Member of the Surbana Jurong Group

Technical Memorandum
Addendum to SLL OMS V2 July 21

Technical Memo No	30042800N-TM-SLL-V1-14122021	**Date of Issue**	14 December 2021
Subject/Title	Striped Legless Lizard Offset Management Strategy (v2, dated July 2021) – Adaptive Biomass Control		
Project Name	Stockyard Hill Wind Farm	**Project Number**	30042800N
Discipline	Ecology		
Revision Details	30042800N-TM-SLL-DRAFT-13102021 (Draft Version) 30042800N-TM-SLL-V1-14122021 (Final Version)		
Author	Andrew Taylor		
Reviewed by	Dan Weller		
Approved by	Andrew Taylor		
Prepared for	Stockyard Hill Wind Farm Pty Ltd	**Attention to**	Elizabeth Zorondo
Attachments	Appendix A: EPBC Act Conditions (EPBC 2016/7746) Appendix B: Offset site Figures		
Document Application	It is understood that this technical memorandum must be read in conjunction with the Striped Legless Lizard Offset Management Strategy (SLL OMS) (v2, dated July 2021) to provide full context for adaptive management measures pertaining to biomass control. Where there are any inconsistencies between this technical memorandum and the OMS (v2, dated July 2021), this technical memorandum (v1) will have primacy over the OMS (v2, dated July 2021). Reference documents: • 30042800N-TM-SLL-V1-14122021 (Final Version) • 8073_EHP_SLL-OMS_SHWF_FINAL_20072021 (v2, dated July 21) (Final Version)		

1. Overview

1.1 Background

SMEC Australia Pty Ltd (SMEC) have prepared this addendum to the SLL OMS v2, dated July 21, as a technical memorandum to provide ecological advice to support an adaptive management approach to biomass control

within a 43 ha Striped Legless Lizard (***Delma impar***) offset site for the Stockyard Hill Wind Farm (the Project), Victoria. The Project was approved under the ***Environmental Protection and Biodiversity Conservation Act 1999*** (EPBC Act) by the Department of Agriculture, Water and the Environment (DAWE) on 19 August 2018, subject to conditions (Approval Decision EPBC 2016/7746) (Appendix 1). The approved Project consists of 149 wind turbines located approximately 35 km west of Ballarat, Victoria.

As part of the project, DAWE approved a 10-year Offset Management Strategy (OMS) for Striped Legless Lizard prepared by Ecology and Heritage Partners Pty Ltd (EHP 2018). The EPBC conditions outlined within the OMS and Project approvals identified how impacts to Striped Legless Lizard were to be managed, including the establishment of a third party offset site located on private property. SMEC have been undertaking annual monitoring at the offset site in accordance with the OMS since October 2018 for Goldwind Australia Pty Ltd (GWA), on behalf of Stockyard Hill Wind Farm Pty Ltd (SHWFPL).

1.2 Management objectives (see Section 1.1 of SLL OMS v2)

Management objectives in accordance with the approved OMS include the following (EHP 2018):

- Protect and secure the offset site for the long term conservation of Striped Legless Lizard;
- Maintain and enhance grassland habitat for the extant Striped Legless Lizard population;
- Control and, if possible, eliminate pest plants and animals; and
- Achieve a high level of ecologically sound on-ground management, monitoring and reporting.

1.2 Adaptive approach (see Section 6.2 of SLL OMS v2)

Consistent with Condition 12 of the EPBC approval, this technical memorandum has been prepared to accompany the revised OMS sent to the Minister for approval. The following sections outline the new impact associated with adaptive biomass control and provides assessment on the likelihood a significant impact to Striped Legless Lizard or associated habitats will occur as result of this revised management approach.

2. Site Details

2.1 Offset site

The offset site is south of Dunnets Road and covers 43 ha private property located approximately 180 km west of Melbourne and 35 km west of Ballarat, Victoria. The property covers Lot 1 and Lot 2 on Title Plan 761464V. The offset site has historically been used for rotational grazing by sheep and cropping activities.

The site comprises rocky rises with embedded rock, native tussock grasses, herbs and introduced pasture grasses. An interesting component of this approved offset site will be the rehabilitation of approximately 50% of the site where areas have been previously cropped as part of historical land-use practices (in which areas are devoid of vegetation and embedded rock). Rehabilitation will be undertaken via direct seeding methods using a suitably qualified and experienced contractor who are familiar with the implementation of this method in Victoria.

2.2 Previous monitoring

2.2.1 Striped Legless Lizard

Monitoring at the offset site has been undertaken annually since 2018 over six separate days (during Years 1 and 3) across the offset site between October and December 2020. Additional monitoring over four separate site visits occurred in Year 2 with similar survey effort anticipated for the 2021/22 monitoring period.

2.2.1.1 Year 1

One Striped Legless Lizard was recorded on 11 October 2018 at Tile Grid 3, the location where the species had been detected during previous monitoring (EHP 2018). No additional Striped Legless Lizard were observed for the remainder of monitoring across Tile Grids 1-5.

2.2.1.2 Year 2

In response to recommendations in Year 1 monitoring, two additional tile grids were deployed in October 2019 to confirm Striped Legless Lizard population dynamics across specific areas of the offset site. Tile Grid 7 was deployed immediately south-west of Tile Grid 3 in areas of scattered native vegetation identified in Year 1 vegetation monitoring (Appendix B, Figure 2). Tile Grid 6 was deployed approximately 65 m west from Tile Grid 4 (the indicative location of an individual relocated during construction works along Dunnets Road in 2018).

One Striped Legless Lizard was recorded on 22 October 2019 at Tile Grid 3. This individual was not able to be captured for detailed inspection and escaped into nearby vegetation. However, morphological characteristics identified this individual as a juvenile Striped Legless Lizard, and its presence within Tile Grid 3 suggest species recruitment is occurring within the offset site (SMEC 2020). No additional Striped Legless Lizard were observed for the remainder of monitoring across Tile Grids 1, 2, 4, 5 and 7.

2.2.1.3 Year 3

Three adult Striped Legless Lizard were recorded during Year 3 monitoring results based on morphological data collected at the offset site. Two adult individuals were detected at Tile Grid 3 and one adult Striped Legless Lizard was detected at Tile Grid 6, a new detection for this location. The presence of a likely juvenile individual during monitoring in Year 2 provides further evidence that the species is likely to be breeding at Tile Grid 3 (SMEC 2020). No additional Striped Legless Lizard were observed for the remainder of monitoring across Tile Grids 1, 2, 4, 5 and 7.

No individual Striped Legless Lizard have been detected at Tile Grid 6 until 8 December 2020 during Year 3 monitoring. Based on the proximity to which the individual was relocated during construction and later detected (<20 m) at Tile Grid 6 (based on morphological similarities), it is possible this may be the relocated individual from Dunnets Road. However, it is important to note that head scale photographs were not taken when the individual was relocated from Dunnets Road and this assumption should be treated with some caution.

2.2.2 Additional fauna

Five additional fauna species comprising Fat-tailed Dunnart (***Sminthopsis crassicaudata***), Eastern Blue-tongue Lizard (***Tiliqua scincoides***), Little Whip Snake (***Parasuta flagellum***), Striped Marsh Frog (***Limnodynastes tasmaniensis***) and House Mouse (***Mus musculus***), have been recorded within the offset site. Several juvenile Eastern Blue-tongue Lizard have been observed at Tile Grids 5 and 7 which indicates active breeding by this species within the offset site. Overall, there is considered to be low reptile diversity within the offset site as no additional species have been detected during monitoring events since 2018.

2.2.3 Native Vegetation

2.2.3.1 Year 1

Vegetation monitoring undertaken during November 2018 and February 2019 identified no remnant patches of vegetation that qualify under the ***Guidelines for the removal, destruction or lopping of native vegetation*** (the Guidelines) (DELWP 2017). However, areas of scattered native species were identified across the offset site and it was recommended that management actions including biomass, recruitment and weed control activities focus in these areas (SMEC 2019, Appendix B, Figure 3).

Vegetation within areas of rocky rises/modified vegetation was dominated by introduced pasture grasses, primarily Toowoomba Canary-grass (***Phalaris aquatica***) and Wild Oat (***Avena fatua***). Introduced species comprised on average 80% cover across the offset site. The remaining comprised 10% native vegetation and 10% bare ground.

2.2.3.2 Year 3

Vegetation monitoring undertaken in January 2021 identified the cover of native species had increased since Year 1 monitoring with small patches of native grassland (Plains Grassland, EVC 132) and wetland (Plains Grassy Wetland, EVC 125) present throughout the site (SMEC 2021, Appendix B, Figure 3).

Patches of Plains Grassland were dominated by Kangaroo Grass, Wallaby Grass (***Rytidosperma*** spp.) and Spear Grass (***Austrostipa spp***.). Herbs were scattered throughout the patches including Drumsticks (***Pycnosorus globosus***), Yellow Rush Lily (***Tricoryne elatior***), Blue Devil (***Eryngium ovinum***), Australian Bindweed (***Convolvulus angustissimus***) and Bluebell (***Wahlenbergia stricta***). Patches of Plains Grassy Wetland were dominated by Common Blown-grass (***Lachnagrostis filiformis***), Wallaby Grasses and Prickfoot (***Eryngium vesiculosum***). Grassy weeds were common in all patches of native vegetation (SMEC 2021).

Vegetation within areas of rocky rises/modified vegetation was still dominated by introduced pasture grasses, primarily Perennial Rye-grass (***Lolium perenne***), Toowoomba Canary-grass and Wild Oat. Introduced species comprised on average 70% cover across the offset site. The remaining comprised 15% native vegetation and 5% bare ground (SMEC 2021).

2.3 Biomass Control (see Section 6.7.3 of SLL OMS v2)

2.3.1 Threats of grazing

High-intensity grazing by livestock is recognised as one of several key threats to Striped Legless Lizard and associated habitats (TSSC 2016, DAWE 2021). This is of particular importance where high-intensity grazing by livestock and native herbivores can degrade grassland habitat, cause mortality through trampling and displacement and increase predation risk to Striped Legless Lizard (Howland et al. 2016). High-intensity grazing can also increase mortality and reduce recruitment of plants leading to simplification of habitat structure and reduction in species diversity (Howland et al. 2014). Low to moderate grazing intensity may increase grass structural complexity and is required to maintain plant species richness in many grassland ecosystems (Howland et al. 2014).

Conversely, impacts to grassland habitats may also result from a reduction in grazing where vegetation may grow tall and dense, limiting access to sunlight needed for a reptile's metabolic function (Howland et al. 2016). Given sites where grass structural complexity is low and supporting exotic grasses have been identified to support preferred habitat for Striped Legless Lizard, grazing at moderate intensities is often recommended for biodiversity conservation, as this level of grazing is considered to increase niche availability for the species (Howland et al. 2014, Howland et al. 2016). Therefore, the management of grazing regimes is important, particularly where adequate grazing is required to promote the formation of more complex vegetation structure (Howland et al. 2014, Howland et al. 2016).

Striped Legless Lizard can therefore persist in floristically degraded habitat, provided that appropriate vegetation structure is available (Howland et al. 2016). Utilisation of non-grass structures may further counter grazing impacts of by providing alternate habitat refugia, such as surface or embedded rock and cracking soils throughout the offset site (SMEC 2019, 2020, 2021, EHP 2018).

While moderate grazing intensity may not cater for the habitat requirements of all ground-dwelling reptiles, the offset site supports low reptile species diversity as demonstrated in previous monitoring events (SMEC 2019, 2020, 2021).

Given the low diversity of reptile species at the offset site and management focus within the OMS for Striped Legless Lizard, a moderate grazing regime is considered adequate to maintain optimal habitat for the species and facilitate the promotion of native grass species in accordance with OMS objectives.

2.3.2 Biomass objectives

Current actions and performance measures identified within the OMS for biomass control are listed below(EHP 2018).

Actions

Biomass control will proceed in accordance with the following:

- Ensure adequate grazing to reduce biomass to acceptable cover levels (i.e. 70%);
- Grazing within offset site containing Plains Grassland areas will cease from approximately late September through to late January; and
- Co-ordinate weed control works with grazing regime.

Performance Measures

The following key performance targets has been provided to measure the success of the biomass control:

- Vegetation cover is maintained at greater than 70% throughout the offset site, and the interstitial space (i.e. bare ground) available for native flora species recruitment is between 20% and 40%;
- Striped Legless Lizard populations are not reduced;
- A diversity native open ground cover flora species is maintained and enhanced;
- No evidence of an increase in soil pugging; and
- The maintenance of open structured Plains Grassland community suitable for the ecological requirements of Striped Legless Lizard.

2.3.3 Previous grazing

2.3.3.1 Year 1

A short period of stock grazing was undertaken in October 2018 due to the completion of fencing being delayed by construction works along Dunnets Road. Additional grazing in October was not possible to further reduce the required biomass levels to 70% given the OMS monitoring had commenced.

2.3.3.2 Year 3

Two short periods of stock grazing were undertaken between 7 and 28 May 2020 and 17 July to 1 August 2020. However, the commencement of monitoring in October 2020 indicated the level of biomass was still above or greater than target levels of 70% in some areas.

Introduced species were notably higher with >90% cover (particularly in locations across the rocky rises). This was reflected with low amounts of bare ground observed (~5%), which are well below targets for the offset site (ideally 20-40% bare ground).

2.3.4 Biomass growth

Recent biomass monitoring has identified very high growth rates for introduced species across the offset site throughout October to December in 2019/20 and 2020/21.

Table 1 presents indicative regional pasture data for Ballarat where it is evident that annual growth rates (kg/ha/day) are highest throughout October to December (EverGraze 2021).

Table 1. Growth rates (kg/ha/day) for various species in South West Upper, Victoria (Ballarat)

	Growth rates (kg/ha/day)											
	J	F	M	A	M	J	J	A	S	O	N	D
Perennial grass, clover pasture, Fert – Stnd year	0	0	15	20	30	20	20	35	50	90	80	70
Bent grass, No fertiliser – Standard year	10	10	5	5	5	5	5	20	40	60	40	30

Plate 1: Vegetation height (30-40cm) October 2020.

Plate 2: Vegetation height (1.5m) December 2020.

Based on recent discussions with the offsite site landowner, growth rates for introduced species are again expected to be high during spring 2021 in response to high soil and moisture temperatures. It is evident that without adaptive management during high growth periods, the ability to reduce grass cover (%) and subsequent seeding of introduced species is limiting the ability to meet management objectives for the OMS.

Plates 1 and 2 below provide an example of the rapid growth rates at one location, Tile Grid 3 between October and December 2020, and provides evidence that growth rates and biomass levels are exceeding targets during this period without additional grazing. It is understood that high growth rates will not occur every year and is dependent on annual climatic conditions at the site. However, without the option to implement adaptive management for biomass control between October to December, introduced pasture grasses have the ability to increase in cover and overall biomass across the offset site during suitable conditions. While Striped Legless Lizard can persist in modified habitat, the ability for native flora species to persist and regenerate is limited by persistent, increased levels of weed species biomass. In these situations, introduced pasture grasses dominate ground cover and limit the amount of bare open ground available in late summer when native species are seeding and require open areas for natural recruitment to be successful.

2.3.5 Stocking rates

The broader property and offset site has been managed as a grazing property for the past 100 years. Historical grazing densities have been consistent with the proposed adaptive management approach in which Striped

Legless Lizard has persisted within the offset site (in predominantly modified vegetation) prior to the construction of the SHWF.

A Dry Sheep Equivalent (DSE) value is used to describe the amount of feed or dry matter (kg DM) required to maintain a wether or nonlactating ewe per day (weighing 45-50 kg). Table 2 indicates the current DSE stocking rates for biomass control in accordance with the OMS between March to August.

Table 2. Current stocking rates within the offset site in accordance with OMS.

Biomass control	Stocking rate	No. of stock	Comment
March to August	10 DSE/Ha	450	Periods of grazing within this time subject to pasture growth rates/seasonal conditions. Generally, the period would be 10-14 days at a time as appropriate.
September to February	No grazing	No grazing	A significant limitation to managing biomass during spring if environmental conditions are favourable for pasture growth.

2.4 Adaptive biomass management

2.4.1 Current limitations

Discussion with the offset site landowners has identified limitations in the OMS with regards to stock grazing periods and the control of biomass (particularly in seasonally wet years, as observed in the 2019/20 and 2020/21 monitoring period). For example, biomass levels and the control of weeds during Year 3 monitoring could have been reduced if stock grazing could have been extended with additional short periods of grazing between October to December.

2.4.2 Adaptive management

2.4.2.1 Stocking rates

The proposed adaptive management approach would allow additional grazing at similar densities between October to December over a seven (7) day period and moderate stocking rate of 15 DSE/Ha (Table 3).

Table 3. Proposed stocking rates within the offset site under adaptive biomass management.

Biomass control	Stocking rate	No. of stock	Comment
October to December	15 DSE/Ha	650	Period of grazing would only occur if season suited (i.e. higher growth rates of pasture). Grazing period would be maximum of seven (7) days with stock removed for a minimum or 14 days.

Under a revised biomass control procedure, adaptive management via grazing would be implemented under the guidance of a suitably qualified ecologist between October to December during years of high pasture growth. Sheep would be permitted for a maximum of seven (7) days and removed for a minimum or 14 days in any given month between October to December to reduce biomass levels. Total vegetation cover will not

exceed 70% (particularly in seasonally wet years) and open bare ground must also be maintained between 20 and 40% to allow adequate recruitment space for native flora species.

All sheep are to be removed annually to rest the site in September, and between January to February to allow the critical flowering/reproductive period for native species. In any circumstance sheep must be removed should total vegetation cover fall to or below 70% and open ground between 20 and 40%.Risks without grazing

The following factors are considered relevant to inactive biomass control at the offset site:

- Increased biomass and cover (%) of introduced pasture grasses limiting open bare ground for native species to recolonise;
- Increased spread of introduced pasture grasses if seed heads are not grazed during spring and subsequently allowed to flower and colonise available bare ground;
- Decreased suitability of Striped Legless Lizard habitat (and other fauna species such as Fat-tailed Dunnart) in response to increased biomass levels and shading at ground level; and
- Reduced ability to implement rehabilitation objectives for the OMS in response to additional management effort required (i.e. increased weed management prior to direct seeding).

2.4.2.2 Impacts to species

An adaptive grazing regime is considered an appropriate method for managing biomass given that Striped Legless Lizard and remnant vegetation has persisted historically prior to rotational grazing under the OMS. It is apparent current grazing patterns are improving the cover of native vegetation in some areas; however, this could be improved by adaptive grazing in seasonally wet years. Given the offset site supports adequate habitat structure to protect Striped Legless Lizards from livestock, additional grazing at similar stocking rates is unlikely to lead to a significant impact to the species. For example, approximately 50% of the offset site where the species is present consists of rocky rise habitat in the form of embedded and surface rock (Tile Grids 3 and 6) which provides the species additional refuge from livestock. The persistence of the species in response to similar historical stocking rates, indicates short-term grazing under moderate stocking rates is unlikely to lead to any additional impacts to the species.

2.4.3 Adaptive improvements

Opportunities to further minimise the potential risk to the species may include temporary fencing around Tile Grids 3 and 6 (and any suitable habitat or native vegetation) i to minimise stock access to extant Striped Legless Lizard populations when vegetation cover is at target levels identified within the OMS.

A reduction of introduced pasture grasses through active weed management and grazing will also assist with increasing grass structural complexity through creating open space for native species to regenerate naturally or through rehabilitation objectives within the OMS.

3. Summary

Based on the previous three years of Striped Legless Lizard monitoring at the offset site, it is apparent an extant population of the species is persisting and possibly increasing under the OMS (including evidence of successful breeding at Tile Grid 3). Currently, there have been limitations identified in the management of biomass during years of high pasture growth and recommendations for adaptive stock grazing is proposed.

The following adaptations are recommended to improve biomass management at the offset site:

1. Continue biomass control in accordance with the OMS between **March to August** at a stocking rate of 10 DSE/Ha (approximately 450 sheep);

2. Removing all stock during **September**;
3. Implementing adaptive biomass control between **October to December** at a stocking rate of 15 DSE/Ha (approximately 650 sheep) (as required);
4. Sheep are to be retained on site for a maximum of seven (7) days and removed for a minimum or 14 days in any given month between October to December to reduce biomass levels;
5. Sheep must be removed prior to seven (7) days should total vegetation cover fall to or below 70% and open bare ground between 20 and 40%;
6. All sheep are to be removed annually from the site between **January to February** to allow the critical flowering/reproductive period for native species; and
7. Installation of temporary fencing may be undertaken around Tile Grids 3 and 6 (and other areas supporting potential habitat or native vegetation) to minimise stock access as required in response to biomass objectives in the OMS.

The historical land use of the offset site indicates management of the site has been consistent with (or more intensive) proposed adaptive management proposed for the OMS. Given the high cover (%) of grass structure available in addition to other forms of suitable refuge for the species, additional significant impacts to the species are not considered likely in response to additional grazing between October to December.

To further mitigate any potential risk during the species active periods, temporary stock exclusion fencing will also be implemented around extant populations and suitable habitat areas to minimise potential risks to the species.

Overall, given the response of the natural environment to changing conditions in any given year, more flexibility is required to allow for responsive biomass management through additional grazing (in accordance with **Section 6.2 – Adaptive Management Approach** in the OMS, EHP 2018). Allowing flexibility around the timing of stock grazing at the discretion of the landowner and regulators (in consultation with an ecologist) is therefore recommended to better maintain performance and completion criteria within the OMS.

4. References

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SMEC 2021. Striped Legless Lizard (***Delma impar***) population monitoring (Year 3), Stockyard Hill Wind Farm, Victoria. Prepared for Goldwind Australia Pty Ltd.

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Appendix A **EPBC Act Conditions**

Approval

Stockyard Hill Wind Farm – Wind Energy Facility and associated infrastructure, south-west Victoria (EPBC 2016/7746)

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted	Stockyard Hill Wind Farm Pty Ltd
proponent's ABN	71 118 119 501
proposed action	To develop and operate the Stockyard Hill Wind Farm and associated infrastructure in south-west Victoria, approximately 150 km west, northwest of Melbourne and approximately 35 km west of Ballarat [see EPBC 2016/7746].

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 31 July 2050.

Decision-maker

name and position	James Barker Assistant Secretary Assessments and Governance Branch
signature	
date of decision	18 August 2017

Conditions attached to the approval

1. The **approval holder** must not **clear** more than:

    a. 42.16 ha of habitat for **striped legless lizard**; and

    b. 1.57 ha of habitat for **golden sun moth**,

    Without the prior written approval of the **Minister**.

2. To compensate for the loss of 42.16 ha of **striped legless lizard** habitat, the **approval holder** must:

    a. secure the **striped legless lizard offset** with a **covenant** before **commencement of construction**; and

    b. implement the **Striped Legless Lizard Offset Management Strategy** for the secured **striped legless lizard offset**.

3. To compensate for the loss of 1.57 ha of **golden sun moth** habitat, the **approval holder** must:

    a. secure the **golden sun moth offset** with a **covenant** prior to **commencement of construction**. The **golden sun moth offset** must contain at least 9 ha of known **golden sun moth** habitat (**Figure 2**); and

    b. implement the **Golden Sun Moth Offset Management Strategy** for the secured **golden sun moth offset**.

Administrative

4. Within 14 days after the **commencement of construction**, the **approval holder** must advise the **Department** in writing of the actual date of **commencement of construction**.

5. The **approval holder** must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the **strategy** required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.

6. Within three months of every 12 month anniversary of the **commencement of construction**, the **approval holder** must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any **strategies** as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Reports must remain published for the life of the approval. The **approval holder** must continue to publish reports until such time as advised in writing by the **Minister**.

7. The **approval holder** may choose to revise a **strategy** approved by the **Minister** under conditions 2 and 3 without submitting it for approval under section 143A of the **EPBC Act**, if the taking of the action in accordance with the revised **strategy** would not be likely to have a **new or increased impact**. If the **approval holder** makes this choice they must:

i. notify the **Department** in writing that the approved **strategy** has been revised and provide the **Department** with an electronic copy of the revised **strategy**;

ii. implement the revised **strategy** from the date that the **strategy** is submitted to the **Department**; and

iii. for the life of this approval, maintain a record of the reasons the approval holder considers that taking the action in accordance with the revised **strategy** would not be likely to have a **new or increased impact**.

8. The **approval holder** may revoke their choice under condition 7 at any time by notice to the **Department**. If the person taking the action revokes the choice to implement a revised **strategy**, without approval under section 143A of the Act, the **strategy** approved by the **Minister** must be implemented.

9. Condition 7 does not apply if the revisions to the approved **strategy** include changes to environmental offsets provided under the **strategy** in relation to a matter protected by a controlling provision for the action, unless otherwise agreed in writing by the **Minister**. This does not otherwise limit the circumstances in which the taking of the action in accordance with a revised **strategy** would, or would not, be likely to have **new or increased impacts**.

10. If the **Minister** gives a notice to the **approval holder** that the **Minister** is satisfied that the taking of the action in accordance with the revised **strategy** would be likely to have a **new or increased impact**, then:

    i. Condition 7 does not apply, or ceases to apply, in relation to the revised **strategy**; and

    ii. The person taking the action must implement the **strategy** approved by the **Minister**.

    To avoid any doubt, this condition does not affect any operation of conditions 7 and 8 in the period before the day the notice is given.

11. At the time of giving the notice the **Minister** may also notify that for a specified period of time that condition 7 does not apply for the **strategies** required under the approval.

12. Conditions 7 and 8 are not intended to limit the operation of section 143A of the EPBC Act which allows the person taking the action to submit a revised **strategy** to the **Minister** for approval.

13. If, at any time after 5 years from the date of this approval, the **approval holder** has not **commenced** the action, then the person taking the action must not **commence** the action without the written agreement of the **Minister**.

14. Unless otherwise agreed to in writing by the **Minister**, the **approval holder** must publish all **strategies** referred to in these conditions of approval on their website.

15. Unless otherwise agreed to in writing by the **Minister**, the **approval holder** must provide a copy of any **strategy** referred to in these conditions of approval to members of the public upon request, within a reasonable time of the request.

Definitions

Approval holder: means the person to whom the approval is granted, or to when the approval is transferred under section 145B of the **EPBC Act**.

Commencement of construction: the date that preparatory construction works are first undertaken, including but not limited to clearing of vegetation (the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation), the erection of any onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for fencing, infrastructure or earthworks associated with construction of the wind farm and associated infrastructure within the areas of identified habitat for the golden sun moth and striped legless lizard as shown on **Figure 3**. For the purposes of this approval, the carrying out of preliminary investigative works, including geotechnical investigations, for the purposes of gathering data or making other assessments necessary to confirm the final location of proposed infrastructure, is not considered to be commencement of construction.

Covenant: a long term conservation agreement on the land title/s, such as a section 69 agreement under the Victorian *Conservation, Forests and Lands Act 1987* or a Trust for Nature (Victoria) covenant.

Clear: the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native or non-native vegetation.

Department: The Australian Government Department or any other agency administering the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) from time to time.

EPBC Act: the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).

Golden sun moth: *Synemon plana* listed under the Environment Protection and Biodiversity Conservation Act 1999.

Golden Sun Moth Offset Management Strategy: the approved document which outlines the management actions for the **offset** area for **golden sun moth** (*Golden Sun Moth Synemon plana Offset Management Strategy for the Stockyard Hill Wind Farm April 2017*).

Golden sun moth offset: means the area shown in yellow on the map at **Figure 2**, or other area approved by the Minister.

Known striped legless lizard habitat: relevant habitat as identified by a **suitably qualified expert** experienced in undertaking **targeted surveys** in accordance with the Department's survey guidelines.

Minister: The Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and includes a delegate of the Minister.

New or increased impact: A new or increased impact on any matter protected by the controlling provisions for the action, when compared to the **strategy** that has been approved by the Minister.

Offset Policy: *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy, October 2012.*

Offset Management Strategy: the **Golden Sun Moth Offset Management Strategy** or **Striped Legless Lizard Offset Management Strategy**.

Striped Legless Lizard Offset Management Strategy: the approved document which outlines the management actions for the **offset** area for **striped legless lizard** (*Striped Legless Lizard Delma impar Offset Management Strategy for the Stockyard Hill Wind Farm April 2017*).

Striped legless lizard offset means either of the following, as further described in the preliminary documentation:

- the on-site offset (the Option 1 and Option 2 offset constituting at least 43 ha of **known striped legless lizard habitat** shown in blue hatching on the map at **Figure 1**) or other area approved by the Minister; or
- the off-site offset (the Option 3 offset at Cressy constituting 30 ha of **known striped legless lizard habitat**. A map of the off-site offset must be submitted to the **Department** if this offset is implemented).

Strategy: see **Offset Management Strategy**.

Striped legless lizard: *Delma impar* listed under the *Environment Protection and Biodiversity Conservation Act 1999.*

Suitably qualified expert: a person with qualifications in environmental science, biology or ecology and demonstrated experience in the management of native vegetation and the preparation of offset strategies under the **EPBC Act**, or a person otherwise agreed to in writing by the **Department**.

Targeted surveys: surveys undertaken in accordance with **Departmental** guidelines.

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Appendix B **Figures**

FIGURE 1. Study Site Location

FIG NO. 1 **FIGURE TITLE** Study Site Location

DATE 07/03/2019

0 0.125 0.25
1:10,000 Km

PAGE SIZE A3

COORDINATE SYSTEM GDA 1994 MGA Zone 55

SMEC
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PROJECT NO. 30041817

PROJECT TITLE Striped Legless Lizard Offset Monitoring Site Stockyard Hill, Victoria

CREATED BY AE13763

SOURCES Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Location: L:\Work\GIS\Projects\30041817 - Stockyard Hill Wind Farm\GIS Files\MXD\Figure 1 - Stockyard Hill Wind Farm.mxd

Last updated by: AE13763 on 7/03/2019 at 13:59

FIGURE 2. Striped Legless Lizard Monitoring Year 3

FIG NO. 2 **FIGURE TITLE** Striped Legless Lizard Monitoring Year 3

DATE 16/01/2020

0 0.03 0.07 0.13
Km
1:5,000

PAGE SIZE A3

COORDINATE SYSTEM GDA 1994 MGA Zone 55

PROJECT NO. 30042115

PROJECT TITLE Striped Legless Lizard Monitoring Site Stockyard Hill, Victoria

CREATED BY AR15136

SOURCES World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SMEC
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Location:

Last updated by: AR15136 on 16/01/2020 at 9:38

FIGURE 3. Vegetation Monitoring (Year 1)

FIG NO. 3 **FIGURE TITLE** Vegetation Monitoring (Year 1)	**DATE** 29/03/2019	0 0.075 0.15 1:6,360 Km	**PAGE SIZE** A3	**COORDINATE SYSTEM** GDA 1994 MGA Zone 55
PROJECT NO. 30041817 **PROJECT TITLE** Striped Legless Lizard Monitoring Site Stockyard Hill, Victoria	**CREATED BY** AM20078	**SOURCES** Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		

SMEC
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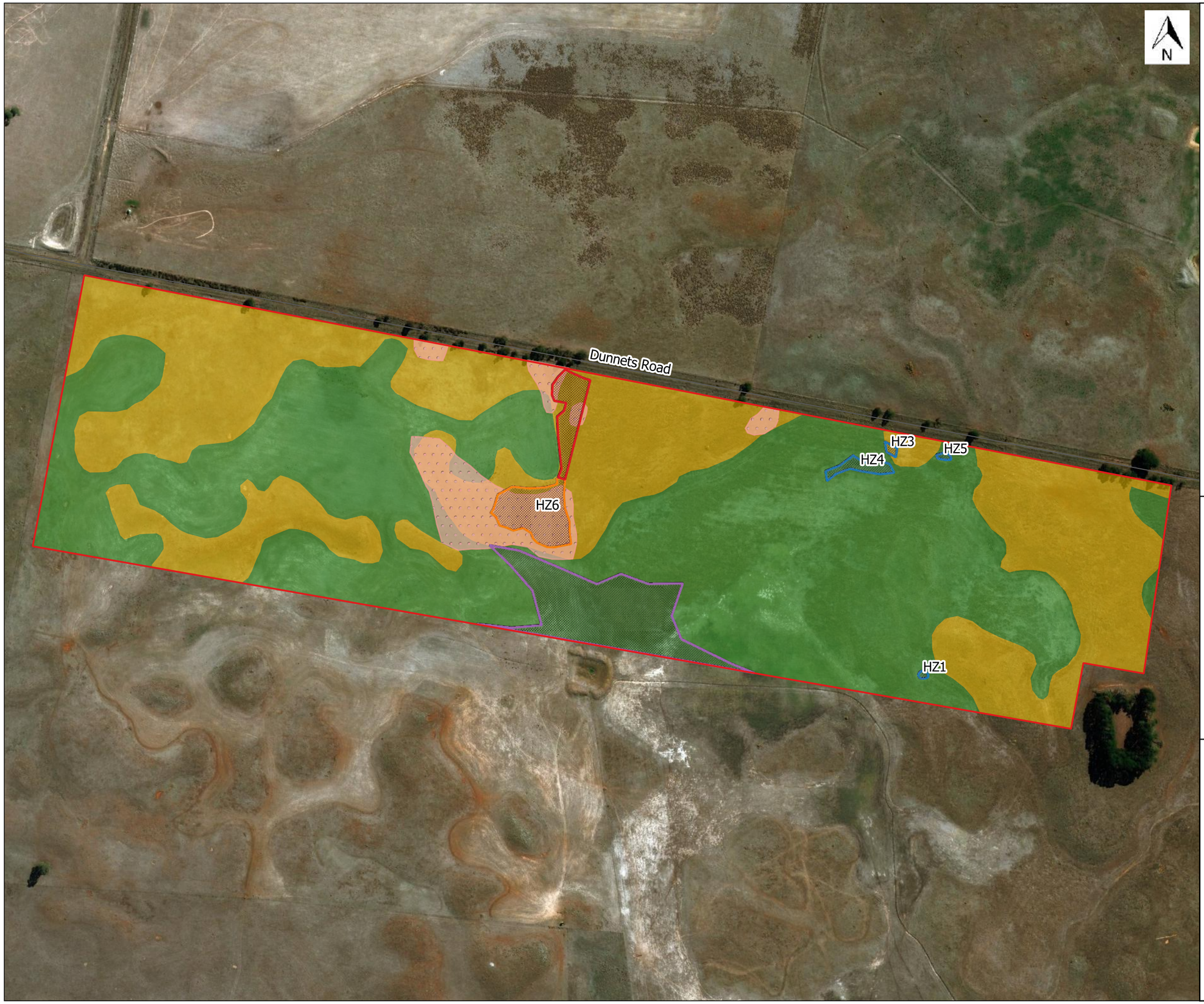
Location: L:\Work\GIS\Projects\30041817 - Stockyard Hill Wind Farm\GIS Files\MXD\Figure 3 - Vegetation Monitoring (Year 1).mxd

Last updated by: AM20078 on 29/03/2019 at 14:39



Legend

- Study Site
- Cropped pasture/revegetation zone
- Rocky rises/modified vegetation

Year 1

- Scattered Natives

Year 3

- Plains Grassland
- Plains Grassy Wetland
- Scattered Natives
- Spear Thistle Management Area

0 0.1 0.2 km

PAGE SIZE A3

FIGURE TITLE	Vegetation Monitoring (Year 3)
PROJECT TITLE	Striped Legless Lizard Monitoring Site, Stockyard Hill
PROJECT NO.	30043025N
DRAWING NO.	4
DATE	17-02-2021
CREATED BY	JH13976
SOURCES	ESRI

SMEC
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SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149

Filepath: X:\Projects\300430\30043025N - Stockyard Hill Wind Farm Striped Legless Lizard Monitoring (Year 3)\060 Technical\GIS\SHWF_SLL_Monitoring_Year3.qgz

FINAL Report

Striped Legless Lizard *Delma impar* Offset Management Strategy for the Stockyard Hill Wind Farm

Prepared for

Stockyard Hill Wind Farm Pty Ltd

July 2021

Ecology and Heritage Partners Pty Ltd

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DOCUMENT CONTROL

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Report reviewer	Aaron Organ (Director / Principal Ecologist)
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- Hagen Ganahl and Ruth Crabb (Department of Environment and Energy) for comments on the draft report.
- Stewart Dekker and Nathan McDonald (Department of Environment, Land, Water and Planning) for comments on the draft report.
- The Victorian Department of Environment, Land, Water and Planning for access to ecological databases.

CONTENTS

EXECUTIVE SUMMARY

Stockyard Hill Wind Farm Pty Ltd (SHWFPL) obtained approval under the Environment Protection Biodiversity and Conservation Act 1999 (EPBC Act) (Approval 2009/4719) to build a Wind Energy Facility (WEF) and associated infrastructure at Stockyard Hill, approximately 150 kilometres west of Melbourne. Under this approval, further surveys were required for Striped Legless Lizard *Delma impar* (SLL), which were undertaken by Ecology and Heritage Partners Pty Ltd on several occasions between 2012 and 2017 (Figure 3).

To minimise impacts as part of the project an amended footprint was designed and additional site assessments of the WEF footprint and the external overhead powerlines corridor were undertaken on 10 December 2015. The assessments were undertaken to identify any additional patches of remnant native vegetation and/or significant species and communities within the amended WEF footprint.

The amended project was referred to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) (formally the Department of the Environment and Energy [DoEE]) for assessment under an updated EPBC Act referral application (EPBC 2016/7746) and on 14 September 2016 the proposed action was deemed a 'controlled action' under the Act. The project has been assessed by preliminary documentation.

As part of the preliminary documentation request by DAWE under 'Section 4 – Offsets', a SLL Offset Management Strategy (SLLOMS) was prepared to outline suitable offset alternatives for the species. Part of this commitment involved additional monitoring for SLL at two potential onsite locations to the north and south of Dunnets Road (Figure 1). Additional surveys have now been completed and the species (comprising two individual SLL) were detected at two new locations, including the Dunnets Road reserve and south of Dunnets Road within the proposed onsite offset site (herein referred to as the 'onsite offset site').

This SLLOMS has been revised to provide detailed management actions for the implementation of the 43 hectare onsite offsite site to support an extant population of SLL over a 10 year management period.

Accordingly, this SLLOMS takes an adaptive management approach to conserving the species onsite through the following management tasks:

- Implementation of native vegetation habitat improvements through direct seeding of planting to native tussock grasses;
- Management of habitat to increase the quality for SLL through pest plant and animal monitoring and control; and
- Continued monitoring of the onsite offset site for SLL and native vegetation;

1 INTRODUCTION

Stockyard Hill Wind Farm Pty Ltd (SHWFPL) has approval to construct a Wind Energy Facility (WEF) and associated infrastructure. An EPBC Act referral was submitted for the development in 2009, and the Action was subsequently approved with conditions in early 2011 (EPBC Act Approval 2009/4719). The Action was assessed by the Victorian Government appointed Advisory Committee as an accredited process under the EPBC Act, and subsequently approved by the Commonwealth Department of the Environment and Energy.

Under this approval, additional Striped Legless Lizard *Delma impar* (SLL) surveys were required, and subsequently undertaken between 2012 and 2017, to determine the species presence / absence of the species, and to determine potential impacts to the species and habitats associated with the proposed development . While the species was recorded along Stockyard Hill Road and Dunnets Roads, no additional individuals were detected throughout the project area (Ecology and Heritage Partners Pty Ltd 2012, 2013a, 2013b, 2013c, 2014a, 2014b). Additional targeted surveys within two proposed onsite offset site were undertaken between September and November 2017, in which two individual Striped Legless Lizard were detected within Dunnets Road and private property to the south (Figure 3). The results of these surveys are detailed in Section 2.1.

To minimise impacts as part of the project an amended footprint was designed. Additional site assessments of the amended WEF footprint and the external overhead powerlines corridor were undertaken on 10 December 2015 to determine the extent of ecological impacts associated with the project The assessments were undertaken to identify any additional patches of remnant native vegetation and/or significant species and communities within the amended WEF footprint. Areas within the permitted WEF footprint that had previously been assessed were also assessed on 10 December 2015, where required.

The amended project was referred to the Commonwealth Department of Agrilculture, Water and the Environment (DAWE) (formally the Department of the Environment and Energy [DoEE]) for assessment under an updated EPBC Act referral application (EPBC 2016/7746) and it was decided by the DAWE on 14 September 2016 that the proposed action is a controlled action to be further assessed by preliminary documentation. Due to the predicted impacts to SLL, the Commonwealth Minister determined that the project would result in a 'significant impact' on matters of National Environmental Significance (NES).

1.1 Objectives

This SLLOMS includes how SHWFPL will follow the 'avoid, minimise and offset' approach when complying with the EPBC Act approval requirements outlined in 'Section 4 – *Offsets'* of the preliminary documentation which requires this OMS to compensate for the residual significant impacts on this species.

This document also provides an evaluation of the suitability of the proposed onsite offset, and a management framework to ensure that the offset site addresses required goals to be suitable as an offset site.

The management objective for SLL within the onsite offset site is to prevent any decline in the vegetation condition. It is essential that management is undertaken to an adequate standard, which manages key threatening processes such as pest plant and animal control, biomass control, population monitoring and reporting will be important management components as part of the strategies objectives.

The objectives of the SLLOMS are to:

- Protect and secure the offset for the long term conservation of SLL;
- Maintain and enhance grassland habitat for the extant SLL population;;
- Control and, if possible, eliminate pest plants and animals; and
- Achieve a high level of ecologically sound on-ground management, monitoring and reporting.

The onsite offset site will primarily be managed for SLL conservation, although periodic managed grazing by sheep will occur to maintain grassland biomass down to an optimal level. All rehabilitation tasks will be undertaken in association with personnel experienced in the management of indigenous/grassland ecosystems, who are able to identify significant flora and fauna species, and who are aware of areas of ecological sensitivity. The offset site will be fenced.

2 BACKGROUND

Ecology and Heritage Partners Pty Ltd was engaged by SHWFPL to undertake targeted surveys for the nationally significant SLL within the approved Stockyard Hill Wind Farm area 2012–2017.

The targeted surveys were required under Conditions 1 of EPBC Act Approval 2009/4719 to ascertain the distribution and abundance of SLL and the extent of potential habitat within the SHWF impact area (Figure 2). Detailed surveys were required to quantify the potential impacts of the development on SLL, guide micro-siting of infrastructure and to provide effective information on mitigation measures. The results of targeted surveys for SLL are provided within the following reports:

- Ecology and Heritage Partners Pty Ltd 2012. Targeted Striped Legless Lizard *Delma impar* Surveys of Stockyard Hill Wind Farm, Stockyard Hill, Victoria. Prepared for Stockyard Hill Wind Farm Pty Ltd.
- Ecology and Heritage Partners Pty Ltd 2013a. Targeted Striped Legless Lizard *Delma impar* surveys of proposed Terminal Station for Stockyard Hill Wind Farm, Lismore, Victoria. Prepared for Stockyard Hill Wind Farm Pty Ltd.
- Ecology and Heritage Partners Pty Ltd 2013b. Targeted Striped Legless Lizard surveys of proposed borrow pits within Stockyard Hill Wind Farm, Stockyard Hill, Victoria. Prepared for Stockyard Hill Wind Farm Pty Ltd.
- Ecology and Heritage Partners Pty Ltd 2013c. Stockyard Hill Wind Farm: Detailed Flora and Fauna Surveys of the Proposed Quarry Site, Stockyard Hill. Prepared for Stockyard Hill Wind Farm Pty Ltd.
- Ecology and Heritage Partners Pty Ltd 2014a. Targeted Striped Legless Lizard *Delma impar* surveys of proposed widened roadsides and intersections for the Wind Energy Facility, Stockyard Hill Wind Farm. Prepared for Stockyard Hill Wind Farm Pty Ltd.
- Ecology and Heritage Partners Pty Ltd 2014b: Targeted Striped Legless Lizard *Delma impar* surveys of the proposed Transmission Alignment, Stockyard Hill Wind Farm. Prepared for Stockyard Hill Wind Farm Pty Ltd.
- Ecology and Heritage Partners Pty Ltd 2017 (in prep): Targeted Striped Legless Lizard *Delma impar* surveys at two proposed onsite offsets sites, Stockyard Hill Wind Farm. Prepared for Stockyard Hill Wind Farm Pty Ltd.

Targeted surveys were undertaken for SLL across the proposed WEF footprint (i.e. in areas of proposed internal access tracks and turbine locations) and as part of the proposed quarry site, terminal station, transmission line and associated road widenings, upgrades and intersections between 2012–2014. While the species was recorded along Stockyard Hill Road and Dunnets Roads, no additional individuals were detected throughout remaining habitats located within the SHWF impact area (Figure 2).

However, the proposed road widening along Stockyard Hill Road and Dunnets Road will result in the direct loss of approximately 2.53 hectares of known grassland SLL habitat. In addition, it is predicted that the up to 39.63 hectares of modified grassland (low to medium quality habitat) for SLL habitat is proposed to be directly impacted as a result of the construction of internal access tracks and at turbine locations.

This action was assessed by the Commonwealth Government under an updated EPBC Act referral application (EPBC 2016/7746) and it was decided by the DAWE on 14 September 2016 that the proposed action is a 'controlled action' to be further assessed by preliminary documentation.

2.1 Previous Records and Surveys

There are 11 previous records of SLL within 10 kilometres of the study area (DELWP 2017; Table 1). Several targeted surveys have been undertaken for SLL as part of the WEF and associated infrastructure (including substations, internal overhead powerlines, cabling and access tracks) (Ecology and Heritage Partners Pty Ltd 2012, 2013a, 2013b, 2013c, 2014a, 2014b).

2.1.1 Records adjoining the study area

The species has been recorded from a number of locations adjoining the study area, primarily within Blacks Creeks Reserve (Table 1). Surveys of the transmission alignment were undertaken concurrently with those in the proposed widened roadsides and the species was detected along the Rokewood-Skipton Road, approximately nine kilometres south of the WEF area (Ecology and Heritage Partners Pty Ltd 2014a).

Details of the location and date of SLL records in the local area are provided in Table 1 below:

Table 1 Database records of SLL in the local area (DEWLP 2017)

Date of most recent record	Distance from WEF boundary	Direction from study area	Name of location
2009	5 kms	NW	Ballyrogan
2009	4.2 kms	W	Yalla-Y-Poora
2004	4 kms	W	Yalla-Y-Poora
2006	4 kms	W	Yalla-Y-Poora
2008	< 500 m	Central	Blacks Creek Reserve
2007	< 500 m	Central	Blacks Creek Reserve
2005	< 500 m	Central	Blacks Creek Reserve
2004	< 500 m	Central	Blacks Creek Reserve
1997	4.9 kms	E	Chepstowe
2005	4.9 kms	E	Chepstowe
2007	5.6 kms	E	Chepstowe

2.1.2 Records within the study area

Striped Legless Lizard has been detected within the study area along the Stockyard Hill Road reserve, adjacent to Black Lake (Ecology and Heritage Partners Pty Ltd 2012; 2013c). The species has also been detected at the intersection of Eurambeen-Streatham Road and Meadows Lane and within the Dunnets Road reserve (Ecology and Heritage Partners Pty Ltd 2014a). All tile grids were located in areas that had the highest potential to support a resident population of SLL (i.e. sites with a higher proportion of native grasses and where embedded and surface rocks are present).

Surveys were undertaken broadly in accordance with *Survey guidelines for Australia's threatened reptiles* (SEWPaC 2011a) and *EPBC Act survey guidelines and the EPBC Act referral guidelines for the vulnerable Striped Legless Lizard Delma impar* (SEWPaC 2011b).

Two additional Striped Legless Lizard have been detected during targeted surveys between September-November 2017 within a new location along Dunnets Road reserve (Tile Grid D4) and private property to the south of Dunnets Road (Tile Grid T3) (Ecology and Heritage Partners Pty Ltd 2017e, in prep; Figure 3).

3 AVOIDANCE

3.1 Wind Energy Facility

Despite targeted surveys being undertaken across the proposed WEF footprint (i.e. areas proposed for internal access tracks and turbine locations) no SLL were detected. However, the species was recorded along Stockyard Hill Road and Dunnets Roads where road widening is proposed. The proposed action will result in directly impacting up to 39.63 hectares of modified grassland (low to medium quality habitat) for SLL habitat as a result of the construction of internal access tracks and at turbine hardstand/foundation locations (Figures 2a–2l).

The grassland habitat across the WEF infrastructure area is highly modified and subject to ongoing land use practices (principally grazing) and is connected to extensive areas (i.e. it forms part of an area greater than 0.5 ha) within the agricultural landscape. These areas (i.e. several hectares) of available habitat (not impacted by the proposed amended WEF) are consistent with the areas proposed to be impacted (e.g. is similar habitat) and support the species' breeding and dispersal requirements in the future. Therefore, the breeding and dispersal capabilities of this population are unlikely to be significantly impacted given the highly localised nature of the proposed WEF infrastructure works.

As a result of the proposed WEF, no specific avoidance measures have been implemented given the quality of habitat(s) proposed to be impacted and the results of targeted surveys.

3.2 Road Upgrades

The proposed road widening along Stockyard Hill Road and Dunnets Road will result in the direct loss of approximately 2.53 hectares of known grassland SLL habitat. Given that several individual SLL were detected during targeted surveys over several months along the Stockyard Hill Road reserve and two SLL specimens have been detected along Dunnets Road, it is apparent that these two sections of the roadside reserves supports an extant population of the species, where ongoing breeding and dispersal occurs. However, given the location of the site, this population is not considered to be near the limit of the species range, nor is it likely to be an important population for maintaining genetic diversity across the species geographical range.

As outlined above, the proposed action will result in a minor reduction in the extent of potential SLL habitat, with the proposed removal of linear strips of highly modified grassland along either side of Stockyard Hill Road and Dunnets Road. The total area of potentially suitable habitat that is proposed to be disturbed along either side of the roadside is approximately 2.53 hectares. It is important to note that the small linear strips proposed to be disturbed either side of Stockyard Hill Road and Dunnets Road constitute a small proportion of grassland habitat present, and areas along the roadside will be avoided during the road works (i.e. retained areas will be clearly demarcated or fenced as no-go areas).

The vegetation along both Stockyard Hill Road and Dunnets Road roadside reserves is connected to extensive areas (i.e. it forms part of an area greater than 0.5 ha) within the agricultural landscape, and these areas (i.e. several hectares) of available habitat are likely to support the species' breeding and dispersal requirements in the future. Therefore, the breeding and dispersal capabilities of this population are unlikely to be significantly impacted given the highly localised nature of the proposed road works.

4 MITIGATION

A series of mitigation actions are proposed, and will be implemented to further minimise the impact of the wind farm on SLL and associated habitats.

4.1 Planning Phase

The following mitigation measures will be implemented during the detailed design phase:

- Where possible, access track widths will be reduced, and there is a commitment in this OMS to investigate this further during detailed design stages prior to construction;
- Reduction in turbine construction footprints may be achieved and this will be investigated;
- Planning for the implementation of capture and relocation measures for any individual SLL detected during the removal of habitat within Dunnets Road. Individuals will be relocated into the adjoining onsite offset site in accordance with an appropriate capture and relocation plan (Appendix B); and
- Preparation and implementation of this SLLOMS will be undertaken for the long-term management of an onsite offset site (the contents of this Plan are discussed in Section 6 below).

4.2 Construction Phase

The following mitigation measures will be implemented during the construction phase:

- Prior to construction, an Environmental Management Plan (EMP) will be developed and endorsed by the Minister for Planning. This will include particular provisions for the protection of SLL and its habitat. This is a condition of the Wind Energy Facility Planning Permit PL-SP/05/0548/A;
- The EMP will also include a Construction and Site Works Management Plan with specific requirements for SLL and associated grassland habitats;
- Implementation of a suitable capture and relocation program for any individual SLL detected during the removal of confirmed or suitable habitat(s) within Dunnets Road.
- Information, highlighting the importance of the SLL and habitats, together with the actions that will be implemented to avoid and minimise impacts, will be included in site inductions and ongoing tool-box meetings; and
- Signs highlighting the importance and significance of the SLL will be erected within all site offices and at selected locations across the sites (i.e. important habitat areas).

4.3 Operational Phase

The following mitigation measures will be implemented during the operational phase:

- Where areas are designed for rehabilitation after construction, this will include replanting of locally indigenous species; and
- Implement all aspects associated within this SLLOMS during the operational phase.

4.4 Capture and Relocation

The Victorian Department of Environment, Land, Water and Planning (DELWP) have recently advised that an interim moratorium applies to SLL salvage efforts within Melbourne's Growth Areas given the uncertainty of translocation being successful for the species (especially into new sites which are not in proximity to the related impact). This is also consistent with literature that suggests only a small proportion of reptile translocations are successful, and the salvage and translocation of SLL is not considered to make a meaningful contribution to the conservation of the species if well planned programs are implemented (TSSP 2016). The term salvage and translocation in the context of this document refers to the capture of individuals and moving them to a new site. For example, capturing SLL at a development site and moving them 50 kilometres to a new grassland where the species has not been detected before

However, specific projects / actions that are likely to impact the species' habitat and where individuals may be detected during habitat disturbance, and where capture and relocation over short distances is contemplated, may be submitted to local DELWP offices, and if required the Victorian Translocation Evaluation Panel (TEP) for further review and consideration. Examples of situations where the TEP may consider capture and relocation of animals, including SLL, include:

1. If search/salvage is required to deposit specimens with Museum Victoria for scientific purposes;
2. It abuts an existing conservation reserve and it may be appropriate to relocate nearby; or,
3. The works are of an interim/temporary disturbance nature and SLLs are relocated outside the impact footprint.

In the current scenario, Points 2 and 3 listed above both apply to the proposed onsite offset site where SLL have been detected within and adjoining an appropriate offset site. It is therefore proposed that any captured individuals will be relocated short distances (<20m) to connecting habitat out of the impact footprint of required road upgrades. In addition, as part of detailed design works for road upgrades along Dunnets Road, the alignment of the road will now be moved as far north as possible to allow a linear strip of *in-situ* habitat (up to 10m in width) will remain along the northern boundary of the offset site for SLL. This will allow animals to move naturally into other areas of suitable vegetation within the Dunnets Road reserve during disturbance works (or further south into the onsite offset site), and will also provide an alternative relocation site for any capture individuals. It is envisaged that SLL will remain within the road reserve once construction works are complete and disperse south into the onsite offset site.

This advice has been provided by Alan Webster (Program Manager - Healthy Landscapes, Port Phillip Region, DELWP) and has also been discussed with the DAWE (Trish Randell) as part of previous projects involving the species. However, given the proposed implementation of an onsite offset site and the related impacts to confirmed habitat along Dunnets Road as part of road upgrades associated with the SHWFPL, an appropriate capture and relocation plan will be implemented in accordance with Appendix B.

While the broader SHWFPL project will remove approximately 39.63 hectares of modified grassland habitat, salvage is not likely to lead to a significant biodiversity outcome for the species and is therefore not proposed. This is based on the following:

1) The low overall quality of habitat(s) that are proposed to be impacted and therefore the low likelihood that any individuals will be detected

2) The species is unlikely to reside within the majority of areas proposed to be impacted given the highly modified nature of habitat(s) and,

3) The resourcing costs and time required to undertake the salvage and translocation is not considered appropriate for the magnitude of this project.

Based on the advice provided by DELWP, the low to moderate habitat quality of areas proposed to be impacted and the results of targeted surveys, salvage and translocation operations for SLL are not considered appropriate for this overall project. Overall, the avoidance of remnant grassland habitats, in the addition to the detailed mitigation measures and specific environmental management plans are considered adequate to manage potential impacts to SLL.

5 OFFSETS

Despite the efforts of SHWFPL to avoid and minimise impacts to the SLL, there will be a residual impact on the species as a result of the overall wind farm development. The residual impact will be offset through the protection of approximately 43 hectares of confirmed SLL habitat south of Dunnets Road where SLL has recently been detected during targeted surveys (Ecology and Heritage Partners Pty Ltd 2017, in prep).

5.1 The Impact Area

5.1.1 Extent

The proposed road widening along Stockyard Hill Road and Dunnets Road will result in the direct loss of approximately 2.53 hectares of confirmed and potentially suitable grassland habitat for SLL. In addition, it is predicted that the up to 39.63 hectares of modified grassland (low to medium quality habitat) for SLL habitat is proposed to be directly impacted as a result of the construction of internal access and at turbine locations. A concept plan has been prepared and this shows the areas of the proposed infrastructure layout that intersect with known SLL habitat (Figure 2a–2l).

5.1.2 Habitat

The grassland habitat across the WEF infrastructure area is highly modified and subject to ongoing land use practices (principally grazing) and is connected to extensive areas (i.e. it forms part of an area greater than 0.5 hectares) within the agricultural landscape. These areas (i.e. several hectares) of available habitat (not impacted by the proposed amended WEF) are consistent with the areas proposed to be impacted (e.g. is similar habitat) and support the species' breeding and dispersal requirements in the future. Therefore, the breeding and dispersal capabilities of any extant population on the WEF are unlikely to be significantly impacted given the highly localised nature of the proposed WEF infrastructure works.

5.1.3 Significance of impacts

The proposed road widening along Stockyard Hill Road and Dunnets Road will result in the direct loss of approximately 2.53 hectares of known grassland SLL habitat. In addition, it is predicted that the up to 39.63 hectares of modified grassland (low to medium quality habitat) for SLL habitat is proposed to be directly impacted as a result of the construction of internal access and at turbine locations.

The grassland habitat across the WEF infrastructure area is highly modified and subject to ongoing land use practices (principally grazing) and is connected to extensive areas (i.e. it forms part of an area greater than 0.5 hectares) within the agricultural landscape. These areas (i.e. several hectares) of available habitat (not impacted by the proposed amended WEF) are consistent with the areas proposed to be impacted (e.g. is similar habitat) and support the species' breeding and dispersal requirements in the future. Therefore, the breeding and dispersal capabilities of any extant population on the WEF are unlikely to be significantly impacted given the highly localised nature of the proposed WEF infrastructure works.

The vegetation along both Stockyard Hill Road and Dunnets Road roadside reserves is connected to extensive areas (i.e. it forms part of an area greater than 0.5 ha) within the agricultural landscape, and these areas (i.e. several hectares) of available habitat are likely to support the species' breeding and dispersal requirements in the future as part of an onsite OMS (see below). Therefore, the breeding and dispersal capabilities of this population are unlikely to be significantly impacted given the highly localised nature of the proposed road works.

5.1.4 Relevance of impacts

All potential impacts to SLL have been identified and are known. Although SLL was detected in high quality vegetation patches along Stockyard Hill Road and Dunnets Road, extensive areas in the south west portion of the study area (where several turbines and access tracks are proposed) have been mapped as suitable habitat for the species despite the species not being detected during targeted surveys. As such, a conservative assessment of the extent of impacts has been determined, and therefore there is not likely to be any unknown or unpredictable impacts to the species or suitable habitats associated with the proposed development.

With the exception of the permanent removal of suitable grassland habitat along Dunnets Road and areas of habitat across the WEF, the proposed action is not likely to lead to any irreversible impacts to SLL.

The following section summarises the acceptability of relevant impacts in the context of the proposed development:

<u>WEF</u>

- Survey results indicate that the majority of habitats to be removed are unlikely to support SLL as they support no habitat (cropped areas), or are highly modified (i.e. dominated by introduced grasses with some areas of embedded rock) as a result of ongoing land use practices such as pastoral grazing, and in some areas cropping.

- The linear nature of proposed internal access tracks is not likely to compromise the species ability to disperse throughout other grasslands across connected paddocks. The location and alignment of infrastructure has been revised through detailed design to minimise potential impacts to SLL habitat in response to information collected during the detailed assessments as part of the project.

<u>Roadsides</u>

- The total extent of potentially suitable habitat that is proposed to be disturbed along either side of the roadsides is approximately 2.53 hectares, and it is considered that small linear strips proposed to be disturbed either side of Stockyard Hill Road and Dunnets Road constitute a small proportion of available grassland. In addition, higher quality habitat along roadsides will be avoided, while retained areas will be clearly demarcated or fenced as no-go areas.

- Additionally, vegetation along both Stockyard Hill Road and Dunnets Road roadside reserves is connected to extensive areas (i.e. it forms part of an area greater than 0.5 hectare) within the agricultural landscape, and these areas (i.e. several hectares) of available habitat are likely to support the species' breeding and dispersal requirements in the future. Therefore, the breeding and

dispersal capabilities of this population are unlikely to be significantly impacted given the highly localised nature of the proposed road works.

- A suitable area of approximately 43 hectares south of Dunnets Road will be used as an onsite offset site where grassland habitat will be rehabilitated and managed (e.g. weed control) with the primary objective to increase the habitat for an extant resident population of SLL.

5.2 The Offset Area

One offset site south of Dunnets Road is proposed to be secured and managed as part of the project to meet the objectives of 'Section 4 – *Offsets'* of the preliminary documentation which requires this OMS to compensate for the residual impacts on this species associated with the project.

Two Striped Legless Lizard have recently been detected during targeted surveys between September-November 2017 within a new location along Dunnets Road reserve and private property to the south the road reserve (Ecology and Heritage Partners Pty Ltd 2017e, in prep; Figure 3). As such, SHWFPL intend to manage a proposed onsite offset located directly south of Dunnets Road (Figure 3).

While recent site inspections have been undertaken between June 2016 and November 2017, the timing of these surveys have been sub-optimal to determine the quality and extent of native vegetation within the onsite offset site. However, detailed vegetation assessments will be incorporated as part of this offset strategy program (Section 6).

Accordingly, habitat assessments undertaken for SLL during the preliminary site inspection (winter 2016) will be used as the baseline data. These assessments noted suitable characteristics for the species, including native vegetation (% cover) and dominant species, the presence of rock (% cover), grazing intensity, dominant weed species (% cover) and site photographs. A summary of the vegetation assessment is summarised below (refer to Figure 3).

5.3 Proposed Onsite Offset Site

The onsite offset site (Lot 1 and Lot 2 on Title Plan 761464V) will be located south of Dunnets Road and comprises a total area of approximately 43 ha (Figure 3).

Vegetation Assessment (2016)

This proposed offset site is currently being used for pastoral grazing by sheep and cropping. As outlined above, there are numerous linear patches of remnant vegetation located along Dunnets Road that extend into this offset site along rocky outcrops which have not been significantly modified as part of cropping activities (Figure 3). One section of the offset site connects directly to a tile grid where SLL was detected during previous targeted surveys within the Dunnets Road reserve (Ecology and Heritage Partners Pty Ltd 2014a; Figure 3). An example of high quality SLL habitat which is considered to extend into the onsite offset site is shown in Plates 6 and 8 below.

Remnant patches of vegetation were identified within the offset site, in the form of Plains Grassland, comprising native species including native species including wallaby grass and spear grass ranging between a ground cover of 5-25% (Table 2).

Cropped areas considered to provide 'unlikely' habitat for SLL consisted of introduced pasture grasses although are suitable for revegetation due to their highly modified nature and ability to direct seed after ripping (Plates 3 and 4). Overall, embedded rock across the site ranges between 1-20% cover.

A summary of the vegetation assessment are provided in Table 2 and Plates 1–8 below.

Table 2. Summary of SLL Habitat Quality within the Onsite Offset Site.

Vegetation Survey Point ID	Plate References	Native Species (% cover)	Rock Cover (%)	Grazing Pressure (H/M/L)	Weed Species (% cover)
1	Plate 1	Native grass cover (Spear grasses *Stipa* spp. and wallaby grass *Rytidosperma* spp.) (25%)	15-20%	Medium (grass height 10-25cm)	Cape Weed *Arctotheca calendula* and pasture grasses (60%)
2	Plate 2	Native grass cover (spear grasses and wallaby grass) (20%)	15-20%	Medium (grass height 10-25cm)	Cape Weed *Arctotheca calendula* and pasture grasses (60%)
3	Plate 3	Native grass cover (spear grasses and wallaby grass) (15-20%)	5-10%	Medium (grass height 10-25cm)	Cape Weed *Arctotheca calendula* and pasture grasses (70%)
4	Plate 4	Native grass cover (spear grasses and wallaby grass) (10%)	<1% (previous cropping)	Medium (grass height 10-25cm)	Onion Grass *Romulea rose* and pasture grasses (60%)
5	Plate 8	Native grass cover (spear grasses and wallaby grass) (20-25%)	10%	Medium (grass height 10-25cm)	Cape Weed *Arctotheca calendula* and pasture grasses (60%)
6	Plate 5	Native grass cover (Tussock grass *Poa* spp. Kangaroo Grass *Themeda triandra* and spear grasse (25%)	5%	Low (grass height >25cm)	Toowoomba Canary Grass *Phalaris aquatic*, Spear Thistle *Cirsium vulgare*, Onion Grass *Arctotheca calendula* and pasture grasses (70%)
7	Plate 7	Tussock grass *Poa* sp., Kangaroo Grass *Themeda triandra* and spear grasses *Stipa* spp. (25%)	15%	High (grass height 5-10cm)	Dominant species include Onion Grass *Romulea rosea*, Toowoomba Canary Grass *Phalaris aquatica*, Spear Thistle *Cirsium vulgare* and pasture grasses (60%)
8	Plate 6	Native grass cover (spear grasses and wallaby grass) (10%)	5%	Medium (grass height 10-25cm)	Spear Thistle *Cirsium vulgare* and pasture grasses (70%)
9	N/A	Native grass cover (Juncus *Juncus* spp. spear grasses and wallaby grass) (5-10%)	10%	High (grass height 5-10cm)	Cape Weed *Arctotheca calendula*, Toowoomba Canary Grass *Phalaris aquatic* and pasture grasses (70%)

Plate 1. Photo **Point 191** facing south within onsite offset site (Ecology and Heritage Partners Pty Ltd June 2016) (Figure 3).

Plate 2. Photo **Point 205** facing south within onsite offset site (Ecology and Heritage Partners Pty Ltd June 2016) (Figure 3).

Plate 3. Photo **215** facing west within onsite offset site (Ecology and Heritage Partners Pty Ltd June 2016) (Figure 3).

Plate 4. Photo **Point 216** facing east within onsite offset site (Ecology and Heritage Partners Pty Ltd June 2016) (Figure 3).

Plate 5. Confirmed SLL habitat along Dunnets Road adjoining onsite offset site (Ecology and Heritage Partners Pty Ltd June 2016) (Figure 3).

Plate 6. Confirmed SLL habitat along Dunnets Road adjoining onsite offset site (Ecology and Heritage Partners Pty Ltd June 2016) (Figure 3).

Plate 7. Photo Point 200 facing south-west from Dunnets Lane (Ecology and Heritage Partners Pty Ltd, June 2016) (Figure 3).

Plate 8. Remnant vegetation within Dunnets Road (Ecology and Heritage Partners Pty Ltd, June 2016) (Figure 3).

Direct Seeding

Direct seeding methods will be utilised across the entire onsite offset site, particularly areas which have been cropped and that are highly modified (i.e. dominated by exotic pasture grasses and weeds) may be used for future habitat enhancements through direct seeding methods (Plates 3 and 5). This will involve direct consultation with a suitably qualified sub-contractor experienced in large scale restoration work. Seed collection will be sourced from a local source unless the required seed amounts require the assistance of another provider.

Additional information on the direct seeding method can be obtained at the following website: https://chris-findlay.squarespace.com/revegetation/. Appropriate discussions with local native seed providers and grassland rehabilitation contractors have been undertaken for the associated on-ground works and indicative costings associated with the implementation of the 10 year management plan are provided below (Appendix D). It is expected that once detailed vegetation monitoring has been undertaken within the onsite offset site, appropriate habitat enhancement works will be incorporated within areas containing remnant vegetation as part of the offset package for the SHWF.

While direct seeding will promote and create additional areas of native vegetation cover and associated habitat for SLL, there is likely to be some natural failure in the direct seeding of native grasses throughout open and/or rocky areas within the offset site. Accordingly, the management and rehabilitation works associated with this offset site will allow for 'over sowing' in identified areas where additional direct seeding may be required in response to poor seed germination. This has been costed and implemented under the assumption that approximately 25% of all native seeds will not germinate successfully (Appendix D).

Summary of Onsite Offset Option

Based on targeted surveys undertaken in 2017 and the presence of remnant grasslands extending from Dunnets Road into the onsite offset site, this area currently provides both confirmed and connected areas of suitable habitat for the species.

The presence of SLL along Dunnets Road and within the onsite offset site in addition to the availability of suitable grassland habitat confirms this site is suitable to be used as offsets under the EPBC Act. It is envisaged habitat will also be enhanced through rehabilitation works proposed in areas adjoining confirmed or suitable habitat for SLL.

Management will involve habitat enhancement actions such as revegetation, weed control, biomass management and vegetation and species population monitoring over a 10 year period. A detailed summary of the management actions to manage the onsite offset site is provided in Section 6.

5.3.1 Security of the offset area

The long-term security of the offset site will be undertaken through a land management agreement under Section 69 of the *Conservation Forests and Lands Act 1987*.

5.3.2 Management

For the offset area to qualify as an appropriate offset to compensate for the permitted removal of suitable habitat associated with the WEF, management actions will need to be undertaken to maintain, and where relevant, increase the quality of habitat of the protected area (see Appendix A and the EPBC Act offset calculator for details).

5.3.2.1 High quality habitat

High quality SLL habitat typically includes the following (Hadden 1995):

- No recent fire history at the site;
- Predominantly basalt soils with a high clay content and a propensity for cracking;
- Presence of lightly embedded rocks, and most sites had 1-10% of rock cover;
- Low to moderate levels of physical disturbance;
- Contains perennial grasslands of indigenous or introduced species;
- Tussock structure varies from widely spaced tussocks of open grassland to a dense sward of closed grassland;
- Tussock cover exceeded 50% of the ground, and
- Contain little bare ground, with plant litter to a depth of approximately 3 cm.

5.3.2.2 Considerations

Grazing is proposed to be implemented as one of the management options to improve SLL habitat quality and biomass control, particularly once rehabilitation works have been completed and the grassland is established. Management actions to provide a net benefit for the SLL will also focus on vegetation monitoring, pest plant and animal control and encouragement of revegetation through possible methods including direct seeding and beneficial habitat management techniques such as slashing and/or burning (if implemented).

Note that for all management options on the offset site, there will be no planned disturbance to SLL habitat during the active season, with the exception of strategic grazing in later summer, as required.

5.4 Benefit of the Impact / Offset Approach against a 'Do Nothing' Scenario

The management actions detailed in this strategy for the onsite offset area have been designed to provide a net benefit when compared with a 'do nothing' scenario for the SLL within the development area.

Under a 'do nothing' approach, existing land management practices would continue, without regard to the extant SLL population present. For example, altering grazing pressure or not managing the spread of weeds may have a negative impact on the SLL within the onsite offset site and may occur without consideration of the species' response under a 'do nothing' scenario. Extreme events, such as grass fires, also would not be specifically managed to protect SLL habitat.

Protection of the area as an offset site provides certainty as to future habitat suitability for the SLL, facilitates habitat improvement and removes the current uncertainty about future management actions and their impact on the species. This will provide a net conservation benefit for the species over the 'do nothing' scenario.

6 OFFSET MANAGEMENT STRATEGY

The onsite offset site will be protected under land title agreements (Section 5.3.1) to ensure it is secured and managed appropriately in perpetuity.

The following report section discusses the actions required to implement the SLLOMS. The plan details methods for the management and conservation of SLL habitat at the onsite offset site over the requisite 10 year management period and into perpetuity.

It is anticipated that the management works will begin in response to the relocation of SLL during construction works associated with clearing areas of potential habitat along Dunnets Road. All construction works will be conducted by suitably qualified contractors who will undergo appropriate training during project inductions and will be supervised by an ecologist during habitat removal along Dunnets Road (Appendix D).

6.1 Strategy for Offset Site

The onsite offset site is to be secured and managed for conservation purposes in perpetuity. The management strategy for the proposed offset site consists of implementing a vegetation management plan incorporating weed and biomass control, as well as regular monitoring specifically tailored to the ecological requirements of SLL and the maintenance of Plains Grassland. Details of security and management responsibility are shown in Table 3.

Table 3. Security and Management Responsibility

Offset Security and Management Responsibility	
Who is liable/responsible for meeting offset requirements?	Approval Holder
Type of security i.e. Planning Permit Condition, Section 69 of the *Conservation, Forest and Lands Act 1987 (Vic)*	In preparation
Agreement or Planning Permit Number (ID)	In preparation
Date 10-year offset management to commence	Early 2018
Date 10-year offset management expires	Mid 2028
Registered on title? (Yes/No)	In preparation
Offset site management responsibility (i.e. Landowner, SHWFPL)	Approval holder and Landowner
Offset Monitoring Responsibility (i.e. Responsible Authority, DELWP)	Responsible Authority / Landowner

6.2 Adaptive Management Approach

The SLLOMS will use an adaptive management approach to allow the flexibility to respond appropriately and effectively to the uncertainties involved in ecological processes. This will ensure that management objectives are being met while allowing for altered circumstances to be included in the SLLOMS.

It is envisaged that the 10 year management plan will allow for an adaptive management program in response to the outcomes (and overall success) of rehabilitation works and SLL monitoring as part of the implementation of this strategy.

6.3 Management Objectives

The offset site will be managed for the purposes of conservation and will involve physical protection of the proposed onsite offset site, the control of pest animals and environmental weeds, biomass reduction and general maintenance of the character and quality of the native vegetation, consistent with its historic context. This OMS and specified management actions will form a strategy for the long-term management of SLL and its habitat.

6.4 Rehabilitation Objectives

Given a large proportion of the study area is currently proposed to be rehabilitated, the overall site has been broken up into three separate management zones (Figure 4). The focus of the first five years of management will be to rehabilitate and direct see predominantly exotic grassland areas in Zones 1–3 as these will be most accessible and suited to large sized revegetation works given their modified nature (i.e. cropped areas not containing embedded rock).

It is envisaged that rocky areas supporting confirmed SLL and associated habitats (i.e. adjoining Tile Grid T3) will be enhanced once surrounding areas have been rehabilitated to provide suitable habitat for the species. This will aim to ensure that individuals have the capacity to disperse and extend current habitat areas in response to the creation of suitable grassland habitat(s). The proposed timing and costings for the preparation of each management zone is provided in more detail in Appendix D below.

Native Grasses and Surface Rocks

The following species will be utilised for rehabilitation works within each of the management zones through direct seeding methods, and will include:

- *Rytidosperma* spp. Wallaby Grasses
- *Anthosachne scabra* Wheat Grasses
- *Poa Labillardierei* Common Tussock Grass
- *Austrostipa* spp. Spear Grasses
- *Themeda triandra* Kangaroo Grass

The introduction of surface rocks will also be implemented into newly rehabilitated grassland habitats to increase the availability of suitable habitats for SLL within the onsite offset site.

6.5 Vegetation Improvements / Additional Habitat for SLL

As the preferred approach for the SHWFPL is to secure a direct onsite offsets for SLL, additional opportunities to enhance modified areas of potentially suitable SLL habitats through the direct seeding of native flora species is considered appropriate as part of the 10 year management plan.

This will involve preparing selected areas (i.e. areas that have been previously disturbed/cropped) through appropriate weed control followed by direct seeding using a suitably qualified contractor.

This approach would aim to connect existing areas of confirmed SLL habitat to increase the overall size, quality and suitability of the offset site in response to the long-term conservation objectives of this OMS. Once any new areas are established, management regimes will be undertaken in accordance with the objectives and actions for biomass, pest control and SLL monitoring as outlined in the sections above to ensure broader areas are maintained for the species in the long term.

The costs of this work would be incorporated into the management plan as a separate item to ensure that appropriate conservation measures (i.e. adaptive management) are being considered as part of the overall onsite SLL offset site (Appendix D). Habitat rehabilitation works will also be undertaken throughout rocky areas which contain varying levels of native and non-native vegetation in conjunction with more modified habitats in order to enhance the full offset site over the 10 year management period.

6.6 Management Costings / Timing

Detailed management actions, timing and costings for the 10 year offset strategy are provided in Appendix D. This will account for the installation of new fencing around the entire offset site, repairing existing fencing (and ongoing maintenance), pest animal and active weed control, SLL population monitoring, reporting, project management and revegetation works through direct seeding.

6.7 Management Actions

The following section discusses the actions required to implement the management strategy for the ongoing protection of the existing SLL population and Plains Grassland vegetation. The offset site is to be secured and managed for conservation purposes in perpetuity.

Management actions described below are to be implemented for a mandatory period of 10 years. However, there are several standard actions which must be followed if the offset site is to be considered suitable as an offset site. These include:

- No cropping, no drainage/hydrology alteration;
- No use of boom sprayers once an area has been rehabilitated with native grass species. Boom spraying may be utilised as an affective for site rehabilitation preparation works;
- No rock removal;
- No artificial stock feeding within the offset area;
- No pasture improvements within the offset area;
- Weed cover is managed in perpetuity to ensure it does not increase beyond the level attained at year 10 years of management;
- Pest animals are controlled in perpetuity to the level attained at year 10 years of the management;
- SLL populations and habitat are maintained or improved; and
- Any proposed uses or development of the site which conflict with the landowners commitments are not permitted under this plan.

6.7.1 Security Arrangements

The onsite offset site will have on-title legal agreements put in place (Section 5.3.1) in accordance with the relevant Responsible Authority to ensure the land is secured and managed appropriately in perpetuity.

6.7.2 Access Control

Without active management and appropriate fencing, unrestricted access into the offset site may result in loss of native vegetation cover, soil disturbance and compaction, and weed facilitation. The perimeter of the onsite SLL offset site will be enclosed by permanent post-and-wire fencing (metal stakes may be used if stock proof).

Actions

Access control will proceed in accordance with the following:

- Maintain permanent fences surrounding the perimeter of the offset site. Any new fencing will be permanent post-and-wire fencing and constructed with minimal impact to the offset site (i.e. no stock piling of fencing materials or soil during construction); and
- Fence condition will be constantly monitored given that much of the broader site is still used for the controlled grazing of sheep. Any gaps or holes in fencing will be repaired immediately.

Performance Measures

The following key performance target has been provided to measure the success of the access control:

- Permanent stock-proof fencing maintained to prevent accidental or unauthorised access into the offset site from adjoining areas of the selected offset site.

6.7.3 Biomass Control

The current biomass reduction method applied throughout the offset site consists of low-intensity rotational grazing by sheep. All sheep are to be removed during September. Adaptive management via crash grazing may be implemented under the guidance of a suitably qualified ecologist between October to December. Sheep are to be retained on site for a maximum of 7 days and removed for a minimum or 14 days in any given month between October to December to reduce biomass levels (**Note:** a higher abundance of sheep over a shorter period is preferred). Total vegetation cover will not exceed 70% (particularly in seasonally wet years) and open bare ground must also be maintained between 20 and 40% to allow adequate recruitment space for native flora species. All sheep are to be removed annually from the site between January to February to allow the critical flowering/reproductive period for native species. The reintroduction of grazing may return to reduce biomass levels over autumn and winter (March to August). In any circumstance sheep must be removed should total vegetation cover fall to or below 70% and open bare ground between 20 and 40%. Temporary fencing may be installed within the offset site to meet the biomass control objectives of this management plan. An adaptive grazing regime is considered an appropriate method for managing biomass given that remnant vegetation has persisted throughout the site as a direct result of a more permanent and intensive grazing disturbance regime.

An option for burning has also been provided for Years 6, 8 and 10 as an additional management measure to strategic rotational grazing by sheep.

This would entail approximately two areas of 15 hectares in size (with each area selected on a selective burn year), and would focus on areas which require additional management actions to assist with the improvement and success of rehabilitation works (i.e. areas with a high biomass levels). The ability to alter which year a burn is undertaken between years 6-10 is also an important component of the management plan as it will allow for an adaptive approach, which can be utilised in response to seasonal and local conditions (i.e. rainfall, drought and success of management actions), to ensure the objectives of this strategy are met.

It is envisaged that low intensity mosaic burns could be used in the future to maintain biomass levels at intervals no greater than three years apart to aid in the recruitment and persistence of indigenous flora species. Should the use of fire be considered as a biomass control mechanism, such an activity must be conducted outside of the normal active period for SLL (approximately September to April) through the incorporation of cool late autumn burns. The need for biomass reduction via prescribed burns will be assessed on an annual basis and be implemented on an as-needs basis according to an approved burn plan.

Actions

Biomass control will proceed in accordance with the following:

- Ensure adequate grazing to reduce biomass to acceptable cover levels (i.e. 70%);
- Spell offset site containing Plains Grassland areas from approximately late September through to late January (or as advised by a suitably qualified ecologist where adaptive management is required); and
- Co-ordinate weed control works with grazing regime.

Performance Measures

The following key performance target has been provided to measure the success of the biomass control:

- Vegetation cover is maintained at greater than 70% throughout the study area, and the space (i.e. bare ground) available for native flora species recruitment is between 20% and 40%;
- SLL populations are not reduced;
- A diversity native open ground cover flora species is maintained and enhanced;
- No evidence of an increase in soil pugging; and
- The maintenance of open structured Plains Grassland community suitable for the ecological requirements of SLL.

6.7.4 Pest Control

6.7.4.1 Weed Control

The control of weed species is a key management action within the offset area and is critical to the maintenance of indigenous vegetation cover and species diversity.

Effective weed control should promote the regeneration of existing populations of indigenous species and encourage recruitment from soil seed banks. Weed control work should be carried out by a suitably qualified contractor.

Whilst the ultimate objective is to eliminate or reduce all weed species to less than 1-5% cover, emphasis will be placed on priority weeds within the offset site and adjacent land. Priority weeds include woody weeds, all noxious weeds listed under the *Catchment and Land Protection Act 1994* (CaLP), or any other high threat weed species (DPI 2008).

Site Preparation

Areas which have been extensively modified over consecutive years (i.e. for cropping) will require adequate site preparation through broad acre boom spraying (through boom spraying). Areas which require site preparation and are less accessible (i.e. rock outcrop) will be prepared using pack spraying methods.

The aim for site preparation will be to remove the cover of any exotic weed species to ensure the implementation of direct seeding will be as effective as possible.

Management Guidelines

The following management guidelines should be taken as general management principles in regards to weed control:

- Weed control methodology for eradicating graminoid and herbaceous weeds will consist of manual removal and/or spot spraying weeds with an appropriate herbicide. Care should be taken when spraying herbicide to ensure that the poison does not affect native vegetation in the local application area. Weed species should be treated before seed is set, which may involve localised slashing if spot-spraying proves ineffective. A dye should be used in the spray to mark where the spraying has occurred;
- Selective herbicide application will be undertaken in less accessible areas of the offset site as opposed to broad area application; however, the loss of non-target species needs to be balanced with the threat of incomplete control of the existing weed population (particularly in relation to the preparation of rehabilitation areas);
- Weed control actions should be conducted outside of the normal active period for SLL (approximately October to February) where the species is known or likely to occur (i.e. rocky areas containing remnant grasses) and activities should also be conducted in a mosaic fashion to avoid any unexpected impacts (Appendix D);
- Weed control actions within areas which have been annually cropped and sprayed can be undertaken at the most suitable time of year (October-November) prior to the seeding of annual exotic grass species;
- Any weed control should be done in a manner that minimises soil disturbance;
- All herbicide application should use waterway sensitive products and non-residual herbicides to avoid unwanted off-target effects;
- Pest plants that reproduce sexually (by seed) are best controlled before seed set. If herbicide application is proposed after seed set, slashing should be undertaken to ensure seed does not reach maturity; and
- Weed control works should be monitored regularly to assess their effectiveness, and evaluated for follow up actions.

Actions

The following key management actions will be undertaken to ensure success of the weed management program:

- Introduced weeds will be mapped across the site, and monitored annually, to determine when eradication is required. Results will be used to evaluate eradication actions from previous seasons;
- Eliminate high threat environmental weeds (cover reduced to <1%) and control medium threat environmental weeds within all habitat zones (cover reduced to <5%);
- Identify new infestations of weed species and implement control as appropriate; and
- Control all other weeds within all habitat zones (ideally at a reduced cover of current levels).

Performance Measures

The following key performance targets have been provided to measure the success of the weed management program and include at a minimum:

- The reduction of high threat weed cover to <1%;
- The reduction of medium threat weed cover to <5%; and
- The maintenance of all other weeds ideally at a reduced cover to current levels.

6.7.4.2 Pest Animal Control

European Rabbit *Oryctolagus cuniculus* remain a threat for the regeneration/recruitment of native species throughout western Victoria. All vermin harbour (i.e. burrows) should be treated, without disturbance to native vegetation or significant soil disturbance.

The land owner/contractor is to monitor pest animal use of the onsite offset site whilst undertaking vegetation management works. Any changes in the influences of pest animals may require a change in the management actions.

Actions

The following key management actions will be undertaken to ensure success of the pest animal program:

- Monitor the population of pest animals (namely rabbits, hares, feral cats and foxes) during weed control works and adapt management as considered appropriate (i.e. if an increase in pest animal activity is observed then a targeted pest animal control program should be implemented.);
- Identify potential harbour and burrows, and destroy if soil disturbance can be minimised and all native vegetation retained; and
- If necessary, undertake a pest animal control program (i.e. trapping and shooting of foxes, hares, rabbits or feral cats).

Performance Measures

The following key performance targets have been provided to measure the success of the pest animal management:

- No increase in pest animal activity from approval of this plan; and

- Minimal soil disturbance and no native vegetation loss from pest animal management activities.

6.8 Monitoring and Reporting

Monitoring of SLL habitat will be undertaken by a suitably qualified ecologist on three occasions within the first five years of management to ensure key performance targets are met and the responsible authorities notified of the success and or failure of works through regular progress reports. Monitoring would commence in spring 2018 to ensure appropriate survey protocols are in place prior to the active period of the species. Progress reports will be provided to the responsible authority in Years 1, 3, 5, 7, 9 and 10 of the program (Table 4).

6.8.1 Monitoring

6.8.1.1 Striped Legless Lizard

Monitoring is required to determine if SLL has persisted in grassland areas and to ensure that management actions and habitats are suitable for a viable SLL population in the future.

Appropriate monitoring of SLL will be undertaken during SLL monitoring surveys in Years 1, 3, 5, 7, 9 and 10 in accordance with Appendix D. If, at the end of the first five years of monitoring program, the results indicate a decline in the population size or degradation to habitat is evident, this OMS will be re-evaluated and adapted accordingly.

Specific survey procedures will follow those approved monitoring guidelines for SLL prepared by the DAWE (SEWPaC 2011b). The following measures will be undertaken as part of population and habitat monitoring for SLL in the initial five year period (and extended if required):

- Collection of baseline data to be used as a reference point to assess the impacts of management actions. This action will comprise targeted SLL surveys undertaken throughout the extent of the offset site (and the remainder of the property where possible if established through revegetation);
- Surveys are to be conducted by suitably trained observers;
- A total of 10 monitoring sites will be installed inside the offsite site and will require the addition of five new tile grids (Figure 4). Note: the deployment of additional monitoring sites will be in response to extensive areas being rehabilitated. That is, a component of the monitoring will be focused on determining if SLL are moving into rehabilitated habitats over the 10 year period;
- Additional monitoring sites will be deployed in Year 4 within the offset site at the pre-determined locations shown in Figure 4.
- Arrays consist of 50 tiles, at 5 metre spacing between tiles, arranged in a grid of 10 tiles by five or a transect;
- Orientation is important: arrays will preferably be positioned on a northerly aspect;
- Shelter sites will be checked when ambient temperatures do not exceed 28^{o}C. Grids may be checked during summer/autumn for the presence of shed skin;
- Shelters will be checked a minimum of six times over between October – November. In Victoria the Department of Sustainability and Environment recommend at least six months of survey; and

- Checking more frequently than once or twice a week may lead to SLL abandoning the artificial shelters.

6.8.1.2 Vegetation Monitoring

Appropriate vegetation monitoring of the quantity and quality of native grassland and threatened species habitat will be collected during SLL monitoring surveys in Years 1, 3, 5, 7, 9 and 10 in accordance with Appendix D.

Surveys will be structured around biomass reduction and weed control activities. Fixed photo points will be utilised in selected areas to also visually record any successive changes. Surveys will focus on whether the quality and structure of remnant and rehabilitated grassland areas are improved beyond the baseline habitat scores. All surveys will be conducted by qualified botanists/ecologists. Regular progress and monitoring reports will involve input from all sub-contractors used to complete management activities, and all reporting documentation will be submitted to the relevant authorities (DAWE and DELWP).

Monitoring and progress reports will document the following components:

- Overall assessment of the quality and quantity of vegetation and composition of species (i.e. habitat hectare assessment);
- Biomass levels;
- The extent, severity, trend and presence of current weed species and any new and emerging weed species;
- Assessment of weed and pest animal control work;
- Implementation of permanent photo points. Photographs will be taken at the same location and during the same time of each year. Photo points will allow monitoring of weed populations and maintenance of the current condition of native vegetation within the offset site. Details of photo points and photographs will be provided to DELWP where required as evidence of progress.

Note: the expected fees to undertake vegetation monitoring and reporting is included in the fees to complete Striped Legless Lizard Monitoring in Appendix D.

6.8.1.3 Other Monitoring

Information relating to fencing, weed control and pest animal control will be provided by landowners and the relevant contractors, with a landowner monitoring form completed on an annual basis (see below). This information will be included in the progress report, discussed below. Information collected by contractors during rehabilitation works will also be recorded and reported accordingly during the 10 year program.

6.8.2 Reporting

Progress reports will be provided to the responsible authority in Years 1, 3, 5, 7, 9 and 10 of the program. Information to be provided in the progress report includes:

- A copy of the Management Actions Table (Table 4) detailing actions completed during the reporting period;
- Landowner monitoring and reporting forms;

- A description of the specific monitoring results from ecological surveys undertaken;
- Results of weed and pest animal control work;
- Successful management tools (i.e. techniques used to control weed species, monitoring technique, etc.);
- Any problems or issues experienced (i.e. new infestation of weed species, etc.);
- Any corrective actions and contingency measures where monitoring indicates that there has been a deterioration in the native vegetation or SLL population; and
- Photographs showing evidence of works.

In order to meet EPBC Act referral conditions, all records/evidence of management actions must be maintained, and be submitted to DAWE upon request, and any proposed management changes must be submitted to DAWE prior to the changes being undertaken.

If any agreed management actions or commitments are incomplete or have not been undertaken in the times specified, the landowner is to document the justification and the actions that will be undertaken to implement the requirement.

6.8.2.1 Landowner Monitoring and Reporting Form

Information relating to fencing, weed control and pest animal control will be provided by landowners and the relevant contractors, with a landowner monitoring form completed on an annual basis (see below). The template for a landowner monitoring and reporting form is shown in Table 5.

If any agreed management actions or commitments are incomplete or have not been undertaken in the times specified, the responsible party must explain the reasons why and what program of action/s will be undertaken to implement the action. If no action has been undertaken please explain the reason(s) and how the targets specified will be met.

6.9 Review

The OMS will be reviewed every five years to include new information, consider the relevance of monitoring, each management action, the validity of trigger value, and to ensure that the objectives of the Plan are being met.

6.10 Management Actions Table

Management actions are summarised below (Table 4). The actions constitute the minimum management requirements for the offset site over the mandatory 10 year management period.

Table 4: Summary of Management Actions for a 10 Year Monitoring Program.

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
0	0.1	Implement on-title legal agreements for offset site	Liaise between the landowner, Trust for Nature, DELWP and Council.	Within three months of this plan being approved by DAWE	
0	0.2	Prepare tenders for relevant management contractors where required	SHWFPL and landowner (with assistance from ecological specialist)	Prior to commencement of development	
1	1.1	Construct permanent fencing surrounding the property and offset sites are secure	Landowner (under SHWFPL supervision)	Within six months of this plan being approved by DAWE	
1	1.2	Conduct site preparation works for weed works in Zones 1b, 1c, 2b and 3b	SHWFPL and its contractors	October-November	
1	1.3	Monitor populations of pest animals and conduct control works if required	SHWFPL and its contractors	After peak breeding season - late summer/early autumn	
1	1.4	Undertake SLL monitoring at **five** existing sites within onsite offset site (Figure 4)	Suitably qualified ecological specialist	September to November Year 1	
1	1.5	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
1	1.6	Undertake detailed vegetation monitoring within Zones 1a, 1b, 2a and 3a (Figure 4).	Suitably qualified ecological specialist	December-February	
1	1.7	Monitor and assess works (baseline summary report)	Suitably qualified ecological specialist	Two months after SLL and vegetation monitoring is completed	

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
2	2.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
2	2.2	Conduct site preparation works for weed works in Zones 1b, 1c, 2b and 3b	SHWFPL and landowner	October-November	
2	2.3	Monitor populations of pest animals and conduct control works if required	SHWFPL and landowner	After peak breeding season - late summer/early autumn	
2	2.4	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
3	3.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
3	3.2	Commence direct seeding in Zones 1b, 1c, 2b and 3b	SHWFPL, ecologist and its contractors	Autumn/Spring	
3	3.3	Conduct site preparation weed control for rehabilitation works in Zones 2a and 3a	SHWFPL and landowner	October-November	
3	3.4	Undertake SLL monitoring at **five** existing sites within onsite offset site (Figure 4)	Suitably qualified ecological specialist	September to November Year 3	
3	3.5	Undertake detailed vegetation monitoring within Zones 1a, 1b, 2a and 3a (Figure 4)	Suitably qualified ecological specialist	December-February	
3	3.6	Monitor populations of pest animals and conduct control works if required	SHWFPL and landowner	After peak breeding season - late summer/early autumn	
3	3.7	Monitor and assess works (summary report)	Suitably qualified ecological specialist	Two months after SLL and vegetation monitoring is completed. Report will include summary of rehabilitation / weed control works	
3	3.8	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
4	4.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
4	4.2	Conduct site preparation works for weed works in Zones 1a (SLL habitat Zone)	SHWFPL and landowner	October-November	
4	4.3	Commence over sowing / direct seeding in Zones 1b, 1c, 2b and 3b	SHWFPL, ecologist and its contractors	Autumn/Spring	

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
4	4.4	Conduct site preparation weed control for rehabilitation works in Zones 1a, 2a and 3a	SHWFPL and landowner	October-November	
4	4.5	Conduct weed management works for rehabilitated Zones 1b, 1c, 2b and 3b	SHWFPL and landowner	October-November	
4	4.6	Deploy **five** additional SLL monitoring sites within rehabilitated areas (Figure 4)	Suitably qualified ecological specialist	July-August of Year 4	
4	4.7	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
5	5.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
5	5.2	Conduct site preparation weed control for rehabilitation works in Zone 1a	SHWFPL and landowner	October-November	
5	5.3	Conduct weed management works for rehabilitated Zones 1b, 1c, 2b and 3b	SHWFPL and landowner	October-November	
5	5.4	Commence direct seeding in Zones 2a and 3a	SHWFPL, ecologist and its contractors	Autumn/Spring	
5	5.5	Undertake SLL monitoring at all **10** monitoring sites within onsite offset site (Figure 4)	Suitably qualified ecological specialist	September to November Year 3	
5	5.6	Undertake detailed vegetation monitoring within **Zones 1, 2 and 3**	Suitably qualified ecological specialist	December-February	
5	5.7	Monitor and assess works (summary report)	Suitably qualified ecological specialist	Two months after SLL and vegetation monitoring is completed. Report will include summary of rehabilitation / weed control works	
5	5.8	Re-evaluated management plan and effectiveness – revise as required	Suitably qualified ecological specialist	Revise upon feedback on summary report and success of management actions in Years 1-5 (as required)	
5	5.9	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
6	6.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
6	6.2	Monitor populations of pest animals and conduct control works if required	SHWFPL and landowner	After peak breeding season - late summer/early autumn	
6	6.3	Commence direct seeding in Zone 1a	SHWFPL, ecologist and its contractors	Autumn/Spring	
6	6.4	Conduct weed management works for rehabilitated **Zones 1, 2 and 3**	SHWFPL and landowner	October-November	
6	6.5	Commence over sowing / direct seeding in Zones 1b, 1c, 2b and 3b	SHWFPL, ecologist and its contractors	Autumn/Spring (after any planned site burn)	
6	6.6	Consider biomass reduction (burning)	SHWFPL/landowner/CFA	Autumn/Spring or as recommended by CFA	
6	6.7	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
7	7.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
7	7.2	Commence over sowing / direct seeding in Zone 1a	SHWFPL, ecologist and its contractors	Autumn/Spring	
7	7.3	Conduct weed management works for rehabilitated **Zones 1, 2 and 3**	SHWFPL and landowner	October-November	
7	7.4	Undertake SLL monitoring at all **10** monitoring sites within onsite offset site (Figure 4)	Suitably qualified ecological specialist	September to November Year 3	
7	7.5	Undertake detailed vegetation monitoring within **Zones 1, 2 and 3**	Suitably qualified ecological specialist	December-February	
7	7.6	Monitor and assess works (summary report)	Suitably qualified ecological specialist	Two months after SLL and vegetation monitoring is completed. Report will include summary of rehabilitation / weed control works	
7	7.7	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
8	8.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
8	8.2	Monitor populations of pest animals and conduct control works if required	SHWFPL and landowner	After peak breeding season - late summer/early autumn	

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
8	8.3	Commence over sowing / direct seeding in Zones 1b, 1c, 2a and 3a	SHWFPL, ecologist and its contractors	Autumn/Spring (after any planned site burn)	
8	8.4	Conduct weed management works for rehabilitated **Zones 1, 2 and 3**	SHWFPL and landowner	October-November	
8	8.5	Consider biomass reduction (burning)	SHWFPL/landowner/CFA	Autumn/Spring or as recommended by CFA	
8	8.6	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
9	9.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
9	9.2	Commence over sowing / direct seeding in Zone 1a, 2b and 3b	SHWFPL, ecologist and its contractors	Autumn/Spring	
9	9.3	Conduct weed management works for rehabilitated **Zones 1a, 2a, 3a**	SHWFPL and landowner	October-November	
9	9.4	Undertake SLL monitoring at all **10** monitoring sites within onsite offset site (Figure 4)	Suitably qualified ecological specialist	September to November Year 3	
9	9.5	Undertake detailed vegetation monitoring within **Zones 1, 2 and 3**	Suitably qualified ecological specialist	December-February	
9	9.6	Monitor and assess works (summary report)	Suitably qualified ecological specialist	Two months after SLL and vegetation monitoring is completed. Report will include summary of rehabilitation / weed control works	
9	9.7	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
10	10.1	Undertake fencing repairs as required	Landowner (under SHWFPL supervision)	Ongoing as required	
10	10.2	Monitor populations of pest animals and conduct control works if required	SHWFPL and landowner	After peak breeding season - late summer/early autumn	
10	10.3	Commence over sowing / direct seeding in Zone 1a, 2b and 3b	SHWFPL, ecologist and its contractors	Autumn/Spring (after any planned site burn)	
10	10.4	Conduct weed management works for rehabilitated **Zones 1, 2 and 3**	SHWFPL and landowner	October-November	

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
10	10.5	Undertake SLL monitoring at all **10** monitoring sites within onsite offset site (Figure 4)	Suitably qualified ecological specialist	September to November Year 3	
10	10.6	Undertake detailed vegetation monitoring within **Zones 1, 2 and 3**	Suitably qualified ecological specialist	December-February	
10	10.7	Consider biomass reduction (burning)	SHWFPL/landowner/CFA	Autumn/Spring or as recommended by CFA	
10	10.8	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	
10	10.9	Final Management Plan Report	Suitably qualified ecological specialist	Two months after SLL and vegetation monitoring is completed. Report will include summary of rehabilitation / weed control works	

Table 5. Landowner Monitoring and Reporting Form

Landowner of offset site		
Location and address of offset site		
Offset site number (if applicable)		
Offset plan reference number (if applicable)		
Responsible Authority		
Report #		
Actions completed within the offset site (since commencement)	**Date and details of action**	**Key performance target met (Y/N)**
Signature		
Date		

7 REFERENCES

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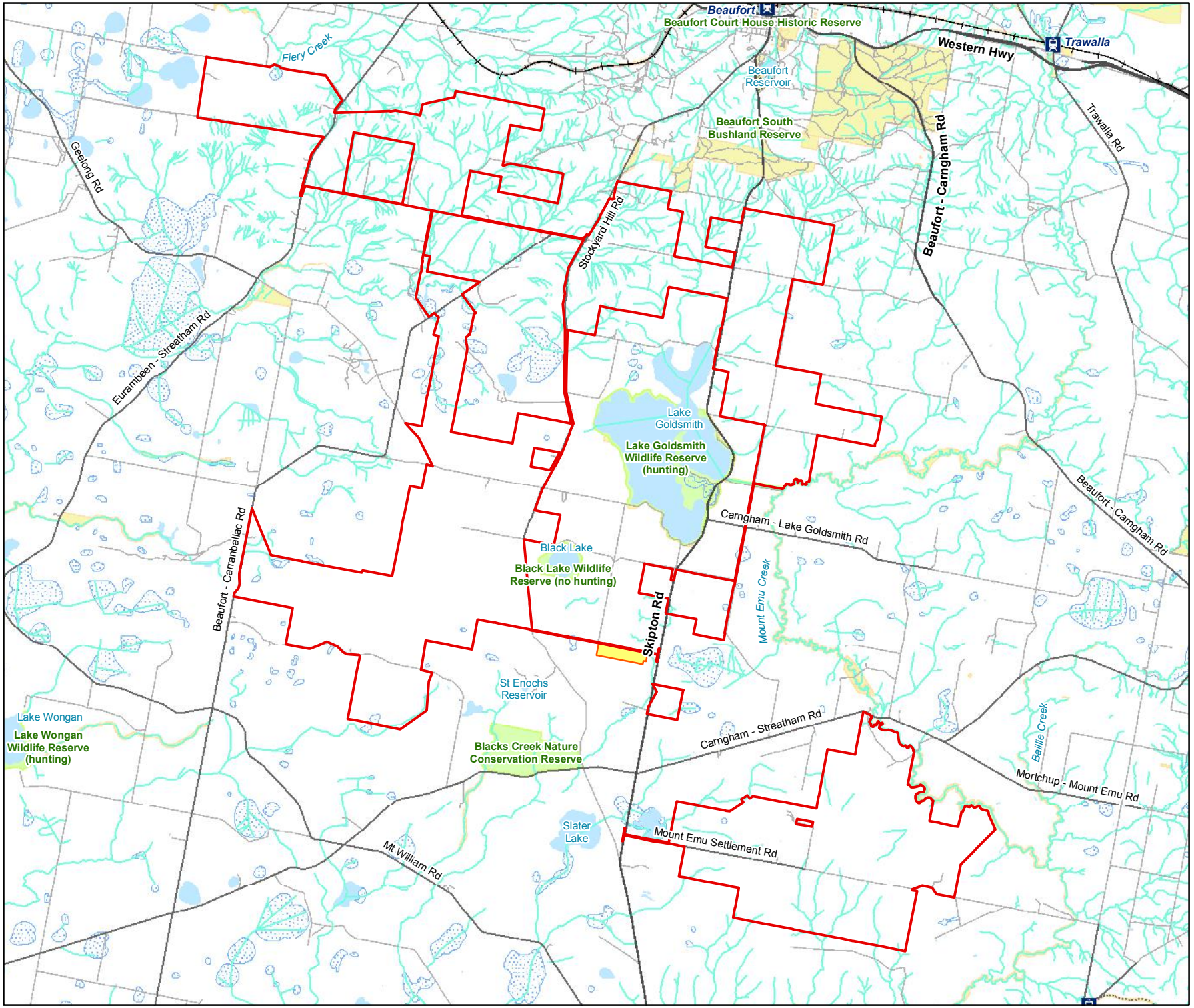
8 FIGURES



Legend

- Stockyard Hill Wind Farm boundary
- Proposed Onsite Offset Site)
- Railway
- Major Road
- Collector Road
- Minor Road
- Walking Track
- Minor Watercourse
- Permanent Waterbody
- Land Subject to Inundation
- Wetland/Swamp
- Parks and Reserves
- Crown Land

Figure 1

Location of the study area

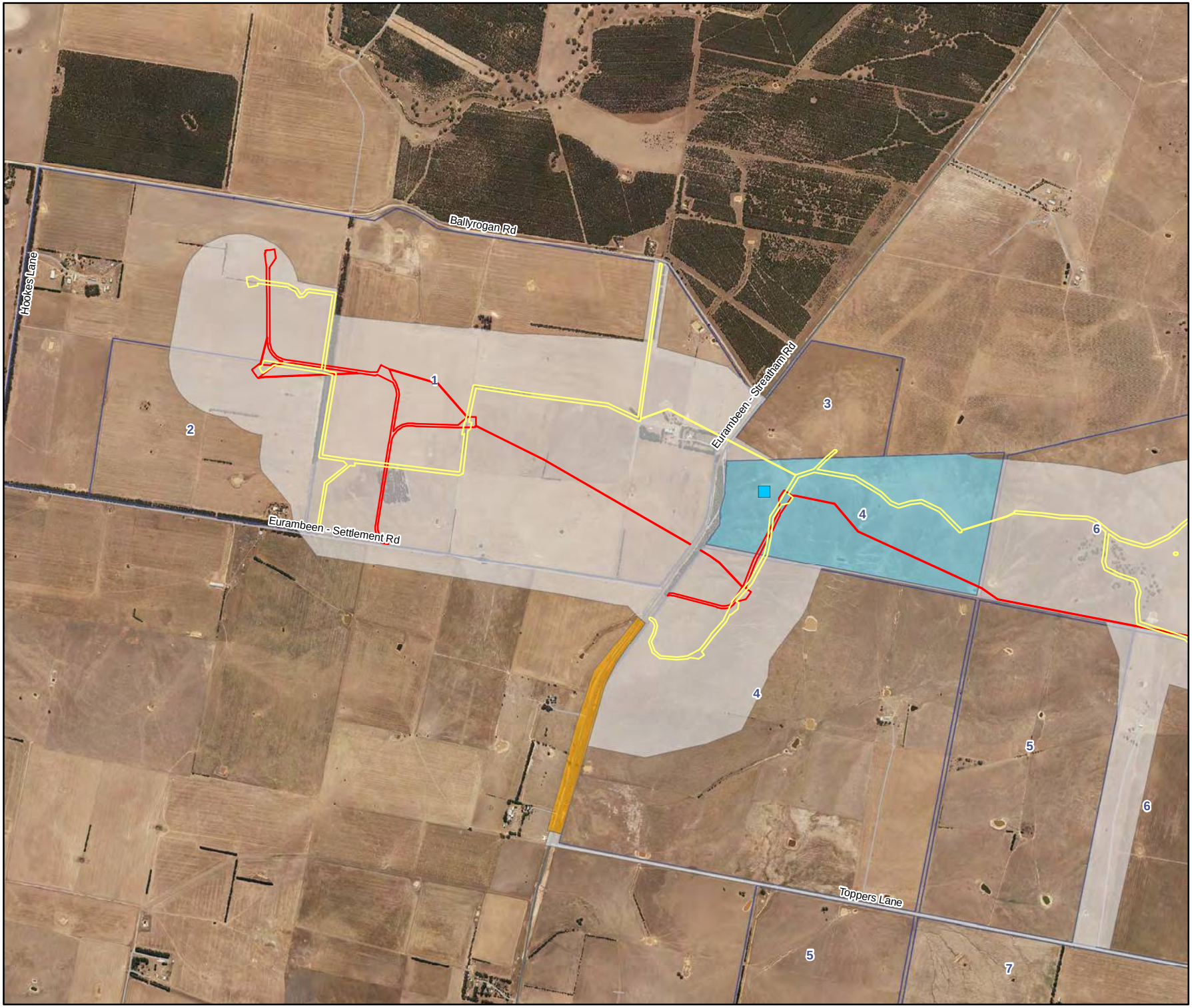
Striped Legless Lizard Offset Strategy, Stockyard Hill Wind Farm

N

0 2,000 4,000

Metres

ecology & heritage partners



Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Medium
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

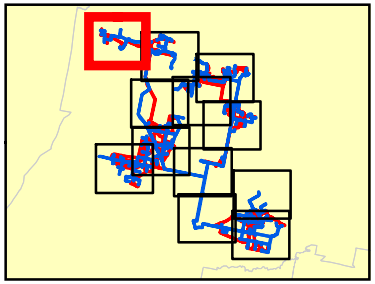


Figure 2a

MNES - Fauna

Stockyard Hill Wind Farm Project

N

0 250 500

Metres

ecology & heritage partners

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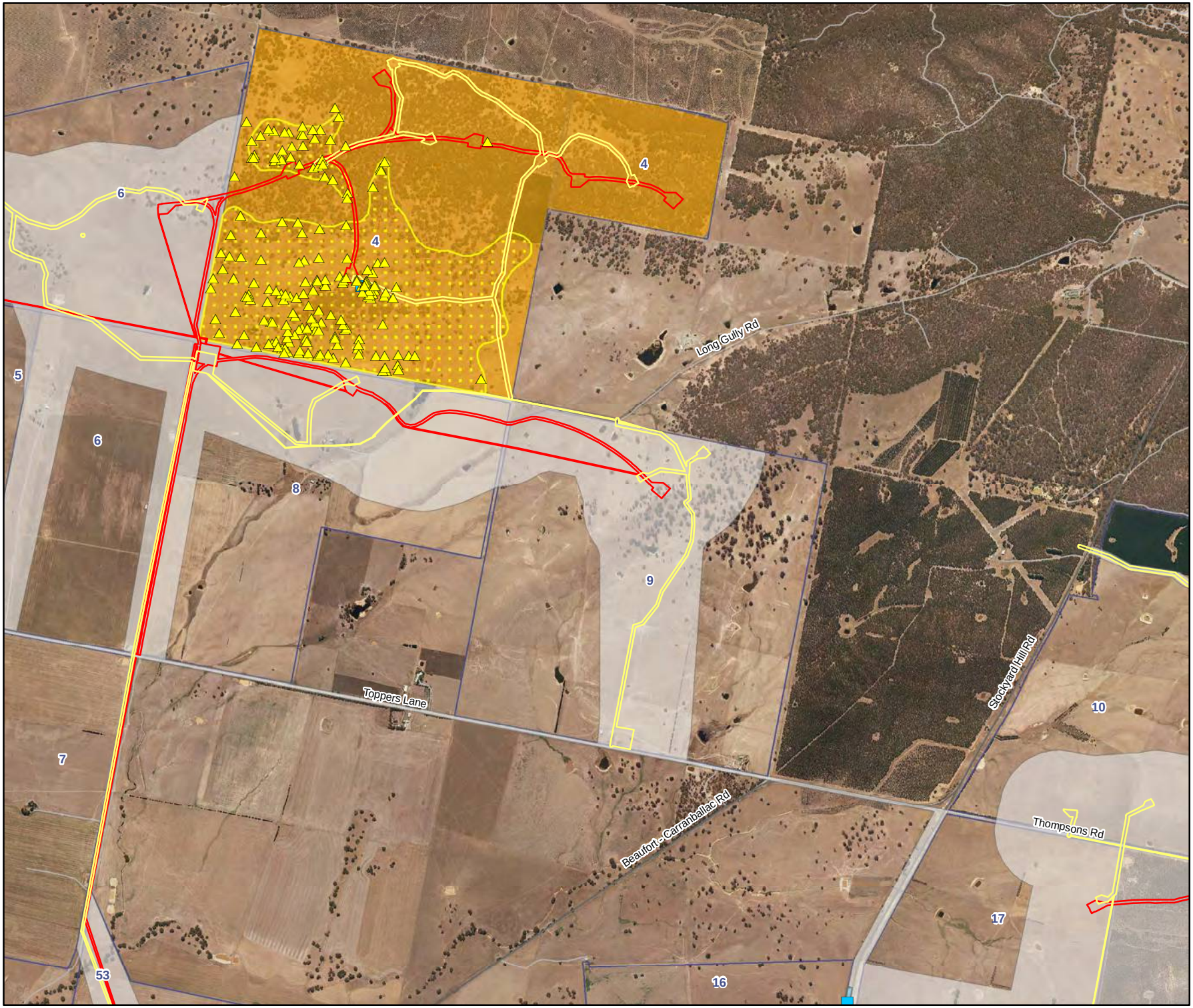

Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Golden Sun Moth records
- Confirmed Golden Sun Moth habitat
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Medium
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

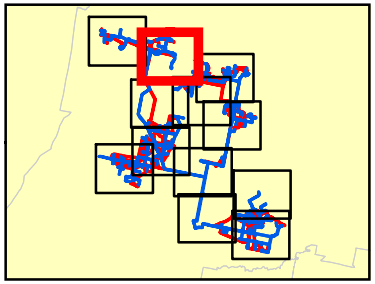

Figure 2b

MNES - Fauna

Stockyard Hill Wind Farm Project

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Metres

ecology & heritage partners

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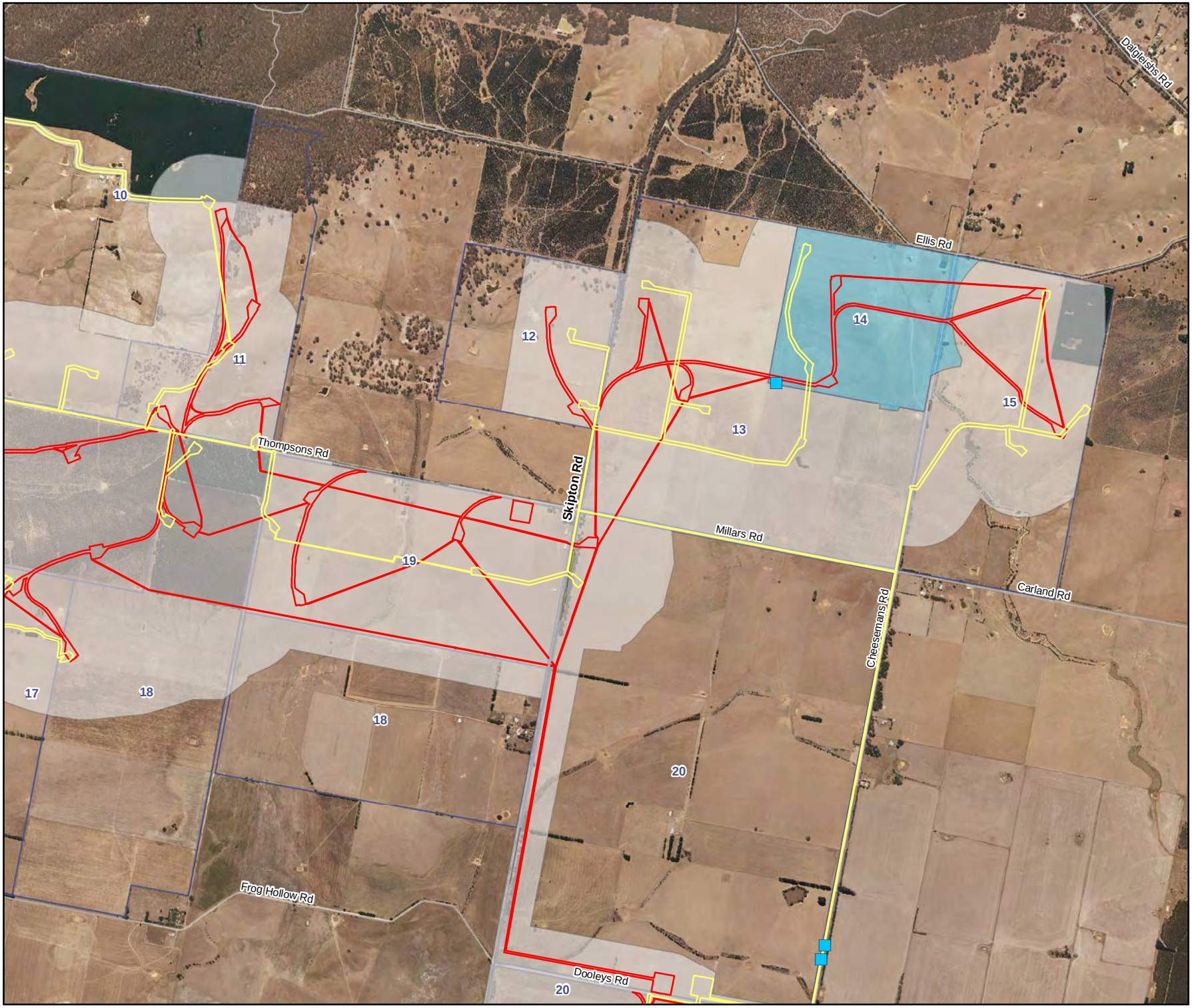

Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Medium
- Low
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

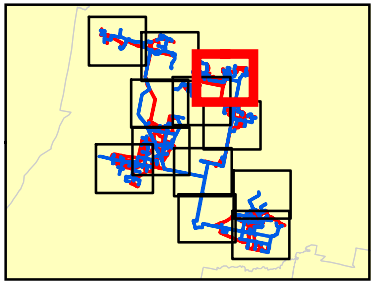

Figure 2c

MNES - Fauna

Stockyard Hill Wind Farm Project

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Metres

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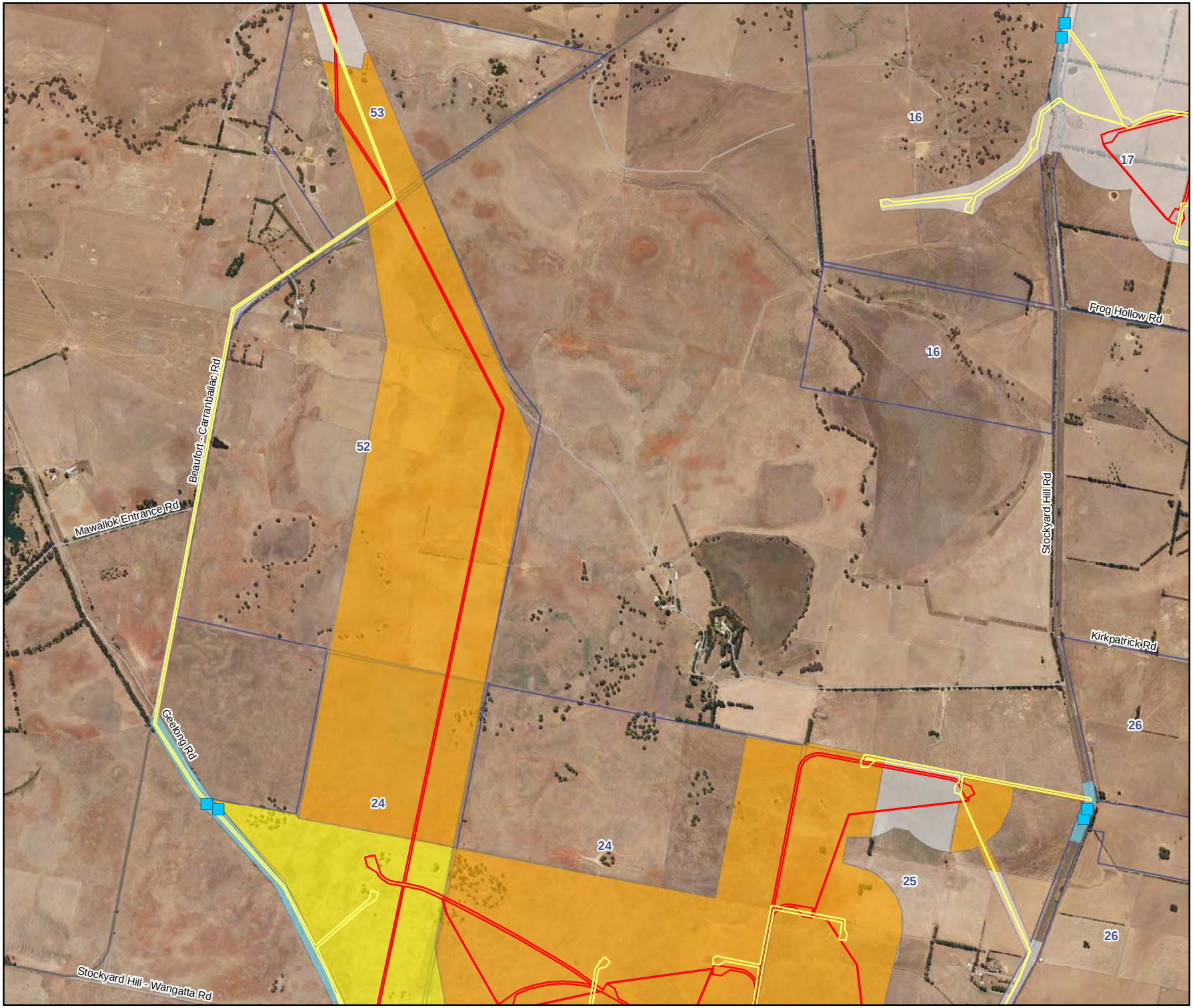

Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Medium
- Low
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

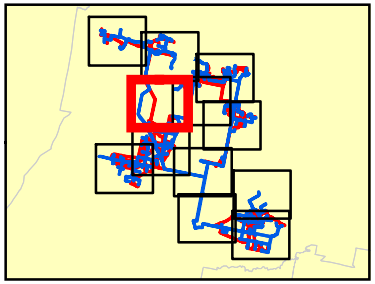

Figure 2d

MNES - Fauna

Stockyard Hill Wind Farm Project

N

0 250 500

Metres

ecology & heritage partners

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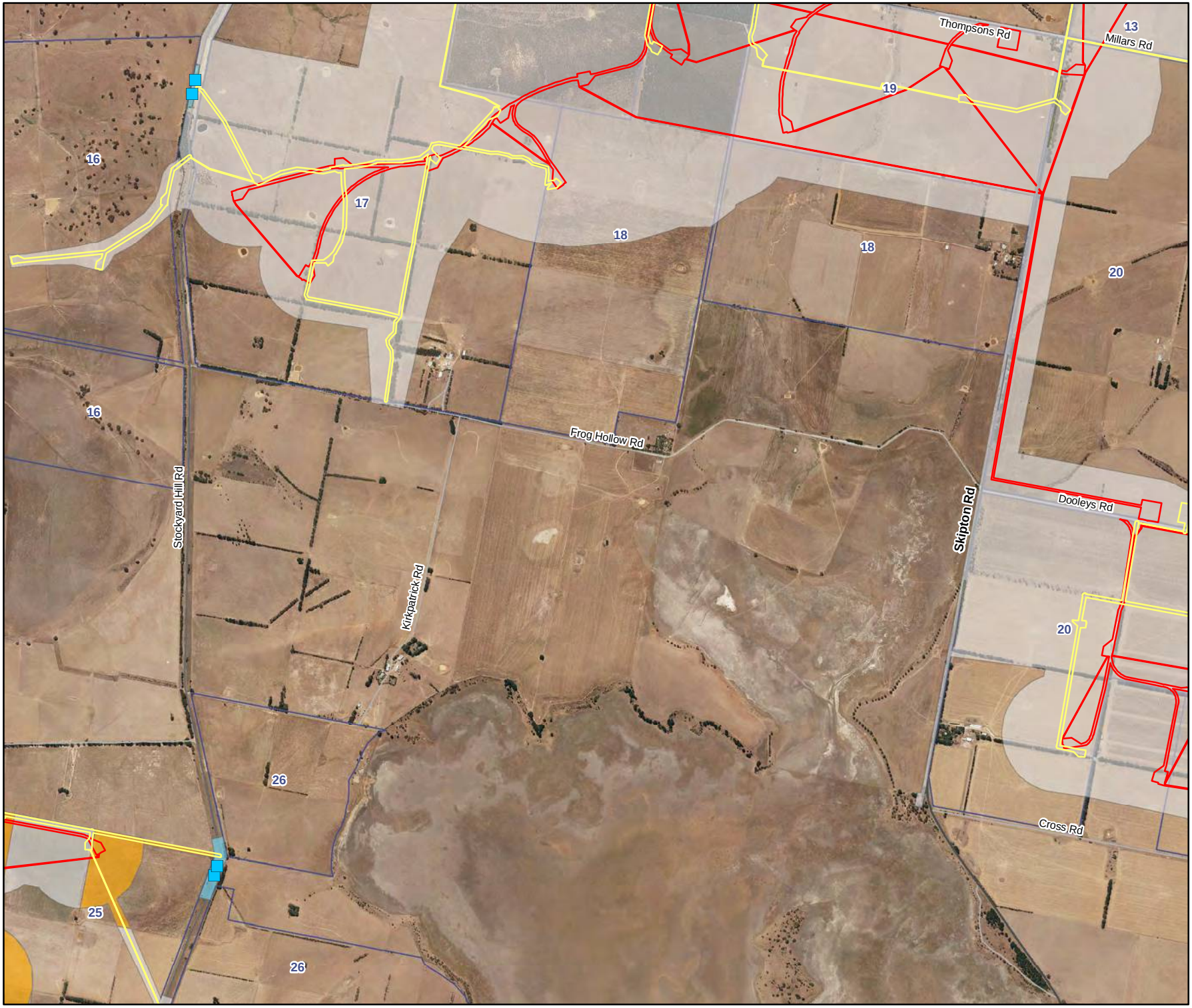

Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Medium
- Low
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

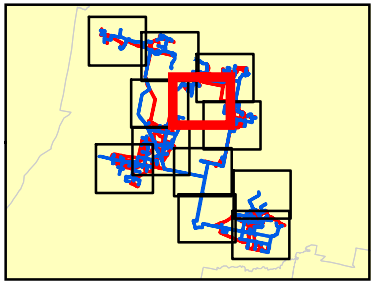

Figure 2e

MNES - Fauna

Stockyard Hill Wind Farm Project

N

0 250 500

Metres

ecology & heritage partners

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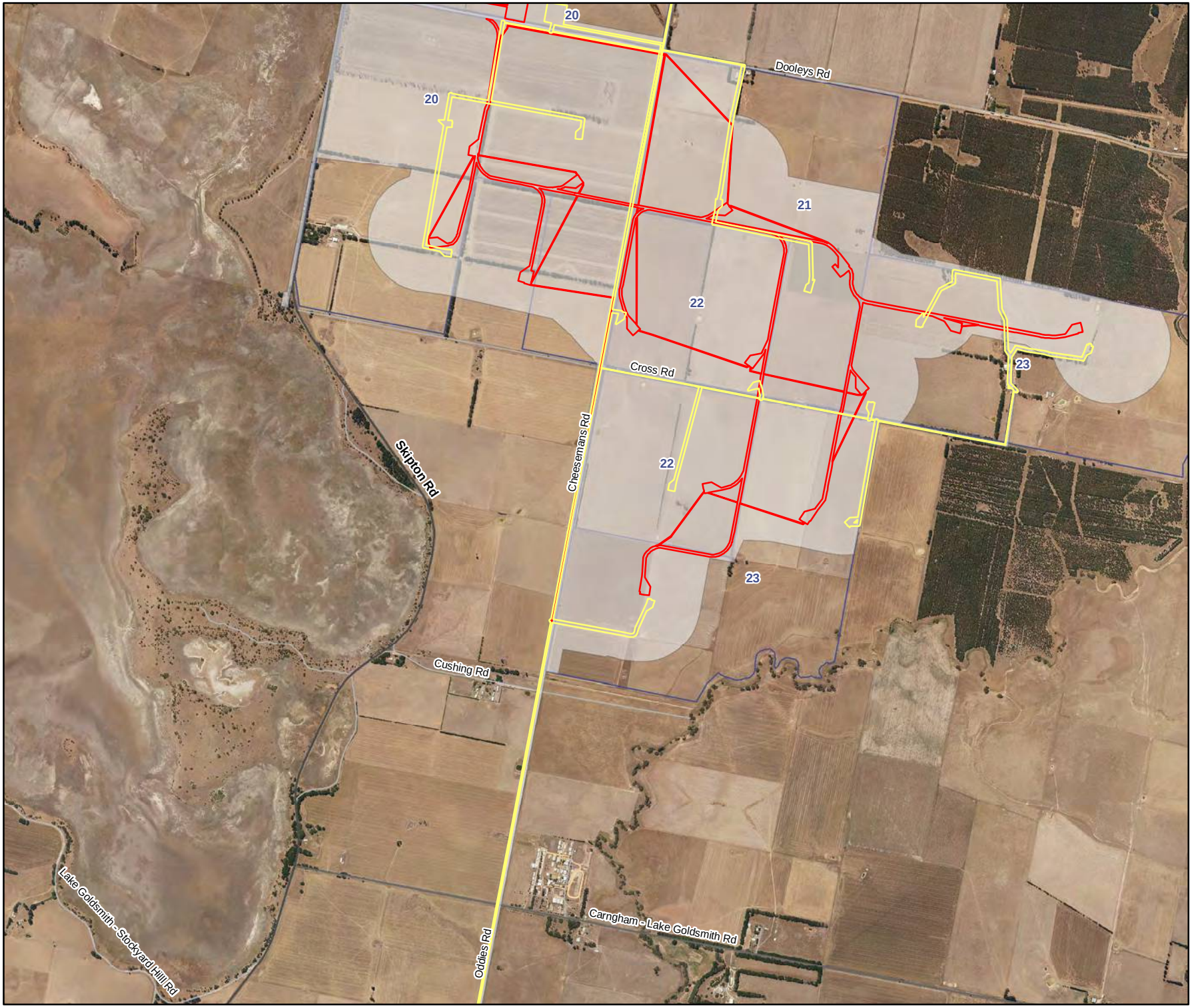

Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)

Striped Legless Lizard habitat quality

- Medium
- Low
- Presence unlikely / no suitable habitat

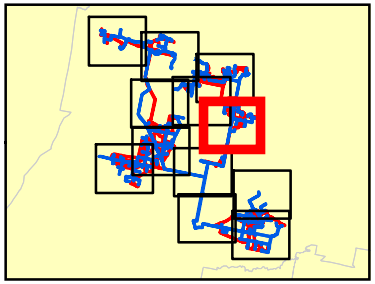

Figure 2f

MNES - Fauna

Stockyard Hill Wind Farm Project

N

0 250 500

Metres

ecology & heritage partners

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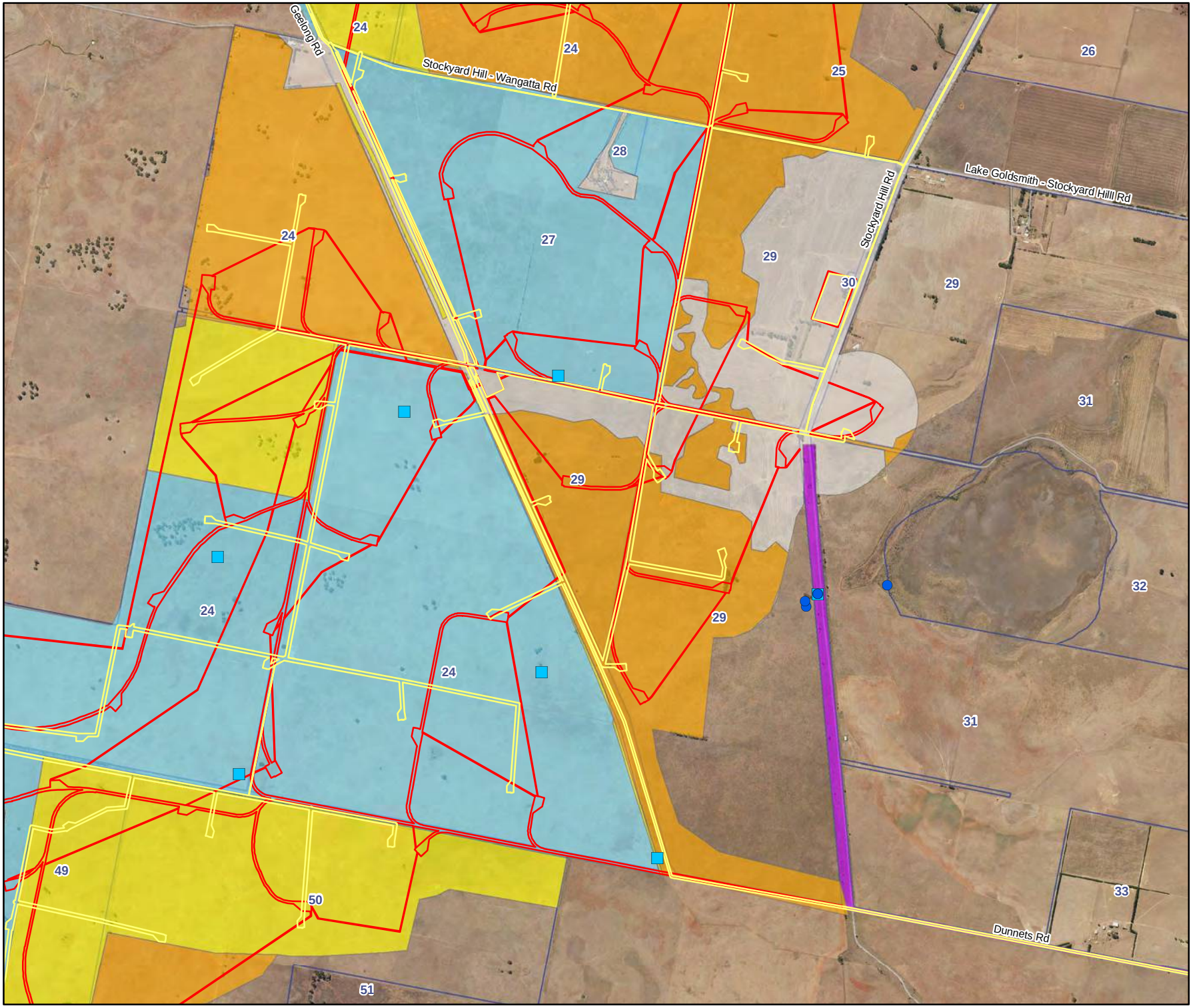

Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard records
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Medium
- Low
- Known
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

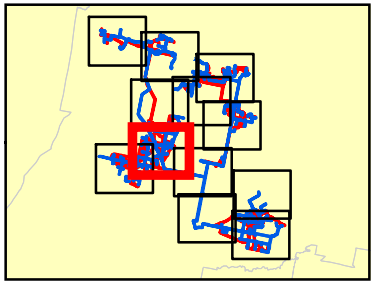

Figure 2g

MNES - Fauna

Stockyard Hill Wind Farm Project

N

0 250 500

Metres

ecology & heritage partners

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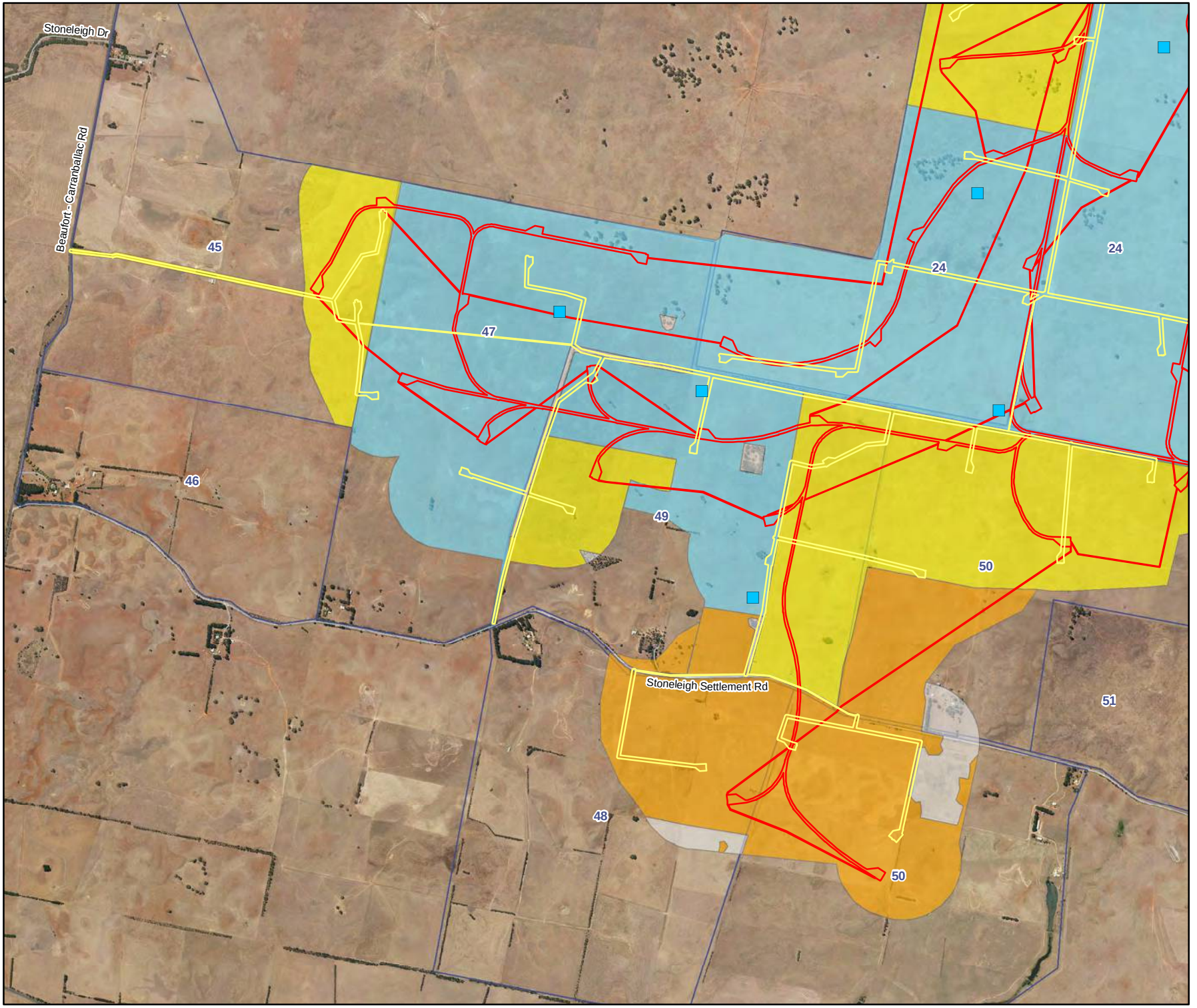


Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Medium
- Low
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

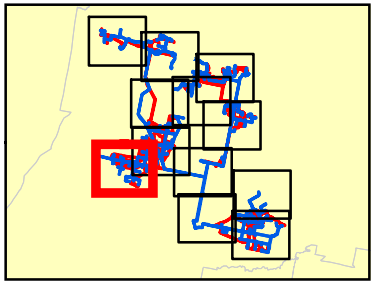


Figure 2h

MNES - Fauna

Stockyard Hill Wind Farm Project

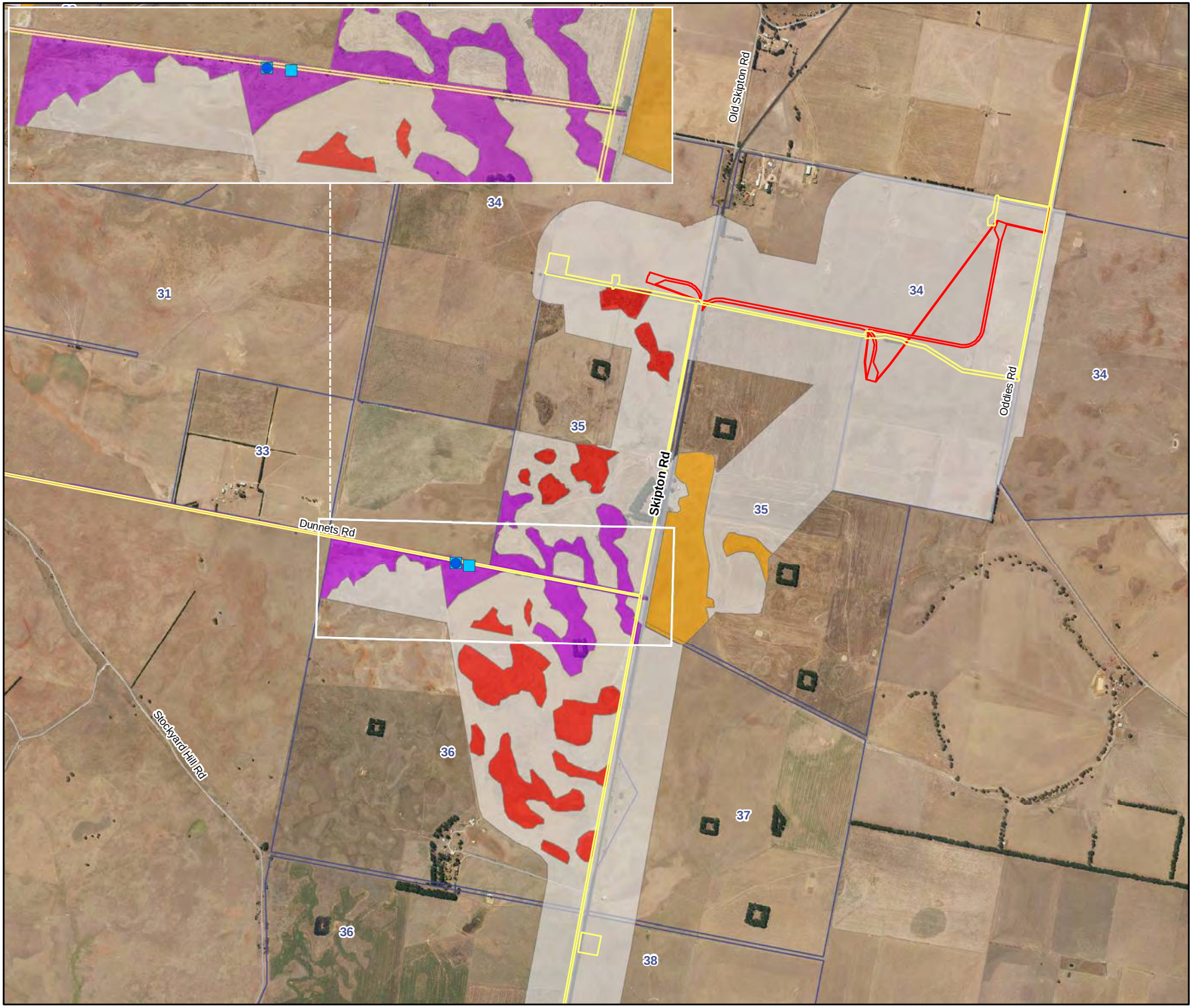
N

0 250 500

Metres

ecology & heritage partners

7334_Fig02_MNES_Fauna_MB 26/04/2016 melsley



Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard records
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- High
- Medium
- Low
- Known
- Presence unlikely / no suitable habitat

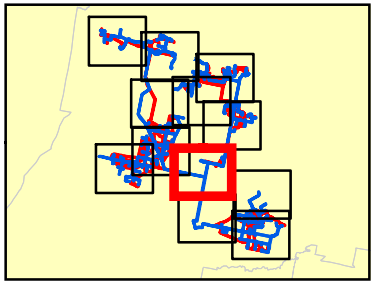


Figure 2i

MNES - Fauna

Stockyard Hill Wind Farm Project

N

0 250 500

Metres

ecology & heritage partners

7334_Fig02_MNES_Fauna_MB_Pi 26/04/2016 melsley

Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)

Striped Legless Lizard habitat quality

- Low
- Presence unlikely / no suitable habitat

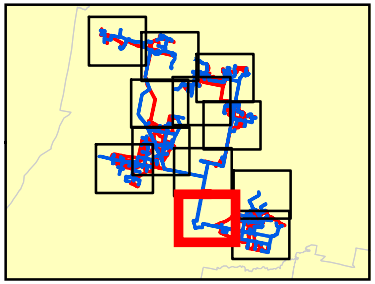


Figure 2j

MNES - Fauna

Stockyard Hill Wind Farm Project

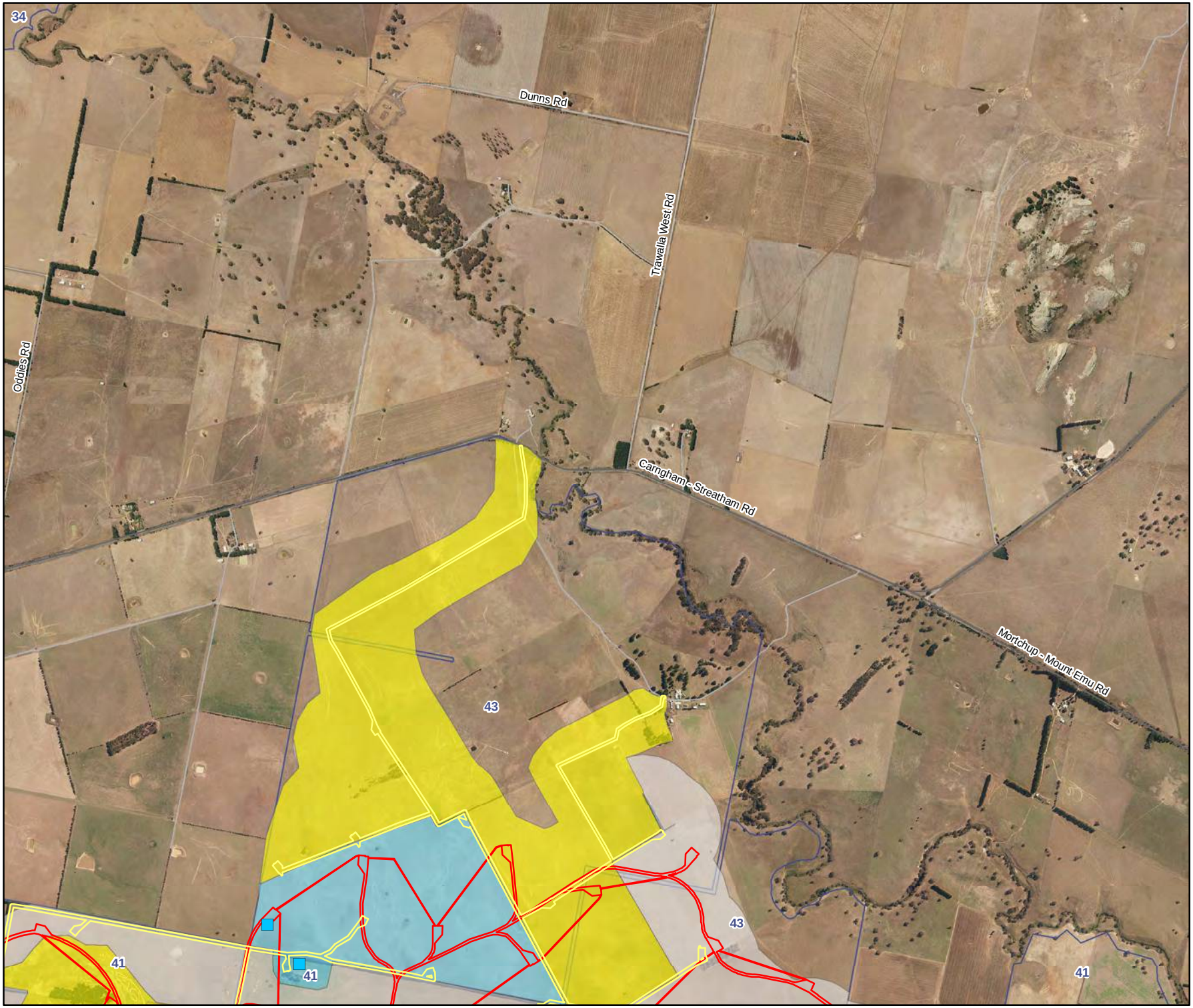
N

0 250 500

Metres

ecology & heritage partners

7334_Fig02_MNES_Fauna_MB 26/04/2016 melsley



Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Low
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

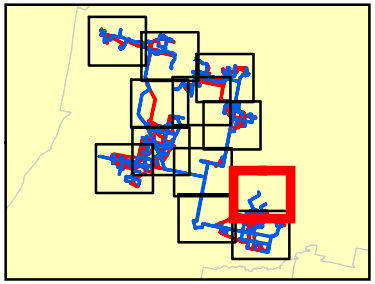


Figure 2k

MNES - Fauna

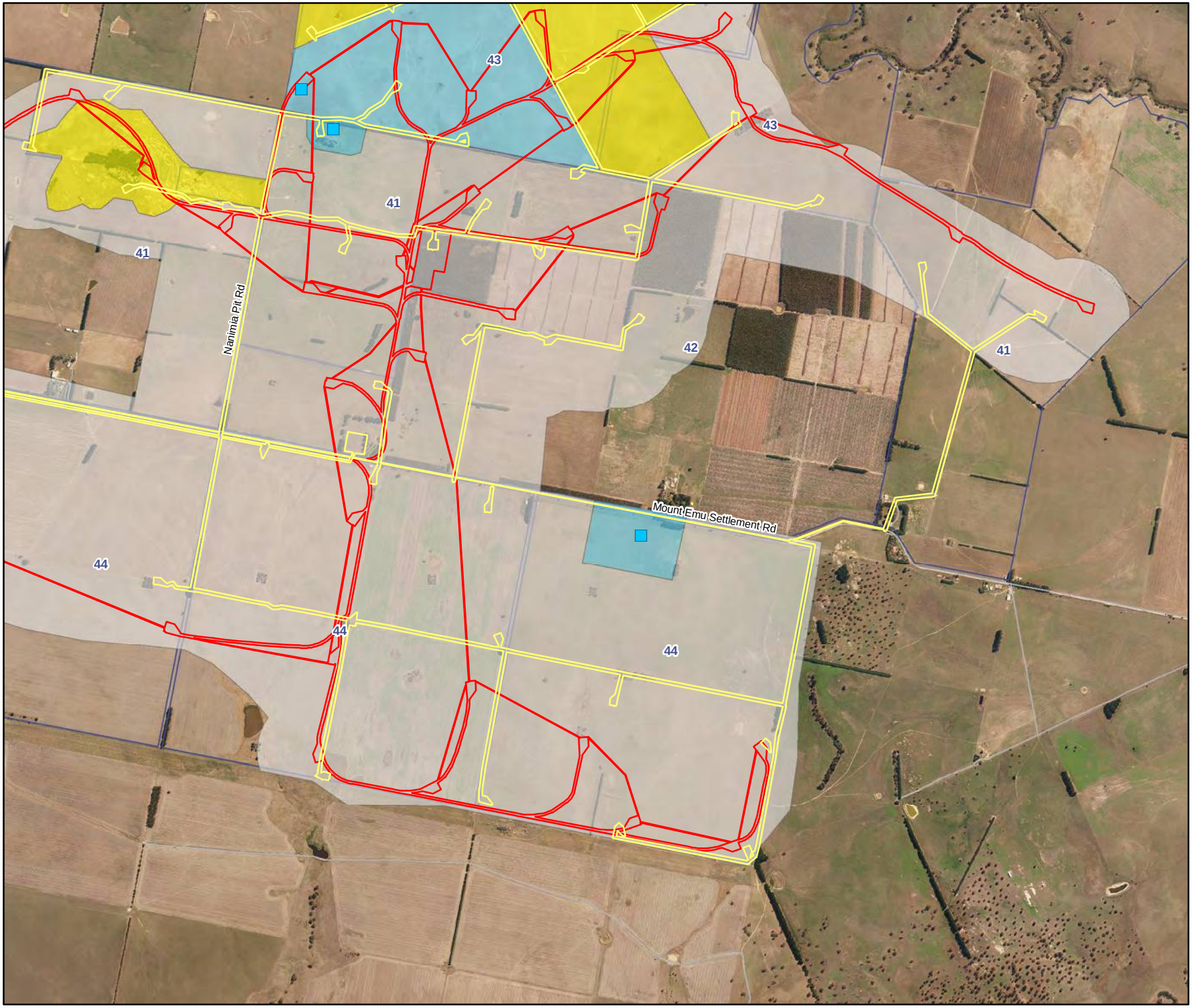
Stockyard Hill Wind Farm Project

N

0 250 500

Metres

ecology & heritage partners



Legend

- Permitted WEF footprint
- Amended WEF footprint
- Property boundaries (with ID)
- Striped Legless Lizard tile grid locations

Striped Legless Lizard habitat quality

- Low
- Presence unlikely / surveys undertaken
- Presence unlikely / no suitable habitat

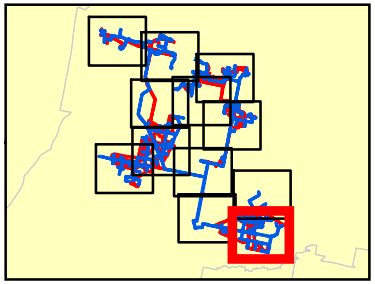


Figure 2l

MNES - Fauna

Stockyard Hill Wind Farm Project

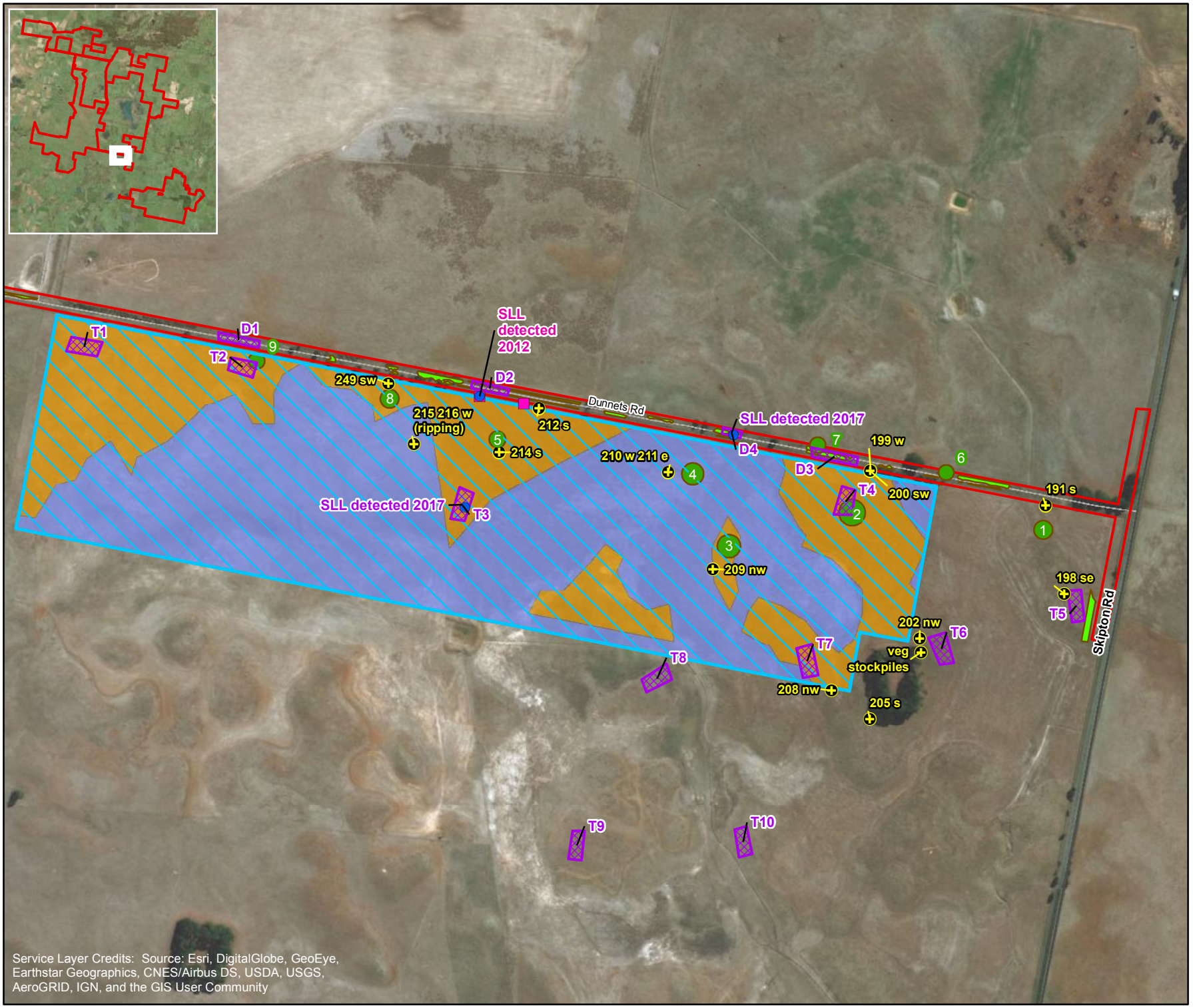
N

0 250 500

Metres

ecology & heritage partners

7334_Fig02_MNES_Fauna_MB 26/04/2016 melsley



Legend

- Stockyard Hill Wind Farm boundary
- Proposed Onsite Offset Site (43ha)
- Vegetation Survey Points
- Photopoints
- Striped Legless Lizard records
- Tile grid locations
- Tile Grid locations (current survey)

Striped Legless Lizard habitat characteristicsv2

- Rocky rises mixed with native and exotic species
- Predominantly exotic grassland (future revegetation and management)
- Remnant Native Vegetation

Figure 3

Proposed Offset Sites

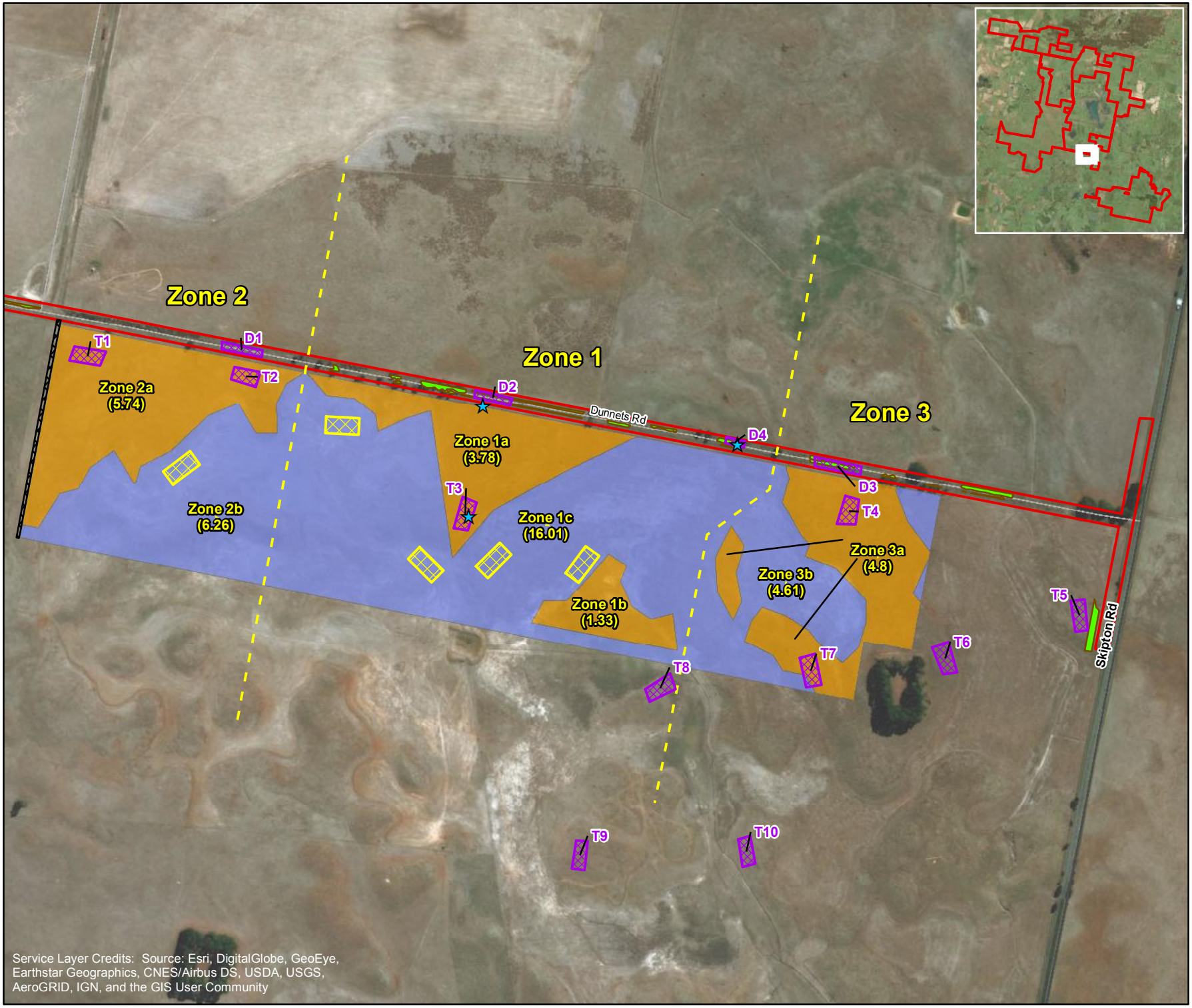
Striped Legless Lizard Offset Strategy, Stockyard Hill Wind Farm

N

0 100 200

Metres

ecology & heritage partners



Legend

- Stockyard Hill Wind Farm boundary
- 15m Access Lane
- Tile Grid Monitoring Sites
- Tile Grid locations (current survey)
- Striped Legless Lizard records

Striped Legless Lizard habitat characteristics

- Rocky rises mixed with native and exotic species (16ha)
- Predominantly exotic grassland (future revegetation and management) (27ha)
- Remnant Native Vegetation

Figure X

Rehabilitation Plan

Striped Legless Lizard Offset Strategy, Stockyard Hill Wind Farm

Date: 12/02/2018 / Version 2

N

0 100 200

Metres

ecology & heritage partners

APPENDIX A

Assessment of offsets against principles in the EPBC Act Environment Offset Policy

Table A.1. Assessment summary of the Striped Legless Lizard Offset against the EPBC Act Environment Offset Policy

Principle of suitable offset	Assessment
Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action	The proposed onsite offset site will protect approximately 43 hectares of land, comprising suitable habitat for the species. The protection of this land will meet the offset requirements associated with the proposed removal of 42.16 hectares of SLL habitat as part of the development. This is based on the majority of impacted habitat (39.63 hectares) comprising highly modified pasture grasses. Given the offset sites adjoin areas of confirmed SLL habitat along Dunnets road and within private property in the offset site, the proposed habitat management and enhancement works outlined in this strategy will provide an overall conservation gain for the species.
Be built around direct offsets but may include other compensatory measures	Additional compensatory measures will also be undertaken in the form of direct seeding and rehabilitating areas habitats within the offset site. Specific details and costings are available within Appendix D and Section 6.
Be in proportion to the level of statutory protection that applies to the protected matter	In accordance with the EPBC Act Offset Assessment Guide (Appendix A), if managed appropriately (as planned), this area will meet the offset requirements associated with the proposed removal of SLL habitats as part of the development.
Be of a size and scale proportionate to the residual impacts on the protected matter	The protection of approximately 43 hectares will meet the offset requirements associated with the proposed removal of SLL habitats as part of the development given the highly modified nature of habitat being removed and the proposed management regime for the offset site, including habitat enhancements such as direct seeding (if undertaken).
Effectively account for and manage the risks of the offset not succeeding	Appropriate management actions detailed in Section 6 of this OMS will be implemented for a 10 year period and are designed to maintain and enhance current SLL habitat within the offset site.
Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action)	This offset is solely for the impact to SLL habitats associated with the WEF and associated projects (Figures 2a–2l).
Be efficient, effective, timely, transparent, scientifically robust and reasonable	The proposed offsets will provide sufficient offset outcomes for the impacts to SLL as part of this project. The OMS will be supported by species population monitoring and habitat management for a minimum of 10 years (Section 6).
Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced	The long-term security of the offset site will be undertaken through a land management agreement under Section 69 of the *Conservation Forests and Lands Act 1987*. The SHWFPL and landowner will also be required to submit relevant reporting to the DAWE to track the progress of the offset site and SLL populations and associated habitat conditions.

EPBC Act Offset Calculator and Associated Notes for SLL Onsite Offset at the SHWF

Table A.2. Impact Calculator

Condition	Value	Comments
Area of habitat to be cleared	42.16	As provided by SHWFPL.
Quality of area to be cleared	3	The habitat is of low quality overall, as it does not meet the most of the optimum habitat specifications for the species.

Table A.3. Offset calculator

Condition	Value	Comments
Time over which loss is averted (max. 20 years)	20	SHWFPL plans to maintain the offset site for at least 10 years.
Time until ecological benefit	10	As the start condition is reasonably poor quality, considerable management over 10 years will be required to achieve the proposed improvements. Additional management actions (e.g. removal of weeds, revegetation) are not expected to effect the SLL and potential improvements are likely to occur within 10 years with focused management efforts under this OMS.
Start area (hectares)	43 ha	As per the area mapped on Figure 4 the onsite offset site will retain approximately 43ha for SLL conservation purposes.
Start quality	4	The quality of the offset area is considered to be of a higher quality to the modified areas being cleared as part of the WEF and associated projects. While the offset site is now within the property of a single landowner, given the retention of linear remnant vegetation (up to 10m in width) and confirmed SLL habitat within Dunnets Road will occur, the start quality will remain at 4.
Risk of loss (%) without offset	50	There is a medium risk that the habitat would be lost without being designated as an offset. The site is not managed for SLL, and future decisions would not take the species' conservation requirements into consideration. Over the 20 years that this offset considers, changes in management to the detriment of the SLL habitats and extant population (e.g. over-grazing, habitat degradation) would be likely to occur. The SLL may also be at risk of burning though grass fires, and the site is not currently protected from this currently.
Future quality without offset	2	It is assumed that the habitat quality will decrease from the current level of quality if not managed and offset in accordance with this SLLOMS.
Risk of loss (%) with offset	15	With specific management of the site as a SLL conservation area, there is a much smaller risk that the habitat will be lost through poor management decisions. Fire prevention measures will also implemented, which will reduce the chances of the area being lost to grass fire.
Future quality with offset	6	It is expected that this OMS, and the actions detailed within, will lead to an increase of the habitat quality. Given that the habitat quality is already low-moderate, if a conservative approach is taken, the nominated increase is likely to be significant as part of the long-term management of the site.
Confidence of results:	70%	There is a moderate to high confidence that the management of the site as an offset will result in habitat improvement, and improve the long-term viability and security of an extant population of SLL within these offset sites.

APPENDIX B – CAPTURE AND RELOCATION PLAN

Background

This Capture and Relocation Plan (CRP) has been developed to assist SHWFPL with the removal of areas of habitat which are known to provide potential refuge for Striped Legless Lizard *Delma impar* (SLL) within the road reserve of Dunnets Road. This CRP provides a step-by-step guide for the relevant contractor to follow during all stages of the road upgrade works proposed along Dunnets Road.

This CRP will generally follow the recommendations within the '*Salvage and Translocation Operational Plan*' (DSE 2011), which was prepared by the (former) Department of Sustainability and Environment (DSE, now DELWP) to assist with salvaging and translocating Striped Legless Lizard during habitat removal within the urban growth area of Melbourne.

Objectives

The objectives of the CRP are to ensure that any SLL individuals are captured and relocated safely within the proposed onsite offset site in areas providing potential habitats. This will be achieved through the following steps:

1. Identifying areas which are likely to provide known or potential habitat(s) requiring capture and relocation along Dunnets Road. Given the onsite offset site is immediately south of Dunnets Road, it is anticipated that all vegetation adjoining the offset site will be considered potential habitat.
2. Ensuring habitat areas which are not required to be removed are not impacted through the implementation of appropriate controls (i.e. contractor inductions, signage and clearly marked no-go zones)
3. Clearly outlining the procedures to be followed by contractors during the removal of habitat in areas which are known or likely to contain SLL.
4. Clearly providing guidelines on the procedures to be followed if a SLL is detected during habitat removal.
5. Clearly defining the roles and responsibilities of all ecological and construction staff associated with the road upgrade works and the SHWFPL project.

Timing

Based on the recommendations outlined in the '*Salvage and Translocation Operational Plan*' (DSE 2011), it is preferable for salvage to occur between October and March during a time of the year when SLL are more active. No construction earthworks may commence until the herpetological consultant provides written confirmation to the Department of Environment, Land, Water and Planning (DELWP) and the developer that the CRP is approved.

Capture technique

Capture of SLL will entail the use of an excavator provided/hired by the Developer to the specifications outlined below (DSE 2011):

- Hydraulic excavator with the largest toothed bucket that can be practically used (usually 900-950mm). **Note:** mini excavators/backhoes can also be used if an excavator is not available, but the smaller bucket capacity of such machines can be expected to reduce efficiency of the salvage regime.
- Two qualified herpetologists will be in attendance during all habitat removal within relevant areas associated with the road upgrade works along Dunnets Road as shown on Figure 4. Given the cover of rock is high (>20%) and the site is linear, an excavator will be predominantly utilised on site (as opposed to tyning using a grader). The methods detailed below will be implemented during all stages of habitat removal in accordance with the '*Salvage and Translocation Operational Plan*' (DSE 2011):
- Prior to any earthworks, all existing tile grids (Tile Grids D1-D4) within the Dunnets Road reserve will be checked prior to construction works to capture any individuals seeking refuge under artificial habitats (Figure 3).
- Once all existing artificial habitats have been checked, the excavator will dig the surface layer to a depth of approximately 300 mm into the bucket while two observers watch for SLL within the excavated plot (DSE 2011).
- The operator will then slowly empty the bucket to the side of the work area using a jerky motion. One of the two observers will search for SLL within the vegetation which has been removed and placed on the edge of the work area (DSE 2011).
- The excavator bucket will also be used to carefully dislodge and pick up surface and 'floater' rocks in a manner that permits the observers the best opportunity to locate and capture any SLL that may have been beneath the rock. **Note:** it is important that the excavator does not drive over or place excavated soil on an area selected for relocation before works have been completed there (DSE 2011).

Relocation Process

In the event that SLL's are found during works, the herpetological consultants will:

- Transfer any Striped Legless Lizard caught will be transferred into a clean calico bag (one animal only per bag). Bags containing lizards must be kept in a secure and cool, shaded location where there is no risk of animals being crushed. Cloth bags are to be used inside out to avoid entanglement of Striped Legless Lizard in loose threads (DSE 2011).
- Transfer uninjured Striped Legless Lizard within suitable habitat no greater than 50 metres from where the individual was detected or as pre-determined by the relevant DELWP representative .

- Any obviously injured individuals will require in-field euthanasia by a sudden crushing blow to the head and decapitation. **Note:** that tail loss (autotomy) as a natural anti-predator mechanism may occur and does not constitute injury (DSE 2011).
- Retain preserved specimen of whole or any part of a SLL recovered dead, including autotomised tails, and offer to Museum Victoria along with all data for the individual (DSE 2011).
- Document exact location of each individual using hand-held GPS (DSE 2011).
- Document and record head scale patterns for monitoring, number of individuals captured, sexes (if known), age-classes (adults, juveniles), morphometrics, for all SLL captured (DSE 2011).
- Record key micro-habitat data for soil, vegetation and other micro-habitat parameters to a pre-determined set of measurable variables (DSE 2011).
- Document survey effort, including time spent, number of herpetological consultants, survey method and surface area of habitat disturbed (DSE 2011).

All required data must be recorded for each SLL captured and all data must be forwarded to DELWP within 10 working days.

Occupational health and safety

All staff involved with implementing this CRP will employ suitable safety measures applicable to the location and will include (as a minimum):

- Prepare a Safe Working Methods Statement (SWMS) for the proposed works.
- Undergo a site induction and adhere to all site OH&S requirements, as required.
- Stand back from the point of excavation at a safe working distance from the machine, but sufficiently close to adequately detect any Striped Legless Lizard disturbed (DSE 2011).
- Move to catch animals only after the machine operator has stopped movement of the machine.
- Use only herpetologists proficient in rapid field identification of pygopodids and elapid snakes.
- Be inducted to these safety procedures by the relevant Developer/site manager in consultation with the lead herpetological consultant.

APPENDIX C – EPBC ACT OFFSET ASSESSMENT CALCULATIONS (ONSITE OFFSET)

Impact calculator							
Impact calculator	**Protected matter attributes**	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
	Threatened species habitat						
	Area of habitat	Yes	Striped Legless Lizard habitat	**Area**	42.16	Hectares	EHP field assessments and mapping.
				Quality	**3**	Scale 0-10	
				Total quantum of impact	12.65	Adjusted hectares	

Offset calculator

Offset calculator	Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)		% of impact offset	Minimum (90%) direct offset met?	Cost ($ total)	Source
	Threatened species habitat																					
	Area of habitat	Yes	12.65	Adjusted hectares	Offsets onsite within either Option 1 or Option 2	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	43	**Risk of loss (%) without offset**	50%	**Risk of loss (%) with offset**	15 %	15.05	70%	10.54	10.12	12.82	101.34%	Yes	$750,000 (ex GST)	Habitat quality based on EHP reporting and field assessments
										Future area without offset (adjusted hectares)	21.5	**Future area with offset (adjusted hectares)**	36.6									
						Time until ecological benefit	10	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**2**	**Future quality with offset (scale of 0-10)**	**6**	4.00	80%	3.20	3.14					

Cost ($Total) Note (*): **Any additional fees associated with acquiring the land have not been included.**

APPENDIX D – ONSITE OFFSET SITE 10 YEAR MANAGEMENT COSTINGS

Table D.1. Management costings and timelines for rehabilitation works, weed management, fencing and associated monitoring for Striped Legless Lizard and vegetation.

Task	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Subtotal	GST	Total
Zone 1 Rehabilitation Management Plan (21.54 ha)													
Site Preparation Pack Spraying Rocky Areas (Zones 1a)				$1,632	$1,665						$3,297	$330	$3,626
Direct Seeding (Zone 1a x seeding of 50% total area due to existing native cover)						$13,464					$13,464	$1,346	$14,810
Direct Seedling (Zone 1a - over sowing if poor success rate - 1ha)							$6,600		$6,732	$6,867	$20,199	$2,020	$22,219
Weed Maintenance Spraying (Zone 1a)						$1,020	$1,040	$1,061	$1,082	$1,104	$5,308	$531	$5,839
Site Preparation Pack Spraying Rocky Areas (Zones 1b)	$532	$543									$1,075	$107	$1,182
Site Preparation Broad Acre Boom Spraying (Zone 1c)	$1,613	$1,645									$3,258	$326	$3,584
Direct Seeding (Zone 1b and 1c)			$115,236								$115,236	$11,524	$126,760
Direct Seedling (Zone 1b and 1c - over sowing if poor success rate - 4ha)				$26,400		$26,928		$27,467			$80,795	$8,080	$88,875
Weed Maintenance Spraying (Zones 1b and 1c)				$4,365	$4,452	$4,541		$4,725		$4,916	$23,000	$2,300	$25,300
Zone 2 Rehabilitation Management Plan (11.89 ha)													
Site Preparation Pack Spraying Rocky Areas (Zone 2a)			$2,260	$2,305							$4,565	$457	$5,022
Direct Seeding (Zone 2a x seeding of 50% total area due to existing native cover)					$18,645						$18,645	$1,865	$20,510
Direct Seedling (Zone 2a - over sowing if poor success rate - 1ha)						$6,600		$6,732		$6,867	$20,199	$2,020	$22,219
Weed Maintenance Spraying (Zone 2a)						$1,413	$1,441	$1,470	$1,499	$1,529	$7,353	$735	$8,089
Site Preparation Broad Acre Boom Spraying (Zones 2b)	$624	$636									$1,260	$126	$1,387
Direct Seeding (Zone 2b)			$41,184								$41,184	$4,118	$45,302
Direct Seedling (Zone 2b - over sowing if poor success rate - 1ha)				$6,600		$6,732			$6,867		$20,199	$2,020	$22,219
Weed Maintenance Spraying (Zone 2b)				$1,560	$1,591	$1,623		$1,689		$1,757	$8,220	$822	$9,042
Zone 3 Rehabilitation Management Plan (9.55 ha)													
Site Preparation Pack Spraying Rocky Areas (Zone 3a)			$1,960	$1,999							$3,959	$396	$4,355
Direct Seeding (Zone 3a x seeding of 50% total area due to existing native cover)					$16,170						$16,170	$1,617	$17,787
Direct Seedling (Zone 3a - over sowing if poor success rate - 1ha)						$6,600		$6,732		$6,867	$20,199	$2,020	$22,219
Weed Maintenance Spraying (Zone 3a)						$1,225	$1,250	$1,274	$1,300	$1,326	$6,375	$637	$7,012
Site Preparation Broad Acre Boom Spraying (Zones 3b)	$465	$474									$939	$94	$1,033
Direct Seeding (Zone 3b)			$30,690								$30,690	$3,069	$33,759
Direct Seedling (Zone 3b - over sowing if poor success rate - 1ha)				$6,600		$6,732			$6,867		$20,199	$2,020	$22,219
Weed Maintenance Spraying (Zone 3b)				$1,163	$1,186	$1,210		$1,259		$1,310	$6,128	$613	$6,741
Broader Offset Site Costings													
Fence installation (3300 metres for new perimeter fence to north and east the offset site)	$56,100										$56,100	$5,610	$61,710
Fence maintenance (of existing farm fencing)		$800	$816	$832	$849	$866	$883	$901	$919	$937	$7,804	$780	$8,584
Pest animal control (rabbits and hares)	$5,000		$4,200			$3,600		$2,916		$2,362	$18,078	$1,808	$19,886
Striped Legless Lizard Monitoring	$16,000		$16,646		$17,319		$17,665		$18,019	$18,379	$104,028	$10,403	$114,431
Biomass reduction (burning as an alternative to sheep grazing)						$12,500		$12,750		$13,005	$38,255	$3,826	$42,081
Project management	$3,000	$3,060	$3,121	$3,184	$3,247	$3,312	$3,378	$3,446	$3,515	$3,585	$32,849	$3,285	$36,134
SUB TOTAL	**$83,334**	**$7,159**	**$216,113**	**$56,640**	**$65,125**	**$98,367**	**$32,258**	**$72,423**	**$46,801**	**$70,811**	**$749,030**	**$74,903**	**$823,933**

Assumptions/Cost Indexes

General	Where costs are consistent across consecutive years, an annual 2% CPI has been applied.
Site Preparation Broad Acre Boom Spraying (includes labour and chemical)	$100.00 / hectare. Annual 2% CPI has been applied.
Site Preparation Pack Spraying (includes labour and chemical)	$400.00 / hectare. Annual 2% CPI has been applied.
Weed Maintenance Spraying in established grassland (grass and herbacious weeds)	$250.00 / hectare. Annual 2% has been applied.
Direct Seeding (sowing of native grass seeds)	$1,100.00 / hectare. Annual 2% CPI has been applied.
Direct Seed Mix (native tussock grasses)	$5,500.00 / hectare for the seed mixture of native grasses. Annual 2% CPI has been applied.
Biomass reduction (burning of 2 x 15ha areas each year - areas subject to vegetation quality / SLL)	Every 2 years commencing in Year 6. Annual 2% CPI has been applied.
Pest animal control	Pest animal control requirements will reduce over time.
Fence installation	$17.00 per metre for materials and labour.
Fence maintenance, rubbish removal	Costs consistent. Annual 2% CPI has been applied.
Striped Legless Lizard Monitoring	Commencing Year 1 for suitable habitats and year Set up cost of 10 tile grids and 4 monitoring events, mileage, reporting and project management. Subsequent years account for 4 tile checks, mileage, reporting and project management. Annual 2% CPI has been applied.
Project management	Costs consistent. Annual 2% CPI has been applied.