Stockyard Hill Wind Farm

EPBC 2016/7746

22 May 2021 to 21 May 2022

Annual Compliance Report 2022

Document No.	SH-PM-REP-0015
Revision Date	August 2022

Prepared by: CNC Project Management

For: Stockyard Hill Wind Farm Pty Ltd

GOLDWIND

Document Control - SH-PM-REP-0015

Document Version	Date	Prepared by	Owners Representative
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Final for submission	*15/08/2022*		

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ABBREVIATIONS

Approval Holder	Stockyard Hill Wind Farm Pty Ltd (ABN 71 118 119 501)
AEMO	Australian Energy Market Operator
BB	Bush Broker
EMP	Environmental Management Plan (approved by DELWP under SHWEF permit)
Commencement	As per the Definitions in Approval
CTA	Credit Trade Agreement
CMA	Catchment Management Authority
DAWE, DCCEEW or Department	Department of Agriculture, Water and Environment, now the Department of Climate Change, Energy, the Environment and Water administering the EPBC Act 1999
DELWP	Department of Environment, Land, Water and Planning
EPBC	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
EPBC 2016/7746	EPBC Approval No. 2016/7746
EPC	Engineer, Procure and Construct
GSM	Golden Sun Moth *Synemon plana* listed under EPBC Act 1999
GWA	Goldwind Australia Pty Ltd (ACN 140 108 390)
Ha	Hectare
kV	Kilovolt
LA	Landowner Agreement
Minister	The Minister administering the EPBC Act 1999
MW	Megawatt
O&M	Operations and Maintenance (Phase of Development)
OMS	Offset Management Strategy
SCADA	Supervisory Control and Data Acquisition
SHWF	Stockyard Hill Wind Farm
SHWEF	Stockyard Hill Wind Energy Facility comprising 149 wind turbines and associated facilities
SHWFPL	Stockyard Hill Wind Farm Pty Ltd
SLL	Striped legless lizard *Delmar Impar* listed under EPBC Act 1999
Strategy	See OMS, Offset Management Strategy
The Land	Project land as shown in Planning Permit and EPBC Referral/Approval documents
The Proponent	Stockyard Hill Wind Farm Pty Ltd (SHWFPL)
SHWFPL address	Stockyard Hill Wind Farm Pty Ltd Level 25, Tower 1, 100 Barangaroo Avenue, Barangaroo NSW 2000

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Declaration of Accuracy

This Annual Compliance Report relates to the Stockyard Hill Wind Farm located in Western Victoria between Beaufort and Skipton.

The Annual Compliance Report has been prepared in accordance with the requirements of the Condition 6 of the EPBC Approval, issued under the Environment Protection Biodiversity and Conservation Act 1999, in respect of the following Action:

> ***Stockyard Hill Wind Farm, Wind Energy Facility and associated infrastructure, southwest Victoria (EPBC 2016/7746)***

This Report:

- *has been prepared for submission to the Department of Agriculture, Water and Environment in accordance with the submission requirement of Condition 6 of the Approval and based on the anniversary of commencement of the Action, 22 May 2018;*
- *addresses each of the Conditions of the Approval and Management Strategies to describe the status of compliance with the respective requirements;*
- *provides an accurate account of the respective matters for the Approval and does not intentionally misrepresent circumstances; and*
- *Is made publicly available (except as indicated for Appendix C) through publication on the Stockyard Hill Wind Farm website (www.stockyardhilllwindfarm.com).*

Jeff Bembrick

Development Compliance Manager, Goldwind Australia, on behalf of Stockyard Hill Wind Farm Pty Ltd.

15 August 2022

1 INTRODUCTION

1.1 Purpose of this document

This Annual Compliance Report describes the activities undertaken and relevant performance in respect of:

- **Project:** Stockyard Hill Wind Farm – Wind Energy Facility and associated infrastructure;
- **Proponent:** Stockyard Hill Wind Farm Pty Ltd (ABN 71 118 119 501);
- **EPBC Approval:** EPBC 2016/7746;
- **Condition No. 6** – Year 4 report under requirements of Condition 6 of the Approval;
- **Report period:** 22 May 2021 to 21 May 2022;
- **Project phase:** Construction/Commissioning phase for current reporting period.

The report has been prepared by Goldwind Australia on behalf of Stockyard Hill Wind Farm Pty Ltd (SHWFPL).

The report has been prepared in accordance with Condition 6 of EPBC Approval, EPBC 2016/7746, to fulfil the requirements of Condition 6. Table 1.1 lists the requirements of Condition 6 and the sections of this report where each requirement is addressed.

Table 1.1: EPBC Condition 6 - Annual Compliance Reporting Requirements

EPBC Approval Condition 6 Reporting Requirements	Details
Within three months of every 12-month anniversary of the commencement of construction, the approval holder must publish a report on their website	Due Date is by 22 August 2022
• The report to be published on the website must address:	See below:
○ compliance with each of the conditions of this approval, including	Section 4, and Appendix A, B, C and D
○ implementation of any strategies specified in the conditions.	Section 4, and Appendix A, B, C and D
• Documentary evidence providing:	See below:
○ proof of the date of publication, and	Email/Letter to Department
○ 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.	As per this report. No instances of non-compliance.
• Report must remain published for the life of the approval	Ongoing requirement
• Continue to publish reports until such time as advised in writing by Minister	Ongoing requirement

A summary of compliance status for the Approval Conditions and Management Strategies (Year 4) is shown in Table 1.2 and is expanded on in Section 4, Appendix A (Compliance Tracker), Appendix B

(SMEC Report, March 2022), Appendix C (SMEC Report, March 2022a) and Appendix D (AusEco Solutions Report 2022).

Table 1.2 – Summary of Year 4 Compliance for Conditions of Approval and Management Plans

Condition	Compliance Status	Requirement	Date Completed
1(a)	Compliant	Clear less than 42.16 ha SLL habitat	Refer Year 2 Rpt.
1(b)	Compliant	Clear less than 1.57 ha GSM habitat	Refer Year 2 Rpt.
2(a)	Compliant	SLL Covenant secured	Refer Year 1 Rpt.
2(b)	Compliant	Implement SLL Offset Management Strategy	Year 4 complete
3(a)	Compliant	GSM Covenant secured	Refer Year 1 Rpt.
3(b)	Compliant	Implement GSM Offset Management Strategy	Year 4 complete
Administrative			
4	Compliant	Notify Commencement	4 June 2018
5	Compliant	Maintain records of all activities	Ongoing
6	Compliant	Annual Compliance Reporting	Ongoing – 4th Rpt.
7	Compliant	Revision of Strategy	(Notified 4 Aug 2021)
8	Not Applicable	Revoke choice under Condition 7	NA - Year 4
9	Not Applicable	Exclusions to Condition 7 applicability	NA - Year 4
10	Not applicable	Minister's decision on revised strategy	23rd December 2021
11	Not applicable	Notify time Condition 7 does not apply	NA - Year 4
12	Not applicable	Conditions 7, 8 not intended to limit operation of Section 143A in respect of revised strategy	Noted
13	Compliant	Not commence after 5 years of Approval without written agreement of Minister. (Approval dated 18 August 2017)	Commenced on 22/5/2018 (less than 5 years)
14	Compliant	Publish all strategies on the website	At time of submission
15	Not applicable	Provide copy of any strategy to members of public upon request within reasonable time	No requests to date
Definitions	For information	Various	Noted

Offset Management Strategies for Year 4			**Status Year 4**
2(b) SLL	4.1	Undertake fencing repairs, as required	Ongoing
	4.2	Conduct site preparation works for weed works in Zones 1a (SLL habitat Zone)	Jan-May '22
	4.3	Commence over sowing / direct seeding in Zones 1b, 1c, 2b and 3b	May '22
	4.4	Conduct site preparation weed control for rehabilitation works in Zones 1a, 2a and 3a	Jan-May '22
	4.5	Conduct weed management works for rehabilitated Zones 1b, 1c, 2b and 3b	Jan-May '22
	4.6	Deploy **five** additional SLL monitoring sites within rehabilitated areas	Deferred to Year 5
	4.7	Monitor biomass density and implement stock grazing regime	Complies
3(b) GSM	4.1	Conduct weed control	Complies
	4.2	Monitor populations of pest animals and conduct control works if required	Complies
	4.3	Conduct monitoring for GSM	Complies
	4.4	Maintain fences	Complies

	4.4	Monitor biomass density and implement stock grazing regime or develop ecological burn/fuel reduction plan if appropriate	Complies
	4.6	Monitor and assess works and provide four-year progress report	Complies

2 SUMMARY DETAILS OF SHWEF PROJECT, LOCATION AND CONTEXT

2.1 Project Context

Stockyard Hill Wind Energy Facility (SHWEF) has been developed in Western Victoria between the towns of Beaufort and Skipton. Construction activities commenced in May 2018 with commencement of the Action under the EPBC Approval EPBC 2016/7746, notified on 4 June 2018, as having commenced from 22 May 2018.

The construction and turbine installation is now complete with the wind farm near to the completion of commissioning. At the end of the 2022 annual report period, all 149 wind turbines have operated and only a few remain to complete their commissioning under ongoing Australian Energy Market Operator (AEMO) hold point testing. Wind farm registration for 286MW was gained in early July 2021 followed by full registration at 511MW (at point of connection) in February 2022 and by May 2022 had generated up to approximately 400MW under the AEMO hold point regime.

When operational, the wind farm's 149 Goldwind wind turbines will collectively produce approximately 536MW of electricity sourced from the wind energy resources available at the site.

Once operational, SHWEF will provide a significant contribution to Victoria's renewable energy target and national greenhouse gas emissions reductions.

2.2 Project Locality and Setting

SHWEF is located in Western Victoria, approximately 35 kilometres west of Ballarat (Figure 2.1). The site is within a sparsely settled rural lands within the Victorian Volcanic Plains and within the Pyrenees Shire Council municipality. The land where the turbines are located ranges in height from approximately 325 metres to 430 metres above sea level and within Glen Hopkins Catchment Management Authority (CMA). It spans parts of two bioregions, Central Victorian Uplands and Victorian Volcanic Plain Bioregion.

The site spans a wide area, approximately 25 kilometres from north to south and approximately 20 kilometres from east to west. The wind turbines are grouped in four discrete geographic areas North, East, West and South as indicated in Figure 2.1. Distribution of the turbines by Turbine Group is shown in Table 2.1 and Figure 2.1.

Table 2.1 SHWEF Groups of Wind Turbines and Associated Infrastructure

Turbine group	Number of wind turbines	Wind Turbine Numbering	Other infrastructure within each Group
North	15	WTG 1-15	access tracks, underground cabling, 1 permanent met mast, substation and internal OHL
West	54	WTG 16-69	access tracks, underground cabling, 2 permanent met masts, substation and internal OHL, 4 new access to RDZ1, Site compound, O&M buildings and Fire suppression water tank
East	43	WTG 70-112	access tracks, underground cabling, 2 permanent met masts, substation, 7 new access to RDZ1, Site compound, O&M buildings and Fire suppression water tank

South	37	WTG 113- 149	access tracks, underground cabling, 2 permanent met mast, substation, Site compound, and O&M buildings and Fire suppression water tank
Total	**149**	**1 to 149**	

The SHWEF site is accessible by sealed and unsealed roads, normally associated with low to moderate traffic levels, some of which have been upgraded in parts, for the project access requirements.

The wind farm is situated on privately-owned land which is used for pastoral purposes and has scattered residential development. The project area is subject to leases between Stockyard Hill Wind Farm Pty Ltd (SHWFPL) and respective landowners allowing the wind farm activities to be undertaken in accordance with the commercial provisions of the respective leases.

The biodiversity values for the project area have been significantly reduced by many years of pastoral activities, but nevertheless include threatened flora species and native vegetation communities and a number of threatened fauna species. Parts of the project area have been set aside for conservation purposes as part of biodiversity offset provisions arising from the project's unavoidable impacts on the location's biodiversity and native vegetation credits have also been secured prior to commencement of construction. The secured offset credits relate to provisions of the EPBC Approval (Conditions 2 and 3) and the Victorian planning permit (Condition 18).

SMEC 2020, reviewed impacts on Threatened Species and Communities listed under the EPBC Act and assessed the impact on Natural Temperate Grasslands of the Victorian Volcanic Plain as having increased from an estimated 0.08 hectares to 0.121 hectares. The overall increase was assessed by SMEC as 0.041 hectares and was '*considered unlikely to constitute a 'significant impact' under condition thresholds in the EPBC Act Significant Impact Guidelines (SEWPAC 2011).'*

2.3 Associated Planning Approvals

In addition to the EPBC approval for the SHWEF Project, the development is permitted under Planning Permit PL-SP/05/0548/C that has been issued by the Victorian Minister for Planning and amended on three occasions, most recently May 2022.

The Victorian planning permit for SHWEF, was initially issued by the Minister for Planning on 26 October 2010 and, has been amended on three occasions, of most relevance in 2017, to provide for a project comprising 149 wind turbines on the layout shown in Figure 2.1 that has been micro-sited generally in accordance with the endorsed Condition 1 Development Plans for SHWEF (consistent with Condition 2).

A quarry was also established within the wind farm area under separate approvals and not within areas of mapped native vegetation. The quarry activity has now ceased, and the site has been rehabilitated.

A 132kV high voltage electricity transmission easement has also been constructed between SHWEF and a new 500 kV Terminal Station some 70 kilometres to the south of the wind farm project. The line has separate permits for native vegetation approval. The line has been constructed by AusNet Services and is owned and operated by AusNet Services.

2.4 SHWEF Project Land

The land on which the SHWEF is located is rural land with mostly gently sloping terrain, where Stockyard Hill and Nanimia Hill are elevated features within the project area. The land does also rise to the north of the project area. Lower elevation areas occur between the turbine groups including the large expanse of Lake Goldsmith on the western side of the Skipton Road. The land in the vicinity of Stockyard Hill is characterized by the former volcanic structure at this location with a crater lake

to the east of Stockyard Hill Road and land sloping away from the rim of the crater lake. There are also areas of irregular drainage pattern that is generally typical of areas of volcanic terrain in Western Victoria.

The locations of the four turbine groups are shown on Figure 2.1, the pink shaded areas are lands that are within the project area. The SHWEF infrastructure impacts only a small part of the project lands.

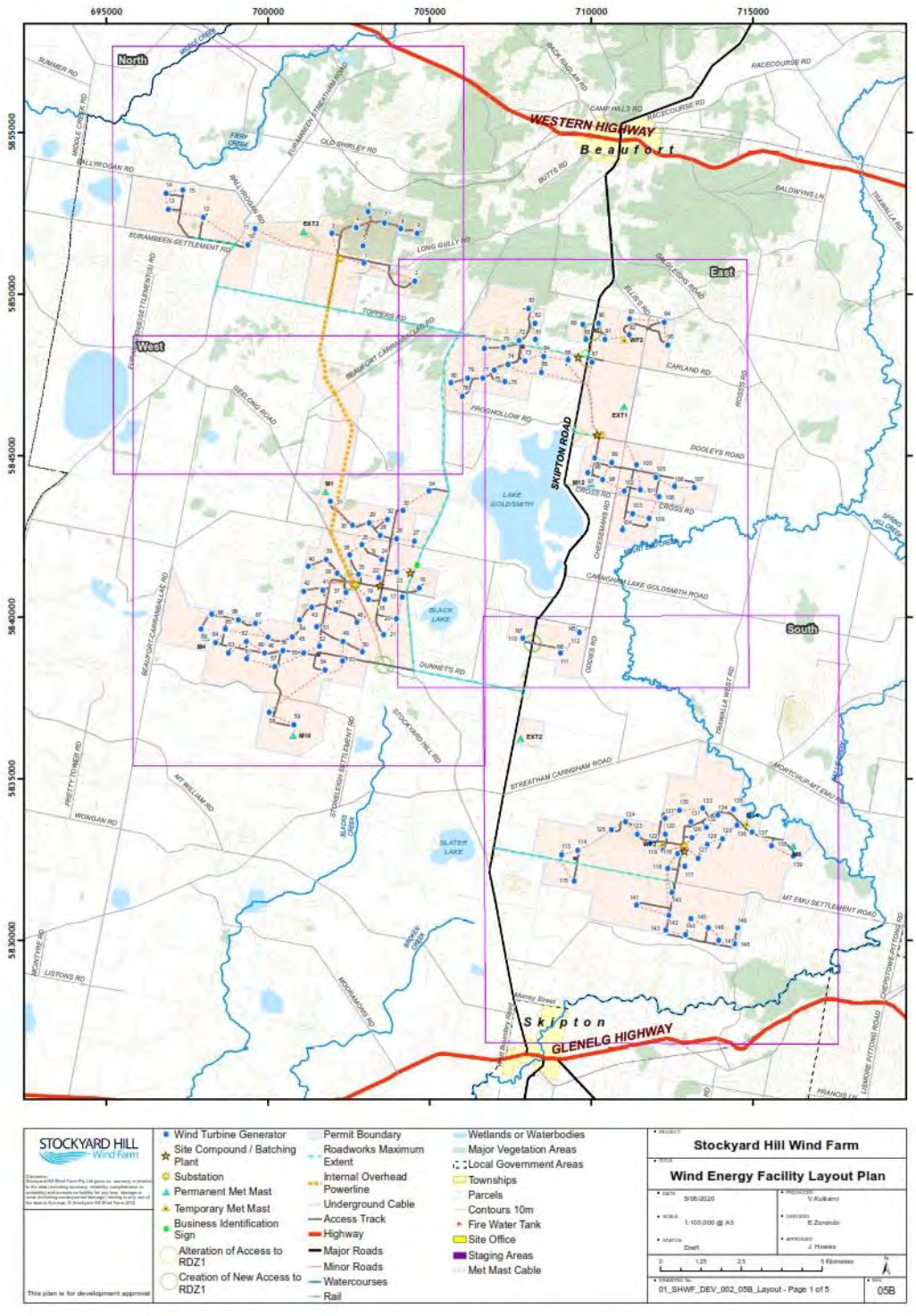

Figure 2.1 – Stockyard Hill Wind Energy Facility Project Layout – August 2020

3 DETAILS OF SHWEF PROJECT AND DEVELOPMENT STATUS

3.1 Approved Action

The EPBC Approval 2016/7746 allows the following Approved 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].*

The SHWEF layout (Figure 2.1) comprising 149 wind turbines, has been constructed generally consistent with the referral for EPBC 2016/7746.

The SHWEF project comprising 149 wind turbines has been subject to micro-siting that has not materially increased the impacts on biodiversity.

The details of the SHWEF project being implemented are outlined below in the context of the compliance reporting provided in this document.

3.2 Details of Wind Turbines

The project comprises 149 wind turbines. These are a combination of Goldwind's Permanent Magnet Direct Drive design (models GW140/3000, GW140/3400 and GW140/3570) with a total wind farm generating capacity of approximately 536MW.

The wind turbines have key dimensions as follows:

- a maximum height (to highest point of rotor swept area) of 180 meters above ground level,
- a hub height of approximately 109 metres,
- The three bladed rotors are approximately 140 metres in diameter.

Near the base of each wind turbine tower are:

- an external kiosk-style 33kV Ring Main Unit (RMU)
- two banks of cooling fans. Cooling fluid circulates between the cooling fan units and the internal areas of the tower and turbine.
- A compacted hardstand area has been formed at each wind turbine site, for use by large cranes installing turbines and for component laydown during construction. These hardstands are retained for the operations phase in case large cranes are required for maintenance activities.

No aviation safety lighting is required on the wind turbines. Lighting is provided at the entry to each wind turbine tower. The wind turbines are off-white/grey with non-reflective finish as required by the Victorian Planning Permit.

3.3 Substation details

Three 132kV/33kV substations are located in the West, East and South Turbine Groups. A 33kV switchyard is located in the North Group and a 10 km 33kV transmission line provides connection of the North Group to the West Substation. The grid connection infrastructure (three substations and a switchyard) is sited at locations that avoid impacts on native vegetation. These infrastructure elements comprise:

- Switch-rooms that receive 33 kV cables from each of the wind farm's collector groups.
- 33kV/132kV transformers are located at each of the three 33kV/132kV substations. The transformers are located in concrete bunds that provide containment for any oil spill or leakage

- landing gantry for conductors from substation to cut-in poles for the 132kV-kV transmission lines.
- Control rooms housing battery banks and electrical control equipment.
- Various electrical protection and power quality equipment.
- Security fencing around the substations.
- Earthing grid below gravel cover for substation compounds, and
- Country Fire Authority (CFA) 4 m fuel reduction zone around the 3 substations and switchyard.

3.4 Other permanent infrastructure

The wind farm design also includes facilities as described below:

- Access track network from the site entry to all turbine sites and the substation sites (Figure 2.1), comprising approximately 101 km of trackwork.
- 33 kV collections circuits comprising 33kV underground cables between groups of turbines and the respective substation for the Group. Communications and control cables are co-located with the 33kV cables.
- An approximate 10 km section of 33kV overhead line links the North Group to the West Group.
- A Main Operations and Maintenance facility is located within the West Turbine Group adjacent, Stockyard Hill Road:
    - a compound surrounded by security fencing and including parking for service team;
    - a building providing office desks, computer and communications facilities and amenities. A septic system is provided at the location;
    - a warehouse with minor workshop.
- Three remote facilities are necessary for the East and South Substations and North Group Transition Station (switchyard) that provide meal room facilities and amenities for service personnel at these remote locations. Small Warehouses are also located at the East and South Substations.
- None of the substation or O&M/remote facilities are located in areas of native vegetation.

3.5 Temporary construction infrastructure

The wind farm design also allowed for temporary construction infrastructure including:

- Construction compounds at each turbine group – have been mostly removed following construction activities. None are located in areas of native vegetation.
- Two batch plant sites (eastern and western sites) – Batch Plants now removed from site.

3.6 Status of SHWEF Works

Preliminary investigative works occurred in early 2018. Initial construction works commenced on 22 May 2018 (as per notification to DAWE on 4 June 2018). The project layout is shown in Figure 2.1. The full access network had been completed approximately 18 months later, by approx. end of 2019. All wind turbines were installed by early December 2020. Rehabilitation of the civil works has been ongoing and is mostly completed with residual matters continuing in 2022.

For this reporting period (Year 4 of the Action, to 21 May 2022), the project was in the commissioning phase that has been delayed by an extended process for grid access and associated hold point testing. Full commissioning of individual turbines was only possible following Grid registration of SHWF in early July 2021, with the first turbine commissioned in August 2021. Commissioning has

progressively worked through the 149 turbines with a large proportion commissioned by the end of the report period. Full operations will commence in the next reporting period once the last turbine is commissioned.

4 EPBC Approval Conditions and Proponent Responses

4.1 Overview of the EPBC Approval requirements

This report addresses the 4th Year since commencement of the Action and, reviews compliance with:

- Conditions 1 to 15 of EPBC Approval 2016/7746 (Section 4 and Appendix A), and
- the implementation of any strategies required by this approval (Sections 4, and 5), specifically:
    - Condition 2b, Striped legless Lizard Offset Management Strategy
    - Condition 3b, Golden Sun Moth Offset Management Strategy

The review is supported by the SMEC Reports listed below that provide the substantive evidence of compliance with the EPBC Approval Conditions and the Offset Management Strategy requirements.

- SHWF Striped Legless Lizard Population Monitoring (Year 4) SMEC, 11 March 2022
- SHWF Golden Sun Moth Population Monitoring Report (Year 4) SMEC, 11 March 2022

A summary of the compliance status for each of the Conditions is set out in Appendix A. The following parts of Section 4 provide further compliance details, additional to the summary detail in Appendix A.

A summary of compliance for implementation of management strategies, under Conditions 2b and 3b, is also described in Section 4. Full details are provided in the attachments.

A number of conditions are not applicable to the current reporting period, as indicated in this report.

4.2 Condition 1(a) – Striped Legless Lizard Habitat

Condition 1(a) requires that:

The approval holder must not clear more than, 42.16 ha of habitat for Striped legless lizard.

SMEC 2020, reviewed the extent of final construction disturbance within the area of Striped Legless Lizard Habitat and reported that the total extent is 41.40 hectares, which is less than specified in Condition 1(a) by 0.76 hectares.

Accordingly, the works are compliant with requirements of Condition 1(a). No further ground disturbance works is required.

4.3 Condition 1(b) – Golden Sun Moth Habitat

Condition 1(b) requires that:

The approval holder must not clear more than, 1.57 ha of habitat for Golden Sun Moth.

SMEC 2020, reviewed the extent of final construction disturbance within the area of Golden Sun Moth Habitat and reported that the total extent is 1.26 hectares, less than specified in Condition 1(b) by 0.31 hectares.

Accordingly, the works are compliant with requirements of Condition 1(b). No further ground disturbance works is required.

4.4 Condition 2(a) – Covenant secured for Striped Legless Lizard Habitat

Condition 2(a) requires that:

To compensate for the loss of 42.16 ha of striped legless lizard habitat, the approval holder must secure the striped legless lizard offset with a covenant before commencement of construction;

In respect of securing a covenant for the Striped legless lizard offset, the details were reported in the 2019 Annual Compliance Report. In summary, the offset has been secured under a DELWP landowner agreement (BB-3036-LA01). As part of DELWP's oversight of the compliance with Offset management

requirements, DELWP has previously undertaken a site audit of the covenant and management actions and details were outlined in the 2020 Annual Compliance Report.

As described above, the requirements of Condition 2(a) have been previously complied with.

4.5 Condition 2(b) – Implementation of SLL Offset Management Strategy

Condition 2(b) requires that:

To compensate for the loss of 42.16 ha of striped legless lizard habitat, the approval holder must implement the Striped Legless Lizard Offset Management Strategy for the secured striped legless lizard offset.

Components of the Striped Legless Lizard Offset Management Strategy (SLL OMS) implementation for Years 1, 2 and 3 were reported in the 2019, 2020 and 2021 Compliance Reports respectively. It is noted that SMEC has been engaged by SHWFPL to undertake SLL monitoring and review of actions under the OMS that are described for Year 4 in Appendix B (SMEC March 2022). The landowner separately engages AusEco Solutions to undertake maintenance including direct seeding and rehabilitation works within the Offset Site, as required. The landowner and SHWFPL are jointly involved with the implementation of the Strategy.

Table 4.1 SHWEF SLL Offset Management Strategy - Year 4 Actions and Status (Appendix B)

Action	Management Action	Responsible	Timing	Date Completed
4.1	Undertake fencing repairs, as required	Landowner (under SHWFPL supervision)	Ongoing as required	Ongoing
4.2	Conduct site preparation works for weed works in Zones 1a (SLL habitat Zone)	SHWFPL, ecologist and its contractors	October-November	Jan-May 2022
4.3	Commence over sowing / direct seeding in Zones 1b, 1c, 2b and 3b	SHWFPL, ecologist and its contractors	Autumn/ Spring	May 22
4.4	Conduct site preparation weed control for rehabilitation works in Zones 1a, 2a and 3a	SHWFPL and landowner	October-November	Jan-May 2022
4.5	Conduct weed management works for rehabilitated Zones 1b, 1c, 2b and 3b	SHWFPL and landowner	October-November	Jan-May 2022
4.6	Deploy **five** additional SLL monitoring sites within rehabilitated areas	Suitably qualified ecological specialist	July-August of Year 4	Deferred to Year 5
4.7	Monitor biomass density and implement stock grazing regime	SHWFPL and landowner	August-September (or as required as part of adaptive management)	Completed March 2022- Appendix B

Year 4 Action 4.1 - Undertake fencing repairs as required.

No fencing repairs were required during Year 4. Fences remain in good condition. Monitoring of fences is undertaken routinely by the landholder, their contractors and SMEC staff delivering the OMS.

Year 4 Action 4.2 - Conduct site preparation works for weed works in Zones 1a (SLL habitat Zone)

Pest plant and animals have been managed by the landowner, AusEco Solutions and relevant sub-contractors where required. Focused efforts have been undertaken to collect seed of native species within the offset site (i.e. Kangaroo Grass [*Themeda triandra*], wallaby-grasses, wheat-grass and

tussock-grass) between January and May 2021. Weed management has focused on Toowoomba Canary Grass (*Phalaris aquatica*) and thistles. Professional shooters conducted targeted pest control on three separate occasions between June to August 2021, in which nine European Rabbits (*Oryctolagus cuniculus*) and two Red Fox (*Vulpes vulpes*) were shot within the offset site. Further information is available in Appendices B and D.

Year 4 Action 4.3 – Commence over sowing / direct seeding in Zones 1b, 1c, 2b and 3b

Direct seeding of pre purchased seed began in May with approximately 35kg of mixed species spread through the areas. The area that was direct seeded this year was prepared by spraying out the target area with a knockdown herbicide and then slashed to reduce dead material. Autumn germinating species were selected out of the SLL OMS for May sowing. A site inspection will be undertaken in spring to assess the results and capture any key information relating to successful areas. Further information is available in Appendix D.

Year 4 Action 4.4 – Conduct site preparation weed control for rehabilitation works in Zones 1a, 2a and 3a

Slashing was undertaken prior to direct seeding in order to reduce biomass giving seed a chance to germinate. Crash grazing was undertaken post direct seeding to keep pasture grass low giving seed a chance to germinate. Pest plant and animals have been managed by the landowner, AusEco Solutions and relevant sub-contractors where required. Focused efforts have been undertaken to collect seed of native species within the offset site (i.e. Kangaroo Grass [*Themeda triandra*], wallaby-grasses, wheat-grass and tussock-grass) between January and May 2021. Weed management has focused on Toowoomba Canary Grass (*Phalaris aquatica*) and thistles.

Year 4 Action 4.5 - Conduct weed management works for rehabilitated Zones 1b, 1c, 2b and 3b

Herbicide spraying was undertaken in high-value areas, direct-seeded areas and areas with higher weed densities. The main target weed was Scotch Thistle (*Onoprodium acanthium*). Pest plant and animals have been managed by the landowner, AusEco Solutions and relevant sub-contractors where required.

Year 4 Action 4.6 – Deploy five additional SLL monitoring sites within rehabilitated areas

Given continued efforts to establish native grasses in Years 1-4 do not currently provide suitable native grass cover in Cropped Pasture/Revegetation Zones, the deployment of additional monitoring sites was not undertaken in Year 4. This will be reviewed in detail during Year 5 species and vegetation monitoring with recommendations on timing and/or any adaptive measure required to meet this objective (in consultation with DCCEEW).

SMEC has deployed two additional monitoring sites within Rocky Rises/Modified Vegetation (Grids 6 and 7), with detection of a new SLL population at Tile Grid 6.

Year 4 Action 4.7 – Monitor biomass density and implement stock grazing regime

SMEC undertook monitoring and assessment of the works including consultation with landowners and provided a detailed report dated, 11 March 2022 (Appendix B).

Overall, biomass cover was high (80-90%) on average and exceeded the target of 70% ground cover and open ground (20-40%) identified within the OMS (EHP 2021). Grass height is typically lowest (ranging between a height of 15-40cm) at the commencement of monitoring (October-November), and after stock grazing has been implemented between March to August. However, it is apparent that further adaptive management and rotational grazing in accordance with the revised OMS between October to December will assist with managing grass height (i.e. maintaining $\leqslant$50 cm), and biomass levels throughout the offset site (particular established rocky rise areas where previous cropping has not been undertaken).

Requirements of Condition 2(b) in relation to Year 4 Management Actions for the SLL OMS have been satisfied.

4.6 Condition 3(a) – Covenant secured for Golden Sun Moth Habitat

Condition 3(a) requires that:

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

In respect of securing a covenant, for Golden Sun Moth offset, SHWFPL, entered into a Two-Party Agreement for an area 300 metres by 300 metres (9 hectares) details of which were provided with the First Year Annual Compliance Report. The agreement is referred to as Asset BBA-3027 – Landowner Agreement No LA02, Bush Broker Site Plan – BB-3027/LA02-01.

As described above, the requirements of Condition 3(a) have been previously complied with.

4.7 Condition 3(b) – Implementation GSM Offset Management Strategy

Condition 3(b) requires that:

To compensate for the loss of 1.57 ha of golden sun moth habitat, the approval holder must implement the Golden Sun Moth Offset Management Strategy for the secured golden sun moth offset.

Details of responses to Year 4 management actions specified in Table 2 of the Strategy are provided in SMEC March 2022 (Appendix C), and key points are summarized in Table 4.2.

Table 4.2 SHWF GSM Offset Management Strategy - Year 4 Actions and Status (Appendix C)

Action	Management Action	Responsible	Timing	Date Completed
4.1	Conduct weed control	SHWFPL and its contractors	Species dependent	Completed over 12-month reporting period by landholder
4.2	Monitor populations of pest animals and conduct control works if required	SHWFPL and contractors	After peak breeding season – late summer/early autumn	Completed over 12-month reporting period by landholder
4.3	Conduct monitoring for GSM	Suitably qualified ecological specialist	Four years after commencement of OMS (SMEC Mar 2022)	Completed Dec 01- Jan 11. SMEC Mar 2022, 100 Male GSM recorded
4.4	Maintain fences	SHWFPL and contractors	As required	Completed over 12-month reporting period by landholder
4.5	Monitor biomass density and implement stock grazing regime or develop ecological burn/fuel reduction plan if appropriate	SHWFPL/landowner/CFA	Summer/Autumn (or as required as part of adaptive management)	Completed. SMEC Mar 2022. Grazing regime but no burn.

4.6	Monitor and assess works and prepare four-year progress report.	Suitably qualified ecological specialist	Four years after commencement of OMS	Completed. A report of monitoring was provided SMEC 2022

Year 4 Action 4.1 – Conduct weed control

Weed control has been managed by the landowner during Years 1-4 of the OMS and is summarised within Gerrpart Holdings Pty Ltd (2021). SMEC, March 2022 (Appendix C) identifies small increases in the presence of Wild Oat (*Avena fatua*) were noted by the landowner and treated by spot spraying. Spear Thistle (*Cirsium vulgare*) were limited in numbers across the site and were removed by the landowner.

The ongoing management of high threat weed species will include ongoing treatment of Brown-top Bent, Cape Weed, Cat's Ear and Yorkshire Fog. SMEC recommended active weed management (spot-spraying) in Zones 1 and 2 during February to March 2022 to increase open ground for native species recruitment. Additional rotational stock grazing in March to August 2022 and October to December 2022 will also be required to further reduce biomass levels in Zones 1 and 2.

Year 4 Action 4.2 - Monitor populations of pest animals and conduct control works if required

Rabbit burrows and warrens previously identified were fumigated and collapsed in Year 4 and are being monitored by the landowners. No active rabbit burrows or warrens are present within the offset site but the species remains present within the broader property in low numbers (Gerrpart Holdings Pty Ltd 2021). Spotlighting events took place during Year 4 pest animal monitoring with no rabbits, pigs or foxes observed or shot within the offset site (Gerrpart Holdings Pty Ltd 2021). Pest animal control has been managed by the landowner during Years 1-4 of the OMS and can be reviewed within Gerrpart Holdings Pty Ltd (2019, 2020, 2021a, 2021b).

Year 4 Action 4.3 – Conduct Monitoring for GSM 4 years after commencement of strategy

Monitoring by SMEC occurred over 4 separate days between 01 December 2021 and 1 January 2022. A total of 100 male GSM was recorded.

The number of individuals in the 2021/22 monitoring season was considerably less than previous monitoring years between 2018/19 (>400), 2019/20 (349) and 2020/21 (477), respectively (EHP 2019, SMEC 2020, 2021c). The reduction in 2021/22 Golden Sun Moth abundances is unlikely to be associated with management of the offset site as vegetation has predominantly remained consistent between monitoring Years 2, 3 and 4 (SMEC 2020, 2021c, Section 3.4). Given the limited knowledge of larvae life cycles within the literature, it is unclear how above average pre-flight season rainfall may impact the emergence of the species in subsequent years of monitoring. However, based on other shared monitoring data across Victoria, the emergence of Golden Sun Moth across southern Victoria indicated low abundances at other reference and monitoring sites (ECA 2022).

Year 4 Action 4.4 - Maintain fences

The Southern boundary was only constructed in 2017 and is in good condition. The Western boundary has a new fence constructed in 2020, with concrete and steel posts, 7-line cyclone and a top plain wire. Temporary fencing is now installed around the offset site to implement localised biomass control. It is important to continue monitoring the effectiveness of stock grazing as the main approach for biomass control, particularly in response to seasonal changes in environmental conditions where adaptive management is required to meet objectives within the OMS.

Year 4 Action 4.5 - Monitor Biomass density implement stock grazing regime or develop ecological burn / fuel reduction if appropriate

Biomass is under control on the East side but despite crash grazing the grasses on the south and west sides has grown well due to the wet and prolonged season. Crash grazing was successful in the autumn but the winter and spring were too wet to graze intensively.

Modified crash grazing was utilised to manage biomass under recommendation of project ecologist with the biomass levels and grazing efforts detailed in SMEC March 2022 and Gerrpart Holdings Pty Ltd 2021

Year 4 Action 4.6 - Monitor and assess works and prepare four-year progress report.

Sections 3 and 4.6 of the SMEC Report (Appendix C) provides details of the Offset management and Golden Sun Moth (GSM) monitoring respectively. Section 6 identifies recommendations for improved management.

Full details of responses to the Year 4 Actions for the GSM OMS are provided in Appendix C prepared by SMEC.

Requirements of Condition 3(b) in relation to Year 4 management actions of the GSM OMS have been satisfied.

4.8 Condition 4 – Notify Commencement

Condition 4 requires that.

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.

SHWFPL submitted a letter to the Department, on 4 June 2018, notifying commencement of construction on 22nd May 2018.

No further requirements apply for Condition 4.

4.9 Condition 5 – Maintain records of all activities

Condition 5 requires that:

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.

This is an ongoing requirement, is applicable for this reporting period and has been complied with.

4.10 Condition 6 – Annual Compliance Reporting

Condition 16 requires that:

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.

In response to Condition 6, SHWFPL has:

- Prepared this fourth annual compliance report, required by Condition 6.
- Published this report on website as per link here: https://stockyardhillwindfarm.com/
- Provides evidence to the Department of proof of publication (email direct to Department).

4.11 Condition 7 – Revision of Strategies

Condition 7 requires that:

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.

During the report period SHWFPL obtained revisions of both of the strategies (under conditions 2 and 3) and submitted them to the Department on 4 August 2021, in accordance with the requirements of 7(i), (ii) and (iii) and, will be implemented from that date. The department notified SHWFPL of the revised strategies approval on 23 December 2021. Details of performance in relation to the revised strategies are provided in this Year 4 Report.

4.12 Condition 8 – Revocation of choice under Condition 7

Condition 8 requires that:

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.

Condition 8 was not triggered during the 2022 report period. Its requirements are noted by SHWFPL.

4.13 Condition 9 – Condition 7 may not apply if including change to environmental offsets

Condition 9 requires that:

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.

Condition 9 was not triggered during the 2022 report period. Its requirements are noted by SHWFPL.

4.14 Condition 10 – Minister advises revised strategy has a new or increased impact

Condition 10 requires that:

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.

Condition 10 was not triggered during the 2022 report period. Its requirements are noted by SHWFPL.

4.15 Condition 11 – Minister may notify that Condition 7 does not apply for specified time

Condition 11 requires that:

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.

Condition 11 was not triggered during the 2022 report period. Its requirements are noted by SHWFPL.

4.16 Condition 12 – Conditions 7 and 8 not limit the operation of Section 143A of EPBC Act

Condition 12 requires that:

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.

Condition 12 is noted by SHWFPL. No further response is required for this report.

4.17 Condition 13 – Not Commenced after 5 years of Approval Date

Condition 13 requires that:

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.

The project commencement and Action under the Approval occurred on 22 May 2018, within 5 years of the approval date and, there are no further requirements of the Condition that are applicable to the project.

4.18 Condition 14 – Publish all strategies on website

Condition 14 requires:

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.

In response to Condition 14, SHWFPL has published the following documents on the project website (https://stockyardhillwindfarm.com/).

- Condition 2(b) – Striped Legless Lizard Revised Offset Management Strategy (published August 2021);
- Condition 3(b) – Golden Sun Moth Revised Offset Management Strategy (published August 2021);
- Annual Compliance Report May 2018 to May 2019, published August 2019;
- Annual Compliance Report May 2019 to May 2020, published August 2020;

- Annual Compliance Report May 2020 to May 2021, published August 2021.

A request to post this August 2022 Annual Compliance Report on the SHWEF Website will be made at time of its submission to the Department.

4.19 Condition 15 – Provision of Strategies to public upon request

Condition 15 requires that:

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.

No such requests have been received for the reporting period and no copies of strategies needed to be provided. It is noted that the strategies referred to in the conditions of approval, are in accordance with Condition 14, published on the project website.

5 IMPLEMENTATION OF THE MANAGEMENT STRATEGIES

The compliance requirements for implementation of the revised Striped legless Lizard Offset Management Strategy (Condition 2(b)) are outlined in Section 4.5 of this report and Appendix B (SMEC February 2022).

The compliance requirements for implementation of the revised Golden Sun Moth Offset Management Strategy (Condition 3(b)) are outlined in 4.7 of this Report and Appendix C (SMEC March 2022).

6 CONCLUSIONS

This report provides the relevant details required for satisfying requirements of Condition 6 of the EPBC Approval 2016/7746 for the 4th year after commencement of the Action on 22 May 2018.

The report addresses:

- status of compliance with conditions of the EPBC approval, and
- status of implementation of the revised SLL and GSM Offset Management Strategies required by Conditions 2(b) and 3(b) of the approval.

SHWFPL concludes that all compliance requirements have been met for the Year 4 Period as described in this Report. No instances of non-compliance have been identified for the reporting period.

Based on results of Year 4 Actions and assessments, variations to the two Offset Management Strategies have been made and were notified to the Department on 4 August 2021. Electronic copies of the revised strategies were also provided to the Department on 4 August 2021. Implementation of the revised strategies has been assessed by a qualified ecologist from SMEC as unlikely to have a new or increased impact. The Department notified SHWFPL of the revised OMS approvals on 23 December 2021. Implementation has occurred from 4 August 2021.

7 REFERENCES

DAWE	EPBC Approval 2016/7746 approved on 18 August 2017.
DELWP	Permit No: PL-SP/05/0548/C as amended 04 Aug 2022
SMEC	SHWF EPBC Act Compliance Reporting Year 2, 21 August 2020
SMEC	SHWF SLL Population Monitoring (Year 4), 11 March 2022
SMEC	SHWF GSM Population Monitoring Report (Year 4), 11 March 2022

Other references are referred to in the text of this report or its attachments, in relation to specific aspects addressed by this report.

8 APPENDICES

Appendix A – Table showing compliance status for each Condition of EPBC Approval 2016/7746.

Appendix B – SHWF SLL Population Monitoring (Year 4), SMEC 11 March 2022

Appendix C - SHWF GSM Population Monitoring Report (Year 4), SMEC 11 March 2022

Appendix D – Goldwind Offset Site Monmot Farming – 2021 Works Report AusEco, 2022

Appendix A - Stockyard Hill WF –EPBC Approval (EPBC 2016/7746) - Review of Compliance with Approval Conditions – Report August 2022

Ref	part	Details of Condition	Stage	Responsibility	Compliance	Details for demonstrating compliance
1	The approval holder must not clear more than:					
1	a	42.16 ha of habitat for striped legless lizard; and	Planning and Construction	GWA	Partial	Areas of SLL habitat were to be marked out on site in advance of removal activities commencing and that occurred for the initial construction works at Dunnets Rd, however was not undertaken for all high-risk SSL habitat within the wind farm and road side areas. Within Dunnets Rd, opportunities to avoid clearance of NTGVVP and confirmed SSL habitat were identified and implemented. Realignment of Dunnett's Rd approximately 5 meters north along its full extent, avoided disturbance of confirmed SLL habitat on the southern boundary, as well as disturbance to critically endangered NTGVVP grasslands. An additional section of plains grassland was also protected as a result of this change. Pre-clearance was undertaken prior to construction, with rocks within the construction footprint mechanically lifted. No SLL were found or harmed. during this process, however, 5 blue tongue lizards were salvaged and relocated into the adjoining SLL offset area in accordance with the approved Fauna Management Plan. SMEC 2020, undertook a survey of post-construction project disturbance and advised that the impact on the area of Striped Legless Lizard is 41.40 ha impacted and is less than the 42.16 ha allowed under Condition 1(a). Refer SHWF Annual Compliance Report 2020, Appendix B, SMEC August 2020.
1	b	1.57 ha of habitat for golden sun moth,	Planning and Construction	GWA	Partial	Areas of Golden Sun Moth (GSM) habitat within the WEF were largely avoided during the design process, with the exception of the area surrounding Golden Sun Moth offset (Gerard's property in the north). SMEC 2020, concluded that approximately 1.26 ha of GSM was disturbed (less than 1.57 ha allowed under Condition 1(b). Refer to SHWF Annual Compliance Report 2020, Appendix B (SMEC August 2020)
1		Without the prior written approval of the Minister.	Construction	GWA	Ongoing	The limits of clearing for Condition 1 were complied with. Impact was assessed by SMEC 2020.
2	To compensate for the loss of 42.16 ha of striped legless lizard (SLL) habitat, the approval holder must:					

Ref	part	Details of Condition	Stage	Responsibility	Compliance	Details for demonstrating compliance
	a	secure the striped legless lizard offset with a covenant before commencement of construction; and	Before construction	SHWFPL	Complies	A s 69 covenant was executed by the landowner and signed by DELWP.A Credit Trade Agreement is in place and was forwarded to DELWP prior to construction commencing. Evidence of securing the SSL offset was included as Attachment 2a of the Annual Compliance Report, 2019.
	b	implement the Striped Legless Lizard Offset Management Strategy for the secured SLL offset.	Construction / Operations	SHWFPL	Complies – ongoing	Actions were undertaken during the report period to address year 4 requirements for the SLL Offset Management Strategy, Section 6.10, Table 4 and Revised OSM Strategy SMEC 2021, included as follows: 4.1 – Maintenance of fencing was undertaken by the landowner, as required 4.2 – AusEco pest plant and seed collection works, weed spraying and slashing was also undertaken 4.3 – Direct seeding began in May with 35kg of mixed species seeds spread through the site. Results will be assessed in Spring 4.4 – Slashing and crash grazing were undertaken and pest plants and animals were managed by the landowner and seeds were collected, 4.5 – Herbicide spraying was undertaken, Scotch Thistle was the main target weed 4.6 – Deployment of 5 additional SLL monitoring sites was deferred due to the placement areas not being suitable. The sites will be assessed in Year 5 to determine timing for their placement. S4.7 – SMEC undertook monitoring and assessment of the works including consultation with landowners and provided a detailed report (Appendix B of the 2022 Annual Compliance Report). Requirements of Condition 2(b) for Year 4 have been satisfied.
3	To compensate for the loss of 1.57 ha of golden sun moth (GSM) habitat, the approval holder must:					
	a	secure the GSM offset with a covenant prior to commencement of construction. The GSM offset must contain at least 9 ha of known GSM habitat and	Before construction	SHWFPL	Complies	A Section 69 covenant has been executed by the landowner and signed by DELWP.A Credit Trade Agreement is also in place, which was forwarded to DELWP in advance of construction commencing. Evidence of securing the GSM offset was included as Attachment 3a of the 2019 EPBC Annual Compliance Report.
	b	implement the Golden Sun Moth Offset Management Strategy for the secured golden sun moth offset.	Construction / Operations	SHWFPL	Ongoing (complies to date)	Management actions undertaken to comply with Year 4 requirements for the GSM Offset Strategy (Table 2, Year 4) were undertaken as follows:

Ref	part	Details of Condition	Stage	Responsibility	Compliance	Details for demonstrating compliance
						4.1 – Weed control is managed by the landowner. Wild Oat and Spear Thistle were targeted as well as ongoing management of high threat weed species. 4.2 – Rabbit burrows and warrens are monitored and as necessary treated by the landowner. The pest animal controls appear effective. 4.3 – Monitoring for GSM occurred in December 2021 and January 2022. 100 male GSM were recorded, lower than previous monitoring years but that was similar to other data across Victoria for similar period. 4.4 – Fences appear adequate but effectiveness of grazing for biomass control needs continued monitoring. 4.5 – Extended wet conditions may have reduced control of biomass in parts of the area and modified crash grazing was recommended and used to assist control as necessary. 4.6 – Monitoring and assessment of the Offset area is undertaken and reported by SMEC (Appendix C of the 2022 EPBC Annual Compliance Report). Requirements of Condition 3(b) for Year 4 have been satisfied.
		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.	At the start of construction	SHWFPL	Complies	A letter (dated 4 June 2018) was sent to the Department advising commencement of construction activities in Dunnett's Lane as of 22 May 2018.
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 publicized through the general media.	Construction / Operations	SHWFPL	Ongoing	Records to be kept for the duration of the approval documenting implementation of the EPBC approval requirements and approved strategies. Record keeping requirements have been discussed with both landowners and the appointed consultants and are being kept as required in line with project management, incident, and annual reporting requirements.

Ref	part	Details of Condition	Stage	Responsibility	Compliance	Details for demonstrating compliance
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 and must continue to be published until advised in writing by the Minister.	Annually	SHWFPL	Compliant Ongoing	Annual Compliance Reports (ACRs) have been submitted annually to the Department addressing the requirements of Condition 6. This is the fourth in the series of ACRs. The Annual Compliance Reports are also placed on the SHWF Website in conjunction with being submitted to the Department. Evidence is also provided to the Department of proof of publication, usually within a day or two of being submitted to the Department. The Project submits this Y4 annual compliance report by 22 August 2022.
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 under the revised strategy would not be likely to have a new or increased impact. If the approval holder makes this choice they must:	At any time	SHWFPL	N/A	SHWFPL prepared revised GSM and SLL Offset Management Strategies and submitted them to the Department on 4 August 2021, during the 2021/2022 reporting period. The Department notified SHWFPL of approval of the strategies on 23 December 2021. Reporting of performance of the strategies is included in the 2022 Annual Compliance Report.
	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.	Construction / Operations	SHWFPL	N/A	Any changes to the proposed arrangements must have adequate records kept for the duration of the approval which substantiate the change. At this time, and for the foreseeable future, no changes are envisioned.
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.	At any time	SHWFPL	N/A	N/A

Ref	part	Details of Condition	Stage	Responsibility	Compliance	Details for demonstrating compliance
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.	At any time	SHWFPL	N/A	N/A
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:	At any time	SHWFPL	N/A	N/A
	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.				
	iii	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 that condition 7 does not apply for the strategies required under the approval.	At any time	SHWFPL	N/A	N/A
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.	At any time	SHWFPL	N/A	Revised strategies for the GSM and SLL were approved (23 Dec 2021) and are now published on SHWF website as the current OMSs.
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.	Operations	SHWFPL	Complies	N/A – the action commenced on 22 May 2018. within 5 years of the approval date
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.	At any time	GWA	Complies	Copies of the revised and approved SSL and GSM strategies, and maps showing the offset areas are available on the project website here

Ref	part	Details of Condition	Stage	Responsibility	Compliance	Details for demonstrating compliance
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	At any time	GWA	N/A	Copies of the approved SSL and GSM strategies, and maps showing the offset areas should also be made available within the shop front located in Beaufort.

DEFINITIONS
Approval holder: means the person to whom the approval is granted, or to when the approval is transferred under section 1458 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: Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
Golden sun moth: Synemon p/ana listed under the EPBC 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 targeted surveys in accordance with the Department's 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 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).

DEFINITIONS
Striped legless lizard: Delma impar listed under the EPBC 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

Appendix B

SHWF Striped Legless Lizard Population Monitoring (Year 4) SMEC, 11 March 2022

Member of the Surbana Jurong Group

SMEC Ref. No. 30043162N

11 March 2022

Elizabeth Zorondo
Senior Environmental Planner
Goldwind Australia Pty Ltd
Level 4, 485 La Trobe Street
Melbourne 3000

Dear Elizabeth,

Re: Striped Legless Lizard (*Delma impar*) population monitoring (Year 4), Stockyard Hill Wind Farm, Victoria

SMEC Australia Pty Ltd (SMEC) was commissioned by Goldwind Australia Pty Ltd (Goldwind) to undertake additional Striped Legless Lizard (*Delma impar*) species monitoring as part of the Stockyard Hill Wind Farm Pty Ltd project (the Project). 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) (former Department of the Environment and Energy [DoEE]) on 19 August 2018. It is understood that the DAWE post-approvals team have approved the 10-year Offset Management Strategy (OMS) subject to conditions (Approval Decision EPBC 2016/7746) (EHP 2021).

Given high biomass levels observed during vegetation monitoring between 2018 to 2021, the OMS was resubmitted to DAWE with an accompany technical memorandum to incorporate adaptive management approaches to biomass control (EHP 2021, SMEC 2021a). The request to implement adaptive management is in response to limitations identified in the management of biomass during years of high pasture growth. Consistent with Condition 12 of the EPBC Act approval, the technical memorandum serves as an addendum to the Striped Legless Lizard OMS v2 (dated 20 July 2021) (EHP 2021), which was approved by the delegate of the Minister for the Environment on 23 December 2021 (Appendix A.1). The technical memorandum is provided for information in Appendix A.2 and is discussed in more detail within this report.

It should be noted that detailed monitoring in Year 4 is not formally required within the OMS, however, as part of Year 1 species monitoring (SMEC 2019), two additional tile grids (6 and 7) were deployed and have undergone subsequent species monitoring in Years 2, 3 and 4. The objective of deploying Tile Grids 6 and 7 and additional monitoring efforts is to build an understanding of population dynamics and current site utilisation by the species to guide future management practices.

Study sites

The offset site is located south of Dunnets Road and covers 43 ha, approximately 180 km west of Melbourne and 35 km west of Ballarat (Figure 1). 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 offset site occurs within the Victorian Volcanic Plain bioregion, Pyrenees Shire Council municipality and Glenelg Catchment Management Authority (CMA) (DELWP 2022a). The offset site is zoned Farming Zone (FZ) within the Pyrenees Planning Scheme and an Environmental Significance Overlay – Schedule 1 (ESO1) applies for the protection and enhancement of water quality and water quality within the designated water supply catchment (DELWP 2022b).

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
Member of the Surbana Jurong Group

PROJECT NO. 30041817

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

CREATED BY AE13763

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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

Survey permits

Striped Legless Lizard monitoring was undertaken in accordance with a Research Permit approved by the Department of the Environment, Land, Water and Planning (DELWP) under the Wildlife Act 1975 (Permit 10009728). All animal handling was in accordance with SMECs Standard Operating Procedure (SMEC 2021b), and Wildlife and Small Institutions Animal Ethics Committee (WSIAEC) approval 23.20.

Scope of works

The scope of works commissioned by Goldwind included:

1. Undertaking four (4) monitoring checks at Tile Grids 1-7 between November-December 2021 to better understand population dynamics within the offset site (particularly at Tile Grids 6 and 7);
2. Liaison with the landowner to discuss current management objectives and future actions leading into Year 5 monitoring requirements; and
3. Provision of a report outlining the results of monitoring activities and recommendations for management within the offset site.

Assumptions and limitations

The timing of Striped Legless Lizard surveys was extended to 1 December 2021. While this is not the proposed timing of surveys (October-November) under the OMS, it is still considered to be an appropriate time of year to detect the species using tile grid survey methodology. While surveys have extended into December in current and previous monitoring years, this has not limited detection of Striped Legless Lizard (SMEC 2021c). A total of four tile grid checks were undertaken. This is fewer visits than required during monitoring years in the OMS and may limit the detection of known or new Striped Legless Lizard individuals. Dry Sheep Equivalent (DSE) values are 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) and has been used to discuss stocking rates in this report.

Methods

Reference documents

Striped Legless Lizard monitoring was undertaken in accordance with the following DAWE departmental guidelines:

- Referral guidelines for the vulnerable Striped Legless Lizard, *Delma impar* (SEWPaC 2011a); and
- Survey guidelines for Australia's threatened reptiles (SEWPaC 2011b).

Field methods

The following field methodologies were completed as part of Year 4 monitoring for Striped Legless Lizard (Figure 2):

- Collection of data on Striped Legless Lizard population dynamics at Tile Grids 1-7 by suitably trained observers;
- Each of Tile Grids 1-7 consisted of 50 tiles, at 5 m spacing between tiles, arranged in a grid of 10 x 5 array;
- Checking more frequently than twice a week was avoided as it may lead to Striped Legless Lizard abandoning the artificial shelters; and
- Information such as the date, time and weather conditions were recorded for each survey event.

Results

Striped Legless Lizard monitoring

Monitoring was undertaken at Tile Grids 1-7 over four separate days between November-December 2021. Weather conditions during monitoring events were considered suitable for the detection of Striped Legless Lizard (Table 1). Two adult Striped Legless Lizard were recorded on 4 November 2021 at two separate locations, Tile Grid 4 and Tile Grid 6.

Tile Grid 6 is the location where the species has been detected during previous monitoring events (Figure 2, SMEC 2021c), and is confirmed to be a new individual based on head scale images take during processing (see below). The second individual observed at Tile Grid 4 was identified to be an adult based on the SVL but was not captured for processing.

No additional Striped Legless Lizard were observed for the remainder of monitoring across Tile Grids 1, 2, 3, 5 and 7.

Table 1: Monitoring survey results and weather conditions[1].

Survey no.	Survey Date	SLL (Y/N)	Time of Survey	Tile Grid	Species	Total	Temp. (°C)	Wind speed (km/h)
1	4-11-2021	Yes	12:00pm-14:30pm	TG4	SLL, HME	1, 1	17.3	31 SE
				TG5	HME	1		
				TG6	SLL(d), HME	1, 1		
				TG7	LWS	4		
2	16-11-2021	No	9:00am-11:00am	TG1	SMF	1	9.7	17 SSW
				TG3	LWS	1		
				TG4	SMF, HME	1, 1		
				TG6	EBTL, HME	1, 1		
				TG7	LWS	4		
3	24-11-2021	No	7:00am-9:00am	TG1, TG2, TG5, TG6	HME	1, 1, 1, 1	10.3	11 SE
				TG3	LWS, EBTL	1, 1		
				TG4	HM	1		
				TG7	LWS, EBTL	3, 1		
4	01-12-2021	No	9:00am-11:00am	TG6	LWS	1	22.9	26 NNW
				TG7	LWS	1		

Note: Species acronyms, SLL = Striped Legless Lizard; LWS = Little Whip Snake; EBTL = Eastern Blue Tongue Lizard; SMF = Spotted Marsh Frog and HM = House Mouse (HME = House Mouse Evidence).

Eastern Blue Tongue Lizard (*Tiliqua scincoides*), Little Whip Snake (*Parasuta flagellum*) and House Mouse (*Mus musculus*) were also recorded during monitoring (Table 1, Plates 1-2). Two additional species, Fat-tailed Dunnart (*Sminthopsis crassicaudata*) and Spotted Marsh Frog (*Limnodynastes tasmaniensis*), have been observed within the offset site to date although were not detected during the current monitoring period (SMEC 2021c).

Plate 1. TG3 – Eastern Blue Tongue Lizard (A, Taylor. SMEC).

Plate 2. TG7 – Little Whip Snakes (A, Taylor. SMEC).

Footnotes: (1) Bureau of Meteorology: data sourced from Ballarat Aerodrome (Station 089002).

FIGURE 2. Striped Legless Lizard Monitoring Year 3

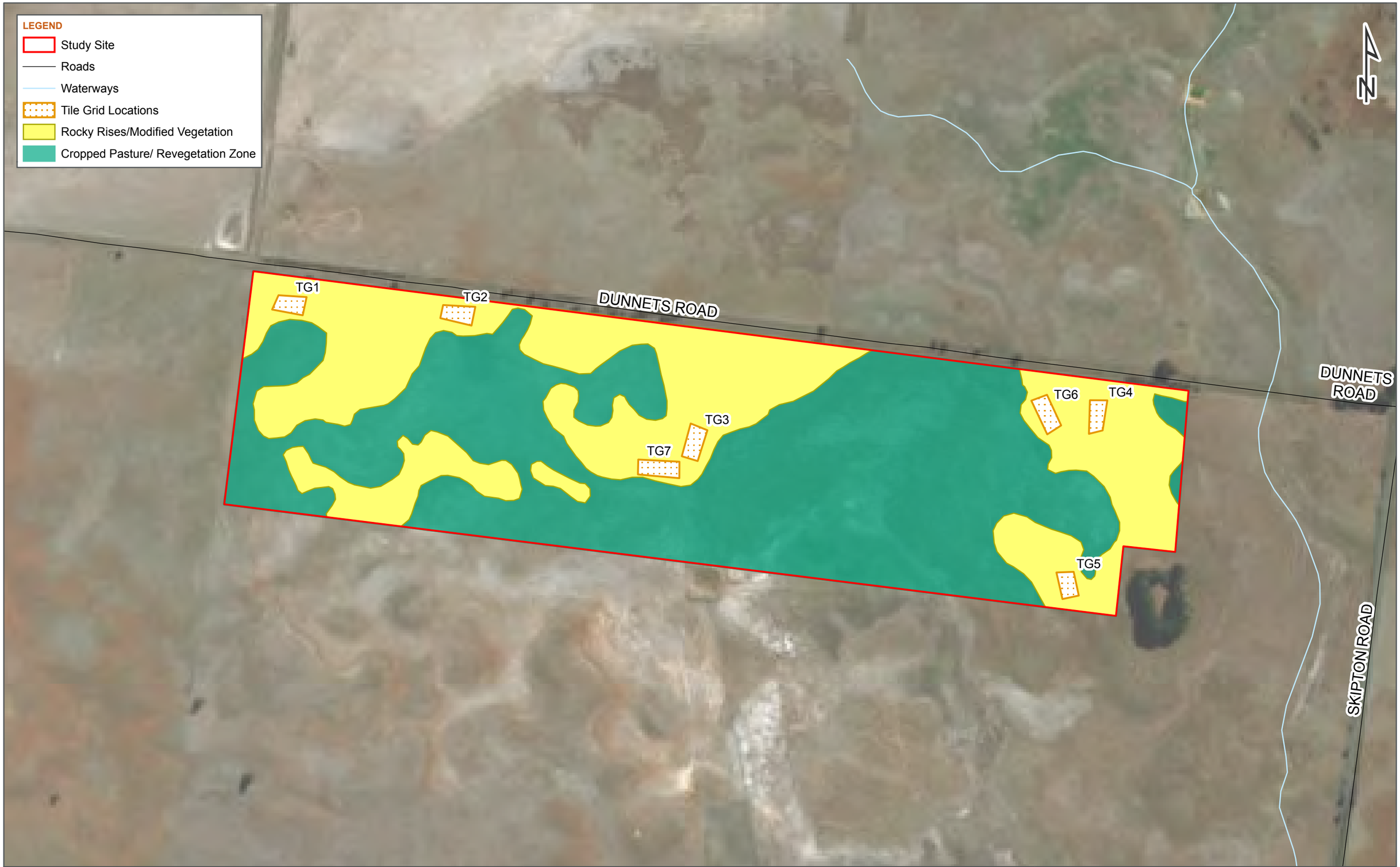


FIG NO. 2 **FIGURE TITLE** Striped Legless Lizard Monitoring Year 3	**DATE** 16/01/2020	0 0.03 0.07 0.13 Km 1:5,000	**PAGE SIZE** A3	**COORDINATE SYSTEM** GDA 1994 MGA Zone 55
PROJECT NO. 30042115 **PROJECT TITLE** Striped Legless Lizard Monitoring Site Stockyard Hill, Victoria	**CREATED BY** AR15136	**SOURCES** World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		

SMEC
Member of the Surbana Jurong Group

Location:

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

Population dynamics

Morphological data including snout-vent length (SVL) and head scale photographs were recorded for all captured Striped Legless Lizard. The sex of individuals was not determined during Year 4 monitoring.

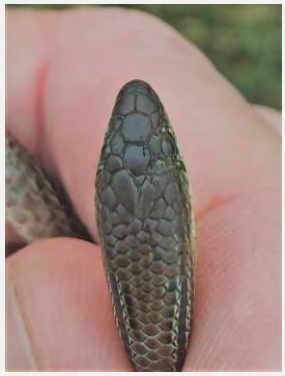
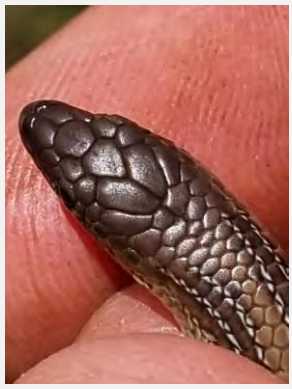
Year 3 monitoring confirmed three distinct adult Striped Legless Lizard between Tile Grid 3 (SLLa and SLLb) and Tile Grid 6 (SLLc) (Table 2) (SMEC 2020, 2021c).

The adult Striped Legless Lizard identified at Tile Grid 6 is confirmed to be a new adult referred to as SLL(d), this is based on head scale photographs and morphological appearance (Table 2). This result confirms at least four adult Striped Legless Lizard between Tile Grid 3 and Tile Grid 6, and two extant populations within the offset site (based on distances between monitoring locations).

A second Striped Legless Lizard was detected at Tile Grid 4 but was not captured (Table 1). The individual was also considered to be an adult based on the observed SVL (>20 cm). This result indicates a population size of up to three adult Striped Legless Lizard between Tile Grids 4 and 6 and will be a key area for monitoring to determine if breeding success is also observed in future years (as observed at Tile Grid 3 previously).

Table 2: Morphological data for Striped Legless Lizard captured in Year 3 and Year 4 monitoring.

SLL ID	SVL	LOCATION AND DATE	HEAD SCALE PHOTOGRAPHS	BODY IMAGE
SLL(a)	17 cm	Tile Grid 3 – 20/11/2020		
SLL(b)	24 cm	Tile Grid 3 – 8/12/2020		

SLL ID	SVL	LOCATION AND DATE	HEAD SCALE PHOTOGRAPHS	BODY IMAGE
SLL(c)	20 cm	Tile Grid 6 – 8/12/2020		
SLL(d)	25cm	Tile Grid 6 – 4/11/2021		

Biomass Density and Stock Grazing

Previous discussions with the landowners 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) (EHP 2021, SMEC 2020, SMEC 2021c). For example, biomass levels and the control of weeds during Year 3 monitoring could have been reduced if stock grazing was extended with additional short periods of grazing between October to December.

Previous stocking rates across the offset site have been approximately 10 DSE/Ha (450 sheep), this will remain in place between March to August annually, with all sheep being removed during the critical flowering/reproductive period for native species (September to February). However, the revised OMS will now allow for adaptive management measures to be implemented between October to December with increased stocking rates (EHP 2021, SMEC 2021a).

An overview of the adaptive management approach for biomass control is detailed below:

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.

Overall, biomass cover was high (80-90%) on average and exceeded the target of 70% ground cover and open ground (20-40%) identified within the OMS (EHP 2021). Grass height is typically lowest (ranging between a height of 15-40 cm) at the commencement of monitoring (October-November), and after stock grazing has been implemented between March to August. However, it is apparent that further adaptive management and rotational grazing in accordance with the revised OMS between October to December will assist with managing grass height (i.e. maintaining ≤50 cm), and biomass levels throughout the offset site (particular established rocky rise areas where previous cropping has not been undertaken).

Pest plants and animals

Pest plant and animals have been managed by the landowner, AusEco Solutions and relevant sub-contractors where required. Focussed efforts have been undertaken to collect seed of native species within the offset site (i.e. Kangaroo Grass [*Themeda triandra*], wallaby-grasses, wheat-grass and tussock-grass) between January and May 2021. Weed management has focussed on Toowoomba Canary Grass (*Phalaris aquatica*) and thistles. Professional shooters conducted targeted pest control on three separate occasions between June to August 2021, in which nine European Rabbits (*Oryctolagus cuniculus*) and two Red Fox (*Vulpes vulpes*) were shot within the offset site. Further details summarising works associated with pest plant and animal management will be provided separately by the landowner.

Rehabilitation / direct seeding

The site continues to improve with respect to native species cover and will be reviewed and remapped in Year 5 monitoring. Further review of native vegetation rehabilitation, in consultation with AusEco Solutions, will be reviewed in Year 5 also to determine if adequate levels of native vegetation has been established to implement the remaining five tile grid sites outlined as part of the OMS (see Section 6.8.1 within EHP 2021). This task was not undertaken in Year 4 as recommended due to insufficient native vegetation cover in cropped areas which is still being undertaken by AusEco Solutions. Rehabilitation works through direct seeding is managed separately by AusEco Solutions and will be summarised within a separate report (to be provided by the landowner).

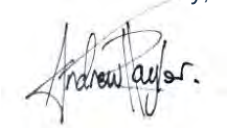
Conclusion

Two Striped Legless Lizard were recorded utilising habitat at Tile Grids 4 and 6 during Year 4 monitoring. Interestingly, one of the detected individuals was noted to be a separate adult at Tile Grid 6, which indicates a total of two adult Striped Legless Lizards at this location. The second individual observed at Tile Grid 4 was classified as an additional adult based on the morphological features noted. This result as it indicates two extant populations occur within the offset site at present. Three additional species were recorded within the offset site including Little Whip Snake, Eastern Blue Tongue Lizard and Striped Marsh Frog. No additional mammal, reptile or frog species were recorded.

Biomass levels were approximately 80-90% on average and adaptive management actions are recommended between October-December 2022 if targets of total vegetation cover (70%) and open ground (20-40%) are not achieved. Overall, weed and pest animal management will be ongoing and is actively being implemented by the landowner in accordance with the OMS. Areas utilised for rehabilitation trials will be monitored for success in Year 5 monitoring to determine suitability for deployment of remaining tile grids as per Section 6.8.1 of the OMS (EHP 2021).

If you have any questions, please feel free to contact me.

Yours sincerely,



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SMEC 2021c. Striped Legless Lizard Population Monitoring Report (Year 3), Stockyard Hill Wind Farm Pty Ltd. Prepared for Goldwind Australia Pty Ltd.

Appendix A Offset Management Strategy – Accompanying Documents

Appendix A.1:

2016-7746-Stockyard Hill-OMS-Approval Letter

Appendix A.2:

SMEC 2021a. '*Technical Memorandum - Addendum to SLL OMS V2 July 2021*', dated 14 December 2021, for Striped Legless Lizard Offset Management Strategy (v2, dated July 2021) - Adaptive Biomass Control, at Stockyard Hill Wind Farm.

Australian Government
Department of Agriculture, Water and the Environment

Ms Elizabeth Zorondo
Senior Environmental Planner
GOLDWIND AUSTRALIA PTY LTD
Level 4, North Tower Building,
485 La Trobe Street MELBOURNE VIC 3000

Stockyard Hill Wind Farm - Wind Energy Facility and associated infrastructure, south-west Victoria - Offset Management Strategies and Technical Memorandums (EPBC 2016/7746)

Dear Ms Zorondo

Thank you for submitting the revised Offset Management Strategies and Technical Memorandums for approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Officers of this Department have advised me on the revised Striped Legless Lizard Offset Management Strategy and its associated Technical Memorandum, and on the requirements of the conditions of approval. On this basis, and as a delegate of the Minister for the Environment and in accordance with Condition 12 of the EPBC Act approval for EPBC 2006/2912 and section 143A of the EPBC Act, I have decided to approve the:

- *Striped Legless Lizard Delma impar Offset Management Strategy for the Stockyard Hill Wind Farm, Version 2, 20 July 2021;*
- *Technical Memorandum - Addendum to SLL OMS V2 July 2021*, dated 14 December 2021, for Striped Legless Lizard Offset Management Strategy (v2, dated July 2021) - Adaptive Biomass Control, at Stockyard Hill Wind Farm;

as meeting the requirements of Condition 2 of the EPBC Act approval for 2016/7746.

Officers of this Department have also advised me on the revised Golden Sun Moth Offset Management Strategy and its associated Technical Memorandum, and on the requirements of the conditions of approval. On this basis, and as a delegate of the Minister for the Environment and in accordance with Condition 12 of the EPBC Act approval for EPBC 2006/2912 and section 143A of the EPBC Act, I have decided to approve the:

- *Golden Sun Moth Synemon plana Offset Management Strategy for the Stockyard Hill Wind Farm, Version 5, 7 July 2021; and*
- *Technical Memorandum - Addendum to GSM OMS V5 July 2021,* dated 14 December 2021, for Golden Sun Moth Offset Management Strategy (v5, dated July 2021) - Adaptive Biomass Control, at Stockyard Hill Wind Farm;

as meeting the requirements of Condition 3 of the EPBC Act approval for 2016/7746.

The above approved strategies and technical memorandums must now be implemented.

Please note that the conditions of approval for EPBC 2016/7746 require that the approved strategies and technical addendums be published on your website, and that may choose to vary the approved strategies and technical addendums without seeking the Department's approval, if the revised strategies and technical addendums would not be likely to have a new or increased impact on a matter protected under the conditions of approval for this project, in accordance with Condition 7 of the approval.

The Department has an active monitoring program which includes monitoring inspections, and desktop document reviews and audits. Please ensure that you maintain accurate records of all activities associated with the conditions of approval, including implementation of approved plans, so that they can be made available to the Department on request.

Should you require any further information please contact Tony Dowd on (02) 6274 1769 or PostApproval@awe.gov.au.

Yours sincerely

Vaughn Cox
A/g Director, Post Approval Section
Assessments (Vic, Tas) and Post Approvals Branch

23 December 2021

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

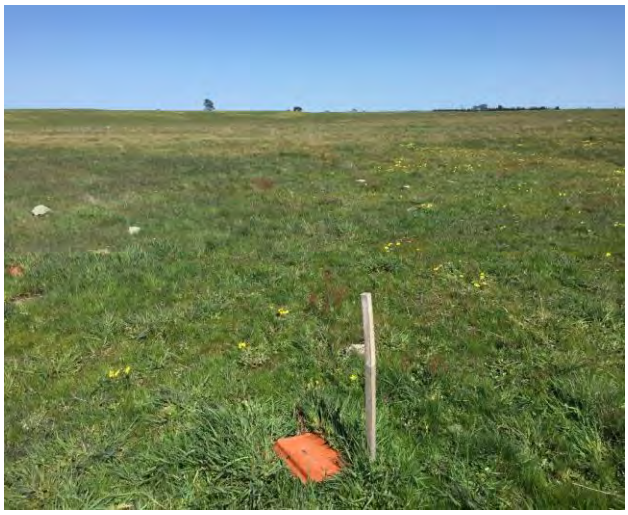

Plate 1: Vegetation height (30-40cm) October 2020.

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.

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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.

Member of the Surbana Jurong Group

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
Member of the Surbana Jurong Group

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

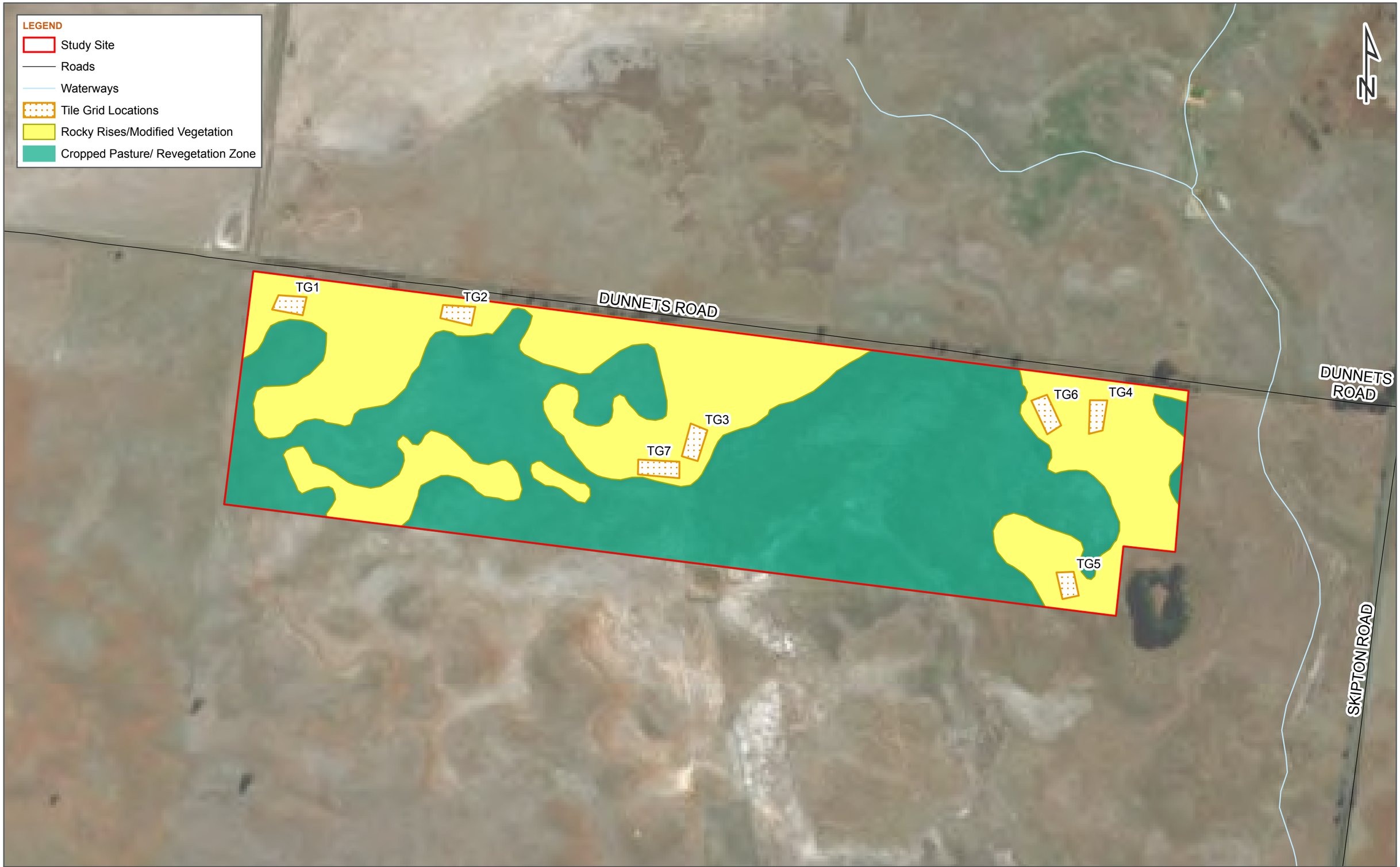

FIG NO. 2 **FIGURE TITLE** Striped Legless Lizard Monitoring Year 3	**DATE** 16/01/2020	0 0.03 0.07 0.13 Km 1:5,000	**PAGE SIZE** A3	**COORDINATE SYSTEM** GDA 1994 MGA Zone 55
PROJECT NO. 30042115 **PROJECT TITLE** Striped Legless Lizard Monitoring Site Stockyard Hill, Victoria	**CREATED BY** AR15136	**SOURCES** World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		

SMEC
Member of the Surbana Jurong Group

Location:

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

FIGURE 3. Vegetation Monitoring (Year 1)

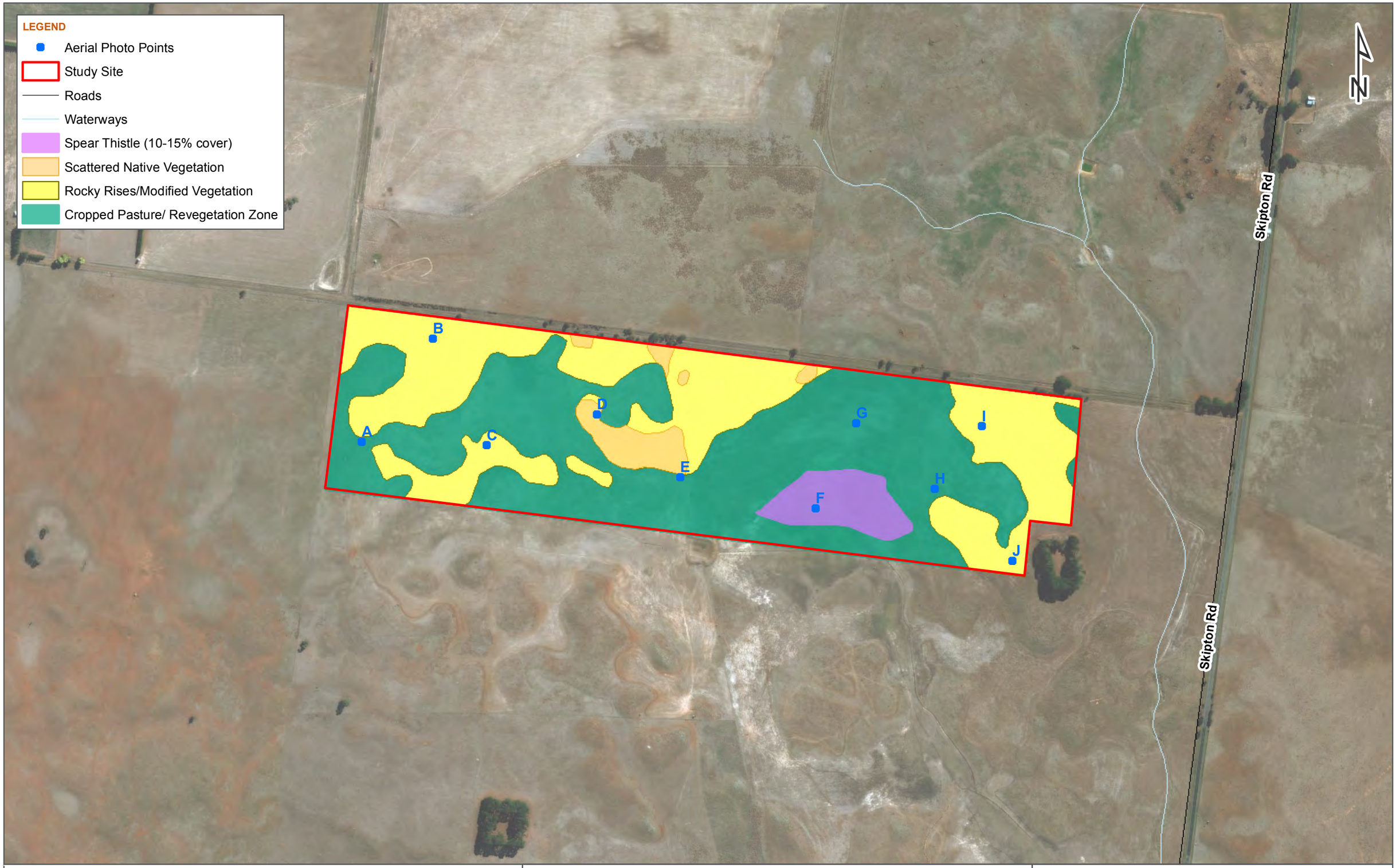

FIG NO. 3 **FIGURE TITLE** Vegetation Monitoring (Year 1)	**DATE** 29/03/2019	0 0.075 0.15 1:6,360 Km	**PAGE SIZE** A3	**COORDINATE SYSTEM** GDA 1994 MGA Zone 55
PROJECT NO. 30041817 **PROJECT TITLE** Striped Legless Lizard Monitoring Site Stockyard Hill, Victoria	**CREATED BY** AM20078	**SOURCES** Source: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

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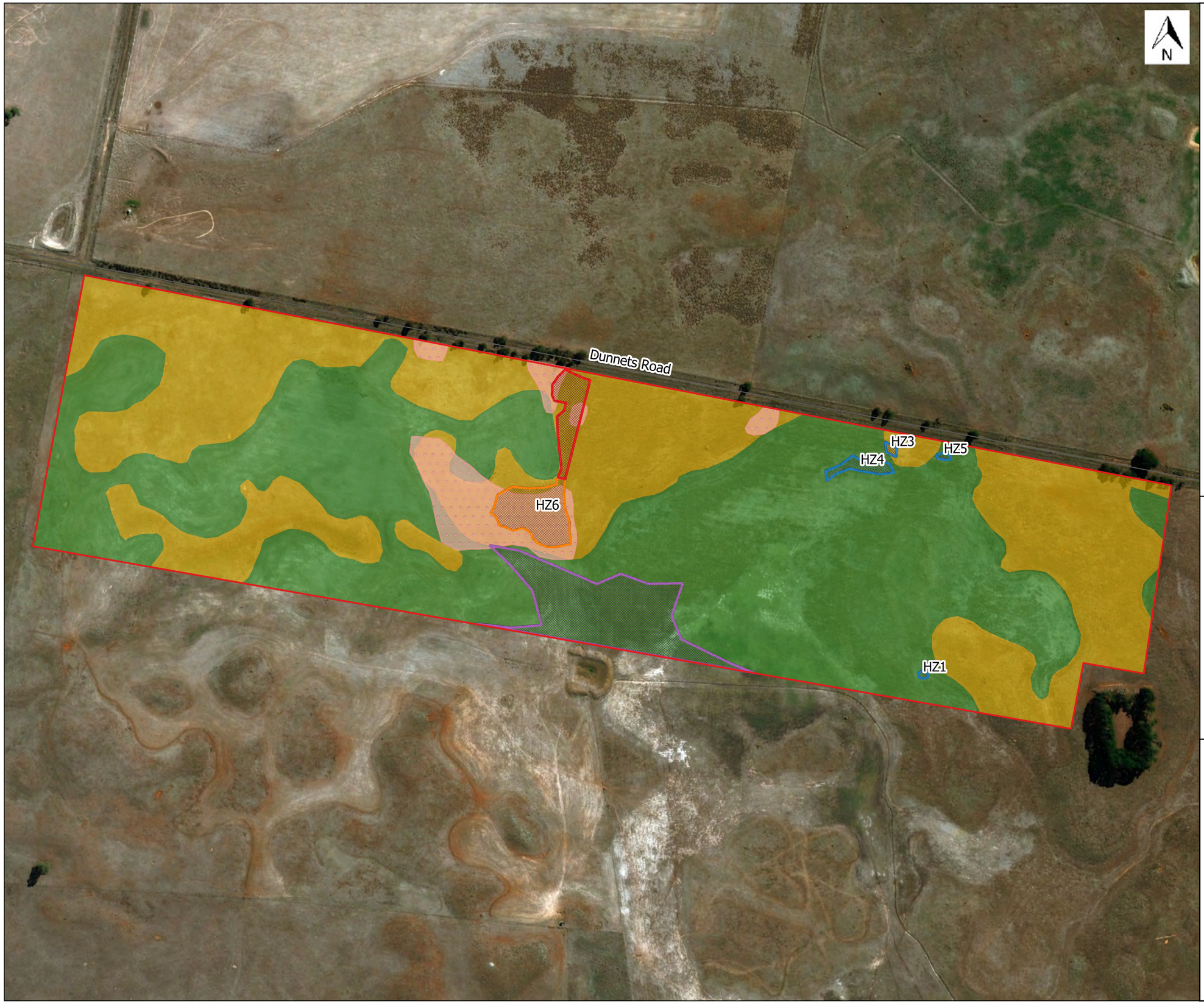
Location: L:\Work\GIS\Projects\30041817 - Stockyard Hill Wind Farm\GIS Files\MXD\Figure 3 - Vegetation Monitoring (Year 1).mxd

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

Appendix B – Monitoring Grid Photographs (November 2021)

Photograph 1. TG1 (B, Gwynne. 16 November 2021).

Photograph 2. TG1 – ground cover (B, Gwynne 16 November 2021).

Photograph 3. TG2 (B, Gwynne. 16 November 2021).

Photograph 4. TG2 – ground cover (B, Gwynne. 16 November 2021).

Photograph 5. TG3 (B, Gwynne. 16 November 2021).

Photograph 6. TG3 – ground cover (B, Gwynne. 16 November 2021).

Photograph 7. TG4 (B, Gwynne. 16 November 2021).

Photograph 8. TG4 – ground cover (B, Gwynne. 16 November 2021).

Photograph 9. TG5 (B, Gwynne. 16 November 2021).

Photograph 10. TG5 – ground cover (B, Gwynne. 16 November 2021).

Photograph 11. TG6 (B, Gwynne. 16 November 2021).

Photograph 12. TG6 – ground cover (B, Gwynne. 16 November 2021).

Photograph 13. TG7 (B, Gwynne. 16 November 2021).

Photograph 14. TG7 – ground cover (B, Gwynne. 16 November 2021).

Appendix C

SHWF Golden Sun Moth Population Monitoring Report (Year 4) SMEC, 11 March 2022

SMEC
Member of the Surbana Jurong Group

Offset Monitoring

Golden Sun Moth Population Monitoring Report (Year 4) – Stockyard Hill Wind Farm Pty Ltd

Reference No. 30043163N
Prepared for Goldwind Australia Pty Ltd
11 March 2022

Document Control

Document	Golden Sun Moth Population Monitoring Report (Year 4)
File Location	X:\SMECANZ\Projects\300430\30043049N - Stockyard Hill Wind Farm Golden Sun Moth Monitoring (Year 4)\040 Reporting
Project Name:	Golden Sun Moth Population Monitoring Report (Year 4) – Stockyard Hill Wind Farm Pty Ltd
Project Number:	30043163N
Revision Number	2

Revision History

Revision No.	Date	Prepared By	Reviewed By	Approved for Issue By
1	16 February 2022	Andrew Taylor Jacinta Harrison	Dan Weller	Jenna Forbes
2	11 March 2022	Andrew Taylor	GWA (client) / GHPL(landowner)	Jenna Forbes

Issue Register

Distribution List	Date Issued	Number of Copies
Goldwind Australia Pty Ltd	16 February 2022	1
Goldwind Australia Pty Ltd	11 March 2022	1

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Important Notice

This report is confidential and is provided solely for the purpose of understanding population dynamics of Golden Sun Moth (***Synemon plana***) at an offset site associated with the Stockyard Hill Wind Farm Pty Ltd. This report is provided pursuant to the agreement between SMEC Australia Pty Limited ("SMEC") and Goldwind Australia Pty Ltd, under which SMEC undertook to perform a specific and limited task for Goldwind Australia Pty Ltd. This report is strictly limited to the matters stated in it and subject to the various assumptions, qualifications and limitations in it and does not apply by implication to other matters. SMEC makes no representation that the scope, assumptions, qualifications and exclusions set out in this report will be suitable or sufficient for other purposes nor that the content of the report covers all matters which you may regard as material for your purposes.

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Acronyms

Acronyms	Description
CaLP Act	*Catchment and Land Protection Act 1994*
CMA	Catchment Management Authority
DAWE	Commonwealth Department of Agriculture, Water and Environment (formally DoEE)
DELWP	Department of Environment, Land, Water and Planning
DEPI	Department of Environment and Primary Industries (now DELWP)
DoEE	Commonwealth Department of the Environment and Energy
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ha	Hectares
km	Kilometres
LGA	Local Government Authority
m	Metres
OMS	Offset Management Strategy
SHWF	Stockyard Hill Wind Farm Pty Ltd
sp.	Species (one species)
spp.	Species (more than one species)

1 Introduction

1.1 Background

SMEC Australia Pty Ltd (SMEC) was commissioned by Goldwind Australia Pty Ltd (Goldwind) to undertake Golden Sun Moth (***Synemon plana***) habitat management and species monitoring at an offset site associated with the Stockyard Hill Wind Farm Pty Ltd project (the Project). The Project was approved under the ***Environmental Protection and Biodiversity Conservation Act 1999*** (EPBC Act) on 19 August 2018 by the Department of Agriculture, Water and Environment (DAWE) (formally the Department the Environment and Energy [DoEE]). The Project will consist of the construction of 149 approved wind turbines located approximately 35 km west of Ballarat, Victoria.

The DAWE post-approvals team have approved the 10-year Offset Management Strategy (OMS) for Golden Sun Moth prepared by Ecology and Heritage Partners Pty Ltd (EHP 2021), subject to conditions (Approval Decision EPBC 2016/7746). The conditions outlined within the OMS and project approvals set out how impacts to Golden Sun Moth listed under Sections 18 and 18A of the EPBC Act will be mitigated and managed to acceptable levels.

This includes, but is not limited to, the following key criteria under Approval Decision EPBC 2016/7746:

1. ***The approval holder must not clear more than:***
   (a) **1.57** ha of habitat for Golden Sun Moth. Without the prior written approval of the Minister.
2. ***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; and
   (b) Implement the Golden Sun Moth Offset Management Strategy for the secured Golden Sun Moth offset.

Impacts pertaining to the Project will therefore be managed through a 9 ha offset site which is located on private property in the northern section of the Project (the '***offset site***') (Figure 1). Given the confirmed presence of Golden Sun Moth within the offset site between the 2011-12 and 2012-13 monitoring seasons (EHP 2014), the offset site provides an opportunity to enhance and manage long-term conservation objectives for the species.

In response to high biomass levels observed during vegetation monitoring between 2018 to 2021, the OMS was resubmitted to DAWE with a technical memorandum to incorporate adaptive management approaches to biomass control (EHP 2021, SMEC 2021a). The request to implement adaptive management is in response to limitations identified in the management of biomass using rotational grazing during years of high pasture growth. Consistent with Condition 12 of the EPBC Act approval, the technical memorandum serves as an addendum to the Golden Sun Moth OMS v5 (dated 7 July 2021) (EHP 2021), which was approved by the delegate of the Minister for the Environment on 23 December 2021 (Attachment 1). The technical memorandum is provided for information as Attachment 2 and is detailed in Section 3.4 below.

1.2 Scope of Works

The broader objectives for the Project are in accordance with the approved OMS, which requires Goldwind and the landowner to complete the following (EHP 2021):

- ***Protect and secure the environmental values of the site, ensuring that indigenous species survive;***
- ***Maintain and enhance the biodiversity of the site by maintaining natural ecosystem processes;***
- ***Maintain and if possible expand Golden Sun Moth populations and associated habitats;***
- ***Control and if possible eliminate populations of pest plants and animals; and***
- ***Achieve a high level of ecologically sound on-ground management.***

The objectives of Golden Sun Moth monitoring and implementation of the OMS in Year 4, included:

- Completion of Golden Sun Moth monitoring in accordance with suitable survey methodology;
- Providing advice on access control, biomass and grazing management regimes;
- Identifying areas of focused management activities with respect to pest plant and animals; and
- Provision of a Year 4 summary report detailing the monitoring results specific to the objectives of the OMS.

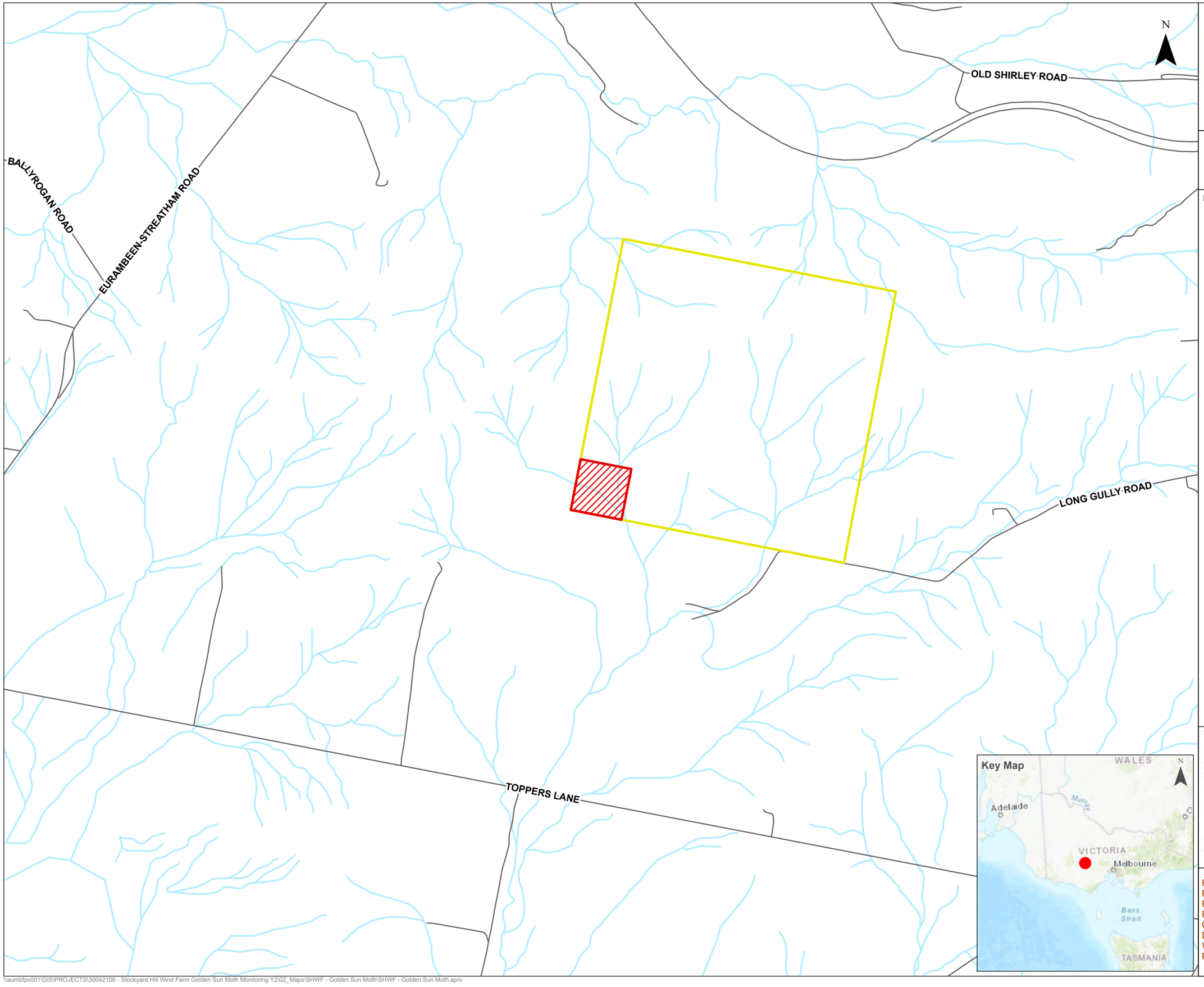
1.3 Offset Site

The 9 ha offset site is located within private property (Crown Allotments 23A, 23B, 24A and 24B Parish of Eurambeen) and is situated within a broader 263 ha area of land within the northern project area. The offset site is located approximately 180 km west of Melbourne and 60 km west of Ballarat (Figure 1).

The offset site has historically been used for rotational grazing by sheep and comprises remnant vegetation patches of Grassy Woodland (EVC 175).

The vegetation within the offset site also consists of scattered native trees and open understorey areas supporting native tussock grasses, including wallaby grasses (***Rytidosperma*** spp.), Kangaroo Grass (***Themeda triandra***), spear grasses (***Austrostipa*** spp.) and Weeping Grass (***Microlaena stipoides*** var. ***stipoides***).

The offset site occurs within the Central Victorian Uplands bioregion, Pyrenees Shire Council municipality and Glenelg Catchment Management Authority (CMA) (DELWP 2022a). The offset site is zoned Farming Zone (FZ) within the Pyrenees Planning Scheme and no planning scheme overlays apply to the offset site (although a Bushfire Management Overlay [BMO1] applies to vegetated areas within the broader property) (DELWP 2022b).



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SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149

0 250 500 750 1000
Meters

1:20,000

Legend

- Property Boundary
- 9 ha Offset Site
- Watercourse
- Road

Key Map

SOURCES:

1. Example Data © DELWP 2019
2. Basemap World Topographic Map: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

PROJECT:	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO:	30042106
FIGURE NO:	1
FIGURE TITLE:	Golden Sun Moth Offset
CREATED BY:	ar15136
DATE:	30/01/2020
VERSION:	DRAFT 1
PAGE SIZE:	A3

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2 Golden Sun Moth

2.1 Conservation Status

EPBC Act: Vulnerable
FFG Act: Vulnerable

2.2 Description

The Golden Sun Moth is a medium-sized, diurnal moth with a wingspan up to 3.4 cm (DAWE 2022). In the female, the upper-side of the forewing is dark grey, and the hindwing is bright orange, while in the males the forewing and hindwing are dark brown (Image 1, DAWE 2022).

Image 1. Golden Sun Moth – male (left) and female (right) (Source: DEWHA 2009).

For much of their lifecycle Golden Sun Moth are underground in a larval stage, feeding on the roots of wallaby grasses (***Rytidospema*** spp.), however, the species may also inhabit degraded grasslands dominated by the exotic Chilean Needle-grass (***Nassella neesiana***), a Weed of National Significance (WONS) (DAWE 2022). Adults emerge during summer to breed, with males flying approximately 1 m above the grass actively searching for a female (DAWE 2022). Adult moths generally survive for one to four days as they lack functional mouth parts (DAWE 2022).

2.3 Distribution

The distribution of Golden Sun Moth corresponds with native temperate grasslands across NSW, the ACT, Victoria and South Australia. Native grasslands once covered approximately 2,000,000 ha of south-eastern Australia, however, less than 1% of these temperate native grasslands remain. As a result, the remaining Golden Sun Moth populations are thought to be reduced and fragmented throughout their historical range (DAWE 2022).

2.4 Habitat

Golden Sun Moth persist in native temperate grassland and open grassy woodlands dominated by Wallaby-grasses within the species historical range throughout Victoria (DEWHA 2009). The most common native grasses in these systems are wallaby grasses, spear grasses (***Austrostipa*** spp.), tussock grasses (***Poa*** spp.), Weeping Grass, wire grasses (***Aristida*** spp.) and Kangaroo Grass (DAWE 2022). Habitat containing a high cover (≥40%) of suitable host plants combined with well drained and north facing sites with minimal shading are preferred by the species. Areas of bare or sparsely covered ground between grass tussocks (inter-tussock spaces) are important in helping males locate females during the breeding period (October-January) (DAWE 2022).

2.5 Key Threats

The principal threats to the Golden Sun Moth include loss, degradation, modification and fragmentation of habitat through the following impacts (DEWHA 2009):

- Removal of vegetation;
- Inappropriate fire regimes;
- Weed invasion;
- Overstocking (causing loss of habitat plants);
- Changes to soil and plant structure;
- Increased nutrient loads);
- Changes to agricultural practices (e.g. fertiliser application, ploughing and overgrazing);
- Rank growth (loss of inter-tussock spaces); and
- Soil compaction.

3 Offset Management Strategy

The following section outlines detailed management and monitoring actions in accordance with the OMS for the identified Golden Sun Moth population. Overall, the implementation of the OMS will provide a net benefit to Golden Sun Moth within the offset site through the protection and active management of the existing population and associated habitat(s).

3.1 Mandatory Offset Site Actions

The following actions will be maintained for a mandatory period of 10-years in accordance with the OMS (EHP 2021):

- No cropping;
- No drainage/hydrology alteration;
- No use of boom sprayers;
- No rock removal;
- No artificial stock feeding within the offset area;
- Weed cover is managed in perpetuity to ensure it does not increase beyond the level attained at Year-10 of management;
- Pest animals are controlled in perpetuity to the level attained at year 10 of the management;
- Golden Sun Moth populations and habitat are maintained or improved; and
- Any proposed uses or development of the site which conflict with the landowner's commitments are not permitted under this plan.

3.2 Golden Sun Moth Monitoring

3.2.1 Survey permits

Golden Sun Moth monitoring was undertaken in accordance with a Research Permit approved by the Department of the Environment, Land, Water and Planning (DELWP) under the ***Wildlife Act 1975*** (Permit 10009728). All animal handling was in accordance with SMECs Standard Operating Procedure (SMEC 2021b), and Wildlife and Small Institutions Animal Ethics Committee (WSIAEC) approval 23.20.

3.2.2 Survey methods

Golden Sun Moth monitoring was undertaken between 1 December 2021 to 11 January 2022 in general accordance with the ***Significant Impact Guidelines for the Critically Endangered Golden Sun Moth (Synemon plana***) (DEWHA 2009). All monitoring events were conducted during suitable weather conditions during the species known emergence period (October-January), specifically (DEWHA 2009):

- Warm to hot days;
- Between 10:00am-14:00pm;
- Clear or mostly cloudless sky;
- Still or nearly still wind conditions; and
- At least two days since rain.

Surveys were completed by SMEC ecologists experienced with the identification and ecology of Golden Sun Moth. Survey transects across the offset site were undertaken at average intervals of approximately 50 m. A total of four monitoring events were completed to confirm the species relative abundance and distribution across the offset site.

3.3 Access Control

The OMS outlines the requirement to implement appropriate fencing around the offset site to restrict stock access by means of an enclosed, permanent post-and-wire fence. Given the addition of a new offset site immediately adjoining the 9 ha area, the existing northern and eastern extent of this fence was removed by the landowner in 2019. This approach was undertaken to facilitate biomass control via rotational grazing, which is required at similar intervals between the two offset sites (March to August).

However, in response to recommendations (SMEC 2020, SMEC 2021c), a temporary fence has been reinstalled to allow focused biomass control within the offset site in order to meet the objectives of management targets outlined in the OMS. The offset site can now be closed off and grazed at selected intervals to manage biomass more strategically as deemed appropriate by the landowner. As per the revised OMS (EHP 2021), the direct removal of stock will be undertaken during designated management periods (September and January to February) to avoid accidental or unauthorised access.

3.3.1 Access control actions

Access control within the OMS is stated in accordance with the following:

- Maintain permanent fences surrounding the perimeter of the offset site. Any new fencing will be 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 property is still used for the controlled grazing of sheep. Any damage, gaps or holes in fencing will be repaired immediately.

3.3.2 Performance measures

Key performance measures within the OMS have the following targets to quantify the success of access control:

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

3.4 Biomass Density and Stock Grazing

Prior to the review of biomass control measures within the OMS, the offset site was grazed at three (3) week intervals during March to August with approximately three (3) rotations overall. 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). Stocking rates between March to August are set at 3 DSE/Ha (30 sheep), with all sheep being removed during the critical flowering/reproductive period for native species (September to February). No mosaic burns in Years 1 to 4 of monitoring have been undertaken to date.

The OMS has now been updated in response to limitations with previous stocking rates and grazing periods relating to the control of biomass (particularly in seasonally wet years as observed in the 2019/20 and 2020/21 monitoring period) (EHP 2021, SMEC 2020, SMEC 2021c). The revised OMS will now allow the following adaptive management measures to be implemented between October to December (as required) (EHP 2021, SMEC 2021a):

1. Continue biomass control in accordance with the OMS between **March** to **August** at a stocking rate of 3 DSE/Ha (approximately 30 sheep);
2. Removing all stock during **September**;
3. Implementing adaptive biomass control between **October** to **December** at a stocking rate of **5 DSE/Ha** (approximately 50 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 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. Implementation of temporary fencing is recommended around Zones 1, 2 and 5 to minimise stock access to higher quality habitat(s) known to support the species.

3.4.1 Biomass 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 Grassy Woodland areas from approximately late September through to late January (or as advised by a suitably qualified ecologist where adaptive management is required); and
- An appropriate land manager/contractor will co-ordinate weed control works with the grazing regime.

3.4.2 Performance measures

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

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

3.5 Weed Control

Weed control is currently being undertaken by the landowner. While the overall objective of the OMS is to eliminate or reduce all weed species to less than 1-5% cover, priority weeds within the offset site and immediately adjacent will be the focus of management. Priority weeds include woody weeds, all noxious weeds listed under the ***Catchment and Land Protection Act 1994*** (CaLP), or any other weed species considered to be high threat.

3.5.1 Weed control actions

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

- Priority weeds: These 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 (at a reduced cover of current levels).

3.5.2 Performance measures

The following key performance targets will be used 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 at a reduced cover to current levels.

3.6 Pest Animal Control

The OMS requires all vermin harbour (i.e. burrows) to be treated, particularly European Rabbits (***Oryctolagus cuniculus***), without disturbance to native vegetation or significant soil disturbance. The landowner will monitor pest animal use within the offset site whilst undertaking weed control works to determine if changes to management actions are required.

3.6.1 Pest animal 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 (e.g. baiting, trapping and shooting of foxes, hares, rabbits or feral cats).

3.6.2 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.

3.7 Reporting

3.7.1 Progress reports

Progress reports will be provided to the responsible authority at the end of years 2, 4, 6, 8 and 10 of the program. Information to be provided in the progress report includes:

- A summary of management actions detailing activities completed during the reporting period (Table 3);
- Landowner monitoring and reporting forms (Section 3.7.2);
- A description of the specific monitoring results from ecological surveys undertaken (Section 4.1);
- Results of weed and pest animal control work (Gerrpart Holdings Pty Ltd 2021b);
- Successful management tools (i.e. techniques used to control weed species, monitoring technique, etc.) (Gerrpart Holdings Pty Ltd 2021b);

- Any problems or issues experienced (i.e. new infestation of weed species, etc.) (Sections 4.4 and Gerrpart Holdings Pty Ltd 2021b);
- Any corrective actions and contingency measures where monitoring indicates that there has been a deterioration in the native vegetation or Golden Sun Moth population (Section 6.1); and
- Photographs showing evidence of works (Gerrpart Holdings Pty Ltd 2021b).

3.7.2 Landowner monitoring and reporting

Information relating to access control, weed and pest animal control will be provided by the landowner within a stand-alone report (Gerrpart Holdings Pty Ltd 2021b).

4 Results

4.1 Golden Sun Moth monitoring

4.1.1 Survey results

Monitoring was undertaken over four separate days across the offset site between 1 December 2021 and 11 January 2022. Weather conditions during monitoring events were considered suitable for the detection of Golden Sun Moth and no reference site was visited as the species is present on site (Table 1).

Table 1: Golden Sun Moth survey dates and weather conditions[1].

Survey no.	Survey date	Time of survey	Temp. (°C)	Wind (km/h) / Direction	Days since rain	Total GSM
1	01-12-2021	13:10-14:20	25	9 NE	>2	0
2	13-12-2021	11:30-12:30	27.4	26 N	>2	3
3	23-12-2021	15:00-16:00	22.9	19 SSE	>2	28
4	11-01-2022	12:30-13:30	25.6	28 ESE	>2	0

A total of approximately 31 male Golden Sun Moth were recorded during four separate monitoring events (Table 1). The highest species emergence was detected on Survey 3 (23 December 2021), with 28 male Golden Sun Moth recorded (Table 1; Figure 2). The species was generally observed across the entire offset site during Survey 3 and areas adjoining the offset site where high quality grassland habitat for the species is present. Such areas typically supported a higher percentage of native grass cover (≥40-50%) and open ground (20%), which are known to occur in the eastern portion of the offset site (Table 1, Figures 2 and 3). It was assumed the Golden Sun Moth core emergence period had finished by Survey 4 (11 January 2022), as no individuals were detected. No female Golden Sun Moth were observed during monitoring events across the site.

The number of individuals in the 2021/22 monitoring season was considerably less than previous monitoring years between 2018/19 (>400), 2019/20 (349) and 2020/21 (477), respectively (EHP 2019, SMEC 2020, 2021c). The reduction in 2021/22 Golden Sun Moth abundances is unlikely to be associated with management of the offset site as vegetation has predominantly remained consistent between monitoring Years 2, 3 and 4 (SMEC 2020, 2021c, Section 3.4). Given the limited knowledge of larvae life cycles within the literature, it is unclear how above average pre-flight season rainfall may impact the emergence of the species in subsequent years of monitoring. However, based on other shared monitoring data across Victoria, the emergence of Golden Sun Moth across southern Victoria indicated low abundances at other reference and monitoring sites (ECA 2022).

4.1.2 Landowner Observations

The landowners were able to undertake opportunistic monitoring in addition to results detailed in Table 1. A total of approximately 69 male Golden Sun Moth were detected on 30 December 2021. This indicate that a strong population of Golden Sun Moth is persisting across the offset site despite the consistently low numbers observed across other monitoring sites within Victoria (**Note:** these additional records are not shown on Figure 2).

Table 2: Golden Sun Moth observed by landowners with survey dates and weather conditions[1].

Survey no.	Survey date	Time of survey	Temp. (°C)	Wind (km/h) / Direction	Days Since rain	TOTAL GSM*
1	30-12-2021	Unknown	33	13 NNW	>2	69

Note: (*) Landowners have been trained by experienced ecologists in the correct identification of Golden Sun Moth.

4.2 Access Control

Temporary fencing is now installed around the offset site to implement localised biomass control. It is important to continue monitoring the effectiveness of stock grazing as the main approach for biomass control, particularly in response to seasonal changes in environmental conditions where adaptive management is required to meet objectives within the OMS. The results of weed monitoring and biomass, including recommendations for improvements, are provided in Sections 4.3 below.

[1] Bureau of Meteorology: data sourced from Ballarat Aerodrome (Station 089002)

Legend

Golden Sun Moth Offset Site

Golden Sun Moth Observations

- December 1 2021 (0 indvs)
- December 13 2021 (0 indvs)
- December 23 2021 (ecologist 1) (16 males)
- December 23 2021 (ecologist 2) (12 males)
- January 11 2022 (0 indvs)

Survey Transects

- December 1 2021
- December 13 2021
- December 23 2021 (ecologist 1)
- December 23 2021 (ecologist 2)
- January 11 2022

0 25 50 m

PAGE SIZE A3

FIGURE TITLE	Golden Sun Moth Monitoring (Year 4)
PROJECT TITLE	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO.	30043163N
FIGURE NO.	2
DATE	14-02-2022
CREATED BY	JH13976
SOURCES	VicMap

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4.3 Biomass Density and Stock Grazing

4.3.1 Overall habitat quality

The offset site continues to provide suitable habitat for Golden Sun Moth supporting areas with a high cover (25-40%) of wallaby grasses, spear grasses, Weeping Grass, Kangaroo Grass and open ground with available spaces to support breeding (Plates 1-3). However, prior to adaptive management measures being approved, grazing was excluded between September to February and has resulted in a higher cover of introduced species reducing open space to approximately 10% on average. This is likely to be rectified in Year 5 with additional rotational grazing between October to December as per the revised OMS (EHP 2021, SMEC 2021a).

Other native species previously noted in the offset site include Blue Devil (***Eryngium ovinum***), Chocolate Lily (***Arthropodium strictum***), Bluebell (***Wahlenbergia*** sp.) and areas supporting bryophytes and lichens (particularly in the east of the site, Zone 3).

As noted in previous monitoring, dominant weed species on site that will require focused management include Brown-top Bent (***Agrostic capillaris***), Bulbous Meadow-grass (***Poa bulbosa***), Yorkshire Fog (***Holcus lanatus***), Onion Grass (***Romulea rosea***), Soft Brome (***Bromus hordeaceus***), Perennial Ryegrass (***Lolium perenne***), Soft Brome (***Bromus hordeaceus***), Hair-grass (***Aira*** spp.), Cat's Ear (***Hypochaeris radicata***), Cape Weed (***Arctotheca calendula***) and other annual weedy grasses (Plate 4). A more detailed discussion on biomass control and weed management is provided in Sections 4.3.2 and 4.4 below.

Plate 1: High cover of wallaby grasses and open ground (J, Harrison 11-01-2022).

Plate 2: High cover of wallaby grasses interspersed with introduced pasture grasses (A, Taylor 13-12-2021).

Plate 3: High quality Golden Sun Moth habitat in Zone 3 with high cover of native tussock grasses (40-50%) and available bare open ground (20%) (A, Taylor 13-12-2021).

Plate 4: Areas in Zone 1 with a higher cover of introduced pasture grasses (65%) interspersed with native tussock grasses (30%) (A, Taylor 13-12-2021).

4.3.2 Biomass density

The following section discusses current vegetation cover within five separate zones (Zones 1-5) as identified within the offset site. Density covers have changed slightly since the Year 3 monitoring within each zone and will need to be managed accordingly. Please refer to Figure 3 below for the indicative extents of each zone.

4.3.2.1 Zone 1

This zone is located in the centre of the offset site and extends to the western boundary fence (Figure 3). Zone 1 includes a shallow drainage line running east-west which flows to an artificial waterbody at the eastern edge of the offset site (Figure 3). Accordingly, conditions are monitored by the landowner and stock are removed from low lying areas during periods of inundation to avoid soil pugging.

Zone 1 supports a variety of native tussock grasses and maintains a baseline cover (30%) of wallaby grasses, spear grasses and Weeping Grass.

Zone 1 had the second highest level of biomass (65%) comprising pasture grasses including Brown-top Bent, Perennial Ryegrass, Bulbous Meadow-grass and Hair-grass (Plates 5-6). This zone will require focussed biomass management between March to August 2022 and October to December 2022 to increase the availability of open ground to 20-40% in accordance with the OMS, currently open ground is approximately 5%. Temporary fencing and additional weed management (spot-spraying) of areas supporting high biomass will be undertaken within Zone 1 to assist management objectives of the OMS.

Plate 5: Native and introduced pasture grasses observed within Zone 1 (J. Harrison 11-01-2022).

Plate 6: Typical ground cover/biomass observed in Zone 1 (J. Harrison 11-01-2022).

4.3.2.2 Zone 2

This zone is located along the northern and southern extent of the offset site (Figure 3). Similar to Zone 1, this zone contains a high level of biomass (90%) and will require focussed grazing management between March to August 2022 and October to December 2022.

Temporary fencing and active weed control (spot-spraying) will be implemented to accompany management efforts in Zone 1. Available open ground cover (10%) is currently lower than the 20-40% target noted within the OMS. Overall, this zone has a similar level of native tussock grass cover (25%) to Zone 1, with pasture grasses comprising the majority of ground cover (65%) within this zone (Plates 7-8).

Plate 7: Biomass observed within Zone 2 (A. Taylor 11-01-2022).

Plate 8: Typical ground cover/biomass observed in Zone 2 (A. Taylor 11-01-2022).

4.3.2.3 Zone 3

This zone provides the highest quality vegetation for Golden Sun Moth and is located along the eastern boundary of the offset site, with a small area along the northern boundary (Figure 3). This zone has a high cover of native tussock-forming grasses (40-50%), and open ground is typically within the preferred range for the species (20%). Some low intensity grazing will be required to increase this value (ideally to 40%) between March to August 2022 and October to December 2022 (Plates 9 and 10). Overall, the amount of introduced pasture grass is relatively low (30%) and can be maintained at current levels through the proposed grazing regime and active weed management (spot-spraying) where pasture grasses are more dominant.

Plate 9: Biomass observed within Zone 3 (J. Harrison 11-01-2022).

Plate 10: Typical ground cover/biomass observed in Zone 3 (J. Harrison 11-01-2022).

4.3.2.4 Zone 4

This zone occurs in shallow drainage lines in the south-east corner of the offset site (Figure 3). This zone has a similar cover of native tussocks (35%), pasture grass (55%) and open ground (5-10%) to Zone 2 and can be managed via stock grazing and active weed management (spot-spraying) (Plates 11 and 12). Given this area is immediately adjoining higher quality species habitat in Zone 3, any high threat weeds should be treated proactively to minimise potential spread into areas of remnant vegetation adjoining the drainage line.

Plate 11: Biomass observed within Zone 4 (J. Harrison 11-01-2022).

Plate 12: Typical ground cover/biomass observed in Zone 4 (J. Harrison 11-01-2022).

4.3.2.5 Zone 5

This zone was added as part of the Year 3 monitoring results and is located in the south-west corner of the offset site (Figure 3). In the Year 4 monitoring, it was observed that this zone was smaller than previously recorded as a higher density if native species was present. Zone 5 is frequented by stock as it is the most elevated location within the offset site and is dominated by Brown-top Bent and Yorkshire Fog. It comprises approximately 85% pasture grasses and 5% native species. This zone will require focussed weed and biomass reduction in March to August 2022 and October to December 2022 to increase the availability of open ground to 20-40% in accordance with the OMS, currently open ground is approximately 10% (Plates 13 and 14). This zone may be a suitable location for trial of a mosaic burn to review suitability for management actions in Zones 1 and 2 where a high cover of introduced grass species are also present. Any burns are to be undertaken in consultation with DELWP and CFA.

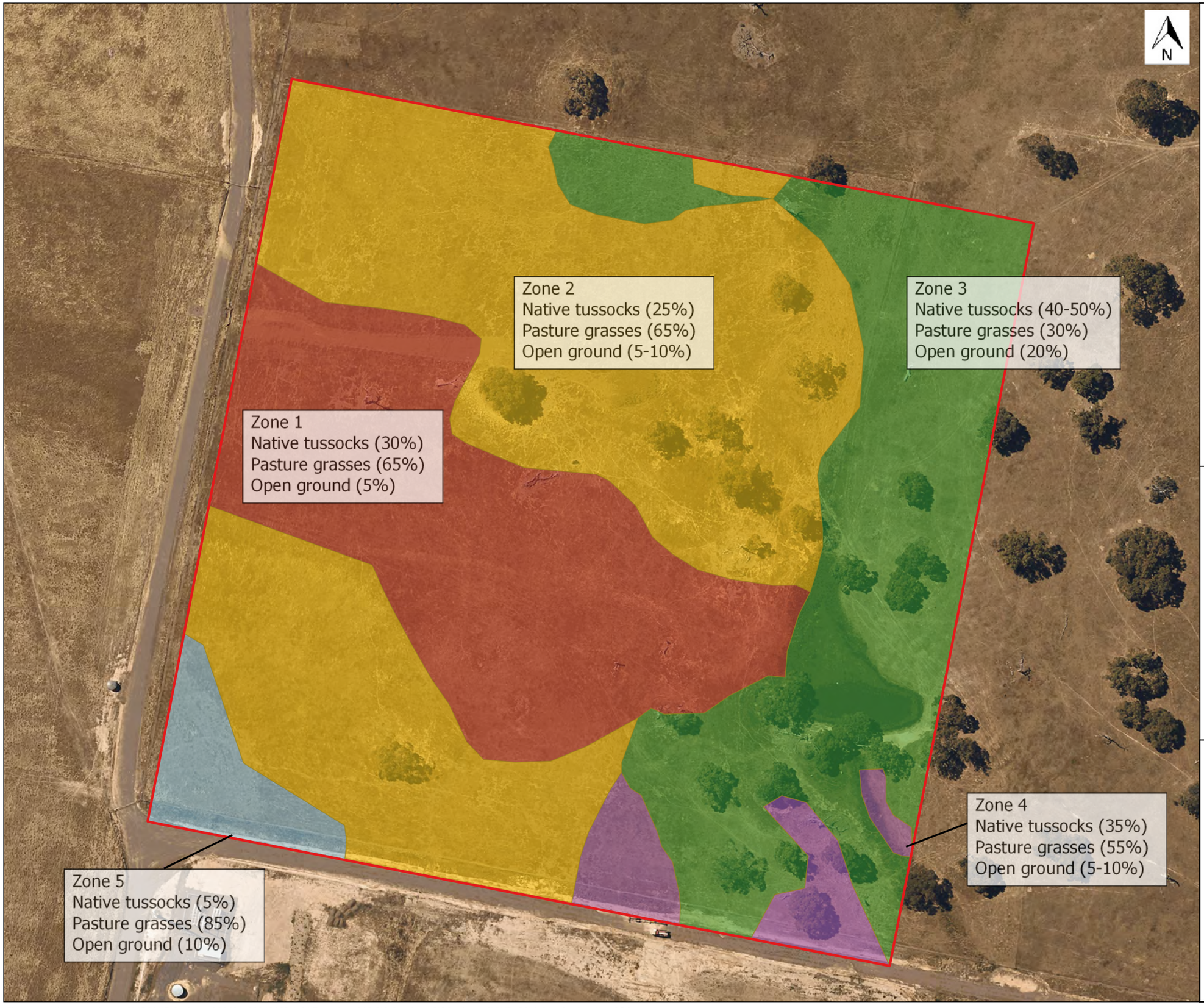
Plate 13: Biomass observed within Zone 5 (J. Harrison 11-01-2022).

Plate 14: Typical ground cover/biomass observed in Zone 5 (J. Harrison 11-01-2022).

4.3.3 Stock grazing

Year 4 monitoring indicates stock grazing will need to be focussed within Zones 1, 2 and 5 during March to August 2022 and October to December 2022 (Figure 3). Temporary fencing coupled with adaptive management will aim to reduce high biomass levels observed during the previous monitoring Years 2 and 3 to increase the amount of open ground and recruitment space for native species.

Stocking rates may now be increased to 5 DSE/ha between October to December if rotational grazing does not show improvements in biomass levels between March to August 2022. Stock should be excluded from any low-lying areas within Zone 1 that become inundated after significant rainfall events through the installation of temporary fencing or other means. Zones 3 and 4 will only require low intensity grazing and should be excluded to stock if areas of open ground increase to 40% or above. The ability to implement additional stock grazing between October to December 2022 will be monitored along with weed management activities to determine if more focussed biomass controls are required (i.e. mosaic burning in Zones 1 and 2).



Legend

- Golden Sun Moth Offset Site

Vegetation Zone

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5

0 20 40 60 80 m

PAGE SIZE A3

FIGURE TITLE	Vegetation Management
PROJECT TITLE	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO.	30043163N
FIGURE NO.	3
DATE	14-02-2022
CREATED BY	JH13976
SOURCES	VicMap

SMEC
Member of the Surbana Jurong Group

SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149

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4.4 Weed Control

The ongoing management of high threat weed species will include ongoing treatment of Brown-top Bent, Cape Weed, Cat's Ear and Yorkshire Fog. Small increases in the presence of Wild Oat (***Avena fatua***) were noted by the landowner and treated by spot spraying. Spear Thistle (***Cirsium vulgare***) were limited in numbers across the site and were removed by the landowner.

Active weed management (spot-spraying) in Zones 1 and 2 will be required February to March 2022 to increase open ground for native species recruitment. Additional rotational stock grazing in March to August 2022 and October to December 2022 will also be required to further reduce biomass levels in Zones 1 and 2.

Given the level of biomass observed during Year 4 monitoring (and in response to high rainfall), controlled burning could be undertaken in Zone 5 as a trial in 2022 given the low cover of native species and limited Golden Sun Moth habitat available. Alternatively, more intensive spot-spraying may be undertaken to create open space for the rehabilitation of native species.

Weed control has been managed by the landowner during Years 1-4 of the OMS and is summarised within Gerrpart Holdings Pty Ltd (2019, 2020, 2021a, 2021b).

4.4.1 Species of concern

Year 3 monitoring identified one new weed species of concern, South African Weed-orchid (***Disa bracteata***), in proximity to the offset site. This species generally grows in disturbed areas and can be found in woodlands, grazing lands and can invade bushland and pastures (Agriculture Victoria 2022). No individuals were located during Year 4 monitoring within the offset site (Gerrpart Holdings Pty Ltd 2021b).

It is recommended this species is monitored closely within the property with areas excluded by fencing to sheep and kangaroos to avoid potential spread. The fencing should include a barrier to seed dispersal (i.e. sediment type material) to limit seed dispersal across the property. Any individuals located must be dug out with any tubers removed to avoid potential regrowth, and should ideally be done before setting seed, the species is known to sprout in early spring. Alternative management approaches to reduce the spread of this species are recommended in consultation with other land managers experienced with the species.

4.5 Pest Animal Control

Rabbit burrows and warrens previously identified were fumigated and collapsed in Year 4 and are being monitored by the landowners. No active rabbit burrows or warrens are present within the offset site but the species remains present within the broader property in low numbers (Gerrpart Holdings Pty Ltd 2021b).

Spotlighting events took place during Year 4 pest animal monitoring with no rabbits, pigs or foxes observed or shot within the offset site (Gerrpart Holdings Pty Ltd 2021b). Pest animal control has been managed by the landowner during Years 1-4 of the OMS and can be reviewed within Gerrpart Holdings Pty Ltd (2019, 2020, 2021a, 2021b).

4.6 Summary of Monitoring

Table 3 outlines the monitoring results in response to targeted management objectives of the OMS.

Table 3: Summary of management objectives and recommendations.

Management objective	Target objective	Year 4 results	Recommendations
Golden Sun Moth monitoring and vegetation quality	Undertake annual species monitoring over four separate occasions between October-January	Approximately 28 male Golden Sun Moth were recorded during 2021-22 monitoring events. An additional 69 individuals were detected by the landowner. This result indicates the offset site continues to provide high quality habitat for the species.	Recommendations in Section 6.1 are aimed to improve habitat quality for the species.
Access control	Maintain existing and any new fencing to appropriate standards	Temporary internal perimeter fencing has been re-installed to improve biomass management within the offset site. Sheep are otherwise excluded to avoid unauthorised entry to offset site.	Manage biomass levels in accordance with Section 4.3. If biomass levels are not within OMS parameters, introduce rotational grazing between October to December,

			additional temporary fencing or additional management tools (i.e. burning) to reduce biomass levels.
Biomass Density and Stock Grazing	Vegetation maintained to a level of 70% with areas of recruitment (bare ground) ranging between 20-40%	Zones 1, 2, 4 and 5 – recruitment targets not met and can be limited by current stock grazing periods within the OMS. Zone 3 – appropriate recruitment targets met.	Focus biomass reduction in Zones 1, 2 and 5. Implement additional measures such as temporary fencing, spot spraying or burning to minimise biomass.
Weed Control	Control and manage high threat weeds, remove woody weeds	Continue weed management on high threat weeds such as Spear Thistle, Cape Weed, Yorkshire Fog and Bent-top Grass, Cat's Ear to maintain (and reduce) current levels within the offset site. No woody weeds found. Refer to Gerrpart Holdings Pty Ltd (2021b).	Continue active management of South African Weed-orchid to minimise the spread of this weed. Focus management efforts to high threat weeds include Brown-top Bent, Yorkshire Fog, Wild Oat and Cape Weed. Maintain Spear Thistle at <1% cover and minimise further spread of Cat's Ear within the offset site.
Pest Animal Control	Monitor and treat pest animals as required	Pest animal monitoring has been undertaken. No further evidence of rabbits, foxes or pigs in Year 4. Refer to Gerrpart Holdings Pty Ltd (2021b).	Continue monitoring pest animal activity in accordance with the OMS requirements.
Reporting	Completion of a summary report for Year 4 monitoring	Refer to documented results contained within this report and Gerrpart Holdings Pty Ltd (2021b).	Refer to Section 6.1

5 Management action summary

Table 4 summarises the management actions required for Years 1-4 of the OMS and date of completion.

Table 4: Management action summary for Years 1-4 OMS objectives.

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
1	1.1	Check permanent fences surrounding the offset property are secure	Landowner	Within three months of this plan being approved by DoEE	March 2018
1	1.2	Conduct weed control	Landowner	Species dependent	Refer to Gerrard Holdings Pty Ltd (2019)
1	1.3	Monitor populations of pest animals and conduct control works if required	Landowner and relevant contractors	After peak breeding season - late summer/early autumn	Refer to Gerrard Holdings Pty Ltd (2019)
1	1.4	Conduct monitoring for GSM	EHP Pty Ltd	One year after commencement of OMS	Refer to EHP (2019)
1	1.5	Monitor biomass density and implement stock grazing regime or develop ecological burn/ fuel reduction plan if appropriate	Landowner	Summer/Autumn	Refer to Gerrard Holdings Pty Ltd (2019) and EHP (2019)
2	2.1	Conduct weed control	Landowner	Species dependent	Refer to Gerrard Holdings Pty Ltd (2020)
2	2.2	Monitor populations of pest animals and conduct control works if required	Landowner	After summer/early peak breeding autumn season - late	Refer to Gerrard Holdings Pty Ltd (2020)
2	2.3	Conduct monitoring for GSM	SMEC Australia	Two years after commencement of OMS	Refer to Section 4.1 of SMEC 2020
2	2.4	Maintain fences	Landowner	As required	Refer to Section 4.2 and Gerrard Holdings Pty Ltd (2020)
2	2.5	Monitor biomass density and implement stock grazing regime or develop ecological burn/ fuel reduction plan if appropriate	Landowner	Summer/Autumn	Refer to Section 4.3 and Gerrard Holdings Pty Ltd (2020)
2	2.6	Monitor and assess works, and prepare two-year progress report	SMEC Australia	Two years after commencement of OMS	Refer to documented results contained within this report
3	3.1	Conduct weed control	Landowner	Species dependent	Refer to Gerrard Holdings Pty Ltd (2021a)

Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
3	3.2	Monitor populations of pest animals and conduct control works if required	Landowner	After summer/early peak breeding autumn season - late	Refer to Gerrard Holdings Pty Ltd (2021a)
3	3.3	Conduct monitoring for GSM	SMEC Australia	Three years after commencement of OMS	Refer to Section 4.1 (SMEC 2021b)
3	3.4	Maintain fences	Landowner	As required	Refer to Section 4.2 and Gerrard Holdings Pty Ltd (2021a)
3	3.5	Monitor biomass density and implement stock grazing regime or develop ecological burn/ fuel reduction plan if appropriate	Landowner	Summer/Autumn	Refer to Section 4.3 and Gerrard Holdings Pty Ltd (2021a)
3	3.6	Monitor and assess works (no report)	SMEC Australia	Three years after commencement of OMS	Refer to documented results contained within this report
4	4.1	Conduct weed control	Landowner	Species dependent	Refer to Gerrard Holdings Pty Ltd (2021b)
4	4.2	Monitor populations of pest animals and conduct control works if required	Landowner	After summer/early peak breeding autumn season - late	Refer to Gerrard Holdings Pty Ltd (2021b)
4	4.3	Conduct monitoring for GSM	SMEC Australia	Four years after commencement of OMS	Refer to Section 4.1 within this report
4	4.4	Maintain fences	Landowner	As required	Refer to Section 4.2 and Gerrard Holdings Pty Ltd (2021b)
4	4.5	Monitor biomass density and implement stock grazing regime or develop ecological burn/ fuel reduction plan if appropriate	Landowner	Summer/Autumn (or as require as part of adaptive management)	Refer to Section 4.3 and Gerrard Holdings Pty Ltd (2021b)
4	4.6	Monitor and assess works	SMEC Australia	Four years after commencement of OMS	Refer to documented results contained within this report

6 Conclusion

Management actions implemented in Year 4 were undertaken in accordance with the OMS by SMEC and the landowner. Results of Golden Sun Moth population monitoring indicate the offset site is continuing to support a population of the species with approximately 100 male Golden Sun Moth detected during four separate monitoring events. Despite fluctuations in population numbers between Years 1-4 of monitoring, the reduced abundance observed in Year 4 may be subject to a range of factors (i.e. environmental conditions and species breeding success in previous years). Therefore, Golden Sun Moth abundances will need to be closely monitored in subsequent years to determine if the species is experiencing continued or noticeable decreases in population densities (to determine if further adaptive management actions are required). Available species data within southern Victoria indicates this offset site continues to provide high abundances of the species compared with other reference and offset sites for which data is available. Monitoring results indicate that a high number of Golden Sun Moth are persisting across the offset site, supported by high quality habitat for the species.

Zone 3 continues to provide the highest quality habitat for Golden Sun Moth and will require lower intensity stock grazing to maintain current biomass and recruitment levels. As Zone 4 is immediately adjacent to higher quality Golden Sun Moth habitat in Zone 3, it is recommended any high threat weeds are treated in this area to minimise potential spread into higher quality areas of remnant vegetation adjoining the drainage line.

As discussed, seasonally wet conditions in 2020/21 and 2021/22 at the offset site (and without opportunities for additional rotational grazing), has ultimately increased the level of biomass in Zones 1, 2 and 5. Biomass level reduction will be undertaken in these zones through active weed management between March to April 2022 and further rotational grazing between March to August 2022 and October to December 2022. Temporary fencing has been reinstalled to focus stock grazing to areas within Zone 1, 2 and 5 given the high biomass levels. If site conditions permit, trialling a controlled mosaic burn in Zone 5 during April-May 2022 may be undertaken given the high cover of pasture grasses and limited suitability for Golden Sun Moth. Any burns are to be undertaken in consultation with DELWP and CFA.

South African Weed-orchid has been identified by the landowner in proximity to the offset site but has not been observed within the offset site during Year 4 monitoring. Continued monitoring of the species within and adjoining the offset site will be a key focus for the long-term management of the site.

Weed treatment for the broader offset site will need to continue focussing on high threat weeds such as Cape Weed, Yorkshire Fog, Bent-top Grass and Cat's Ear to maintain (and reduce) current levels within the offset site in subsequent years. Limiting any further spread of Spear Thistle and Wild Oat will also be a key management action for Year 5. Pest animals are currently being managed appropriately and will need to be monitored in subsequent years to avoid an increase in pest species numbers within the offset site.

6.1 Recommendations

Recommendations for each management action within the offset site are listed below:

6.1.1 Access control

The following recommendations are provided for access control:

- Retain temporary fencing installed within the internal perimeter of the offset site to allow the continuation of rotational stock grazing and management of biomass;
- If biomass targets cannot be met within Zones 1, 2, 4 and 5, it is recommended temporary fencing is installed to retain stock within designated zones with a higher level of biomass; and
- Temporary fencing may also be required in Zone 3 if biomass levels are adequate and stock need to be directly excluded from this zone.

6.1.2 Biomass density and stock grazing

The following recommendations are provided to manage biomass via rotational stock grazing:

6.1.2.1 Zones 1, 2 and 5

- Implement rotational grazing in Zones 1, 2 and 5 between March to August 2022 at 3 DSE/ha;
- Implement adaptive management actions via rotational grazing in Zones 1, 2 and 5 between October to December at 5 DSE/ha as guided by an ecologist;
- Remove stock if biomass control targets outlined within the OMS are met within Zones 1, 2 and 5; and
- Remove stock from low lying areas during periods of inundation to avoid soil pugging.

6.1.2.2 Zones 3 and 4

- Biomass can be maintained in Zone 3 at current levels through the grazing regime proposed in March to August 2022 (noting removal of stock if open ground reaches 40% or greater); and

- As Zone 4 has a higher cover of biomass and weed species and is immediately adjoining higher quality habitat in Zone 3, it is recommended any high threat weeds are treated to minimise potential spread into areas of remnant vegetation adjoining this zone.

6.1.3 Weed control

The following recommendations are provided to manage weeds within the offset site:

- Focus weed management activities (spot-spraying) in Zones 1, 2 and 5 during February to March 2022. High threat weeds include Brown-top Bent, Yorkshire Fog and Cape Weed;
- Consider opportunities to trial a mosaic burn in Zone 5 during March to April 2022 in consultation with DELWP and CFA (if weed management and/or stock grazing is not adequate enough to manage biomass to OMS targets);
- Continue monitoring presence and location of South African Weed-orchid throughout the property and within the offset site;
- Continue to monitoring and maintain Spear Thistle at <1% cover; and
- Maintain (and reduce) the spread of Cat's Ear within offset site.

6.1.4 Pest animal control

The following recommendations are provided to manage pest animals within the offset site:

- Continue monitoring pest animal activity in accordance with the OMS requirements to maintain current levels within the offset site.

7 References

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SMEC 2020. Golden Sun Moth Population Monitoring Report (Year 2), Stockyard Hill Wind Farm Pty Ltd. Prepared for Goldwind Australia Pty Ltd.

SMEC 2021a. '***Technical Memorandum - Addendum to SLL OMS V2 July 2021***', dated 14 December 2021, for Striped Legless Lizard Offset Management Strategy (v2, dated July 2021) - Adaptive Biomass Control, at Stockyard Hill Wind Farm.

SMEC 2021b. Golden Sun Moth Population Monitoring Report (Year 3), Stockyard Hill Wind Farm Pty Ltd. Prepared for Goldwind Australia Pty Ltd.

SMEC 2021c (V 4.0). Standard Operating Procedures Wildlife survey and handling: Animal ethics and welfare (Victoria). Melbourne, Victoria.

8 Attachments

Attachment 1:
2016-7746-Stockyard Hill-OMS-Approval Letter

Attachment 2:
SMEC 2021. '***Technical Memorandum - Addendum to SLL OMS V2 July 2021***', dated 14 December 2021, for Striped Legless Lizard Offset Management Strategy (v2, dated July 2021) - Adaptive Biomass Control, at Stockyard Hill Wind Farm.

Australian Government
Department of Agriculture, Water and the Environment

Ms Elizabeth Zorondo
Senior Environmental Planner
GOLDWIND AUSTRALIA PTY LTD
Level 4, North Tower Building,
485 La Trobe Street MELBOURNE VIC 3000

Stockyard Hill Wind Farm - Wind Energy Facility and associated infrastructure, south-west Victoria - Offset Management Strategies and Technical Memorandums (EPBC 2016/7746)

Dear Ms Zorondo

Thank you for submitting the revised Offset Management Strategies and Technical Memorandums for approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Officers of this Department have advised me on the revised Striped Legless Lizard Offset Management Strategy and its associated Technical Memorandum, and on the requirements of the conditions of approval. On this basis, and as a delegate of the Minister for the Environment and in accordance with Condition 12 of the EPBC Act approval for EPBC 2006/2912 and section 143A of the EPBC Act, I have decided to approve the:

- *Striped Legless Lizard Delma impar Offset Management Strategy for the Stockyard Hill Wind Farm, Version 2, 20 July 2021;*
- *Technical Memorandum - Addendum to SLL OMS V2 July 2021*, dated 14 December 2021, for Striped Legless Lizard Offset Management Strategy (v2, dated July 2021) - Adaptive Biomass Control, at Stockyard Hill Wind Farm;

as meeting the requirements of Condition 2 of the EPBC Act approval for 2016/7746.

Officers of this Department have also advised me on the revised Golden Sun Moth Offset Management Strategy and its associated Technical Memorandum, and on the requirements of the conditions of approval. On this basis, and as a delegate of the Minister for the Environment and in accordance with Condition 12 of the EPBC Act approval for EPBC 2006/2912 and section 143A of the EPBC Act, I have decided to approve the:

- *Golden Sun Moth Synemon plana Offset Management Strategy for the Stockyard Hill Wind Farm, Version 5, 7 July 2021; and*
- *Technical Memorandum - Addendum to GSM OMS V5 July 2021,* dated 14 December 2021, for Golden Sun Moth Offset Management Strategy (v5, dated July 2021) - Adaptive Biomass Control, at Stockyard Hill Wind Farm;

as meeting the requirements of Condition 3 of the EPBC Act approval for 2016/7746.

The above approved strategies and technical memorandums must now be implemented.

Please note that the conditions of approval for EPBC 2016/7746 require that the approved strategies and technical addendums be published on your website, and that may choose to vary the approved strategies and technical addendums without seeking the Department's approval, if the revised strategies and technical addendums would not be likely to have a new or increased impact on a matter protected under the conditions of approval for this project, in accordance with Condition 7 of the approval.

The Department has an active monitoring program which includes monitoring inspections, and desktop document reviews and audits. Please ensure that you maintain accurate records of all activities associated with the conditions of approval, including implementation of approved plans, so that they can be made available to the Department on request.

Should you require any further information please contact Tony Dowd on (02) 6274 1769 or PostApproval@awe.gov.au.

Yours sincerely

Vaughn Cox
A/g Director, Post Approval Section
Assessments (Vic, Tas) and Post Approvals Branch

23 December 2021

Member of the Surbana Jurong Group

Technical Memorandum
Addendum to GSM OMS V5 July 21

Technical Memo No.	30042800N-TM-GSM-V1-14122021	**Date of Issue**	14 December 2021
Subject/Title	Golden Sun Moth Offset Management Strategy (v5, dated July 2021) – Adaptive Biomass Control		
Project Name	Stockyard Hill Wind Farm	**Project Number**	30042800N
Discipline	Ecology		
Revision Details	30042800N-TM-GSM-DRAFT-13102021 (Draft Version) 30042800N-TM-GSM-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 Golden Sun Moth Offset Management Strategy (GSM OMS) (v5, 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 (v5), this technical memorandum (v1) will have primacy over the OMS (v5, dated July 2021). Reference documents: • 30042800N-TM-GSM-V1-14122021 (Final Version) • 8073_EHP_GSM-OMS_SHWF_FINAL_17072021 (v5, dated July 21) (Final Version)		

1. Overview

1.1 Background

SMEC Australia Pty Ltd (SMEC) have prepared this addendum to the GSM OMS v5 dated July 21, as a technical memorandum to provide ecological advice to support an adaptive management approach to biomass control within a 9 ha Golden Sun Moth (***Synemon plana***) 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 Golden Sun Moth, prepared by Ecology and Heritage Partners Pty Ltd (EHP) (EHP 2017). The EPBC conditions outlined within the OMS and project approvals identified how impacts to Golden Sun Moth were to be managed via a third party offset site located on private property. SMEC Australia Pty Ltd (SMEC) have undertaken annual monitoring at the offset site in accordance with the OMS since November 2019 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 GSM OMS v5)

Management objectives in accordance with the approved OMS include the following (EHP 2017):

- Protect and secure the environmental values of the site, ensuring that indigenous species survive;
- Maintain and enhance the biodiversity of the site by maintaining natural ecosystem processes;
- Maintain, and if possible, expand Golden Sun Moth populations and associated habitats;
- Control and, if possible, eliminate populations of 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 GSM OMS v5)

Consistent with Condition 12 of the EPBC Act approval, this technical memorandum serves as an addendum to the GSM OMS v5, dated July 2021 currently with the Minister for approval. The following sections detail a potential new impact source associated with adaptive biomass control and outline a significant impact assessment for Golden Sun Moth and its associated habitats as result of this revised management approach.

2. Site Details

2.1 Offset site

The 9 ha offset site is located within private property (Crown Allotments 23A, 23B, 24A and 24B Parish of Eurambeen) and is situated within a broader 263 ha area of land within the northern extent of the Project area. The offset site is located approximately 180 km west of Melbourne and 60 km west of Ballarat (Figure 1).

The offset site has historically been used for rotational grazing by sheep and comprises remnant vegetation – patches of Grassy Woodland (EVC 175). The vegetation within the offset site also consists of scattered native trees and areas of open understorey supporting native tussock grasses, including wallaby grasses (***Rytidosperma*** spp.), Kangaroo Grass (***Themeda triandra***) and spear grasses (***Austrostipa*** spp.).

2.2 Previous monitoring

2.2.1 Golden Sun Moth

Population monitoring at the offset site has been undertaken annually since 2018 during the species core flight period between October and January (EHP 2019, SMEC 2020, SMEC 2021).

2.2.1.1 Year 1

Two separate surveys were undertaken by EHP on 19 November 2018 and 2 January 2019. Surveys on 19 November recorded high population numbers (400+), indicating the site continues to support a significant population (EHP 2019).

2.2.1.2 Year 2

A total of approximately 88 male Golden Sun Moth were recorded during four separate monitoring events (SMEC 2020, Figure 2). In addition, up to 159 Golden Sun Moth were detected in a single survey event by the landowner. While population numbers are lower than Year 1 monitoring, overall population counts across Victoria in 2019/20 were typically low and was therefore not considered to be associated with management practices within the offset site (SMEC 2020).

2.2.1.3 Year 3

A total of approximately 477 male Golden Sun Moth were recorded during four separate monitoring events (SMEC 2021, Figure 3). Golden Sun Moth were typically observed in areas of higher quality grassland during Surveys 1 and 2 (30 November and 3 December 2020). The species was detected in areas with a higher percentage of native grass cover (≥40-50%) and open ground (≥25%) across the eastern portion of the offset site (SMEC 2021).

The highest species emergence was detected on Survey 3 (11 December 2020), with 386 male Golden Sun Moth recorded (SMEC 2021). The species was observed across the entire offset site during Survey 3 and areas adjoining the offset site where high quality grassland habitat for the species is present. It was assumed the Golden Sun Moth core emergence period had finished by Survey 4 (14 January 2021), as no individuals were detected. No female Golden Sun Moth were observed during monitoring events across the site (SMEC 2021).

Based on other shared monitoring data across Victoria (ECA 2021), this offset site continues to provide high abundances of the species compared with other reference locations and offset sites for which data is available. Monitoring results indicate that a high number of Golden Sun Moth are still persisting across the offset site and is continuing to provide high quality habitat for the species (SMEC 2021).

2.2.2 Native Vegetation

Native vegetation monitoring in accordance with the OMS has been undertaken by EHP (Year 1) and SMEC (Years 2 and 3) between 2018 and 2021. Vegetation monitoring undertaken by SMEC identified management Zones 1-5, distinguished by percentage cover of native and introduced tussock-forming grass species and bare open ground. This information has been used to inform management in areas that may require more focussed biomass and weed controls to meet objectives outlined in the OMS.

2.2.2.1 Year 1

Vegetation monitoring undertaken by EHP in 2019 identified that western sections of the offset site supported a smaller number of Golden Sun Moth in comparison to other areas of the site (EHP 2019). Potential factors at the time of the assessment may have been related to a higher percentage cover of introduced grasses such as Rye grass (***Lolium perenne***), and some environmental weeds species such as Cape Weed (***Arctotheca calendula***) (EHP 2019).

2.2.2.2 Year 2

Vegetation monitoring indicated the offset site had a high level of biomass and it was recommended by SMEC that this be reduced by rotational stock grazing in Zones 1 and 2 (Figure 4).

It was recommended that weed treatment focus on high threat weeds across the study site including Spear Thistle (***Cirsium vulgare***), Cape Weed (***Arctotheca calendula***), Yorkshire Fog (***Holcus lanatus***), Brown-top Bent (***Agrostic capillaris***), Cat's Ear (***Hypochaeris radicata***) and Sweet Vernal Grass (***Anthoxanthum odoratum***) to maintain or reduce levels within the offset site in subsequent years (SMEC 2020).

Zone 3 supported the highest quality Golden Sun Moth habitat, and lower intensity stock grazing was considered sufficient to maintain current biomass and recruitment levels (Figure 4). As Zone 4 is immediately adjoining higher quality Golden Sun Moth habitat in Zone 3, it was recommended any high threat weeds be treated to minimise their potential spread into adjacent areas of higher quality remnant vegetation (SMEC 2020).

2.2.2.3 Year 3

One additional zone (Zone 5) was included in Year 3 vegetation monitoring due to a higher proportion of introduced pasture grasses recorded in the south-west corner of the offset sites (Figure 5). Overall, monitoring identified the site to maintain a high level of biomass with renewed recommendations by SMEC for more intensive stock grazing in Zones 1, 2 and 5 (SMEC 2021). Zone 3 maintained the highest quality habitat for Golden Sun Moth although the adjoining Zone 4 would again require active management of high threat weeds to minimise potential spread across the offset site (Figure 5). High threat weeds observed included Spear Thistle, Cape Weed, Yorkshire Fog, Bent-top Grass and Cat's Ear (SMEC 2021).

2.3 Biomass Control (see Section 6.5.3 of GSM OMS v5)

2.3.1 Threats of grazing

Golden Sun Moth have a specific habitat relationship and reliance on suitable host plants (wallaby grasses) in native grasslands. As a result, the modification of ecological processes through changes to land use in locations known to support Golden Sun Moth and its associated habitat is a known threat to the species (DSE 2004).

Land use practices such as grazing is known to reduce the suitability of remnant grasslands for Golden Sun Moth (SPRAT 2021). For example, reduced grazing may increase biomass levels if not managed, allowing tall perennial grasses to dominate and limit overall species diversity (SPRAT 2021). Reduced grazing effort can also create less space (bare open ground) which enables introduced to increase in cover over time (SPRAT 2021). This may ultimately shade native species or suitable host plants (wallaby grasses) where taller grass species (native or exotic) have the ability to limit species growth (Van Praagh 2004).

Conversely, increased levels of grazing may encourage weed invasion and degradation of native grassland regeneration (Barlow 1998). Therefore, it is important to manage grazing levels by applying suitable stocking rates and timing management to allow natural recruitment of native species at an appropriate time of year.

2.3.2 Biomass objectives

The following section outlines the actions and performance measures identified within the OMS for biomass control (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 the offset site containing areas of Plains Grassland will cease from approximately late September through to late January; and
- An appropriate land manager/contractor will co-ordinate weed control works with the 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 offset site, and the space (i.e. open ground) available for native flora species recruitment is between 20% and 40%;
- Golden Sun Moth populations are not reduced;
- A herb-rich diversity native open ground cover 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 Golden Sun Moth.

2.3.3 Previous grazing

2.3.3.1 Year 1

A general discussion of stock grazing was not provided in the Year 1 monitoring report (EHP 2019).

It was noted that further biomass and weed control measures could be used to improve the habitat quality for Golden Sun Moth in areas where the species was detected less during monitoring (i.e. western sections of the site) (EHP 2019).

Information provided within the landowner work diary indicated sheep grazing was implemented between March to September 2018 and soil conditions were not subject to pugging during winter (Gerrpart Holdings Pty Ltd 2019).

2.3.3.2 Year 2

Grazing with sheep was permitted between March to September 2019; however, due to a wet winter and spring, stock were removed and a high growth rate of biomass was observed in late spring (Gerrpart Holdings Pty Ltd 2019). Higher biomass levels were identified in Zones 1, 2 and 4 within the offset site during 2019, and greater weed control and stock grazing was recommended in these areas during suitable conditions (to avoid soil pugging in low lying areas when inundated) (SMEC 2020). Zone 3 provided the highest quality habitat for Golden Sun Moth. Table 2 below provides a summary of cover (%) for native and introduced tussock species and open ground within the offset during Year 2 monitoring.

Table 1. Year 2 biomass levels within the offset site.

Management Zones	Native tussock cover (%)	Pasture grass cover (%)	Open ground (%)	Landowner comment
Zone 1	25%	70%	<5%	Biomass is under control on the east side but despite grazing on the south and west sides, grasses have grown well due to the wet and prolonged season.
Zone 2	30%	60%	10%	
Zone 3	40-50%	25%	25%	
Zone 4	30%	60%	10%	

2.3.3.3 Year 3

Given the wet conditions and warmer temperatures, spring growth of pasture grasses was again high in Zones 1, 2, 4 and 5 (SMEC 2021, Table 2).

Table 2. Year 3 biomass levels within the offset site.

Management Zones	Native tussock cover (%)	Pasture grass cover (%)	Open ground (%)	Landowner comment
Zone 1	30%	65%	5%	Biomass is under control on the east side but despite grazing on the south and west sides, grasses have grown well due to the wet and prolonged season.
Zone 2	30%	60%	10%	
Zone 3	40-50%	25%	25%	
Zone 4	30%	60%	10%	
Zone 5	5%	85%	10%	

2.3.4 Biomass growth

It is apparent that years with high rainfall can limit stock access leading to increased biomass levels in late spring/early summer. This allows introduced pasture grasses to increase in cover and total biomass and reduces bare open ground and space for native species to recruit.

Biomass monitoring has identified high annual growth rates for introduced species across the offset site throughout October to December in 2019/20 and 2020/21. Table 3 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 3. 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

High growth rates could be countered by allowing adaptive management through the application of grazing when the site is dry and less likely to result in ground disturbance by stock (October to December). In doing this and before native flora species recruitment is undertaken (January to February). Based on recent discussions with the landowner, growth rates for introduced species are again expected to be high during spring and summer 2021/22 in response to high soil temperatures and moisture levels. It is evident that without adaptive management during high growth periods, the ability to reduce the percentage of grass cover and subsequent seeding of introduced species is limiting the ability to achieve the OMS management objectives.

Plates 1 and 2 below provides an example of biomass and ground cover in Zone 2 during Year 3 monitoring after high growth during late spring/early summer. The majority of the offset site had a bare ground component of 10% with introduced species cover at approximately 60% (or greater) during late spring/early summer (SMEC 2021, Table 2).

Plate 3: Open ground (25%) December 2020.

Plate 4: Vegetation height (10-30cm) December 2020.

Plates 3 and 4 below provide an example of higher quality Golden Sun Moth habitat in Zone 3 during Year 3 monitoring in which open ground (25%) and native tussock (40-50%) was greatest (SMEC 2021, Table2). This habitat has also supported the highest population densities of Golden Sun Moth since commencement of monitoring in 2018 (EHP 2019, SMEC 2020, SMEC 2021).

Vegetation monitoring in Zones 1, 2, 4 and 5 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 options to implement adaptive management for biomass control between October to December, introduced pasture grasses have the demonstrated ability to increase in cover and dominate overall biomass across the offset site during suitable conditions. While Golden Sun Moth can persist in modified habitats, the ability for native flora species to persist and regenerate is limited by high levels of introduced vegetation species biomass.

Plate 1: Open ground (10%) December 2020.

Plate 2: Vegetation height (20-40cm) December 2020.

2.3.5 Stocking rates

Typically, the offset site is grazed at three (3) week intervals during March to August with approximately three (3) rotations overall. 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 4 indicates the current DSE stocking rates for biomass control in accordance with the OMS between March to August.

Table 4. Current stocking rates within the offset site in accordance with OMS.

Biomass control	Stocking rate	No. of stock	Comment
March to August	3 DSE/Ha	30	Typically, the offset site is grazed at three (3) week intervals during March to August with approximately three (3) rotations overall.
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 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 level management and the control of weeds during Year 3 monitoring could have been more successful 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 greater densities between October to December over a shorter seven (7) day period and a stocking rate of 5 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	5 DSE/Ha	50	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 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%.

2.4.2.2 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 ground for native species to recolonise and/or recruit successfully;
- Increased spread of introduced pasture grasses if seed heads are not grazed during spring and subsequently allowed to flower and colonise available open ground;
- Decreased suitability of Golden Sun Moth habitat 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 in subsequent years).

2.4.2.3 Impacts to species

An adaptive grazing regime is considered an appropriate method for managing excessive biomass given that Golden Sun Moth and remnant vegetation has persisted historically prior to rotational grazing under the OMS. Golden Sun Moth may persist during active sheep grazing (without resting the site) at similar or greater densities and has been observed during previous monitoring seasons in south-eastern Victoria (Pers. Obs. A, Taylor, 2018). Therefore, the long-term persistence of the Golden Sun Moth population in this location in response to similar historical stocking rates, indicates short-term grazing under an adaptive management approach is unlikely to lead to any additional impacts to the species.

2.4.3 Adaptive improvements

To further minimise any potential risk to the species, it is proposed that temporary fencing to manage Zones 1, 2 and 5 is implemented to minimise stock access to higher quality areas of Golden Sun Moth habitat that do not require adaptive management. 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.

3. Summary

Based on the previous three years of Golden Sun Moth monitoring at the offset site, it is apparent that an important population of Golden Sun Moth are persisting, supported by the presence of high quality habitat. Currently, there have been limitations identified in the management of biomass during years of high pasture growth and a recommendation 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 3 DSE/Ha (approximately 30 sheep);
2. Removing all stock during **September**;
3. Implementing adaptive biomass control between **October to December** at a stocking rate of 5 DSE/Ha (approximately 50 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 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. Implementation of temporary fencing is recommended around Zones 1, 2 and 5 to minimise stock access to higher quality habitat(s) known to support the species.

The historical land use of the offset site indicates management of the site has been consistent (or greater) with proposed adaptive management proposed for the OMS. Overall, it should be acknowledged that the response of natural environments and management of biomass needs to allow for more flexible grazing periods to respond to changing conditions in any given year (in accordance with **Section 6.2 – Adaptive Management Approach** in the OMS, EHP 2017).

To further mitigate any potential risk during the species active periods, temporary stock exclusion fencing will also be implemented to focus grazing in areas of the site requiring biomass management. 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.

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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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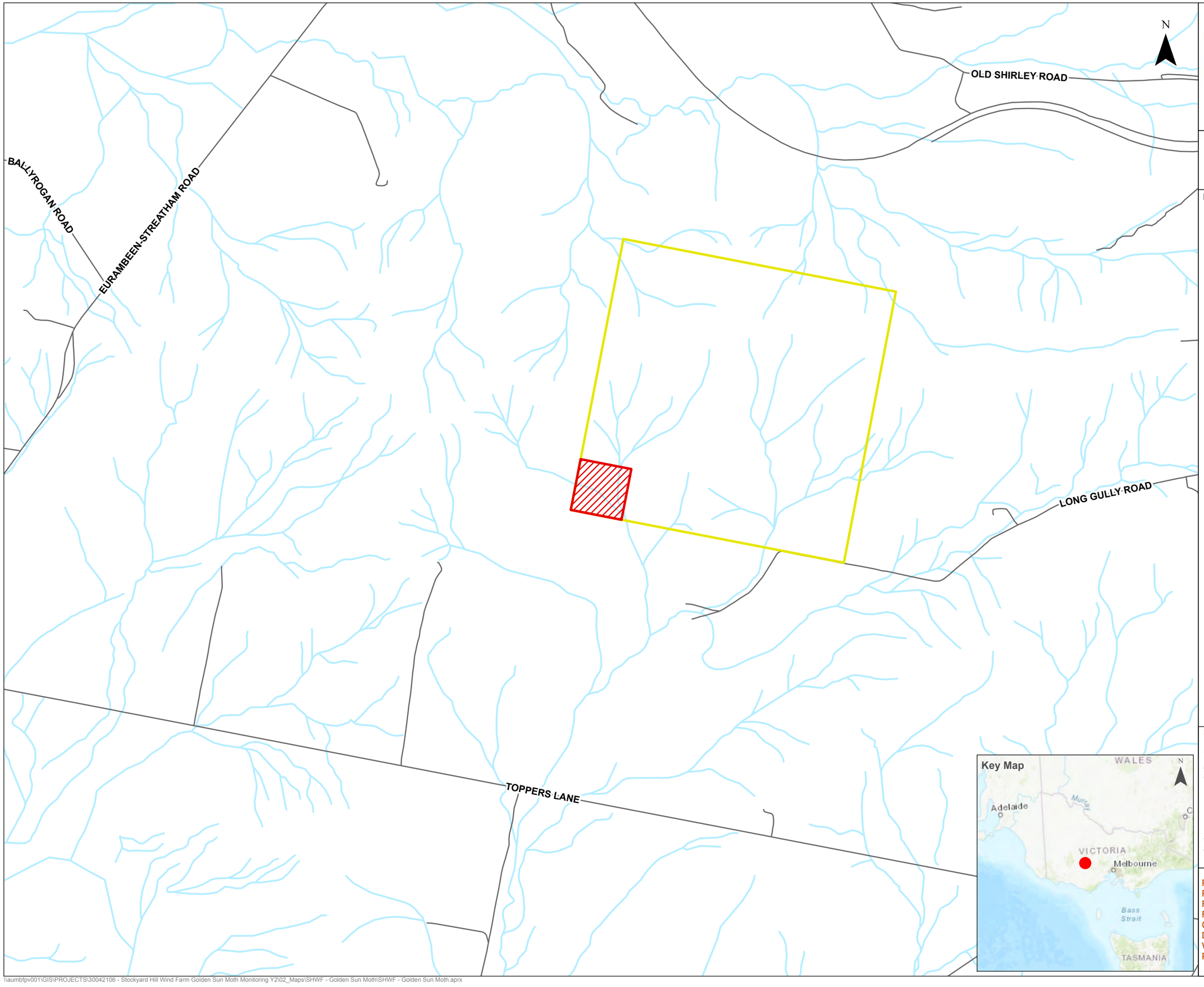
Appendix B **Figures**



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0 250 500 750 1000
Meters

1:20,000

Legend

- Property Boundary
- 9 ha Offset Site
- Watercourse
- Road

SOURCES:

1. Example Data © DELWP 2019
2. Basemap World Topographic Map: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, this map contains data from a number of sources - no warranty is given that the informa;on contained on this is free from error or omission. Any reliance placed on such informa;on shall be at the sole risk of the user. Please verify the accuracy of all informa;on prior to using it. This

PROJECT:	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO:	30042106
FIGURE NO:	1
FIGURE TITLE:	Golden Sun Moth Offset
CREATED BY:	ar15136
DATE:	30/01/2020
VERSION:	DRAFT 1
PAGE SIZE:	A3

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0 20 40 60 80
Meters

1:1,600

Legend

- Golden Sun Moth Offset

Golden Sun Moth Observations

- November 21 2019
- December 10 2019
- December 18 2019

Survey Transects

- November 21 2019 (3 males)
- December 10 2019 (31 males)
- December 18 2019 (54 males)
- January 9 2020 (0 indvs.)

PROJECT:	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO:	30042106
FIGURE NO:	2
FIGURE TITLE:	Golden Sun Moth Monitoring (Year 2)
CREATED BY:	ar15136
DATE:	30/01/2020
VERSION:	DRAFT 1
PAGE SIZE:	A3

\\aumbfpv001\GIS\PROJECTS\30042106 - Stockyard Hill Wind Farm Golden Sun Moth Monitoring Y2\02_Maps\SHWF - Golden Sun Moth\SHWF - Golden Sun Moth.aprx

Legend

Golden Sun Moth Offset Site

Golden Sun Moth Observations

- November 30 2020
- December 3 2020
- December 11 2020

Survey Transects

- November 30 2020 (35 males)
- December 3 2020 (56 males)
- December 11 2020 (386 males)
- January 14 2021 (0 indvs.)

0 20 40 60 80 m

PAGE SIZE	A3
FIGURE TITLE	Golden Sun Moth Monitoring (Year 3)
PROJECT TITLE	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO.	30043049N
FIGURE NO.	3
DATE	12-02-2021
CREATED BY	NC14936
SOURCES	ESRI

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Filepath: \\filer.nasuni.local\SMECANZ\Projects\300430\30043049N - Stockyard Hill Wind Farm Golden Sun Moth Monitoring (Year 3)\050 Technical\GIS\SHWF_GSM_Monitoring_Year2&3.qgz

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0 20 40 60 80
Meters

1:2,000

Legend

- Golden Sun Moth Offset

Vegetation Zone

- Zone 1
- Zone 2
- Zone 3
- Zone 4

SOURCES:

1. Example Data © DELWP 2019
2. Basemap, World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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PROJECT:	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO:	30042106
FIGURE NO:	4
FIGURE TITLE:	Vegetation Management
CREATED BY:	ar15136
DATE:	30/01/2020
VERSION:	DRAFT 1
PAGE SIZE:	A3

\\aumbfpv001\GIS\PROJECTS\30042106 - Stockyard Hill Wind Farm Golden Sun Moth Monitoring Y2\02_Maps\SHWF - Golden Sun Moth\SHWF - Golden Sun Moth.aprx

Legend

- Golden Sun Moth Offset Site

Vegetation Zone

- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5

0 20 40 60 80 m

PAGE SIZE A3

FIGURE TITLE	Vegetation Management
PROJECT TITLE	Stockyard Hill Wind Farm - Golden Sun Moth
PROJECT NO.	30043049N
FIGURE NO.	5
DATE	15-02-2021
CREATED BY	JH13976
SOURCES	ESRI

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ABN 47 065 475 149

Filepath: \\filer.nasuni.local\SMECANZ\Projects\300430\30043049N - Stockyard Hill Wind Farm Golden Sun Moth Monitoring (Year 3)\050 Technical\GIS\SHWF_GSM_Monitoring_Year2&3.qgz

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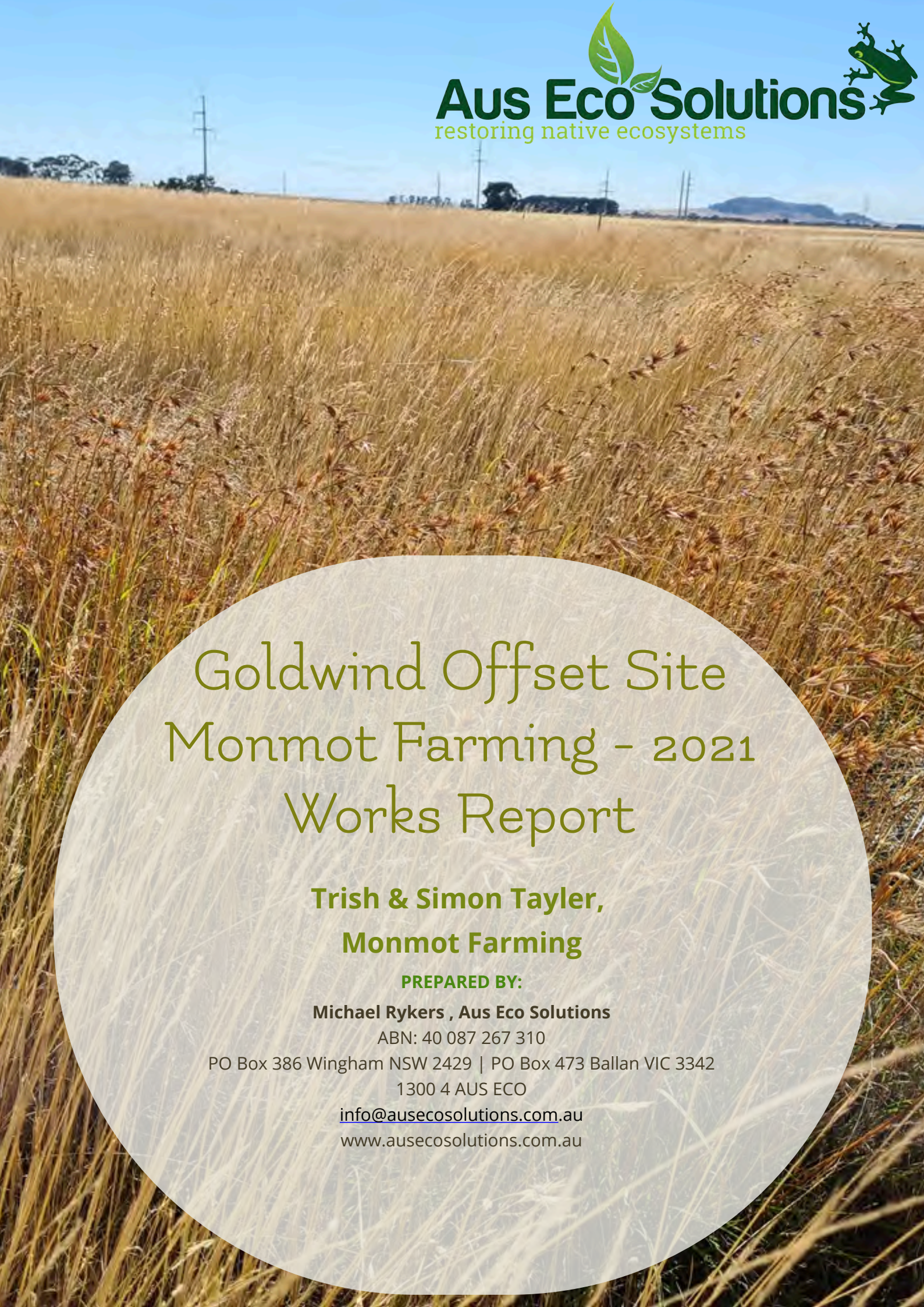
Appendix D

Goldwind Offset Site Monmot Farming – 2021 Works Report, Aus Eco Solutions 2022



Goldwind Offset Site Monmot Farming - 2021 Works Report

Trish & Simon Tayler,
Monmot Farming

PREPARED BY:

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08/03/2022

Acknowledgments:
Trish & Simon Tayler
Monmot Landowners
Stockyard Hill

Andrew Taylor
Senior Scientist - Ecology
SMEC

With reference to:

- Striped Legless Lizard Offset Management Strategy (SLLOMS)
- The BushBroker landowner agreement (BB-3036/LA01)

1 Introduction

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

The Striped Legless Lizard is a grassland specialist, found only in areas of native grassland and nearby grassy woodland and exotic pasture. The lizard's primary habitat is encompassed by four nationally threatened ecological communities including Natural Temperate Grassland of the Victorian Volcanic Plain.
The life history of the striped legless lizard is poorly known, though estimates of lifespan start at about 10 years. Loss, modification, degradation and fragmentation of habitat including urban development, high intensity grazing and ploughing and pasture improvement are threats to the SLL.

A SLL Offset Management Strategy (SLLOMS) was prepared to outline suitable alternative habitat for the species. The site now lies directly south of Dunnets Road reserve. The SLLOMS has been revised and detailed management actions provided to the offset site over a 10 year management period. Aus Eco Solutions (AES) was engaged by SHWFPL to carry out the management objectives of the onsite offset site.

Aus Eco Solutions are assisting with the management of this offset site through the implementation of native vegetation habitat improvements through direct seeding and monitoring. Our ongoing management commitments will relate back to the BushBroker landowner agreement (BB-3036/LA01) for all management zones:

- To maintain / improve the quality of the SLL habitat onsite
- Monitor all woody weeds <1% cover
- Ensure weed cover does not increase beyond current level
- Monitor for any new emerging weeds
- Vegetation cover is maintained at greater than 70% throughout site

The landowner will also aid with management objectives by:

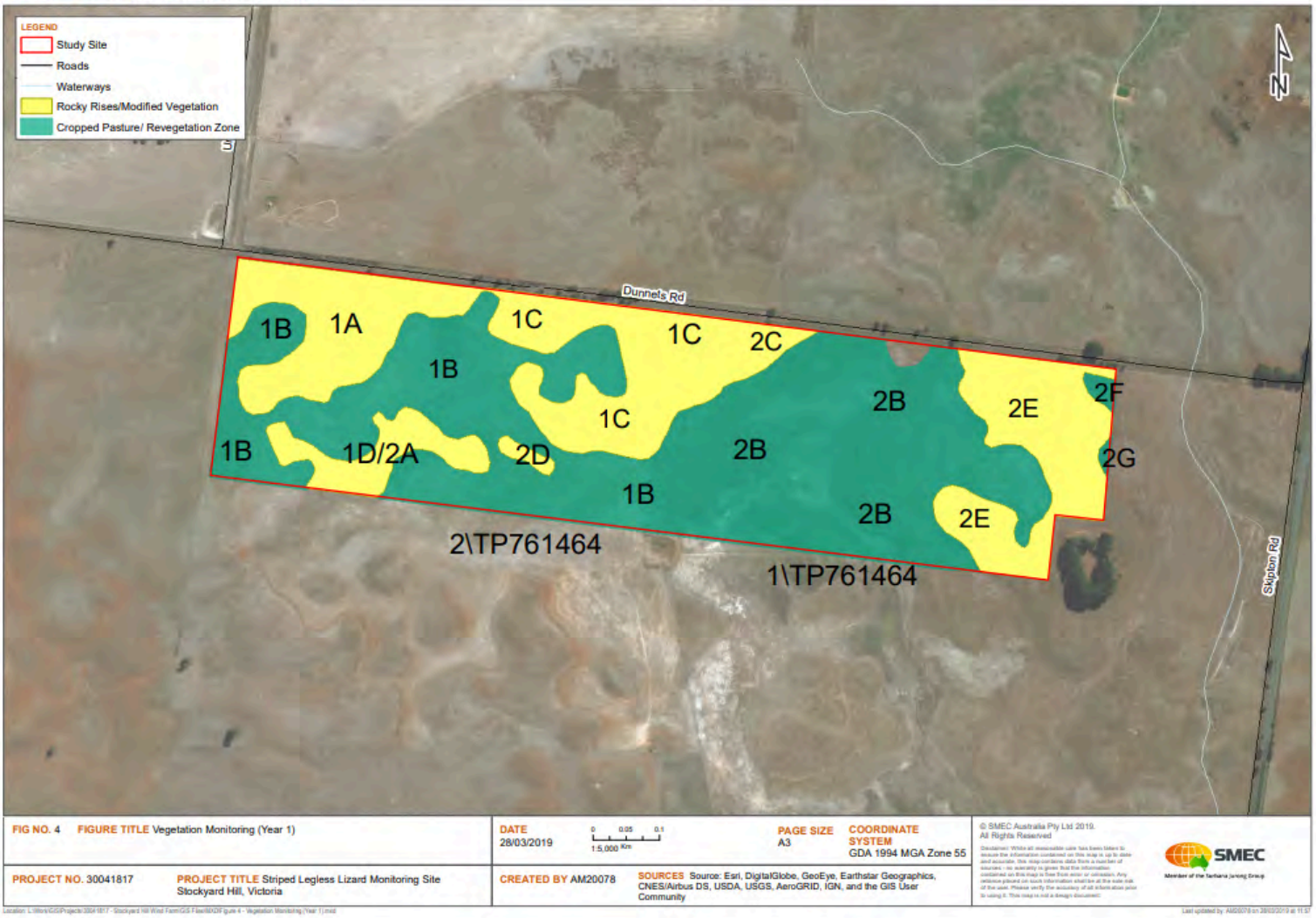
- Controlling rabbits
- Eliminate / monitor all weeds <1% cover (including woody weeds)
- Retaining all rocks, logs or fallen timber
- No cropping, no drainage/hydrology alternation
- No artificial stock feeding
- No pasture improvements
- Boom spraying within habitat zones (1B, 2B, 2F and 2G)

1.1 Site Location

Aus Eco Solutions objective is to maintain and improve the quality of Striped Legless Lizard habitat onsite for the initial 3 years of the project. The management and the progress of the site will be re-visited after year 3 to make further plans of the offset site.

Figure 1 is an updated map featuring fine grained definition of the two distinct management zones. This type of data progression is a direct result of the project maturing and will form an improved baseline to measure site development over time.

FIGURE 4. Vegetation Monitoring (Year 1)



Map 1: Stockyard Hill SLL Offset Site. Map supplied by Andew Taylor from SMEC. Management zones have been updated

1.2 Aus Eco Solutions Management Actions 2021

Management actions this reporting period include:

- Herbicide treatment and Grass slashing prior to direct seeding.
- Direct seeding in areas adjacent to previously direct seeded areas.
- Spot spraying of Thistles in high value areas.
- Reporting.

1.3 Site Observations

Previous direct seeding undertaken in 2018 was thought to be unsuccessful due to high rainfall and waterlogging of the lower-lying areas of the offset where direct seeding was undertaken.

Site observations this season have shown this not to be the case with Poa species emerging in large numbers.

No germination has been observed in areas direct-seeded in May 2021. However, based on the lag time between sowing and germination of the 2018 areas, we suggest surveying the areas for results in May 2022.

It is recommended to keep biomass low in direct-seeded areas to give the seed the best chance of germination through crash grazing, slashing or ecological burning.

Pidgeon grass (*Setaria pumili*) was observed onsite in small patches and is recommended that control is undertaken to prevent further spread.

The area just north of this years direct seeding has a good patch of remnant vegetation with Themeda triandra, Poa labillardieri, Convolvulus spp and Eryngium ovinum observed. Yellow Rushh Lily (Tricryne elatior) was also observed on the roadside at Dunnets rd.

Areas to be direct seeded were first sprayed out and slashed to reduce biomass.

1.4 Slashing

Slashing was undertaken prior to direct seeding in order to reduce biomass giving seed a chance to germinate.

1.5 Pest Animal Control

No pest animal control was undertaken this periods.

1.6 Crash Grazing

Crash grazing was undertaken post direct seeding to keep pasture grass low giving seed a chance to germinate.

1.7 Seed Collection

No seed collection was undertaken throughout the reporting period. Summer seed has been bagged labelled and stored at the Aus Eco Solutions Ballan Depot.

1.8 Direct Seeding & Re-vegetation

Direct seeding of pre purchased seed began in May with approximately 35kg of mixed species spread through an area marked on the below.

The area that was direct seeded this year was prepared by spraying out the target area with a knockdown herbicide and then slashed to reduce dead material. The direct seeding was undertaken using our seeding unit pictured below.

It was noted that willow herb (Epalobium spp) is spread throughout the adjacent areas and would require follow up treatment to give seed a competitive advantage.

Map 2: Approximate area Direct Seeded in Yellow.

1.9 Herbicide Spraying

Herbicide spraying was undertaken in high-value areas, direct-seeded areas and areas with higher weed densities.

The main target weed was Scotch Thistle - Onoprodium acanthium (Map 3).

Map 3: Area treated for Scotch Thistles Onopordium acanthium.

Direct Seeder towed by gator to spread the seed.

Direct seeded areas above and below.

Autumn germinating species were selected out of the (SLLOMS) for May sowing. A site inspection will be undertaken in spring to assess the results and capture any key information relating to successful areas. Further seeding in spring will be undertaken within the SLL habitat zone highlighted in yellow on the Native Re-vegetation Site Map. Sowing in this zone will be undertaken via hand broadcasting to limit the disturbance within the rocky rises. Kangaroo grass (Themeda triandra) will be sown around the edges of intact patches of native grasses and also in areas where weed control has been undertaken. The native Kangaroo grass has been collected as thatch, which lends itself to this type of re-vegetation as the florets blanket the ground providing cover and keeping the seed in place

Grass Species Direct Seeding Ratio

Grass Species	Per hopper seed weight
Poa labillardieri	500g
Anthosachne scabra	2kg
Rytidosperma	1.5kg
Sub total	4kg

Poa labillardieri is easy to see with green foilage growing from 2020 direct seeding works.

Photos 1,2,3 & 4

Good patch of remnant vegetation North of this years direct seeding below.

Pidgeon grass (Seteria pumila) observed on site below.

CRASH GRAZING

The management plan (SLLOMS) states that grazing is to be used to control bio-mass in March through to August with one round completed in May. Even with the high rainfall received throughout Autumn, we would not expect to require a graze until 2020.

BOOM SPRAYING

We would suggest that the Landholder undertake a boom spray treatment of the re-vegetated area before spring aimed at knocking down emerging broadleaf weeds and thistles. Consultation with the agronomist is advised to select a herbicide that will not impact on the native grasses.

SPOT SPRAYING (INC WOODY WEED)

It's been noted during site inspections that the eastern fenceline has a high concentrations thistles. These weeds would be best controlled via spot spraying using a selective herbicide with an initial treatment in Winter and a follow-up treatment in Spring.

DIRECT SEEDING & REVEGETATION

The next round of re-vegetation will be undertaken within the SLL habitat. In contrast to the full-scale re-vegetation undertaken in the previously cropped areas. The aim within the SLL habitat will be to hand broadcast native seed around the edges of intact patches of native seed and re-seed area that have been treated with herbicide. Summer germinating seed such as Kangaroo grass (Themeda triandra) grass will be broadcast as thatch to provide stability and increase the potential for soil seed contact. The previously cropped areas will be monitored for successful germinates and assessed for key site attributes of contributing to germinations such as soil type and position.

OTHER RECOMMENDATIONS

To install two internal fences, separating the reserve into three distinct management zones. This will provide the ability to manage stock and isolate re-vegetated areas to allow for native grass establishment.

Blue Devil (Eryynium ovinum) onsite.

Pink Bindweed (Convolvulus spp)