition Thresholds for EPBC Act listed *Grassy Eucalypt Woodland of the Victorian Volcanic Plain* (GEWVVP) (TSSC 2009).

	GEWVVP Condition Thresholds	Dunkeld Offset Site
Vegetation Description	An open eucalypt woodland with a predominantly grassy understorey. The tree canopy is typically up to 15m tall and dominated by River Red Gum *Eucalyptus camaldulensis*, OR Swamp Gum *Eucalyptus ovata* and Manna Gum *Eucalyptus viminalis* at sites that receive higher rainfall (>700mm pa), OR Grey Box *Eucalyptus microcarpa* and Yellow Box *Eucalyptus melliodora* at sites that receive lower rainfall (<600mm pa). Other tree and shrubs species that may be present include Wattles *Acacia* spp., Tree Violet *Melicytus dentatus*, Drooping Sheoak *Allocasuarina verticillata*, Sweet Bursaria *Bursaria spinosa* and Silver Banksia *Banksia marginata*. The cover of native trees and shrubs in the canopy and mid layers ranges from 5 to 30%. The	The offset comprises native eucalypt woodland vegetation (5-50% native vegetation cover), including scattered River Red-gum canopy trees, newly recruiting River Red-gums, and a diverse range of native grasses (Common Wheat-grass, Spear-grasses, Blown-grass, Weeping Grass, Tussock-grass and Wallaby-grasses), and native herbs (Sheep's Burr, Chocolate Lily, Bulbine Lily, Blushing Bindweed, but is dominated (>50% cover) by introduced grasses and herbaceous

[redacted]

	ground layer is the dominant layer of the understorey and is dominated by native grasses, including Wallaby Grasses *Rytidosperma* spp., Spear Grasses *Austrostipa* spp., Weeping Grass *Microlaena stipoides*, Tussock Grasses *Poa* spp. and Kangaroo Grass *Themeda triandra*, and/or native herb genera, such as *Acaena*, *Arthropodium, Calocephalus, Chrysocephalum, Dianella, Dichondra, Geranium, Leptorhynchos* or *Solenogyne*. Small shrubs also may be present in the ground layer.		weeds. The cover of native canopy and mid layer vegetation across the offset is approximately 3-5%.
Ecological Vegetation Classes (EVCs)	The native vegetation within the site includes one or several of the following EVCs: Plains Grassy Woodland (EVC 55_61), Western Basalt Plains Grassy Woodland (EVC 55-04), Higher Rainfall Plains Grassy Woodland (EVC 55_63), Plains Swampy Woodland (EVC 651), Stony Knoll Shrubland (EVC 649) and Plains Grassland/Plains Grassy Woodland Mosaic (EVC 897).		Offset supports poor to moderate quality Plains Grassy Woodland (EVC 55_61) vegetation.
Bioregions	Site is in the Victorian Volcanic Plain or near to the Victorian Volcanic Plain (Central Victorian Uplands, Dundas Tablelands and Otway Plain Bioregions)		The property is within the Victorian Volcanic Plain bioregion
Size of Patch	The minimum patch size for the listed ecological community is 0.5 hectares.		The proposed offset area comprises 4.0709 hectares of degraded GEWVVP remnants.
Condition Thresholds	One or more of the following native grass genera accounts for at least 50% of the perennial ground layer cover: *Themeda*, *Rytidosperma*, *Austrostipa*, *Poa* and/or *Microleana*. OR		Perennial native grass genera, including *Themeda*, *Rytidosperma*, *Austrostipa* and *Poa*, or native wildflowers, <u>does not</u> make up for more than 50% of the vegetative cover across the site. The cover of perennial weeds varies from 50-95%, however the offset does comprise a diverse native groundcover with at least 10 native perennial species per 100m², with an average of 1.6 large trees per hectare.
	If native grasses account for less than 50% of the perennial ground layer cover, then the patch is either:	A valuable wildflower site where at least 50% of the ground layer vegetation cover is represented by native forbs (including geophytes) during spring-summer (ie. September to dryland February inclusive but noting that the ground layer may be sparse in some situations); OR	
		Not heavily invaded by perennial weeds, such that perennial weeds comprise less than 70% of the ground layer vegetative cover; OR	
		If perennial weeds comprise more than 70% of the ground layer vegetative cover, then the patch must have more than 10 native perennial species per 100m² AND a density of at least three large trees per hectare. Large trees are defined as trees with at least 70cm diameter at breast height (DBH) for eucalypts and at least 40cm DBH for non-eucalypt species.	
Additional Characteristics	The conservation value of a patch of the ecological community is enhanced if it shows any of the following features: ▪ A high native plant species richness; ▪ Large patch size or connectivity with a large patch of remnant vegetation; ▪ Minimal weed invasion; ▪ Presence of threatened plant and/or animal species; ▪ Presence of natural exposed rock platforms and outcrops; or ▪ Diversity of habitat, eg. trees hollows, fallen logs, natural exposed rock outcrops.		The offset site is situated approximately 5km south of the Grampians National Park, amongst mostly modified farming land comprising extensive areas of large remnant scattered eucalypt trees that was likely to have originally supported native eucalypt woodlands. The offset supports a high diversity of native groundcover species, including grasses, sedges, rushes and herbs, however at low cover due to weed competition.

[redacted]

3.6 In Perpetuity Security

The Dunkeld offset site is proposed to be permanently secured under a Trust for Nature Deed of Covenant for the Conservation of Land pursuant to Section 3A of the *Victorian Conservation Trust Act 1972*. This security mechanism permanently restricts permitted land uses, obliges the landowner to undertake conservation management in accordance with the approved offset management plan and meets the requirements under the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (SEWPaC 2012).

3.7 Offset Management

The offset site will be managed by the landowner in accordance with the 12-year offset management plan and the in perpetuity conservation management requirements detailed in Section 4 below. The landowner has over 10 years of experience in successfully implementing and managing Victorian offsets in partnership with the Victorian Department of Energy, Environment and Climate Action (DEECA) under multiple Section 69 (*Conservation, Forests and Lands Act 1987*) Agreements, and has demonstrated ongoing compliance with these existing on-title security agreements.

[redacted]

4 Offset Management Plan (implementation)

4.1 Offset Objectives

The primary objectives of the offset management plan are as follows:

Objective 1: Secure and manage the offset site for conservation purposes in perpetuity

A Trust for Nature (TfN) Deed of Covenant will provide permanent administrative protection to the offset site through restricting allowable land uses to conservation purposes only. This on-title security will protect the site from agriculture or development activities that would impact ecological values on site. The offset site will also be protected from uncontrolled livestock access, unauthorised vehicle access and threats from adjacent farmland, such as spray drift. Sheep will access the offset site under a controlled grazing regime for the purposes of biomass control and weed management only, discussed further in sections 4.2.4 and 4.2.5 below.

Objective 2: Achieve a gain in native vegetation and habitat to compensate for the impact

The Dunkeld offset site at [redacted] Dunkeld, comprises 4.0709 hectares of Plains Grassy Woodland vegetation, that represents degraded relics of GEWVVP. To compensate for proposed impacts for GEWVVP as part of the WORM Project, APA propose to achieve an environmental gain, through undertaking conservation management in accordance with this OMP to prevent further decline in Plains Grassy Woodland vegetation and improve its quality over a 12-year offset management period, to be maintained in perpetuity. This improvement will bring the condition of all Plains Grassy Woodland vegetation within the offset area to 4/10 and meet the minimum thresholds for GEWVVP (Table 4, Figure 2). Native grassland and herbland vegetation communities experience the highest rates of loss in Victoria, with an estimated loss of 15% reported between 2005 and 2015 (CES 2018). This loss is primarily due to agricultural expansion and intensification, and urban development. The GEWVVP vegetation previously assessed at the Dunkeld offset site also experienced an average decline in quality of 15.6% per annum and average decline in extent by 1.6% per annum (see Section 3.5). Given the vulnerability of this community to ongoing threats, protecting and restoring these areas is significant to the long-term conservation of GEWVVP.

Tables 5 and 6 below outline the projected decline in Plains Grassy Woodland vegetation quality over 12 years without the offset, and the projected improvement in vegetation over 12 years with the offset, relative to its current assessed quality (Table 3). The offset site is situated in the Farming Zone and does not contain any overlays (DELWP 2023a). The projected decline in quality without the offset within each habitat zone assumes that the historic grazing practices will continue to support the aims of primary production, and not conservation. This decline would result from the continued degradation of native vegetation and habitat under current management practices that are not targeted under biodiversity protection legislation, including over-grazing by livestock and kangaroos, particularly of native herbs and grasses (eg. during their growth and dispersal periods, or in dry periods), insufficient biomass and weed

[redacted]

control of introduced grasses and herbaceous weeds, soil disturbance, rock or firewood removal, and fertilizer and broad-acre herbicide application. These practices have been shown to promote the spread of introduced grasses and herbaceous weeds (impacting 'lack of weeds' score), reduce the extent and diversity of native groundcover species (impacting 'understorey' score), reduce soil crust and logs (impacting 'understorey', 'recruitment' and 'log' scores), and limit native organic litter (impacting 'organic litter' score) available for decomposition (Tumble and Fraser 1932; Dorrough et al 2004 & 2008a; Appendix 3).

Table 5 shows a decline in the understorey scores for all habitat zones, a decline in the organic litter scores in habitat zones 1B, 1C, 1E and 2A, a decline in the logs score in habitat zones 1B and 1E. The logs score will remain low in all other habitat zones, and the lack of weeds score will remain low in all habitat zones without the offset. As the offset does not show evidence of recent tree removal, health deterioration or lopping, the large old trees and canopy cover scores would not be expected to decline significantly over the same period without the offset. In summary, without the offset, the quality of all remnant patches of Plains Grassy Woodland vegetation (1.2659 hectares in habitat zones 1B, 1C, 1E and 2A) is expected to decline by 1 point, and the quality of all remaining 2.8050 hectares (habitat zones 1A, 1D and 3A) of the Plains Grassy Woodland vegetation that does not currently meet Victorian patch criteria will decline by a further ½ point.

Table 5. Projected Plains Grassy Woodland vegetation quality without the proposed offset.

Vegetation Quality (Habitat Hectare) Assessment			**HZ1A**	**HZ1B**	**HZ1C**	**HZ1D**	**HZ1E**	**HZ2A**	**HZ3A**
Area (ha)			**1.0236**	**0.2398**	**0.2055**	**1.079**	**0.1813**	**0.6393**	**0.7024**
EVC name			**PGW**	**PGW**	**PGW**	**PGW**	**PGW**	**PGW**	**PGW**
EVC Number			**55_61**	**55_61**	**55_61**	**55_61**	**55_61**	**55_61**	**55_61**
Bioregion			**VVP**	**VVP**	**VVP**	**VVP**	**VVP**	**VVP**	**VVP**
		Max Score	**Score**	**Score**	**Score**	**Score**	**Score**	**Score**	**Score**
Site Condition Score	Large Old Trees	10	3	0	0	2	0	0	2
	Canopy Cover	5	0	4	2	0	5	2	0
	Understorey	25	0	5	10	0	10	10	0
	Lack of Weeds	15	0	0	0	0	0	0	0
	Recruitment	10	0	5	5	0	5	3	0
	Organic Matter	5	2	2	2	2	2	2	2
	Logs	5	0	0	0	0	0	0	0
	Total Site Condition Score	**75**	5	16	19	4	22	17	4
Landscape value	Patch Size	10	1	1	1	1	1	1	1
	Neighbourhood	10	1	1	1	1	1	1	1
	Distance to Core	5	0	0	0	0	0	0	0
	Total Landscape Score	**25**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Habitat points out of 100		**100**	**7**	**18**	**21**	**6**	**24**	**19**	**6**
Habitat (Quality) Score out of 10		**10**	**0.7**	**2**	**2**	**0.6**	**2**	**2**	**0.6**

Notes: PGW – Plains Grassy Woodland; VVP – Victorian Volcanic Plain

[redacted]

[redacted]

The projected improvement in vegetation quality within each habitat zone assumes that the offset will be managed for the purposes of conservation and maintained in perpetuity (Table 6). It has been determined based on the offset management actions proposed to be implemented over the 12-year management period (see Section 4.2). This will include restricting livestock and vehicle access, particularly during flowering and seed set periods for native herbs and grasses, to facilitate native recruitment and enhance the diversity and extent of native flora species, and undertaking biomass, weed and pest animal control (including native herbivores) to reduce the pressure on native vegetation from introduced species. Vegetation monitoring will be undertaken throughout the offset management period, and offset site monitoring in perpetuity.

Table 6 shows that an improvement in the lack of weeds score in all habitat zones will be achieved within the proposed offset area by reducing the current cover of weeds in habitat zones 1B, 1C, 1E and 2A (50-75%) (remnant patch Plains Grassy Woodland areas) and habitat zones 1A, 1D and 3A (80-95%) (non-patch areas) to <50%. This improvement in the lack of weeds score will be essential to restoring GEWVVP in all habitat zones. An improvement will also be achieved in the understorey scores in habitat zones 1A, 1B, 1D, and 3A (through biomass, weed and pest control to reduce competition and support native recruitment, and supplementary planting if natural recruitment inadequate), in the recruitment scores of habitat zones 1A, 1B, 1D, 2A and 3A (through the protection of recruiting canopy trees and other woody understorey), in the organic litter scores of all habitat zones (through biomass, weed and pest control, and increased dominance of native groundcover), and the logs scores of habitat zones 1A, 1C, 1D, 2A and 3A (from the introduction of logs in Year 1 and the protection of fallen timber). The large old trees and canopy scores are not expected to improve significantly over the 12-year offset management period.

In summary, with the offset, GEWVVP is to be restored in all habitat zones (4.0709 hectares), and the quality of all remnant patches of Plains Grassy Woodland vegetation (1.2659 hectares) will increase by 1 point to 4/10, and the quality of all remaining Plains Grassy Woodland vegetation in the offset (2.8050 hectares) that does not currently meet Victorian patch criteria will increase by 3 points to 4/10.

[redacted]

Table 6. Future projected Plains Grassy Woodland vegetation quality with the proposed offset.

Vegetation Quality (Habitat Hectare) Assessment			HZ1A	HZ1B	HZ1C	HZ1D	HZ1E	HZ2A	HZ3A
Area (ha)			1.0236	0.2398	0.2055	1.079	0.1813	0.6393	0.7024
EVC name			PGW	PGW	PGW	PGW	PGW	PGW	PGW
EVC Number			55_61	55_61	55_61	55_61	55_61	55_61	55_61
Bioregion			VVP	VVP	VVP	VVP	VVP	VVP	VVP
		Max Score	Score	Score	Score	Score	Score	Score	Score
Site Condition Score	Large Old Trees	10	3	0	0	2	0	0	2
	Canopy Cover	5	0	4	2	0	5	2	0
	Understorey	25	15	15	15	15	15	15	15
	Lack of Weeds	15	4	4	4	4	4	4	4
	Recruitment	10	5	5	5	5	5	5	5
	Organic Matter	5	5	5	5	5	5	5	5
	Logs	5	2	2	2	2	2	2	2
	Total Site Condition Score	**75**	34	35	33	33	36	33	33
Landscape value	Patch Size	10	1	1	1	1	1	1	1
	Neighbourhood	10	1	1	1	1	1	1	1
	Distance to Core	5	0	0	0	0	0	0	0
	Total Landscape Score	**25**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Habitat points out of 100		**100**	**36**	**37**	**35**	**35**	**38**	**35**	**35**
Habitat (Quality) Score out of 10		**10**	**4**	**4**	**4**	**4**	**4**	**4**	**4**

Notes: PGW – Plains Grassy Woodland; VVP – Victorian Volcanic Plain

Objective 3: Implement the 12-year offset management plan

A 12-year offset management plan (OMP) has been prepared in consultation with the landowner, and drawn from peer-reviewed literature and expertise in native woodland rehabilitation. The management activities, schedule and performance targets for the 12-year management period are outlined below. The implementation of this OMP is essential to achieve the projected gain and the long-term conservation of GEWVVP.

Objective 4: Undertake an adaptive management approach

Native Woodlands are dynamic and inherently variable ecosystems, where groundcover vegetation and habitat composition can change yearly and seasonally in response to rainfall, temperature, fire, grazing pressure and management (TSSC 2009). Given the open eucalypt-canopy of GEWVVP and Plains Grassy Woodland vegetation, the quality of its native groundcover is particularly vulnerable to weed invasions and climatic extremes. Managers of grassy woodland habitats must be highly responsive to seasonal variability, changes in site conditions and the emergence of new threats, and have sufficient flexibility to adapt their management appropriately.

[redacted]

[redacted]

An adaptive management approach involves continual monitoring, review and re-evaluation of management strategies to achieve the management objectives. Undertaking an adaptive management approach is essential to the success of this offset, as it will ensure that the land manager has adequate flexibility to adjust their management approach according to the outcomes of implemented management activities and/or unforeseen threats that may arise, and to respond to seasonal variations, in particular fluctuations in annual grassy and herbaceous weeds.

An adaptive management approach may involve adjustments in the timing and methods of the management activities outlined in section 4.2 below. It may also involve the introduction of alternative management activities that are not outlined below, but which also align with the objectives of the offset management plan. To ensure accountability under an adaptive management approach, any changes to the management actions outlined below, or the introduction of new activities and approaches beyond the scope of the proposed offset management actions in Section 4.2 must be undertaken in consultation with TfN. A variation to the OMP should not be required under an adaptive management approach, unless a variation to the offset objectives is proposed. Any proposed variation to the OMP will be subject to DCCEEW approval.

Under an adaptive management approach, strict management actions and schedules are not possible as they will limit the flexibility of the land manager to adjust management approaches and timing and in response to changing site, seasonal or climatic conditions. Accordingly, restrictive language, such as "must" are not used under the proposed offset management actions, as this would restrict flexibility and may lead to worse outcomes if the prevailing seasonal and site conditions during a particular period are not conducive to a particular management action.

All targets should be assessed with consideration of the timing of the assessment and normal seasonal variability, and where appropriate, unseasonal conditions and/or recent management. Regular site monitoring and good record keeping (see Section 4.2.7) will also ensure that in the event that performance targets are not met within a particular period, evidence of the climatic and site conditions, management decisions and remedial actions undertaken will assist to determine ongoing compliance with the approved OMP.

4.2 Management Actions

4.2.1 Security Agreement

Prior to the commencement of the offset management plan, the offset will be secured on-title via a TfN Deed of Covenant. This security agreement will provide permanent administrative protection to the offset through restricting allowable land uses to conservation purposes only in accordance with the approved OMP.

4.2.2 Fencing and Access

The offset must be protected from livestock and unauthorised vehicle access. The offset site is currently fenced around its perimeter, with vehicle access gates for site and stock management (Figure 2). All fencing must be stockproof to the satisfaction of TfN within 12 months from the commencement of the OMP. This timeframe

[redacted]

ensures adequate flexibility for the landowner to avoid impacts to native flora and soils from vehicles (ie. when wet). Fencing maintenance, upgrades and/or repairs must be undertaken annually thereafter to ensure the offset site remains stockproof.

Gates will be maintained to allow vehicle access for offset management purposes. The offset site will not be accessed by heavy vehicles during wet periods (eg. winter) to avoid adverse impacts to native vegetation and soil structure.

4.2.3 Signage

Within three months from the commencement of the OMP, signage will be erected along the offset boundary fence and at vehicle access gates to alert the public, land managers and contractors to the presence of the offset site and prohibited activities. A minimum of four signs will be erected along the offset boundary fence and one for each access gate.

4.2.4 Native Canopy and Logs

All native mature River Red-gum canopy trees, dead or alive, must be retained in the Dunkeld offset site. The site currently supports approximately 1.6 large trees per hectare and 3% tree canopy cover. The benchmark number of large trees and tree canopy cover for EVC 55 Plains Grassy Woodland vegetation is 8 per hectare and 10% respectively (DELWP 2022b), and the expected combined cover of canopy and mid (eg. undertorey trees and shrubs) layer for GEWVVP ranges from 5-30% (TSSC 2009). Given the low number and cover of mature canopy trees present, trees may have been historically removed from the offset site. Eucalypt canopy trees provide important habitat for local fauna, and are a source of self-recruiting canopy trees and a key characteristic of the critically endangered GEWVVP community (TSSC 2009).

To increase the number of large old trees and tree canopy cover long term, self-recruiting River Red-gums should be retained and protected at a recommended rate of 8-12 per hectare. These recruits should be protected from grazing (eg. through large tree guards) and burning practices (eg. providing adequate breaks). As the re-establishment of large old trees and increasing the tree canopy cover is not achievable within the 12-year offset management period (expected time until ecological benefit is 30-100 years), protecting self-recruiting tree canopy species will not result in an improvement in the Large Old Tree or Canopy Cover scores from this offset, however it will improve the woody recruitment scores for habitat zones 1A, 1B, 1D, 2A and 3A (Table 6). The retention and protection of recruiting understorey trees and shrubs should also be undertaken to achieve the minimum canopy and mid layer cover for GEWVVP (5-30%). If the natural recruitment of canopy and mid layer flora is inadequate, supplementary planting in accordance with Section 4.2.8 will be implemented from Year 6 as required.

Logs are defined as dead timber fallen to the ground with a diameter greater than 10cm (DSE 2004). In EVC 55 Plains Grassy Woodland vegetation, large logs are defined as logs with a diameter greater than 40cm. The absence of logs and large logs in the Dunkeld offset site indicate that log removal for firewood or other uses is likely to have been a regular practice in the past. Logs provide important habitat, structural diversity and nutrients for woodland fauna and flora, and must be retained to improve the 'Logs' score in all habitat zones from this offset (Table 6). The collective target log length for all habitat zones is 10-50 metres per hectare.

[redacted]

To ensure the minimum target is reached, logs will also be introduced in Year 1 at a rate of at least 10 metres per hectare in each habitat zone as required. Introduced logs can include tree families indigenous to the introduction site (eg. Myrtaceae understorey or canopy trees), and may be from the native vegetation removal site or another TfN approved source (eg. from another site intended for destruction). Landowners cannot move logs from other patches of native vegetation. The logs must be introduced to the offset site in a way that will have a minimal impact on existing native vegetation (eg. when dry to avoid damage from vehicles), and should be placed in locations where they can be easily protected from ongoing ecological burning practices (eg. adjacent to existing canopy or newly recruiting canopy trees also to be protected).

4.2.5 Biomass Control

Biomass control through grazing and burning is an important management activity to promote floristic diversity in grassy ecosystems, including grassy woodlands (Barlow 1999). Biomass control will aim to provide adequate space for germination and recruitment of native flora, and will target introduced grasses and herbaceous weeds flora species through timing and regular monitoring (discussed below).

The current cover of bare ground is very low (0-5%) throughout the offset site. Biomass control will aim to maintain 10-30% bare ground or inter-tussock spaces by late-winter to early spring each year where achievable (accounting for seasonal variations), to support the recruitment of native flora species in spring and early summer. Biomass control may be undertaken through strategic grazing with sheep and ecological burning. If the natural recruitment of native groundcover is inadequate (as determined through Vegetation Quality Assessment monitoring), including native perennial grasses and herbs, supplementary planting in accordance with Section 4.2.8 will be implemented from Year 8 as required.

4.2.5.1. Strategic Grazing

Strategic livestock grazing has been recognised as an essential management tool for the conservation of productive grassy ecosystems (Lunt et al 2007; Dorrough et al 2008b). However, a controlled approach must be undertaken to target introduced grasses and herbaceous weeds, promote the recruitment and extent of native flora, and avoid impacts to soil and existing native flora.

Grazing is recommended in grassy woodlands which already have a history (and therefore some tolerance) of grazing and/or where dense stands of weeds, such as Toowoomba Canary-grass, Yorkshire Fog and Sweet Vernal (as in the case of the Dunkeld offset site) has invaded the woodland (Barlow 1999). The aim of strategic grazing is to target introduced biomass during its growth period and create space for native flora recruitment by late-winter/early spring.

Crash-grazing with sheep has been undertaken periodically in late-summer or autumn for the last 15 years at the Dunkeld offset site (*pers. comm.* [redacted] 18/11/2022). Summer or autumn grazing is less likely to disturb the soil profile through pugging, however it may also favour the establishment of winter-growing introduced perennial and annual grasses. Grazing with sheep in mid- to late-winter is more likely to favour the establishment of native flora through creating space for their recruitment in spring and summer. The intensity of sheep grazing during wet periods should be adjusted to avoid impacts from pugging, which may require the exclusion of grazing entirely as required.

[redacted]

The grazing frequency, intensity and duration will depend on seasonal and site conditions, and will involve close monitoring by the land manager. Under a strategic grazing regime for this offset, unless advice is sought from TfN to adjust this approach, the land manager will:

- Aim to maintain a vegetative cover of at least 70%;
- Aim to provide 10-30% inter-tussock space by late-winter or early-spring each year in conjunction with other biomass control;
- Avoid or minimise grazing during the active growth period for native groundcover (generally spring and summer);
- Reduce or remove grazing from the offset site entirely as required (eg. during extreme dry, low growth periods, or wet conditions when site may be at risk of excess pugging), to avoid impacts to soil and native flora; and,
- Protect the minimum number of River Red-gum canopy and native mid layer recruits (section 4.2.4) from browsing (eg. fencing or tree guards).

4.2.5.2. Ecological Burning

Ecological burning can assist in reducing both native and non-native biomass and, where targeted, the cover of introduced grasses, particularly if undertaken in conjunction with strategic grazing and other weed control (Barlow 1999). The timing and intensity of ecological burning should be adjusted according to the flora species being targeted, their growth and flowering periods, and to assist the effectiveness of other weed control.

For example, Yorkshire Fog *Holcus lanatus* is an introduced perennial grass that tolerates wet conditions. If conditions allow, it can be controlled through burning at the beginning of its flowering period (August-December) in winter. Introduced annual grasses generally flower from mid-late spring, accordingly burning should be undertaken in late winter or early spring to control introduced annual grasses prior to their high-growth and seed set period. Where required, dense swards of native Kangaroo Grass *Themeda triandra* can be thinned through either burning in spring to create space for native herb recruitment, or autumn (prior to their dormancy) to reduce their overall density. Ecological burning can also be undertaken to increase the effectiveness of herbicide spraying of introduced perennial grasses. Toowoomba Canary-grass *Phalaris aquatica* can be more effectively sprayed after a burn has removed its large perennial tussock, as a smaller regenerating tussock can be more effectively targeted and requires less chemical herbicide to kill.

Due to the dominance of introduced annual and perennial grasses at the Dunkeld offset site, late-winter burning will assist to reduce the cover of introduced grasses and create space for native groundcover flora to recruit prior to their active growth period (generally spring to mid-summer, subject to seasonal conditions) (Barlow 1999). Follow-up weed control and spreading locally-collected (ie. from site or of local provenance) seeds of native grasses and herbs post-burning will support the re-establishment of native flora in burnt areas and increase competition with introduced flora. Burning during the active growth period for native flora should only be undertaken on the basis of expert advice. Autumn burning is unlikely to assist in the reduction of introduced biomass at the Dunkeld offset site, as it will favour winter-growing weeds such as Yorkshire Fog, Sweet Vernal and annual grasses.

[redacted]

To protect existing and recruiting River Redgum canopy trees, other native shrubs, and fallen or introduced logs, suitable breaks should be prepared around the dripline of mature canopy trees, shrubs and logs prior to burning. While recruiting River Redgums and other woody species can tolerate some cool burning, repeated burning will impact their survival. To avoid impacts to recruiting native trees and shrubs in grassy woodland vegetation, the recommended frequency of burning is once per 6-7 years in the same area (Barlow 1999). However, given the site comprises many open grassland-like areas, a higher frequency (eg. once per 3 years) in the same area is suitable where no canopy trees occur (eg. in habitat zones 1A, 1D and 3A).

While burning is an effective management tool in grassy ecosystems, the outcomes of burning can vary and should be used on a 'trial' basis, followed up by regular monitoring and review. For this offset, ecological burning will involve:

- Burning outside the fire danger period (generally April to November);
- Burning within the fire danger period can only be undertaken following approval by TfN and with a permit to burn from the Country Fire Authority (CFA);
- Pre- and post-burn monitoring, including photos, burn maps and observations on biomass, weed and native vegetation covers, and summarised in annual reports (see Section 4.2.9.1);
- Burning in a non-targeted mosaic pattern to a maximum of 50% of the offset site in one year, or burning one or multiple targeted areas (to a maximum of 50% of the offset site in one year) with a high cover of introduced grasses or dense swards of native grass (eg. Kangaroo Grass) that are limiting inter-tussock spaces;
- A minimum of two burns to be undertaken prior to Year 10 of the 12-year offset management period, to allow for adequate review of results in Years 10-12;
- The reintroduction of grazing should be delayed post burn to allow sufficient recovery of native perennial grass (eg. native grasses have a minimum of three tillers); and,
- All burning must be undertaken in accordance with CFA planning requirements.

4.2.6 Weed Control

Table 7 below lists all the weeds observed on site, their threat status (based on their invasiveness and status under the *Catchment and Land Protection Act 1994*), and the method and timing for their control. The cover of introduced grasses and herbaceous weeds varies throughout the offset site varies from 50-95%, with habitat zones 1B, 1C, 1E and 2A (remnant patch areas) comprising a 50-75% cover of weeds, and habitat zones 1A, 1D and 3A (non-remnant patch areas) comprising a 75%-95% cover. All introduced perennial grasses are considered high threat to the offset site due to their capacity to out-compete native flora. Two noxious weeds, Slender Thistle and Spear Thistle, and one high threat emergent weed, South African Orchid, were recorded in the offset site, and two woody weeds, White Poplar and Lombardy Poplar, are situated adjacent to the offset site.

For this offset, adjacent woody weeds in Creekline Grassy Woodland vegetation will be eliminated by Year 2, and the cover of introduced grasses and herbaceous weeds will be reduced to less than 50% in the offset site by the end of the 12-year offset management plan. The cover of all high threat weeds (Table 7) should be targeted to minimise their competition with native vegetation.

[redacted]

Table 7. Weeds recorded in the Offset Site, control method and timing.

Weed Group/ Common Name	Species Scientific Name	Threat Status	Method	Timing
Poplars	*Populus spp.*	High	Herbicide application (eg. cut and paste or drill and fill) during active growth period.	Spring and summer
Annual grasses	*Aira spp., Avena barbata, Bromus* spp., *Cynosurus echinatus, Hordeum spp., Isolepis levynsiana, Lolium* spp., *Vulpia spp.*	Moderate	Strategic grazing, ecological burning, slashing and/or herbicide application prior to seedset if appropriate (eg. limited off-target damage).	Winter and spring
Perennial grasses	*Agrostis capillaris, Anthoxanthum odoratum, Cynodon dactylon, Holcus lanatus, Paspalum dilatatum, Setaria parviflora*	Moderate	Strategic grazing, ecological burning, slashing and herbicide application prior to seedset and/or post-burning.	All year
Toowoomba Canary-grass	*Phalaris aquatica*	High	Strategic grazing, ecological burning, slashing and herbicide application prior to flowering and/or post-burning.	All year
Flatweeds	*Helminthotheca echioides, Hypochaeris* spp, *Plantago spp., Rumex* spp., *Sonchus* spp.	Low	Strategic grazing, if required herbicide application prior to flowering	Winter, spring and summer
Capeweed	*Arctotheca calendula*	Moderate	Herbicide application prior to flowering, or chip if practical (eg. present in low numbers).	Spring
Asparagus	*Asparagus officinalis*	High	Herbicide application prior to flowering, chip or handpull if practical (eg. present in low numbers).	Winter and spring
South African Orchid	*Disa bracteata*	High	Chip, handpull and dig out roots.	Spring
Thistles	*Carduus pycnocephalus, Cirsium vulgare*	High	Herbicide application prior to flowering, or chip if practical (eg. present in low numbers). .	Winter, spring and summer
Herbaceous weeds	*Acetosella vulgaris, Cerastium glomeratum, Silene gallica var. gallica, Trifolium spp., Vicia sativa*	Low	Strategic grazing, herbicide application prior to flowering, or chip and handpull if practical (eg. present in low numbers).	Spring and summer
Onion Grass	*Romulea* spp.	Moderate	If concentrated areas occur that do not comprise any native vegetation, herbicide may be applied.	Winter to spring

Weed control methods include strategic grazing (section 4.2.5.1), ecological burning (section 4.2.5.2), herbicide application (section 4.2.6.1), slashing (ie. prior to seedset), chipping (ie. with hoe) or handpulling. Monitoring for new and emerging woody and herbaceous weeds will be conducted throughout the year, and any new and emerging weeds eliminated.

4.2.6.1 *Herbicide Application*

The application of herbicides is an effective and efficient control method for a range of woody, herbaceous and grass weeds. Herbicide application methods will vary depending on the weed species being targeted, their location, growth and flowering periods, and density. Off-target impacts to native flora and fauna, and waterways, must be avoided through the correct use, timing and careful application of herbicides. All herbicide application must be undertaken by suitably qualified personnel, using best-practice methods, and in accordance with the manufacturer's specifications and occupational health and safety policies.

4.2.6.2 *Onion Grass*

Onion Grass *Romulea rosea* is a common weed found throughout Victoria. It occurs in the offset site at a very low cover (less than 1%). Control options for Onion Grass are however limited in native grassy woodlands habitats, as there are no selective herbicides that will target Onion Grass without also harming adjacent native grass or herb species. Corms may be dug out, but this practice will cause significant ground disturbance for

native flora and fauna. If concentrated infestations occur, that do not contain native flora, herbicide may be applied.

4.2.6.3 *Flatweed*

'Flatweed' or 'Cat's Ear' *Hypochaeris radicata* is a widespread weed in south-eastern Australia, found in both disturbed and undisturbed sites. The species is a perennial herb up to 80cm tall, with a long tap-root, a rosette of lanceolate leaves and bright yellow flowers. It produces large quantities of wind-dispersed seed, which can germinate all year-round in response to favourable (generally wet) conditions. It is not considered a high threat weed of native grasslands, but rather it is opportunistic. Their cover fluctuates in response to seasonal and site conditions, and they are not known to out-compete native vegetation. Recommended control techniques for Flatweed include a combination of spot-spraying, mechanical removal and rotational grazing (HerbiGuide 2022). However, given its widespread distribution and invasiveness, any control of flatweed is unlikely to be effective long term, hence eradication is not considered possible, nor essential to the health of the woodland habitat.

4.2.6.4 *Weed Reduction Plan*

Reducing the high cover of introduced pasture grasses and herbaceous weeds is an essential management requirement to restoring GEWVVP in the offset site and achieving the proposed gains in native vegetation and habitat (section 4.1, objective 2). Table 8 outlines the weed cover reduction targets that will be achieved during and at the end of the 12-year offset management period. Interim targets will ensure that progress can be monitored, measured, evaluated and remediated (if required) throughout the offset period. Vegetation Quality Assessments (VQAs) will be undertaken in Years 2, 5, 8, 10 and 12, and will include an assessment of weed covers within each habitat zone (section 4.2.9.2). The VQAs in Years 2, 5, 8 and 10 will monitor progress towards the interim and final weed cover targets, and support adaptive management required to achieve the targets. In the event that the interim Year 5 and 10 weed cover targets are not achieved, the landowner will notify APA, TfN and DCCEEW, and provide the following information to support remediation:

1. Relevant Vegetation Quality Assessment report(s) with assessed weed cover per habitat zone;
2. Dominant and/or problem weed species;
3. Weed control works, including methods and frequency, completed to date;
4. Landowner monitoring frequency and record;
5. Consideration of environmental pressures outside of landowner's control (if relevant);
6. Proposed adaptive management strategy and timeframe to remediate weed cover and achieve the interim target;
7. Proposed monitoring, review and evaluation frequency to support remediation; and,
8. Resources required (eg. equipment, personnel) to implement remediation.

Table 8. Weed Reduction Targets

Habitat Zones	Current Weed Cover	Weed Cover Targets				
		Year 2	Year 5	Year 8	Year 10	Year 12
1B, 1C, 1E and 2A	50-75%	Review progress towards targets	<65%	Review progress towards targets	<55%	<50%
1A, 1D and 3A	75-95%		<80%		<60%	<50%

[redacted]

4.2.7 Pest Control

The *Catchment and Land Protection Act 1994* lists rabbits and foxes as established pest animals and requires that all landowners take reasonable steps to prevent the spread of, and as far as possible eradicate, established pest animals on their land. Rabbits and foxes are a threat to native fauna through competition and predation respectively. They also impact native vegetation through burrowing, over-browsing and soil erosion.

One fox was recorded during the site assessment on 18 November 2022. Rabbits and foxes are also known to occur in the area at low numbers (*pers. comm.* Farm manager). No warrens or dens have been observed in the offset site. Rabbits and foxes will be monitored and controlled as required in the offset site throughout the year in accordance with Table 9 below. Annual shooting is the preferred control method. Other methods that may be implemented include fumigation, hand collapsing of burrows/dens and baiting if required. Any carcasses must be removed to prevent poisoning of native predators. Rubbish and artificial piles of logs and rocks may be used as harbour by pest animals, and should be removed or dispersed as appropriate. Do not remove indigenous plants, fallen logs or rocks from the site.

Mobs of native Eastern Grey Kangaroos *Macropus giganteus* are known to occur regularly on site, and the site shows evidence of preferential browsing by kangaroos on native flora over introduced species through the high cover of introduced Sweet Vernal-grass (*pers. comm.* [redacted] 24 October 2023). Preferential browsing on native flora is a threat to Plains Grassy Woodland vegetation, as it can reduce the cover of native grasses and herbs, limit or prevent the recruitment of native canopy species, and support the spread of unpalatable introduced flora species, such as Sweet Vernal-grass. Preferential browsing by kangaroos should be monitored to avoid impacts to the offset site, and control undertaken if required. Kangaroo control options include:

1. Reducing local kangaroo population numbers through obtaining an *Authority Control Wildlife Permit* and/or under Victoria's existing *Kangaroo Harvesting Program* which would allow the landowner to engage professional harvesters to undertake control and remove carcasses for commercial use (DEECA 2023d);
2. Create exclusion plots in the offset site using temporary or permanent kangaroo-proof fencing; and/or
3. Exclude grazing by native macropods from the offset site through the installation of temporary or permanent kangaroo-proof fencing around the offset perimeter.

Monitoring for new and emerging pest animals will also be undertaken throughout the year, and control undertaken as required.

[redacted]

Table 9. Pest animals control method and timing.

Common name	Method	Timing
Rabbits & Foxes	Fumigation and hand collapse of rabbit burrows and fox dens, if required	Ongoing
Rabbits & Foxes	Baiting (optional method)	In accordance with annual breeding cycles and integrated baiting programs as required.
Rabbits & Foxes	When baiting, collect and dispose of carcasses to prevent poisoning of native predators.	
Rabbits & Foxes	Shooting	All year
Rabbits & Foxes	Remove or disperse surface harbour	Ongoing
Rabbits & foxes	Monitor and control	Ongoing
Kangaroos	Monitor and control if required	Ongoing
Kangaroos	Reduce population in accordance with appropriate permits, license and/or control programs	All year, if required
Kangaroos	Create exclusion plots in the offset site through kangaroo-proof fencing	As required
Kangaroos	Erect kangaroo-proof fencing around the offset site	As required
New & Emerging pest animals	Monitor and control	Ongoing

4.2.8 Supplementary Planting

To restore GEWVVP in Plains Grassy Woodland vegetation in the offset, the native canopy and mid layer cover must be increased to 5-30% (see Section 4.2.2), and the cover of native perennial grasses and/or herbs in the understorey should increase to at least 50% (Table 4). In the event that natural recruitment of native flora does not occur in adequate densities to achieve the minimum native canopy, mid layer and understorey cover required through biomass and weed control (see Sections 4.2.5 and 4.2.6), supplementary planting will be undertaken from Year 6 of the 12-year offset management period for native canopy and mid layer flora, and from Year 8 for native understorey as required.

Supplementary planting using indigenous seed or tubestock of local provenance can be undertaken in gaps in the existing native vegetation and outside of the canopy drip-line of all indigenous trees, and should not impact upon any existing native vegetation, including native grasses. Any soil cultivation required must only be undertaken in areas of non-native vegetation and must not occur within an area twice the diameter of the canopy of existing indigenous trees on the site.

Site preparation should be undertaken prior to planting to remove competition from introduced flora and ensure optimal establishment of planted vegetation. This may include weed control techniques outlined above (see Section 4.2.6), weed-matting or other physical suppressants, or soil cultivation (ie. in areas of non-native vegetation only, and outside twice the diameter of native tree canopies) prior to seeding.

A list of recommended indigenous flora species suitable for Plains Grassy Woodland and GEWVVP vegetation is provided in Table 10. This list may be adjusted on expert advice and species availability. The strata, life-forms and densities provided reflect the GEWVVP listing advice and EVC benchmark requirements for Plains Grassy Woodland (TSSC 2009; DEECA 2023b).

[redacted]

Table 10. Indigenous Flora Species and Densities for Supplementary Planting (if required)

Strata	Life-form	Scientific name	Common name	Density/ha
Overstorey	**Canopy species**	*Eucalyptus camaldulensis*	River Red-gum	8-12/ha
Mid Layer	**Understorey Trees and Large Shrubs (> 5 m tall)**	*Acacia melonoxylon* *Acacia mearnsii* *Allocasuarina verticillata* *Banksia marginata*	Blackwood Black Wattle Drooping Sheoak Silver Banksia	5-30/ha
	Medium Shrubs (1-5 m tall)	*Acacia pycnantha* *Acacia verticillata* *Acacia paradoxa* *Bursaria spinosa*	Golden Wattle Prickly Moses Wedge Wattle Sweet Bursaria	10-50/ha
Groundcover	**Small Shrubs (20cm-1 m tall)**	*Pimelea humilis*	Common Rice-flower	5-40/ha
	Prostrate Shrubs (<20cm)	*Styphelia humifusum* *Bossiaea prostrata*	Cranberry Heath Creeping Bossiaea	5-40/ha
	Large Tufted Graminoids (>1 m tall)	*Austrostipa semibarbata* *Austrostipa mollis* *Poa Labillardieri*	Fibrous Spear-grass Supple Spear-grass Common Tussock-grass	100-700/ha
	Medum to Small Tufted Graminoids (<1m tall)	*Anthosachne scabra* *Austrostipa scabra* subsp. *falcata* *Lachnagrostis filiformis* *Poa sieberiana* *Rytidosperma caespitosum* *Rytidosperma duttonianum* *Rytidosperma racemosum* *Rytidosperma setaceum* *Themeda triandra*	Common Wheat-grass Rough Spear-grass Common Blown-grass Grey Tussock-grass Common Wallaby-grass Brown-back Wallaby-grass Slender Wallaby-grass Bristly Wallaby-grass Kangaroo Grass	4,000-12,000/ha
	Medium to Tiny Non-tufted Graminoids (<1m tall)	*Microlaena stipoides var. stipoides* *Dianella revoluta*	Weeping Grass Black-anther Flax-lily	500-2,000/ha
	Large Herbs (>50cm)	*Rumex brownie* *Senecio hispidulus* *Senecio quadridentatus*	Slender Dock Rough Fireweed Cotton Fireweed	100-500/ha
	Medium Herbs (5-50cm tall)	*Acaena echinata* *Arthropodium strictum* *Asperula conferta* *Bulbine bulbosa* *Calocephalus citreus* *Calocephalus lacteus* *Chrysocephalum apiculatum* *Convolvulus angustissimus* subsp. *angustissimus* *Drosera peltata* *Epilobium billardiereanum* *Eryngium ovinum* *Galium gaudichaudii* *Geranium solanderi* *Gonocarpus tetragynus* *Haloragis aspera* *Oxalis perennans* *Pauridia vaginata* *Plantago gaudichaudii* *Rumex dumosus* *Tricoryne elatior* *Wahlenbergia gracilis*	Sheep's Burr Chocolate Lily Common Woodruff Bulbine Lily Lemon Beauty-heads Milk Beauty-heads Common Everlasting Blushing Bindweed Pale Sundew Variable Willow-herb Blue Devil Rough Bedstraw Austral Crane's Bill Common Raspwort Rough Raspwort Grassland Wood-sorrel Yellow Star Narrow Plantain Wiry Dock Yellow Rush-lily Sprawling Bluebell	750-7,500/ha
	Small Herbs (<5cm tall)	*Dichondra repens* *Hydrocotyle laxiflora* *Veronica gracilis*	Kidney-weed Stinking Pennywort Slender Speedwell	100-1,000/ha

[redacted] [redacted]

[redacted]

4.2.9 Monitoring and Reporting

Within three months from the commencement of the OMP, a minimum of two photopoints in site number 1, and a minimum of one photopoint in each of site numbers 2 and 3 (ie. at least four, two on the western site of [redacted] and two on the eastern side), be installed by the Landowner and clearly marked throughout the offset site. Photos will be undertaken at these points, and any other points of interest, annually.

Landowner offset site monitoring will be undertaken by the landowner for the duration of the 12-year offset management plan and in perpetuity, although formal annual reporting (Section 4.2.9.1) by the landowner will be undertaken for the duration of the 12-year offset management period only. Site monitoring will include observations of flora and fauna, pest animal activity, and native and non-native vegetation cover, and the outcomes of management activities.

4.2.9.1 Annual Reporting

The landowner will submit annual reports to TfN and APA over the 12-year offset management period. The annual report will outline the offset progress against the management activities and performance targets set out in the OMP, and site observations. Annual Reports should include photos and provide enough detail in the form of written comments and supporting evidence that an assessor can easily determine the completion of, or progress against, the performance targets for each management activity. DEECA's annual reporting template is provided as Attachment 1.

4.2.9.2 Vegetation Quality Assessment

To monitor the quality of woodland vegetation in the offset site, vegetation quality assessments will be undertaken by suitably qualified botanists/ecologists in Years 2, 5, 8, 10 and 12. These assessments should be undertaken during the optimal survey period to detect native woodland and grassland flora (typically spring or early summer, subject to seasonal conditions), and should include:

- A record of flora species present;
- Review vegetative covers of native and introduced vegetation in each habitat zone (1A, 1B, 1C, 1D, 1E, 2A and 3A), including native canopy trees, understorey trees, shrubs, native grasses and herbs, woody and herbaceous weeds, and high threat herbaceous weeds;
- Record the combined percentage cover of canopy and mid layer trees and shrubs across the entire offset;
- Undertake a Vegetation Quality (Habitat Hectare) Assessment (Appendix 3);
- Reassessment of the vegetation against the condition thresholds for GEWVVP (Table 4); and,
- Vegetation quality assessment reports to be prepared after each assessment in Years 2, 5, 8, 10 and 12, and must include the completed Vegetation Quality Field Assessment Sheets for each habitat zone (Appendix 3).

Vegetation quality assessments will also be undertaken every 5 years after the 12-year offset management period for the life of the approval, and the last two years of the life of the approval, to confirm the continued presence and quality of GEWVVP achieved at the end of the 12-year offset management period (Table 11).

[redacted]

The Landowner is responsible for funding and coordinating the Vegetation Quality Assessments for the life of the approval. All Vegetation Quality Assessment reports will be submitted to the Landowner, APA, TfN and DCCEEW upon completion. The timing of report submissions will be subject to the appropriate survey periods and consultant timeframes.

Table 11. Offset Monitoring and Reporting Schedule

Monitoring Type	Responsibility	Monitoring Frequency		
		12-Year Offset Management Period	Life of the Approval (24 June 2022 – 30 January 2072)	In-Perpetuity
Site Monitoring	Landowner	Ongoing	Ongoing	Ongoing
Annual Reporting	Landowner, APA, TfN, DCCEEW	End of each year	-	-
Vegetation Quality Assessment	Landowner, Botanist/Ecologist, APA, TfN, DCCEEW	Years 2, 5, 8, 10 and 12	Every 5 years, and in last 2 years (2071 & 2072)	-

4.3 12-Year Offset Management Plan

4.3.1 Performance and Completion Criteria

The time until the ecological benefit is projected to be 12 years. Native woodlands are dynamic ecosystems that can respond rapidly to changes in management approaches, in particular grazing pressure, ecological burning, pest animal control and weed control. This time period is considered adequate to maintain and improve the current quality of Plains Grassy Woodland vegetation, and restore GEWVVP across the offset area (Figure 2). Table 12 below outlines the 12-year performance targets and in which year each target will be achieved. The risk of each target not being achieved has been determined in accordance with the Risk Assessment Framework detailed in Appendix 4.

[redacted]

Table 12. 12-year Performance and Completion Criteria

Ecological Outcome	Management Action	Responsibility	Performance Criteria		Completion Criteria	Year to be Achieved	Risk of Completion Criteria not being achieved	Remedial action if Performance or Completion Criteria not achieved		
								Trigger Value	Detection Monitoring	Remedial Action
To protect and improve the quality of Plains Grassy Woodland vegetation, and restore GEWVVP (4.0709 hectares).	**Security Agreement**	Landowner, APA, TfN, Land Use Victoria	1.1	Site secured through appropriate administrative protection to permanently restrict allowable land uses and activities to the conservation of MNES	Trust for Nature Deed of Covenant executed and subsequently registered on-title	Commencement of Year 1	Very Low	Trust for Nature Deed of Covenant not executed by all relevant parties, and/or registered on land title	APA, Trust for Nature and Landowner currently coordinating execution and registration	Offset does not proceed prior to execution of The TfN Covenant. Registration on-title will occur subsequent to Agreement execution and offset commencement, and is subject to Land use Victoria's timeframes. TfN Covenant to remain on-title in-perpetuity or re-registered if removed.
	Fencing and Access	Landowner	2.1	Existing perimeter fencing upgraded as required and maintained	Offset site is stockproof	As soon as practical within 12 months of commencement of OMP (subject to site conditions)	Low	Existing perimeter fencing not upgraded as required and/or maintained	Regular site monitoring (ie. 3-monthly)	Upgrade and/or repair all fencing and gates as required to prevent access from unauthorised vehicles and neighbouring livestock.
			2.2	Access gates remain locked	Vehicle access is restricted	Commencement of Year 1, ongoing	Low	Property access gates are unlocked		
	Signage	Landowner	3.1	Minimum of four signs erected and maintained along boundary fences and at each vehicle access gates	Public alerted to the presence of offset site and prohibited activities	Within 3 months of commence of Year 1	Very Low	At least four signs are not visible along boundary fence or access gates.	Regular site monitoring (ie. 3-monthly)	Erect, upgrade, replace and/or maintain signs to alert public as required
	Native Canopy and Logs	Landowner	4.1	Retain and protect all mature canopy trees from threats	All mature canopy trees are retained.	Commencement of Year 1, ongoing	Low	Mature canopy trees are not protected from	Regular site monitoring (ie. 3-monthly)	Evaluate loss, report impacts to TfN and DCCEEW, and support

[redacted] [redacted]

				(ie. burning, removal).				threats and/or are impacted.	Vegetation Quality Assessment in Years 2, 5, 8, 10 and 12	tree repair and/or regeneration where feasible, or re-evaluate offset gains if loss due to non-compliant activities.
			4.2	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks.	Newly-recruiting canopy trees are protected at a rate of 8-12/ha Native canopy and mid layer cover ranges from 5-30%	Year 12	Low	Number of newly-recruited canopy trees is <8-12/ha Native canopy and mid layer is <5% or >30% Newly-recruiting canopy trees, understorey trees and shrubs are not protected from threats	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment in Years 2, 5, 8, 10 and 12	Protect newly-recruiting canopy trees, understorey trees and shrubs. Undertake supplementary planting in accordance with Section 4.2.8 if required.
			4.3	Introduce logs	Log length increases to 10-50 metres per hectare	Year 1	Low	Logs are not introduced in Year 1 Log length is <10-50 metres per hectare Logs are not protected from threats	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment in Years 2, 5, 8, 10 and 12	Minimum long length target to be met through introduction of logs in Year 1. Fallen logs to provide additional length. If removed, logs will be re-instated to maintain the target log length per hectare. (see Section 4.2.4).
			4.4	Retain and protect introduced and fallen logs from threats (ie. burning, removal).						
	Biomass Control	Landowner	5.1	Strategic sheep grazing undertaken in accordance with Section 4.2.5.1	Maintain 10-30% inter-tussock space for native flora recruitment in spring/summer	Annually as required and if conditions allow	Low	<10% or >30% bare ground during spring each year	Regular site monitoring (ie. 3-monthly)	Adjust strategic grazing, burning and/or weed control regime to achieve the inter-tussock space and maximum weed covers required (see Sections 4.2.5 and 4.2.6 for methods and timing). Consult with TfN if alternative methods or timing are required.
			5.2	Minimum of two ecological burns prior to Year 10 in accordance with Section 4.2.5.2		Year 9		First ecological burn not undertaken by end Years 6-8. Second ecological burn not undertaken by end Year 9	Annual monitoring and reporting, and review of future management actions	

	Weed Control	Landowner	6.1	Weed control undertaken annually in accordance with Table 7	Eliminate (<1%) adjacent woody weeds	Year 2	Low	>1% cover woody weeds adjacent to site	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment in Years 2, 5, 8, 10 and 12	Supplementary weed control in accordance with Section 4.2.6 and Table 7. Implement Weed Reduction Plan (section 4.2.6.4). Consult with TfN if alternative methods or timing are required.
					Reduce weed cover in HZs 1B, 1C, 1E and 2A to <65%, and in HZs 1A, 1D and 3A to <80%	Year 5	Low	Introduced flora in HZs 1B, 1C, 1E and 2A to >65%, and in HZs 1A, 1D and 3A to >80%		
					Reduce weed cover in HZs 1B, 1C, 1E and 2A to <55%, and in HZs 1A, 1D and 3A to <60%	Year 10		Introduced flora in HZs 1B, 1C, 1E and 2A to >55%, and in HZs 1A, 1D and 3A to >60%		
					Reduce weed cover to <50% in offset area	Year 12		Introduced flora >50%		
			6.2	Monitoring to be conducted throughout the year, woody, new and emergent weeds eliminated	No woody weeds present	Annually	Low	Woody weeds recorded on site		Monitor and control all new and emergent woody and high threat weeds.
					No new and emergent weeds	Annually	Low	New and emergent weeds recorded		
	Pest Control	Landowner	7.1	Rabbit and fox control undertaken annually in accordance with Table 8	Rabbit and fox populations controlled or reduced	Years 1-12	Low	Observed rabbit and fox population increasing	Regular site monitoring (ie. 3-monthly) Annual pest control monitoring Warrens/dens re-monitored two weeks after fumigation/collapse, then monthly for four months. If no further activity, regular site monitoring (ie. 3-monthly) to continue. Vegetation Quality Assessment in	Monitor and control pest animals (see Section 4.2.7 for control methods and timing)
			7.2	New warren, dens and harbour are collapsed, fumigation and removed as required	No active rabbit warrens and fox dens	Year 12	Moderate	Rabbit warrens and/or fox dens detected		
			7.3	Monitor and control over-browsing of native flora by kangaroos in accordance with Table 8 if required	At least 50% cover of native perennial grasses and/or herbs present during their growth period (eg. spring-summer)	Year 12	Moderate	Over-browsing by kangaroos detected <50% cover of native perennial		

								grasses and/or herbs	Years 2, 5, 8, 10 and 12	
			7.4	New and emergent pests controlled annually on identification of threat	No new and emergent pest animals	Years 1-12	Low	New and emergent pest animals detected		
	Monitoring and Reporting	Landowner	8.1	Install and maintain photopoints in the offset site	Minimum four photopoints (one per site number) installed and maintained	Install at the commencement of Year 1, and maintain annually	Very Low	Less than four photopoints installed and/or maintained	Regular site monitoring (ie. 3-monthly)	Install, upgrade and/or repair at least four photopoints as required.
		Landowner	8.2	Regular site monitoring undertaken. Observations, management and photos recorded	Offset management undertaken in accordance with OMP	Every 3 months	Low	Regular site monitoring not undertaken	Regular site monitoring (ie. 3-monthly)	Undertake site monitoring at least every 3 months, and keep a record or observations, management actions and photos.
		Landowner, APA, TfN, DCCEEW	8.3	Prepare and Submit Annual Reports	Annual report prepared and submitted to Trust for Nature and DCCEEW	End each Management Year	Very Low	Annual reports not submitted to TfN and DCCEEW	End Years 1-12	Prepare and submit annual reports to TfN
		Landowner, Qualified botanist/ ecologist, APA, TfN, DCCEEW	8.4	Vegetation Quality Assessment (VQA) undertaken	VQA report prepared and submitted to Landowner, APA, TfN and DCCEEW	Years 2, 5, 8, 10 and 12	Low	VQA report not submitted to Landowner, APA, Trust for Nature and DCCEEW	End of Years 2, 5, 8, 10 and 12	Coordinate VQA with suitably qualified personnel, and submit VQA report to all stakeholders.
					Extent and quality of 4.0709 hectares of Plains Grassy Woodland vegetation maintained	Year 12	Moderate	Extent and/or quality of Plains Grassy Woodland vegetation declines	End of Years 2, 5, 8, 10 and 12	Undertake all management actions in accordance with the OMP and/or adjust management where required, to meet ongoing performance and completion criteria. Undertake supplementary planting in accordance with Section 4.2.8 if required. Consult with TfN if alternative management
					Quality of 1.2659 hectares of Plains Grassy Woodland vegetation improved by 1 point to 4/10 in Habitat zones 1B, 1C, 1E and 2A.	Year 12	Low	Quality of Plains Grassy Woodland vegetation in Habitat zones 1B, 1C, 1E and 2A. does not improve by at least 1 point	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment in	

[redacted]

[redacted]

					Quality of 2.8050 hectares of Plains Grassy Woodland vegetation improved by 3 points to 4/10 in Habitat zones 1A, 1D and 3A.	Year 12	Low	Quality of Plains Grassy Woodland vegetation in Habitat zones 1A, 1D and 3A. does not improve by at least 3 points	Years 2, 5, 8, 10 and 12	actions are required that are not addressed in the OMP. Consult with all stakeholders if management approach is not meeting performance and completion criteria, and review OMP as required.
					4.0709 hectares of GEWVVP community restored, including 5-30% native canopy and mid layer cover and at least 50% cover of native perennial grasses and/or herbs during their growing period (spring-early summer).	Year 12	Low	<4.0709 hectares of GEWVVP community is restored		

[redacted]

4.3.2 12-Year Schedule of Works

Table 13 below summarises the management actions, responsible personnel and timing of each action to be implemented over the 12-year management period.

Table 13. 12-year management actions, responsibility and timing.

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
1	1.1	**Security Agreement**	Offset secured on-title under a Trust for Nature Deed of Covenant	Landowner, TfN	Commencement of OMP	1.1
1	1.2	**Monitoring and Reporting**	Install a minimum of 4 x photopoints.	Landowner	Commencement of OMP	8.1
1	1.3	**Fencing and Access**	Upgrade and maintain all existing perimeter fencing (approx 2.198km) to ensure site is stock-proof as required.	Landowner, qualified personnel	Within 12 months of commence of OMP	2.1
1	1.4	**Fencing and Access**	Property access gates to remain locked at all times	Landowner	Commencement of OMP, ongoing	2.2
1	1.5	**Signage**	Erect a minimum 4 x signs along the property fence and at each vehicle access gates to alert neighbouring properties and land managers to the presence of the offset site and prohibited activities.	Landowner, qualified personnel	Within 3 months of commence of OMP	3.1
1	1.6	**Native Canopy and Logs**	Retain and protect all mature canopy trees from threats	Landowner	Commencement of OMP, ongoing	4.1
1	1.7	**Native Canopy and Logs**	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks.	Landowner	Commencement of OMP, ongoing	4.2
1	1.8	**Native Canopy and Logs**	Introduce logs from the impact site or a TfN-approved source (see Section 4.2.4)	Landowner	Year 1	4.3
1	1.9	**Native Canopy and Logs**	Retain and protect fallen logs from threats	Landowner	Commencement of OMP, ongoing	4.4
1	1.10	**Biomass Control**	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
1	1.11	**Biomass Control**	Collect or purchase native grass and herb seed of local provenance to support ecological burning	Landowner, qualified personnel	Spring and summer	5.2

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
1	1.12	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2).	Landowner, qualified personnel	Site conditions and weather dependent	5.2
1	1.14	Weed Control	Eliminate (<1%) adjacent woody weeds (see Table 7 for control methods and timing) by end Year 2.	Landowner, qualified personnel	All year	6.1
1	1.15	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
1	1.16	Weed Control	Monitor for and eliminate new and emergent weeds	Landowner	All year	6.2
1	1.17	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing).	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
1	1.18	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
1	1.19	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 1	8.3
2	2.1	Fencing and Access	Maintain/repair all offset perimeter fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
2	2.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
2	2.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
2	2.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
2	2.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks.	Landowner	Ongoing	4.2
2	2.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
2	2.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
2	2.8	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2)	Landowner, qualified personnel	Site conditions and weather dependent	5.2
2	2.9	Weed Control	Eliminate (<1%) adjacent woody weeds (see Table 7 for control methods and timing) by end Year 2	Landowner, qualified personnel	All year	6.1
2	2.10	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
2	2.11	Weed Control	Review VQA and progress towards Year 5 weed cover targets (see Table 8)	Landowner, qualified personnel	Year 2	6.1
2	2.12	Weed Control	Monitor for and eliminate new and emergent weeds	Landowner	All year	6.2
2	2.13	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
2	2.14	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
2	2.15	Monitoring and Reporting	Conduct Vegetation Quality Assessment (see Section 4.2.9.2), and submit report to Landowner, APA, TfN and DCCEEW. Review VQA against completion criteria, and adapt management as required.	Qualified botanist/ecologist	Year 2	8.4
2	2.16	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 2	8.3
3	3.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
3	3.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
3	3.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
3	3.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
3	3.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks.	Landowner	Ongoing	4.2
3	3.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4
3	3.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
3	3.8	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2)	Landowner, qualified personnel	Site conditions and weather dependent	5.2
3	3.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
3	3.10	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
3	3.11	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
3	3.12	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
3	3.13	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 3	8.3
4	4.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
4	4.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
4	4.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
4	4.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
4	4.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks.	Landowner	Ongoing	4.2

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
4	4.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4
4	4.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
4	4.8	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2)	Landowner, qualified personnel	Site conditions and weather dependent	5.2
4	4.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
4	4.10	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
4	4.11	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
4	4.12	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
4	4.13	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 4	8.3
5	5.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
5	5.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
5	5.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
5	5.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
5	5.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks.	Landowner	Ongoing	4.2
5	5.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
5	5.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
5	5.8	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2)	Landowner, qualified personnel	Site conditions and weather dependent	5.2
5	5.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
5	5.10	Weed Control	Review VQA and achievement Year 5 weed cover target (see Table 8). Implement remediation as required (see section 4.2.6.4)	Landowner, qualified personnel	Year 5	6.1
5	5.11	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
5	5.12	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
5	5.13	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
5	5.14	Monitoring and Reporting	Conduct Vegetation Quality Assessment (see Section 4.2.9.2), and submit report to Landowner, APA, TfN and DCCEEW. Review VQA against completion criteria, and adapt management as required.	Qualified botanist/ecologist	Year 5	8.4
5	5.15	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 5	8.3
6	6.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
6	6.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
6	6.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
6	6.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
6	6.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks. Option to undertake supplementary planting if required (Section 4.2.8)	Landowner	Ongoing	4.2

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
6	6.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4
6	6.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
6	6.8	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2)	Landowner, qualified personnel	Site conditions and weather dependent	5.2
6	6.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
6	6.11	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
6	6.12	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
6	6.13	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
6	6.14	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 6	8.3
7	7.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
7	7.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
7	7.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
7	7.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
7	7.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks. Option to undertake supplementary planting if required (Section 4.2.8)	Landowner	Ongoing	4.2
7	7.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
7	7.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
7	7.8	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2)	Landowner, qualified personnel	Site conditions and weather dependent	5.2
7	7.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
7	7.10	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
7	7.11	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
7	7.12	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
7	7.13	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 7	8.3
8	8.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
8	8.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
8	8.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
8	8.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
8	8.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks. Option to undertake supplementary planting if required (see Section 4.2.8)	Landowner	Ongoing	4.2
8	8.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4
8	8.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
8	8.8	Biomass Control	Undertake biomass control through ecological burning as appropriate, monitor and review outcomes (see Section 4.2.5.2)	Landowner, qualified personnel	Site conditions and weather dependent	5.2
8	8.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
8	8.10	Weed Control	Review VQA and progress towards Year 10 weed cover targets (see Table 8)	Landowner, qualified personnel	Year 8	6.1
8	8.11	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
8	8.12	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 8 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
8	8.13	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
8	8.14	Monitoring and Reporting	Conduct Vegetation Quality Assessment (see Section 4.2.9.2), and submit report to Landowner, APA, TfN and DCCEEW. Review VQA against completion criteria, and adapt management as required. Option to undertake supplementary planting if required (Section 4.2.8)	Qualified botanist/ecologist	Year 8	8.4
8	8.15	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 8	8.3
9	9.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
9	9.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
9	9.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
9	9.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
9	9.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks. Option to undertake supplementary planting if required (see Section 4.2.8)	Landowner	Ongoing	4.2
9	9.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4

[redacted] [redacted]

[redacted]

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
9	9.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	Mid-late winter	5.1
9	9.8	Biomass Control	Monitor and review outcomes of ecological burning in Years 1-8 (see Section 4.2.5.2)	Landowner, qualified personnel	All year	5.2, 8.2
9	9.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
9	9.10	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
9	9.11	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
9	9.12	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
9	9.13	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 9	8.3
10	10.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
10	10.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
10	10.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
10	10.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
10	10.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks. Option to undertake supplementary planting if required (see Section 4.2.8)	Landowner	Ongoing	4.2
10	10.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4
10	10.7	Biomass Control	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	All year	4.1

Year	Action No.	Management Action	Description	Responsible Authority/ personnel	Timing of action	Performance Target (Table 12)
10	10.8	Biomass Control	Monitor and review outcomes of ecological burning in Years 1-8 (see Section 4.2.5.2)	Landowner, qualified personnel	All year	5.2, 8.2
10	10.9	Weed Control	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
10	10.10	Weed Control	Review VQA and achievement Year 10 weed cover target (see Table 8). Implement remediation as required (see section 4.2.6.4)	Landowner, qualified personnel	Year 10	6.1
10	10.11	Weed Control	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
10	10.12	Pest Control	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
10	10.13	Monitoring and Reporting	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
10	10.14	Monitoring and Reporting	Conduct Vegetation Quality Assessment (see Section 4.2.9.2), and submit report to Landowner, APA, TfN and DCCEEW. Review VQA against completion criteria, and adapt management as required. Option to undertake supplementary planting if required (see Section 4.2.8)	Qualified botanist/ecologist	Year 10	8.4
10	10.15	Monitoring and Reporting	Prepare and submit annual report	Landowner, TfN, DCCEEW, APA	End of Year 10	8.3
11	11.1	Fencing and Access	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
11	11.2	Fencing and Access	Property access gates to remain locked at all times	Landowner	All year	2.2
11	11.3	Signage	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
11	11.4	Native Canopy and Logs	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
11	11.5	Native Canopy and Logs	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks. Option to undertake supplementary planting if required (see Section 4.2.8)	Landowner	Ongoing	4.2
11	11.6	Native Canopy and Logs	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4

[redacted]

11	11.7	**Biomass Control**	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	All year	4.1
11	11.8	**Biomass Control**	Monitor and review outcomes of ecological burning in Years 1-8 (see Section 4.2.5.2)	Landowner, qualified personnel	All year	5.2, 8.2
11	11.9	**Weed Control**	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
11	11.10	**Weed Control**	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
11	11.11	**Pest Control**	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
11	11.12	**Monitoring and Reporting**	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
11	11.13	**Monitoring and Reporting**	Prepare and submit final report	Landowner, TfN, DCCEEW, APA	End of Year 11	8.3

12	12.1	**Fencing and Access**	Maintain/repair all offset perimeter and internal fencing (approx. 2.198km) as required.	Landowner, qualified personnel	All year	2.1
12	12.2	**Fencing and Access**	Property access gates to remain locked at all times	Landowner	All year	2.2
12	12.3	**Signage**	Maintain signage along the property boundary and at access gates	Landowner, qualified personnel	All year	3.1
12	12.4	**Native Canopy and Logs**	Retain and protect all mature canopy trees from threats	Landowner	Ongoing	4.1
12	12.5	**Native Canopy and Logs**	Protect newly-recruiting canopy trees, understorey trees and shrubs from threats (ie. grazing, burning) with fencing, guards and suitable fire breaks. Option to undertake supplementary planting if required (see Section 4.2.8)	Landowner	Ongoing	4.2
12	12.6	**Native Canopy and Logs**	Retain and protect introduced and fallen logs from threats	Landowner	Ongoing	4.4
12	12.7	**Biomass Control**	Undertake biomass control through strategic grazing with sheep as required and where conditions allow (see Section 4.2.5.1)	Landowner, qualified personnel	All year	4.1
12	12.8	**Biomass Control**	Monitor and review outcomes of ecological burning in Years 1-8 (see Section 4.2.5.2)	Landowner, qualified personnel	All year	5.2, 8.2
12	12.9	**Weed Control**	Undertake appropriate weed control (see Tables 7 and 8 for control methods, timing and targets).	Landowner, qualified personnel	All year	6.1
12	12.10	**Weed Control**	Review VQA and achievement Year 12 weed cover target (see Table 8). Implement remediation as required (see section 4.2.6.4)	Landowner, qualified personnel	Year 12	6.1

[redacted] [redacted]

[redacted]

12	**12.11**	**Weed Control**	Monitor for and eliminate woody, new and emergent weeds	Landowner	All year	6.2
12	**12.12**	**Pest Control**	Monitor for pest animals and preferential browsing by kangaroos, undertaken control measures as required (see Table 9 for control methods and timing)	Landowner, qualified personnel	All year	7.1, 7.2, 7.3, 7.4
12	**12.13**	**Monitoring and Reporting**	Monitor offset site and outcomes of management actions, including photos and a record of management actions and observations. Review future management actions to ensure performance targets are met.	Landowner	Every 3 months	8.2
12	**12.14**	**Monitoring and Reporting**	Conduct Vegetation Quality Assessment (see Section 4.2.9.2), and submit report to Landowner, APA, TfN and DCCEEW. Review VQA against completion criteria, and adapt management as required. Option to undertake supplementary planting if required (see Section 4.2.8)	Qualified botanist/ecologist	Year 12	8.4
12	**12.15**	**Monitoring and Reporting**	Prepare and submit final report	Landowner, TfN, DCCEEW, APA	End of Year 12	8.3

[redacted] [redacted]

[redacted]

4.4 In Perpetuity Management

4.4.1. Performance and Completion Criteria

The OMP outlines management actions and targets to be implemented at the offset site to protect and improve the quality of all Plains Grassy Woodland vegetation, and restore 4.0709 hectares of GEWVVP, over the 12-year management period. At the completion of the 12-year management period, the landowner is required to continue to undertake management to maintain the achieved quality and extent of Plains Grassy Woodland vegetation and GEWVVP at the offset site. Table 14 below outlines the in perpetuity performance targets for the offset site.

Table 14. In-perpetuity Performance and Completion Criteria

Ecological Outcome	Management Action	Responsibility	Performance Criteria	Completion Criteria	Risk of Completion Criteria not being met	Remedial action if performance or Completion Criteria not achieved		
						Trigger Value	Detection Monitoring	Remedial Action
To maintain the extent and quality of GEWVVP.	**Security Agreement**	Landowner, APA, TfN, Land Use Victoria	Site secured through appropriate administrative protection to permanently restrict allowable land uses and activities to the conservation of MNES	TfN Deed of Covenant remains registered on-title	Very Low	TfN Deed of Covenant removed from title	APA, TfN and Landowner as executing parties to the Deed	TfN Deed of Covenant to remain on-title or re-registered if removed
	Fencing and Access	Landowner	Perimeter fencing maintained	Offset site is stockproof	Low	Perimeter fencing not maintained and not stockproof	Regular site monitoring (ie. 3-monthly)	Upgrade and/or repair all fencing and gates as required to prevent access from unauthorised vehicles and neighbouring livestock.
			Property access gates remain locked	Vehicle access is restricted	Low	Property access gates are unlocked		
	Signage	Landowner	Minimum of four signs maintained along offset boundary fence and at each vehicle access gates	Public alerted to the presence of offset site and prohibited activities	Very Low	At least four signs are not visible along boundary fence or access gates.	Regular site monitoring (ie. 3-monthly)	Upgrade, replace and/or maintain signs to alert public as required
	Native Canopy and Logs	Landowner	Retain and protect all mature canopy trees from threats (ie. burning, removal).	All mature canopy trees retained	Low	Mature canopy trees are not protected from threats and/or are impacted/removed.	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment for life of approval	Report impacts to TfN and DCCEEW, and support tree repair and/or regeneration where feasible, or re-evaluate

[redacted] [redacted]

								offset gains if loss due to non-compliant activities.
			Retain recruited canopy trees, understorey trees and shrubs	Recruited canopy trees retained at a rate of 8-12/ha Native canopy and mid layer cover ranges from 5-30%	Low	The number of canopy trees is <8-12/ha Native canopy and mid layer is <5% or >30%	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment for life of approval	Protect new canopy trees, understorey trees and shrubs in accoradance with Section 4,2,4). Undertake supplementary planting in accordance with Section 4.2.8 if required.
			Retain and protect introduced and fallen logs	Logs retained at a minimum log length of 10-50 metres per hectare	Low	Log length is at least 10-50 metres per hectare	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment for life of approval	Unretained logs to be re-introduced using the same logs or logs from a TfN-approved source to meet minimum log length and in accordance with Section 4.2.4.
	Biomass Control	Landowner	Strategic sheep grazing undertaken in accordance with Section 4.2.5.1 Ecological burning undertaken as required in accordance with Section 4.2.5.2	Maintain 10-30% inter-tussock space for native flora recruitment in spring/summer	Low	<10% or >30% bare ground during spring each year	Regular site monitoring (ie. 3-monthly)	Adjust strategic grazing, burning and/or weed control regime to achieve the inter-tussock space and maximum weed covers required (see Sections 4.2.5 and 4.2.6 for methods and timing)
	Weed Control	Landowner	Weed control undertaken annually in accordance with Table 7	Maintain weed cover to <50% across the offset area	Low	Introduced flora >50%	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment for life of approval	Supplementary control of introduced grasses and herbaceous weeds
			Monitoring to be conducted throughout the year, woody, and new and emergent high threat weeds eliminated	No woody weeds present	Low	Woody weeds recorded on site		Monitor and control all new and emergent woody and high threat weeds
	Pest Control	Landowner	Rabbit and fox control undertaken annually in accordance with Table 8	Rabbit and fox populations controlled or reduced	Low	Observed rabbit and fox population increasing	Regular site monitoring (ie. 3-monthly) Warrens/dens re-monitored two weeks after fumigation/collapse, then	Monitor and control pest animals (see Section 4.2.7 for control methods and timing)
			New warren, dens and harbour are collapsed, fumigation and removed as required	No active rabbit warrens and fox dens	Moderate	Rabbit warrens and/or fox dens detected		

			Monitor and control over-browsing of native flora by kangaroos in accordance with Table 8 if required	At least 50% cover of native perennial grasses and/or herbs present during their growth period (eg. spring-early summer)	Moderate	Over-browsing by kangaroos detected <50% cover of native perennial grasses and/or herbs	monthly for four months. If no further activity, regular site monitoring (ie. 3-monthly) to continue.	
			New and emergent pests controlled annually on identification of threat	No new and emergent pest animals	Low	New and emergent pest animals detected		
	Monitoring and Reporting	Landowner, TfN	Site monitoring undertaken through each year in accordance with the TfN Covenant.	Offset management undertaken in accordance with TfN Covenant.	Low	Regular site monitoring not undertaken	Regular site monitoring (ie. 3-monthly)	Adjust management according to site and seasonal conditions to meet ongoing performance and completion criteria.
				4.0709 hectares of Plains Grassy Woodland vegetation and restored GEWVVP maintained.	Moderate	Extent of Plains Grassy Woodland vegetation and restored GEWVVP is <4.0709 hectares	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment for life of approval	
				The quality of 4.0709 hectares of GEWVVP/Plains Grassy Woodland vegetation maintained at 4/10 or higher in habitat zones 1A, 1B, 1C, 1D, 1E, 2A and 3A.	Low	Quality of 4.0709 hectares of GEWVVP/Plains Grassy Woodland vegetation <4/10 in habitat zones 1A, 1B, 1C, 1D, 1E, 2A and 3A.	Regular site monitoring (ie. 3-monthly) Vegetation Quality Assessment for life of approval	

[redacted]

[redacted]

[redacted]

5 EPBC Act Environmental Offsets Policy

5.1 Meeting the Principles of the EPBC Act Environmental Offsets Policy

Table 15 below outlines how the proposed offsets meet the principles of the *EPBC Act Environmental Offsets Policy* (SEWPaC 2012).

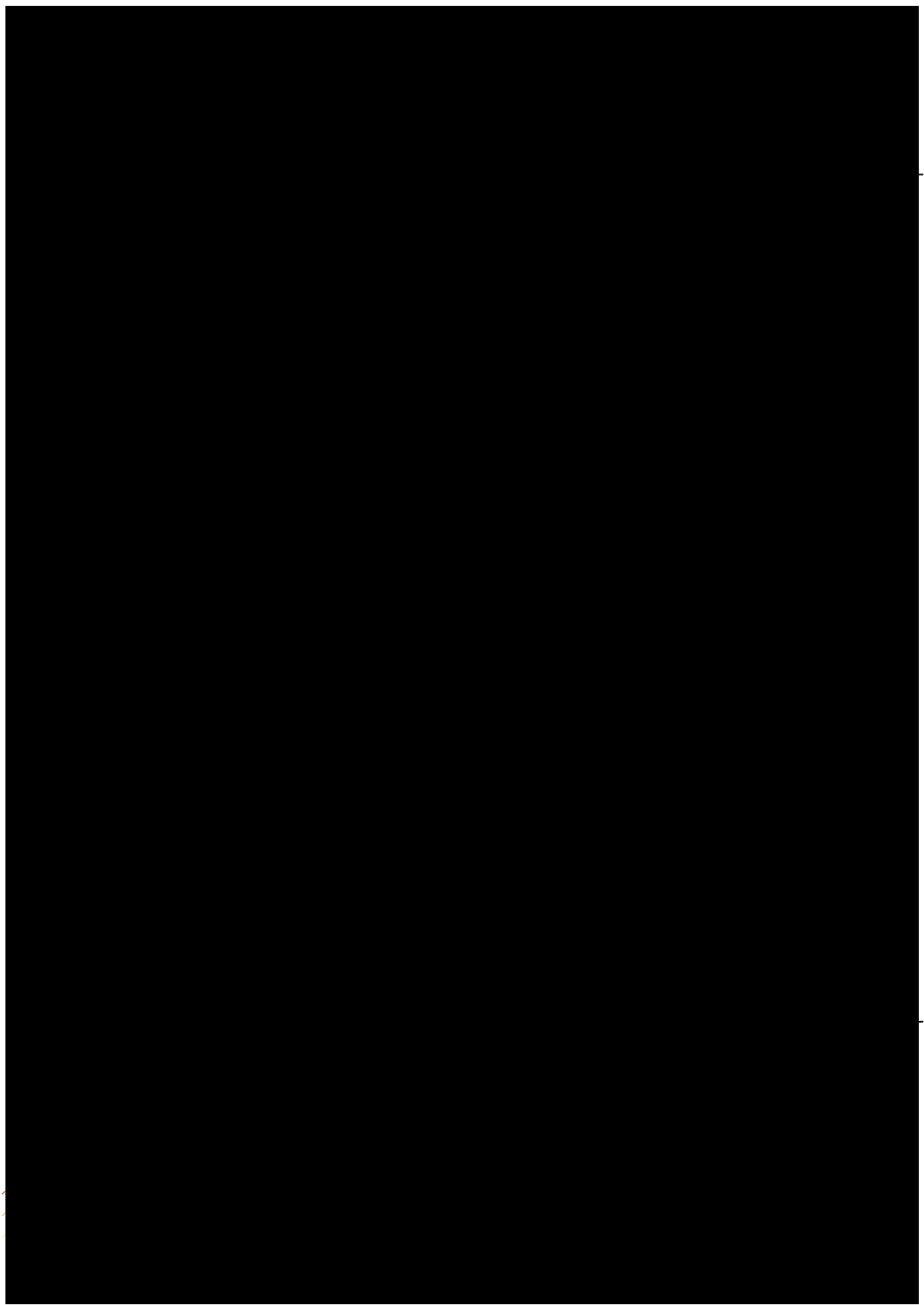
Table 15. Meeting the principles of the *EPBC Act Environmental Offsets Policy*

Principle	Proposed Offset
Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.	The offset will maintain and improve the overall viability of GEWVVP, as it will deliver a gain through the protection and improvement of remnant Plains Grassy Woodland vegetation to restore 4.0709 hectares of GEWVVP.
Be built around direct offsets but may include other compensatory measures.	The offset proposal includes at least 100% of direct offsets through the Dunkeld (35.67%) and Dobie (64.50%) offsets.
Be in proportion to the level of statutory protection that applies to the protected matter.	The security, extent and management of the offset is in proportion to the protected matter being impacted in accordance with the EPBC Act offsets calculator. The security and management of MNES at the offset under a TfN Deed of Covenant will ensure their permanent protection.
Be of a size and scale proportionate to the residual impacts on the protected matter.	The combined Dunkeld and Dobie offset areas are approximately 5 times the size of the area being impacted.
Effectively account for and manage the risks of the offset not succeeding.	The offset will be secured under a TfN Deed of Covenant, administered and overseen by TfN. The TfN Covenant will be legally binding, and will include the requirement to implement the approved OMP. The offset management has been prepared to deliver improved outcomes for biodiversity and to mitigate against risks of the offset not succeeding (Tables 12 and 14).
Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs.	Planning regulations and local laws relevant to the offset allow agricultural activities to continue for the purposes of production, and do not support the permanent protection and improvement of native vegetation and MNES. The security agreement and OMP will provide in perpetuity protection to the offset site, in addition to existing laws and regulations, and ensure that the offset will be managed for the purposes of conservation in-perpetuity.
Be efficient, effective, timely, transparent, scientifically robust and reasonable.	The impact and offsets have undergone rigorous ecological assessment (Sections 2.2 and 3.3). The offset proposes to prevent further decline of GEWVVP relic vegetation in the offset site, improve the quality of this vegetation, and restore 4.0709 hectares of GEWVVP. The 12-year management plan draws on literature and research on conservation management and threat abatement in woodlands and grassy ecosystems.
Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.	The offset will be delivered in accordance with the approved OMP to be registered on-title in-perpetuity via a TfN Deed of Covenant. This is a legally enforceable security agreement, administered and governed by TfN. TfN will oversee the

[redacted]

	implementation of the offset, undertake stewardship visits and review all monitoring reports. All monitoring reports will also be provided to DCCEEW for review.

Figures



[redacted]

References

APA (2021) *Western Outer Ring Main Gas Pipeline Inquiry - Technical Note No. 15 – Ecology assessment of Revision 10 alignment changes*, Prepared by APA VTS (Operations) Pty Ltd, Southbank, VIC.

APA (2022) *Western Outer Ring Main Ecological Offset Strategy* (Version April 2022), Prepared by APA VTS (Operations) Pty Ltd, Southbank, VIC.

Barlow T (1999) *Grassy Guidelines: How to Manage Native Grasslands and Grassy Woodlands on your Property*. Trust for Nature, Melbourne, Victoria.

CES (2018) *Victorian State of the Environment 2018*, 'Biodiversity (B) Scientific Assessments Part III', Commissioner for Environmental Sustainability Victoria.

DCCEEW (2022) *Grassy Eucalypt Woodland of the Victorian Volcanic Plain in Species Profile and Threats Database*. URL: http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=46 (accessed 30/1/2023), Australian Government Department of Climate Change, Energy, the Environment and Water, Canberra, ACT.

DEECA (2023a) *NatureKit 2.0*, URL: https://maps2.biodiversity.vic.gov.au/Html5viewer/index.html?viewer=NatureKit (accessed 6/3/2023), Victorian Government Department of Energy, Environment and Climate Action, East Melbourne.

DEECA (2023b) *Bioregions and EVC Benchmarks*, URL: https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks (accessed 6/3/2023), Victorian Government Department of Energy, Environment and Climate Action, East Melbourne.

DEECA (2023c) *Victorian Biodiversity Atlas*, URL: https://vba.dse.vic.gov.au (accessed 6/3/2023), Victorian Department of Energy, Environment and Climate Action, East Melbourne.

DEECA (2023d) *Kangaroo Harvesting Program*, URL: https://www.wildlife.vic.gov.au/our-wildlife/kangaroo-harvesting-program (accessed 21/11/2023), Victorian Department of Energy, Environment and Climate Action, East Melbourne.

DEWHA (2009) *Approved Conservation Advice for the Grassy Eucalypt Woodland of the Victorian Volcanic Plain*, Department of the Environment, Water, Heritage and the Arts, Canberra, ACT.

DoE (2013) *Matters of Environmental Significance: Significance impact Guidelines 1.1, Environmental Protection and Biodiversity Conservation Act 1999*, Australian Government Department of the Environment, Canberra, ACT.

Dorrough, J., Yen, A., Turner, V., Clark, S., Crosthwaite, J. and J. Hirth (2004) 'Livestock grazing management and biodiversity conservation in Australian temperate grassy landscapes', *Australian Journal of Agricultural Research*, Vol. 55, pp. 279-295.

[redacted] [redacted]

Dorrough, J., and M. Scroggie (2008a) 'Plant responses to agricultural intensification', *Journal of Applied Ecology*, Vol. 45, pp. 1274–1283.

Dorrough, J., Stol, J., and S. McIntyre (2008b) 'Biodiversity in the Paddock: a Land Manager's Guide', CSIRO, Canberra, ACT.

DSE (2004) *Vegetation Quality Assessment Manual – Guidelines for applying the habitat hectares scoring method Version 1.3*, Victorian Government Department of Sustainability and Environment, East Melbourne.

[redacted]

GHD (2021) *Western Outer Ring Main (WORM) Environment Effects Statement Technical Report A - Biodiversity and Habitats Report*, Unpublished Report prepared by GHD on behalf of APA VTS (Operations) Pty Ltd

HerbiGuide (2022) 'Flatweed', *HerbiGuide The Pesticide Expert on a Desk*, URL: http://www.herbiguide.com.au/Descriptions/hg_Flatweed.htm (accessed 19/8/2022), HerbiGuide Pty Ltd, Albany, WA.

Langford, C.M. (2005) 'Managing Native Pasture for Agriculture and Conservation.', In: O'Dwyer, C. and Hamilton, S. (eds) (2005) *Grassland Conservation and Production Both Sides of the Fence*, Proceedings of Fourth Stipa Conference on Management of Native Grasses and Pastures, 11-13 October 2005 Burra, SA. FLFR University of Melbourne, Dookie Campus.

Lunt, I. & J.W. Morgan (1999) 'Effect of Fire Frequency on Plant Composition at the Laverton North Grassland Reserve', *The Victorian Naturalist*, Vol. 116, pp.84-90.

Lunt, I. & J.W. Morgan (2002) 'The role of fire regimes in temperate lowland grasslands of south-eastern Australia', In: Bradstock R.S., Williams J.E., Gill M.A., eds. *Flammable Australia: the fire regimes and biodiversity of a continent*, Cambridge, UK: Cambridge University Press, 177–196.

Lunt, I., Eldridge, D., Morgan, J. and G. Witt (2007) 'A framework to predict the effects of livestock grazing and grazing exclusion on conservation values in natural ecosystems in Australia', *Australian Journal of Botany*, Vol. 55, pp. 401–415.

Parkes, D., Newell, G. & D. Cheal (2003) 'Assessing the quality of native vegetation: the 'habitat hectares' approach', *Ecological Management & Restoration*, Vol. 4, S29–S38.

SEWPaC (2012) *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, Australian Government Department of Sustainability, Environment, Water, Population and Community, Canberra, ACT.

SEWPaC (2013) *Matters of National Environmental Significance. Significant Impact Guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999*, Australian Government Department of Sustainability, Environment, Water, Population and Community, Canberra, ACT.

Trumble, H. and K. Fraser (1932) 'The effect of top-dressing with artificial fertilisers on the annual yield, botanical composition, and carrying capacity of a natural pasture over a period of seven years', *Journal of Agriculture*, Vol. 35, pp. 1342-1353.

TSSC (2009). *Commonwealth Listing Advice on Grassy Eucalypt Woodland of the Victorian Volcanic Plain*. URL: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/46-listing-advice.pdf (accessed 12/12/2022), Threatened Species Scientific Committee Department of the Environment, Water, Heritage and the Arts, Canberra, ACT.

[redacted]

Appendices

[redacted]

Appendix 1. Vascular plant species recorded on site, 18 November 2022

Key:

EPBC Act

- CR – Critically Endangered
- EN – Endangered
- VU - Vulnerable

VROT = Victorian rare or threatened

- e - endangered
- v - vulnerable
- r - rare
- k - poorly known but thought to be rare or threatened

FFG = Listed under the *Flora and Fauna Guarantee Act 1988*

- L – listed as threatened under FFG Act

Weed = plant taxa introduced into Victoria or Australia

- * - weed
- # - native species outside natural range

Status	Scientific name	Common name
	Acacia mearnsii	Black Wattle
	Acacia melanoxylon	Blackwood
	Acacia verticillata	Prickly Moses
	Acaena echinata	Sheep's Burr
	Acaena novae-zelandiae	Bidgee-widgee
	Acaena spp.	Sheep's Burr
	Acaena X ovina	Australian Sheep's Burr
*	*Acetosella vulgaris*	Sheep Sorrel
*	*Agrostis capillaris*	Brown-top Bent
*	*Aira cupaniana*	Quicksilver Grass
*	*Aira spp.*	Hair Grass
	Allocasuarina verticillata	Drooping Sheoak
	Amphibromus nervosus	Common Swamp Wallaby-grass
	Amphibromus spp.	Swamp Wallaby-grass
	Anthosachne scabra s.l.	Common Wheat-grass
*	*Anthoxanthum odoratum*	Sweet Vernal-grass
	Aphelia pumilio	Dwarf Aphelia
*	*Arctotheca calendula*	Cape Weed
	Arthropodium strictum s.s.	Chocolate Lily
*	*Asparagus officinalis*	Asparagus
	Asperula conferta	Common Woodruff
	Austrostipa scabra subsp. falcata	Rough Spear-grass
	Austrostipa semibarbata	Fibrous Spear-grass
	Austrostipa spp.	Spear Grass
*	*Avena barbata*	Bearded Oat
	Bolboschoenus medianus	Marsh Club-sedge
*	*Bromus catharticus*	Prairie Grass
*	*Bromus diandrus*	Great Brome
*	*Bromus hordeaceus*	Soft Brome
	Bulbine bulbosa	Bulbine Lily
*	*Carduus pycnocephalus*	Slender Thistle
	Carex appressa	Tall Sedge
	Carex spp.	Sedge

[redacted] [redacted]

[redacted]

*	*Cerastium glomeratum s.s.*	Sticky Mouse-ear Chickweed
*	*Cirsium vulgare*	Spear Thistle
	Convolvulus angustissimus subsp. angustissimus	Blushing Bindweed
	Cycnogeton procerum s.s.	Common Water-ribbons
*	*Cynodon dactylon var. dactylon*	Couch
*	*Cynosurus echinatus*	Rough Dog's-tail
	Dichondra repens	Kidney-weed
*	*Disa bracteata*	South African Orchid
	Diuris chryseopsis	Common Golden Moths
	Diuris pardina	Leopard Orchid
	Drosera peltata s.l.	Pale Sundew
	Drosera peltata subsp. peltata spp. agg.	Pale Sundew
	Eleocharis acuta	Common Spike-sedge
	Epilobium billardiereanum	Variable Willow-herb
	Epilobium hirtigerum	Hairy Willow-herb
	Eryngium ovinum	Blue Devil
	Eucalyptus camaldulensis	River Red-gum
	Eucalyptus ovata	Swamp Gum
	Eucalyptus viminalis	Manna-gum
	Galium spp.	Bedstraw
	Geranium potentilloides	Soft Crane's-bill
	Geranium solanderi	Austral Crane's Bill
	Geranium spp.	Crane's Bill
	Haloragis aspera	Rough Raspwort
*	*Helminthotheca echioides*	Ox-tongue
*	*Holcus lanatus*	Yorkshire Fog
*	*Hordeum leporinum*	Barley Grass
*	*Hordeum spp.*	Barley Grass
	Hydrocotyle laxiflora	Stinking Pennywort
	Hydrocotyle spp.	Pennywort
*	*Hypochaeris radicata*	Flatweed
	Isolepis Hookeriana	Grassy Club-sedge
*	*Isolepis levynsiana*	Tiny Flat-sedge
	Isolepis spp.	Club Sedge
	Juncus amabilis	Hollow Rush
#	*Juncus bufonius*	Toad Rush
	Juncus spp.	Rush
	Juncus subsecundus	Finger Rush
	Lachnagrostis filiformis s.l.	Common Blown-grass
	Leptorhynchos squamatus	Scaly Buttons
*	*Lolium perenne*	Perennial Rye-grass
	Luzula meridionalis var. densiflora	Common Woodrush
	Lythrum hyssopifolia	Small Loosestrife
	Microlaena stipoides var. stipoides	Weeping Grass
	Microtis spp.	Onion Orchid
	Microtis unifolia	Common Onion-orchid

[redacted]

	Oxalis perennans	Grassland Wood-sorrel
*	*Paspalum dilatatum*	Paspalum
	Pauridia vaginata	Yellow Star
	Persicaria decipiens	Slender Knotweed
*	*Phalaris aquatica*	Toowoomba Canary-grass
*	*Plantago coronopus*	Buck's-horn Plantain
	Plantago gaudichaudii	Narrow Plantain
*	*Plantago lanceolata*	Ribwort
	Poa labillardierei var. labillardierei	Common Tussock-grass
	Poa sieberiana var. sieberiana	Grey Tussock-grass
*	*Populus alba*	White Poplar
*	*Populus nigra 'Italica'*	Lombardy Poplar
*	*Romulea rosea*	Onion Grass
	Rumex brownii	Slender Dock
*	*Rumex conglomeratus*	Clustered Dock
*	*Rumex crispus*	Curled Dock
	Rumex dumosus	Wiry Dock
	Rumex spp.	Dock
	Rytidosperma caespitosum	Common Wallaby-grass
	Rytidosperma duttonianum	Brown-back Wallaby-grass
	Rytidosperma spp.	Wallaby Grass
	Schoenoplectus pungens	Sharp Club-rush
	Schoenus apogon	Common Bog-sedge
	Sebaea albidiflora	White Sebaea
*	*Setaria parviflora*	Slender Pigeon Grass
*	*Silene gallica var. gallica*	French Catchfly
*	*Sonchus asper s.l.*	Rough Sow-thistle
*	*Sonchus oleraceus*	Common Sow-thistle
	Thelymitra spp.	Sun Orchid
	Tricoryne elatior	Yellow Rush-lily
*	*Trifolium dubium*	Suckling Clover
*	*Trifolium repens var. repens*	White Clover
*	*Trifolium subterraneum*	Subterranean Clover
	Typha domingensis	Narrow-leaf Cumbungi
	Veronica gracilis	Slender Speedwell
*	*Vicia sativa*	Common Vetch
*	*Vulpia bromoides*	Squirrel-tail Fescue
	Wahlenbergia gracilis	Sprawling Bluebell
	Wahlenbergia spp.	Bluebell

[redacted] [redacted]

[redacted]

Appendix 2. EPBC 2019/8569 Conditions of Approval for the Dunkeld offset

Condition	How condition is addressed	Where condition is addressed in OMP
4. The approval holder must submit an Additional Offset Management Plan (AOMP) to the department for the Minister's approval. The approval holder must implement the AOMP as and from when approved by the Minister in writing in accordance with the timelines specified in the AOMP or at least until the expiry date of this approval, whichever is the longer. The AOMP must, to the satisfaction of the Minister, meet the requirements of the Environmental Offsets Policy and be consistent with the Environmental Management Plan Guidelines. The AOMP must include:	The Dunkeld offset site and OMP meets Environmental Offsets Policy (Section 5) and Environmental Management Guidelines.	This document
a) A proposal which identifies one or more offset site to compensate for the impacts of the Action to GEWVVP not offset by the ADS-OMP.	This OMP proposes the Dunkeld site to compensate impacts to GEWVVP.	See Table 1, and Sections 3 and 4
b) A description of the proposed offset site or sites.	This OMP describes the proposed Dunkeld site, including location, historic land uses and ecological values.	See Section 3
c) A summary of the residual impacts to GEWVVP that will be compensated for by the offset site or sites. This summary must include the area(s) of habitat for GEWVVP and its condition at all impact sites which the offset site or sites are to address.	Impacts to 2.09 ha of GEWVVP is proposed to be compensated by the offset site in conjunction with the ADS-OMP. Further information is provided in the approved offset strategy (APA 2022).	See Table 1 and Section 2.3
d) A reference to the EPBC Act approval conditions to which the AOMP refers.	This Offset Management Plan refers to Condition 4 of the EPBC Act approval.	See this Appendix
e) Detailed information and shapefiles specifying the location, area and boundaries of the proposed offset site or sites.	The Shapefile has been submitted to Department along with this plan.	Section 3.1, Figures 1 and 2 and shapefile provided
f) Detailed baseline information on the areas of habitat, their condition, and the presence (or not) of GEWVVP on the proposed offset site or sites.	This OMP outlines the site assessments undertaken, their findings, and describes the habitat, condition and presence of GEWVVP.	Section 3.3, 3.4 and 3.5
g) Commitments to achievable improved ecological benefits at the offset site or sites and the timeframes in which they will be achieved.	All commitments (performance criteria) to control threats and to achieve the completion criteria (ecological benefits) are outlined in the OMP.	See Sections 4.1 (Objective 2) and 4.2, and Table 12
h) A table summarising all commitments to achieve the proposed ecological benefits for GEWVVP at the offset site or sites, and a reference to where each commitment is detailed in the AOMP.	Tables summarising all commitments (performance criteria) to control threats and to achieve the completion criteria (ecological benefits) are provided in the OMP.	See Tables 12 and 14
i) Reporting and review mechanisms to inform the department annually regarding compliance with the management and environmental outcome	Annual reporting required to be submitted by Landholder to TfN and APA detailing all monitoring and management undertaken	See Sections 4.2.6.4 and 4.2.9, Tables 12 and 14, and Appendix 5

[redacted]

commitments, and attainment and maintenance of the ecological benefits specified in the AOMP.	for the offset site. Third party monitoring by qualified ecologists is proposed at regular intervals to monitor and review the progress of achieving ecological benefits.	
j) An assessment of risks to achieving the proposed ecological benefits and what risk management measures and/or strategies will be applied to address these.	Information on risk levels and risk management strategies are provided in the OMP.	See Tables 12 and 14, and Appendix 4
k) A monitoring program, which must specify: **I. Measurable performance indicators and the timeframes for their achievement to gauge attainment of the proposed ecological benefits for GEWVVP,**	This OMP describes performance criteria and completion criteria which are measurable indicators to meet the required ecological benefits.	See performance and completion criteria in Tables 12 and 14
II. Trigger values for corrective actions, and	This OMP describes trigger values, the monitoring to detect the triggers, and the subsequent corrective (remedial) actions to be undertaken if trigger values are reached.	See Tables 12 and 14
III. The proposed timing (including season/time of day/frequency), methods and effort, and an explanation of how these will be effective for this purpose, of monitoring capable of detecting trigger values, changes in the performance indicators and to gather evidence that effectively demonstrates actual progress towards, attainment of and maintenance of the ecological benefits for GEWVVP.	As above.	See Sections 4.2.6.4 and 4.2.9, and Tables 12, 13 and 14
l) Corrective actions to be implemented to ensure that the proposed ecological benefits for GEWVVP are achieved or maintained if trigger values are reached or performance indicators not achieved in the specified timeframes.	As above.	See remedial actions if performance or completion criteria not met, Tables 12 and 14
m) Links to referenced plans and applicable conditions of approval (including State approval conditions) if any.	All relevant referencing provided in References or Appendices sections	See Section 1. OMP links with WORM Ecological Offset Strategy
n) How the offset site or sites will be protected, and ecological benefits maintained, at least until the expiry of the approval.	The OMP describes the proposed offset security, management actions, 12-year schedule of works, in-perpetuity commitments, roles and responsibilities, and monitoring and reporting for the life of the approval. These will ensure the site is permanently protected and ecological benefits maintained in perpetuity.	Sections 3.6, 3.7, 4.2, 4.3 and 4.4

[redacted]

Appendix 3. Vegetation Quality Assessment Methodology (DSE 2004)

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Site Name/No. ..... Location ..... Date .....

Assessor(s) ..... Map Name/No. ..... AMG / MGA .....

Tenure ..... EVC ..... Bioregion .....

'Site Condition Score'

Large Trees — Score

Category & Description	% Canopy Health*		
	> 70%	30-70%	< 30%
None present	0	0	0
> 0 to 20% of the benchmark number of large trees/ha	3	2	1
> 20% to 40% of the benchmark number of large trees/ha	4	3	2
> 40% to 70% of the benchmark number of large trees/ha	6	5	4
> 70% to 100% of the benchmark number of large trees/ha	8	7	6
≥ the benchmark number of large trees/ha	10	9	8

Large trees are defined by diameter at breast height (dbh) - see EVC benchmark.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Tree Canopy Cover — Score

Category & Description	% Canopy Health *		
	> 70%	30-70%	< 30%
< 10% of benchmark cover	0	0	0
< 50% or > 150% of benchmark cover	3	2	1
≥ 50% or ≤ 150% of benchmark cover	5	4	3

Tree canopy is defined as those canopy tree species reaching ≥ 80% of mature height - see EVC benchmark description.

* Estimate proportion of an expected healthy canopy cover that is present (i.e. not missing due to tree death or decline, or mistletoe infestation).

Lack of Weeds — Score

Category & Description	'high threat' weeds*		
	None	≤ 50%	> 50%
> 50% cover of weeds	4	2	0
25 - 50% cover of weeds	7	6	4
5 - 25% cover of weeds	11	9	7
< 5% cover of weeds**	15	13	11

* proportion of weed cover due to 'high threat' weeds - see EVC benchmark for guide.

'High threat' weed species are defined as those introduced species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term assuming on-going current site characteristics and disturbance regime.

The EVC benchmark lists typical weed species for the EVC in the bioregion and provides an estimate of their 'invasiveness' and 'impact'. In general, those weed species considered to have a *high impact* are considered *high threat* regardless of their invasiveness.

** if total weed cover is negligible (<1%) and high threat weed species are present then score '13'.

Understorey Life forms

LF Code from EVC benchmark	# spp observed / Benchmark spp.	% cover observed / Benchmark % cover	Present (✓)	Modified (✓)
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		
	/	/		

Present

For life forms with benchmark cover of < 10%, considered 'present' if
- any specimens are observed.

For life forms with benchmark cover of ≥ 10%, considered 'present' if
- the life form occupies at least 10% of benchmark cover.

Modified (apply only where life form is 'present')

For life forms with benchmark cover of <10%, then considered substantially 'modified' if the life form has either:
- < 50% of the benchmark species diversity; or
- no reproductively-mature specimens are observed.

For life forms with benchmark cover of ≥ 10%, then considered substantially 'modified' if the life form has either:
- < 50% of benchmark cover; or
- < 50% of benchmark species diversity; or
- ≥ 50% of benchmark cover due largely to immature canopy specimens but the cover of reproductively-mature specimens is < 10% of the benchmark cover.

Understorey — Score

Category & Description		
All strata and Life forms effectively absent		0
Up to 50% of life forms present		5
≥ 50% to 90% of Life forms present	• of those present, ≥ 50% substantially modified	10
	• of those present, < 50% substantially modified	15
≥ 90% of Life forms present	• of those present, ≥ 50% substantially modified	15
	• of those present, < 50% substantially modified	20
	• of those present, none substantially modified	25

Victoria The Place To Be

Vegetation Quality Field Assessment Sheet

Version 1.3 - October 2004

Department of Sustainability and Environment

Recruitment *Score*

Category & Description			High diversity*◊	Low diversity*◊
No evidence of a recruitment 'cohort'+	within EVC not driven by episodic events		0	0
	within EVC driven by episodic events^	clear evidence of appropriate episodic event	0	0
		no clear evidence of appropriate episodic event	5	5
Evidence of at least one recruitment 'cohort' in at least one life-form	proportion of native woody species present that have adequate recruitment◊	< 30%	3	1
		30 - 70%	6	3
		≥ 70%	10	5

+ 'cohort' refers to a group of woody plants established in a single episode (can include suppressed canopy species individuals).

^ refer to EVC benchmark for clarification.

◊ treat multiple eucalypt canopy species as one species.

* high diversity defined as ≥ 50% of benchmark woody species diversity.

Species Recruitment

Woody species recorded in habitat zone	Adequate Recruitment (✓)
Eucalypt canopy (combined species)	
number of woody spp. in EVC benchmark (SS and taller)	

Organic Litter *Score*

Category & Description	Dominated by native organic litter	Dominated by non-native organic litter
< 10% of benchmark cover	0	0
< 50% or > 150% of benchmark cover	3	2
≥ 50% or ≤ 150% of benchmark cover	5	4

Logs *Score*

Category & Description	Large logs present*	Large logs absent#
< 10% of benchmark length	0	0
< 50% of benchmark length	3	2
≥ 50% of benchmark length	5	4

Large logs defined as those with diameter ≥ 0.5 of benchmark large tree dbh.

* present if large log length is ≥ 25% of EVC benchmark log length.

absent if large log length is < 25% of EVC benchmark log length.

'Landscape Context Score'

Patch Size *Score*

Category & Description	
< 2 ha	1
Between 2 and 5 ha	2
Between 5 and 10 ha	4
Between 10 and 20 ha	6
≥ 20 ha, but 'significantly disturbed'*	8
≥ 20 ha, but not 'significantly disturbed'*	10

* 'significantly disturbed' defined as per RFA 'Old Growth' analyses eg. roading, coupes, grazing etc. – effectively most patches within fragmented landscapes.

Distance to Core Area *Score*

Distance	Core Area not significantly disturbed*	Core Area significantly disturbed*
> 5 km	0	0
1 to 5 km	2	1
< 1 km	4	3
contiguous	5	4

* defined as per RFA 'Old Growth' analyses.

Neighbourhood *Score*

Radius from site	% Native vegetation*	Weighting	
100 m		0.03	
1 km		0.04	
5 km		0.03	
	subtract 2 if the neighbourhood is 'significantly disturbed'		
		Add Values and 'round-off'	

* to nearest 20%.

Multiply % native vegetation x Weighting for each radius from the zone (eg. 40% x 0.03 = 1.2); then add values to obtain final Neighbourhood Value.

Final Habitat Score

	'Site Condition Score'							'Landscape Context Score'			
Component	Large Trees	Tree Canopy Cover	Lack of Weeds	Understorey	Recruitment	Organic Litter	Logs	Patch Size	Neighbourhood	Distance to Core Area	Total
Score											100

Appendix 4. Risk Assessment Framework

RISK LEVEL		Likelihood				
		1	2	3	4	5
Consequence	1	Very Low	Very Low	Very Low	Low	Low
	2	Very Low	Low	Low	Low	Moderate
	3	Low	Low	Moderate	Moderate	High
	4	Low	Moderate	High	High	Very High
	5	Moderate	Moderate	High	Very High	Very High

Category Descriptions		
Likelihood		
1	***Rare***	Would only occur under exceptional circumstances (eg. 1 in 100-year event).
2	***Unlikely***	Could occur but considered unlikely (eg. 1 in 10-50-year event).
3	***Possible***	May occur under non-average circumstances during the offset management period (eg. 1 in 10-year event).
4	***Likely***	Will occur under average circumstances (eg. annually).
5	***Almost Certain***	Expected to occur under most circumstances (eg. multiple times per year).
Consequence		
1	***Insignificant***	No impacts on MNES or achievement of OMP objectives. Inconvenience for management only.
2	***Minor***	Some short-term impacts on MNES and/or achievement of OMP objectives. Remediation <1 year.
3	***Moderate***	Medium-term impacts on MNES and/or achievement of OMP objectives. Remediation 1-5 years.
4	***Major***	Long-term impacts on MNES and/or achievement of OMP objectives. Remediation >5 years.
5	***Catastrophic***	Irreversible impacts to MNES. OMP objectives cannot be achieved. Remediation not possible

[redacted]

Appendix 5. Annual Report Template

Landowner name completing report				**Trust for Nature Site ID**	
Offset site address	[redacted]			**Offset Management Plan No. (if applicable)**	
Responsible Authority	Commonwealth Department of Climate Change, Energy, the Environment and Water			**Annual Report No.**	
Matters of National Environmental Significance	*Grassy Eucalypt Woodland of the Victorian Volcanic Plain*				
Management Action	**Performance Target**	**Management Activities Implemented**	**Timing**	**Performance Target Met? (Y/N)**	**Description of Actions and observed outcomes (Include or attach evidence of actions completed / comments / observed outcomes)**
Eg. Biomass Control	Provide 10-30% inter-tussock space	Strategic sheep grazing	August/September	Y	
Signed			**Date**		