Warrambeen Offset Management 1372 Rokewood Shelford Rd Shelford 3329

ph. (03) 52813250 e. <u>offsets@warrambeen.com</u>



Landowner of offset site	Ian and Trish Taylor
Location and address of offset site	"Saxon Paddock" Crown Portion 125, Title 10493, Folio 429 Warrambeen Pty Ltd, Rokewood – Shelford Rd, Shelford.
Offset Proponent	Mt. Mercer Windfarm
Offset site reference number	AJ 9650 58J
Responsible Authority	Golden Plains Shire, DSE and DEWHA
Report number / Year Start Year	Year 4 / 2015 2009
Type of Offset Size of Offset	Vegetation and Golden Sun Moth 8.44 Ha
Signature	lan D. Taylor.
Date	April 1, 2016

Information to be included:

- A copy of the Management Action Table from the OMP with information on which actions have been completed for the year/s of this reporting period;
- A description of the specific monitoring results from surveys undertaken for vegetation/flora species;
- A description of the specific monitoring results from surveys undertaken for significant fauna species, such as the Golden Sun Moth
- Fencing work;
- Success of weed and pest animal control work;
- Successful management tools (i.e. techniques used to control weed species, protection of new plants, monitoring technique, etc.);
- Any problems or issues experienced (i.e. new infestation of weed species, storm damage to fencing, etc.)
- Include any corrective actions and contingency measures where monitoring indicates that there has been a degradation in the native vegetation and Golden Sun Moth population and habitat; and,
- Provide any photographs showing evidence of works.

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Summary of Independent Monitoring Report

(Excerpt from Ecology & Heritage Partners Final Report March 2016 DRAFT)

"While the number of Golden Sun Moth detected was lower than the previous season, this is likely to be due to an early emergence of the species during the 2015/2016 monitoring period in which the peak number of moths would have been missed.

Habitat monitoring of the Saxon Paddock indicated that further biomass control and weed management, predominantly in the northern third, is still required in order to meet the targets set out within the Golden Sun Moth CMP.

Sheep are currently used to periodically graze the paddock to control biomass. There are no signs of pugging within the offset site and a herb-rich understorey has been maintained, therefore it is appropriate for this grazing regime to continue. Options to increase grazing in the northern third of the offset site may be suitable to reduce the level of biomass and weed cover to provide more open ground and potential habitat for the species."

Monitoring results for vegetation/flora species

(Excerpt from Ecology & Heritage Partners Final Report March 2016 DRAFT)

"The northern third of the study area comprised a high cover of Wild Oat *Avena fatua* and will require active management to ensure the percentage cover of biomass meets the objectives of the CMP. However, the management of this area had improved through active biomass control (sheep grazing), in which the percentage cover had reduced since the last habitat assessment.

The remaining areas of the offset site provided excellent habitat for Golden Sun Moth as it contained a high cover (>50%) of favourable host plants including Wallaby-grasses I. Mixed with native Tussock-grasses *Poa spp.* And herbs such as Blue-devil *Erynguim ovinum* and Pink Bindweed *Convolvulus arvensis*.

The cover of weeds was below target values (<25%) for this portion of the offset site and the level of open ground was still similar to the 2014/2015 monitoring period, remaining at approximately 15% cover throughout the remaining areas of the offset site."

Monitoring results for significant fauna species, such as the Golden Sun Moth

(Excerpt from Ecology & Heritage Partners Final Report March 2016 DRAFT)

"Targeted surveys identified a total of 18 Golden Sun Moth flying within the offset site between 30 November and 23 December 2015. The species was located predominantly within areas of more open ground containing preferred host plants including Wallaby-grasses. While the species was not detected in the same abundances, the species was detected over more consecutive surveys as opposed to the previous monitoring event in the 2014/2015 season." Warrambeen Offset Management 1372 Rokewood Shelford Rd Shelford 3329



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Successful management tools

(i.e. techniques used to control weed species, protection of new plants, monitoring technique, etc.)

The combination of Grid Spraying in spring and crash grazing in the dryer months is proving to be successful in reducing Biomass and weed control. No pugging is evident from grazing within the paddock, and a herb-rich understorey has been maintained, despite the severe lack of rain.

Problems or issues experienced

(i.e. new infestation of weed species, storm damage to fencing, etc.)

The drought has been a major contributor to the resurgence of weeds over the past years.

Wild oats are a difficult species to manage. Because of the small thin size of the plant and the scattered spread it is not possible to spray them without impacting on the species we are trying to protect. Management through the intense grazing of sheep is the best solution and this will continue. We will liaise with consultant ecologists to develop additional strategies to reduce the wild-oat population.

We have not noted any new weed species within the site.

Corrective actions and contingency measures

(Where monitoring indicates that there has been a degradation in the native vegetation and Golden Sun Moth population and habitat)

Having spoken to Mr. Andrew Taylor of Ecology Heritage and Partners, we will be undertaking a new regime to try to reduce the Wild Oats even further. A temporary electric fence will be erected to isolate the impacted area. Andrew has suggested that it may be necessary to leave the sheep in the area for slightly longer than normal to eat the area right down.

Photos

Photographs on USB stick are available on request.

Fencing work

Fencing undergoes regular checks and maintenance as per the Farm program, all are in good condition and stock proof.

A temporary fence will be erected to isolate the area of the Northern Third of the paddock during crash grazing periods.



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Weed and pest animal control work

Biomass Control:

- Paddocks crash grazed during late January and then again late into September to control wild oat.
- No October rain
- Very dry Spring
- Much improved control of wild oats and biomass, which should flow through to next year's score.
- Post grazing inspections revealed decrease in wild oat numbers, and no signs of pugging.
- Significant drought conditions have encouraged weed growth, however Ian Taylor who is managing this site is very happy with the improvement given the adverse weather conditions.
- The impacted area will be isolated and intensive grazing undertaken of the entire zone to bare ground.

Bare Ground:

- Concentrating on the Northern Third of the site to reduce the presence of introduced pasture, and biomass control.
- The impacted area will be isolated and intensive grazing undertaken of the entire zone to bare ground.

Weed Cover / Control:

Paul and Karen Higgins were engaged to grid spray paddock

- Fluroproponate, Round Up and colour dye.
- Low numbers of serrated tussock found.
- Very happy with current level of control.
- Drought conditions are unfavourable in the fight against weeds.
- The area impacted by Wild Oat will be isolated and heavily grazed to bare ground.
- Chemical Invoice attached see Appendix 3.

GSM Population Monitoring:

- The species is likely to have emerged early in November or even late October before monitoring had begun.
- It is likely that the peak emergence within the offset site had potentially passed prior to the commencement of monitoring.
- Therefore the results from the 2015/2016 monitoring should not be viewed as a decrease in the overall population size or quality of habitat, as condition have improved at the site over the past year.

Fox and Rabbit Control:

- Ongoing Bi Monthly shooting programme maintained with registered shooter.
- Numbers of Fox and Rabbit have been anecdotally lower on the offset site.



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Management Plan 2016

The erection of a temporary fence to contain the sheep to the Northern Third of the paddock to ensure the Wild Oat is eaten down. This may include the sheep staying in the paddock for a longer period than usual.

All other farm practises including fencing, pest control and grid spraying and as per the OMP will continue.

Photographs – Taken October 28, 2015







535 - 28.10.15 (07).JPG

Attachments

Appendix 1 – Management Action Table

Table A1.1. Management Action Table for the Mount Mercer Wind Farm Pty Ltd offset site.

Year	Action	Offset Zone	Management action	Resource/ personnel required	Timing of action	Key performance target	Completed (Yes/No)	Date
1	1.1	Entire offset site	Approve Offset Management Plan	Liaise between the landholder, SEWPaC and DSE	Pre commencement of any works associated with the vegetation management plan.	Site and vegetation management plan approved by relevant parties.	YES	2011
1	1.2	Entire offset site	Arrange details of the on- title agreement over the proposed offset site to ensure the site cannot be developed in the future or used for other offsets.	Liaise between the landholder, SEWPaC and DSE	Pre commencement of any works associated with the vegetation management plan.	Security option approved by DSE	YES	2011
1	1.3	Entire offset site	Acquire baseline monitoring data and initiate offset management plan	Suitably qualified ecological specialist	First year	Report submitted to appropriate authority	YES	
1	1.4	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Landowner	Refer Table 2	Maintain weed levels below 25%	YES	2012
1	1.5	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers	YES	2012
1	1.6	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling	YES	2012

Year	Action	Offset Zone	Management action	Resource/ personnel required	Timing of action	Key performance target	Completed (Yes/No)	Date
2	2.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Landowner	Refer Table 2	Maintain weed levels below 25%	YES	2013
2	2.2	Entire offset site	Monitor, Golden Sun Moth populations and associated habitat (i.e. biomass levels and weed levels)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)	NO	
2	2.3	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling	YES	DEC 2013
2	2.4	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers	YES	DEC 2013
3	3.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Landowner	Refer Table 2	Maintain weed levels below 25%	YES	DEC 2014
3	3.2	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling	YES	SEPT 2014
3	3.3	Entire offset site	Monitor and assess works, and prepare progress report	Suitably qualified ecological specialist	Three years after commencement of works.	Progress report submitted to appropriate authority	YES	DEC 2014

Year	Action	Offset Zone	Management action	Resource/ personnel required	Timing of action	Key performance target	Completed (Yes/No)	Date
3	3.4	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ Landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers	YES	2014
3	3.5	Entire offset site	Monitor, Golden Sun Moth populations and associated habitat (i.e. biomass levels and weed levels)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)	YES	DEC 2014

4	4.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Landowner	Refer Table 2	Maintain weed levels below 25%	YES	2015
4	4.2	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling	YES	JAN – SEPT 2015
4	4.3	Entire offset site	Monitor, Golden Sun Moth populations and associated habitat (i.e. biomass levels and weed levels)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)	YES	DEC 2015
4	4.4	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ Landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers	YES	2015
			Conduct systematic	Bushland				
_	5 4	Entire	Conduct Systematic	Management		Maintain weed levels		

5	5.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Landowner	Refer Table 2	Maintain weed levels below 25%			
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Year	Action	Offset Zone	Management action	Resource/ personnel required	Timing of action	Key performance target	Completed (Yes/No)	Date
5	5.2	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling		
5	5.3	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ Landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers		
5	5.4	Entire offset site	Monitor, Golden Sun Moth populations and associated habitat (i.e. biomass levels and weed levels)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)		
5	5.5	Entire offset site	Offset progress to be audited and management actions updated where appropriate aid in achievement of gain targets	Suitably qualified ecological specialist	As required	Satisfactory progress towards achieving management actions		
5	5.6	Entire offset site	Monitor and assess progress of management plans, re-asses OMP and Golden Sun Moth CMP and prepare summary report	Suitably qualified ecological specialist	Five years after commencement of works.	Progress report submitted to appropriate authority		

6	6.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Landowner	Refer Table 2	Maintain weed levels below 25%	
6	6.2	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling	

Year	Action	Offset Zone	Management action	Resource/ personnel required	Timing of action	Key performance target	Completed (Yes/No)	Date
6	6.3	Entire offset site	Undertake Golden Sun Moth monitoring (if required)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)		
7	7.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Northern Grampians Shire Council	Refer Table 2	Maintain weed levels below 25%		
7	7.2	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ Landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers		
7	7.3	All zones	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling		
7	7.4	Entire offset site	Undertake Golden Sun Moth monitoring (if required)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)		
7	7.5	Entire offset site	Monitor and assess works, and prepare progress report	Suitably qualified ecological specialist	Seven years after commencement of works.	Progress report submitted to appropriate authority		

8	8.1 Entire		Bushland Management Contractor/ Northern Grampians Shire Council	Refer Table 2	Maintain weed levels below 25%	
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Year	Action	Offset Zone	Management action	Resource/ personnel required	Timing of action	Key performance target	Completed (Yes/No)	Date
8	8.2	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling		
8	8.3	Entire offset site	Undertake Golden Sun Moth monitoring (if required)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)		
8	8.4	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ Landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers		

9	9.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Northern Grampians Shire Council	Refer Table 2	Maintain weed levels below 25%	
9	9.2	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling	
9	9.3	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	Pest Animal Contractor/ Landowner	After peak breeding season - late summer/early autumn.	No detrimental impact on values from pest animals and reduced pest numbers	

Year	Action	Offset Zone	Management action	Resource/ personnel required	Timing of action	Key performance target	Completed (Yes/No)	Date
9	9.4	Entire offset site	Undertake Golden Sun Moth monitoring (if required)	Qualified ecologist on behalf of MMWF or Landowner	Late October to early January	Undertake population and habitat management as required (Section 3.4)		
10	10.1	Entire offset site	Conduct systematic weed control for all weed species	Bushland Management Contractor/ Northern Grampians Shire Council	Refer Table 2	Maintain weed levels below 25%		
10	10.2	Entire offset site	Undertake Golden Sun Moth monitoring (if required) Qualified ecologist on behalf of MMWF or Landowner		Late October to early January	Undertake population and habitat management as required (Section 3.4)		
10	10.3	Entire offset site	Offset site to be audited by undertaking a habitat- hectare assessmentSuitably qualified ecologicalAs required		As required	Satisfactory progress towards achieving management actions		
10	10.4	Entire offset site	Monitor organic litter density and control biomass outside GSM core active period (October – January)	Landowner	Late summer - Autumn	Maintain at least 70% vegetation cover and adhere to seasonal spelling		
10	10.5	Entire offset site	Monitor for populations of feral animals such as rabbits and conduct control works if required.	as Contractor/ season - late animals and summer/early autumn		No detrimental impact on values from pest animals and reduced pest numbers		

Appendix 2 – Targeted Golden Sun Moth survey results

Table A2.1. Golden Sun Moth survey results within the offset site (2010/11 flight period)

Known GSM reference site (distance from study area)	Surveyor	Date	Survey Times	Temperature (9am and 3pm)		Wind (0-3)	Cloud cover (%)	No. of days since rain	No. GSM
Avalon, Victoria (45km)	Jenna Forbes and Kim Weston	23/12/2010	1400 - 1500	18ºC	22°C	1	20	1	0
Avalon, Victoria (45km)	Jenna Forbes	30/12/2010	1330 - 1530	18°C	22°C	1	15	3	0
Flying on-site	Jenna Forbes and Ian Taylor	6/01/2010	1330-1414	18ºC	26°C	1	5	7	23
Flying on-site	Clio Gates Foale	20/01/2011	1100 - 1500	17ºC	25°C	0	0	5	7

Table A2.2. Golden Sun Moth survey results within the offset site (2015/16 flight period)

Date	Survey times	Reference Site	Temperature (9am and 3pm)		Wind (km/hr)	Cloud cover (%)	No. of days since rain	No. GSM
30/11/2015 16.20 - 17.00 Flying during survey		15.9ºC	28.5°C	24	60	2	4	
4/12/2015	10.30 – 11.00 Flying during Survey		16.7ºC	30.6°C	7	15	1(0.2mm)	11
17/12/20154	10.00 – 10.45	Known Site	17.4ºC	34.4°C	17	10	>2	3
23/01/2016	11.00 – 12.00	Known Site	17.9ºC	34.4°C	19	10	1(0.2mm)	0

Appendix 3 – Chemical invoice

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MD Merchandise Invoice AV 45463 Loc 3434 15/06/2015 TAX INVOICE 9:53:09 ABN: 72 004 045 121 PAGE INVOICE NUMBER AV 45463

SOLD TO: WARRAMBINE PASTORAL PTY LTD ATF WARRAMBINE PASTORAL TRUST 1372 ROKEWOOD ROAD SHELFORD VIC 3329 PH: 03 52813329

: 3434886839004 ACCOUNT YOUR REFERENCE: P SALESPERSON : MC : 31/07/2015 DUE DATE

1

INVOICED BY:

FAX: 03-53414681

DELIVERY INSTRUCTIONS:

(3434) BALLARAT CNR CARNGHAM RD & LEARMONTH ST

PH:0353-37 9999 FAX:0353-37 9900 DELIVERY DATE: 15/06/2015

QUANTITY (:	PRICE INC GST)	TOTAL GST	TOTAL (INC GST)
3.00	175.000	47.73	525.00
2.00	145.000	26.36	290.00
SUB TOT	AL		815.00
INVOICE	TOTAL		815.00
INCLUDE	S GST OF		74.09
	3.00 2.00 SUB TOT INVOICE	(INC GST) 3.00 175.000	(INC GST) GST 3.00 175.000 47.73 2.00 145.000 26.36 SUB TOTAL INVOICE TOTAL

We are required to charge 4 cents per litre/kg on all non returnable containers which fall under the drumMUSTER scheme We regret that Goods supplied direct from supplier are non returnable.

Product sold 'Ex-Stock' is only returnable within 14 days of delivery, and must be in unused, resaleable condition.

* indicates GST free supply