



Alliance Business Park EPBC Act Offset
Management Plan: 250-290 Hamilton Road,
New Gisborne (EPBC 2017/7930)

Final Plan
Prepared for Alliance Business Park Pty Ltd
13 March 2019

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Industrial Development of 165-195 O'Herns Rd, Epping, (EPBC 2017/7930)

Declaration of accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed

Dan Rush
Project Manager
Alliance Business Park Pty Ltd

Summary

Biosis Pty. Ltd. was commissioned by Alliance Business Park Pty Ltd (ABP) to prepare an Offset Management Plan (OMP) for a section of a pastoral property at Lot 4, Hamilton Road, New Gisborne in Victoria. The section assessed (covering 24.05 ha) was part of Lot 4 PS129443 within the Parish of Gisborne (the offset area). The property is currently owned by Bronwyn Elizabeth Shaw.

The 24.05 ha offset area meets the quantity and quality requirements for an offset of Matted Flax-lily *Dianella amoena* (MFL) habitat as determined by Department of the Environment and Energy (DoEE) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in association with the approval conditions for referral EPBC 2017/7930. It also provides the general biodiversity equivalence unit (0.012 GBEU) and specific biodiversity equivalence unit (1.706 SBEU for MFL) offset requirements prescribed in association with the project's approval under Victoria's biodiversity assessment guidelines (DEPI 2013).

Specifically this plan addresses the approval under the EPBC Act for the industrial and commercial development at 165 – 195 O'Herns Road, Epping, Victoria as outlined under referral 2017/7930. The EPBC approval (2017/7930) specifies the following condition in relation to the provision of offsets:

3. The approval holder must, within 2 months of approval of the Offset Strategy specified in condition 2, submit an Offset Management Plan(s) for approval by the Minister. The approval holder must not commence the action until the Offset Management Plan(s) has been approved by the Minister. Once approved, the approved Offset Management Plan(s) must be implemented. The Offset Management Plan(s) must:

- a. be prepared by a suitably qualified expert*
- b. be prepared in accordance with the Department's Environmental Management Plan Guidelines, and the EPBC Act Environmental Offsets Policy*
- c. provide a written description and map that clearly defines the location and boundaries of the offset area(s), consistent with the Offset Strategy approved under Condition 2. This must be accompanied with the offset attributes and shape-files*
- d. a survey and description of the current condition (prior to any management activities) of the offset area proposed, including existing vegetation (the baseline condition)*
- e. detail management actions, regeneration and/or revegetation strategies (i.e. weed, grazing and/or fire management) to be undertaken on the offset area(s) to improve and extend Golden Sun Moth habitat, Matted Flax-lily habitat and NTGVVP, including:*
 - i. a description and timeframe of measures that will be implemented to improve the condition and extent of Golden Sun Moth habitat, Matted Flax-lily habitat and NTGVVP within the offset area(s)*
 - ii. performance and completion criteria for evaluating the management of the offset areas, and criteria for triggering remedial action*
 - iii. a program to monitor and report on the effectiveness of these measures, and progress against the performance and competition criteria*
 - iv. a description of potential risks to the successful implementation of the plan, a description of the measures that will be implemented to mitigate against these risks and a description of the contingency measures that will be implemented if defined triggers arise*
 - v. details of who is responsible for monitoring, reviewing and implementing the plan.*

A suitable offset site has been identified near New Gisborne, Victoria. The offset area is located within a larger property, and management prescriptions within this plan are consistent with the plans for the broader property. The offset area has been the subject of a targeted survey for MFL which recorded 34 plants scattered at numerous locations across the property (Biosis 2017).

The property provides a total offset area of 24.05 hectares, amounting to an offset of about 2.5 times the impact to 9.89 hectares of MFL habitat at the eastern extension to ABP covering land at 165 O'Herns Road Epping.

This OMP requires that some land use rights are relinquished and that management actions have the primary objective aimed at conserving and improving of defined areas of habitat for MFL. The management actions outlined in this plan consider key management issues identified for the protection and enhancement of habitat for MFL.

The offset site will be secured in-perpetuity through an appropriate legal encumbrance registered on the property (a covenant as to part Section 3A Victorian *Conservation Trust Act 1972*). Gains in vegetation and MFL habitat quality through on-ground actions are expected over the initial 10 years of this OMP, and maintained through enduring commitments to manage the offset site for MFL and biodiversity conservation.

This plan specifies a range of management actions for the offset area, including weed management and protection of the habitat values of the offset site from degradation by stock and unauthorised access. The plan includes an adaptive management approach, in which management actions are modified based on the results of monitoring and auditing activities in order to keep management focussed on the outcome of protecting and enhancing MFL habitat. The risk assessment also includes triggers for plan review, following environmental events such as significant weed invasion that has the potential to prejudice attainment and maintenance of OMP completion criteria.

1. Introduction

1.1 Project Background

Biosis Pty Ltd was commissioned by Alliance Business Park Pty Ltd (ABP) to prepare an Offset Management Plan (OMP) for an offset site required for losses associated with the industrial and commercial development at 165 – 195 O'Herns Road, Epping, Victoria (Alliance Business Park (East)) as outlined under referral 2017/7930. The location of the development site is shown in Figure 1.

An ecological assessment of the O'Herns Road site, including a habitat hectare assessment, is documented by Biosis (2017a). That report identifies the condition and extent of native vegetation, including areas of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP), Golden Sun Moth *Synemon plana* (GSM) habitat and habitat for Matted Flax-lily *Dianella amoena* (MFL) to be both impacted and protected in association with the proposed development (Figure 2). Biosis (2017a) was used, in conjunction with the *Environment Protection and Biodiversity Conservation Act 1999* EPBC Act offsets policy, to identify the extent of NTGVVP, GSM and MFL habitat to be protected outside the project area.

A Planning Permit application has been approved by the City of Whittlesea for the industrial subdivision (716886). Clearing associated with the development of the subdivision was also assessed by the Department of Environment, Land, Water and Planning (DELWP) as part of the development approvals process. The development has also been assessed and approved by the Department of the Environment and Energy (DoEE) under the EPBC Act through referral 2017/7930.

The plans approved by Whittlesea Council would result in clearing of 1.608 hectares of native vegetation equivalent to NTGVVP. This impact would also result in the loss of 20.53 ha of GSM habitat and 23 individuals of Matted Flax-lily *Dianella amoena* within 9.89 ha of suitable habitat (Figure 2).

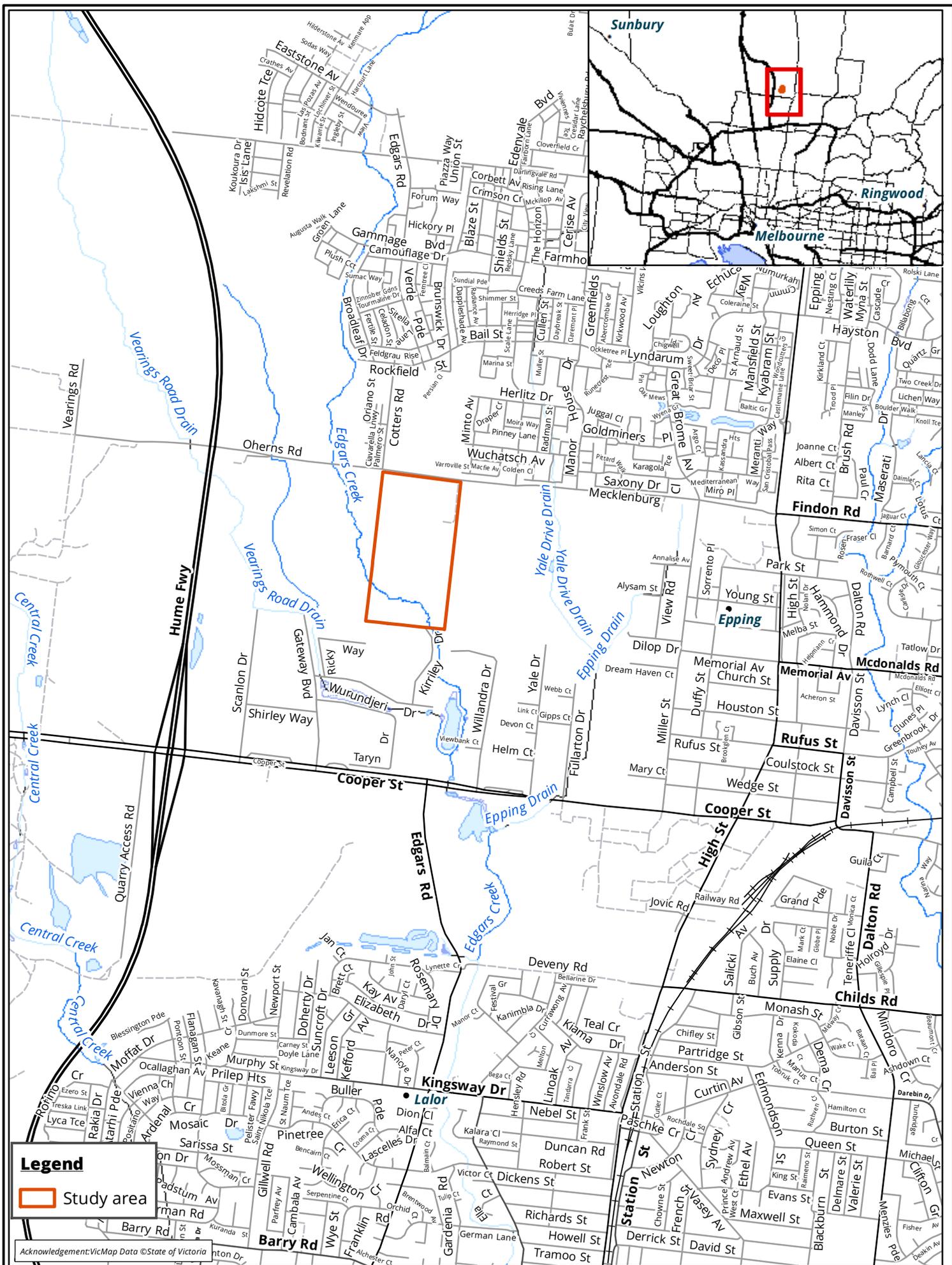
Offsets for the proposed development are prescribed by both state (DELWP) and federal (DoEE) regulators. All offsets prescribed under the EPBC Act and the Guidelines cannot be generated concurrently and therefore three offset sites are required to satisfy all the offsets required for the development. Offsets proposed under the EPBC Act involve securing an offset supporting 24.05 ha of MFL habitat.

The EPBC Act offset for MFL and all of the Victorian offset prescription is proposed to be sourced from a 24.05 ha section of Lot 4, Hamilton Road, New Gisborne (Figure 3). An ecological assessment of the proposed offset area was conducted by Biosis (2017b). This report provides the basic ecological information to support this OMP and identified one remnant, largely contiguous patch of the ecological vegetation class (EVC) Plains Grassy Woodland (EVC 55) supporting a significant population of MFL.

Management of the EPBC Act offset will involve protection and active ecological management of 24.05 ha of a high quality remnant of Plains Grassy Woodland (EVC 55) which also supports a known population of 34 MFL (Figure 4).

Both the O'Herns Road industrial subdivision and New Gisborne offset site are within the Victorian Volcanic Plain (VVP) Bioregion (www.delwp.vic.gov.au). The New Gisborne offset site is approximately 40 km north-west of the O'Herns Road development site.

A glossary of technical terms used throughout this OMP is provided in Appendix 3.



Legend

 Study area

Acknowledgement: VicMap Data © State of Victoria

Figure 1 Location of Alliance Business Park (East), Epping Victoria

Matter: 25346,
 Date: 31 July 2017,
 Checked by: SGM, Drawn by: SSK, Last edited by: skumar
 Location: P:\25300s\25346\Mapping\25346_F1_Location.mxd

Legend

- Study area
- MFL observation
- Edgars Creek
- Parcel boundary
- Drainage asset
- Footprint - sewer alignment
- Proposed roadway
- Matted Flax-lily potential habitat

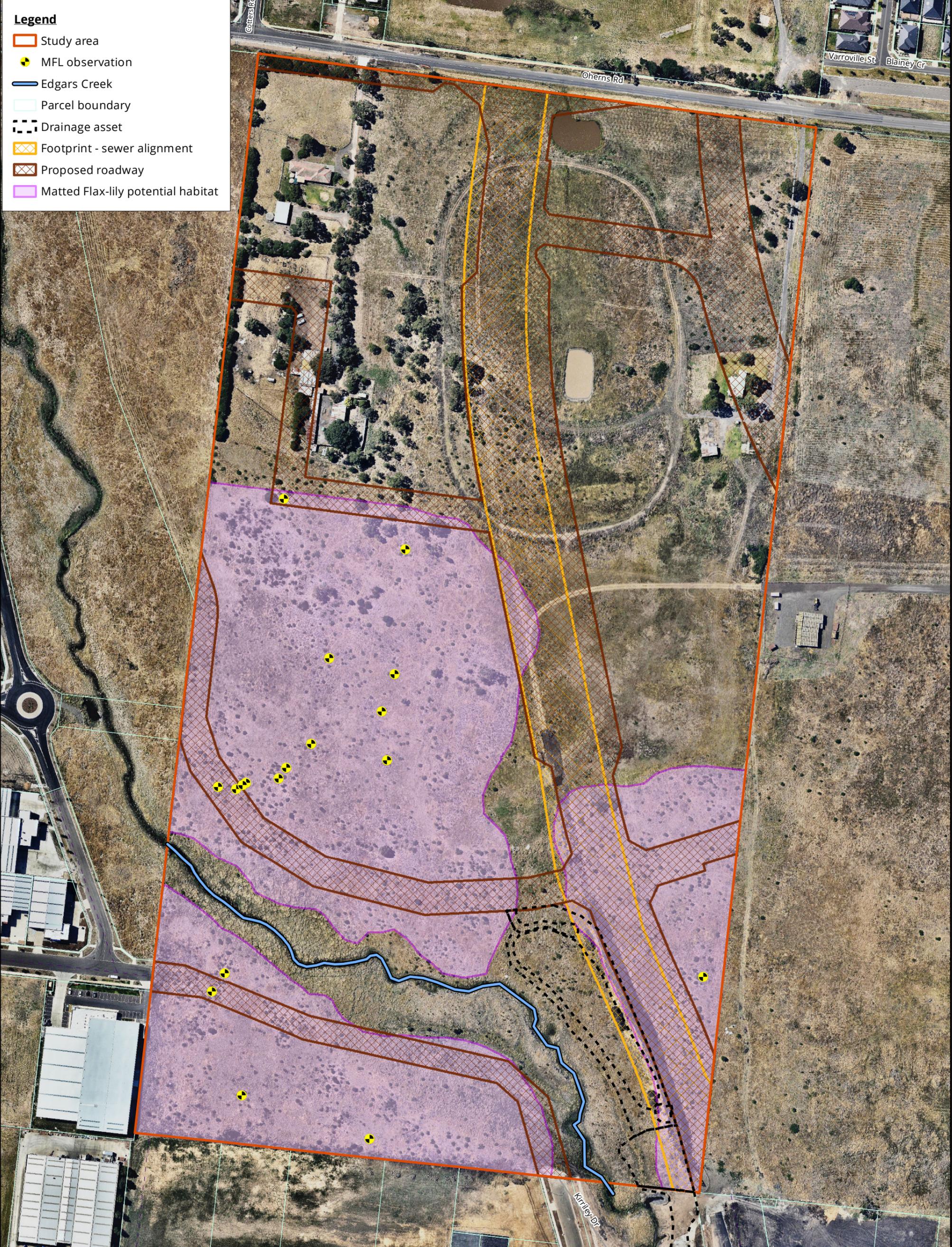


Figure 2 The extent of Matted Flax-lily records and habitat within the impact area

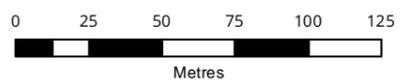


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Acknowledgements: Vicmap ©State of Victoria

Matter: 25346,
Date: 17 November 2017,
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Scale 1:2,415 @ A3

Coordinate System: GDA 1994 MGA Zone 55



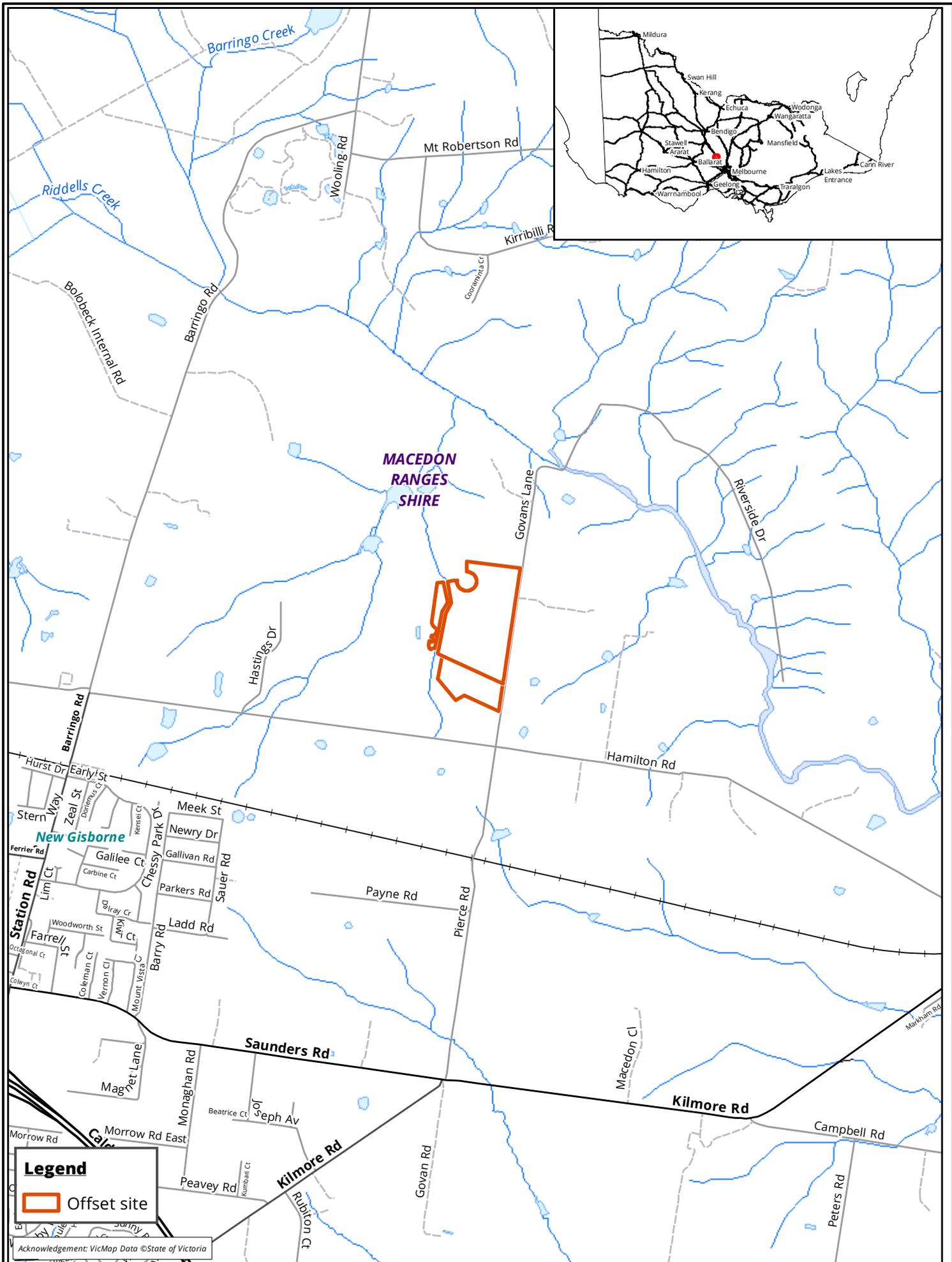
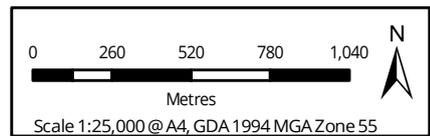


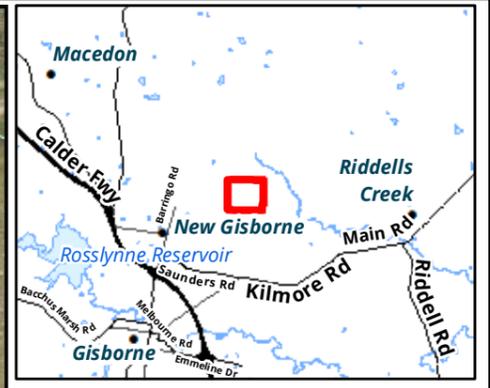
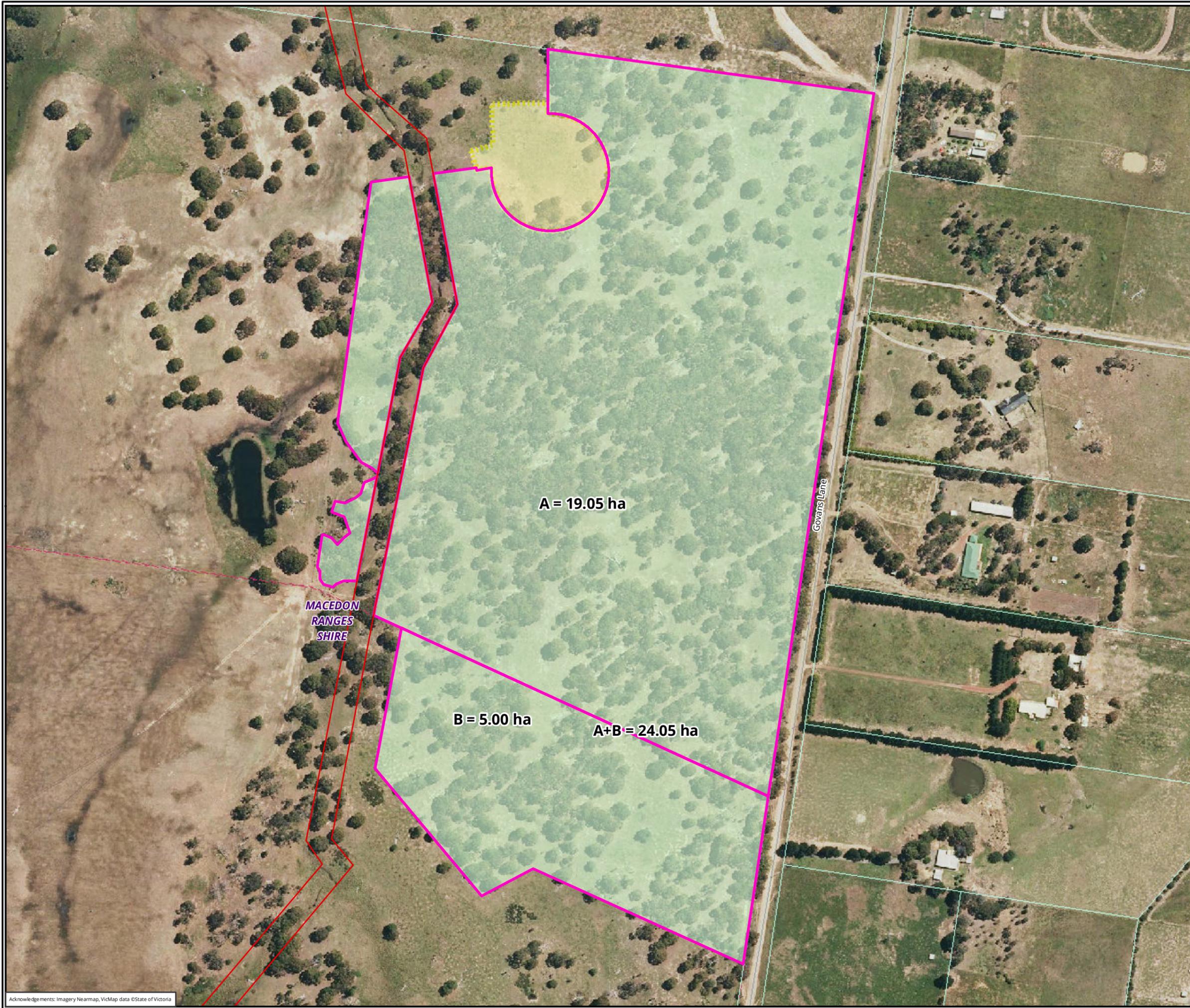
Figure 3 Location of the offset site - Lot 4 Hamilton Road, New Gisborne, Victoria 3438



Biosis Pty Ltd
Albury, Ballarat, Melbourne,
Newcastle, Sydney, Wangaratta & Wollongong

Matter: 28455,
Date: 15 February 2019,
Checked by: SGM, Drawn by: SKM, Last edited by: jturner
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- Legend**
- Plains Grassy Woodland
 - Offset site
 - Proposed infrastructure footprint
 - WaterEasement
- Cadastre**
- Active parcel
 - Proposed parcel

A = 19.05 ha

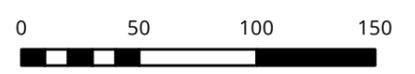
B = 5.00 ha

A+B = 24.05 ha

MACEDON
RANGES
SHIRE

Govans Lane

Figure 4 Ecological features of the offset site - Lot 4 Hamilton Road, New Gisborne, Victoria 3438



Metres
Scale: 1:3,000 @ A3
Coordinate System: GDA 1994 MGA Zone 55



Matter: 28455,
Date: 13 February 2019,
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Location:\bio-data-01\matters\28400s\28455\mapping\28455_F8_NewGisborne_EcoFeatures.mxd

1.2 Objectives

The objective of the OMP is to document the development site and offset site details to meet EPBC Act approval requirements for offsetting impacts to MFL by securing, maintaining and improving MFL habitat within the designated offset site. The objectives of this plan are to:

- Improve the condition of 24.05 ha of MFL habitat at the Hamilton Road offset property in a manner consistent with the EPBC Act Environmental Offsets Policy;
- support establishment of legal security arrangements for the in perpetuity protection and management of the offset site;
- Undertake management actions to protect and improve the quality of native vegetation and MFL habitat within the offset site;
- Provide a timetable of management actions, outcomes and progress reviews;
- Detail appropriate monitoring and evaluation of management actions and completion criteria; and
- Attain and maintain the offset completion criteria for the life of the EPBC Act approval for EPBC 2017/7930.

1.3 Report structure

The structure and content of the OMP is consistent with the requirements of the 'Standard Offset Plan' template provided by the Department of Environment, Land, Water and Planning (DELWP) and is organised in several parts:

- **Introduction** - This section summarises the background information relevant to the Project, including the purpose and scope of the work and the assessment methodology.
- **Part A: Offset Suitability** - This section assesses the suitability of the proposed offset site, and includes details regarding approved clearing, gain and site improvement calculations. Part A should be read in conjunction with Part B, but due to its technical nature, the information it contains is not intended to be placed on title (e.g. covenant).
- **Part B: Offset Implementation** - This section describes how the offset is to be implemented. Part B includes details regarding landowner and EPBC Act approval holder commitments, management activities, monitoring and reporting. This section is intended for those responsible for implementing the plan, including ABP and future landowners. Information in this section is intended to be placed on title.

The plan also addresses the requirements of guidelines for the preparation of an environmental management plan (Commonwealth of Australia 2014).

2. Part A: Offset Suitability

This section provides details of the development site, and includes details regarding approved clearing, gain and site improvement. This section should be read in conjunction with Part B, but due to its technical nature, the information it contains is not intended to be placed on title (e.g. Covenant under the *Victorian Conservation Trust Act 1972*). The location of the development site and the proposed offset site are provided in Figures 1 and 3 respectively. The Hamilton Road offset site is included within the ABP offset strategy approved by DoEE on 25 January 2019 (Biosis 2019).

2.1 Clearing Site Details

Landowner of clearing site	Alliance Business Park Pty Ltd
Location and address of clearing site	165 – 195 O’Herns Road, Epping, Victoria
Local Government Area	City of Whittlesea
Catchment Management Authority	Port Phillip and Western Port
Responsible Authority	Department of Environment, Land, Water and Planning (DELWP)
Permit applicant	Alliance Business Park Pty Ltd
Planning Permit Number (ID)	716886
Date Approved	21 November 2017
EPBC Act Referral	2017/7930
Date Approved	25 September 2018

2.2 Vegetation Approved for Removal

Vegetation / habitat removal associated with the eastern expansion of ABP (Figure 1) has been approved under the City of Whittlesea Planning Permit 716886 and the EPBC Act approval for EPBC 2017/7930. Vegetation proposed for removal is described in the biodiversity assessment prepared by Biosis (2017a) and the 9.89 hectares of MFL habitat to be removed is identified in Figure 2.

2.3 Description of the New Gisborne Offset Site

The offset area (24.05 ha) is located at Lot 4 Hamilton Road, New Gisborne, on the western margin of Govans Lane. The site is approximately 48 km north of the Melbourne central business district and 4 km north of Gisborne (Figure 3). The property is currently zoned as Rural Conservation Zone (RCZ) which allows the normal grazing of domestic stock and is not covered by any overlays relating to biodiversity or inundation. The site has recently changed ownership but has historically been used for the grazing of domestic stock.

The offset area assessed is part of a broader, approximately 86 ha land parcel (Figure 4). This land parcel includes substantial areas dominated by Plains Grassy Woodland (EVC 55) in relatively uniform condition. Other parts of this parcel of land have been cleared for pasture improvement.

The proposed offset area (the area subject to this OMP) is in the north eastern corner of this land parcel (Figure 4). The offset area is comprised of five habitat zones which will be managed to provide all of the MFL offsets for development of the O'Herns Road industrial subdivision (Referral 2017/7930). This portion of the site has recently had a dwelling constructed on site. The dwelling and associated infrastructure have been buffered by 50 metres and this residential area has been excluded from the offset site.

A detailed description of the flora and habitat hectare values within the proposed offset area is included in Biosis (2017b) which identifies a total of 88 indigenous and 40 introduced plant species. This species list is included in Appendix 1. More indigenous and weed species are likely to be present as seasonal conditions and survey intensity typically prevent the detection of all species present within a defined area. The study area has no known history of cultivation, significant pasture improvement or intensive fertilizer application. However, at present pasture improvement activities and fertiliser application remain existing rights for the use of this land.

The vegetation within the offset area consists of scattered mature Candlebark *Eucalyptus rubida* trees with abundant regeneration. Local landowners indicate that much of the older regeneration dates from about 1970 and is therefore almost 50 years old. The mature trees are likely to pre-date European settlement (i.e. are greater than 250 years old). The site supports an open understorey tree layer of Blackwood *Acacia melanoxylon* with scattered occurrences of Silver Wattle *Acacia dealbata*. Smaller shrubs include Parrot-peas *Dillwynia* spp., Tree Violet *Melicytis dentatus* and Peach Heath *Lissanthe strigosa*.

The grassy, often herb-rich groundcover is variously dominated by Kangaroo Grass *Themeda triandra*, Spear-grasses *Austrostipa* spp., Weeping Grass *Microlaena stipoides*, Tussock-grasses *Poa* spp. and Wallaby-grasses *Rytidosperma* spp. Common herbaceous species include Chocolate Lily *Arthropodium strictum*, Common Woodruff *Asperula conferta*, Wattle Mat-rush *Lomandra filiformis*, Grassland Wood-sorrel *Oxalis perennans*, Kidney-weed *Dichondra repens*, Common Raspwort *Gonocarpus tetragynus*, Smooth Solenogyne *Solenogyne dominii*, Milkmaids *Burchardia umbellata* and Shade Plantain *Plantago debilis*. A population of 34 Matted Flax-lily was recorded by Biosis (2017b).

Common woody weeds (in order of abundance) include Gorse *Ulex europaeus*, Hawthorn *Crataegus monogyna* Sweet Briar *Rosa rubiginosa* and Common Blackberry *Rubus anglocandicans*. Other, less frequent woody weeds include Sallow Wattle *Acacia longifolia* subsp. *longifolia*, Spanish Heath *Erica lusitanica* and Radiata Pine *Pinus radiata*.

Common ground-cover weeds include Brown-top Bent *Agrostis capillaris*, Sweet Vernal-grass *Anthoxanthum odoratum*, clovers *Trifolium* spp., Flatweed *Hypochaeris radicata*, Yorkshire Fog *Holcus lanatus*, Bromes *Bromus* spp. and other annual weedy grasses.

While not currently utilised for grazing by domestic stock, the offset site does support a significant population of Eastern Grey Kangaroos *Macropus giganteus*. The grazing pressure provided by this population appears to maintain a relatively low ground cover biomass. The cover of indigenous grasses and herb therefore appears to remain relatively open, providing opportunities for understorey recruitment.

Current permitted land uses

The property is zoned Rural Conservation Zone (RCZ) within the Macedon Ranges Shire Planning Scheme. The RCZ zoning allows the normal grazing of domestic stock.

Within Victoria, removal of native vegetation is controlled under Clause 52.17 of the Victoria Planning Provisions. Some removal of native vegetation is currently permitted (exempt from a planning permit requirement – See Clause 52.17-7) to the minimum extent possible, for activities including:

- Removal of dead vegetation.
- Removal of vegetation for construction of a boundary fence.
- Mowing of understorey grass vegetation to a height of 100 millimetres above ground level.
- Grazing by domestic stock.
- Timber harvesting of 'reasonable amounts' for personal use, including firewood and construction of fences or buildings.
- Pruning of up to 1/3 of the foliage of individual plants.
- Treatment of pest animal burrows or weed infestations.
- Stone exploration or extraction.
- Fire protection, including periodic fuel reduction burning or construction of firebreaks and firefighting access tracks.

Existing buildings within the property have been excluded from the offset site with an appropriate (50 metre) buffer.

Existing offset arrangements

The proposed offset site has not been allocated for the provision of any other offsets, either under the EPBC Act Environmental Offsets Policy or for provision of offsets under any current or past Victorian policy, including the Biodiversity Assessment Guidelines or the Net Gain Framework.

Other sections of the property contain habitat and records of MFL. These sections may be subject to separate, future offset arrangements for other projects.

3. Part B: Offset Implementation

This section presents the actions required to implement the OMP. The OMP details methods for the management, conservation and improvement of native vegetation at the offset site for the benefit of the protected matter (MFL) over a ten year period commencing from EPBC Act approval of this OMP. These actions are required over the initial ten year period and, while the OMP may be updated after that period with approval from DoEE, active ecological management to maintain or improve MFL habitat condition is required for the life of the EPBC Act Approval and from thereon in perpetuity.

All works will be conducted by a suitably qualified and experienced contractor and/or the landholder. Prescribed management actions are, where relevant, in accordance with the Victorian BushBroker standards for management (DSE 2012a, DSE 2012b and DSE 2012c).

This OMP aims to achieve habitat improvement gains through on-ground actions and therefore is required to be achievable, straightforward and practical. All of the management actions specified must be measurable and support the offset completion criteria.

3.1 Offset Site Details

Table 1 provides details of the offset site, including the landowner, parcel details and local government property information.

Table 1 Offset Site Details

Offset Site Details	
Landowner of offset site	Bronwyn Elizabeth Shaw
Type of offset	3 rd party
Location and address of offset site	Lot 4 Hamilton Road, New Gisborne, VIC 3438
Area of offset site (hectares)	24.05
Parish	Gisborne
Allotment	Lots 4 LP129443
Volume / Folio	3682 / 324
Local Government Area	Macedon Ranges Shire
Council Property Number	1179757
Bioregion	Victorian Volcanic Plain

3.2 Strategy for Offset Site

The offset site is to be secured and managed for the purposes of conservation for MFL in perpetuity. This offset site is a smaller component of a larger area of farmland which will be managed in a sympathetic manner on a voluntary basis. The current land owners have nominated a section of this parcel for this offset which has otherwise not been allocated for the provision of any other offsets, either under the EPBC Act Environmental Offsets Policy or for provision of offsets under any past or present Victorian policy, including the Biodiversity Assessment Guidelines or the Net Gain Framework.

All easements noted on the current title have been excluded from the net offset area. No future easements can be applied to the offset area as these are likely to conflict with the objectives of this OMP.

The site will be concurrently used under the Victorian offset program (BushBroker) to provide both the general (0.012 units) and specific biodiversity equivalence units (agreed to be provided by the protection of 16 hectares of this offset site) required by the approved planning permit (City of Whittlesea 716886). The nominated offset area provides well in excess of the area requirement for these State prescribed offsets.

3.3 Offset security, management responsibility and reporting requirements

ABP has located a suitable offset site and negotiated an agreement with the owner(s) of the property. The proposed offset area is located within a larger property on Hamilton Road, New Gisborne. The property is owned by Bronwyn Elizabeth Shaw (or other future owner), who will be responsible for ongoing management of the offset site throughout the period of this plan.

The offset site will be secured and managed for the purposes of conservation in perpetuity via covenant as to Section 3A *Victorian Conservation Trust Act 1972* managed by the Trust for Nature (TfN). The management strategy for the proposed offset site consists of implementing a vegetation OMP incorporating the management of ground cover biomass, weed and vermin control and regular monitoring. Details of security and management responsibility are shown in Table 2.

Table 2 Security and Management Responsibility and Reporting Requirements

Responsibility	
Who is liable/responsible for meeting offset requirements?	Alliance Business Park Pty Ltd
Type of security	Covenant as to part Section 3A <i>Victorian Conservation Trust Act 1972</i>
Date of commencement for the covenant	To be completed in 2019
Date covenant registered on-title	To be completed in 2019
Offset site management responsibility	Bronwyn Elizabeth Shaw
Offset Monitoring Responsibility	Bronwyn Elizabeth Shaw
Site management	Bronwyn Elizabeth Shaw
Monitoring	Bronwyn Elizabeth Shaw
Auditing	Alliance Business Park Pty Ltd
Reporting responsibility (to TfN)	Bronwyn Elizabeth Shaw
Reporting responsibility (to DoEE)	Alliance Business Park Pty Ltd
Plan review	Alliance Business Park Pty Ltd

The offset area will be secured in-perpetuity via a covenant as to part Section 3A *Victorian Conservation Trust Act 1972*, to be registered on the title in 2019. The encumbrance registered on title requires the landholder and future owners to manage the land in accordance with this OMP or any future approved revisions of this plan.

The covenant will specifically state the in-perpetuity land-use commitments across the offset site to:

- Retain and manage all native vegetation as directed by this offset management plan;
- Retain all fallen timber and branches;
- Exclude all domestic stock;

- Exclude the use of stock feed such as hay or other material which could support weed seeds that are sourced from outside the offset area;
- Eliminate any woody weeds and control the cover of other high threat weeds ensuring this cover does not exceed levels achieved upon attainment of Year 10 offset completion criteria;
- Ensure that pest animals are controlled and that level of control attained at the completion of Year 10 of management is maintained in perpetuity.
- Exclude pasture improvement and any type of cultivation and cropping;
- Exclude fertilizer application;
- Control the accumulation of ground cover biomass through the controlled application of fire if required;
- Monitoring for any new and emerging weeds and continuously treating those weeds to avoid further seed set, dispersal or infestation;
- Maintain a progressive annual works plan which caters to current conditions and prescribes ongoing management with the promotion of native perennial grasses, and attainment and maintenance of offset completion criteria, as its primary objective; and
- Monitor and report on the abundance of MFL within the offset site.

Implementation of this management plan is the overall responsibility of ABP, which has engaged the land owner (Bronwyn Elizabeth Shaw) to deliver the offset outcomes on ABP's behalf. However, direct management responsibility may be delegated to a designated site manager and/or managing ecologist. The land owner is responsible for engaging a qualified ecologist to conduct monitoring (Section 3.9) with reports submitted to TfN, ABP and DoEE. Management actions by the land owner will be overseen by the TfN as part of the legal protection over the site.

The TfN is responsible for:

- Undertaking site inspections at least 4 times over the initial 10 year period and provide input into the annual works program.
- Review of ecological monitoring reports including an assessment of attainment and maintenance of the offset completion criteria.

Implementation of the management plan will be monitored by the TfN, who will verify that the management actions have been carried out appropriately.

Implementation of the OMP will begin on 15 April 2019 with registration of the covenant to be completed as soon as possible in 2019. While preparation of the covenant is expected to be completed in early 2019, formal signing of the covenant by the Minister may be delayed by other priorities. However, ABP will pay all the prescribed fees within four weeks of the approval of this OMP. These fees will be non-refundable and the covenant signing will therefore be an administrative formality.

Funding for implementation of this OMP has been agreed between ABP, the land owner and TfN. Where appropriate, or otherwise agreed, funding will be held by the TfN and paid to the land owner over the 10 year management period as per a land owner agreement. This will include agreed funding for anticipated ongoing management required to maintain completion criteria at the offset site in perpetuity, beyond the initial 10 year period during which the completion criteria are achieved.

3.4 Offset outcomes

The key environmental outcomes / criteria to be achieved through protection and management of the offset area are:

- Permanent legal protection of 24.05 hectares of MFL habitat;
- Physical protection of the habitat area from manageable threats including grazing by domestic stock, weed infestations and degradation by pest animals.
- Attainment of MFL habitat condition completion criteria (below), as measured by habitat monitoring.

3.4.1 Future site condition - completion criteria

The 24.05 hectare offset site must achieve the following site condition:

- a) be dominated by good quality native vegetation (VQA site condition score of 45+/75).

Monitoring assessments will be undertaken in marked quadrats distributed through the offset site as described in Section 3.9. A key performance target, to assist in attainment of (a), is to eliminate woody weeds and reduce the abundance of perennial, introduced pasture grasses such as Brown-top Bent, Toowoomba Canary-grass and Cocksfoot. The weed reduction target for introduced perennial grasses is set at 50% of the baseline cover identified by baseline monitoring.

The open ground cover structure across the site currently appears to be maintained through the ongoing grazing by Eastern Grey Kangaroos. Where monitoring indicates this structural condition is not being maintained the application of an ecological burning regime will be used to maintain this open structure.

Achieving these goals will increase the Lack of Weeds score and provide opportunities for additional understorey lifeforms to establish. These outcomes will elevated the offset site condition score to the required level to achieve the defined completion criteria.

3.4.2 Performance criteria

Key performance criteria for this OMP are:

- Continuous improvement in average site condition as described in Section 3.4.1.
- Effective threat abatements, including the exclusion of stock grazing, weeds and pests as specified in Section 3.8.
- Completion of scheduled management actions (Section 3.8 and Tables 4 & 6).
- Completion of scheduled monitoring activities (Section 3.9 and Table 6).
- Completion of scheduled reports and audits (Section 3.10, 3.11 and Table 7).

3.5 Limitations and uncertainty

This management plan has been formulated using information from recently conducted site inspections (Biosis 2017). The OMP has been subject to external review and quality assurance by TfN as part of the process to register the site covenant. Relevant federal and state government policies, procedures and databases have also been consulted where appropriate.

The proposed offset site supports a population of MFL, which has been confirmed by recording the species within the offset site during targeted surveys (Biosis 2018) and from incidental observations by the land owner.

The OMP includes a reasonable expectation that the control of environmental weeds to reduce their cover and prevent / restrict their production of seed, while concurrently encouraging the growth and seed production of the existing cover of indigenous grasses, will result in an increase in the abundance and cover of native grasses, herbs, woody species and MFL. The active and persistent control of woody and other environmental weeds will increase the overall Site Condition score as assessed using the habitat hectare assessment protocols (DSE 2004). However, there is a possibility that the recruitment of indigenous species will be slower than expected or prolonged drought conditions may inhibit recruitment.

If seed production is restricted by unforeseen circumstances such as drought then seed collection and dispersal options would be investigated. Alternatively the time period for active management would be extended to compensate for any lag in the establishment of indigenous species.

3.6 Ongoing management commitments

The offset site will be managed for the conservation of MFL.

From the commencement of the approved OMP and conservation agreement, the landowner agrees to undertake the following management commitments in perpetuity:

- Eliminating all woody weeds through continuous detection, treatment and infestation prevention.
- Monitoring for any new and emerging weeds and eliminate through continuous detection, treatment and infestation prevention.
- Controlling rabbits, hares and foxes to an extent above existing legal requirements.
- Retaining all standing trees, dead or alive.
- Retaining fallen logs and fallen branches.
- Exclude all domestic stock.
- Exclude the use of stock feed such as hay or other material which could support weed seeds that is sourced from outside the offset area.
- Exclude pasture improvement (but not ground cover rehabilitation to increase the cover of native grasses and herbs), and cultivation for commercial cropping.
- Exclude fertilizer application.

3.7 Risk assessment and adaptive management

Active ecological management is expected to provide a high probability of generating improvements in the condition of the vegetation present (i.e. increasing the abundance of native grasses and herbs while decreasing the abundance of introduced species) and attainment of the offset completion criteria. Note however that the extent of this offset has conservatively been based on the assumption that management will, at a minimum, improve the condition of MFL habitat and therefore the size and condition of the MFL population.

The management actions proposed in this plan are based on a combination of experience in the management of native grasslands and grassy woodlands, documents prepared by Victoria's Department of Environment, Land, Water and Planning (DELWP) (i.e. DSE 2009) and other publications (i.e. Marshall 2013, Williams et al. 2015).

The proposed strategies for the management of this site are consistent with established practices for the management of grasslands and grassy woodlands elsewhere including State conservation reserves and offset sites.

The active involvement of TfN is also expected to provide high quality guidance and advice to the landholder in their management of the site.

The monitoring protocols documented in this plan are considered adequate to detect attainment of the offset completion criteria (above).

The plan supports the existing grazing regime provided by Eastern Grey Kangaroos for ground-cover biomass control which is considered a major ecological requirement for the site. Where this fails to deliver the prescribed outcome in any one year, ecological burning provides an option to achieve the required biomass management target (i.e. maintaining an open grassy ground cover environment dominated by native species with at least 20% open ground). The application of one or both of these management actions will provide the biomass control outcome required.

It is acknowledged that the response of natural environments to management can be unpredictable and management activities need to be flexible to respond to changing conditions and unpredictable events. Examples of potential risks are outlined in Table 5 and discussed below. Seasonal conditions can also vary greatly from year to year and influence offset site management actions in any one year. This seasonality is recognised in this offset plan by allowing for flexibility around timing of actions at the discretion of the land manager in consultation with TfN so as to attain and maintain performance and completion criteria

There is some risk that biomass control is not properly managed in any one year. This has the potential to occur in response to above average rainfall years when ground cover growth is persistently high and wet conditions maximise ground cover biomass production and restrict the potential use of ecological burning. If such events occur, the land manager will ensure additional efforts are made by in subsequent years to maintain the rate of improvement required.

Another major ecological management requirement is weed control, with the objective of reducing the overall presence of weeds and maintaining an open ground cover. Varying seasonal conditions will provide triggers for changes in the abundance of different species, particularly weeds. The greatest risk to achieving the required outcomes is a failure to conduct an appropriate level of work at an appropriate time or the occurrence of persistent adverse conditions restricting an appropriate management response. The regular site inspections will allow land managers to anticipate changes in seasonal conditions and respond accordingly. Persistent, well timed management actions will be able to take advantage of seasonal fluctuations to achieve the completion criteria.

Woody weeds are common within the offset site and control will require a high level of initial works and persistent follow-up control efforts. While woody weeds will probably colonise the site from near-by infestations, seedlings will be detected through monitoring and controlled by the proposed on-going works. If live, woody weeds are detected in the offset area beyond Year 3 of the plan corrective actions would be required (e.g. increase woody weed control activities to ensure elimination of these species within one year).

Similarly control works will target perennial weeds including Canary-grasses, Brown-top Bent and Cocksfoot. Persistent herbicide application is an effective control measure for these species and while these species are likely to reinvade from surrounding infestations, ongoing works are planned to cope with the associated management requirements. If adequate resources are not allocated to these tasks, the cover of these species may remain static or increase. Any observations or monitoring which detect an increase in perennial weeds above previous assessed conditions and percentage cover will trigger a requirement for a greater management input (the required corrective action being targeted increased management actions). In that context additional site observations (over and above formal monitoring) collected by TfN (or an independent ecologist) is essential in providing feedback on the efficacy of management.

Another significant risk associated with the management of this site is the occurrence of climatic triggers which would increase the abundance of weed species by triggering the germination of any soil stored seed

reserves. In the first instance management will over allocate resources to weed control as the more comprehensive control achieved by such works the lower the ability these species have to recover / recolonise. Integrating herbicide control works with biomass control works (i.e. fire) increases the efficacy of both actions and the outcomes-based approach to this plan (i.e. to attain and maintain the offset completion criteria) supports this approach. Given persistent management occurs it is considered a relatively low risk that the completion criteria will not be achieved.

If after the first 8 years of management, the monitoring results indicate that the completion criteria are unlikely to be achieved, DoEE will be contacted to determine potential additional future offset requirements. If the offset area fails to attain and maintain the completion criteria at or following year 10, but during the period of EPBC Act Approval, an additional offset area will be provided to account for the failed offset. DoEE will be consulted with to determine the suitability of the replacement offset.

Active management to target the control of pest plants and to manage the accumulation of ground-cover biomass is advantageous to both the health of this grassy woodland but also to the ability of MFL to persist within this environment. As such the proposed management regime is considered unlikely to have a negative impact on MFL. This has been our experience where Biosis has managed other grassland / grassy woodland reserves in metropolitan Melbourne. If the MFL monitoring detects significantly fewer MFL than the baseline population of 34 plants (i.e. a decline of over 20%) in successive monitoring events potential causes for such a decline would be investigated and appropriate corrective actions implemented. Such an outcome resulting from the implementation of this OMP is considered highly unlikely (i.e. low risk).

This OMP describes management and monitoring actions at the offset site for the 10 year period following commencement of the OMP. At the end of that period management and monitoring actions will be reviewed in light of the new condition of the offset and any new information relating to the management of this type of grassy woodland environment. Note that active conservation management is required until 2038 and the quality of the vegetation needs to be maintained in perpetuity. The timing of actions is based on adaptive management. By monitoring management actions, and habitat condition, management will be adapted to ensure the stated commitments in the OMP are achieved. Also over time, new management techniques may become available, or further information on the ecology and status of the vegetation communities onsite may necessitate adjustment to management actions. The landowner will continue to receive advice from TfN on any developments in grassy woodland management and update the OMP as appropriate in perpetuity.

Section 4 includes tables of management actions (Table 5) and a risk assessment (Table 6) with associated monitoring (Table 7) and reporting (Table 8) programs.

Key risks identified in Table 6 include:

- Unauthorised entry of domestic stock or vehicles into the offset area;
- Woody weed infestations;
- Failure to detect and control new infestations, as well as failure to reduce existing infestations;
- Failure to increase the species composition and density of perennial native grasses.
- Rabbit infestations; and
- An unexplainable decline in the abundance of MFL.

Failure of the adaptive management approach to adequately respond to risks, as identified in monitoring reports (Section 3.10) or audits (Section 3.11), will result in a review of this plan, as discussed in Section 3.12 and Table 5.

3.8 Management Actions and land use commitments

The main threats to this native grassy woodland include the existing permitted uses associated with normal farming practices such as inappropriate grazing regimes, pasture improvement and fertiliser application. Other threats include the expansion of the existing high threat weed populations, weed invasion in general and the accumulation of ground cover biomass. Currently the accumulation of ground cover biomass is restricted as a result of grazing by the local population of Eastern Grey Kangaroos (but there are no current restrictions on what domestic stock may be grazed on site) and this is likely to continue. In addition, ecological burning guidelines have been developed as a back-up should kangaroo grazing decline.

Currently the site is not actively managed for biodiversity values.

The prescribed management actions outlined below are intended to achieve a conservation outcome which improves and maintains the viability of the MFL population on the offset site. This will be achieved through active ecological management (maintenance and improvement) and permanent protection of the offset site. Table 5 details these prescribed actions and outlines the relevant timing for implementation. These actions will be applied to the entire offset area identified in Figure 4.

Offsets will be achieved by:

- Maintaining the fencing around the broader land parcel, and limiting access to the existing access gates unless otherwise authorised as appropriate by TfN.
- Weed control through active management;
 - Eliminating all woody environmental weeds
 - Controlling high threat weeds to levels specified in Table 4.
 - Controlling perennial grassy weed cover to less than 1%.
 - Controlling broadleaf weed cover to less than 2%.
- Limiting organic litter and biomass accumulation (litter must not exceed the EVC benchmark cover of 10%);
- Biomass control is currently maintained by unplanned grazing associated with the presence of a significant local population of Eastern Grey Kangaroos. Where the cumulative cover of bare ground, bryophyte/lichen and soil crust falls below an average cover of 10% the ecological application of fire will be considered;
- Ecological burning (the offset area may be burnt at least five times within the 10 year management period e.g. years 1, 3, 5, 7 and 9) may be applied to portions of the site if the existing grazing by kangaroos is considered locally inadequate to control ground cover biomass or will provide advantages for weed control works. No area is to be burnt more than once every two years;
- Controlling pest animals, particularly rabbits, hares, foxes and cats; and
- Managing native species understorey diversity and recruitment.

The management actions listed below outline the prescribed actions for achieving the required gains through active management (maintenance and improvement) and permanent protection of the offset site. Table 5 specifies these prescribed actions and the timing for implementation. These actions will be applied to the entire offset area as identified in Figure 4.

Prior to works being undertaken each year an annual works program (based on Table 5) will be developed by an experience bushland regenerator. The person undertaking the works will prepare a detailed works program in consultation with TfN. The works program for the coming year will also address issues that may not have been anticipated in formulating this offset management plan. The OMP will be updated as required with any revised versions of the OMP to be submitted to the DoEE for approval.

3.8.1 Fencing, information and access control

Permanent fencing able to exclude domestic stock already exists around the boundary of the broader 86 ha land parcel and other subsets thereof. Additional fencing around the 24.05 ha offset area (Figure 4) is not required as it is proposed that grazing of domestic stock would be excluded from the broader parcel which will also be managed in accordance with the prescriptions outlined within this offset management plan. Temporary fencing may be used within the offset area where negligible impacts to native vegetation associated with the placement and removal of that fencing occurs. However fence maintenance is required along the offset frontage with Govans Lane and this boundary fence will be repaired within one month of commencement of this plan.

Posts marking the boundary of the offset site will be set up to clearly identify the area for monitoring and management purposes. Posts will be located in accordance with advice from a qualified ecologist to ensure impacts to native vegetation are avoided.

The offset area remains private property and access or disturbance to the offset site by unauthorised persons is prohibited. The existing access gate and security (locked gates) arrangement is adequate to service the access management requirements of this offset area.

If existing land-use rights are to be fully exercised in the remainder of the broader parcel, fencing to control stock access to the offset site will be required.

No additional signs identifying the property as an offset site are proposed. Explicit signage may inadvertently attract undesirable impacts. However signs identifying the property as a protected area of native vegetation will be considered by the owner.

Actions

- Maintain existing fencing to control access by domestic stock within the broader parcel and repair promptly if damage occurs.

Establish posts to mark the boundary of the offset site for management and monitoring purposes under supervision from a qualified ecologist.

- Control access and any passive use to minimise impacts on native vegetation.
- Provide access for management vehicles into the offset site, using the existing access gates. No additional vehicle access is to be established.

3.8.2 Weed control

Woody weeds are prominent within the offset area and the broader 86 ha land parcel. The woody weeds recorded are listed in Table 3 along with proposed control methods. All woody weeds are to be treated within one year, and eradicated from the offset site within three years of the commencement of this OMP. Any regeneration or isolated individuals missed by this initial knock-down exercise will be controlled as these are observed. Where woody weeds are observed during site management or monitoring activities, these need to be controlled and eliminated promptly (before fruiting and seed set). The existing woody weeds will be targeted for immediate control works and will not persist into the third year of management. The cover of woody weeds will be maintained at negligible levels in perpetuity.

Weed control works are required to achieve biodiversity gains for an offset under the EPBC Act and DoEE requires a habitat improvement for both the woodland and MFL habitat. Targets below therefore identify a reduction in the cover of woody, perennial and annual weeds.

Table 3: Woody weeds for priority control (Biosis 2017b).

Scientific Name	Common Name	% cover	Control Proposed
<i>Acacia longifolia</i>	Sallow Wattle	<1	Cut down mature individuals and paint stump with neat herbicide. Hand pull seedlings.
<i>Crataegus monogyna</i>	Hawthorn	1	Cut down mature individuals and paint stump with neat herbicide. Hand pull seedlings.
<i>Erica lusitanica</i>	Spanish Heath	<1	Cut down mature individuals and paint stump with neat herbicide. Hand pull seedlings.
<i>Marrubium vulgare</i>	Horehound	<1	Spot spray or dig out.
<i>Pinus radiata</i>	Radiata Pine	<1	Single mature individual. Ringbark or poison. Hand pull any seedlings
<i>Prunus spp.</i>	Prunus	1	Cut down mature individuals and paint stump with neat herbicide. Hand pull seedlings.
<i>Rosa rubiginosa</i>	Sweet Briar	1	Cut down mature individuals and paint stump with neat herbicide. Hand pull seedlings.
<i>Rubus anglocandicans</i>	Blackberry	1	Spray and burn dead material. Hand pull or spot spray seedlings.
<i>Ulex europaeus</i>	Gorse	2	Spray and burn dead material. Hand pull or spot spray seedlings.

Annual grassy weeds are prominent and typically the total weed cover (annuals and perennials) is about 50%. Existing grazing by kangaroos currently provides a level of control for these species. However it is possible in relatively wet years that grazing may not be able to have a large enough impact on ground cover biomass and in this situation the application of ecological burning will be evaluated. Application of fire prior to the seed set for weedy annual grasses is known to have a significant negative impact on these weeds. The timed application of fire is therefore strongly encouraged by this OMP to attempt to reduce the prominence of weedy annual grasses.

An overall target for weed reduction is set from the current estimated level of 50% to 20%.

All high threat weeds are to be controlled to minimise or reduce their occurrence and ensure no further spread of weeds. The total cover of perennial grassy and broad-leaf weeds on site will be reduced from the current average level of 10% to no more than 2% (Table 4). This includes specific targets for high threat species identified in Table 4, perennial grassy weeds will be reduced to less than 1% total cover and broadleaf weeds will be reduced to less than 2% of the cover by the end of the ten year management period.

The emphasis for weed control is the prevention of weed seed production with the goal being the reduction in the total weed cover with specific targets for high threat species on site. Weed control works will be timed appropriately in accordance with Tables 3, 4 & 5.

Weed levels will be monitored and management methods adapted over time in response to changing conditions. New and emerging high threat weeds will be monitored and treated if found. Any other significant environmental weeds identified during the ongoing site monitoring will also be controlled. If other high threat weeds, such as Serrated Tussock *Nassella trichotoma*, are found to occur in surrounding areas owned by the offset land owner, it would be prudent and cost effective to eliminate such species from nearby areas to reduce any potential invasion into the offset area. The offset owner will contact the land owner of any public

land (i.e. council managed road reserves adjacent to the offset site) where high threat weeds occur within the vicinity of the offset area, with the aim to have these weeds controlled.

Table 4: High threat weeds for priority control (Biosis 2017b).

Scientific Name	Common Name	% cover for the current assessment	Control Proposed	Desired Outcome [^]
<i>Agrostis capillaris</i>	Brown-top Bent	10%	New growth controlled by macropod grazing. Herbicide application as considered appropriate to achieve targets. Brown-top Bent is significantly disadvantaged by burning.	<5% cover
<i>Phalaris aquatica</i>	Toowoomba Canary-grass	2%	Spot spraying appropriate herbicide (early spring).	<1% cover
<i>Dactylis glomerata</i>	Cocksfoot	2%	Spot spraying appropriate herbicide (early spring).	<1% cover
<i>Holcus lanatus</i>	Yorkshire Fog	2%	Grazing by macropods has some impact on this species. Spot spray with appropriate herbicide or slash to prevent seeding.	<1% cover
Other annual grasses (<i>Briza</i>, <i>Bromus</i>, <i>Aira</i>, <i>Anthoxanthum</i>, <i>Lolium</i>, <i>Vulpia</i>)	Annual Grasses	30%	Grazing by macropods has some impact on these species. Spot spray with appropriate herbicide or slash to prevent seeding.	20% cover
<i>Cirsium vulgare</i>	Spear Thistle	2%	Spot Spraying appropriate herbicide (prevent flowering).	<1% cover

[^] Desired outcome after 10 years of ecological management

Spot spraying with appropriate herbicide is the main method for reducing weed cover. Spot spraying will be undertaken regularly, particularly in spring and early summer, with a focus on killing weed plants prior to seed set. Biomass control is also considered as an effective method for controlling and reducing weed levels. Biomass control at the site will include controlled sheep grazing and, when considered appropriate, ecological burning. Spot spraying will be completed in a manner which minimises non-target damage. Spot spraying will not occur during high wind days or in close proximity to threatened flora without protective measures in place (i.e. physical shielding).

Burning is particularly effective at reducing weed cover, especially for species that are difficult to control such as Brown-top Bent *Agrostis capillaris*. Burning and/or grazing will allow greater access and efficiency for weed control and increased natural regeneration of indigenous plant species (Sections 3.8.4 and 3.8.5 below). Periodic burning that is followed by spot spraying will be important for weed species that are difficult to control (such as Brown-top Bent) until they are replaced by native species.

Target species are likely to change over time in response to seasonal conditions, the result of macropod grazing or the conduct of any controlled burns (e.g. likely flush of broad-leaf weeds to be treated post-burn). Weed cover and species will therefore be monitored and management adapted in response to achieve

desired outcomes outlined in this management plan. TfN will be consulted and approve the control techniques for any new or emerging weeds identified within the offset area.

The offset area is not in close proximity to any named waterway although a headwater ephemeral stream traverses the western third of the offset site. While there may be localised surface water flows during high rainfall events, any stream within the site is ephemeral and no specific runoff risk is identified for the application of herbicides to this area.

Actions

- Treat all existing infestations of woody weeds within 12 months, and eradicate within three years. Continuous follow-up control to eradicate woody weed seedlings and other regeneration.
- Spot spraying of weeds with appropriate herbicide will be undertaken, particularly through spring and early summer.
- Target weeds will be treated before seed set; this requires repeated monitoring and treatment during the growing season.
- Ensure the absence of high threat woody weeds within the offset area through monitoring and where found to occur, control and eliminate promptly. Preferably control nearby infestations to prevent the spread of these species.
- Control works will ensure that the total cover of perennial weeds will be reduced to no more than 2% and preferably eliminated. Specific targets include: a reduction of high threat weeds in accordance with Table 4; perennial grassy weeds will be reduced to less than 1% total cover; and broadleaf weeds reduced to no more than 2% cover.
- Monitoring will be undertaken to demonstrate the effectiveness of weed control works and the results are to be used to adapt future control works and targets.
- Any populations of new and emerging high threat weeds will be treated promptly and eliminated. This will be done in consultation with TfN.
- Any other significant environmental weeds identified during the ongoing site monitoring will also be controlled in consultation with TfN.
- During weed control, natural regeneration of indigenous flora will be protected from off-target damage.
- Biomass management will be undertaken as per Sections 3.8.4 below.

3.8.3 Pest Animals

The control of vermin including rabbits and other pest herbivores beyond the legal duty of care is a requirement of this OMP. Therefore pest animal control works are required within the offset site.

Grazing / browsing by European Rabbits *Oryctolagus cuniculus* and European Hares *Lepus europeaus* is evident and is likely to have a significant impact within the offset site. However, no active rabbit warrens were noted within the offset site. If detected rabbit warrens will be promptly controlled.

Currently rabbits and hares are controlled by shooting and this appears to be effective at this point in time. If this changes, baiting will be considered as an option for control of these pests.

Control within the offset site would effectively be achieved through a reasonable level of works to eliminate any active warrens in the local area (i.e. land within the owners control and within 500 m of the offset site). Control will in part be achieved through the removal and destruction of the shelter provided by any shrubby weeds within the broader area managed by the same landowner. The landowner will therefore control all

shrubby environmental weeds on their land within 500 m of the offset site. Control of rabbits will be undertaken in accordance with current guidelines provided by the relevant Victorian Government Department.

Ripping of rabbit warrens within the offset site is not permitted. If any warrens develop within the offset site they will be treated by low impact measures such as fumigation or implosion.

Other problem pest or problematic animals include cats, foxes and kangaroos. The general lack of shelter and harbour for cats and foxes reduces the likelihood that any animals are resident in the local area. Control techniques such as poisoning are therefore likely to be ineffective. The landowner will select from the range of control techniques available and apply the most effective in the local conditions.

If the local kangaroo population is assessed as having an impact on the population and health of MFL corrective action will be taken to reduce their population.

Actions

- Control and seek to locally eliminate European Hares, European Rabbits, cats and foxes and using appropriate control techniques including shooting, poison baits or similar methods, without significant soil disturbance (i.e. ripping of warrens is not acceptable).
- At a minimum spotlight shooting over a minimum period of three hours targeting all pest animals will occur over the entire site once every three months. This will be conducted by the landowner or a professional shooter employed by the landowner.
- Fumigate rabbit warrens within three weeks of detection. Fumigation works will be conducted by a suitably qualified operator.
- Control the local population of kangaroos if monitoring suggests high numbers are impacting MFL.

3.8.4 Biomass / Organic Litter control

Biomass management is essential to maintain indigenous flora and fauna values throughout the offset site. Biomass management is also required to maintain inter-tussock spaces and prevent excessive competition to grassy woodland forbs. Where there is a sustained build up in ground cover biomass over any one year, resulting in a reduction of inter grass tussock space to an average of less than 30%, biomass will need to be actively reduced. Judgements on the cover of inter-tussock space and the build-up of groundcover biomass will be made by the landowner in consultation with the TfN. The independent ecological monitoring will also assess the effectiveness of the biomass control techniques applied and the need for any adjustments to the management regime to provide the prescribe outcome.

A present, a high level of macropod grazing effectively reduces ground cover biomass and maintains an open tussock-grass structure for this woodland. Where appropriate, ecological burning will also be utilised to assist in weed and biomass control.

Use of fire for ecological management

Burning within the offset area will only be undertaken with due consideration to relevant health and safety issues, in consultation with the Country Fire Authority and in line with a fire management plan completed by a suitably qualified consultant. The following provides guidelines for use of burning only in an ecological sense. The land owner is responsible for ensuring any burning outlined in this OMP can be carried out in a manner compliant with all other government planning requirements and permits.

While grazing by macropods is the typical manner in which ground cover biomass is maintained at an acceptable level, the controlled application of fire is an efficient and cost-effective option for reducing biomass in grassy ecosystems such as those that occur within the offset site. Importantly, burning (c.f. grazing or slashing) allows greater access and efficiency for weed control and increased natural regeneration of

indigenous plant species. While burning may enhance germination of indigenous species, it can also be expected to promote certain exotic species and as such post-burning weed-control will be vital in maintaining remnant vegetation. However stimulating the soil stored weed seed bank is seen as positive as this allows this seed bank to be exhausted through active management.

The controlled application of fire can be used for biomass reduction in all or parts of the offset site. Fire can be applied at many scales from burning as little as tens of square metres to burning hectares at a time. Selected areas of this grassy woodland may be burnt to tackle particular weed issues or to assist in the lowering of soil nitrogen and phosphorous which would also assist in weed control works. However no portion of the offset area is to be burnt more frequently than every two years. The application of a mosaic burning regime is also considered advantageous and therefore any individual burn will not necessarily burn the entire site.

The landowner will prepare maps identifying the fire history of the offset area to ensure biomass control efforts are at appropriate frequencies and recorded. Details of fire and grazing pressures within the offset will also be documented in the annual reporting as outlined in Section 3.10.

Any ecological burns will be conducted during benign (nil to low wind and mild temperature) weather conditions and are likely to be patchy (i.e. not result in the uniform burning of all areas). Patchy burns are a desirable outcome. Patch burning will ensure an array of small patches are burnt covering no more than about a hectare for any burnt patch. This will be mapped by GPS to ensure appropriate tracking of management actions.

No portion of the offset site will be burnt at a frequency of more than three times over any decade covered by this OMP. This is considered a low fire frequency for the management of grassy ecosystems.

Actions

- If burning is used to provide general biomass control, engage a qualified contractor to produce a fire management plan which allows for an ecological burning regime described in the following dot points.
- Small localised fires outside any fire danger period can be implemented at the landowners discretion.
- Undertake ecological burning over the offset area (or parts there-of) up to five times during the 10 year management period. For example at year 1, 3, 5, 7 and 9 or in smaller areas more frequently as directed by a TfN approved fire management plan. Rotate areas burnt so that no area is burnt more frequently than every two years. Note that the use of fire is not a compulsory component of this plan and may also be used at a much reduced scale if considered appropriate (i.e. localised burning of small areas for weed or biomass control);
- When planning burns, liaise with any relevant regulator regarding appropriate planning and permits in a timely manner;
- Plan and conduct ecological burning within different seasons to promote regeneration of a variety of species and remove debris created by the control of woody weeds.

3.8.5 Understorey Diversity and Recruitment

A major threat to understorey diversity in grassy woodlands is over-grazing by domestic stock and other herbivores, competition from introduced plant species and the accumulation of biomass over a prolonged period (greater than a year). The areas of Plains Grassy Woodland within the offset site retain between 50 and 90% of the expected number of understorey life-forms for this EVC, and are generally not considered deficient in terms of the species diversity of the life-forms that are present. Missing or deficient elements are typically the large herbs and this is largely a function of the growth stage of the plants present. Enrichment

planting is therefore not currently necessary although this will be reviewed by the independent ecologist monitoring the site after five years of active ecological management.

The control of rabbits and hares are required to maintain understorey diversity and encourage recruitment of threatened species. Fire or other forms of biomass reduction would also be required to facilitate regeneration, remove the dead biomass associated with weed control works and maintain inter-tussock spacing. The use of fire could be implemented at a number of scales. Within this larger grassy woodland patch it would take the form of a managed patch burn covering up to 8 hectares or in smaller patches localised burning covering up to half a hectare or even tens of square metres using a hand held weed burner. Biomass control works will also reduce the potential for uncontrolled wildfire to impact this site.

Active management will seek to significantly reduce the cover of all exotic species with specific targets for high threat species given in Table 4.

Actions

- Active weed management to be undertaken as outlined in Section 3.8.2
- Biomass will be managed to enhance recruitment – see Sections 3.8.4 above.

3.9 Monitoring

3.9.1 Baseline Site Condition

While the condition of the broader area of woodland is documented by Biosis (2017), details of the specific matters relating to the selected offset area of 24.05 hectares will be established by the collection of baseline condition data. These data will provide the baseline information for future comparisons and assessments to define the efficacy and progress of the management of the offset site to achieve the completion criteria.

Within three months of approval of this OMP and prior to the commencement of any management activities a suitably experienced botanist will systematically survey the site and collect information on the flora species (native and introduced) present and maintain a complete list of all vascular species observed. Notes will be taken on the distribution and location of weed species with GPS waypoints recorded to provide detailed information on the location, extent and severity of target pest plant infestations. This information will be mapped to provide a guide to both management activities and allow a visual assessment of management progress over the life of the plan.

GPS locations will be recorded and mapped to identify the location of any threatened species observed and the location of any other survey and monitoring infrastructure (i.e. photo points and monitoring quadrats).

Eight permanent five by five metre monitoring quadrats will be established within the offset site, having regard for the size, nature and variability of management zones (paddocks). The minimum of eight plots was selected on the basis of the extent of the site (provide at least 1 plot per ten hectare), the topographic variation present (upper, mid and lower slopes, ridgetops and valley floors) and the variation in site conditions (across a spectrum of weed dominated to predominantly native).

These locations will be defined during the baseline site inspection prior to the commencement of other management works and will be representative of the offset site. They will be evenly distributed across the site and if considered appropriate, additional monitoring sites can be included. Quadrats will be clearly marked and accurately located by GPS or similar within the offset site. These quadrats will be used to assess and record the percentage total vegetation cover, the percentage cover of inter-tussock spaces, the average height of vegetation and the cover of native and exotic life-forms. These areas will also include the collection of biomass data using the golf ball method (Morgan 2015). These data will be collated, in conjunction with the observations made on herbaceous and woody weeds collected during the systematic site assessment survey, and be used to report on the baseline condition of the offset site. Ongoing monitoring will then assess

progress in the management of weeds (including grasses) and biomass over the entire offset site. Ongoing use of the established monitoring plots will continue if this information is required to evaluate ongoing compliance with the completion criteria.

A project database will be maintained allowing for data storage and protection, data extraction, quality control, analysis, interpretation, reporting and presentation. The landowner and TfN will have ownership of all data collected, and be responsible for its distribution, availability and licensing to DoEE for compliance and recovery planning purposes.

All of the permanent vegetation monitoring quadrats established by the botanist will also serve as permanent photo points. Photo points will be located to adequately characterise the current vegetation condition. Using a selected marker point for the vegetation monitoring quadrat, a photo will be taken facing the four points of the compass (N, S, E & W). These baseline photos will be used to provide a visual document and for monitoring the vegetation response to management until 2038.

The average level of open inter-tussock spaces (as determined by the 8 monitoring plots) will be taken as the average open space available across the offset site unless the broad observations taken during the annual vegetation monitoring indicate this result is not representative of condition trends across the offset site.

3.9.2 Continuous monitoring

Monitoring of the site is an integral component of the regular site management activities. Such monitoring identifies changes early, allowing an appropriate and timely management response to matters which would otherwise undermine the objectives of the OMP. This includes observations by the landowner during normal activities within the offset site and broader property. Such observations are important for maintaining things such as the integrity of fencing and site security. While these are normal land management activities they have also been formalised in this OMP (See Table 5).

Regular site inspections (of about three to five hours at least every two months) to provide general condition observations are also a requirement of this plan (See Table 5). The landowner must keep a diary of any works conducted within the offset site and record any observations which could influence or initiate a management response (e.g. "observed seedlings of a new woody weed in the middle of the offset site today. Will spot spray these with an appropriate herbicide by the end of the week"). These details provide valuable information on the management of the site and detail the commitment of the landowner to the OMP.

More general supervision/monitoring of the offset site will be undertaken by the TfN to ensure the grassy ground cover response to management actions achieve the OMPs completion criteria. TfN will visit the site a minimum of four times over any 10 year period (at least the spring of years 1, 3, 6 and 10) and will liaise with the land owner annually regarding the development of an annual works plan.

The progress of management works will be inspected by the land owner on a regular basis (at a minimum once every 2 months). The land owner will provide a management progress report to TfN on an annual basis (or more frequently as required by TfN). Records of all management actions will be kept to provide evidence of completed works and management tasks.

A list of plant species observed, noting which, if any, weed species have become locally extinct will be maintained for the offset site by the landowner. While all data collection will be the responsibility of the landowner, all data collected will be provided to DoEE on request.

Annual vegetation monitoring assessments (during spring) conducted by suitably qualified ecologists will include a broad assessment of the entire offset site to document the general overall condition of the site and the ability of management works to attain and maintain the OMPs completion criteria.

3.9.3 Fence monitoring

Surveys of the property boundary fence will be conducted quarterly, and when visiting the site to conduct other monitoring or management actions. Any damage to the fence that may allow vehicles or stock to enter outside of the parameters outlined in this OMP will be repaired within seven days.

3.9.4 Weed monitoring

Weed monitoring will be conducted annually in spring (September – November). There will be three components to the monitoring:

- Inspection of the entire offset area for woody weeds, by walking throughout the area such that a visual inspection (including with binoculars) would detect the presence of any woody weeds. Complete coverage of the offset site will likely require at least three hours of survey. All patches of infestations or individual plants will be mapped with a GPS, and the locations will be supplied to the weed management contractor/landholder for treatment. Subsequent monitoring will then revisit previously mapped/identified infestations to evaluate the success of weed control, as well as inspecting the entire offset site for new infestations.
- While conducting the woody weed surveys, notes will be taken regarding the cover of herbaceous weed species, and cover will be estimated to the nearest five percent cover. Species and areas suitable for targeted treatment (such as spot spraying), will be mapped and supplied to the weed management contractor/landholder for treatment.
- Eight (8), five by five metre quadrats will be established in selected locations across the offset site. Each monitoring quadrat will be representative of the management unit identified for that portion of the offset site. These quadrats will be used to assess and record the percentage total vegetation cover, the percentage cover of inter-tussock spaces, the average height of vegetation and the cover of native and exotic life-forms. These data will be collated and, in conjunction with the observations made on herbaceous weeds collected in association with woody weed monitoring, used to report on progress in attaining offset completion criteria.
- The permanent vegetation monitoring quadrats established by the botanist will also serve as permanent photo points. Photo points will be located to adequately characterise the current vegetation condition, and include a range of weed species. Using a selected marker point for the vegetation monitoring quadrat, a photo will be taken facing the four points of the compass (N, S, E & W). These baseline photos will be used to provide a visual document and for monitoring the vegetation response to management until 2038.

3.9.5 Pest animal monitoring

Signs of pest animals (rabbits, hares and foxes) will be recorded during weed monitoring surveys, and at all other times when visiting the offset site. In particular, the locations of any active rabbit warrens will be mapped using GPS, and the locations supplied to the pest animal management contractor/landholder for treatment. Subsequent monitoring will then revisit previously mapped warrens to check for on-going use, as well as searching for new warrens throughout the offset area.

More formal monitoring for the presence of pest animals will occur annually in November. This will include a systematic spotlight survey of the offset site lasting no less than one hour. The results of this survey will be included in the annual report to the DoEE.

3.9.6 Woodland monitoring

The condition of the Plains Grassy Woodland will be assessed annually during spring. This will be done using the offset site as a single unit (habitat zone) and using the habitat hectare assessment protocols (DSE 2004).

3.9.7 Matted Flax-lily Monitoring

As the site is specifically an offset site for the conservation of MFL, monitoring the known individuals of this species is considered essential to determine the efficacy of the actions taken to maintain and/or improve the size and health of the MFL population on the offset site. Any additional individuals of MFL observed during any works or monitoring within the offset site should have their location recorded and have their persistence and condition assessed annually.

A monitoring event will include an assessment of each known individual, taking a photo of the plant and its local environment, and recording any relevant information relating to plant health, flowering, fruiting, grazing impacts or the influence of weeds.

Surveys are to occur annually during mid to late spring and be conducted in association with other monitoring events. The results of each survey will be reported to TfN and DoEE. The report will also include an assessment of any changes or trends noted in either the habitat condition or number of MFL observed by the ecologist.

3.10 Reporting

Unless otherwise advised by the Minister, the landowner, via the approval holder (ABP), must submit a report annually to TfN and DoEE for the period of the approval (i.e. until 2038). Reports are to be submitted at least two months prior to the anniversary date of the execution of the OMP to allow time for compliance to be assessed before the anniversary date. Reports will also be published on the ABP website within 3 months of every 12 month anniversary.

The Annual Report will address progress against the commitments set out in this OMP. Annual Reports will provide enough detail in the form of written comments and supporting evidence that an assessor can easily determine the completion of/progress against the management commitments and completion criteria for the offset site.

The annual report will include:

- Details of management actions, including on ground works, undertaken within the reporting period.
- Results of monitoring activities, including fence condition, weeds, pest animals, habitat quality, vegetation quality and ground cover biomass accumulation / the cover of open ground.
- Tracking of results in comparison to management performance targets and completion criteria
- Site photographs including from eight defined photo points.
- Details of compliance or non-compliance with the schedule of management actions (Table 5).
- Details of compliance or non-compliance with performance targets (Section 3.4.2).
- Details of any incidents or new and emerging management issues, with recommendations for corrective action and plan review in order to obtain the offset completion criteria.
- Any triggers exceeded and which corrective actions were implemented
- Details of any MFL monitoring events including an assessment of the relevant results.

The reporting schedule is detailed in Table 7.

3.11 Auditing

The approval holder (ABP) is responsible for auditing the implementation and effectiveness of the OMP. Audits will be conducted by an independent ecologist at the following stages:

- At the end of the first year of site management - this is to ensure that initial management and monitoring actions are conducted to the satisfaction of the approval holder and DoEE, including implementing the legal security mechanism, ensuring the property is securely fenced, and that other initial management and baseline monitoring actions have been completed.
- At the end of the fourth year of site management – this will involve a review of four annual monitoring and management reports, as well as an independent assessment of the condition of MFL habitat within the site.
- At the end of the eighth year of site management – as per the four year audit.
- Following the completion of the 10th and final year management period – to audit the implementation and effectiveness of the OMP.
- At the end of year 18 of site management to ensure that the offset completion criteria have been maintained from Year 10 and to the end of the period of approval (September 2038).

The timing of scheduled audits is detailed in Table 7. Additional audits may be triggered as a result of a plan review (Section 3.12) or following an environmental incident resulting in significant change to site conditions, as identified in the risk assessment (Table 6).

3.12 Plan review

This plan includes an adaptive management approach, where corrective actions will be triggered by events occurring within the offset site, or the results of monitoring activities. A review of the OMP will be necessary in the event of a major incident that makes a significant change to the character or condition of the offset area. The most likely such event is a major wildfire, as described in Table 6.

If a plan review is triggered, this will be conducted by ABP in consultation with the offset site owner and DoEE. Any future adaptive management changes will be incorporated into the OMP and an updated version of the OMP will be supplied to DoEE for approval.

The OMP review will involve changes to any part of the OMP, in order to adequately respond to the trigger and re-direct management actions towards achieving the offset completion criteria under potentially altered site conditions.

This could involve changes to:

- Specific details of offset site management methods.
- Monitoring methodology.
- Schedules of monitoring, reporting and auditing.

Table 5: Management plan actions and timing for offsets on the New Gisborne offset site.

This section provides a schedule of management actions (Table 5) for the offset area, an assessment of the risk of failing to achieve desired outcomes (Table 6), and specifies how this relates to the monitoring (Table 7) and reporting (Table 8) program.

Year No	Objective – Entire offset site	Timing of activity – month(s)	Performance criteria	Related management and monitoring activity (# -see Table 7)
1 and all years following	1. Develop annual works plan. Ensure the annual works program is appropriately planned and coordinated to achieve short and long term targets.	Completed within 1 month of commencement of this OMP.	TfN approved annual works plan in place	Management Sec. 3.3. 3.7 & 3.8 Monitoring #2 & 3 Sec. 3.9.2
1 and all years following	2. Control stock, prevent unauthorised activities and vehicle access. Ensure the offset site is appropriately fenced from neighbouring land and road reserves. Fences to be monitored and maintained in functional condition.	Completed within 1 month of commencement of this OMP.	Exclude stock from the offset area. Exclude unauthorised vehicles from offset area. Exclude unauthorised access and firewood collection. Maintain fencing around the perimeter of the property to the standard detailed in BushBroker Information Sheet 12 – Standards for Management – Fencing (DSE 2012c) (sheep fencing standard). Any new fences, if required to control threats to ecological values, will be constructed to this standard.	Management Sec. 3.8.1 Monitoring #1 - Sec. 3.9.1
1 and all years following	3. Remove all woody weed infestations within the offset area Weeds to be managed in accordance with BushBroker Information Sheet 8 – Standards for Management – Weeds (DSE 2012b)	Completed within 1 month of commencement of this OMP.	No mature woody weeds present within offset area after the completion of Year 2. Minimise off-target damage (avoid all native plants) Record and control any woody weed regeneration / re-colonisation	Management Sec. 3.8.2 Monitoring #2 - Sec. 3.9.2
All years	4. Reduce herbaceous weed covers. Control methods and timing specified in Table 4 and in accordance with DSE (2012b). Establish baseline monitoring sites including quadrats and photo points (8) and reassess annually in late spring.	Refer to Table 3.	Herbaceous weed cover to be less than baseline. Minimise off-target damage (avoid all native plants) Introduced perennial grasses to reduce in cover to 1% at the end of 10 years management.	Management Sec. 3.8.3 Monitoring #2 - Sec. 3.9.2

Year No	Objective – Entire offset site	Timing of activity – month(s)	Performance criteria	Related management and monitoring activity (# -see Table 7)
All years	5. Prevent new and emerging weeds	Ongoing	New outbreaks of weeds to be detected and treated. No woody weeds present within offset area. Minimise off-target damage (avoid all native plants).	Management Sec. 3.8.2 Monitoring #2 - Sec. 3.9.2
All years	6. Manage ground cover biomass	Ongoing	Maintain an open tussock grassy ground cover with inter-tussock spaces covering about 30% (+/- 10%).	Management Sec. 3.8.4 Monitoring #2 - Sec. 3.9.5
All Years	7. Maintain and enhance the MFL population. Report on population and habitat condition.	Late Spring	Document known MFL population. Assessment of any trends in MFL population size, health or extent. Documentation of the condition of MFL habitat based on visual assessments.	Management Sec. 3.9.7 Monitoring #2
All years	8. Enhance MFL habitat condition. Utilise 8 quadrats used for weed monitoring and other general observations.	Late Spring (see Table 5)	Documentation of the condition of MFL habitat based on a habitat hectare assessment and other monitoring data.	Management Sec. 3.9.1 Monitoring #6
All years	9. Control Rabbits, Hares and Foxes. Rabbits to be managed in accordance with BushBroker Information Sheet 7 (DSE 2012a).	Ongoing	No fresh ground disturbance by pest animals (particularly rabbits) observed in the offset area. No active rabbit warrens within offset area, minimal surface harbour for rabbits and hares present (excluding natural harbour such as logs and rocks). No active fox dens within offset area, if present they are to be destroyed through fumigation and hand collapse. Continue to monitor and control rabbits and foxes all year round.	Management Sec. 3.8.3 Monitoring #3 - Sec. 3.9.5
All years	10. Control all new and emerging pest animals.	Ongoing	Control numbers of any new and emerging pests.	Management Sec. 3.8.3 Monitoring #3 - Sec. 3.9.5
All years	11. Report on OMP implementation.	Submit 2 months prior to agreement anniversary date.	Annual report is signed, dated and submitted by the landholder at least 2 months prior to the anniversary date of the agreement.	Refer to section 3.10

Table 6 Risk assessment and management

This risk assessment uses the risk framework from the DoEE EMP guidelines. The likelihood and consequence classification is summarised in Appendix 2.

Objective (refer to Table 4)	Event or circumstance	Likelihood	Consequence	Risk level	Trigger	Contingency/s	Related monitoring activity (# See Table 7)
2	Unauthorised entry of domestic stock to the offset area. Grazing, browsing and trampling damage to vegetation. Damage to or loss of juvenile trees and shrubs	Unlikely	Minor	Low	Domestic stock sighted on offset site out of authorised periods.	Remove stock. Repair fencing. Monitor vegetation.	1
2	Entry of vehicles to offset area. Damage to understorey vegetation, soil compaction.	Unlikely	Minor	Low	Vehicle observed on offset site. Evidence of recent vehicle access e.g. tyre tracks.	Repair fencing. Assess adequacy of fencing.	1
2	Unauthorised access.	Unlikely	Minor	Low	Evidence of firewood collection or physical disturbance observed.	Assess adequacy of fencing.	1
3, 4 & 5	Woody weeds are identified within offset area. Herbaceous weed cover exceeds baseline levels.	Possible	Minor	Low	Woody weeds are detected. Herbaceous weed cover exceeds baseline levels.	Control weeds. Minimise off-target damage (avoid all native plants)	2
9, 10	Pest animals observed within offset site. Damage to understorey vegetation or recruiting trees and shrubs.	Possible	Moderate	Medium	Fresh ground disturbance or scats of pest animals observed in the offset area. Active rabbit warrens observed within offset area. Active fox dens observed within offset area. New and emerging pest observed within offset area.	Destroy fox dens and rabbit warrens through fumigation and hand collapse. Undertake control works for new and emerging pests as appropriate.	3

Objective (refer to Table 4)	Event or circumstance	Likelihood	Consequence	Risk level	Trigger	Contingency/s	Related monitoring activity (# See Table 7)
7	MFL population drops significantly	Possible	Critical	Severe	Population of MFL declines by over 20% in comparison to any previous years without explanation as to how it may recover or habitat condition noted as significantly lower than previous year and recovery is uncertain.	Review ecological management parameters. Review plan.	5
8	Failure to attain completion criteria for MFL habitat	Possible	Critical	Low	Habitat completion criteria assessed as unlikely to be achieved as at year 8 of OMP implementation.	Engage DoEE to determine suitable additional offsets.	5
7 & 8	Failure to maintain completion criteria for MFL habitat	Unlikely	Critical	Low	Habitat condition for MFL declines after ten years	Review intensity of management inputs and implement more intensive management as required to reinstate completion criteria	5
1, 2, 3, 4, 5, 6, 7, 8, 9	Wildfire or uncontrolled planned burn. May impact temporarily or permanently on natural regeneration. May impact upon weed recruitment patterns. May destroy fencing.	Possible	Medium	Medium	Wildfire observed within offset area.	Monitor for increased weed invasion (immediately post fire and 12 months post fire). Undertake weed control works to take advantage of new growth. Inspect fence condition and repair any damage. Significant wildfire throughout the majority of the offset area is a trigger for plan review (Section 3.12).	1, 4

Table 7 Monitoring schedule

#	Monitoring activity	Parameter/s measured	Survey / monitoring guidelines	Where	When	Reliability
1	Fence condition	Condition of boundary fences.	Survey the perimeter of the offset site to ensure fences are intact and assess evidence of domestic stock, vehicle access or firewood harvesting. Refer to Section 3.8.1 and 3.9.3 for details.	Offset site perimeter	Quarterly	High
2	Weed monitoring	Cover of woody and herbaceous weed species.	Vegetation survey to be conducted to identify woody and herbaceous weed species and determine cover. Woody species to be mapped using GPS. Herbaceous weed cover (percentage cover) to be estimated for defined sections of the offset site. All weed species present identified to species level. Refer to Section 3.8.2, 3.8.3 and 3.9.4 for details.	Offset area.	Annual - Spring	High
3	Pest animal monitoring (Rabbits, Hares and Foxes, and new and emerging pest animals)	Presence of pest animals or signs e.g. scats, diggings, browsing or grazing	Signs of pest animals to be recorded during vegetation surveys. Locations of rabbit warrens to be mapped using GPS. Refer to Section 3.8.4 and 3.9.5 for details.	Offset area.	Annual – Spring During vegetation condition survey	High
4	Matted Flax-lily population monitoring	Number of MFL observed. Subjective condition of habitat	Refer to Section 3.9.7 for details.	Offset area.	Spring	High
5	MFL habitat condition monitoring	Condition of habitat (VQA related parameters)	Refer to Section 3.9.1 for details.	eight permanent plots.	Annual – Spring (part of weed monitoring).	High

Table 8 Reporting schedule

#	Type of report	Approval condition	Responsibility	Timing	Reporting authority	Trigger (if any)
1	Annual management actions report Tabulates management actions completed within the offset area (Section 3.10).	3e & 8	Offset site owner	Report to be completed by August 31 so information is available prior to spring monitoring.	DoEE TfN ABP	Not Applicable
2	Annual monitoring report. Presents results of offset site monitoring activities (Section 3.10).	3	Offset site owner	Annual monitoring to be completed in spring. Report to be completed by November 30 of each year.	DoEE TfN ABP	Completion of annual monitoring
3	Review of offset management plan (Section 3.12).	3	ABP	As required.	DoEE TfN	Significant environmental event causing widespread impact to habitat within the offset site e.g. Wildfire.
3	MFL population and habitat condition assessment.	3	Ecologist	Annual compliance report to DoEE.	DoEE TfN ABP	Baseline population information at beginning of OMP. Annual in spring thereafter. Completion of annual habitat assessment using 8 monitoring plots.
3	Audit report (Section 3.11).	3 & 10	Approval holder (ABP)	End of years 1, 4, 8 and 10.	DoEE	Not Applicable

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Appendices

Appendix 1

A2.1 Plant species (88 native and 40 weeds) recorded within Lot 4 Hamilton Road, New Gisborne

Rare or threatened species status:

Victorian status: (DEPI 2014)

v	vulnerable
r	rare
P	Protected under the FFG Act

Noxious weed status:

RR	Regionally restricted species
RC	Regionally controlled species

Status	Scientific Name	Common Name
Rare or threatened species		
EN, L, P, e	<i>Dianella amoena</i>	Matted Flax-lily
r	<i>Geranium sp. 3</i>	Pale-flower Crane's-bill
Indigenous species		
	<i>Acacia dealbata</i>	Silver Wattle
	<i>Acacia melanoxylon</i>	Blackwood
	<i>Acaena echinata</i>	Sheep's Burr
	<i>Acaena novae-zelandiae</i>	Bidgee-widgee
	<i>Acaena ovina</i>	Australian Sheep's Burr
P	<i>Acrotriche serrulata</i>	Honey-pots
	<i>Amphibromus nervosus</i>	Common Swamp Wallaby-grass
	<i>Amyema pendula</i>	Drooping Mistletoe
	<i>Anthosachne scabra s.s.</i>	Common Wheat-grass
	<i>Arthropodium strictum s.s.</i>	Chocolate Lily
	<i>Asperula conferta</i>	Common Woodruff
	<i>Austrostipa mollis</i>	Supple Spear-grass
	<i>Austrostipa pubinodis</i>	Tall Spear-grass
	<i>Austrostipa spp.</i>	Spear-grass
	<i>Bossiaea prostrata</i>	Creeping Bossiaea
	<i>Brunonia australis</i>	Blue Pincushion
	<i>Bulbine bulbosa</i>	Bulbine Lily
	<i>Burchardia umbellata</i>	Milkmaids
	<i>Carex appressa</i>	Tall Sedge
	<i>Carex tereticaulis</i>	Poong'ort
	<i>Carex breviculmis</i>	Common Grass-sedge
	<i>Carex tereticaulis</i>	Poong'ort
P	<i>Cassinia longifolia</i>	Shiny Cassinia
k	<i>Clematis decipiens</i>	Slender Clematis
	<i>Crassula decumbens var. decumbens</i>	Spreading Crassula

Status	Scientific Name	Common Name
	<i>Crassula sieberiana</i> s.s.	Sieber Crassula
	<i>Dianella admixta</i>	Black-anther Flax-lily
	<i>Dichondra repens</i>	Kidney-weed
	<i>Dillwynia cinerascens</i> s.s.	Grey Parrot-pea
	<i>Dillwynia sericea</i>	Showy Parrot-pea
	<i>Drosera peltata</i> s.s.	Pale Sundew
	<i>Eleocharis acuta</i>	Common Spike-sedge
	<i>Eleocharis pusilla</i>	Small Spike-sedge
	<i>Epilobium billardierianum</i> subsp. <i>cinereum</i>	Grey Willow-herb
	<i>Epilobium hirtigerum</i>	Hairy Willow-herb
	<i>Eryngium ovinum</i>	Blue Devil
	<i>Eucalyptus ovata</i>	Swamp Gum
	<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	Narrow-leaf Peppermint
	<i>Eucalyptus rubida</i>	Candlebark
P	<i>Euchiton japonicus</i> s.s.	Creeping Cudweed
	<i>Geranium gardneri</i>	Rough Crane's-bill
	<i>Geranium retrorsum</i> s.s.	Grassland Crane's-bill
	<i>Geranium</i> sp. 2	Variable Crane's-bill
	<i>Gonocarpus tetragynus</i>	Common Raspwort
	<i>Haloragis heterophylla</i>	Varied Raspwort
	<i>Helichrysum luteoalbum</i>	Jersey Cudweed
	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort
	<i>Hypericum gramineum</i>	Small St John's Wort
	<i>Hypericum japonicum</i>	Matted St John's Wort
P	<i>Hardenbergia violacea</i>	Purple Coral-pea
	<i>Juncus australis</i>	Austral Rush
	<i>Juncus procerus</i>	Tall Rush
	<i>Juncus</i> spp.	Rush
	<i>Juncus subsecundus</i>	Finger Rush
	<i>Lachnagrostis filiformis</i> s.s.	Common Blown-grass
P	<i>Leptorhynchos squamatus</i>	Scaly Buttons
P	<i>Lissanthe strigosa</i> subsp. <i>subulata</i>	Peach Heath
	<i>Lobelia pedunculata</i> s.s.	Matted Pratia
	<i>Lomandra filiformis</i>	Wattle Mat-rush
	<i>Luzula meridionalis</i> var. <i>densiflora</i>	Common Woodrush
	<i>Lythrum hyssopifolia</i>	Small Loosestrife
	<i>Melaleuca parvistaminea</i>	Rough-barked Honey-myrtle
	<i>Meliclytus dentatus</i> s.s.	Tree Violet
	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass
	<i>Microtis</i> spp.	Onion Orchid
P	<i>Olearia lirata</i>	Snowy Daisy-bush

Status	Scientific Name	Common Name
	<i>Opercularia ovata</i>	Broad-leaf Stinkweed
	<i>Oxalis perennans</i>	Grassland Wood-sorrel
P	<i>Ozothamnus ferrugineus</i>	Tree Everlasting
	<i>Pimelea humilis</i>	Common Rice-flower
	<i>Plantago varia</i>	Variable Plantain
k	<i>Poa labillardierei</i> var. (Volcanic Plains)	Basalt Tussock-grass
	<i>Poa rodwayi</i>	Velvet Tussock-grass
	<i>Poa sieberiana</i>	Grey Tussock-grass
	<i>Rumex brownii</i>	Slender Dock
	<i>Rytidosperma caespitosa</i> .	Common Wallaby Grass
	<i>Rytidosperma carphoides</i> .	Short Wallaby Grass
	<i>Rytidosperma eriantha</i> .	Hill Wallaby Grass
	<i>Rytidosperma</i> spp.	Wallaby Grass
	<i>Schoenus apogon</i>	Common Bog-sedge
P	<i>Senecio glomeratus</i>	Annual Fireweed
P	<i>Senecio odoratus</i>	Scented Groundsel
P	<i>Senecio quadridentatus</i>	Cotton Fireweed
P	<i>Solenogyne dominii</i>	Smooth Solenogyne
P	<i>Solenogyne gunnii</i>	Hairy Solenogyne
	<i>Stellaria pungens</i>	Prickly Starwort
P	<i>Stylidium graminifolium</i> s.s.	Grass Triggerplant
P	<i>Thelymitra peniculata</i>	Trim Sun-orchid
	<i>Themeda triandra</i>	Kangaroo Grass
	<i>Tricoryne elatior</i>	Yellow Rush-lily
	<i>Veronica gracilis</i>	Slender Speedwell
	<i>Wahlenbergia communis</i> s.s.	Tufted Bluebell
Introduced species		
#	<i>Acacia longifolia</i> subsp. <i>longifolia</i>	Sallow Wattle
	<i>Acetosella vulgaris</i>	Sheep Sorrel
	<i>Agrostis capillaris</i>	Brown-top Bent
	<i>Aira caryophyllea</i> subsp. <i>caryophyllea</i>	Silvery Hair-grass
	<i>Aira cupaniana</i>	Quicksilver Grass
	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
	<i>Arctotheca calendula</i>	Cape Weed
	<i>Bromus hordeaceus</i> subsp. <i>hordeaceus</i>	Soft Brome
	<i>Bromus diandrus</i>	Great Brome
	<i>Bromus madritensis</i>	Madrid Brome
	<i>Centaureum erythraea</i>	Common Centaury
RC	<i>Cirsium vulgare</i>	Spear Thistle
RC	<i>Crataegus monogyna</i> .	Hawthorn
	<i>Cynosurus echinatus</i>	Rough Dog's-tail

Status	Scientific Name	Common Name
	<i>Dactylis glomerata</i>	Cocksfoot
	<i>Erica lusitanica</i>	Spanish Heath
	<i>Galium aparine</i>	Cleavers
	<i>Gaudinia fragilis</i>	Fragile Oat
	<i>Holcus lanatus</i>	Yorkshire Fog
	<i>Hypochaeris radicata</i>	Flatweed
	<i>Juncus articulatus</i> subsp. <i>articulatus</i>	Jointed Rush
	<i>Juncus capitatus</i>	Capitate Rush
	<i>Leontodon taraxacoides</i> subsp. <i>taraxacoides</i>	Hairy Hawkbit
	<i>Lolium rigidum</i>	Wimmera Rye-grass
	<i>Leontodon taraxacoides</i> subsp. <i>taraxacoides</i>	Hairy Hawkbit
	<i>Lysimachia arvensis</i>	Pimpernel
RC	<i>Marrubium vulgare</i>	Horehound
#	<i>Melaleuca parvistaminea</i>	Rough-barked Honey-myrtle
	<i>Mentha pulegium</i>	Pennyroyal
	<i>Phalaris aquatica</i>	Toowoomba Canary-grass
	<i>Pinus radiata</i>	Radiata Pine
	<i>Plantago coronopus</i>	Buck's-horn Plantain
	<i>Plantago lanceolata</i>	Ribwort
	<i>Poa annua</i>	Annual Meadow-grass
	<i>Prunus</i> spp.	Prunus
	<i>Romulea rosea</i>	Onion Grass
RC	<i>Rosa rubiginosa</i>	Sweet Briar
RC	<i>Rubus anglocandicans</i>	Blackberry
	<i>Sonchus asper</i>	Rough Sow-thistle
	<i>Sonchus oleraceus</i>	Common Sow-thistle
	<i>Taraxacum</i> Sect. <i>Ruderalia</i>	Garden Dandelion
	<i>Trifolium angustifolium</i> var. <i>angustifolium</i>	Narrow-leaf Clover
	<i>Trifolium campestre</i> var. <i>campestre</i>	Hop Clover
	<i>Trifolium dubium</i>	Suckling Clover
	<i>Trifolium repens</i> var. <i>repens</i>	White Clover
	<i>Trifolium subterraneum</i>	Subterranean Clover
RC	<i>Ulex europaeus</i>	Gorse
	<i>Vulpia bromoides</i>	Squirrel-tail Fescue
	<i>Vulpia myuros</i>	Rat's-tail Fescue

Appendix 2

A2.1 DoEE EMP Guidelines Risk Framework

Risk Framework

		Consequence				
		Minor	Moderate	High	Major	Critical
Likelihood	Highly Likely	Medium	High	High	Severe	Severe
	Likely	Low	Medium	High	High	Severe
	Possible	Low	Medium	Medium	High	Severe
	Unlikely	Low	Low	Medium	High	High
	Rare	Low	Low	Low	Medium	High

Likelihood

Qualitative measure of likelihood (how likely is it that this event/circumstances will occur after management actions have been put in place/are being implemented)

Highly Likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely
Rare	May occur in exceptional circumstances

Consequence

Qualitative measure of consequences (what will be the consequence / result if the issue does occur)

Minor	Minor incident of environmental damage that can be reversed
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts
High	Substantial instances of environmental damage that could be reversed with intensive effort
Major	Major loss of environmental amenity and real danger of continuing
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage

Appendix 3

A3.1 Glossary

This appendix contains definitions of technical terms used in this OMP.

Items marked with an asterisk (*) are cited from DELWP (2007b)

Benchmark*

A standard vegetation –quality reference point, dependent on vegetation type, which is applied in Habitat hectare assessments. Represents the average characteristics of a mature and apparently long undisturbed state of the same vegetation type.

Biodiversity*

The variety of all life forms, the different plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part.

Bioregion*

Biogeographic areas that capture the patterns of ecological characteristics in the landscape or seascape, providing a natural framework for recognising and responding to biodiversity values. A landscape based approach to classifying the land surface using a range of environmental attributes such as climate, geomorphology, lithology and vegetation.

BushBroker

A program coordinated by DELWP to match parties that require native vegetation offsets with third party suppliers of native vegetation offsets.

Canopy Tree

Defined in the Habitat Hectare (DSE 2004) vegetation quality assessment method, as a mature tree that is greater than three metres in height, and is normally found in the upper layer of the relevant vegetation type.

DBH (Diameter at Breast Height)*

The diameter of the main trunk of a tree measured 1.3 m above ground level.

Ecological vegetation class (EVC)*

A native vegetation type classified on the basis of a combination of its floristic, life form, environmental and ecological characteristics.

EPBC Act

Environmental Protection and Biodiversity Conservation Act 1999

Habitat hectares*

Combined measure of condition and extent of native vegetation. This measure is obtained by multiplying the site's condition score (measured between 0 and 1) with the area of the site (in hectares).

Habitat score*

The score assigned to a habitat zone that indicates the quality of the vegetation relative to the ecological vegetation class benchmark – sum of the site condition score and landscape context score, usually expressed as a percentage or on a scale of 0 to 1.

Habitat zone*

A discrete area of native vegetation consisting of a single vegetation type (EVC) within an assumed similar quality. This is the base spatial unit for conducting a Habitat hectare assessment. Separate *Vegetation Quality Assessments* (or Habitat hectare assessments) are conducted for each habitat zone within the designated assessment area.

Improvement gain*

This is gain resulting from management commitments beyond existing obligations under legislation to improve the current vegetation quality. Achieving improvement gain is predicated on maintenance commitments being already in place. For example, control of any threats such as grazing that could otherwise damage the native vegetation must already be agreed.

Indigenous vegetation*

The type of native vegetation that would have normally been expected to occur on the site prior to European settlement.

Offset*

Protection and management (including revegetation) of native vegetation at a site to generate a gain in the contribution that native vegetation makes to Victoria's biodiversity. An offset is used to compensate for the loss to Victoria's biodiversity from the removal of native vegetation.

Offset Management Plan (OMP)

A document which sets out the requirements for establishment, protection and management of an offset site.

Medium Shrub

A shrub life-form used in the Habitat Hectare (DSE 2004) vegetation quality assessment method. The life-form includes shrubs between 1 and 5 m high.

Revegetation*

Establishment of native vegetation to a minimum standard in formerly cleared areas, outside of a remnant patch.

Scattered tree*

An indigenous canopy tree that does not form part of a remnant patch of native vegetation (see definition of remnant patch of native vegetation).

Site

An area of land that contains contiguous patches of native vegetation or scattered trees, within the same ownership.

Recruitment*

The production of new generations of plants, either by allowing natural ecological processes to occur (regeneration etc.), by facilitating such processes such as regeneration to occur, or by actively revegetating (replanting, reseeding). See Revegetation.

Remnant vegetation*

Native vegetation that is established or has regenerated on a largely natural landform. The species present are those normally expected in that vegetation community. Largely natural landforms may have been subject to some past surface disturbance such as some clearing or cultivation (or even the activities of the nineteenth century gold rushes) but do not include man-made structures such as dam walls and quarry floors.

Understorey*

Understorey is all vegetation other than mature canopy trees – includes immature trees, shrubs, grasses, herbs, mosses, lichens and soil crust. It does not include dead plant material that is not attached to a living plant. More information on understorey life forms is set out in the Vegetation Quality Assessment Manual (DSE 2004).

Victoria Planning Provisions

A list of planning provisions that provides a standard template for individual planning schemes.