

Landowner of offset site	lan, Trish and James Taylor
Location and address of offset site	Lot 1 TP16458 Warrambeen Pty Ltd, Rokewood – Shelford Rd, Shelford.
Offset Proponent	Rosenthal EPBC 2008/4212
Responsible Authority	Golden Plains Shire, DEWHA
Report number / Year Start Year	Year 10 / 2024 2015
Type of Offset Size of Offset	Golden Sun Moth 86 Ha
Signature	Janes Tay
Date	22/4/2025

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 or Golden Sun Moth population and habitat.

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General Offset Overview - Year 10 - December 2024

This is the Annual Landowner Report for the Rosenthal Estate offset at Warrambeen, Shelford. It discusses management actions taken within the offset to meet the Offset Management Plan (OMP) requirements for Native Vegetation and Golden Sun Moth (GSM) during the reporting period for 2024. This is Year 10 of the OMP and therefore this report also includes a summary of the findings of the Year 10 independent evaluation of the success of the past 10 years of land management actions in improving the conservation value of the site to meet standards required by the OMP.



Overall we are quite satisfied with the state of the offset as GSM habitat even though we experienced a very dry 18 months. This compares to the previous three years that were very wet at times which created unique challenges with biomass control, weed control and grazing management due to pugging issues.

At year 10 of the Offset we are very happy with the lower levels of weeds we have achieved after another year of work, such as a large reduction in Sweet Vernal, Phalaris and Yorkshire Fog grasses across the offset site. The previous wetter seasons created high levels of Fog Grass infestations in particular across native grasslands in Victoria. This current drier year combined with our methods of 5 - 6 person line pass weed control and grazing management have seen a much reduced level of this weed. We've also been able to reduce Phalaris and Sweet Vernal grass coverage by reducing seed set through grazing and targeted spot spraying. Sweet Vernal was not found in the most recent surveys - which we are very happy about. We also note Spear grass is filling in gaps created by grazing which is the intended outcome of the offset as this grass is a GSM food

As in most years, the main management challenges for us are weed control and the timing and length of grazing that allows for optimal biomass reduction and weed control without negatively affecting native seed production, germination and growth, or GSM habitat and food supply. Getting this balance right is challenging as each season is uniquely different. The seasonal fluctuations can be rapid and unexpected, requiring adaptability and responsiveness, which within an agricultural system often isn't practical or even possible. This drier year has meant some grazing rotations could not be completed due to lack of feed suitable for merino sheep, which affects the biomass levels recorded. However, some of these native grasses will not be eaten by sheep when it becomes unpalatable as it matures, and burning to reduce biomass has not been possible due to seasonal conditions.

To meet target biomass benchmarks we would have to graze heavily and later in Spring than we prefer. This would result in emerging native plants being grazed and result in less recruitment of GSM habitat and food supply. Consequently we have found the offset consistently has higher biomass levels than targets, yet the population of GSM remains / or has increased, with 165 moths being recorded as recently as 2022.

As in the previous years there are some areas within the offset that are not quite of the quality we would have liked given the large amount of work undertaken over the years that the offset has been in place. This is largely due to the last four years being wetter seasons which have favoured introduced plants that have in some cases out competed the native plant population. While we are happy with the weed control we have achieved, some of the weeds that prefer dry conditions - like Saffron thistle and serrated tussock have been even more present this year.

As we continue into another dryer season we expect that the grassland will move to increasingly improved quality, especially considering our significant management efforts since the offset commenced. We will continue our strong focus on reducing the amount of Spear and Saffron Thistle, Phalaris, Fog Grass and Cocksfoot in 2025, along with the recommendations made in the Year 10 monitoring report. We have summarised key points from independent monitoring in the following section and will return to reporting on the annual works completed in Year 10 by the Landowner in later sections.

Independent Monitoring

(Excerpts from "Rosenthal Offset Monitoring: Year 10 Final Report, Austral Research and Consulting, *Thorin Robertson, Phil Hunter & Allanah Mott, January 2025*).

Austral Research and Consulting (Austral) were engaged by Warrambeen Landcare Farm to undertake golden sun moth (GSM) surveys and habitat monitoring (2024/25) for year ten of a ten year monitoring program. The full report can be viewed <u>here</u> and will be sent as a separate document with this Annual Landowner Report.

The GSM survey occurred during the flight season (late November to early February) and vegetation assessments were undertaken over several days in late Summer by a suitably qualified botanist experienced in the assessment of vegetation associated with GSM habitat. The Rosenthal Offset site was walked in its entirety to assess the overall condition of the vegetation and estimate key values such as native vegetation, biomass and weed cover which were then mapped. A habitat hectare assessment was undertaken across the site in its entirety, separated into three zones to obtain information on floristic values.

"The results of this year's assessment are a 'snapshot' representation of ecological values within the site at the time of surveys. Ecological values may vary within, and between seasons. This report is part of a long-term monitoring program for the Rosenthal Offset site and all results and data should take into consideration previous assessments." p. 13

We feel it is important to highlight that the vegetation surveying was conducted late in the season when some of the herbs had died off, so we believe some plant species may be under-represented and the results may have been skewed as a consequence.

Furthermore, we would like to add that this monitoring report should be read in conjunction with previous years Independent monitoring for a fuller picture of the success of our management actions over the 10 years.

Results

- 1. Key performance targets specified in the Rosenthal site OMP have in part been met.
- 2. No golden sun moths were observed during the 2024 surveys:

"Victoria experienced a notably quiet year for golden sun moth, with limited numbers of the species being recorded across the state. Golden sun moth observations were notably low across all offset sites managed by Warrambeen Landcare Farm for the 2024/25 fight season and the Ecological Consultants Association of Victoria (ECA) reports for reported golden sun moth observations were notably low for the 2024/25 flight season (Ecological Consultants Association, 2024) indicating relatively few golden sun moth emerged for their mating activities across Victoria. The reason for this is not currently understood." p. 14

"The results of the golden sun moth monitoring over the 10 year monitoring period vary greatly between years. Observations range from zero moths during most recent surveys (year 10 of monitoring) to greater than 500 individual moths observed in the year 5 monitoring period" p 24

This demonstrates the importance of long term monitoring to account for variability. Results from GSM surveys from all ten years can be viewed in Appendix 4

The report concludes that:

"The key performance targets for golden sun moth as specified in the OMP are that golden sun moth populations should be **maintained or improved.** Given the variation in golden sun moth records across years, it is difficult to determine whether the population has been maintained OR improved". p. 38

"In some years up to 500 moths were recorded, whilst in other years zero moths were recorded. It is considered that the temporal variation observed within the Rosenthal Offset site is likely natural and owing to factors such as seasonal weather variations, rather than being primarily influenced by annual changes in implementation of management actions and associated fluctuations in vegetation quality. It is almost certain that the Rosenthal Offset site continues to support a healthy population of golden sun moth and will continue to do so into the future. p. 38

3. There has been an increase in native vegetation suitable for GSM:

"Native vegetation supporting habitat suitable for the golden sun moth and consistent with being characteristic of a NTGVVP community covers approximately 82.48 hectares (97.7%) of the study area (see figure 13 for native vegetation and weed cover mapping). This figure has increased from 95.9% in 2022, when native vegetation was last mapped due to auditing requirements in year 7 (Austral Research and Consulting 2022)." p. 14

4. The offset has a predominantly native cover that is spreading into bare ground:

"The study area is predominantly covered by native grasses, particularly spear-grasses (Austrostipa spp.) and common tussock-grass (Poa labillardierei). Other common species include wallaby-grasses (Rytidosperma spp.), kangaroo grass (Themeda triandra), and to a lesser extent weeping grass (Microlena stipoides). The spear-grasses have clearly expanded since year 7 monitoring, colonising areas of bare ground, with numerous small tussocks now observed throughout the site." p 14

LANDOWNER NOTE: As an adaptive management decision we decided to graze more heavily in this drier year in the Rosenthal paddock compared to previous seasons to control annual weeds and reduce overall biomass. This will have impacted both Wallaby and Kangaroo grass levels but

we have learned from past grassland offset management experience that these grasses are somewhat resilient to grazing.

5. The offset has some scattered shrubs throughout:

"Scattered shrubs including sweet bursaria (Bursaria spinosa), tree violet (Melicytus dentatus) and plains tree violet (Melicytus angustifolius) occur within rocky outcrops and near the creek line. Some plains tree violet regeneration was observed in rock crevices, but no sweet bursaria seedlings were observed."

6. Native herb species are present and scattered throughout the site:

"Native herb species are lightly scattered throughout the site, mostly present around rocky outcrops and in close proximity to kangaroo grass. Many had been grazed heavily at the time of the assessment (See note 1. below). Typical species include tough scurf-pea (Cullen tenax) (Endangered under the Victorian FFG Act) (Department of Energy, Environment and Climate Action, 2022), southern tick- trefoil (Desmodium gunnii) and variable glycine (Glycine tabacina). Other common species include blue devils (Eryngium ovinum), lemon beauty-heads (Calocephalus citreus) and bluebells (Wahlenbergia spp.). p15

"Native vegetation has remained stable over time, with no significant changes in native herbs or forbs" p 36

7. Weed cover throughout the offset has decreased:

"Within the Rosenthal Offset site, weeds are typically present along the site boundaries, high stock traffic areas, vehicle tracks, depressions/drainage lines, previously sprayed areas, bare ground and inter-tussock spaces. Weed cover, defined by patches dominated by weeds and reduced cover of native vegetation, occurs across approximately 1.91 hectares (2.3%) of the study area (figure 13). This figure has decreased from 4.06% in 2022 (Austral Research and Consulting 2022). p. 17

austral

research and consulting



Figure 13: Mapping of weed and native vegetation cover for the offset site (ArcGIS online, 2025)

8. There is evidence of large scale effective spraying of noxious weeds:

"Under the Catchment and Land Protection Act 1994 (CaLP Act), (Regionally Controlled and Restricted Weeds) (Agriculture Victoria, 2020), the noxious weeds present in the offset site include spear thistle (Cirsium vulgare), saffron thistle (Carthamus lanatus), serrated tussock (Nassella trichotoma), horehound (Marrubium vulgare), African boxthorn (Lycium ferocissimum), spiny rush (Juncus acutus) and Bathurst burr (Xanthium spinosum). Significant outbreaks of these weeds were mapped separately for the benefit of the client. p 17

Extensive and effective spraying of serrated tussock, spear thistle, and saffron thistle has been carried out across the site in recent months (Figures 9–11), with only limited numbers of weeds evident during the assessment. A sustained effort has been maintained by the client to control these weeds over the 10-year period." p.17

<u>LANDOWNER NOTE</u>: From our past experience in managing native grasslands and GSM habitat we know that it is impossible to get ALL weeds in any one season, though we strive to do our best. We focus on high threat weeds with spraying and low threat annual weeds with grazing, and train our staff extensively whilst actively supporting them in the field. However there will always be human error and some weed plants will get missed. We implement a multi pass spraying method over the seasons in order to address this.

9. High threat perennial grasses have reduced coverage or disappeared since last assessment:

"Yorkshire fog (Holcus lanatus) and Toowoomba canary-grass (Phalaris aquatica) are high threat perennial grasses that were mostly found in depressions and drainage lines within the offset site. Both of those species have been grazed heavily, which has reduced seed set this year. Both species have reduced coverage since last year's assessment. The client has effectively managed these two species with herbicide control throughout the 10-year period. Sweet vernal-grass (Anthoxanthum odoratum) is a highly invasive perennial species observed during assessment in 2023/24. It was not observed in 2024/25." p.20

10. There are some new and emerging weeds noted across the site:

"There are several new and emerging weeds across the site. New outbreaks of paspalum (Paspalum dilatatum) (a high threat perennial grass), red-flowered mallow (Moodiola caroliniana) (figure 11), spiny rush (Juncus acutus), plum (Prunus sp.), Bathurst burr (Xanthium spinosum) and horehound (Marrubium vulgare) were noted and mapped." p.20

<u>LANDOWNER NOTE</u>: Since receiving this report we have had a team of three spray the areas for horehound and the burr and paddy melon was cut then the root chipped out to reduce the risk of seed fall if chipped out only, as evidenced in these images.





Evidence of treating horehound and cutting before chipping bathurst burr and paddy melon.

11. The report concludes there has been a reduction in high and medium threat weeds and an increase in low threat weeds over the 10 years.

"A reduction in high threat weeds such as thistles and Toowoomba canary-grass, a reduction in medium threat weeds and an increase of low threat weeds such as annual grasses over the ten-year period. There has been a reduction in cover of two of the three categories of weed, but only one of three targets have been met." p. 26

12. Above average monthly Spring rainfall in some years has likely contributed to annual weed increase:

"Above average monthly rainfall occurring during spring over the ten-year period, such as the 125.6mm in October 2021, the 152.0 mm in October and 138 mm November 2022 (Bureau of Meteorology 2025), likely contributed to an extended growing season for annual grasses. Increased soil moisture allowed these grasses to continue growing and producing seed for longer periods, leading to greater seed production and higher grass densities in subsequent seasons. Higher biomass of vegetation between inter-tussock spaces has also resulted." p. 27

13. Areas with high biomass of vegetation have increased from Year 7 monitoring:

"Areas of high biomass of vegetation (over 70%) occur across 78.96 hectares (93.6%) of the site (figure 15) which is up from 81.31% in year 7 monitoring (Austral Research and Consulting 2022) (the only other year when biomass was mapped). These areas are typified by dense spear-grasses with dead spear-grass and annual grass material filling the inter-tussock spaces". p. 27

Landowner Note: Biomass has not been mapped throughout the life of the offset, and has not been required to be mapped as part of the OMP. It was done in Year 7 as requested by the Government audit conducted in that year. Furthermore, high biomass areas tended to be native grasses which are harder to graze due lower palatability to Merino sheep.

14. There has been a steady increase in biomass over the 10 years and surpassed the target in Year 10:

"It is thought that the increase in biomass is related to alterations to the grazing regime once the OMP was implemented. The year 7 habitat mapping report (Austral Research and Consulting 2022) recommended the grazing regime be reinstated to that prior to the implementation of the OMP however biomass has remained high. High spring rainfall conditions in 2021, 2022, 2023 and 2024 have been a key contributing factor to increased biomass in recent years and future OMPs should include adaptive management strategies such as increased grazing or controlled burns as a response to weather induced increases in biomass."p. 29

<u>LANDOWNER NOTE</u>: Biomass levels vary greatly over the life of an offset and are heavily dependent on climactic seasons. We have worked really hard to lower the biomass levels in this offset and in our experience of managing native grasslands over many years a target of 70% is indeed very low and more often than not difficult to achieve, this level also sets up lots of open areas that tend to favour weeds.

Since the start of this offset maintaining the grazing and biomass targets has been challenging. Although we believe the increase in biomass is mainly due to the seasons. The Offset commenced during a drought period and as a result the baseline might have been at a lower level than was possible to manage in a normal season. We note also that this is a GSM offset and population was confirmed in numbers of moths that were found in the Year 8, 2022 survey (165 moths).

Furthermore, as discussed in point 12 above, in the 2024 reporting period we were coming off the back of higher than average rainfall over multiple seasons. We anticipate biomass levels will reduce in dryer years with continued management of pulse grazing.

	Zone B1	Zone B2	Zone E
OMP/Baseline	68/100	53/100	53/100
*Year 10	52/100	44/100	40/100

15. Habitat Hectares Scores (Section 6.4)

*note a different EVC 132 classification was used from Year 7 so results may be skewed compared to the EVC Classification used in years 1-7

Landowner Note: We question the usefulness of using these figures as a comparison of offset management success given gains are achieved from a greater diversity of herbs and woody natives, but none of these plants are GSM food. We also note that this is a GSM offset and not a Native Vegetation offset, so quality of improvement of vegetation is not as significant.

Note also that we asked the report authors to prepare the same data using the original EVC for direct comparison with the baseline data and have included these alternate assessment findings here:

	Zone B1	Zone B2	Zone E
OMP/Baseline	68/100	53/100	53/100
*Year 10	52/100	57/100	48/100

Section 6.5 (p.36) notes that the reduction in Habitat scores is attributable to three key contributing elements:

1. "Recruitment. As stated in section 3.3 Limitations, original surveys utilised a different benchmark EVC which is likely to have inflated the recruitment component in the beginning. After 10 years of implementing the OMP, only zone B1 demonstrated adequate recruitment of a woody life form.

2. An increase in weed cover across the site, mostly from annual grasses (see section 6.2).

3. Increased levels of organic matter across the site over time (see section 6.3)".

16. The Year 10 report noted that neighbouring paddocks outside the offset have large spear thistle populations. We identified this ourselves during the last season and treatment undertaken in some locations and has been added for *all* areas adjoining *all* offsets in our 2025 works plan.

Recommendations

Recommendation	Landowner Response		
 Regular burning that can be maintained, including follow-up weed control is recommended to preserve inter-tussock spaces for golden sun moth habitat. This will also help to reduce weed cover on site, particularly annual grasses. 	We have had some past success with ecological burns and will consider them again for this offset on an annual basis, however the grazing exclusion period required after burning does make it difficult to control weeds, and some seasonal conditions do not support burning. Furthermore, sometimes the grazing does not leave enough biomass to get a good burn completed, this is a delicate balance as we need to continue to graze to prevent weeds growing in greater numbers, but also leave enough older biomass so that a fire will be carried. This is often not possible or practical.		
 Fencing around sweet bursaria and both tree violet species will prevent grazing of young seedlings, which would improve the habitat hectare score of each zone. 	This is something we could consider.		
3. Treatment of spear thistle in neighbouring paddocks	We recognised this issue ourselves and began doing this late in the 2024 season and will be doing it for all offsets in 2025. The HIII paddock adjoining this offset was treated for thistles in Spring 2024 as were paddocks South of the offset.		
4. Follow up treatment of saffron thistle	This has already been done in March 2025 as part of our regular works plan and will again be followed up in the winter/spring spot spraying passes.		
5. Toowoomba canary-grass and Yorkshire fog require ongoing herbicide control in colder months. Grazing could be implemented on remaining plants during warmer months to limit seed set. Attempts	This is our normal practice and will be continued beyond the year 10 monitoring period. We will attempt to increase winter and spring grazing pressure if possible and practical amid seasonal conditions.		

	should be made to eliminate paspalum and other emerging weeds from the site through herbicide control. To reduce annual grasses, such as Vulpia spp., grazing should be allowed through drier winter and spring periods when these grasses are most palatable.	
б.	Weed control efforts should be prioritised on the edges of the site, stock traffic areas, vehicle tracks, depressions/drainage lines, the creek line zone, previously sprayed or burnt areas, bare ground and inter-tussock spaces.	This is our normal practice and will be continued beyond the year 10 monitoring period.
7.	As specified in the OMP (Ecology and Heritage Partners 2015), weed cover should be managed in perpetuity to ensure it does not increase beyond the level attained at year 10 of management.	We will continue to manage this offset as we always have, taking into consideration the above recommendations.

The remainder of this report constitutes the management actions undertaken during the 2024 reporting period.

The results this year have really highlighted to us the tension created from trying to achieve objectives on a GSM offset. The offset has a target of 70% biomass, which for us means heavy grazing. This type of grazing does not leave plants with much opportunity to reseed and create new growth. Consider the timing: we currently graze heavily in late winter and then pull sheep out to allow Themeda, Wallaby grass and to set seed in late spring. At the same time there is a massive build up of spring growth and the biomass objectives are not achieved. Or we graze the offset to allow open space and create best practice habitat for GSM which in turn means younger plants are eaten and can't establish.

Successful Management Tools

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

An area of success for us this year has been in seasonal staff employment strategies. We've implemented some new approaches and have seen positive results. Specifically, we utilised a Natural Resource Management Jobsite for the first time and continued to employ backpackers for our spot spray team.

NRM Jobs (a green jobs website) proved to be a valuable resource, allowing us to find both a weed control contractor for our Cressy site and a highly skilled conservation worker to join our spray team. The contractor has freed up our spray Operations Manager, creating additional staff capacity, while the conservation worker's plant identification skills and ability to motivate and organise the spray team have been crucial, especially during a period of annual leave. This member then found us another conservation worker from her previous employment who has exceptional plant identification skills and a good work ethic and he completed the season with us alongside the backpackers.

While the supply of backpacking staff remains high, finding quality workers has been a challenge this season - unlike previous years, resulting in two team changeovers later in the season despite our excellent training record and persistence. And whilst this did not happen during the work on this offset, it is noteworthy to record it as we've not experienced this before. Despite this unusual occurrence we're pleased with the outcomes of our staffing strategies and will continue to refine our approach moving forward.

The regular inspection and reporting process we have in place constitutes our Annual Works Plan and is working really well for us. These inspections combined with visits in the normal course of farming activities allow us to be adaptable and responsive to seasonal conditions with grazing management and spot spraying. In these visits we are able to identify areas of concern and any emerging threats to the offset and plan our actions accordingly. The tools we have available include grazing, spraying and ecological burning.

As mentioned in the overview, grazing has been effective in reducing biomass and controlling weeds, particularly phalaris, fog and sweet vernal grasses. This combined with a drier year compared to the previous three wetter than average seasons, which enabled us to better control annual weeds and support the emergence of an abundance of native grasses, herbs and forbs. Flat weed has reduced due to both grazing and the drier season.

Our multi-pass weed control approach has again worked very well this year and saw the implementation of a slight modification out in the field to reduce "misses" as staff walk a line spraying. This year the team walked in two rows, the second line following the first, targeting different weeds and keeping their eye in for misses from the first line. We found this enabled the team to swap chemicals to suit what they were finding. For example the first row of 5 workers would target Spear Thistle and other broad-leaf weeds as they walked in a marked line and the second row of 3 would target Phalaris, Fog grass and serrated tussocks and alert the others to any Spear Thistle misses. This was altered to rows of 4 and 4 or 6 and 2 according to what was found in each area of the offset walked.

Another success in relation to spraying was the use of cones on spray nozzles this season which resulted in more direct contact with desired species and less overspray to non-targeted plants. Weed control is discussed in more detail below.

Weed Cover and Control

This year we utilised spot spraying and grazing to control weeds and biomass levels. We have worked hard again to be responsive to seasonal conditions and as mentioned have utilised a multi-pass spraying method as our main method of weed control.

Spot Spraying

This year the team walked in two rows using cones on spray nozzles, the second row following the first targeting different weeds and keeping their eye out for broad-leaf misses from the first line. We found this enabled the team to swap chemicals and staff to suit what they were finding in each area.

For example the first row of 5 workers would target Spear Thistle, Saffron Thistle and other broad-leaf weeds as they walked in a marked line and the second row of 3 would target Phalaris, Fog grass and Serrated tussocks and alert the others to any Thistle misses until the area was completed. This was altered to rows of 4 and 4 or 6 and 2 according to what was found in each area of the offset.



Images of spray control methods.

Rosenthal Operations Record 2023-2024

	Blu 2	ie Star 7 Ha	Blue Devil 32 Ha		Rosenthal South of Creek 22 Ha		Rosenthal North of Creek 22 Ha	
	Spring 2023	Spring 2024	Spring 2023	Spring 2024	Spring 2023	Spring 2024	Spring 2023	Spring 2024
Spear Thistles	26,939	20,853	7,397	19,216	3,126	7,837	8,256	22,643
Phalaris	Med	Low	Med	Med	low	low	low	Med
Serrated Tussock	78	509	83	379	120	370	89	539
Briar Rose	1	0	0	0	0	0	1	0
Saffron Thistle		Med		Very low		Extreme along creek		Low
Bathurst Burr	0	0	0	1	0	0	0	removed in summer
Horehound	Low	Low	Low	Low	Low	Low	Low	Low
Biomass	70%	60%	75%	70%	85%	70%	90%	70%
Hours	15.5	23	10.5	28	7.5	30.15	7	29.15
						Note saffron spraying is not included in hours		

Serrated Tussock

This reporting period we have seen a significant increase in serrated tussock (*Nassella trichotoma*) numbers across the whole farm from previous years which is a disappointment given the intense control work completed. Our thoughts are that the past few years were unseasonally wet which created 80-100% biomass that was difficult to control with grazing due to pugging issues. We suspect that in these years many serrated tussock plants germinated but could not be seen by the spray operations team during winter/spring passes amid the higher biomass and perhaps many were missed and in this year with much lower biomass levels they've been found. We will maintain vigilance in monitoring and prioritise control of this weed in the coming season.

Spear Thistle

We have also noticed an increase in Spear Thistle numbers this year in two of the three offset paddocks and have a working theory that includes a number of factors. Firstly, there has been more open ground in this reporting period than the previous wetter years and there are neighbouring paddocks with large infestations that have not been treated. It also highlights to us the value of conducting winter spot spraying for thistles. We will continue to implement our 2-3 pass spraying system and this coming season we will also treat non-offset adjoining paddocks as a priority.

Spiny Rush

This has always been present and is found along the creek area and not in the offset itself. We watch for outlying plants, but the creek is basically a feeder for the Rush and there is not much that can be done. We tend to watch for this and manage if something comes off the creek or it looks to spread.

Chemicals Used and Application Rates

Utilising ecological and agronomic advice we used the following chemicals at the rates noted. This year we used MCPA in place of 2-4D as it is safer to handle for staff.

- MCPA 750
- DIFLUFENICAN
- CLOPYRALID
- FLUPROPANATE
- GLYPHOSATE
- BIO VEGETATION DYE

Broad- leafed weeds:		
20Lt Drum Rate	100L Tank Rate	500L Tank Rate
100ml MCPA 20ml Clopyralid 40ml diflufenican 50ml dye	500ml MCPA 100ml Clopyralid 200ml diflufenican 250ml dye	205L MCPA 500ml Clopyralid 1L diflufenican 1.25L dye
Grass Weeds:		
250ml Glyphosate 50ml Flupropenate 50ml dye	1.2L Glyphosate 250ml Flupropenate 250ml dye	6.25L Glyphosate 1.25L Flupropinate 1.25L Dye
Woody Weeds:		
100ml Gusto	n/a	n/a

Grazing Management

Our grazing practices have been similar to most years with some traditional light grazing during low growth periods and more responsive crash/pulse grazing with higher numbers of sheep during winter and spring. In the schedule below please note that some grazing has occurred within the exclusion period of 30th September to 31st January annually as an adaptive management approach to respond to high biomass levels and weed threat.

The past 12 months have provided much friendlier climatic conditions for effective grazing than in some of the preceding years. We're very happy with the biomass, bare ground levels and weed control over the last 12 months.

This past year we had no autumn break and consequently did almost no grazing through Autumn and early winter - this would normally not be the case. During Spring we didn't do a full grazing rotation of the offset paddocks as there wasn't enough feed that merino sheep will eat, again due to dry conditions

Our regular inspections have shown excellent levels of Poa Tussock, Kangaroo, Spear and Wallaby grasses, a massive amount of Bluedevil and Lemon Beauty-heads along with a diverse amount of other herbs and wildflowers such as convolvulus, kidney weed, blue stars and wood sorrel to name a few. Pretty exciting to see!

As already mentioned above, well timed grazing and spot spraying has helped us see a decrease in fog grass compared to last few years (along with drier seasonal conditions) and in some areas with well timed grazing we have seen a decrease in quaking grass and wild oats. We estimate in some areas Phalaris is down by an estimated 50% after consistent spraying over the last 3 x years.

Offset Area	Date In	Number of Sheep	Date Out	Grazing Days	
Rosenthal	15/1/24	519	29/1/24	14	
	17/5/24	1376	20/5/24	3	
	26/7/24	417	2/8/24	7	
	19/9/24	327	4/10/2024	16	
	9/12/24	453	27/12/24	18	
Blue Devil	5/2/24	519		33	
	22/2/24	171 added	27/2/24	5	
	20/5/24	1376	24/5/24	4	
	2/8/24	95	19/9/24	17	
	16/10/24	327	21/10/24	5	
	11/11/24	453	25/11/24	14	
	7/3/25	682	still in at time of writing		
Blue Star	29/1/24	519	5/2/24	7	
	26/4/24	647	9/5/24	13	
	13/6/24	959	18/7/24	35	

Grazing History

26/7/24	216		
	185	2/8/24	7
	31	19/9/24	17
4/10/24	527	16/10/24	14
25/11/24	453	9/12/24	14

Fencing

Fencing undergoes regular inspections and maintenance as per the farm program, as such all are in good condition and stock proof. No repairs have been required in this reporting period.

Pest Animal Control Record

Fox and Rabbit numbers are continually being monitored on regular landowner and staff drive throughs. When sightings or scratchings are observed pest control is organised by the landowner with licensed shooters. Within this reporting period there has been no increase in pest animal activity from approval of the OMP, minimal soil disturbance and no native vegetation loss from pest animal management activities.

Below is a summary of findings for this and adjoining offsets during the reporting period but much more monitoring and pest control occurs throughout adjoining areas and the entire farm and a full record can be viewed <u>here.</u>

Date	Activity	Result
29/12/23	Shooting, contractor	2 rabbits
13/03/24	Shooting, contractor	1 Hare
9 /05/24	Shooting, contractor	4 Rabbits
13/10/24	Shooting: adjoining offset	8 rabbits
27/12/24	Shooting: adjoining offset	4 Rabbits
27/12/24	Shooting, contractor adjoining offset Rosenthal	2 Foxes 3 hares
18/1/25	Shooting, contractor: Vic Roads Rosenthal	3 Hares 1 Fox 4 Rabbits 1 Cat

Corrective Actions and Contingency Methods

(Where monitoring indicates that there has been a change in the native vegetation)

The Year 10 Monitoring Report again highlights the ongoing difficulties we are having with biomass levels, which is intriguing to us as it is the only offset we have continuing issues in biomass control with, despite great efforts at reducing it. Since the start of this offset maintaining the grazing and biomass targets has been challenging. Although we believe the increase in biomass is mainly due to the seasons. The Offset commenced during a drought period and as a result the baseline might have been at a lower level than was possible to manage in a normal or wet season. Further to this the Landowner did propose during the Year 7 audit that the biomass target be lifted to 80%.

We will review our grazing efforts for the coming season and determine if we can crash graze with higher numbers of sheep or conduct cool burns in a way that better reduces biomass in spring 2025.

Management Plan 2025

Overview

In 2025 our focus will continue to be a reduction of weeds through 2-3 passes per year spot spraying and well timed grazing as needed. We will continue to implement the OMP and make adaptive management decisions if required. We will also employ skilled staff to conduct a thorough gridded walk to identify any areas with Texan or Chilean Needle Grass as this species has been found in a nearby offset.

Biomass Control

We will utilise a reviewed grazing regime with some light grazing and increased pulse grazing as hard as possible during Spring whilst remaining adaptive to seasonal climatic conditions. We will consider if its possible to conduct spring burns to reduce biomass if seasonal conditions support this.

Observations

We are committed to continuing to undertake regular inspections as part of our ongoing efforts in weed management with a specific target on Spear and Saffron Thistles, Serrated Tussock and. We will continue regular monitoring of grazing pre and post sheep movements.

Reporting

We will continue our regular Landowner Reviews. 2025 is Year 11 of the offset and per the OMP no longer requires external monitoring.

Appendix 1 Management Actions Table - Year 10



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Year	Action	Management action	Responsible authority / personnel	Timing of action	Date completed
		stock grazing regime or develop ecological burn/ fuel reduction plan if appropriate	Contractor/CFA		
9	9.1	Conduct weed control	Landowner/Bushland Management Contractor	Species dependent	
9	9.2	Monitor populations of pest animals and conduct control works if required	Landowner/Pest Animal Contractor	After peak breeding season - late summer/early autumn	
9	9.3	Maintain fences	Landowner/Fencing Contractor	As required	
9	9.4	Monitor biomass density and implement stock grazing regime or develop ecological burn/ fuel reduction plan if appropriate	Landowner/Bushland Management Contractor/CFA	Summer/Autumn	
10	10.1	Conduct weed control	Landowner/Bushland Management Contractor	Species dependent	
10	10.2	Monitor populations of pest animals and conduct control works if required	Landowner/Pest Animal Contractor	After peak breeding season - late summer/early autumn	
10	10.3	Conduct monitoring for vegetation and Golden Sun Moth	Suitably qualified ecological specialist	Ten years after commencement of OMP	
10	10.4	Maintain fences	Landowner/Fencing Contractor	As required	
10	10.5	Monitor biomass density and implement stock grazing regime or develop ecological burn/ fuel reduction plan if appropriate	Landowner/Bushland Management Contractor/CFA	Summer/Autumn	
10	10.6	Monitor and assess works, and prepare final report	Suitably qualified ecological specialist	Ten years after commencement of OMP	

Offset Management Plan: Rosenthal Estate - 100 Vineyard Rd, Sunbury, Victoria

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Appendix 2 Photo Points

<u>PP346</u>



<u>PP347</u>



PP348



<u>PP349</u>



Appendix 3 Additional Photographic Evidence

Note, images have been reduced to 30% to reduce file size and quality may be affected. Originals can be requested.

General Views:



Wildflowers/Herbs/Native grasses:





Serrated Tussock & Saffron Thistle Control:





Horehound Control



Very Dry Conditions



Appendix 4 Golden Sun Moth Survey Results Years 1-10 AUSTRAL 2025

Table 4: Previous Golden Sun Moth Survey results and annual management recommendations

Survey Year	Golden Sun Moth Abundances	Annual Management Recommendations			
2015/16 (Year 1)	62 moths	The offset site was considered to provide favourable habitat for golden sun moth at the time of the targeted surveys (Ecology and Heritage Partners 2016).			
2016/17 (Year 2)	238 moths	The results of the golden sun moth surveys indicate that a high overall population density of the species remains within the Rosenthal Offset site. Additional biomass control and weed management were recommended to increase the overall habitat quality of remnant vegetation and golden sun moth in subsequent years of the OMP implementation (Ecology and Heritage Partners 2017).			
2017/18 (Year 3)	320 moths	The results of the golden sun moth surveys indicate that a high overall population density of the species remained within the Rosenthal Offset site. Additional biomass control and weed management was recommended to increase the overall habitat quality of remnant vegetation and golden sun moth in subsequent years of the OMP implementation (Ecology and Heritage Partners 2018).			
2018/19 (Year 4)	39 moths	It was stated that low numbers of golden sun moth was possibly owing to natural variation in cohort size and the survey results should not be viewed in isolation. Rather, golden sun moth abundance should be viewed across multiple years to obtain a view of population health. Weed coverage was observed to be high and additional biomass control and weed management was recommended to increase the overall habitat quality of remnant vegetation and golden sun moth in subsequent years of the OMP implementation (Ecology and Heritage Partners 2019).			
2019/20 (Year 5)	-	Per the endorsed OMP (Ecology and Heritage Partners 2015), formal golden sun			
Rosenthal Offset Monitoring (Year 10) Warrambeen Landcare Farm Page 25					

Survey Year	Golden Sun Moth Abundances	Annual Management Recommendations
		moth surveys were not undertaken within the Rosenthal Offset site for the 2019/20 monitoring period. Despite the lack of formal studies, a high number of golden sun moth were observed during the vegetation assessment (> 500 individuals). This was substantially higher than observed during the 2018/19 monitoring period (Ecology and Heritage Partners 2020).
2020/21 (Year 6)	65 moths	Although numbers of moths observed were lower relative to Year 2 and Year 3, the species was recorded consistently across the site, which indicates that the population is still present. It is considered that the lower numbers (relative to Year 2 and Year 3) were likely due to the surveys being conducted early in the flying season, and that additional surveys being conducted during warmer, drier conditions would record the species in higher abundance (Ecology and Heritage Partners 2021).
2021/22 (Year 7)	165 moths	Following the observed pattern evident in previous years survey results the number of moth observations for the 2021/22 flight season was higher than the 2020/21 flight season. Abundance was high and there was an even spread of moths observed across the site. The offset site supports a viable, breeding population. Zero moths were recorded for the year however golden sun moth numbers were
2024/25 (Year 10)	0 moths	extremely low across all of Victoria this year. The year 10 results should not be considered indicative of a long-term decline in the health of the golden sun moth population within the offset site