EPBC Act referral 2018/8158
80A & 80B Oakwood Road, Albanvale:

Offset Management Plan: Chathams - 6060 Hamilton Highway, Cressy

Prepared for Panorama Investment (Albanvale) Pty Ltd

2 April 2020

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Biosis staff involved in this project were:

- Sonika Kumar (mapping)

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Declaration of accuracy

Residential Development,

80A & 80B Oakwood Road, Albanvale, Victoria

EPBC 2018/8158

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

Stephen Mueck

Senior Consultant Botanist

Biosis Pty Ltd

24/02/2020

Summary

Biosis Pty Ltd was commissioned by Panorama Investment (Albanvale) Pty Ltd (Panorama) to prepare an Offset Management Plan (OMP) for the Residential Development, 80A & 80B Oakwood Road, Albanvale, Victoria. This residential development was declared a controlled action under the EPBC Act to be assessed via preliminary documentation.

This OMP will demonstrate how the Environmental Offsets will compensate for the loss of 1.15 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP) and 5.23 hectares of Striped Legless Lizard *Delma impar* (SLL) habitat consistent with the EPBC Act Environmental Offsets Policy. In summary, these conditions will be met in part by securing for conservation and improving the condition of 14.0 hectares of SLL habitat which is also NTGVVP within a new third party offset known as Chathams, located at 6060 Hamilton Highway, Cressy, Victoria, 128 kilometres west of the development site.

The specific objectives for the Offset area result from the inputs into and the outputs from the Offsets Assessment Guide. The specific objectives form the basis of the management commitments that the Landholder has agreed to when reviewing earlier versions of this OMP. The management commitments will be implemented on the ground using defined management actions that are practical and feasible within an agricultural context. Each of the individual management actions will have a management target based on maintenance or improvement of the current condition of the Offset area.

The specific objectives of the Offset area will be assessed using the following key performance indicators:

- Permanent legal protection of 14.0 hectares of SLL habitat and NTGVVP via a Trust for Nature (TfN) covenant.
- Permanent exclusion of all agricultural practices except as described in this OMP.
- Completion of the 10-year program of intensive management, including monitoring and reporting.
- Improving the quality of NTGVVP from 6 (out of 10) to 7 (out of 10).
- Improving the quality SLL habitat from 6 (out of 10) to 7 (out of 10).
- Annual works plan in place for on-going management actions from Year 11 onwards.

The broad approach of the management actions is to produce a decrease in the abundance of perennial weeds and maintain open grassland conditions that are suitable for the recruitment (seed production, germination and growth) of native plant species. While decreasing weed cover is an improvement in itself, it is anticipated that this will be accompanied by a commensurate increase in the abundance of native grasses and herbs. The increased abundance of native grasses will also improve habitat stability for SLL.

A risk assessment has been undertaken to address potential threats to the success of the Offset area. Surveillance of the Offset area is an integral component of risk management for the Offset area and includes both routine inspections by the Landholder and ecological monitoring by a qualified ecologist. These activities allow for early identification of changes, appropriate and timely management responses, and adaptive management to changing conditions. Regular reporting to regulatory bodies will track the improvement of the Offset area over time.

Schedules for management actions, monitoring and reporting are provided at the end of this document. The table on the following page summarises the OMP specific objectives, key performance indicators (KPIs) and management actions to be implemented according to the details in this OMP.

Summary Table Specific objectives, KPIs and management actions

Specific objective	Offsets Assessment Guide	KPI / Measureable target	Management actions		
			Upon commencement	Year 1 to Year 10	Year 11 onwards
Offset area protection (security)	Provide 14 ha Offset area	On-title protection via TfN covenant	Register TfN covenant on-title		
Offset area protection (threat abatement)	Risk of loss reduced from 10% to 1%	• No loss of NTGVVP or SLL habitat or preventable weed introductions over 20 year time horizon of OMP • No unauthorised access or unapproved works within offset area • Understory score maintained at a minimum of 15 (out of 25)	Exclude all agricultural practices except those in accordance with OMP	Routine inspections and maintenance of: • Fencing • Signage and access	Routine inspections and maintenance of: • Fencing • Information and access
Offset area improvement	Quality score of NTGVVP improved from 6/10 to 7/10 and SLL habitat from 6/10 to 7/10.	• Average Habitat Hectares score improves from 63.1 to a minimum of 67.04, with a preferred score of 76.7. • SLL habitat secured to provide long-term protection. • SLL population density maintained or improved	Conversion from agricultural management to conservation management: • New internal fencing & watering points • Signage & markers • Convert to rotational cell grazing with exclusion periods • Install monitoring plots	Intensive program of management actions for: • Weeds • Pest animals • Biomass & organic litter • Routine inspections by Landholder and TfN. • Ecological monitoring of NTGVVP & SLL	
Offset area maintenance	**Quality** score achieved at the end of Year 10 maintained from Year 11 onwards	Habitat Hectares score and SLL habitat protection achieved at the end of Year 10 maintained			Maintenance of Year-10 condition with annual works plan for: • Weeds • Pest animals • Biomass & organic litter • Routine inspections by Landholder and TfN

Structure of this document

The structure and content of the Offset Management Plan (OMP) is organised as follows: Sections 1 and 2 are aimed at technical professionals at DAWE, Panorama, and ecologists undertaking monitoring of the Offset area; meanwhile, Sections 3, 4 and 5 are also aimed at the Landholder who will implement the OMP as well as technical professionals. Appendix 1 is contains the detailed schedule of management actions, including monitoring and reporting, to enable implementation of the OMP.

- 1. Introduction: summarises the background information leading up to the requirement for this OMP, including the purpose and scope of the OMP and who is responsible for its implementation.
- 2. Offset area description: provides information about the property on which the offset is located and describes the Offset area itself. This section also defines the specific objectives as they arise from the Offset Assessment Guide, rather than detailed management targets.
- 3. Specific management actions: details the management actions to achieve the specific objectives of the OMP including weed, pest and biomass control targets.
- 4. Monitoring actions: describes how the progress of the Offset area will be tracked over the 10 year timeframe to achieve the specific objectives.
- 5. Risk assessment and adaptive management: details how management of the Offset area will adapt to changes conditions, the results of monitoring and any unforeseen events or Incidents.
- Appendices: provides schedule for management actions and background information.

A glossary of technical terms used throughout this OMP is provided in Appendix 5.

Definition of terms

The following terms terms are used throughout the OMP:

Credit Trading Agreement means a legal agreement between the approval holder, Trust for Nature and the owner of the Offset area to outline the arrangements for the Offset area in accordance with the Offset Management Plan.

Conservation covenant means a binding agreement registered on the title of the property that provides enduring protection of the environmental values of the property.

Environmental services means services including: (i) entering into and registering a conservation covenant over the Offset area; and, (ii) managing the Offset area in accordance with the Offset Management Plan.

EPBC Act Environmental Offsets Policy means the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy,* October 2013 or any document published by the Australian Government which supersedes this document.

Striped Legless Lizard or **SLL** means the EPBC Act listed threatened species *Delma impar.*

Striped Legless Lizard or **SLL habitat** means the habitat for the Striped Legless Lizard as defined in the species approved conservation advice.

Incident means any event which has the potential to, or does, impact on protected matter(s).

Independent audit(s): means an audit conducted by an independent and suitably qualified person as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2015).

Monitoring data means the data required to be recorded under the conditions of this approval.

Natural Temperate Grassland of the Victorian Volcanic Plain or **NTGVVP** means the EPBC Act listed ecological community: the Natural Temperate Grassland of the Victorian Volcanic Plain ecological community.

Offset area means the area of land to be secured and managed for NTGVVP and/or SLL habitat.

Offset Management Plan or **OMP** means the document outlining the management and protection of the Offset area, or any subsequent version approved by the Minister under section 143A of the EPBC Act.

Protected matter(s) means a matter protected under a controlling provision in Part 3 of the EPBC Act for which this approval has effect.

Suitably qualified person means a person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

Trust for Nature means the Victorian based not-for-profit organisation working to protect native plants and wildlife in cooperation with private landowners (ABN: 60 292 993 543). Abbreviated as TfN.

The following terms are defined below for use in this OMP:

Key performance indicator or **KPI** means a measureable change that provides evidence that the Offset area has achieved/is progressing towards achieving the specific objectives.

Management commitment(s) means the overall changes to land management practices that will be undertaken by the Landholder within the Offset area.

Management action(s) means the works that will be undertaken within the Offset area to improve and maintain NTGVVP and SLL habitat within the Offset area.

Management target means a measureable change that provides evidence that the management action has achieved/is progressing towards achieving the improvement in NTGVVP and SLL habitat.

Quality means the score out of 10 used in the Offset Assessment Guide to define the conservation values present within an area of listed threatened species habitat or ecological community.

Specific objectives means the requirements for the performance of the Offset area as defined by the Offsets Assessment Guide.

The following list of the entities are referred to in this document:

Panorama Investment (Albanvale) Pty Ltd (Panorama) is the proponent undertaking the action and means the company responsible for the development at 80A & 80B Oakwood Road, Albanvale.

Department of Agriculture, Water and the Environment Energy (DAWE) means the Commonwealth Government department responsible for the Environment *Protection and Biodiversity Conservation Act 1999* (EPBC Act). The name of the department may undergo changes throughout the life of this document but it is assumed the department responsible for the EPBC Act will remain the regulator of the approval.

Trust for Nature (TfN) means the statutory body enacted under the *Victorian Conservation Trusts Act 1972* and is responsible to covenants enacted as a result of that Act. Regardless of any future name changes, this document assumes that a successor organisation would take responsibility for and be bound by the covenants should TfN be dissolved.

Landholder means the current or future owner of the Offset area or their legal representative or their delegate, where the delegate is the person responsible for land management within the Offset area (e.g. farm manager).

Chathams means the name of the property at 6060 Hamilton Highway, Cressy, on which the Offset area is located.

RD Griffiths Trading Pty Ltd (ACN 627 675 094) Trustee for R D Griffiths Trust (ABN 96 686 573 402) (abbreviated as RGDT) is the legal entity that owns Chathams.

1. Introduction

1.1 Background information / description of the action

Panorama Investment (Albanvale) Pty Ltd (Panorama) is undertaking the residential development of 80A & 80B Oakwood Road, Albanvale, Victoria (Figure 1). This residential development was declared a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to be assessed via Preliminary Documentation (EPBC Act referral number 2018/8158). This OMP is provided as part of the Preliminary Documentation for referral 2018/8158. The controlling provisions on the action are summarised as significant impacts on *Listed Threatened Species and Communities* protected under Section 18 and Section 18A of the EPBC Act.

The Preliminary Documentation identifies that there would be a significant impact on two Matters of National Environmental Significance (MNES):

- 1.15 hectares Temperate Grassland of the Victorian Volcanic Plain (NTGVVP)
- 5.23 hectares Habitat for Striped Legless Lizard *Delma impar* (SLL).

The total area of NTGVPP was considered to be SLL habitat (Figure 1) with an additional 4.08 hectares of vegetation not classified as NTGVVP also identified as **SLL habitat**.

The Quality (measured out of 10) of the NTGVVP varied within the development site (EHP 2017). The areas of NTGVVP were allocated a score as Quality 3 (out of 10). The 5.23 hectares of **SLL habitat** was assessed as **SLL habitat** of **Quality** 6 (out of 10) (Figure 1).

Details of the development site are provided Table 1.

Table 1 Development Site Details

Site details:	
Applicant	Panorama Investment (Albanvale) Pty Ltd
Location/address of Development Site	80A & 80B Oakwood Road, Albanvale 3021
Local Government Area	City of Brimbank
Catchment Management Authority	Port Phillip and Western Port
Responsible Authority	Department of Environment, Land, Water and Planning
Planning Scheme Zoning	General Residential Zone (GRZ1)
Planning Scheme Overlays	Environmental Significance Overlay (ESO6 – in part)
EPBC Act referral	2018/8158
Planning Permit Application	P687/2017
Planning Permit Approval Date	In progress

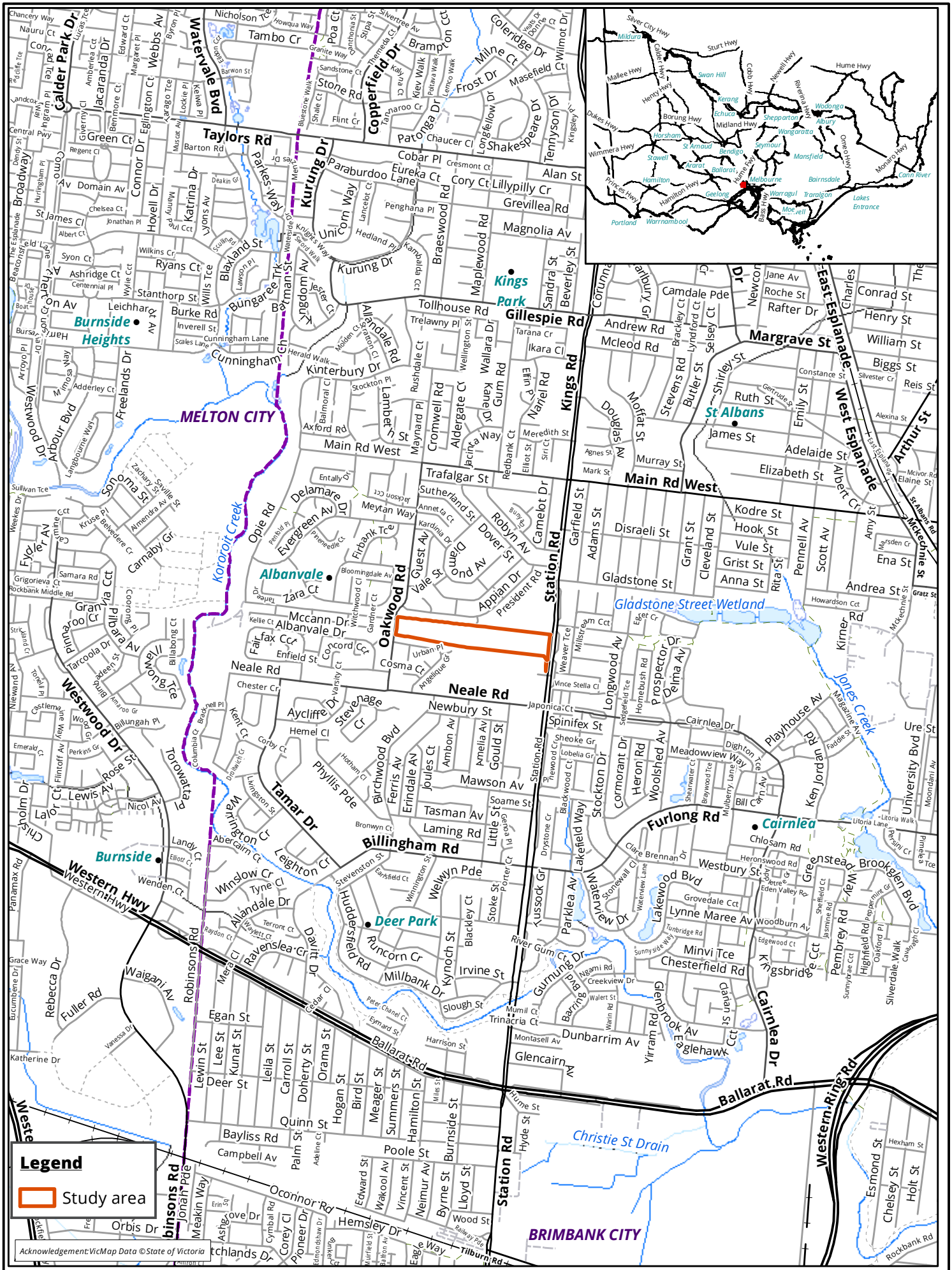

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Figure 1 Location of 80A & 80B Oakwood Road, Albanvale, Victoria

Matter: 29429,
Date: 04 March 2019,
Checked by: SGM, Drawn by: IPT, Last edited by: jturner
Location:\\bio-data-01\matters$\28000s\28074\Mapping\28074_F1_Locality.mxd

1.2 Purpose

The purpose of this OMP is to describe how the provision of Environmental Offsets under EPBC Act referral 2018/8158 will be met by an Offset area established on the property known as Chathams. The specific objectives of this OMP are as follows:

- Offset area protection (security): In-perpetuity, legal protection of the conservation values of the Offset area.
- Offset area protection (threat abatement): in-perpetuity management commitments for removing the threats posed by agricultural production and current land use rights.
- Offset area improvement: An intensive 10-year program of management actions to be implemented from the commencement of the OMP to improve NTGVVP and SLL habitat Quality.
- Offset area maintenance: In-perpetuity management actions that will ensure that the improvement achieved in the first 10 years of the OMP is maintained over time.

The management actions are described in the sections that follow and are supported by schedules at the end of this document (Appendix 1).

1.3 Objectives

This OMP has the following objectives:

- Provide supporting documentation for the establishment of a conservation covenant for the Offset area;
- Describe the Offset area including location, size, condition, environmental values present and surrounding land uses and provide maps of the Offset area.
- Document the presence and baseline quality of the NTGVVP and SLL habitat within the Offset area.
- Define specific objectives to demonstrate NTGVVP and SLL habitat Quality improvement.
- Describe specific management actions, and timeframes for implementation, to be carried out to meet specific objectives.
- Define key performance indicators (KPIs) to demonstrate the improvement to the Quality of NTGVVP and SLL habitat.
- Detail the nature, timing and frequency of monitoring to determine the success of management actions against KPIs.
- Provide information on indicative corrective actions that will be implemented in the event monitoring activities indicate KPIs are not or are unlikely to be achieved.
- Explain the roles and responsibilities for implementing the management actions.

All management actions are consistent with conservation advice for NTGVVP and SLL, and threat abatement plans relevant to both protected matters. These documents are referenced throughout where necessary.

There is one other EPBC Act listed threatened species known to be present in the Offset area: a population of Golden Sun Moth *Synemon plana* (GSM). As a fauna species known to occur in NTGVVP, GSM will also be accommodated within the nominated management actions.

1.4 Roles and responsibilities

This section is in accordance with Section 3.8 of *Environmental Management Plan Guidelines* (Doe 2014). It provides the details of which entities are responsible for the various components of this OMP (see Definition of terms section above for the full list of entities listed in this document). Note that the TfN covenant has further contractual obligations that are not duplicated here.

Table 2 provides a list of the responsibilities allocated to each entity and further description is provided below. The legal liabilities associated with these responsibilities are not directly controlled by this document but will be conferred through the approval under the EPBC Act for EPBC Act referral 2018/8158 and the TfN covenant.

Panorama: The approval for EPBC Act referral 2018/8158 will be granted to the approval holder, Panorama Investment (Albanvale) Pty Ltd (Panorama). As the approval holder, Panorama is ultimately responsible for execution of the approval conditions associated with their approval. Unless otherwise agreed in a legally binding document, Panorama is responsible for ensuring any approval conditions are met to the satisfaction of DAWE including providing compensation for loss of NTGVVP and SLL habitat via implementation of the OMP, ecological monitoring, reporting to DAWE, and ensuring adequate oversight (e.g. auditing). Panorama has engaged the Landholder of Chathams to deliver Environmental Services on their behalf, including implementation of the management actions in this OMP.

Trust for Nature: The responsible authority for the conservation covenant under the *Victorian Conservation Trust Act 1972* (VCT Act) is Trust for Nature (TfN). TfN has authority under the VCT Act to enforce restrictions contained in the covenant but also provides advice on land management to the Landholder (both during the 10 year management period and from Year 11 onwards). TfN bears no responsibility for the execution of any approval conditions associated with EPBC Act referral 2018/8158.

Landholder: The TfN covenant will bind the current (and future) Landholder to the standard restrictions in the TfN covenant and to the requirements described in this OMP. As agreed with Panorama and TfN, the Landholder will be responsible for carrying out the works and associated reporting to manage the Offset area. The Landholder will also facilitate access to the Offset area for ecological monitoring and auditing, as required. The Landholder can engage suitably qualified contractors to carry out the works on the Landholder's behalf. The Landholder can deputise responsibility for carrying out the works to a designated site manager and/or managing ecologist, however, the Landholder remains responsible for ensuring the works are undertaken (Table 2).

Funding arrangements: Financial liabilities will be agreed between Panorama, TfN and the Landholder, who are parties to the TfN agreement. In general terms, TfN will retain sufficient funding to ensure that the Offset area can be managed according to the 10-year management period described in this OMP. A portion of the funds held in trust are released each year to the Landholder, with the exact arrangements stipulated in the TfN agreement. The Credit Trading Agreement has further arrangements pertaining to financing the management and monitoring of the Offset area. However, the details of the financial arrangements associated with the Offset area are beyond the scope of this OMP.

Table 2 Offset area responsibilities

Notes to table: Landholder: refers to the Landholder or their delegate (e.g. farm manager).

Responsibility	Responsible entity	Obligation arising from	Person who will undertake the work
Executing approval conditions (i.e. providing the required environmental offsets)	Panorama	Statutory approval conditions	Panorama or their representative Ecological consultant (preparation of OMP)
Implementation of OMP such as undertaking conservation and maintenance works in Offset area	Landholder	TfN covenant on Offset area	Landholder or their contractor
Routine inspections of Offset area	Landholder	TfN covenant on Offset area	Landholder or their contractor
Keeping records of conservation and maintenance works, and results of routine inspections in Offset area	Landholder	TfN covenant on Offset area	Landholder or their contractor
Ecological monitoring of Offset area	Panorama	Statutory approval conditions	Experienced grassland ecologist to be engaged by the Landholder/Panorama with the costs invoiced to Panorama
Auditing of compliance with the approval conditions	Panorama	Statutory approval conditions	An independent and suitably qualified person as detailed in the EPBC Act Independent Audit and Audit Report Guidelines (2015).
Records and reports of works and routine inspections for Trust for Nature	Landholder	TfN covenant on Offset area	Landholder or their contractor
Ecological monitoring reports	Landholder	TfN covenant on Offset area	Experienced grassland ecologist to provide report to Landholder
Annual compliance reporting to DAWE	Panorama	Statutory approval condition	Landholder or their contractor to provide annual report to Panorama as per management action. Panorama to provide annual compliance report to DAWE (N.B. will include details of both the development site and Offset area).
Reporting non-compliance to DAWE	Panorama	Statutory approval condition	Landholder to inform TfN, Panorama and DAWE in the event of an Incident. Incident means any event which has the potential to, or does, impact on protected matter(s). E.g. wildfire (bushfire) occurring in the Offset area; plant pest or disease outbreak affecting native grassland flora. Minor seasonal issues like fluctuations in weed cover can be discussed with TfN in the course of routine works planning but does not meet the description of an Incident.
Review of OMP (in accordance with the adaptive management provisions of OMP)	Landholder	Statutory approval condition	Landholder in consultation with TfN
Providing advice on and monitoring compliance with Trust for Nature covenant	TfN	TfN covenant on Offset area	Staff members of TfN

1.5 Other offset requirements

The clearing of native vegetation associated with the residential development of 80A & 80B Oakwood Road Albanvale, was also assessed by the Department of Environment, Land, Water and Planning (DELWP) as part of planning permit application P687/2017. Environmental offsets prescribed under the Victorian *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP 2017) will also be required for this project. These Victorian environmental offsets will be provided independently of the obligations for SLL and NTGVVP and are not mentioned further.

1.6 OMP commencement

The implementation of this OMP will begin on execution of the TfN covenant and release of the agreed funds to the Landholder. The funds due to the Landholder are for the purchase of the offsets and for the costs associated with the establishment tasks for the Offset area (Section 3.5). TfN will retain sufficient funds in trust to provide for the 10-year management of the Offset area as well as a contingency for unexpected events or costs.

The registration of the covenant will be completed as soon as possible thereafter noting that administrative requirements may mean that the registration of the covenant with the titles office (currently called Land Use Victoria) takes a further 12 months to be completed and signed-off by the Commonwealth Minister for the Environment. This registration process is an administrative process only and will not prevent the commencement of the management actions of the OMP once the agreement between TfN and Panorama is executed since the funds are non-refundable.

Payment for the application of a TfN covenant was finalised on DD / Month / YYYY and henceforth is the date on which this OMP commenced.

1.7 Financial disclaimer

Please note that any information provided in this OMP regarding financial arrangements is for information purposes only. This OMP is not designed to govern any financial arrangements regarding purchase, management or monitoring of the Offset area. The financial arrangements are governed by the TfN agreement and the Credit Trading Agreement.

2. Offset area description

This section provides a description of the Offset area including location, size, condition, environmental values present and surrounding land uses. It also describes the current ecological condition of the NTGVVP and SLL habitat using field data and other supporting evidence that documents the presence and quality of the NTGVVP and SLL habitat (Biosis 2020).

2.1 Environmental offsets requirements

The Offsets Assessment Guides for the action have been prepared in accordance with the document called How to Use the Offsets Assessment Guide and are included in the preliminary documentation for EPBC referral 2018/8158. The resulting offset requirements are as follows:

- **SLL habitat**: 14.0 hectares
- **NTGVVP**: 4.2 hectares

Panorama will secure the entire offset obligation as a single third party offset on the Victorian Volcanic Plain. This OMP covers 100% of total requirements for SLL habitat and concurrently occurring confirmed NTGVVP.

2.2 Description of the Offset area

2.2.1 Location and surrounding land uses

The Offset area is located at the property called '*Chathams*', 6060 Hamilton Highway, Cressy, Victoria (Figure 2). Chathams is approximately 120 kilometres west of development site, near the regional centre of Ballarat (Figure 2). Chathams is two lots totalling 275 hectares and owned by RD Griffiths Trading Pty Ltd (RGDT), as part of a larger farming enterprise. The land title details of the lot on which the Offset area is located are provided in Table 3.

The Offset area is located within a larger paddock with the directly adjoining land uses being agricultural land and other offset sites. The Offset area shares frontage with the Hamilton Highway but is otherwise bounded by the native vegetation and SLL habitat of the larger paddock. The paddock is used currently for sheep grazing.

There are no formal and informal easements that need to be excluded from the net Offset area. No future utilities or road easements can be applied to the Offset area as these are likely to conflict with the objectives of this OMP.

2.2.2 Size

The Offset area is 14.0 hectares of NTGVVP concurrently with confirmed SLL habitat (Figure 3). The Offset area therefore provides 100% of the prescribed offset obligation for EPBC referral 2018/8158. The offset will be provided as a single contiguous area of grassland (Figure 3).

2.2.3 General description of environmental values present

The Offset area has no known history of cultivation, significant pasture improvement or intensive fertilizer application. Areas surface rock and rocky rises remain intact as does a substantial cryptogam layer and soil crust. It is probable that loose surface rock has been historically removed to construct the dry stone wall along the southern boundary, however, embedded rock remains intact and in sufficient quantities to provide habitat for SLL.

A detailed description of the conservation values within the proposed Offset area is included in Biosis (2020). A total of 44 native and 29 introduced plant species were recorded from two inspections of the Offset area in

2018 and 2020 (Biosis 2020). More native and weed species will be present but seasonal conditions and survey intensity typically preclude the detection of all species at any one time.

The grassland supports many of the flora species that are characteristic of NTGVVP, including Common Tussock-grass *Poa labillardierei*, Spear-grass *Austrostipa* spp., Wallaby-grass *Rytidosperma* spp., Kangaroo-grass *Themeda triandra*, Lemon Beauty-heads *Calocephalus citreus*, Wiry Buttons *Leptorhynchos tenuifolius*, Blue Devils *Eryngium ovinum*, Blushing Bindweed *Convolvulus angustissimus*, Cut-leaf Burr-daisy *Calotis anthemoides*, Common Woodruff *Asperula conferta* and Smooth Solenogyne *Solenogyne dominii* (Biosis 2019 & 2020).

Although weeds are present, the overall vegetation and habitat structure of the grasslands is provided by the native perennial tussock grasses characteristic of NTGVVP. Low-threat annual weeds were the most obvious type of weed present such as Hair-grass *Aira* spp., Quaking-grass *Briza* spp., Squirrel-tail Fescue *Vulpia myuros* and Brome *Bromus* spp.. High threat perennial grasses Brown-top Bent *Agrostis capillaris* and Toowoomba Canary-grass *Phalaris aquatica* were present but these were not dominating the tussock cover of the grassland and were assessed to be a levels low enough to be managed effectively. The noxious broad-leaved weed, Spear Thistle *Cirsium vulgare*, was present but relatively rare with the most obvious broad-leaved perennial weed being Hairy Hawkbit *Leontodon saxatilis*. Less frequently observed broad-leaf weeds include Flatweed *Hypochaeris radicata* and Buck's-horn Plantain *Plantago coronopus*. No woody weeds are known from the Offset area or the broader Chathams property.

Because the Offset area is embedded within a larger patch of NTGVVP, the landscape values of the Offset area also add to its conservation value. NTGVVP has been cleared from most of the Victorian Volcanic Plain and usually occurs in small, isolated patches. In contrast, the Offset area occurs within a patch of native vegetation with a total area of about 260 hectares across the two lots.

Targeted surveys for SLL were undertaken using the field methods stipulated in the Commonwealth EPBC Act referral guidelines (DSEWPaC 2011). The results of the surveys are detailed in Biosis (2019) and by EHP (2018). In summary, three grids of ceramic roof tiles were installed in the Offset area and evidence of occupation by SLL was found in the form of both live animals and skins sloughs. In total, Chathams has 20 tile grids installed with SLL detected in most grids (EHP 2018).

The broader Chathams property is known to support at least two other rare or threatened flora species (Biosis 2019):

- Pale Swamp Everlasting *Coronidium gunnianum* (vulnerable in Victoria); and
- Pale-flower Crane's-bill *Geranium* sp. 3 (rare in Victoria).

Table 3 Offset area and property details

Site details:	
Type of offset	Third party
Landholder of Offset area	RD Griffiths Trading Pty Ltd ACN 627 675 094 (abbreviated as RDGT)
Landholder Contact	offsets@warrambeen.com
Location and address of Offset area	6060 Hamilton Highway, Cressy
Area of Offset area (ha)	14.0 ha
Allotment	Lot 5 LP7127
Parcel identifier (SPI)	5\LP7127
Local Government Area	Colac Otway Shire
Security mechanism	Trust for Nature covenant registered on title
Bioregion	Victorian Volcanic Plain

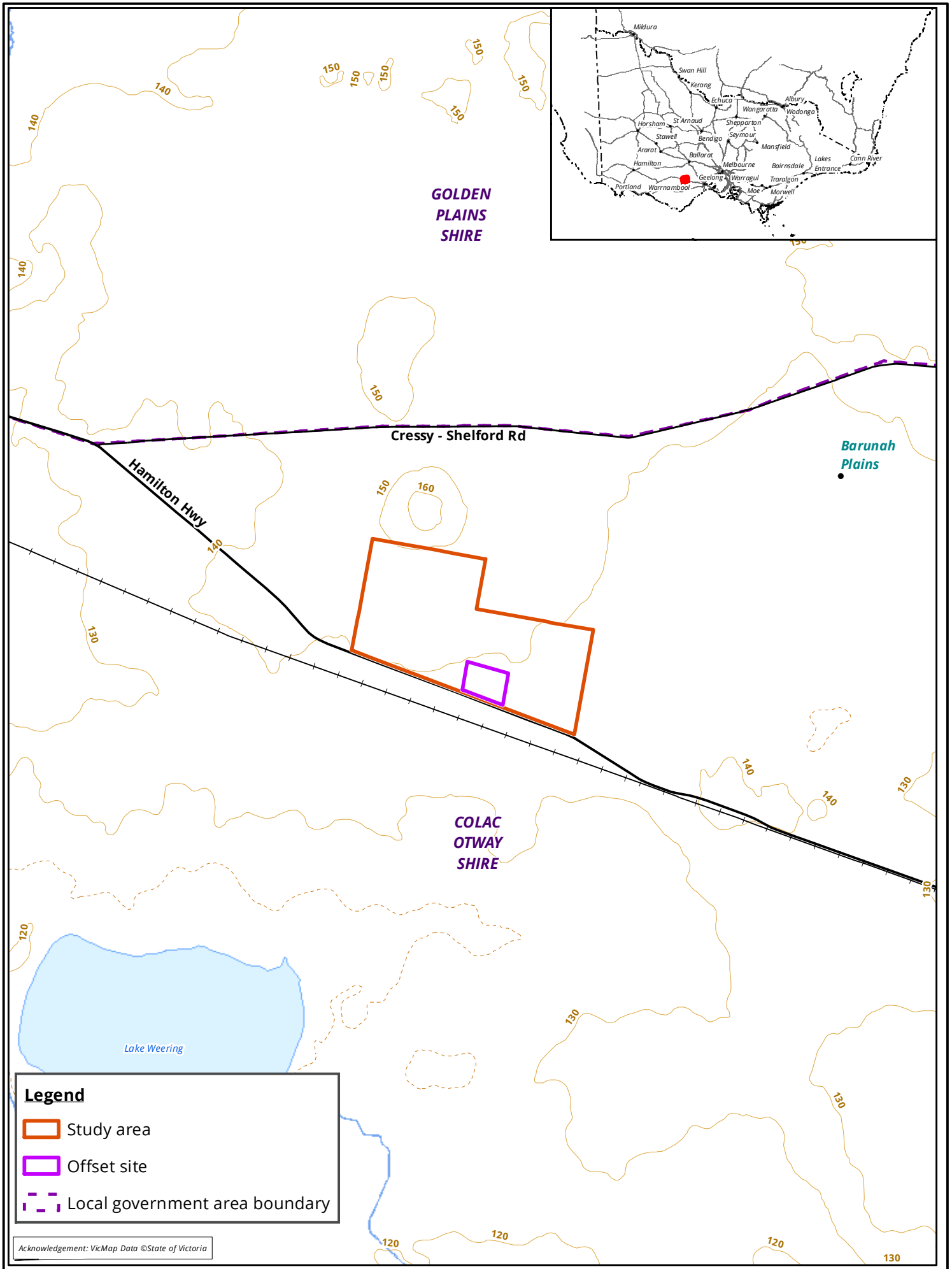
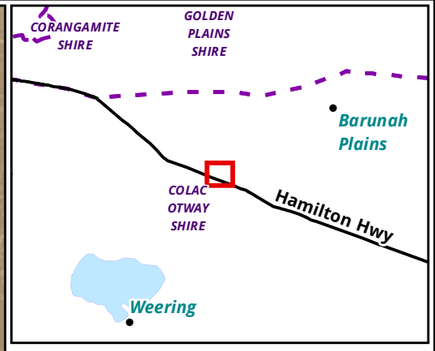


Figure 2 Location of the Chathams Offset area, Cressy

Matter: 30833,
Date: 25 February 2020,
Checked by: SGM, Drawn by: SKM, Last edited by: jturner
Location:P:\30800s\30833\Mapping\30833_F1_Locality_Cressy

0 0.5 1 1.5 2
Kilometres

Scale 1:50,000 @A4, GDA 1994 MGA Zone 54



Legend

- Offset site
- SLL habitat
- NTGVVP
- Tile grid

Parcel status

- Parcel boundary

Figure 3 Ecological features and proposed Offset area at Chathams, Cressy, Victoria

0 25 50 75 100

Metres

N

Scale: 1:2,500 @ A3

Coordinate System: GDA 1994 MGA Zone 54

biosis

Matter: 30833,
Date: 25 February 2020,
Checked by: SGM, Drawn by: SKM, Last edited by: jturner
Location: P:\30800s\30833\Mapping\30833_F2_Veg_extent_Cressy.mxd

2.3 Current condition

The vegetation condition of the Offset area was assessed using the Habitat Hectares method (DSE 2004) and the conservation values of the NTGVVP were assessed against those provided in the listing advice (TSSC 2008). The suitability and Quality of SLL habitat was assessed against the descriptions provided in (DSEWPaC 2011). The condition assessments were used in conjunction with previous advice from DAWE to calculate the Quality score used to calculate the required offsets.

2.3.1 NTGVVP current condition

The native vegetation within the Offset area received a score of 63 out of 100 (Habitat Hectares method, as assessed against the Plains Grassland benchmark, Table 4).

Table 4 Habitat Hectares results

EVC Name (#):			Plains Grassland (EVC 132-61)
Site			Chathams
		Score out of:	Score:
Site Condition	Lack of Weeds	15	6
	Understorey	25	15
	Recruitment	10	10
	Organic Matter	5	5
	Site Score (standardised x1.36)	**75**	**49.1**
Landscape Value	Patch Size	10	8
	Neighbourhood	10	2
	Distance to Core	5	4
	Landscape Score	**25**	**14**
Total Habitat Score		**100**	**63.1**

This is a high score for native vegetation that has been subject to agricultural disturbance and gives a Quality score of 6 out of 10. There are opportunities to improve Quality through increased weed control and maintenance of favourable recruitment conditions through biomass management.

The current condition of NTGVVP was also assessed against the conservation values in the listing advice for the ecological community (Table 5). This assessment was done for both the Offset area and the development site to demonstrate that the Offset area is of higher conservation value than the development site (Table 5).

Appendix 4 provides the explanation of the NTGVVP Quality scoring method.

Table 5 The conservation value of NTGVVP (TSSC 2008) at development site and Offset area

Conservation value	Development site	Offset area – Chathams
A high native plant species richness	No. The site is low native diversity, modified grassland with 22 native species recorded from a survey of 9 hectares (EHP 2017). The areas of NTGVVP in better condition are dominated by Kangaroo Grass *Themeda triandra*, Spear Grass *Austrostipa* spp. and Wallaby Grass *Rytidosperma* spp. but herbs are scarce and are those that are tolerant of disturbance and found commonly in areas grazed by livestock.	Yes. The Offset area has high diversity with 44 native species recorded during the assessment. Areas of **NTGVVP** are in good condition with areas dominated by Kangaroo Grass, Common Tussock-grass *Poa labillardierei*, Spear Grass and Wallaby Grass and supports a range of native herbs indicative of higher conservation value grassland including Chocolate Lily *Arthropodium strictum*, Lemon Beauty-heads *Calocephalus citreus,* and Scaly Buttons *Leptorhynchos squamatus*.
Large patch size	No. While no definition of 'large' is given, the patches are embedded in a landscape context of urban development of which very little is native grassland which is generally in poor condition.	Yes. While no definition of 'large' is given, the patch is embedded in a landscape context of 275 hectares of farmland, much of which is native grassland of varying condition.
Minimal weed invasion	Variable. Weed invasion varies throughout the patch with the highest cover in any one area being 40% cover (EHP 2017). More than half of all species recorded were weeds (47 weed species compared to 22 native species).	Variable. Weed invasion varies throughout the patch with the average cover being 35%. Only one-third of all species recorded were weeds (29 weed species compared to 44 native species).
Presence of threatened plant and/or animal species	Flora - Yes. One threatened plant species, Spiny Rice-flower *Pimelea spinescens* (one individual) was detected during targeted surveys.	Flora - Yes. One FFG listed flora species Pale Swamp Everlasting was recorded from the broader area.
	Fauna - Yes. SLL is recorded.	Fauna - Yes. SLL and GSM are also recorded.
Presence of natural exposed rock platforms and outcrops	Minimal. Basalt surface and embedded rock is present throughout the site but surface rock removal has occurred in the past.	Yes. Basalt surface and embedded rock is present throughout the Offset area but surface rock removal has occurred in the past.
Presence of mosses, lichens or a soil crust on the soil surface.	Minimal. The natural surface crust has been disturbed by a long history of livestock grazing but mosses and lichens are still present with modified cover and structure.	Yes. The natural surface crust is present with mosses and lichens found throughout.

2.3.2 SLL habitat current condition

The Offset area supports a single contiguous area of high conservation value NTGVVP that is also confirmed SLL habitat and so was assigned a single Quality score. The Quality of 6/10 reflects the relatively intact condition of the vegetation but a moderately low stocking rate of SLL was recorded during targeted surveys in 2018. EHP (2018) recorded three animals within the Offset area and 30 animals in Chathams overall while Biosis (2018 internal data) recorded 8 animals within the Offset area and 17 animals in Chathams overall. Biosis (2020) recorded 20 SLL skins under the three tile grids during the February 2020 site condition assessment.

SLL habitat Quality can be improved by excluding agricultural practices that pose a threat to SLL habitat structure and by maintaining and increasing the cover of native grasses and maintaining an open grassland structure.

Tables 6 provides the habitat quality scoring for the Offset area. Appendix 4 provides the explanation of the SLL habitat quality scoring method.

Table 6 SLL habitat Quality score

Parameter	Chathams	
	Score	Justification
Site context - refugia	1/1	The Offset area supports a variety of refugia from disturbance events. Refugia present are surface rock, perennial grass tussocks and cracks and burrows in soil structure.
- legal protection	0/1	The Offset area does not currently provide long term protection from agricultural development. See Section 2.4 below for details of current permitted uses that pose a threat to SLL habitat.
- landscape	0/1	Chathams as a whole has poor connectivity to broader areas of habitat so that while the Offset area is connected to a larger patch of habitat (275 hectares), the landscape is heavily cleared. Potential connectivity existing along the road reserve of Hamilton Hwy but without extensive ecological investigation, there is no certainty about where the nearest SLL population to Chathams is located.
- size	1/1	The Offset area is greater than 0.1 hectares and has not been subject to adverse agricultural practices in the past 10 years. Discussions with the Landholder confirm that high intensity agricultural practices such as excavating rocks, cropping or pasture sowing have not been undertaken.
Site condition	3/3	The Offset area supports predominately native tussock-forming grass species and has ample shelters (crevices, rocks, logs) located within native temperate grassland, which meets the definition provided for 3/3 site condition (Appendix 4).
Species stocking rate	1/4	The Offset area supports records indicating 20 animals in 14 hectares or a density of 1.42 animals per hectare. This places the Offset area in the category of 1-5 animals per hectare.
Quality score	6/10	A score of 6 out of 10 indicates that the Offset area has relatively intact conservation values in its current condition and represents habitat that is highly favourable to the species. There are opportunities to improve quality through habitat protection and with potential to increase stocking rate through maintaining and improving grassland condition.

2.4 Suitability of Offset area to provide a conservation gain

Under Section 7.6 of the *EPBC Act Environmental Offsets Policy* (DSEWPaC 2012), *environmental offsets must deliver a conservation gain for the impacted protected matter, and that conservation gain must be new, or additional to what is already required by a duty of care or to any environmental planning laws at any level of government*. The following sections confirm that the proposed Offset area meets this requirement, having no existing environmental offsets, on-title protections or other proposed conservation protections. In addition, the Offset area has current permitted land uses under the Colac Otway Planning Scheme that are also recognised threats to NTGVVP and SLL habitat. Under these conditions, it was assessed that the risk of loss of NTGVVP or SLL habitat from the Offset area in the absence of the OMP was 10%.

2.4.1 Current permitted land uses

The property is zoned Farming Zone (FZ) within the Colac Otway Shire Planning Scheme, which controls the use of the land. The purpose of the FZ is to provide for the use of land for agriculture. Uses for which a permit is *not* required include:

- Agriculture
- Cattle feedlot
- Domestic animal husbandry
- Dwelling
- Grazing animal production
- Poultry farm
- Timber production at least 40 hectares in size.

Under the Farming Zone, there are no permit requirements for the following agricultural activities that can lead to the decline or loss of native plant species and/or encourage the proliferation of weeds, which are known threats to NTGVVP and SLL habitat:

- Fertiliser application.
- Over-sowing with introduced pasture grasses or clover.
- Over-grazing or grazing with larger livestock that cause more damage to grasslands (especially horses).
- Biomass accumulation and loss of inter-tussock spaces.
- Selling the land to a new owner who may undertake the above activities.

In the event that the above activities were undertaken and the land declined in native grass cover to less than 25% of the perennial vegetation cover, the land would no longer met the definition of a patch of native vegetation (DELWP 2017). If a patch of native vegetation was no longer present, then there would be no planning permit requirement for removal of native vegetation (and associated environmental offsets) to facilitate further develop the land, for example, through de-rocking and cultivation.

2.4.2 Exemptions for minor native vegetation removal

Clause 52.17 of the Colac Otway Planning Scheme controls the removal of native vegetation via a planning permit and avoid, minimise and offset process. In addition to threats from existing uses above, clause 52.17-7 provides a table of exemptions where no planning permit is required to remove native vegetation for certain specified activities. These activities include the following that could lead to incremental loss of condition or extent of NTGVVP and SLL habitat:

- Operation or maintenance of an existing fence.
- Removal of dead vegetation.
- Fire protection, including periodic fuel reduction burning or construction of firebreaks and firefighting access tracks.
- Grazing by domestic stock.
- Pruning of up to 1/3 of the foliage of individual plants.
- Treatment of pest animal burrows or weed infestations.
- Geothermal energy/Mineral/Stone exploration or extraction.
- Minor Utility installation.

These activities can be undertaken without a permit to remove native vegetation and therefore there is no requirement to provide environmental offsets under state legislation.

2.4.3 Existing offset arrangements

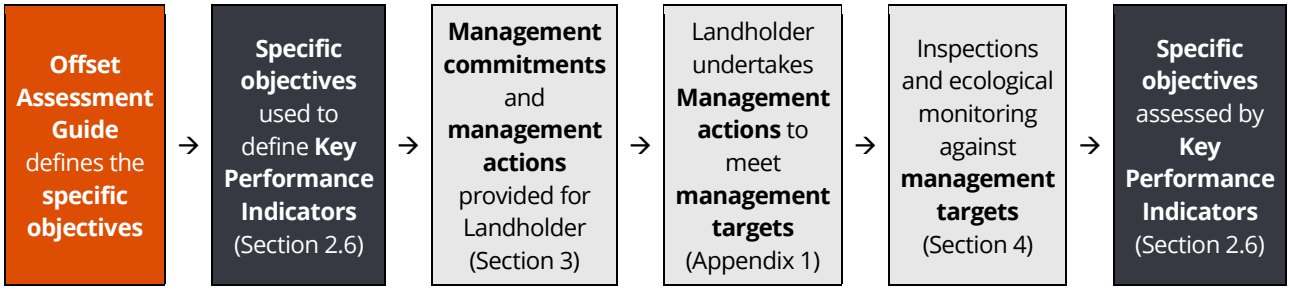
A title search has been completed and the Offset area is not affected by any conservation related encumbrances. The Offset area therefore has not been allocated for the provision of any other offsets, either under the EPBC Act Environmental Offsets Policy or for provision of offsets under any current or past Victorian policy.

2.5 Specific objectives

This section presents the specific objectives to demonstrate NTGVVP and SLL habitat Quality improvement over the period of the OMP's implementation. The specific objectives arise from the Offsets Assessment Guide and are used to determine the overall improvements required to be achieved at the end of 10 years. The specific objectives are broader scale objectives than the management commitments and management actions that are specified in Section 3.

Figure 4 below shows how the specific objectives relate to the management commitments, management actions, and management targets.

Figure 4 Specific objectives and their relationship to the management commitments



2.6 Specific objectives and key performance indicators

Table 7 below describes the specific objectives for the Offset area that result from the inputs into and the outputs from the Offsets Assessment Guide (a.k.a offsets calculator). Achieving the specific objectives will therefore ensure that an environmental offset that meets the requirements of the EPBC Act Environmental Offsets Policy will be provided. The Offset area as a whole will be assessed against key performance indicators that will determine if the specific objectives have been met (Table 7). The key performance indicators use technical terminology and so are broken down into management targets in for the Landholder to implement on the ground in Section 3.

Table 7 Offset area management specific objectives and Key performance indicators

Offset Assessment Guide	Specific objective	Key performance indicators (measureable through ecological monitoring)
Start area: **14.0 ha NTGVVP and SLL habitat**	**Offset area protection (security):** Provide permanent protection for the conservation values of the Offset area with a conservation covenant.	• TfN agreement registered on relevant land titles
Risk of loss : **90%* confidence that the risk of loss decreases from 10%* to 1%* risk of loss** **Time over which loss is averted:** **20 years****	**Offset area protection (threat abatement):** permanently exclude agricultural production except as directed by this OMP. **Risk management:** minimise the risk of the offset area failing to meet specific objectives. Procedures in place to manage and mitigate against incidents or emergencies.	• No loss of NTGVVP or SLL habitat or preventable weed introductions over 20 year time horizon • No unauthorised access or unapproved works within offset area • Understorey score maintained at a minimum of 15 (out of 25)
Gain: **90%* confidence SLL habitat & NTGVVP Quality can both be improved from 6* to 7* (out of 10)** **Time to ecological benefit: 10* years**	**Offset area improvement:** Landholder commits to implementing the intensive 10-year program of management actions, routine inspections and facilitating annual ecological monitoring in accordance with the OMP. **Risk management:** minimise the risk of the offset area failing to meet specific objectives. Procedures in place to manage and mitigate against incidents or emergencies.	• Management actions adapted to seasonal conditions and/or new or emerging threats based on routine inspections and monitoring results • Lack of Weeds score increases from 6 to at least 9 (out of 15) • New weeds eliminated, emerging weed problems controlled to <1% cover, new pest animals eliminated • Understorey score maintained at 15 (out of 25) or improved to 20 (out of 25) • Recruitment score maintained at 10 (out of 10) • Organic litter score maintained at 5 (out of 5) • No active rabbit warrens or fox dens, minimal evidence of pest animal impacts • Tussock cover always sufficient to provide fauna habitat after ecological burns • Ecological monitoring undertaken in accordance with OMP • Reporting undertaken in accordance with OMP • Emergency management undertaken in accordance with OMP
Time over which loss is averted^: **20 years****	**Offset area maintenance:** Landholder commits to implementing the management commitments to maintain the improvement achieved in the first 10 years.	• Habitat hectares score achieved at the end of Year 10 is maintained over next 10 years (to achieve 20 year time horizon) • OMP adapted to changing circumstances or ineffective management actions

*input used in approved Offset Assessment Guide **Maximum value permitted to be used in Offset Assessment Guide

^No directly relevant input or output. 20 year time horizon assumed to be the most logical time period for maintenance to be applied

2.7 Measuring improvement in Quality

For both NTGVVP and SLL habitat, the required improvement is the increase of a single unit of Quality (i.e. score 6 to score 7). The following two sections explain how the baseline score of 6 was calculated and how improvements in Quality are to be measured.

2.7.1 NTGVVP

Quality improvement will be measured using the Habitat Hectares method at each of the permanent monitoring plots and as an average Quality for the whole area. Habitat Hectares is easily converted to a score out of 10 as shown in Appendix 4. The NTGVVP Quality scoring method was used to obtain the Quality score of the Offset area in the Offsets Assessment Guide and should be replicated to determine the final Quality score.

Since the Habitat Hectares method uses categories (which are converted to numeric scores) there is a limited number of ways in which the increase in Quality can be attained within the Habitat Hectares scoring system:

- The Landscape score is not influenced by on-site management actions and so is not expected to change over the 10-year management period (Table 8).
- Recruitment and Organic matter were already scored at their maximum possible scores,10 (out of 10) and 5 (out of 5) respectively, so management actions will maintain their condition.
- Lack of Weeds was scored 6 (out of 15) with possible improvements being 9, 11, 13 or 15 (out of 15). The maximum score (15 out of 15) requires there to be <5% weed cover with the elimination of all high threat weeds. This is not a practical target in a highly modified landscape because the surrounding landscape provides a constant source of wind-borne and animal-borne weed seeds. The minimum improvement target is therefore set at 9 (out of 15). The minimum target requires average cover of weeds to be reduced from the current <43% with the target to be <26%, with less than 50% of the weeds being high threat. The sub-groups of weeds will have lower targets within the overall target e.g. all woody weeds to continue to be excluded from the Offset area.
- The Understory score is already relatively high at 15 (out of 25), with possible improvement categories being 20 (out of 25) or 25 (out of 25). Improvement in the number of understorey species will come from lower weed cover providing more opportunities for recruitment of understorey species that may presently be at quantities too low to be detected. The re-introduction of fire has potential to stimulate soil-stored seed to germinate if done with optimal seasonal conditions for recruitment, which could also improve the Understory score. It is recognised that many flora species are only visible for short amounts of time in response to seasonal conditions and their absence in any particular survey does not indicate their decline from the Offset area. The Understorey target will be set to maintain the 15 (out of 25) score (minimum requirement). An improvement to 20 (out of 25) is achievable and is a credible outcome that would reflect skilled conservation management. A perfect score of 25 (out of 25) may be possible but would require ideal conditions for plant growth and reproduction and two additional lifeforms to be present in an unmodified condition: Large Herbs and Non-tufted graminoids. These lifeforms may colonise the Offset area or otherwise be present but were not detectable during the late summer assessment conducted by Biosis (2020) and would require a sustained period of suitable growing conditions. However, the growth conditions over the next 10 years cannot be predicted so that the certainty around achieving this score is too low to meet the criteria in the Offsets Assessment Guide.

The Habitat Hectares score that can be expected to be achieved at the end of the 10-Year management period are shown in Table 8 below. As noted above, the confidence in achieving the best possible score is too low for this to be the required amount of improvement and still meet the confidence requirements.

Table 8 NTGVVP condition baseline and required improvement

Plains Grassland (EVC 132)			Score			
Max. score for each component:			**Starting condition**	Minimum improvement required	**Preferred improvement**	Possible improvement with ideal conditions
Site Condition	Lack of Weeds	15	6: (25 to 50% cover of weeds, with < 50% of high threat)	**9**: (5 to 25% cover of weeds, with less than 50% of high threat)	**11**: (less than 5% cover of weeds, more than 50% high threat)	13: (< 5% cover of weeds, with less than 50% of high threat)
	Understorey	25	15	15	**20**	25
	Recruitment	10	10	10	10	10
	Organic Matter	5	5	5	5	5
	Site Score (standardised x1.36)		49.1	53.04	**62.7**	72.3
Landscape Value	Patch Size	10	8	8	8	8
	Neighbourhood	10	2	2	2	2
	Distance to Core	5	4	4	4	4
	Landscape Score		14	14	14	14
HABITAT SCORE		100	**63.1**	67.04	**76.7**	86.3
Quality (rounded)		10	**6/10**	7/10	**8/10**	9/10

2.7.2 Striped Legless Lizard habitat

Quality improvement will be measured using the NTGVVP results for site score described above and the results of targeted surveys for SLL.

The scoring methods used to obtain the Quality score of the Offset area in the Offsets Assessment Guide is shown in Appendix 4 and should be replicated to determine the final Quality score. As for NTGVVP, there is a limited number of options for recording an improvement in SLL habitat Quality under the 10 point system:

- Site context (landscape and size) is not influenced by on-site management actions and so is not expected to change over the 10-year management period (Table 9). Site context (legal protection) will be improved with the addition of the TfN covenant (Table 9). Site context (refugia) will be protected in perpetuity with the exclusion of detrimental agricultural practices (Table 9).
- Site condition has already been allocated a maximum score of 3 (out of 3) since the Offset area is high conservation value native vegetation with a site score greater than 46 (out of 75). While the target for site condition is set to maintenance of the 3 (out of 3) score, it is expected that the removal of weeds and subsequent opportunity for growth and recruitment of native grasses will favour SLL. However, it will not be possible to detect this change in the scoring system used.
- The expected improvement comes from the increase in SLL individuals detected during SLL surveys. This is because the management actions will maintain an open grassland structure, with suitable inter-tussock spaces. In addition, the SLL population extends into the paddocks surrounding to the Offset area and this will help ensure SLL persists within the Offset area. Note however, that SLL populations fluctuate naturally in response to seasonal conditions outside the Landholder's control.

Table 9 SLL habitat condition baseline and required improvement

Parameter	Starting condition		Improvement required	
	Score	Justification	Score	Justification
Site context - refugia	1/1	The Offset area supports a variety of refugia from disturbance events.	1/1	Already met, however, conservation management is necessary to ensure site condition is maintained over the 20 year time horizon. E.g. over-grazing can easily reduce tussock cover to the point where the habitat is no longer suitable for SLL (Howland *et al*. 2014).
- legal protection	**0/1**	**The Offset area does not currently provide long term protection from agricultural development.**	**1/1**	**TfN covenant registered on title to provide long term protection from agricultural development.**
- landscape	0/1	Chathams as a whole has poor connectivity to broader areas of habitat.	0/1	Management actions unable to influence broader landscape.
- size	1/1	The Offset area is greater than 0.1 hectares and has not been subject to adverse agricultural practices in the past 10 years.	1/1	Already met, however, TfN covenant will ensure agricultural practices continue to be excluded.
Site condition	3/3	The Offset area support predominately native tussock-forming grass species and has ample shelters located within native temperate grassland.	3/3	Already met, however, conservation management is necessary to ensure site condition is maintained over the 20 year time horizon.
Species stocking rate	1/3	The Offset area supports records at a density of 1.42 animals per hectare.	1/3	Since the density of the animals is 1.42 per hectare, the density would need to increase 350% to achieve the >5 animals per hectare category required for the 2/3 score. While SLL is regularly found at densities higher than is present in the Offset area, not enough is known about the species' reproductive biology (e.g. how often they reproduce at above replacement levels) to conclude with certainty that a 350% increase in density will occur in 10 years.
Quality score	**6/10**		**7/10**	

2.8 Limitations and uncertainty

It is impossible to eliminate all uncertainty from natural systems. However, this OMP has been formulated using the best available information at the time. The information used includes the results of site inspections in 2018, 2019 and 2020, consultation with the Landholder, and the experience of the authors in grassland management and research. Relevant federal and state government policies, procedures and databases have also been consulted where appropriate. The OMP has been subject to external review and quality assurance by TfN and the Landholder as part of the process to register the TfN covenant.

Management action results

The Offset area already supports high conservation value NTGVVP, which provides certainty that conservation values are already present within the Offset area on which management actions can improve. The OMP includes a reasonable expectation that weed control combined with strategic grazing will reduce weed cover and impede weed seed production, which in turn, will provide increased recruitment, growth and seed production opportunities for the native grasses and herbs still in place. There is a reasonable expectation that the management actions will result in an increase in the abundance and cover of native flora species. Since the existing vegetation structure provides good quality SLL habitat, this management strategy along with management of biomass accumulation is expected to at least maintain, if not improve SLL habitat condition.

Recruitment and growth of native species occurs in response to seasonal conditions so there is a possibility that the recruitment and growth of native species will be slower than expected or may be inhibited altogether in the case of prolonged drought conditions. Such a situation would influence the condition score of the NTGVVP and SLL habitat but would be outside the control of the Landholder. Contingencies for these events are dealt with under the adaptive management section of this OMP.

The results of the management actions themselves are also influenced by external factors that cannot be controlled including: annual variation in weather conditions, human-induced climate change, and fluctuations in pest animals and weeds. Contingencies for these events are dealt with under the adaptive management section of this OMP. Especially with unprecedented events expected under human-induced climate change, allowance must be made for the influence of external factors with regard to the assessing the outcomes achieved where in all other respects the OMP has been adhered to satisfactorily.

NTGVVP condition

It is acknowledged that grassland condition varies with micro-topography (gilgais, rocky rises etc.) and it is not expected that grassland condition will be uniform across all monitoring plots but all plots should show improvement from the Year 1 surveys. If average Quality of the Offset area has improved by 1 point after 10 years, the key performance indicators will be considered to be met.

SLL population

Native flora and fauna are adapted to variable seasonal conditions and many display boom and bust cycles of reproduction. As such, it may not be possible to differentiate between a bust cycle and a decrease in SLL numbers due to management actions in any one particular year. The overall trend in SLL numbers should be referred to when assessing the success of the Offset area after 10 years.

3. Management commitments and actions

This section presents the specific management commitments, management actions, and timeframes for implementation, to be carried out to meet specific objectives to improve the Quality of the NTGVVP and SLL habitat within the Offset area. The detailed schedule of management commitments, management actions and management targets is provided in Appendix 1.

The OMP aims to achieve gains in the Quality score of NTGVVP and SLL habitat through on-ground actions undertaken by the Landholder and with a high degree of certainty of success. As a result, the management actions are designed to be straightforward, practicable and achievable within the existing land management context.

The specific management actions of the OMP have two distinct stages for improvement and then maintenance of NTGVVP and SLL habitat Quality as follows:

- An intensive, 10-year program of management actions to be implemented from the commencement of the OMP. The management actions are directed at achieving an improvement in the ecological condition of the Offset area equivalent to a 1 point increase in Quality.
- A set of in-perpetuity land management commitments that will ensure that the improvement achieved in the first 10 years of the OMP is maintained over time.

These stages are described in the sections that follow and are supported by schedules of actions at the end of this document.

The prescribed management actions are in accordance with the DELWP *Management standards for native vegetation offset sites* (DELWP 2019).

3.1 Management commitments

The management commitments are the over-arching land use commitments made by the Landholder with regard to the in-perpetuity management of the Offset area. The management commitments contribute to fulfilling the specific objectives for the Offset area and apply as long as the conservation covenant is registered on-title. The management commitments also direct what on-ground actions will be undertaken during the 10 Year intensive management and in-perpetuity management periods.

The following commitments have been reviewed and agreed to by the current landholder. These commitments will be placed on title by the attachment of the OMP to the TfN covenant. Most commitments will apply immediately from the start of the OMP management period and continue in-perpetuity. In addition to the commitments applicable immediately, the grassland condition achieved as a result of the 10 year period of management, will be required to be maintained, in perpetuity.

The in-perpetuity management commitments of the OMP are as follows:

1. **Retain all native vegetation:**
    - 1.1 *Permanently exclude all activities that would result in direct mechanical removal of native vegetation (excavation, geological exploration, ploughing of fire breaks, cultivation etc.). Direct-driving of posts to mark out the Offset area, monitoring plots or install low-impact fencing is permitted to the minimum extent necessary.*
    - 1.2 *Permanently exclude all activities that would knowingly introduce new weeds, weed seeds or other non-indigenous vegetation into the Offset area. Examples include: over-sowing with pasture seeds or other pasture improvement; using hay, silage or other supplementary feed from outside Offset area that may contain viable weed seeds; planting of tree belts. It is acknowledged that not all weed invasions are within the control of the landholder.*

1.3 *Exclude all broad-acre herbicide application use for purposes not related to weed control for conservation as specified in this OMP (e.g. maintaining fence lines or other easements, creating fire breaks).*

1.4 *Exclude installation of additional farm infrastructure except as required to implement conservation grazing (e.g. yards, higher impact fencing are not allowed). Stock watering points will be outside the Offset area as described in section 3.4. If further watering points or low-impact fencing are needed to facilitate conservation grazing, these will be installed only after consultation with TfN or other relevant regulator at the time.*

2. Protect native herb diversity and native grassland tussock structure:

2.1 *Permanently exclude all fertilizer application.*

2.2 *Permanently exclude set-stocking of sheep.*

2.3 *Permanently exclude all cattle, goat and horse grazing.*

2.4 *Sheep grazing is permitted if it* complies *with the requirements detailed in this OMP.*

2.5 *Grazing of any other domestic livestock not already listed will only be considered after consultation with TfN and where there is clear evidence that it would be of greater benefit to the conservation of NTGVVP and SLL habitat than the sheep grazing described in this OMP.*

3. Implement management actions as detailed in this OMP:

3.1 *Secure Offset area for conservation via TfN conservation covenant registered on-title.*

3.2 *Years 1 to 10: implement works according to the OMP to achieve a 1 point gain in Quality for NTGVVP and SLL habitat. The annual works plan must address:*

- Fencing, signage & access
- Adaptive management
- Woody weeds
- Herbaceous weeds
- Pest animals
- New or emerging threats
- Grazing for biomass / weed control
- Ecological burning (if trialled and successful)
- Inspections, monitoring and reporting
- Emergency management

3.3 *Years 11+: Maintain an annual works plan for the ongoing maintenance of the condition (Habitat Hectares score) of the NTGVVP and SLL that was achieved at the end of Year 10. The annual works plan must incorporate methods to ensure that management actions continue to adapt to current conditions for weeds, pest animals, and biomass control as well as:*

- Maintain fencing and signage.
- Continued protection of herb diversity and native tussock grass structure.
- Woody weeds maintained at <1% cover with no adult plants
- Cover of herbaceous weeds does not increase beyond levels achieved at Year 10
- Pest animals do not increase beyond levels achieved at Year 10
- Biomass is maintained to achieve >20 to 40% bare ground

3.4 *Revise OMP in response to either ineffective management actions, or improvements identified through on-ground evidence/external research and development, or in response to an incident or emergency.*

The implementation of these commitments provides the reasonable expectation that the Offset area will meet the specific objectives of NTGVVP and SLL habitat Quality improvement over the period of the OMP's implementation.

3.2 Offset area management strategy

The key threats to the Offset area derive from the existing permitted uses associated with normal farming practices and the uncertainty created by a change in Landholder. The existing use rights are detailed in Section 2.1.4 and the associated threats are summarised as: inappropriate grazing regimes, pasture improvement, and fertiliser application.

Other threats to the Offset area derive from natural processes that must be managed with on-going works. In particular, expansion of the cover of existing high threat weeds, invasion of new high threat weeds, an explosion in pest animal numbers, and the excessive accumulation of dead plant material through the over-growth of ground-layer plants (referred to generically throughout as 'biomass').

The broad objective of the management actions is to produce a decrease in the abundance of perennial weeds and maintain conditions that are suitable for the recruitment (seed production, germination and growth) of native plant species. While decreasing weed cover is an improvement in itself, it is anticipated that this will be accompanied by a commensurate increase in the abundance of native grasses and herbs. The management of any other parts of the paddock that are not within the Offset area are to be managed in a manner sympathetic to this broad objective on a voluntary basis.

Currently weeds and biomass are managed through grazing by sheep. Kangaroo grazing also currently contributes to biomass management but cannot be controlled by the Landholder. It is proposed that sheep grazing continue under a modified regime designed to provide the most benefit to conservation of the ecological values of the Offset area. This modified regime is referred to as 'rotational cell grazing' in this OMP although other names such as 'time controlled grazing' are also applied to similar activities, which are used for improved management of native grassland. The term 'pulse grazing' (also referred to as 'crash grazing') is a more generic term used to describe grazing that occurs at high intensity for a short period of time, with or without a specific rotational grazing system in place. In addition to sheep grazing, an intensive weed and pest management program will be implemented for the first 10-years of the OMP.

The management actions each have a target to be achieved by the end of the 10-year management period. The management actions and their targets apply to the entire Offset area. However, it is acknowledged that topographic variation (e.g. gilgais and rock rises) over the extent of the Offset area will produce variation in condition of the Offset area. This variation will be captured in the placement of the permanent monitoring plots and each target will be measured as an average across the whole Offset area. The results of the individual management actions will together provide the improvement in Quality required under the management commitments.

The modified grazing regime and weed control is likely to meet the required biomass and weed control management targets in this OMP even in the absence of ecological burning. Ecological burning is recognised to provide other benefits to in native grasslands aside from biomass and weed control (nutrient cycling and seed germination) so guidelines have been developed to guide re-introducing fire on a trial basis. If the trial is deemed successful and feasible, then ecological burning can be introduced more widely at the discretion of the Landholder in consultation with TfN and the consulting ecologist.

3.3 Offset area protection (security)

At the commencement of this OMP, the Offset area will be secured in-perpetuity via a conservation covenant registered on-title under Section 3A *Victorian Conservation Trust Act 1972*. The statutory body that regulates the *Victorian Conservation Trust Act 1972* is TfN and the covenant is known as a TfN covenant.

A TfN covenant has standard provisions, which bind the owner to managing the land for conservation purposes. In addition, this OMP will be registered on-title as an attachment to the covenant. As a result, the

OMP will be binding on the current and any future owners of the Offset area. Details of the security arrangement are shown in Table 10 below.

Table 10 On-title conservation covenant arrangements

Details of security mechanism	Date or other details
Type of security:	Covenant under part Section 3A *Victorian Conservation Trust Act 1972*
Trust for Nature covenant registered on-title:	DD / MM / 2020
Commencement date for on-title protection:	Upon the on-title registration of the covenant
Commencement date for OMP management actions to improve offset Quality:	Upon the on-title registration of the covenant
Expiry date for OMP management actions to improve offset Quality:	10 years after the on-title registration of the covenant
Expiry date for maintenance of offset Quality at end of 10 management period	Nil - see in-perpetuity commitments in Section 3.1
Review of OMP in response to event or changing conditions	As required

3.4 Offset area protection (threat abatement)

The following actions will be undertaken by the landholder or their contractor to establish the Offset area as a conservation area (Appendix 1). The actions are once-off tasks that are required to set up the Offset area. These tasks are considered separately from the yearly management works that will be required after the Offset area is established.

3.4.1 Boundary fencing

Chathams has existing permanent boundary fencing (dry stone wall) able to exclude neighbouring domestic livestock from the property. Should the Landholder require guidance on stock-proofing of boundary fences, they can refer to *Management standards for native vegetation offset sites* (DELWP 2019).

The paddock within which the offset is located is already fenced with low-impact plain wire fencing. Additional fencing around Offset area (Figure 3) is not required as it is proposed that grazing within the broader paddock will be managed in in the same manner as the Offset area.

In the event that existing land-use rights need to be fully exercised in the parts of the paddock not under an offset agreement, stock-proof fencing between the farmed areas and the Offset area will be required. Fencing should meet the minimum standard set by DELWP detailed in *Management standards for native vegetation offset sites* (DELWP 2019).

In the event of the Offset area being affected by a rapidly increased rabbit population that cannot be controlled to an adequate level (based on advice from TfN) then the Offset area fencing will need to be upgraded to a rabbit proof standard (DELWP 2019).

3.4.2 Permanent fencing to aid conservation management

To aid the conversion from production grazing to conservation grazing, additional low-impact internal fences will be installed within the existing paddock. A plan showing the "as built" layout of the fencing must be provided in the Year 1 annual report.

The objective of the new permanent fencing is to divide the paddock into smaller management units of approximately 20 hectares. The Offset area will be completely within one of the smaller management units. This will have advantages for managing the grassland:

- The grazing regime can be managed with a rotational grazing system, which has been shown to have benefits for the management of native grasslands. The rotational grazing system combined with the smaller management units mean that the units or cells can be grazed more intensely but for a shorter amount of time. At the time of writing the OMP the proposed grazing method is about 600 sheep per 20 - 30 hectare unit to achieve a stocking density of 50 dry sheep equivalent (DSE) for a period of 2 to 3 weeks. This stocking rate and grazing duration is to be adapted to seasonal conditions under the adaptive management arrangements of this OMP.
- Grazing at high intensity means that the sheep are more likely to eat both palatable and unpalatable species, resulting in more even grazing pressure, allowing weeds to be managed more effectively.
- The rotations allow the grassland more time to recover between grazing periods which can be managed to provide competitive advantage to desirable species such as native tussock grasses.

The following requirements for the installation of fencing have been discussed with the Landholder and agreed:

- All fence posts (strainer posts and stays) are to be direct-driven into the ground. Concrete footings are not allowed within the Offset area.
- New gates are to be as wide as possible to avoid disturbance associated with the funnelling of sheep through a confined space. Gates are to remain closed while a grazing cell is stocked to avoid disturbance associated with repeated movements of livestock through the gates.
- Fencing will use plain wire or electric wire only. Barbed wire is not permitted as it is a hazard to wildlife.
- Strainer posts and stays will be the minimum number needed to contain sheep within the grazing cell for the period of the grazing rotation. There is no requirement for internal fencing of the paddock to be completely stock-proof.

3.4.3 Stock watering points

Each grazing cell will require a water supply to water the sheep while they area grazing. There are existing stock watering points (WP) near the northern and eastern margins of the paddock. These will be adapted to supply troughs to water each grazing cell. The Offset area of 14 hectares will be located within a grazing cell of 20 hectares size, which will allow for a WP to be established without impacting on this offset areas.

Troughs can be installed where they meet the following conditions:

- Are installed to the minimum number/size necessary to allow conservation management by rotational cell grazing.
- Located outside of the mapped Offset area.
- Are unlikely to cause new stock camp type damage within the Offset area.
- TfN or consulting ecologist is consulted where there is uncertainty about the impacts of proposed watering points.

The finalised configuration of stock WPs is to be included on the “as built” plan included in the Year 1 annual report.

3.4.4 Temporary fencing to aid conservation management

To aid conservation management of the Offset area, additional temporary fences can be used within the Offset area. Temporary fencing is fencing that is not intended to be in place longer than the duration of the grazing season.

In particular, temporary livestock fencing will be established and maintained around the boundary of any burnt area within the Offset area for at least 6 months post-burn to prevent stock access and damage to regenerating vegetation from grazing.

Temporary livestock fencing can be established to delineate smaller cells for higher intensity grazing if this is required.

The temporary fencing must have negligible impacts to native vegetation associated with the placement and removal of that fencing. Fencing will use plain wire or electric wire only. Barbed wire is not permitted as it is a hazard to wildlife.

3.4.5 Signage and access control

Direct-driven posts or other low-impact permanent marker, will be installed at the commencement of the OMP to clearly identify the boundary of the Offset area. This is required for auditing, 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 area by unauthorised persons is prohibited. The existing access gates and security arrangement is adequate.

No external signage identifying the property as an offset site is proposed in this OMP but could be considered by the Landholder at their discretion. Conservation-related signage has potential to inadvertently attract undesirable impacts but could state to the effect: "Conservation Area – Access not permitted unless strictly authorised by the manager".

Monitoring of access will be conducted on an ongoing basis with fencing repaired or upgraded as required.

3.5 Offset area improvement (Year 1 to Year 10)

This section provides the specific management actions, and timeframes for implementation, to be carried out to meet specific objectives to improve the Quality of the NTGVVP and SLL habitat within the Offset area. The detailed schedule of management commitments, management actions and management targets is provided in Appendix 1.

3.5.1 Annual works plan

The annual works plan is the key process for implementing the principle of adaptive management used to minimise the risk of the Offset area being unsuccessful. Adaptive management is discussed in greater detail in section 3.5.4 and section 5. Prior to works towards the management actions being undertaken each year, the annual works plan (based on the schedule in Appendix 1) will be reviewed and updated in consultation with TfN. The updates will be based on the results of the management actions implemented the previous year and any new research or advice that may arise. To enable adaptive management, the review should identify which management actions in the previous year were successful in contributing to achieving the management target but also which actions were ineffective. The annual works plan will need to be updated based on what actions were effective and where relevant, to address any ineffective management actions.

If the management actions were ineffective, it will be necessary to determine the reason why they were ineffective. The most common reasons why a management action was ineffective include the following:

- Incorrect implementation (e.g. herbicides applied at the incorrect rate).
- Insufficient time has passed to determine effectiveness (The management action was not expected to work yet).
- There were seasonal conditions that rendered the management action ineffective (e.g. drought year).
- Management action produced an unexpected result (e.g. emergence of a new weed after ecological burning).

It may also be determined that the management action is generally not the most effective method for achieving the management target and would be better achieved using a different method. Where the management action is deemed to be generally not effective, the Landholder should discuss alternatives with TfN.

The annual works plan will also address any new or emerging issues, even if not anticipated in this OMP or not listed in the schedule in Appendix 1.

The Landholder should be consulted and sign-off on the annual works plan if it is prepared by their manager or other delegate.

3.5.2 Grazing for biomass / organic litter control

Biomass management is essential to maintain indigenous flora and fauna values throughout the Offset area. The term biomass describes the amount of living plant material in a grassland such as the Offset area. Once the biomass has died, it forms a layer of dried organic litter on the surface of the grassland. The amount of biomass in one year therefore determines the amount of organic litter build up that carries over to the next year. Management of biomass and litter are therefore interrelated.

In the absence of a process to reduce biomass or the resultant litter, the dry conditions experienced in Australia mean that the organic litter builds up over time and threatens the condition of the grassland. Factors that influence the amount of biomass and organic matter include: seasonal conditions, presence/absence of fire, amount of grazing by herbivores, and the plant species present, with weeds generally growing faster and producing more biomass than native plant species. Biomass management is therefore required regardless of whether weed control is also required, however, controlling highly productive weeds can also assist in biomass management.

In native grasslands, biomass management is required to ensure that grasses do not dominate all the space in the grassland so that inter-tussock spaces are maintained. Where there are insufficient inter-tussock spaces, native grasses will shade out native herbs and prevent them from photosynthesising, flowering and seeding seed. Sufficient inter-tussock spaces are also required by SLL, a species that favours open grasslands. Biomass management is also a method of weed control as discussed in section 3.6.5. In this OMP, grazing will be the primary management method to manage biomass and organic litter and will therefore also contribute to maintaining species richness by helping to control weeds and maintain inter-tussock spaces.

The management actions for biomass management in this OMP will be the application of rotational grazing followed by a grazing exclusion period each year. The grazing exclusion period is required to allow native grasses and herbs to flower and set seed without grazing pressure from sheep. Grazing pressure from kangaroos cannot be controlled by the Landholder, however, it will need to be considered in drought conditions as the Offset area is likely to have higher grass cover than other parts of the landscape and so attract kangaroo grazing in dry periods. It is also acknowledged that there is a tension between optimal weed management using grazing and the grazing exclusion period, which may prevent grazing at the optimal time to manage some late growing weeds. This is discussed in section 3.5.5 with regard to control of Brown-top Bent *Agrostis capillaris*. The use of ecological burning for biomass control is discussed in section 3.6.

The management target for biomass/organic litter is to maintain the current level of inter-tussocks spaces to within the range of 20 to 40% bare ground and organic litter at 5 to 15% cover. Where there is a sustained build up in biomass over any one year, resulting in a reduction of inter-tussock space to an average of less than 25%, biomass will need to be actively reduced.

To inform the grazing strategy employed each season, biomass and organic litter will be surveyed using routine inspections by the Landholder in consultation with TfN. Ecological monitoring will also assess the effectiveness of the biomass control techniques applied and the need for any adjustments to the management actions.

3.5.3 Conversion to rotational grazing

Currently the Offset area is subject to typical intensity sheep grazing for the district (2 to 3 DSE per hectare) and is grazed to maintain sward vigour. Given the existing conservation values in the Offset area and the observations made during site inspections with regard to the low impacts from livestock and fencing, sheep grazing is seen as a reliable and relatively low risk management action for maintaining biomass and organic litter levels in the Offset area.

To increase the effectiveness of sheep grazing for managing biomass, organic litter and also weeds, the sheep grazing system will be upgraded to ensure it can be undertaken in a more finely controlled manner and in accordance with the annual works plan. Grazing will be implemented as a time-controlled rotational grazing system where small areas are subject to high intensity grazing for short periods of time (called pulse grazing or crash grazing). The rotational system provides benefits to both native plants and to weed control by creating more even grazing pressure and giving plants longer to recover between grazes. Biomass control will be consistent with the standards for management of ecological grazing provided by DELWP (2019).

To ensure the conservation values of the grassland are protected there will be strict restrictions on the grazing activities that are allowed within the Offset area. Grazing of domestic livestock will be restricted to sheep only. Grazing by cattle and horses are specifically excluded in the in-perpetuity management commitments in this OMP. Grazing of any other domestic livestock not already excluded will only be considered after consultation with TfN and where there is clear evidence that it would be of greater benefit to the conservation of NTGVVP and SLL habitat than the sheep grazing described in this OMP.

The timing of grazing will be strictly controlled to allow native species to grow and set seed over the spring to mid-summer period (DELWP 2015). Sheep will be excluded from the start of spring to the middle of summer annually, in perpetuity. While the start of the spring growing season is best judged on the ground on a yearly basis, Table 11 provides targets to be met for ongoing management of grazing within the Offset area, including dates for the grazing exclusion period. The only exceptions to requirements specified for pulse grazing is to allow for an ecological burn or if additional strategic grazing is needed to address a specified weed problem. For ecological burns, a fire management plan produced to inform when grazing will be removed to allow for a build-up in biomass to establish a burn. For strategic grazing, see the adaptive management discussion in the paragraph below.

Each grazing rotation will occur over a short duration and allow for periods of grazing exclusion. The maximum length of continuous grazing is 3 weeks with a minimum 6 weeks rest between cycles. The rest period will need to be judged by the Landholder to ensure native grasses have recovered sufficiently prior to reintroducing sheep.

Grazing intensity needs to exceed the standard stocking rate to provide grazing pressure sufficient to ensure all plant species are grazed evenly in a short amount of time and to prevent selective browsing. The stocking rate will be dependent on the seasonal conditions and the amount of feed available in each grazing cell and so cannot be stipulated in this OMP.

Depending on seasonal conditions, at least three pulse grazing cycles will occur within the grazing period, one of which will occur immediately prior to the exclusion period (weather permitting).

Grazing will not occur in very wet conditions were pugging will cause unacceptable levels of damage to soil and grassland structure or result in more than 30% bare ground within the Offset area. The Offset area will need to be monitored during wet periods to prevent excessive soil damage in seasonally wet areas. Following any high rainfall events, stock will be removed immediately. Grazing will not occur in very dry conditions where grazing will destroy the tussock structure of the grassland and result in more than 30% bare ground within the Offset area.

Weed hygiene will be important to minimise the risk of sheep introducing new weed problems into the Offset area. Sheep moved into the Offset area will be selected and timed to minimise the potential for weed seed transport via mud, attachment to their fleece or within their faeces. Ideally, sheep will be shorn before entering the Offset area, and will otherwise be kept in paddocks with low weed levels. Sheep will be contained in a low weed area and allowed to shed weed seeds for at least 24 hours before entering the Offset area. Stock movements into the Offset area will be excluded within two days of rainfall and new stock brought onto the property will be excluded from use in in the Offset area until shorn.

3.5.4 Adaptive management of grazing

A grazing regime is made up of three factors that are known to influence plant growth: season, duration and intensity of grazing. Since rotational sheep grazing is the key management actions for biomass control, organic matter control and weed control, the correct implementation and fine-tuning of the grazing regime will be essential to the success of the Offset area.

Season of grazing will be controlled by the grazing exclusion period with a protocol put in place to allow strategic grazing where needed during the exclusion period.

Duration and intensity of the grazing will be controlled by the Landholder and will be adapted to meet season conditions on an annual basis but also throughout the grazing period. Duration refers to both the length of grazing and the length of rest. Intensity refers to the stocking rate within individual grazing cells. Grazing should be adapted to meet seasonal conditions, to learn from the experience of previous years or in response to further research or information on grazing in NTGVVP. The Landholder is required to keep records of stocking rate and duration to ensure that the results of grazing can be adapted over time.

3.5.5 Grazing protocol for exclusion period strategic grazing

Management of biomass from excessive growth of weeds and to prevent weeds setting seed, may require strategic grazing to occur within the grazing exclusion period. Grazing within the exclusion period can occur under a limited set of circumstances in consultation with TfN. Grazing within the exclusion period will be limited to strategic crash grazing within the areas of the Offset area affected by a specified problem. Such strategic crash grazing will need to meet the following requirements:

- A risk assessment is made (based on the current seasonal conditions) to compare the benefits of the proposed grazing with the risks of not grazing, and the risks associated with undertaking the grazing.
- The crash graze is to be done for conservation purposes only. Reasonable reasons include unusual seasonal conditions resulting in unusual amounts of plant growth, specific weed management objectives.
- Under no circumstances can the crash graze be done for the primary purpose of benefiting agricultural production (e.g. commercial considerations or feed requirements).
- At no time should a change in grazing be undertaken where it poses a threat to the grassland (e.g. very wet conditions that could cause pugging).

- Prior to introducing the sheep, the Landholder is to document with photos and notes in writing as to the specific reason why the crash grazing is to be implemented. This should include information to show that a risk assessment at point 1 above has been done.
- This information is to be provided to TfN prior to introducing the sheep.
- If possible, the grazing strategy should be developed in consultation with TfN. It is acknowledged, however, that strategic grazing needs to be timed precisely so that TfN resourcing constraints may mean that a response is not received before the time when the grazing needs to occur. This should not preclude the Landholder from undertaking adaptive management if all other dot points above are complied with.

Further discussion of pulse grazing is provided in Section 3.6.6, especially with regard to targeting particular grassy weed species that may require grazing during the exclusion period.

Table 11 Requirements and limit of grazing activities within the Offset area

Requirement	Target
Grazing exclusion period (sheep grazing generally not permitted*)	30th September to 31st January annually* (4 months)
Rotational cell grazing period (sheep grazing generally permitted in accordance with this OMP)	1 February to 29th September (8 months)
Number of rotations	3 or more (dependant on conditions and final configuration of cells)
Minimum rest from grazing between pulse grazing	6 weeks
Maximum continuous pulse grazing	3 weeks (2 weeks or less preferred)
Biomass management thresholds	Total vegetation cover of approx. 70% (maintain within range of 60 to 80%)
Target inter-tussock space	Approx. 30% of total bare ground cover (maintain within range of 20 to 40%)

* As per adaptive management, strategic grazing may be allowed during this period for specific conservation related purposes.

3.5.6 Weed control

The management targets for weed control are shown in Table 12 below and further information is provided in the sections that follow.

The Offset area does not support any woody weeds and this condition will be maintained in perpetuity.

The overall target for the weed control management action is a reduction from the current estimation of <43% to less than 26% cover. Within this management target, there are targets for individual types of weeds (Table 12). The weeds species within the Offset area were surveyed in 2018 and in a follow up inspection in 2020. The main weeds recorded were: annual grasses, Hairy Hawkbit *Leontodon saxatilis*, Spear Thistle *Cirsium vulgare* and the mat-forming (rhizomatous) grass Brown-top Bent *Agrostis capillaris*. Weeds that occurred in smaller amounts included the tussock-forming perennial pasture grass Toowoomba Canary-grass *Phalaris aquatic* and the herbaceous species Flatweed *Hypochaeris radicata* and Buck's-horn Plantain *Plantago coronopus*. See Table 12 and the sections below for more details.

Highly localised or sporadic occurrences of weeds such as Ox-tongue *Helminthotheca echioides*, Prickly Lettuce *Lactuca serriola*, Sheep Sorrel *Acetosella vulgaris* and Yellow Hawkweed *Tolpis barbata* will be spot sprayed as a priority to target local elimination.

Table 12 Management targets for weed control

Scientific Name	Common Name	Average cover 2020	Proposed control measures	Management Target for cover 2030
Annual grasses				
***Vulpia* spp., *Briza* spp., *Bromus* spp., *Aira* spp., *Lolium* spp.**	Fescue, Quaking-grass, Brome, Air-grass, Rye-grass	30%	Time-controlled pulse grazing by sheep to prevent seed set and reduce biomass. Spot spraying appropriate herbicide (or non-chemical methods if available) to prevent seeding.	<20%
High herbaceous threat weeds				
Perennial tussock grasses: *Phalaris aquatica*	Toowoomba Canary-grass	<1%	Time-controlled pulse grazing by sheep to prevent seed set and reduce biomass. Spot spraying appropriate herbicide (early spring).	Elimination
Broad-leaved weeds: primarily *Leontodon saxatilis*, with smaller quantities of *Cirsium vulgare, Hypochaeris radicata* and *Plantago coronopus*	Primarily Hairy Hawkbit, with smaller quantities of Spear Thistle, Flatweed and Buck's-horn Plantain	10%	Spot Spraying appropriate herbicide, hand removal or local broad area herbicide application (prevent flowering).	<5%
Perennial mat-forming grasses: *Agrostis capillaris*	Brown-top Bent	2%	Time-controlled pulse grazing by sheep to prevent seed set and reduce biomass (may require grazing within grazing exclusion period). Spot spraying appropriate herbicide (early spring). Potential trial of late crash grazing.	<1%
Perennial tussock grasses (declared noxious weeds): e.g. *Nassella trichotoma*	e.g. Serrated Tussock	0% (nil detected)	If these species are detected in future, immediately mark the location on the ground and using GPS. Kill the plants using spot spraying appropriate herbicide as soon as possible. Manage ground cover to prevent excess recruitment opportunities and ensure weed hygiene protocols are implemented in accordance with OMP.	0%
Total		<43%		<26%

Strategy for weed control

The weed control strategy is a multi-pronged approach that takes advantage of the ecological conditions of the Offset area. The weed control strategy focuses on ensuring that the ecological conditions stay favourable to native plant species while limiting the growth and reproduction of weed species as well as directly treating weed infestations. This strategy provides the native species with opportunities to recolonise the areas that were previously occupied by weeds once the weeds have been killed. The weed control strategy is similar to that used for well-managed native pastures making the weed control strategy practical and feasible within the agricultural context of the Offset area.

The weed control strategy aims to achieve the following outcomes:

- Maximise recruitment opportunities for native plants species by providing decreased competition from weeds for space, light, nutrients and water.
- Minimise recruitment and reduce recruitment conditions that favour weeds by:
  - *Maintaining sufficient (60% to 80%) ground cover. Insufficient ground cover, resulting in excess bare ground, from over-grazing, post-fire or drought provides increased opportunities for weed seeds to germinate and grow.*
  - *Minimising nutrient enrichment.*
  - *Directly killing weeds prior to seed set with herbicide or physical removal. Chemical free methods of weed control such as steam weeding or flame weeding can also be used.*
  - *Limiting the yearly growth of weeds to minimise the total space they occupy in the Offset area and to prevent excessive build-up of organic litter (i.e. dead grass) that can smother the growth of seedlings and other plants.*
  - *Limiting the yearly growth of weeds at the correct time to also prevent seed set.*
  - *Trialling the use of fire to encourage germination of soil stored weed seed and exhaust the soil weed seed bank.*
  - *Reintroduction of locally extinct indigenous flora to fill ecological niches currently occupied by weeds.*

Note that while this OMP lists management targets for particular weed species, the target species are likely to change over time. The abundance of weeds will change in response to seasonal conditions, in response to grazing or in response to controlled burns (e.g. post-burn flush of broad-leaf weeds) and new weeds may emerge as a result of wind or animal-mediated seed dispersal or germination of soil-stored seed. The management actions for weed control must be adapted to meet the changing conditions. Weed cover and weed species will need to be monitored by both the Landholder and in yearly ecological monitoring with management adapted in response to the monitoring results. The document DELWP *Output Delivery Standards for the Delivery of Environmental Activities* (DELWP 2015) provides information about acceptable weed control activities for conservation activities (N.B. this document supersedes the previous references to BushBroker Standards). However, for any new or emerging weeds or weeds requiring new management methods, TfN will be consulted for site-specific advice and approve the control techniques.

Annual weeds

Annual weeds were recorded throughout the Offset area with an estimated average cover of 30%. Of the annual weeds, annual grasses are present throughout the Offset area including Fescue *Vulpia* spp., Quaking Grass *Briza* spp., Soft Brome *Bromus hordeaceus*, Hair Grass *Aira* spp. and Rye-grass *Lolium* spp..

Given that the main structural components of the grassland are intact (native tussock grasses, herb diversity, intact rock layer), annual weeds are not considered a threat to the conservation values of the Offset area. However, uncontrolled growth of annual weeds can reduce the vegetation condition and Habitat Hectares score by decreasing the Lack of Weeds score, Recruitment score and Organic Litter score. Given this is the case, management will be directed at maintaining the annual weed cover at the existing level and minimising growth and reproduction using strategic grazing.

Active management using targeted grazing is expected to have an impact on the abundance of these species. However, seasonal conditions such as a wet winter followed by a late warm spring may produce growth rates in excess of what can be controlled with strategic grazing before the grazing exclusion period begins. The implementation of rotational cell grazing as described in section 3.5.2 will assist with managing annual weed growth in response to seasonal conditions. The Landholder may also choose to use temporary fencing to further reduce the size of grazing cells in this instance. The grazing provisions also allow for strategic grazing to be implemented during the grazing exclusion period under certain circumstances (section 3.5.4).

If grazing alone has not been able to constrain the spread of annual weeds, direct weed control methods should be applied. A range of non-chemical weed control methods have been developed that can be effective against annual weeds including steam weeding and flame weeding. If chemical weed control is proposed for annual weeds, its use should be evaluated against the risk of damage to non-target (native) plant species prior to application. The use of ecological burning to control weeds is discussed in section 3.6.

High threat herbaceous weeds (perennial tussock grasses, perennial broad-leaved weeds)

High threat herbaceous weeds are those that have potential to displace native species of the same type. For example, perennial grassy weeds like Serrated Tussock *Nassella trichotoma* (rare in the local area and not recorded within the Offset area) or Toowoomba Canary-grass have potential to replace native perennial tussocks grasses like Kangaroo Grass *Themeda triandra*. The overall management objective is to ensure that all high threat herbaceous weeds are controlled to ensure that there is no increase in their cover where they currently occur, no further spread of these weeds into new areas of the Offset area, and where possible, to reduce their cover and abundance.

The management targets for high threat weeds are set for weed species grouped according to growth form and status: Perennial tussock grasses, perennial tussock grasses that are declared noxious weeds, perennial mat-forming (rhizomatous) grasses, and perennial broad-leaved weeds (Table 12). The total cover of high threat herbaceous weeds is currently less than 13% within the Offset area, with details provided in Table 12. Each growth form of weed has been allocated specific management targets as detailed in Table 12. Overall, the management actions must result in a reduction of the cover of herbaceous weeds from current levels of about 13% to less than 6%.

The control methods for high threat herbaceous weeds are discussed below with particular attention to Brown-Top Bent, regarding which the Landholder has already consulted TfN, who have confirmed that this species is known to be difficult to control in conservation settings. The principle method for controlling high threat perennial weeds will be strategic grazing in combination with spot-spraying of herbicide. As discussed above, strategic grazing will aim to reduce the vigour and reproduction of high threat herbaceous weeds, however, not all weed species will be palatable to sheep during the grazing period. For unpalatable species or species where grazing is no sufficient to prevent their spread, herbicide will also be used. Weed control will be a regular activity and undertaken generally in accordance with the schedule in Appendix 1. Grazing methods are discussed in more detail in section 3.5.2. The use of ecological burning to control weeds is discussed in section 3.6.

Use of herbicide

Spot-spraying involves applying herbicide using a small nozzle so that only the target plant is treated. Wick wiping or dabbing to apply concentrated herbicide is also an option for broadleaf weeds. All spot spraying / wick-wiping must be completed in a manner that minimises non-target damage by following all manufacturer's directions regarding rainfall and wind speed on the day of application. There will be no spot spraying in close proximity to threatened flora without protective measures in place (i.e. physical shielding). Spot spraying will be undertaken regularly, particularly in spring and early summer, with a focus on killing weed plants prior to seed set.

There are also a number of chemical-free weed control methods that could be trialled including steam weeding and flame weeding. The Landholder does not have experience with these methods so it is not a requirement that they be used. If, in consultation with TfN, a trial of chemical-free weed control is considered worthwhile, this can be done within the requirements for adaptive management within this OMP since a move away from chemical usage would be considered to be of general benefit to the local environment.

A number of seasonal wetlands occur within the Offset area and its surrounds but there are no mapped drainage lines from the Offset area that form part of the local drainage catchment. Any runoff from the Offset area will be minimal overland flow due to the high cover of perennial vegetation. While there maybe localised surface water flows and pooling during high rainfall events resulting in ephemeral wetlands, herbicide is unlikely to be used during such rainfall events as it would be ineffective. Given the long history of herbicide use in the surrounding cropping areas, there is no specific runoff risk is identified for the application of herbicides to the Offset area.

Options for control of Brown-top Bent

Brown-top Bent *Agrostis capillaris* has several biological characteristics that make it more difficult to control. Firstly it is a weed of low fertility soils so that it directly competes with other native grass species that are likewise adapted to low fertility soils. Secondly, its rhizomatous growth form means that it can survive undetected until it flowers as well as making it harder to target with spot spraying of herbicide and is less favoured by sheep. For the Offset area, control of Brown-top Bent will require a combination of herbicide application and strategic grazing.

The manufacturer's instructions for use of glyphosate (RoundUp) state that herbicide application alone is insufficient to kill the species and follow up management is required involving full disturbance with a tyned implement 10-21 days after spraying and then re-seeding. Since this treatment is not possible within a conservation context, it is unlikely that herbicide alone will be effective.

Agriculture Victoria advises that for winter grazing, a change from set-stocking to rotational grazing will help to control Brown-top Bent by giving an advantage to more upright species such as tussock grasses. The control of Brown-top Bent will require the fine-tuning of the duration and stocking rate of the proposed rotational grazing system as well as the duration of each rest period. These adjustments fit within the requirements of the OMP to adapt management to seasonal growth conditions. More information can be found at the following link: http://agriculture.vic.gov.au/agriculture/farm-management/pastures/developing-a-bent-grass-control-program

The species responds readily to summer rainfall and so growth may remain static in drought years but increase rapidly over summer in wet years. Agriculture Victoria advises that in a wet year, grazing may be required late in the year to control growth that can occur after summer rainfall. Grazing will be most effective if done in the early flowering stage but before seed set. http://agriculture.vic.gov.au/agriculture/farm-management/pastures/what-is-bent-grass

A late grazing strategy would involve grazing within the grazing exclusion period of this OMP and so would need to be done in consultation with TfN. In areas where Brown-top Bent cover is highest and if herbicide application has been ineffective, late crash grazing to control growth can be trialled. The trial is to be within the affected grazing cells only and only after confirming that no threatened flora or fauna species would be impacted negatively by the grazing. It is assumed that in years of high Brown-top Bent growth, the growth of native grasses will also be high and so will not suffer any long term effects from the grazing trial. Grazing cells where Brown-top Bent is already well controlled or absent should not be grazed during the trial. The trial should be done in consultation with TfN who can monitor the effects of late grazing on native species as well as Brown-top Bent. If successful, the grazing can be repeated under the same restrictions in subsequent years.

The use of ecological burning to control weeds is discussed in section 3.7.

New and emerging weed problems

A key management action will be to ensure procedures are in place that can detect any new weed species or emerging weed problems in time to take preventative action. The management actions are described in

Appendix 1. The requirements comprise routine inspections by the Landholder (on-going), visits from TfN (on-going) and annual ecological monitoring (first 10 years of OMP). Any new or emerging weed problems are to be recorded with GPS or clearly marked in the field and treated as soon as possible. Records are to be kept of any new or emerging weeds identified, the treatment applied and follow up inspections of the treated weeds. Where possible, new and emerging high threat weeds (noxious weeds or known environmental weeds) will be eradicated from the Offset area. However, if the weed is already established by the time it is detected and cannot be eradicated in must be controlled to less than 1% cover.

The surrounding landscape is the most likely source of new weeds so that it is advisable to have weed monitoring and treatment schedules for the rest of the property (although this cannot be enforced via the OMP or TfN covenant). This is likely to be a cost effective way to reduce weed loads in the Offset area. Public land can also be a source of weeds (e.g. road reserves) and it would be prudent for the Landholder to alert the relevant authority to any weed problems on public land adjoining the property.

3.5.7 Pest animals

The *Catchment and Land Protection Act 1994* requires that Landholders must take all reasonable steps to prevent the spread of - and as far as possible eradicate - established pest animals on their land. In addition to this legal duty, the control of declared pest animals including rabbits and other pest herbivores is a requirement of this OMP. Grazing by pest herbivores is a known threat to native grasslands and must be controlled to avoid impacts on the conservation values the Offset area.

Within the Offset area, grazing by European Rabbits *Oryctolagus cuniculus* and European Hares *Lepus europeaus* was not evident but they are known from the local area. Therefore pest animal control works are required to control the numbers of pest animals. No active rabbit warrens were observed within the Offset area so that pest animal control will need to include the surrounding landscape where this is acting as a source of pest animal grazing (Biosis 2020).

Rabbits and hares will be monitored and controlled throughout the year if detected. Currently, populations in the local area are at low levels, so that rabbits and hares have the potential to be controlled by shooting alone. If rabbit activity is not controlled by shooting alone, use an integrated approach such as is described in *Output Delivery Standards for The Delivery of Environmental Activities* (DELWP 2015). An integrated approach involves fumigation, hand collapsing of burrows and baiting.

Ripping of rabbit warrens within the Offset area is not permitted. If any warrens develop within the Offset area, they are to be treated by low impact measures such as fumigation or implosion. Remove any carcasses to prevent poisoning of native predators.

In the event of an explosion in the rabbit population, rabbit-proof fencing of the Offset area will need to be considered as control options for these pests.

Pest animal control within the Offset area will need to include works to eliminate any active warrens in the local area. As well as direct control of rabbit numbers, there should be control of potential harbour for rabbits including: shelter provided by shrubby weeds, rock piles and in rock walls. The Landowner should control all active rabbit warrens, shrubby environmental weeds (e.g. African Box-thorn, Sweet Briar) on their land within 500 m of the Offset area and remove any unnecessary stockpiles or rocks or other materials.

Other problem pest animals may include mice, cats and foxes that may find shelter in crops, rock formations and rock walls within and adjacent to the Offset area. The Landholder will select from the range of control techniques available and apply the most effective in the local conditions. Control works targeting these pest animals are not expected to have any negative impact on any MNES.

3.6 Use of fire for ecological management

The controlled application of fire is an efficient and cost-effective alternative technique for reducing biomass in grasslands and can be effective at reducing weed cover, especially for species that are difficult to control. Periodic burning that is followed by spot spraying can be an important strategy for difficult to control weed species such as perennial grassy weeds or widespread annuals. 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 native species, it can also promote weed species to germinate, however, stimulating the soil stored weed seed bank and then applying follow-up weed control is seen as positive as this allows this seed bank to be exhausted over time.

However, burning also has risks involved that must be managed carefully to avoid creating further problems. The reduction in biomass, increased open space, increased soil nutrients that can follow an ecological burn means that weeds often germinate in high numbers shortly after a burn. Because weeds generally grow faster than native species, if weeds are not controlled immediately after a burn, then there is a risk that weed cover will increase as a result of the burn. The timing of any burning also needs to consider the habitat requirements of SLL and therefore burning of the entire Offset area as a single unit is prohibited.

3.6.1 Ecological burning trial

The Offset area has not been subject to regular burns in recent decades and as a result, the management requirements of the Offset area with regard to burning can only be inferred. Grazing exclusion plots in nearby native grasslands suggest that planned ecological burns can affect the species composition of the Offset area to favour weeds unless post-burn weed control is rigorously implemented (Biosis unpublished observations).

If ecological burning is to be introduced into the Offset area, it is to be done initially on a trial basis in a small area to ensure that the Landholder can develop a practical and feasible approach to managing post-burn weed control. Since ecological burns are ideally low temperature and patchy, the weed control requirements of a larger burn will be consequently further complicated by the patchiness of the burn. The initial trial burn should not be more than 10% of the area of the offset (i.e. less than 1.5 hectares in size) and should be done with the same conditions as would be required for a larger burn with respect to season and intensity. The burn area should be temporarily fenced to prevent grazing and post-burn germination of weeds should be closely monitored and treated until native species have regenerated (at least 6 months). Photos should be taken regularly to track the progress of the post-burn recovery. The results of the trial should be evaluated by the Landholder in consultation with TfN and the advising ecologist. If the post-burn weed management requirements are deemed feasible by the Landholder and TfN and the ecologist are satisfied with the results, ecological burning can be progressively introduced into other areas of the Offset area.

3.6.2 General ecological burning requirements

The following section provides guidelines for use of burning only for the purposed of ecological management of biomass and weed control only. Fuel hazard reduction burning is excluded from the Offset area. It should be noted that in some wet years burning may not be possible prior to seed set due to a combination conditions and restrictions.

A fire management plan is to be completed in consultation with TfN and/or the advising ecologist as part of the annual works plan. Any approved fire plan will be provided to TfN at least three weeks prior to any burning event identified within that plan.

Any ecological burns will be conducted during benign (low wind and mild temperature) weather conditions. Burning within the Offset area will be undertaken only with due consideration to relevant health and safety issues. Ecological burning should only occur outside the prescribed declared fire danger period for the region and therefore is unlikely to require a permit. However, the Country Fire Authority should be consulted if there

is any doubt about the permit requirements to undertake planned burning. The Landholder is responsible for ensuring the requirements of this OMP are carried out only if compliant with all other government planning requirements and permits. Any planned burns will minimise the potential for fire to spread in an uncontrolled manner.

All parts of the Offset area are suitable for burning, however, the extent of the burn needs to determined based on what is feasible for follow up weed control (as determined by the trial burn). For weed control, selected areas of grassland 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. For biomass control, selected areas of grassland will be those where biomass is approaching the upper limit allowed under this OMP (70 to 80% cover).

No area is to be burnt more frequently than every two years. After each burn, the Landholder will prepare maps identifying the fire history of the Offset area to ensure the time since an area was last burnt can be documented. If wildfire should happen to occur in the Offset area, this will also need to be recorded in the fire history.

At no time should the entire Offset area be burnt in a single season. The application of a mosaic burning regime is the preferred burn pattern and therefore any individual burn should not burn all vegetation within the Offset area. Nevertheless, the burns must be planned to meet the requirement to maintain adequate fauna habitat within the Offset area. Planned burns therefore will be restricted to no more than 50% of the Offset area within any 12 month period. Patchy burns are a desirable outcome and an array of small burnt and unburnt patches covering up to a hectare is an appropriate scale on which to gauge the success of the burn.

The extent, intensity and timing of burns must take into account the presence of threatened species, in particular SLL and GSM. Fire may kill individuals of SLL and GSM when they are active above the soil surface. Timing of burns should only be undertaken when suitable refugia (i.e. soil cracks) are available unless fires are conducted at a small and limited scale. Late spring burns can be implemented if less than 20% of the Offset area is impacted.

Burnt areas will be protected from grazing for at least 6 months to allow species regeneration and recruitment to occur. Temporary fencing should be erected around burn areas if grazing is to be implemented in the surrounding areas.

3.7 Understorey diversity and recruitment

The Offset area already support a relatively high number and diversity of native plant species. The management actions associated with plant diversity therefore aim to protect the existing plant diversity and encourage its growth and recruitment.

The main risks to understorey diversity in the Offset area once it is protect by the TfN covenant will be: over-grazing (either by sheep, other introduced herbivores or kangaroos), uncontrolled weed growth and the accumulation of biomass over a prolonged period (greater than a year). Since all three risks are addressed in the previous management actions no further mitigation measures are required to manage native plant diversity and recruitment.

There is currently no need to do any supplementary planting or revegetation within the Offset area. The Habitat Hectares assessment shows that the Offset area retains between 50 and 90% of the expected number of understorey lifeforms, and is 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, which is often a function of the growth stage of the plants present.

If the Landholder wished to undertake works for the reintroduction of native species now considered locally extinct, a risk assessment of the activity will need to done in consultation with TfN. The risk assessment will need to include the likelihood of:

- Introducing new weeds or plant diseases, which can be brought in on potting mix from nursery-grown seedlings;
- Disturbance to the Offset area by digging holes to plant seedlings; and
- Introduction of weed seeds in seed mixes or machinery.

3.8 Offset area maintenance (Year 11-onwards)

At the end of Year 10, ecological monitoring will determine the condition of the NTGVVP and SLL habitat using Habitat Hectares and the results of SLL surveys. The condition measured at the end of 10 years must be maintained in perpetuity to ensure that NTGVVP and SLL continue to be provided with a conservation benefit. The following ongoing management action will apply in-perpetuity and align with the management commitments listed in Section 3.1.

As the responsible authority for TfN covenant, it will be the responsibility of TfN to ensure the land under covenant continues to be managed in accordance with their requirements.

The Landholder agrees to undertake the following on-going management actions listed in Table 11.

Table 13 Summary of on-going management actions (Year 11 onwards)

Management action	On-going requirement
Access and signage	• Routine inspections to check the condition of fencing and signs. • Maintaining the existing paddock fencing and signage including the arrangement of gates, unless otherwise authorised by TfN as appropriate.
Weeds	• Routine inspections to look for and detect any new and emerging weeds and eliminate to < 1% cover. • Ensuring that overall weed cover does not increase beyond the levels attained at the end of the 10-year management period either.
Pest animals	• Routine inspections to look for and detect pest animals, particularly rabbits, hares, foxes and cats; • Ensuring that size of the pest animal population does not increase beyond the levels attained at the end of the 10-year management period.
Biomass	• Manage biomass so that bare ground stays at its current level of 20 to 40% cover. • Manage organic litter to meet the EVC benchmark cover of 10%.
Grazing exclusion	• High intensity, short duration (known as 'crash' or 'pulse') grazing of sheep only. • Grazing excluded from 15th September to 31st January, under ideal conditions. • Use of strategic crash grazing can be considered during the grazing exclusion period under the specific circumstances described in section 3.6.4. • Ensuring the in-perpetuity exclusions in Section 3.1 continue to be apply.

3.9 Contractor requirements

Due to the sensitive nature of the working environment, contractors working with Offset area are required to be suitably qualified and experienced. All workers should be familiar with the restrictions association with

working within a conservation area prior to starting works. This can be in the form of a site induction or supervision by the Landholder. Note that the contractor requirements apply to all of the establishment, improvement and on-going management actions.

3.9.1 Required qualifications

All management works are to be carried out by the Landholder (their delegate) or their contractor. All unsupervised contractors should be suitably qualified and experienced and familiar with the Offset area. For labourers being supervised by a suitably qualified contractor, the labourers should be carefully supervised until the Landholder or supervisor is satisfied that the contractor is suitably skilled at the required tasks.

All ecological monitoring of NTGVVP should be undertaken by a suitably qualified professional ecologist who has at least 3 years of experience in assessment of native grassland. All SLL surveys should be overseen by a suitably qualified ecologist who has experience in identifying SLL.

DAWE defines suitably qualified person as follows:

- **Suitably qualified person** means a person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

3.9.2 Required independence

The suitably qualified ecologist undertaking the monitoring must have sufficient independence to objectively assess the results of management actions and therefore cannot be employed by the same contractor engaged to implement the management actions. DAWE also has requirements for auditors to be independent. Please refer to DAWE for auditor requirements.

3.9.3 Site inductions

For contractors that are unfamiliar with the Offset area, the Landholder (or delegate) should provide site inductions to ensure that any contractors undertaking management works within the Offset area are aware of the allowed activities and work methods. Site inductions should include the following key information:

- The Offset area is a conservation area that is protected by federal legislation.
- There are fines associated with damage to the grasslands.
- A work order with specific tasks or a list of works permitted in the Offset area.
- A list of works prohibited in the Offset area.
- Weed hygiene protocols to avoid introducing new weeds on boots, vehicles, plant or equipment.
- All vegetation within the Offset area is protected (other than weeds). Protected vegetation includes native grasses and wildflowers, sedges and rushes, mosses and lichen.
- Surface rocks should not be disturbed as these provide habitat for native reptiles.
- Works should have a minimal impact on the grassland and efforts should be made to avoid leaving wheel ruts due to driving in wet conditions or otherwise disturbing the grassland.
- The emergency management and reporting procedures for Incidents. Note to contractors that possible or actual damage to the grasslands counts as an Incident along with weather-related, bushfire, accidents or medical emergencies.

3.9.4 Contracts

For engagement of new contractors, the Request for Tender or Request for Quote should include a requirement to comply with the relevant provisions in the OMP. The Landholder should request details of the contractor's experience with undertaking works in native grasslands. The services contract should include

requirements for compliance with the relevant provisions on the OMP or include requirements to comply with all instructions regarding protection of native plants and animals on site.

4. Monitoring actions

This section presents the nature, timing and frequency of monitoring to determine the success of management actions against key performance indicators. The detailed schedule of monitoring actions is provided in Appendix 1.

Surveillance of the Offset area is an integral component of the regular management actions. Routine inspections and ecological monitoring are separate activities in the OMP but both are important for early identification of changes, allowing an appropriate and timely management response to matters which would otherwise undermine the objectives of the OMP. Routine inspections include observations by the Landholder during normal activities within the Offset area and broader property and which are important for maintaining a record over the entire year that is not possible during annual ecological monitoring events. Ecological monitoring is undertaken by qualified ecologists who will collect data from repeat surveys of permanent monitoring plots to assess the overall improvement in Quality over time.

4.1 Routine inspections undertaken by landholder

The progress of management works will be surveyed and recorded by the Landholder on a regular basis. Most of these records are normally kept in the course of land management activities but the requirement to keep these records has been formalised in this OMP for the Offset area specifically.

The Landholder will provide a progress report to TfN and DAWE on an annual basis. The report will utilize the compiled records of observations and management works as described below.

4.1.1 Records of management works

The Landholder must keep a diary of any management actions/works undertaken within the Offset area. The works will include weed control, pest animal control, fence maintenance and stocking rates and duration of grazing. These records of all management actions must be kept to provide evidence of the implementation of the OMP.

4.1.2 Records of routine inspections

The Landholder is to undertake regular site inspections in accordance with the schedule in Appendix 1 (at a minimum once every 3 months, with additional requirements to inspect grazing results during the grazing period, Appendix 1). During the site inspections the Landholder is to record general observations including on fence condition, weed levels and biomass levels and well as the location and management requirements of any problems observed during the inspections.

As part of these notes, the Landholder must record any observations that could influence or initiate a management response. It is helpful to allocate a timeframe to undertake the identified management response (e.g. “seedlings of a new woody weed seen in the middle of the Offset area today. Will spot spray these with glyphosate by the end of the week”). The Landholder should also record any new or emerging weed problems or if any weed species have been eradicated. These details provide valuable information on the management of the Offset area and contribute to the records that detail the commitment of the Landholder to the OMP.

Some specific requirements are detailed in Table 14 below.

Table 14 Routine inspection requirements each quarter

Management action	Routine inspection requirement
Fence condition	Surveys of the paddock boundary fence must be conducted quarterly, and when visiting the Offset area to do 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 must be repaired immediately.
Weed monitoring	Once a year in spring, the entire Offset area should be surveyed for woody weeds, by walking and / or driving throughout the area such that a visual inspection (including with binoculars) would detect the presence of any woody weeds. Complete coverage of the Offset area will likely require at least three hours of survey. All infestations or individual woody weeds will be mapped with a GPS, and the locations will be supplied to the weed management contractor/Landholder for treatment. Subsequent surveys will then revisit previously mapped infestations to evaluate the success of weed control, as well as inspecting the entire Offset area for new infestations. While conducting the woody weed surveys, notes will be taken regarding the cover of herbaceous weed species, (estimated to the nearest 5%). Species and areas suitable for targeted treatment (such as spot spraying), will be mapped and supplied to the weed management contractor/Landholder for treatment.
Pulse grazing inspections	To inform the annual works plan, the Offset area should be inspected to determine biomass and pulse grazing requirements for the coming season. During the grazing period, the Landholder will inspect the grazing cells to evaluate grazing effectiveness at reducing biomass and weed levels, and to determine grazing duration. Records are to be kept on grazing intensity (stocking rate) and duration during the grazing period each year.
Pest animal monitoring	Signs of pest animals (rabbits, hares and foxes) will be recorded when visiting the Offset area. In particular, the locations of any active rabbit warrens must 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.

4.2 Routine visits and oversight provided by Trust for Nature

More general supervision/monitoring of the grassland will be undertaken by TfN to ensure the grasslands response to management actions produce the desired outcome outlined by this OMP.

On an annual basis, TfN will liaise with the Landholder regarding the development of an annual works plan in accordance with management actions in Appendix 1. TfN will visit the Offset area a minimum of four times over the 10 year management period (of years 1, 3, 7 and 10). This level of monitoring is the minimum that TfN can commit to as advised in their review of a previous draft of the OMP. TfN can commit to at least one site visit to be undertaken in spring with the other visits undertaken throughout the year, although spring is the best time to assess grassland condition. Further site visits can be requested by the Landholder as needed to address specific management problems or to discuss the progress of the Offset area. During Years 11 to 20, TfN will visit the Offset area a minimum of once every five years. Further site visits can be requested by the Landholder as needed during Years 11 to 20.

On an annual basis, the Landholder provides an annual report to TfN, which is in the form of a template based on the schedule of management actions in Appendix 1. TfN reviews the annual report before releasing funding to the Landholder for works completed. This process ensures that the works are undertaken in accordance with the OMP each year of the 10 year management period or funds are withheld until the works are completed to a satisfactory standard. After the 10 year management period has been completed, TfN has a statutory responsibility to ensure compliance with the TFN covenant. Since the OMP is attached to the covenant, TfN also provides oversight of the OMP.

4.3 Ecological monitoring undertaken by qualified ecologists

Suitably qualified ecologists as defined in section 3.9 must be engaged to undertake ecological monitoring on a regular basis according the schedule in Appendix 1. The monitoring will include assessments that require expert skills such as Habitat Hectares assessment that cannot be undertaken by the Landholder.

4.3.1 Control plot

To determine if management actions have been effective, it is necessary to have a baseline and a control against which to compare the treatment areas. Monitoring done without an unmanaged reference can only record change over time but does not provide a way to link the management actions to the changes recorded. To address this problem, the Landholder will allow a small exclusion plot to be installed prior to any management actions being undertaken. An exclusion plot (one) will be installed by a suitably qualified ecologist. This will be 20 metres x 20 metres and fenced with chicken wire to prevent herbivore grazing as has been shown locally to be sufficient to exclude most grazing. No weed control works will be undertaken in this plot. The plot can be removed at the end of the 10 years of management if required.

4.3.2 NTGVVP condition

Ecological monitoring of the condition of NTGVVP will be undertaken annually in spring, ideally at the peak flowering time for native grasses. The first monitoring event should occur in 2020 prior to introduction of conservation management. This will provide a baseline or "before" measure against which the results of future management actions can be compared.

The monitoring will consist of the following components:

- General site inspection and average Habitat hectare assessment. The walkover will take at least 3 hours and make notes on weed abundance, evidence of biomass management, herbaceous weed cover for target weed species and general condition (evidence of pests, new weeds etc.). This assessment will document the general overall condition of the Offset area and the ability of management works to maintain the condition of NTGVVP.
- Permanent monitoring points will be established throughout the Offset area, stratified by weed cover and topography. There will be 5 plots in this offset area (1 control and 4 treatment plots). The plots will be a square 20 m by 20 m in size to allow for the detection of herb diversity during the monitoring. The plots will be clearly marked and their location accurately recorded using GPS.
- The following data will be collected from each plot and the control plot. It is estimated an hour will be required to collect these data from each plot:
  - *List of native and introduced species.*
  - *Total vegetation cover (%)*
  - *Total cover of native perennial vegetation (%)*
  - *Total cover of native herbs (%)*
  - *Total cover of perennial weeds (%)*
  - *Total cover of annual weeds (%)*
  - *Cover of bare ground (%)*
  - *Cover of organic litter (%)*
  - *Average height of vegetation (cm).*
  - *Habitat Hectares score.*
- A photo of each plot will also serve as permanent photo points. Using the NE corner of the plot for the photo point, a photo will be taken facing the four points of the compass (N, S, E & W).

Information will be collated as part of the annual reporting requirements (Section 4.4).

4.3.3 Striped Legless Lizard monitoring

Monitoring during spring for Striped Legless Lizard is necessary to evaluate the size of the SLL population over time. A monitoring event will include survey of each of the 20 tile grids, fortnightly from the beginning of September until the end of December resulting in nine checks.

Surveys of the SLL population within Chathams were undertaken in the spring of 2018 and this detected SLL within the offset site. Three of the 20 tile grids installed are within the Offset area. Baseline population surveys are therefore required in the first survey season after project approval.

SLL surveys will therefore be undertaken in the first available survey season (i.e. spring 2020) after registration of the TfN covenant and every second spring thereafter for the duration of the 10 year management period. While SLL records within the Offset area will be noted separately, the survey for SLL will encompass all 20 grids to allow a broader view of the SLL population.

It is unlikely that management actions to maintain and improve SLL habitat will have an immediate effect on SLL numbers, therefore, surveys every second year are considered sufficient to monitor the health of the SLL population. SLL surveys area therefore required during spring of the following years: 2020, 2022, 2024, 2026, 2028 and 2030.

Monitoring will record the number of individuals observed from each tile within each tile grid during each inspection. Notes on habitat condition including ground cover biomass and inter-tussock spaces will also be recorded.

The results of these surveys will be compared to the original baseline surveys (2020) and those of the previous monitoring event.

Any observations of SLL during monitoring for vegetation condition and during inspections by the Landholder or TfN will also be recorded.

4.3.4 Monitoring report

Once monitoring is complete, a monitoring report with the following information will be provided:

- Assessment of condition improvement of NTGVVP
- Results of SLL surveys (every second year).
- Advice on planned burning and weed/biomass control approach for the coming year.

The monitoring report is to be provided to the Landholder, Panorama and TfN. It will be the responsibility of Panorama to supply the ecological monitoring reports to DAWE.

4.3.5 Independent audits

The approval holder (Panorama) must ensure that independent audits of compliance with any conditions issued with the approval are conducted as requested in writing by the Minister. In addition, as the approval holder, Panorama is responsible for ensuring the implementation and effectiveness of the OMP.

Audits will be conducted by an independent ecologist appointed by Panorama at the following stages:

- At the end of the first year of site management - this is to ensure that initial management actions are conducted to the satisfaction of the approval holder and DAWE, including implementing the legal security mechanism, ensuring the property is securely fenced, and that other initial management actions have commenced.
- 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 SLL habitat within the Offset area.

- At the end of the eighth year of site management – as per the four year audit.
- Following the completion of the 10 year management period – to be a final audit of the implementation and effectiveness of the OMP.

Additional audits may be triggered as a result of a review of the OMP or following an environmental Incident resulting in significant change to site conditions, as identified in the risk assessment.

4.4 Reporting

The approval holder (Panorama) must submit an annual compliance report to DAWE for the period of the approval. The detailed schedule of reporting is provided in Appendix 1.

As part of this reporting, the Landholder will prepare an Annual Report to 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 area. Reports will be submitted prior to the anniversary date of the execution of the OMP to allow time for compliance to be assessed.

The annual report will include:

- Details of management actions undertaken within the reporting period.
- Results of at least four routine inspections, including fence condition, weeds, pest animals, and biomass accumulation.
- Details of compliance or non-compliance with the schedule of management actions (Appendix 1).
- Details of compliance or non-compliance with management targets (Appendix 1).
- Details of any incidents or new and emerging management issues, with required corrective action.
- Any triggers exceeded and which corrective actions were implemented.
- Details of ecological monitoring results including photos from photo points and SLL survey results in relevant years.

The reporting schedule is detailed in Appendix 1.

5. Risk assessment and emergency management

5.1 Risk assessment

Table 15 on the following pages uses the DAWE risk framework to assess the risk of the KPIs not being met. The risk of the KPIs not being met is assessed by comparing two scenarios: a situation with an approved OMP and a situation without an approved OMP. This is done by identifying a hazard based on each KPI. The risk assessment then provides a summary of how the management actions provide control measures for each of the hazards identified. This allows the risk of the offset failing to meet the KPI's to be reduced. The risk assessment also details the residual risk after the control measures in the OMP are put in place. A strategy for addressing the residual risk is provided in the last column.

The likelihood and consequence classification is summarised in Appendix 2.

5.2 Emergency management

There is residual risk posed by emergency events such as wildfire, floods or unexpected pest outbreak. These events present a risk of damage to the Offset area, because emergency activities may involve any of the following:

- Extreme change in conditions requiring rapid adaptation of management actions and/or management targets (e.g. rapid change from unburnt to burnt in the case of wildfire).
- Emergency works such as earthworks to plough or excavate firebreaks.
- New threats previously absent to the Offset area (e.g. new weeds brought in during emergency works).
- Previously controlled threats becoming more prevalent (e.g. rapid increase in existing weed cover).
- Unauthorised access, livestock grazing or trespass (i.e. as a result of fences being destroyed).

While the likelihood of an emergency management scenario occurring over the life of the OMP is rare, the consequences could be Major and resulting in a risk assessment of Medium. The risk assessment of Medium is based on the impacts that emergency management actions can have on the protected matters, especially ploughing of fire breaks.

5.3 Emergency Contacts and procedures

Should any emergency occur, the relevant contacts (listed below) must be notified as soon as possible.

- In the event of a life-threatening emergency, the relevant emergency services should be contacted immediately. Emergency services must be advised of the conservation protections to avoid inadvertent damage (e.g. ploughing fire breaks, use of chemical fire suppressants).
- Panorama is required to notify DAWE of any incident within 10 days so that the Landholder must notify Panorama and DAWE within this timeframe.
- The Landholder's delegate must notify the Landholder within 12 hours and the Landholder must notify TfN within 24 hours.

Emergency contact details

- Bushfire or other life-threatening emergency: Phone 000, ask for fire brigade
- Non-emergency criminal activity (illegal dumping, trespass): Phone Victoria Police 131 444
- Department of Agriculture, Water and the Environment (DAWE): Phone 1800 803 772
- Trust for Nature: Offset advisor phone (03) 8631 5888
- Panorama: Email: yitong@panoramagroup.net.au
- Landholder: James Taylor

5.4 Review of OMP

This OMP includes an adaptive management framework so that a review of the OMP will only be necessary under the following circumstances:

- A major incident that makes a significant change to the character or condition of the Offset area requiring updates to management targets or KPIs (most likely wildfire, Table 15).
- The Landholder / TFN identifies a beneficial permanent management change such as might arise from new research or on-ground observations and requiring updates to permitted activities or management actions.

If a review required by the Landholder or after a major incident, this will be undertaken by the Landholder in consultation with TfN and DAWE.

If a review is required by DAWE as part of the conditions of approval, the review will be undertaken by Panorama.

Table 15 Risk assessment of potential hazards as defined by Key Performance Indicators

Potential hazards as defined by Key Performance Indicators (KPIs)	Likeli-hood	Consequ-ence	Risk Level	Management action # (see Appendix 1)	Hazard Control Methods	Likeli-hood	Consequ-ence	Risk Level	Residual risks	Management strategy for residual risks
	Without OMP					With OMP				
Failure to register TfN agreement on relevant land titles	Highly Likely	Major	Severe	1, 15	• DAWE post-approvals team to regulate execution of approval conditions	Rare	High	Low	The risk assessment of low is based on the Offset area being secured using a TfN covenant. The action cannot proceed until the Offset area has been secured. This provides a strong financial incentive for both the Landholder and approval holder to ensure the security mechanism is placed on title.	If the TfN covenant is not registered on title, the action cannot proceed and no impacts on NTGVVP or SLL will have occurred.
Failure to implement the OMP to the required standard. (NOTE: for the other risks in the table, when assessing the risk, it is assumed that the OMP has been implemented to the required standard.)	Likely	High	High	5, 6, 14, 15	Checks and balances in place to ensure OMP is implemented to the required standard: • TfN review of annual report from landholder each year. • Release of annual funding from TfN only when satisfied works have been undertaken in accordance with the OMP • Ecological monitoring undertaken yearly during 10 year period • TfN to visit offset area a minimum of four times during 10 year period • TfN to visit offset area every 5 years after Year 10 • Independent audits undertaken as directed by DAWE • The TfN covenant binds the current and future Landholder to both the standard restrictions in the TfN covenant and to the requirements described in this OMP	Rare	High	Low	The risk assessment of low is based on the oversight provided by TfN. TfN reviews the annual report before releasing funding to the Landholder for works completed. This process ensures that the works are undertaken in accordance with the OMP each year of the 10 year management period.	In the event that the landholder fails to undertake the management actions in accordance with the OMP, TfN will withhold funds until the works are completed to a satisfactory standard.
Loss of NTGVVP or SLL habitat over 20 year time horizon	Likely	High	High	2, 3, 15	• OMP provides a schedule of ten detailed management commitments to change land management and protect native vegetation in OMP and TfN covenant	Rare	Moderate	Low	The risk assessment of low is based on the resourcing being provided to the offset area. That is, Biosis has observed that for grassland reserves throughout Melbourne and Victoria, loss of NTGVVP is usually attributable to insufficient funding to provide for the intensity of management required to address the labile nature of native grasslands. Where there is insufficient intensity of management, this has led to invasion of perennial grassy weeds such as Chilean Needle-grass, which dominate the tussock structure. Since the offset area has a dedicated manager (the Landholder), regular monitoring, and sufficient funding available to undertake the required works, it is expected that only exceptional climatic conditions or an emergency event would to lead to a loss of NTGVVP or SLL.	Emergency management provisions are provided in the OMP. Incident reporting procedures of the OMP will also apply - TfN and the consulting ecologist will be consulted for advice, DAWE will be informed and the OMP will be reviewed by the landholder.
Preventable weed introductions over 20 year time horizon	Likely	High	High	2, 3, 15	• OMP provides a schedule of ten detailed management commitments to change land management and protect native vegetation in OMP and TfN covenant	Unlikely	Moderate	Low	The risk assessment of low is based on the monitoring and oversight of the offset area such that any introduction of new weeds will be detected early and management actions undertaken to rectify the problem. N.B. This risk addresses preventable weed introductions only (such as weed seeds brought in on vehicles or machinery) so that the source of the introduction can be traced and prevented in future. Non-human mediated introduction of weeds by fauna or wind-blown seed are addressed in "new or emerging threats".	Preventable weed introductions over 20 year time horizon will be addressed using the adaptive management provisions in the OMP and in consultation with TfN. The management actions in Appendix 1 detail the process by which to address new or emerging threats.
Unauthorised access or works within offset area	Possible	Major	High	3, 4, 15	• OMP provides a schedule of management actions to control access and authorise works within offset area	Unlikely	Moderate	Low	The risk assessment of low is based on the Offset area being fully fenced and having no gates directly from the road into the Offset area. Contravention of the	Since unauthorised access would most likely be a result of trespass, this will be referred to police and will be

									covenant by malicious damage to the Offset area is Low risk and site induction will ensure that any workers will be aware of the activities allowed in the offset area.	addressed using the emergency management provisions in the OMP. Where unauthorised access or works within offset area result in an incident, the incident reporting procedures in the OMP will be followed.
Management actions fail to adapt to seasonal conditions or monitoring/routine inspection results.	Likely	High	High	5, 15	• Landholder to prepare annual works plan in consultation with TfN and incorporating monitoring results and information from routine inspections.	Rare	High	Low	The risk assessment of low is based on the adaptive management provisions in the OMP being designed to allow the landholder to ensure there are no adverse impacts from management during unfavourable conditions such as drought. Should management actions fail to keep pace with changing conditions, the most likely cause will be extreme seasonal conditions or weather events.	Routine inspections will be used to track seasonal conditions and/or emerging threats. The annual works plan will address the management actions required for the coming season. TfN will be consulted where management actions do not appear to be effective and their advice sought on how to address any problems. For extreme events, the emergency management provisions will apply instead.
Failure to improve Lack of Weeds score from 6 to at least 9 (out of 15) or Lack of Weeds score declines.	Likely	High	High	7, 8, 11, (12, 13)	• Management actions provide multiple methods of weed control that can be implemented in response to changing conditions. • OMP provides an adaptive management strategy to allow the landholder to respond to changing the weed levels. • Management actions for weed control compatible with other management targets. • Options for weed control in OMP are: - Rotational cell grazing - Herbicide application - Non-chemical weed control methods - Optional ecological burning trial and implementation	Unlikely	High	Medium	This risk assessment of medium is based on the difficulty of controlling weed invasions once a particular weed species is well established. The circumstances when this could occur include unpredictable extreme climatic or weather event or a post wildfire weed outbreak. In such cases, review of the OMP would be warranted to address the failure to improve the Lack of Weeds score.	In the event that the management actions even in accordance with the OMP fail to improve the Lack of Weeds score in any one year, TfN will be consulted for advice. In the event that the management actions even in accordance with the OMP fail to improve the Lack of Weeds score in consecutive years, and no reason for this can be identified, the OMP will be reviewed by the landholder.
Failure to eliminate new weeds, emerging weed problems not controlled to <1% cover, failure to eliminate new pest animals	Possible	High	Medium	6, 10, 15	• Management actions provide process to Identify and control or eliminate new or emerging threats complimented by oversight by TfN	Rare	High	Low	This risk assessment of low is based on early detection of new or emerging threats leading to effective control or elimination of the threat.	The management actions in Appendix 1 detail the process by which to address new or emerging threats. Where new or emerging threats are not treated promptly and allowed to proliferate, this will be considered a failure to implement the OMP to the required standard and addressed by TfN as above.
Failure to maintain Understorey score at 15 (out of 25) or score declines	Possible	Critical	Severe	2, 3, 4, 7, 8, 9, 10, 11 (12, 13), 14, 15	• OMP provides a schedule of ten detailed management commitments to change land management and protect native vegetation all of which are designed to protect native herb diversity. • OMP provides detailed schedule of management actions all of which consider the need to protect native herb diversity. • Oversight provided by TfN and ecological monitoring annually will record and track vegetation condition.	Unlikely	High	Medium	This risk assessment of medium is based on the difficulty of re-establishing herb diversity once it declines. The circumstances when this could occur include unpredictable extreme climatic or weather event or a post wildfire weed outbreak. In such cases, review of the OMP would be warranted to address the failure to improve the Understorey score.	The management actions in Appendix 1 provide a detailed strategy to manage NTGVVP condition. In the event that the management actions even in accordance with the OMP fail to maintain the Understorey score in any one year, TfN and the consulting ecologist will be consulted for advice, DAWE will be informed and the OMP will be reviewed by the landholder.
Failure to maintain Recruitment score at 10 (out of 10)	Likely	Moderate	Medium	• 8, 11 (12, 13)	• OMP provides two options for biomass control, rotational cell grazing with exclusion period and ecological burning trial and implementation. • OMP provides an adaptive management strategy to allow the landholder to respond to changing the biomass levels.	Unlikely	Moderate	Low	The risk assessment of low is based on biomass being relatively easy to manage and rectify and therefore space for recruitment is also relatively easy to manage.	The management actions in Appendix 1 provide a detailed strategy to manage NTGVVP condition. In the event that the management actions even in accordance with the OMP fail to maintain Recruitment score in any one year, TfN will be consulted for advice. In the event that the management actions even in

					• Management actions for biomass control compatible with other management targets.					accordance with the OMP fail to improve the Recruitment score in consecutive years, and no reason for this can be identified, the OMP will be reviewed by the landholder.
Failure to maintain Organic litter score at 5 (out of 5)	Likely	Moderate	Medium	8, 11 (12, 13)	• OMP provides two options for biomass control, rotational cell grazing with exclusion period and ecological burning trial and implementation. • OMP provides an adaptive management strategy to allow the landholder to respond to changing the biomass levels. • Management actions for biomass control compatible with other management targets.	Unlikely	Moderate	Low	The risk assessment of low is based on biomass being relatively easy to manage and rectify and therefore space for organic matter is also relatively easy to manage.	The management actions in Appendix 1 provide a detailed strategy to manage NTGVVP condition. In the event that the management actions even in accordance with the OMP fail to maintain organic litter score in any one year, TfN will be consulted for advice. In the event that the management actions even in accordance with the OMP fail to improve the organic litter score in consecutive years, and no reason for this can be identified, the OMP will be reviewed by the landholder.
Failure to prevent or eliminate active rabbit warrens or fox dens, evidence of pest animal impacts present	Possible	Moderate	Medium	9	• Offset area already has a low density of pest animals. • OMP provides process for monitoring and treating pest animal populations. • Oversight provided by TfN and ecological monitoring annually will record and track evidence of pest animal impacts.	Unlikely	Moderate	Low	The risk assessment of low is based on pest animals and their impacts being relatively easy to detect and monitor and is undertaken as part of farm management in the rest of the property as well.	The management actions in Appendix 1 provide a detailed strategy to manage pest animals. In the event that the management actions even in accordance with the OMP fail to maintain pest animal numbers in any one year, TfN will be consulted for advice. In the event that the management actions even in accordance with the OMP fail to manage pest numbers in consecutive years, and no reason for this can be identified, the OMP will be reviewed by the landholder.
Failure to maintain Tussock cover sufficient to provide fauna habitat after ecological burns	Possible	Major	High	(12, 13)	OMP provides clear guidelines for ecological burning requirements. Burn plans will be developed as part of annual works plan in consultation with TfN. Ecological monitoring will track weed levels post-burn.	Rare	Major	Medium	This risk assessment of medium is based on the large scale on which a burn would have to occur for this target not to be met (i.e. more than 50% of the offset area to be burnt in any one year). The most likely cause of a large-scale burn would be escape of a controlled burn, which would be a rare occurrence.	For an escaped burn, the emergency provisions and incident reporting of the OMP will apply. TfN and the consulting ecologist will be consulted for advice, DAWE will be informed and the OMP will be reviewed by the landholder,
Failure to undertake ecological monitoring in accordance with OMP	Highly Likely	Moderate	High	14	Ecological monitoring will be undertaken by the landowner. TfN to review annual report from landholder each year and release funding only when satisfied works have been undertaken in accordance with the OMP	Unlikely	Minor	Low	The risk assessment of low is based on the approval holder remaining responsible for ensuring the ecological monitoring is undertaken and the oversight provided by TfN. The landowner has agreed to be responsible for engaging an ecologist to undertake monitoring each year during the 10 year management period.	In the event that the ecological monitoring is not undertaken in accordance with OMP, the cause of the failure will be investigated and rectified prior to the next monitoring season (annually for NTGVVP or alternate years for SLL surveys).
Failure to undertake reporting in accordance with OMP	Highly Likely	Moderate	High	16	Ecological monitoring report prepared by the landowner. TfN to review annual report from landholder each year and release funding only when satisfied works have been undertaken in accordance with the OMP	Unlikely	Minor	Low	The risk assessment of low is based on the approval holder remaining responsible for ensuring the ecological reporting is provided and the oversight provided by TfN.	In the event that reporting is not undertaken in accordance with OMP, the cause of the failure will be investigated and rectified prior to the next reporting season (annually for landholder annual report and NTGVVP or alternate years for SLL surveys).
Failure to undertake emergency management in accordance with OMP	Possible	Major	High	17	OMP provides emergency management procedure.	Rare	Major	Medium	The risk assessment of medium is based on the large impacts that emergency management actions can have on native vegetation, especially ploughing of fire breaks. However, the frequency of emergency events is expected to be rare and the risk has been reduced compared to the current conditions of no OMP.	Failure to implement the emergency provisions of the OMP will likely result in an incident and the incident reporting provisions of the OMP will apply. TfN and the consulting ecologist will be consulted for advice, DAWE will be informed and the OMP will be reviewed by the landholder if

										the offset area is affected.
Failure to maintain habitat hectares score achieved at the end of Year 10 from Year 11 to Year 20 (to achieve 20 year time horizon)	N/A	N/A	N/A	18	The TfN covenant binds the current (and future) Landholder to the standard restrictions in the TfN covenant and to the requirements described in this OMP TfN to visit offset area every 5 years after Year 10 Adaptive management procedure ensures management can response to changing conditions over time.	Possible	High	Medium	This risk assessment of medium is based on the difficulty of improving conditions once they start to decline when compared to simply maintaining conditions. Failure to maintain the habitat hectares score would likely be derived from one of two sources: unpredictable extreme event or insufficient inputs to maintain the NTGVVP condition, both of which have been addressed above.	The annual works plan will address the management actions required for the coming season including routine monitoring. As part of development of the annual works plan, TfN will be consulted where management actions do not appear to be effective and their advice sought on how to address any problems. TfN will visit the offset area at least twice over the Year 11 to Year 20 period and require annual reports to be submitted for review to ensure compliance continues. For extreme events, the emergency management provisions will apply.
Failure to review OMP when circumstances change or management actions become ineffective	N/A	N/A	N/A	19	OMP allows both the landholder and the approval holder to review the OMP and make changes as needed. TfN will provide advice on management to landholder in the event management actions become ineffective.	Unlikely	Moderate	Low	The risk assessment is low because failure to review the OMP after a change of circumstances/due to ineffective management actions would be a failure to implement the OMP to the required standard, which is addressed above.	The OMP provides the details of how and when the OMP is to be reviewed and updated.

N/A = Not applicable, the KPI is only possible if the OMP is in place.

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Appendices

Appendix 1 Schedule of management actions

Table A1 Schedule of management actions and management targets

Legend to table:

Start management action	Progress towards target	Achieve target	Maintain result	As needed	Undertaken by external party

Management action	Timing of activity	Roles and responsibility	Management results to be achieved	Yr: 0	1	2	3	4	5	6	7	8	9	10
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	**Register the Offset area on title**													
	Immediately upon OMP commencement. See OMP commencement in Section 1.	Landholder to register TfN covenant on title	TfN covenant registered on title in accordance with Section 3A *Victorian Conservation Trust Act 1972* Covenant to cover 14.0 ha											
		Landholder to provide copies of title to Panorama within 2 weeks of registration being completed												
		Panorama to provide title to DAWE within 4 weeks of registration												
2	**Implement management commitments to change land management and protect native vegetation in OMP and TfN covenant**													
	Immediately upon OMP commencement. See OMP commencement in Section 1.	Landholder to ensure all excluded activities no longer occur within the Offset area	Permanently exclude all activities involving mechanical disturbance (excavation, geological exploration, ploughing of fire breaks, cultivation etc.).											
			All posts to be direct driven											
			Permanently exclude all activities that would knowingly introduce new weeds/weed seeds, e.g. over-sowing or other pasture improvement using hay, silage or feed that could contain viable weed seeds planting of tree belts.											
			Exclude all broad-acre herbicide use except in accordance with OMP. No creating fence lines or firebreaks with spraying.											
			No farm infrastructure except in accordance with OMP (e.g. no yards, barbed wire fencing etc.)											
			Stock watering points to be installed outside the offset area, to the minimum number necessary.											
			Approval is obtained from TfN for any new farm infrastructure not in accordance with OMP											
			All workers are aware of activities that are not permitted in offset area											
			No unauthorised access or unapproved works within offset area											
			Weed hygiene protocol developed for sheep, workers, vehicles, plant and equipment											

Management action	Timing of activity	Roles and responsibility	Management results to be achieved	Yr: 0	1	2	3	4	5	6	7	8	9	10
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
3	**Implement permanent changes to grazing**													
	Immediately upon OMP commencement. See OMP commencement in Section 1.	Landholder to ensure all grazing is in accordance with OMP	Permanently exclude all fertilizer application.											
			Permanently exclude all cattle, goat and horse grazing.											
			All sheep grazing to be in accordance with OMP, see section below											
			Grazing of any other domestic livestock not already listed will only be considered after consultation with TfN											
4	**Prevent uncontrolled livestock grazing and unauthorised access. Install fencing for rotational cell grazing.**													
	Prior to commencement of Year 1 grazing period	Landholder to ensure all fencing and signage is installed and maintained in accordance with OMP	Fencing installed on boundary of or within Offset area must meet the following requirements : • Direct-driven posts only, no concrete footings • New gates are as wide as possible • Plain or electric wire only • Minimum number of strainer posts											
			The existing paddock fencing is already stock-proof and no further upgrades are needed. Refer to DELWP (2015) for stock-proof fencing standards if new stock-proof fences are needed											
			Install watering points outside of offset area. Installation must not use excavation within offset area, have the minimum number of troughs possible, not create new stock camp impacts.											
			(Optional) Install signage on gates to restrict access into paddock. E.g. “Conservation Area – Access not permitted unless strictly authorised by the manager”.											
			Use low impact method to mark boundary off offset area where it is not marked by fencing											
			Undertake regular repairs to prevent uncontrolled sheep grazing or access											
			New infrastructure is checked routinely to ensure it remains low impact											
			Fencing, gates and signage maintained to prevent accidental access by livestock or people											
5	**Prepare and implement annual works plan**													
	Annually, prior to commencement of each grazing period	Landholder to prepare annual works plan in consultation with TfN and incorporating monitoring results and information from routine inspections.	Review results from routine inspections and monitoring, determine management requirements for coming season in timely manner											
		Landholder to ensure overall progress/results are reviewed at least once per year.	Identify areas for improvement, incidents or changing conditions											
		Landholder to ensure works plan adapts to seasonal conditions and/or new or emerging threats	Prepare annual works plan based on review											
			Identify suitably qualified staff or suitably qualified contractors to undertake works. All work to be undertaken by/supervised by suitably qualified individuals											
			Provide site induction to new staff or contractors											
			Seek advice from TfN, CMA, ecologist or other contractor, if necessary											

Management action	Timing of activity	Roles and responsibility	Management results to be achieved	Yr: 0	1	2	3	4	5	6	7	8	9	10
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
6	**Routine inspections and records of works**													
	Minimum of once per quarter (4 times per year)	Landholder to ensure routine inspections record are undertaken at regular intervals	Undertake routine inspections of Offset area at least once every three months											
		Landholder to records are kept of all routine inspections	Identify any maintenance requirements for external paddock fencing, internal fencing, signage and watering points. Note if additional impacts from livestock movements become apparent around gates, fencelines or watering point.											
		Landholder to records are kept of all works undertaken in the offset area	Records are kept of any maintenance requirements and timeline for repair.											
			Records are kept of all routine inspections											
			Use GPS to record any weed infestations to target for treatment, new or unknown weeds/pests or weeds/pests that appear to be increasing											
			Record any pest sightings or evidence of pest activity with a GPS											
7	**Control woody weeds**													
	July–Nov or as detailed in the annual works plan	Landholder to ensure annual works plan includes detection of woody weeds	Search offset area and use GPS to record location of woody weeds (at least once per year). Record any areas to target for herbaceous weed control at the same time.											
		Landholder to ensure woody weeds are controlled using minimal impact methods if detected	Treat woody weeds using appropriate herbicide at correct time of year and to prevent fruiting and seeding. Refer to manufacturer's instructions or seek advice from TfN or weed contractor if needed.											
		Landholder to ensure woody weed mapping is undertaken at least once per year.	Treat woody weeds with methods that have minimal impact on native species											
		Landholder to ensure woody weed control starts in Year 1 and the management target of zero presence is maintained.	Avoid off target damage to native species											
			Target: • Maintain the exclusion of all established adult plants											
			• Monitor for and promptly treat woody weed seedlings to maintain the absence of woody weeds in perpetuity											
8	**Control herbaceous weeds**													
	July–Nov or as detailed in the annual works plan	Landholder to ensure annual works plan details target species, methods and timing of herbaceous weed control	Determine target weed species/groups for each season, determine treatment method (grazing/herbicide/combination/other)											
		Landholder to ensure herbaceous weeds are controlled using minimal impact methods and in accordance with OMP	Determine number of spot spraying/chemical free weed control events required and record in annual works plan											
		Landholder to ensure herbaceous weeds control starts in Year 1 and management target is met by the end of Year 10	For spot spraying, determine appropriate herbicide/rate and record in annual works plan											
			For grazing, determine seasonal requirements and record in annual works plan											
			Treat herbaceous weeds with appropriate method at appropriate season according to annual works plan.											
			Avoid off target damage to native species											
			Overall target (also applies for grazing and ecological burns): • Weed cover reduced to <26%											
			Targets for types of weeds (also applies for grazing and ecological burns): • Woody weeds: 0%											
			• Annual grasses: <20%											
			• Perennial mat-forming grasses: <1%											
			• Broad-leave high threat weeds <5%											
			• Perennial tussock grasses: eliminated											
			• Perennial tussock grasses (declared noxious): 0%											

Management action	Timing of activity	Roles and responsibility	Management results to be achieved	Yr: 0	1	2	3	4	5	6	7	8	9	10
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
9	**Control pest animals (e.g. rabbits, hares, foxes)**													
	Feb–Apr, Sep–Nov or in accordance with annual works plan	Landholder to ensure annual works plan details target species, methods and timing of pest animal control	Determine pest animal control requirements and record in annual works plan. A minimum requirement is quarterly spotlighting searches.											
		Landholder to ensure pest animals are controlled using minimal impact methods and in accordance with OMP	Treat pests with appropriate method at appropriate season, record results in accordance with annual works plan. A											
		Landholder to ensure pest animal control starts in Year 1 and management target is met by the end of Year 10	Treatment methods will be in accordance with OMP and will not cause damage to the grassland. E.g. no ripping of rabbit warrens. Refer to DELWP (2015) for details on low-impact methods											
			Rabbit warrens fumigated within three weeks of detection.											
			Record any incidental sightings											
			Management target: • By end of Year 1, no active rabbit warrens within offset area, minimal surface harbour in the form of woody weeds											
			• By end of year 10 there should be no fresh ground disturbance by pest animals (particularly rabbits) observed in the offset area or active rabbit warrens or fox dens.											
10	**Identify and control or eliminate new or emerging threats**													
	Routine monitoring, treatment as needed	Landholder to ensure routine inspections record any new or emerging threats.	Routine inspections undertaken according to OMP and all new and emerging threats are identified early.											
		Landholder to ensure incidental sightings of any new or emerging threats are recorded.	Identify correct treatment and treat infestation appropriately											
		Landholder to ensure appropriate treatment methods is identified and implemented where new threat is identified	For unknown weeds/pests, consult appropriately qualified person to establish identity											
			If possible, identify source of new infestation, change procedures to prevent further infestations if within control of Landholder											
			For unknown weeds/pests, consult appropriately qualified person to establish identity											
			Adaptive management used to update procedures in response to new or changing conditions											
			If not already established (not reproducing in the Offset area) threat should be eliminated.											
			If already established, threat should be minimised to <1% cover											
			Target to be achieved from Year 1 onwards: • New weeds eliminated, emerging weed problems controlled to <1% cover, new pest animals eliminated											
11	**Use rotational cell grazing for biomass/weed control**													
	Exclude grazing from 30th September to 31st January each year	Landholder to ensure rotational cell sheep grazing is in accordance with OMP at all times: Total vegetation cover of approx. 70% (maintain within range of 60 to 80%)	Annual works plan prepared prior to grazing period each year. Determine feed availability/target weed species and adapt grazing strategy to seasonal conditions, record strategy in annual works plan											
	Rotational cell grazing between 1 February to 30th September each year (grazing adapted to seasonal conditions within these dates)	Landholder to consult with TfN periodically to discuss effectiveness of grazing strategy	Use rotation cell grazing during grazing period to graze target weeds before seed set											
	Maximum grazing duration: 3 weeks	Landholder to ensure stocking rate and grazing duration are recorded	Record to be kept of stocking rate and grazing duration and compared with results of grazing in annual review											
	Minimum rest period: 6 weeks	Landholder to inspect results of grazing on regular basis (at least 6 times during grazing period and twice during exclusion period)	If needed, use strategic pulse grazing during exclusion period to control a specified weed problem in consultation with TfN											

Management action	Timing of activity	Roles and responsibility	Management results to be achieved	Yr: 0	1	2	3	4	5	6	7	8	9	10
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
			Adaptive management used to update procedures in response to new or changing conditions											
			Targets to be maintained from Year 1 onwards:											
			• Inter-tussock space is maintained at 20 to 40%											
			• Organic litter is maintained at 5 to 15%											
			Targets for weed cover to be achieve at end of Year 1 (as above)											
12	**Ecological burning trial****				**									
	Sep-Oct or March - May (or as specified in the burn plan)	Landholder to develop trial burn plan in consultation with TfN and where necessary, CFA or ecological consultant	Determine appropriate location for ecological burning trial in consultation with TfN / ecologist and record in annual works plan											
		Landholder to ensure all ecological burns are in accordance with the OMP	Undertake burning trial of up to 1.5 hectares, followed by 6 to 12 months grazing exclusion and follow up weed control											
		Landholder responsible for determining feasibility of larger burn in consultation with TfN based on results of trial	Data collected to determine that weed cover does not increase in burnt areas compared to unburnt areas											
			Review results of burning trial against management targets for ecological burn below and discuss feasibility with TfN and ecologist											
			Feasibility is determined for follow up weed control and grazing exclusion requirements prior to undertaking further ecological burning											
13	**Ecological burning^^**					^^								
	Sep-Oct or March - May (or as specified in the burn plan)	Landholder to develop burn plan in consultation with TfN and where necessary, CFA or ecological consultant	Determine appropriate location for ecological burning in consultation with TfN and/or ecologist and develop burn plan in accordance with OMP. Record burn plan in annual works plan											
		Landholder to ensure all ecological burns are in accordance with the OMP	Undertake burn in accordance with burn plan, followed by 6 to 12 months grazing exclusion and follow up weed control											
		Landholder to ensure all ecological burns are in accordance with the OMP	Undertake burning outside of declared fire danger period, followed by 6 to 12 months grazing exclusion and follow up weed control											
			Record burn area with GPS, record approximate coverage of burn within total burn area											
			Ecological monitoring to include review of burnt areas even if outside of control plots											
			Targets to be maintained from Year 1 onwards:											
			• No part of offset area burnt more than once every 2 years											
			• No more than 50% of offset area targeted for burning in any single year / At least 50% of offset area remains unburnt at any one time											
			• Burns are undertaken in accordance with OMP											
			• Weed cover does not increase in burnt areas compared to unburnt areas											
			• Inter-tussock space is maintained at 20 to 40%											
			• Organic litter is maintained at 5 to 15%											
			Target for weed cover to be achieve at end of Year 10 (as above)											

Management action	Timing of activity	Roles and responsibility	Management results to be achieved	Yr: 0	1	2	3	4	5	6	7	8	9	10
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
14	**Ecological monitoring**													
	NTGVVP: Oct-early Dec SLL: during spring to early summer	Landholder to facilitate access to offset area for ecologists undertaking monitoring	Ecologist to establish monitoring plots and undertake baseline surveys in Year 0 for NTGVVP											
		Landholder to ensure any permanent markers of monitoring plots are not accidentally removed	Ecologist to undertake annual NTGVVP surveys in mid-late spring, data collected consistently to determine improvement in NTGVVP and SLL habitat, identify problems early, identify opportunities for adaptive management											
		Landowner to engage and fund ecological monitoring in accordance with the schedule in the OMP	Ecologist to review results of planned burns and provide advice on burn planning (as needed). Data collected to determine weed cover does not increase in burnt areas compared to unburnt areas											
			Ecologist to undertake SLL surveys during spring of Years 0,2,4,6,8,10. Data collected consistently to determine improvement in SLL breeding population	**(Spring 2020)**		**(Spring 2022)**		**(Spring 2024)**		**(Spring 2026)**		**(Spring 2028)**		**(Spring 2030)**
15	**Trust for Nature routine inspections**													
	Years 1, 3, 7 and 10 with at least one visit in spring	TfN will visit the Offset area a minimum of four times over the 10 year management period	Provide advice to landholder, ensure covenant is compliant											
16	**Reporting**													
	Ecological monitoring report - 15th January Landholder annual report - anniversary of OMP	Ecologist to prepare report and supply to Landholder and Panorama prior to start of grazing period each year	Ecologist to prepare report on ecological monitoring and planned burn advice as detailed above.											
		Landholder to supply annual report to Panorama and TfN	Landholder to prepare annual report on based on records of works undertaken and routine inspections.											
		Panorama to supply all reports to DAWE in fulfilment of approval conditions	Report must demonstrate progress of offset area has been tracked regularly each year over the 10 year management period											
17	**Emergency management**													
	Immediately as needed	Landholder to report any incidents that could threaten NTGVVP or SLL to TfN with 24 hours	Identify and respond to emergency events according to Chathams emergency management plan											
		Landholder to report any incidents that could threaten NTGVVP or SLL to Panorama and DAWE within 5 days	Report any incidents that could threaten NTGVVP or SLL to TfN with 24 hours (03) 8631 5888											
			Report any incidents that could threaten NTGVVP or SLL to Panorama and DAWE within 5 days post.approvals@environment.gov.au											

Management action	Timing of activity	Roles and responsibility	Management results to be achieved	Yr: 0	1	2	3	4	5	6	7	8	9	10
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
18	**Years 11+: Maintain an annual works plan as above for the ongoing maintenance of the condition**													**Start in Year 11**
	Year 11 onwards	Landholder to maintain condition achieved at the end of Year 10	Develop annual works plan to ensure management actions continue to adapt to current conditions for weeds, pest animals and biomass control.											
		Landholder to consult with TfN periodically to discuss effectiveness of on-going management	• Maintain fencing and signage.											
			• Continued protection of herb diversity and native tussock grass structure.											
			• Woody weeds maintained at 0% cover with no adult plants											
			• Cover of herbaceous weeds does not increase beyond levels achieved at Year 10											
			• Pest animals do not increase beyond levels achieved at Year 10											
			• Biomass is maintained to achieve >20 to 40% bare ground											
			Seek advice from TfN, CMA, ecologist or other contractor, if necessary											
19	**Revise OMP in response to either ineffective management actions, or improvements identified through on-ground evidence/external research and development, or in response to an incident or emergency.**													
	As needed	Landholder to Identify any incidents or ineffective management actions and revise OMP where these can't be addressed within adaptive management provisions	Revise OMP to address changed circumstances (e.g. wildfire), ineffective management actions or new research											
		Panorama to respond to any plan review request from DAWE	Apply to DAWE post-approvals to update OMP											
			Ensure OMP remains affective over time											

Appendix 2 DAWE Risk matrix

A4.1 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

A4.2 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

A4.3 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 Flora species recorded in February 2020

Notes to tables:

EPBC Act: CR - Critically Endangered EN - Endangered VU - Vulnerable PMST – Protected Matters Search Tool	**DEPI 2014a:** e - endangered v - vulnerable r - rare k - poorly known
FFG Act: L - listed as threatened under FFG Act P - protected under the FFG Act (public land only)	**Noxious weed status:** SP - State prohibited species RP - Regionally prohibited species RC - Regionally controlled species R - Restricted species # - Native species outside natural range

A3.1 Flora species recorded from the Offset area

Note that this list is for information purposes only, it is not an exhaustive list of all species that currently occur within the Offset area or may occur in the future. Weed monitoring should include the possibility of new species entering the Offset area that are not listed in the table below.

Table A3.1 Flora species recorded from the study area

Status	Scientific Name	Common Name
Indigenous species		
	Amphibromus recurvatus	Dark Swamp Wallaby-grass
	Anthosachne scabra s.s.	Common Wheat-grass
	Asperula conferta	Common Woodruff
	Austrostipa bigeniculata	Kneed Spear-grass
	Austrostipa semibarbata	Fibrous Spear-grass
	Austrostipa spp.	Spear-grass
P	*Calocephalus citreus*	Lemon Beauty-heads
P	*Calotis anthemoides*	Cut-leaf Burr-daisy
	Convolvulus angustissimus	Blushing Bindweed
P	*Cymbonotus preissianus*	Austral Bear's-ear
	Deyeuxia quadriseta	Reed Bent-grass
	Dichelachne crinita	Long-hair Plume-grass
	Dichondra repens	Kidney-weed
	Eleocharis pusilla	Small Spike-sedge
	Eryngium ovinum	Blue Devil
	Eryngium vesiculosum	Prickfoot
P	*Euchiton sphaericus*	Annual Cudweed
	Hakea ulicina	Furze Hakea
	Juncus amabilis	Hollow Rush
	Juncus bufonius	Toad Rush
	Juncus holoschoenus	Joint-leaf Rush

Status	Scientific Name	Common Name
	Juncus subsecundus	Finger Rush
	Linum marginale	Native Flax
	Lobelia pratioides	Poison Lobelia
	Lomandra nana	Dwarf Mat-rush
	Lythrum hyssopifolia	Small Loosestrife
P	*Microtis unifolia*	Common Onion-orchid
	Oxalis perennans	Grassland Wood-sorrel
	Plantago gaudichaudii	Narrow Plantain
	Poa labillardierei	Common Tussock-grass
	Poa sieberiana	Grey Tussock-grass
	Rumex dumosus	Wiry Dock
	Rytidosperma caespitosum	Common Wallaby-grass
	Rytidosperma duttonianum	Brown-back Wallaby-grass
	Rytidosperma setaceum	Bristly Wallaby-grass
	Rytidosperma spp.	Wallaby-grass
	Schoenus apogon	Common Bog-sedge
P	*Solenogyne dominii*	Smooth Solenogyne
	Themeda triandra	Kangaroo Grass
P	*Triptilodiscus pygmaeus*	Common Sunray
	Veronica gracilis	Slender Speedwell
	Wahlenbergia communis s.s.	Tufted Bluebell
	Wahlenbergia gracilis	Sprawling Bluebell
	Wahlenbergia multicaulis	Branching Bluebell
Introduced species		
	Acetosella vulgaris	Sheep Sorrel
	Agrostis capillaris	Brown-top Bent
	Aira spp.	Hair Grass
	Briza maxima	Large Quaking-grass
	Briza minor	Lesser Quaking-grass
	Bromus hordeaceus subsp. *hordeaceus*	Soft Brome
	Centaurium erythraea	Common Centaury
	Centaurium tenuiflorum	Slender Centaury
RR	*Cirsium vulgare*	Spear Thistle
	Helminthotheca echioides	Ox-tongue
	Hordeum leporinum	Barley-grass
	Hordeum marinum	Sea Barley-grass
	Hypochaeris radicata	Flatweed
	Isolepis hystrix	Awned Club-sedge
	Juncus capitatus	Capitate Rush
	Lactuca serriola	Prickly Lettuce
	Leontodon saxatilis	Hairy Hawkbit
	Lolium rigidum	Wimmera Rye-grass
	Lysimachia arvensis	Pimpernel
	Phalaris aquatica	Toowoomba Canary-grass
	Plantago coronopus	Buck's-horn Plantain
	Romulea rosea	Onion Grass
	Solanum nigrum s.s.	Black Nightshade
	Sonchus oleraceus	Common Sow-thistle
	Tolpis barbata	Yellow Hawkweed
	Trifolium dubium	Suckling Clover
	Trifolium glomeratum	Cluster Clover
	Trifolium subterraneum	Subterranean Clover
	Vulpia bromoides	Squirrel-tail Fescue

Appendix 4 Quality scoring methods

NTGVVP

Quality improvement will be measured using the Habitat Hectares method at each of the permanent monitoring plots and as an average Quality for the whole area. Habitat Hectares is easily converted to a score out of 10 as shown in Table A4.1 below. The NTGVVP Quality scoring method was used to obtain the Quality score of the Offset area in the Offsets Assessment Guide and should be replicated to determine the final Quality score. Where the score is a decimal, it is rounded to the nearest whole number for entry into the Offsets Assessment Guide. Scores with a decimal place value of less than 0.5 are rounded down, scores with a decimal place value of 0.5 or above are rounded up.

Table A4.1 Habitat Hectares score conversion to Quality score out of 10

Parameter	Components measured	Max. Habitat Hectares score	Equivalent Quality score
Site context	Number of species, cover and diversity of lifeforms Percentage of weed cover moderated by percentage of high threat weed cover Percentage of recruitment area scaled by herb diversity Percentage cover of organic litter scaled to litter type (native/non-native)	75/100	7.5/10
Site condition & stocking rate equivalent	Size of patch Neighbourhood measured as percentage of surrounding area Distance to large areas of native vegetation (>50 ha)	25/100	2.5/10
Total score		100/100	10/10

SLL habitat

As the Commonwealth has identified the need for the uniformity amongst habitat condition assessments within EPBC Act calculations, the following conditions for SLL habitat are defined for assessment. These are based on the conservation advice, listing advice, referral guidelines and scientific papers to compare with the significant impact guidelines.

Assessments of species habitat quality are based on the consideration of three parameters:

- Site Context (scored out of 4)
- Site Condition (scored out of 3)
- Species Stocking Rate (scored out of 3)

Where all of the criteria for a score are not met, the score will revert to the next lowest score. The total score will be out of a possible maximum of 10.

Site context

The *Referral guidelines for the vulnerable striped legless lizard* (Australian Government 2011) identified key characteristics which identified populations as 'key populations' that are important for future conservation, maintaining population viability, and supporting gene flow and dispersal.

Under the EPBC Act, an important population is one that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and / or that are:

- Key source populations for either breeding or dispersal
- Populations that are necessary for maintaining genetic diversity, and/or
- Populations that are near the limit of the species range.

However, Conservation Advice Delma impar striped legless lizard issued in 2016 by the Department of the Environment and Energy Threatened Species Scientific Committee, takes the view that all populations of the species are 'important' and covers aspects previously used in defining important populations in discussion of habitat critical to survival of the species (see below). It considers that all populations of the species are 'important' in light of identified limitations in understanding of fine scale population structure; difficulties in assessment for the species due to the fragmented and disturbed nature of its habitat; and in detection of the species due to its cryptic nature. The Conservation Advice therefore says that "it is considered that when one or more individuals are found on a site that they are member/s of an important population". Using this approach, any site where SLL are present represents an important population. Sites where the species does not occur are not relevant to offset calculations and thus scoring will apply only to sites that support a population (according to criteria in subsequent sections), and no scoring is applicable for the simple presence or absence of a population. Note that the presence of a population must be determined on the basis of surveys undertaken in compliance with the minimum survey methods set out in the Referral guidelines for the vulnerable SLL (Australian Government 2011)

Habitat critical to the survival of the striped legless lizard

The following section is based on discussion in Department of the Environment and Energy Threatened Species Scientific Committee (2016).

The protection, management, improvement in understanding and monitoring of habitat critical to the survival of the SLL are priority conservation actions in this Conservation Advice. Until such time that further insights are made into understanding habitat variation and importance across and within regions, habitat critical to the survival of the striped legless lizard is likely to include sites that possess more than one of the following characteristics. A scoring method has been added for criteria about habitat values and contributes a total potential 4 points towards the overall total of 10 points:

- Provides breeding habitat. The presence of two or more adult individuals or juveniles (lizards < 70 mm snout to vent length) is confirmed on site and a habitat assessment confirms that the site contains complex grass structures including areas of tussocks with high biomass, surface rocks or invertebrate burrows necessary as sites for oviposition and which provide protection for eggs from disturbance. This may include sites with exotic grasses.

No scoring is allocated for provision of breeding habitat. This is because there is no applicable method to monitor for or measure breeding. Because the species is understood to be very sedentary with individual movements limited to a few metres, it can be accepted that where the species is present, breeding is likely to be occurring.

- Provides foraging habitat. The site is floristically diverse with little to no disturbance and is connected to other nearby grasslands or grassy woodlands providing for a diversity and abundance of foraging resources which is likely to sustain a healthy lizard population.

No scoring is allocated for provision of foraging habitat. This is because there is no applicable method to monitor for or measure foraging activity. Because the species is understood to be very sedentary with individual movements limited to a few metres, it can be accepted that where the species is present, foraging habitat is present.

- Provides refuge from disturbance events. The site is within the 'likely to occur' modelled distribution of the species (Department of the Environment and Energy Threatened Species Scientific Committee (2016) Appendix A) and contains surface rocks, arthropod burrows or suitable cracks in the soil where lizards can escape trampling by livestock or fire. Alternatively, it is a site without lizards recorded but has high biomass, surface rocks, arthropod burrows or suitable cracks in the soil and is in close proximity to a known population which is subject to disturbance and therefore provides for refuge during disturbance events and sites by which the lizards can recolonise from after the cessation of the disturbance.

0/1 = The sites supports relatively little refuge from disturbance events.

1/1 = The sites supports variety of refuges from disturbance events.

- Provides for long term protection from development. The site is currently covenanted for conservation management or has existing sympathetic management practices in place and or meets the threshold criteria of one of the four Endangered Ecological Communities (hence has a higher potential to be afforded protection under the EPBC Act).

0/1 = The site does not provide long term protection from development.

1/1 = The sites provides long term protection from development.

- Has connectivity value and contributes to the evolutionary potential of the species in the wild across its natural geographical range. The site is or forms part of a large area of habitat that is not in an urban area or zoning and contains and is connected to breeding habitat or to a site subject to conservation management such as a managed reserve. This can include sites where the lizard has not been recorded through surveys but the site must be free from adverse practices in the last 10 years such as ploughing, cropping, cultivation, fertiliser use or heavy grazing.

0/1 = The site has poor connectivity value and contributes little to the evolutionary potential of the species in the wild across its natural geographical range.

1/1 = The site has connectivity value and contributes to the evolutionary potential of the species in the wild across its natural geographical range.

Where uncertainty may exist with regard to habitat critical to the species survival, for example small, fragmented, highly modified or exotic habitats in urban areas between 0.1 and 10 ha, the critical nature of the habitat on a site is likely to depend on one or more of the following characteristics:

- occurs at the edge of the species known and likely modelled distribution (Appendix A),
- represents a newly discovered range extension (see Appendix A),
- has not been subject to adverse practices in the last 10 years such as ploughing, cropping, cultivation, fertiliser use or intense farming, or
- contains a high density of lizards found through surveys on the site.

0/1 = The site is less than 10 ha in size and/or does not meet at least one of the above four criteria.

1/1 = The site greater than 0.1 ha in size and meets at least one of the above four criteria.

Site condition

Sites that have the best potential to support viable SLL populations are located in areas that supported or once supported native grasslands or grass woodlands. These areas must contain suitable tussock structure, appropriate soil type and minimal major disturbance such as ploughing (Coulson 1990; Dorrough & Ash 1999; Hadden 1995; O'Shea 1996). Sites that are rich in native tussock-forming grass species (often >20-50% cover) such as Kangaroo Grass *Themeda triandra*, Spear-grasses *Austrostipa* spp. and Poa tussocks *Poa* spp. provide good habitat for SLL, although the species can also inhabit areas dominated by introduced grass species

where the site has a history of grazing and pasture improvement (Coulson 1995; Dorrough 1995; Smith & Robertson 1999; Commonwealth of Australia, 2011). The species tends to find shelter within grass tussocks, think ground cover, soil cracks, rocks and ground debris such as timber (Smith & Robertson 1999).

Site condition is assessed as a score out of three (of the overall total of 10), following the conditions below:

0/3 = Negligible -. The sites supports relatively little or no tussock-forming grass species (native or non-native) with no shelters (crevices, rocks, logs) as habitat and does not contain native temperate grassland or grassy woodland on the site.

1/3 = Poor - The site supports < 10% tussock-forming grass species (native or non-native) with some shelters (crevices, rocks, logs) and have small patches of native temperate grassland or grassy woodland on the site.

2/3 = Satisfactory - These sites support predominately (>10-25%) tussock-forming grass species (native or non-native) with ample shelters (crevices, rocks, logs) and are located within native temperate grassland or grassy woodland.

3/3 = Good - These sites support predominately (>25%) tussock-forming grass species (native or non-native) and have ample shelters (crevices, rocks, logs) located within native temperate grassland or grassy woodland.

Species Stocking Rate

SLL is a cryptic species and has the potential to go undetected despite presence at a site, even with suitable survey methods outlined by the survey guidelines. Recapture rates can be very low and therefore cannot be a true representation of the size of a population (Smith & Robertson 1999). Density within populations is highly variable and has been reported ranging from 10-40 individuals per hectare (ARAZPA 1996). The scoring of stocking rate set out here contributes a potential 3 points out of the overall total of 10 points.

Furthermore, very little is known about the movement patterns of the SLL. Most movements are recorded during November and December which is likely linked to reproductive activity (Kutt 1992). Studies in Victoria's Keilor Plains have suggested that SLL have relatively small home ranges with recaptures occurring within 10 metres from the initial capture location (O'Shea 1996). Due to high site fidelity and low dispersal rate it is likely that breeding will occur wherever a large enough population is found, but this cannot be confirmed. From this information, we cannot include breeding success as a measure of specie stocking rate.

As a result, the density of the species over a site is likely to be conservative because density determined survey results is not often representative of the true population size existing at a site. Research from O'Shea (1996) suggested that distribution of individuals across a site is not random and is often concentrated in small communities forming within available habitat. Note that the density of a population within a site must be determined on the basis of surveys undertaken in compliance with the minimum survey methods set out in the Referral guidelines for the vulnerable SLL (Australian Government 2011), noting that detection rates can only provide a relative measure of density, but such surveys are more likely to underestimate density that to overestimate it. Density is scored as follows:

0/3 = no animals recorded

1/3 = >1 - 5 individuals detected per hectare.

2/3 = Good – >5 - 10 individuals detected per hectare.

3/3 = Abundant – 10 plus individuals detected per hectare.

Appendix 5 Glossary of terms

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.

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

Gain

Predicted improvement in the contribution to Victoria's biodiversity achieved from an offset, calculated by combining site gain with the strategic biodiversity score or habitat importance score of the site. Gain is measured with biodiversity equivalence scores or units.

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.

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.

Site

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

Site gain

Predicted improvement in the condition, or the condition and extent, of native vegetation at a site (measured in Habitat hectares) generated by the landowner committing to active management and increased security.

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).