

# MONITORING REPORT WEST SALE AIRPORT GRASSLANDS

Year 6 2024-2025 of Offset Management Plan

Final

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Cover photograph: the ecological burn begins at the offset site in April 2025

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## EXECUTIVE SUMMARY

In 2018 Wellington Shire Council (WSC) received Federal approval from the Australian Government's Department of Agriculture, Water & the Environment (DAWE; now the Department of Climate, Change, Energy, the Environment and Water - DCCEEW) to remove 0.485ha of the EPBC listed Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*) Grassy Woodland and Associated Native Grassland (GRGGW) ecological community to allow for a runway extension at West Sale Airport to support Defence Force pilot training initiatives at the East Sale RAAF Base.

A condition of that approval was that WSC had to find and protect a suitable EPBC Offset Site. This Offset Site is located within airport grounds and is comprised of an area of 3ha of the GRGGW ecological community within a patch of approximately 13ha in size. State approval required the entire 13ha to be protected in perpetuity via a Section 69 Agreement under the Victorian *Conservation, Forests and Lands Act 1987*. An Offset Management Plan was prepared (Ethos NRM, 2018) to facilitate this Agreement and to meet state and federal requirements.

The management plan outlines the monitoring and management required. This report details the works undertaken in Year 6 of that plan (Sept 2024-July 2025).

It should be noted that a major review of the management plan was undertaken in 2023 (Ethos NRM, 2023) and 12 recommended actions were proposed to the Federal Department of Climate Change, Energy, the Environment and Water, which accepted 11 of those recommendations. This has resulted in more weed species being classified as high threat, and a removal of the requirement for ecological burns to be done over 50% of the area at any one time.

### Monitoring

In year 6 (2024-2025), in line with the OMP, Ecologic NRM monitored for cover and diversity of native and weed species, and biomass accumulation, at 18 transects across the entire 13ha grassland. Species inventory walks, another measure of species diversity, were conducted across the entire 13ha.

### Species cover

Native grasses were most dominant in the 3ha EPBC Offset at 58% cover, down almost 20% since Year 5, and weeds were 19% (1% higher than in Year 5 despite concerted weed control). In the 10ha Protected Area, native grasses were at 80% cover (down from 98% in Year 4); weedy species had risen from 5% in Year 4 to 10%.

### Species diversity

A total of 42 flora species – 26 native species and 16 exotic species - were recorded in the 3ha EPBC Offset area. A total of 50 flora species - 32 native species and 18 exotic species - were recorded in the 10ha Protected area. 'New' native species recorded in Year 6 were Variable Raspwort *Haloragis heterophylla* and Wiry Rush *Juncus homalocalis*, while new weed species noted were Timothy Grass *Phleum pratense*, Pigeon Grass *Setaria* sp. and Hairy Hawkbit *Leontodon saxatilis*.

## Woody Weeds

The OMP listed two woody weed species (African Boxthorn and Blackberry) which had to be eliminated. Since the OMP was implemented, five woody weed species have now been recorded at West Sale; one has been eliminated, and the others were all treated in Year 6. Woody weed targets (<1%) are being met.

## High threat herbaceous and grassy weeds

Appendix lists all herbaceous weed species recorded since management began and shows that there have been 40 herbaceous weed species recorded at West Sale, 36 of which are considered high threat; 25 of those high threat weed species were treated in Year 6. The target of reducing weeds to <5% by Year 5 has not been met. It is hoped that intensive weed control following the ecological burn will help ensure this target is reached.

## Biomass monitoring

In the 3ha EPBC Offset area, the average score from all 18 quadrats was 6 – **monitor for thickening** In the 10ha Protected Area, the average score was 3 – **requires disturbance**. The impact of the mowing trial in the EPBC offset in **Year 5** (June 2024) could still be detected when biomass monitoring was undertaken in November 2024: the mowed transects score was 8 (monitor for thickening) and the unmowed transects scored 5 – requires disturbance. This demonstrates that the mowing trial created a mosaic of biomass which is beneficial during an ecological burn. Biomass management was achieved by an ecological burn across the whole site in April 2025; weed control commenced one month after the burn and species recovery (native and exotic) is discussed.

## Pest animals

The trail camera picked up both hares and foxes at the grassland. A shoot was organized and four foxes and one hare were dispatched in January; both species were still present following this shoot and ongoing control will be organized. Two areas previously thought to be rabbit warrens were investigated and were found to be native rat burrows. No evidence of rabbits anywhere else on the grassland were noted either on camera, by surveyors or by shooters.

## Management targets

The following targets are being met:

- No vehicles access the offset site
- Fences are maintained
- Woody weed cover meets the <1% target
- No new woody weeds were noted in Year 6
- Good hare and fox control has been achieved and will continue.

For herbaceous weeds, the standard is to reduce cover of all listed high threat herbaceous weeds to <5% by end of Year 5. This standard has not been met. It is hoped that control will be achievable with increased management after the ecological burn which occurred in April 2025.

# 1 INTRODUCTION

As part of approvals associated with removal of a small area of the EPBC listed threatened ecological community Gippsland Plains Grassy Woodland and Associated Native Grassland at West Sale Airport, Wellington Shire Council had to secure a 3ha offset and manage it to an Offset Management Plan (OMP) between 2018 and 2028.

The Offset Management Plan (Ethos NRM, 2018) recommended the conservation management required for the 10 years following the approval (i.e. 2018-2028) to address the following priority actions from the EPBC Policy Statement (DEWHA, 2010) and approved Conservation Advice (DEWHA, 2008) for the ecological community:

- Weed Invasion - prevention of the spread of invasive exotic weeds.
- Native Shrub Invasion - management of the spread of native shrubs into the ecological community.
- Pest Animals - control of all introduced pest animals.
- Inappropriate Fire Regimes - implementation of suitable fire management regimes and biomass reduction.
- Grazing, Trampling and Browsing – exclusion of grazing at the site.
- Habitat Loss - protection from future infrastructure and maintenance works through the establishment of a management agreement and security of the Offset site on the property title (in perpetuity).

## Objectives

The objective of this report is to present the results of the required monitoring of the grasslands undertaken by Ecologic NRM in November 2024, and associated management of the grassland in Year 6 of the plan.

It should be noted that a major review of the management plan was undertaken in 2023 (Ethos NRM, 2023) and 12 recommended actions were proposed to the Federal Department of Climate Change, Energy, the Environment and Water (DCCEEW), which accepted 11 of those recommendations. This has resulted in more weed species being classified as high threat, and a removal of the requirement for ecological burns to be done over 50% of the area at any one time.

Those recommendations, and the DCCEEW letter accepting them, are included in Appendix 1.

## 2 FIELD SURVEY METHODOLOGY

In 2022 the Offset Management Plan (Ethos NRM, 2018) was reviewed and changes to the monitoring and management schedule were recommended. This review was part of a wider assessment of the site (Ethos NRM, 2023). These changes are summarised in Table 1.

Table 1. Table 10 from (Ethos NRM, 2023) report to DCCEEW.

✓ monitoring schedule in OMP	A: additional monitoring completed					R: extra monitoring recommended				
	Year 1 2019	Year 2 2020	Year 3 2021	Year 4 2022	Year 5 2023	Year 6 2024	Year 7 2025	Year 8 2026	Year 9 2027	Year 10 2028
Native species cover and diversity	✓		✓	A	R 3ha area only	✓	R			✓
Weed species cover and diversity	✓		✓	A	R 3ha area only	✓	R			✓
Pest animal presence and impact	✓		✓	A	R	✓	R			✓
Biomass accumulation	✓		✓ Ecological burn completed	A	R	✓ Next ecological burn/mow	R	✓		✓
Species inventory walk				A	R	R	R			✓
Mowing						R		✓ (pending results of monitoring)		

### 2.1 Percentage cover

The OMP recommends two methods for assessing percentage cover as described below.

#### 2.1.1 Life form cover

Monitoring native and exotic life form cover in nine 50x50cm quadrats along each of the 18 50m transects Figure 1.

Along each transect a 50m tape is extended, a 50x50cm quadrat is placed every 5m and the following data are collected consistent with the methodology in the OMP:

- % native graminoid cover;
- % high threat weed (exotic) vegetation cover (and portion % that is a high threat);
- % bare ground;
- % herbaceous cover;
- % cover lichen or moss;
- and other.

Data are recorded on paper data sheets and information entered into an Excel sheet in the office by one staff member and checked by a second. Transects are marked with GPS and with permanent metal markers so they can be re-surveyed as necessary over the remaining years of the OMP which will continue until 2028.

Cover and diversity of native and weed species were assessed across 18 transects on 11, 12 and 18 November 2024 by Trish Fox, Mick Bramwell, Bernie Connor and Eva Rose.

### 2.1.2 Individual species cover

As recommended in the OMP (Ethos NRM, 2018), a species diversity quadrat (10x10m in size) was also located between the 25m and 35m points along each of the transects established. All species present were recorded, and coverage was assessed using a modified Braun-Blanquet cover-abundance scale (Table 2).

**Table 2. Modified Braun-Blanquet Cover - Abundance Class**

Score	Cover	Abundance
0	0%	Species absent
+	<5%	Few Individuals
1	<5%	More than a few individuals
2	5-20%	Any number of individuals
3	20-50%	Any number of individuals
4	50-75%	Any number of individuals
5	75-100%	Any number of individuals

## 2.2 Species diversity

Using a Species Inventory Walk, Ecologic NRM completed separate searches of the 3ha Offset area and the 10ha Protected area on 18 November 2024. Observations of native and exotic species are recorded over 3 m with time to detection noted for each as this gives an indication of effort to find species (Zeeman *et al.*, 2015). This walking search is considered an appropriate method for providing a reference point for future changes to the presence and absence of species (Zeeman *et al.*, 2015). Species inventory walks were conducted across the entire 13ha (Trish Fox and Mick Bramwell) on 18 November.

## 2.3 Photo Point monitoring

In Year 6, photopoints were established at two transects that had been mowed (T1 and T9 in the EPBC Offset area) and two that had not been mowed (T2 and T4 in the EPBC Offset area), and at the weedy south-west corner. All photographs are included in Appendix 2. It should be noted that the photographs taken for biomass monitoring also act as photo points (see Appendix 4).

## 2.4 Fauna survey

As specified in the OMP, signs of pest animals are to be monitored during vegetation surveys or at any time throughout the year. If significant pest animal populations are observed (particularly rabbits) the site will be searched systematically to identify the location of any warrens or other harbour. A prompt to record signs of pest animals was added to the monitoring sheet but camera traps were also deployed, placed at the site of native rat tunnels.

## 2.5 Biomass monitoring

Biomass was determined using the method outlined in the OMP: assessing the visibility of 18 golf balls dropped individually within a 1x1m quadrat (Schultz *et al.*, 2017) at the 5m and 45m points of each of the nine 50m transects, laying quadrats to the right of each facing 1-50m. In Year 6, biomass monitoring was conducted across the entire site.

A photo was taken of the quadrat from 1.3 meters above the ground and scored high, medium or low (Table 3). To control for observer variability, three observers scored each photo separately from hard copies printed out at the office, with the average number of golf balls observed for each quadrat recorded.

Biomass accumulation was assessed across the entire 13ha grassland by Stewart McNaughton and Norm Borg on 18 November 2024.






**Table 3. Scoring system for biomass monitoring**

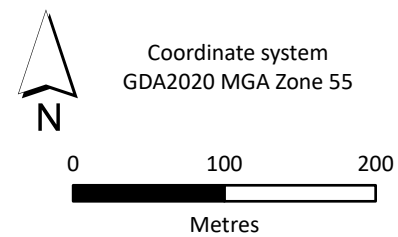
Biomass	Golf ball score	Action
High	0 -5	Requires biomass reduction
Medium	6-14	Monitor for thickening
Low	15-18	No action required





**Figure 1: Transect locations at West Sale Airport Grasslands**

- |  |                  |   |           |
|--|------------------|---|-----------|
|  | Protected Area   |  | Transects |
|  | EPBC Offset Site |  | Start     |
|  |                  |  | End       |



Ecologic NRM project: 24018 West Sale Airport Offset Site Management  
Client: Wellington Shire Council

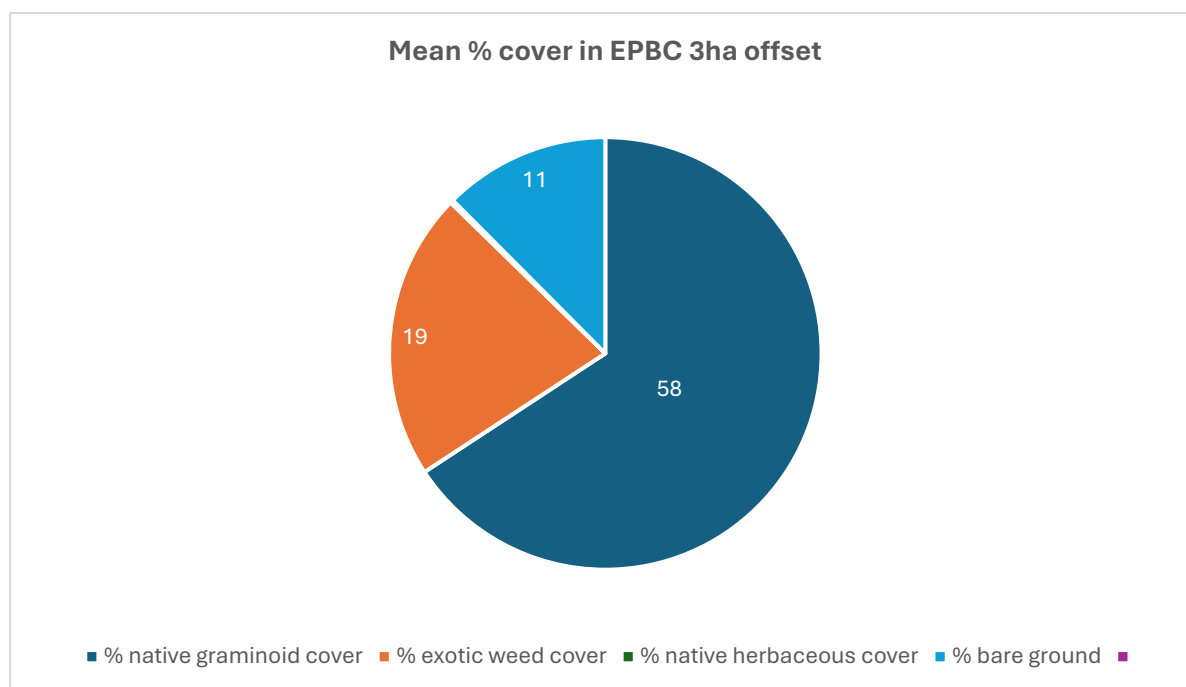


## 3 RESULTS

### 3.1 Percentage covers

#### 3.1.1 Percentage cover: native and exotic life form cover (50x50cm quadrats)\_EPBC 3ha offset

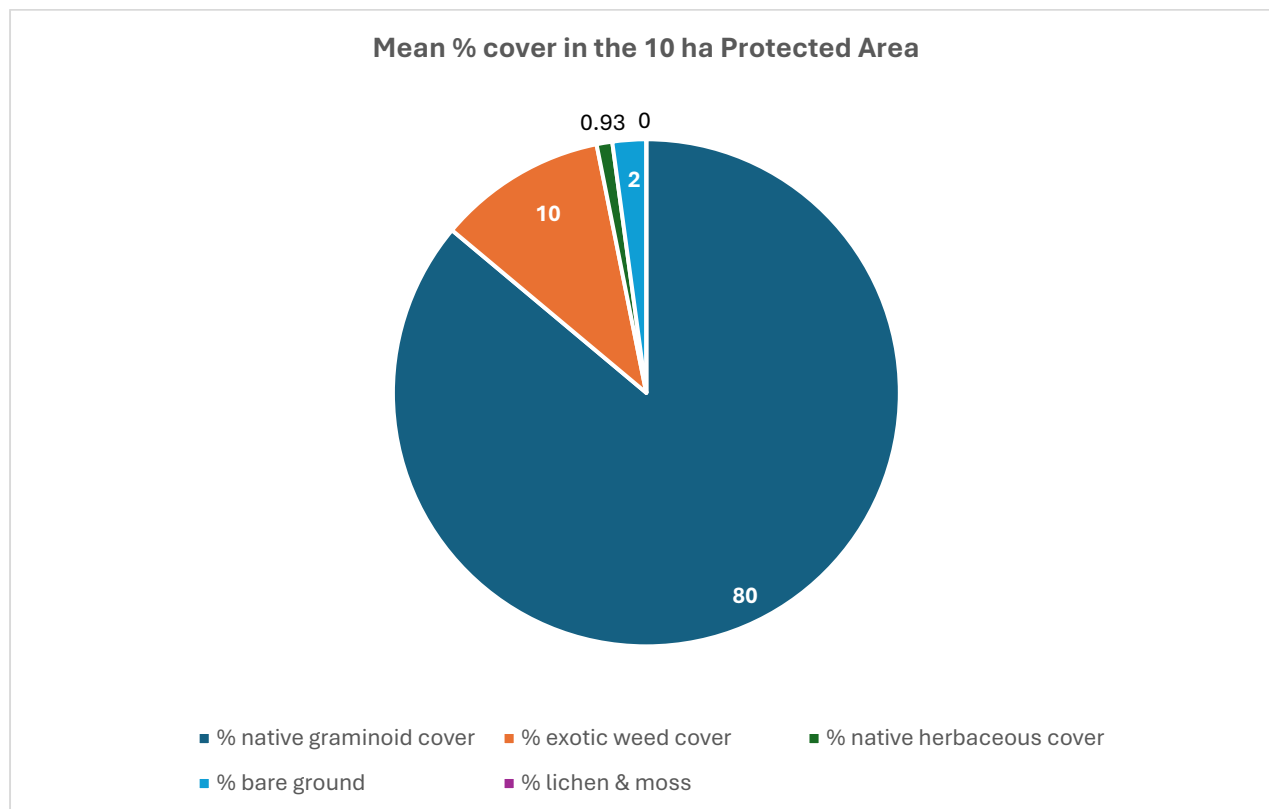
Percentage cover of the various life forms is shown in Figure 2. Native graminoids continue to be the dominant life-form along the transects. Exotic weed coverage (80% of which are high threat species such as Yorkshire Fog and Sweet Vernal Grass) was at 19%. Native herbs averaged only 0.2%.



**Figure 2. Mean percentage cover of the life form categories surveyed in the 3ha EPBC offset area**

#### 3.1.2 Percentage cover: native and exotic life form cover (50x50cm quadrats)\_Protected Area 10ha offset

Figure 3 shows that the native graminoid cover is also dominant in the Protected Area, exotic weeds (of which 90% were high threat species) were assessed at 10% cover and native herbs at just less than 1% cover.



**Figure 3. Mean percentage cover of all categories assessed in the 90 quadrats of the 10ha Protected Area**

## 3.2 All species cover (10x10m quadrats)

### 3.2.1 All species cover\_EPBC 3ha Offset Area

Across the nine 10x10m quadrats surveyed, 41 flora species were recorded: 25 native and 16 exotic species.

Table 4 lists all species with a modified Braun-Blanquet score of 1 or more and shows that the high threat perennial Sweet Vernal Grass was the species with highest cover. The native grasses Kangaroo Grass *Themeda triandra* and Common Tussock-grass *Poa labillardierei* were species with next greatest cover. Common Woodruff *Asperula conferta* (Plate 1) and Small St John's Wort *Hypericum gramineum* were two native herbs that had significant coverage in these plots.



**Plate 1. Common Woodruff**

**Table 4. List of species scoring 1 or more on the modified Braun-Blanquet score in the 3ha EPBC Offset area.**

Scientific name	Common name	Modified Braun Blanquet score	Actual cover (%)
<i>Anthoxanthum odoratum</i> *	Sweet Vernal Grass	3	20-50
<i>Themeda triandra</i>	Kangaroo Grass	2	5-20
<i>Poa labillardierei</i>	Common Tussock-grass	2	5-20
<i>Rytidosperma racemosum</i>	Slender Wallaby Grass	2	5-20
<i>Tricoryne elatior</i>	Yellow Rush-lily	1	<5
<i>Holcus lanatus</i> *	Yorkshire Fog	1	<5
<i>Asperula conferta</i>	Common Woodruff	1	<5
<i>Hypericum gramineum</i>	Small St John's Wort	1	<5
<i>Dichelachne crinita</i>	Plume grass	1	<5
<i>Anthosachne scaber</i>	Common Wheat Grass	1	<5
<i>Briza maxima</i> *	Greater Quaking -grass	1	<5

\* = weed species

### 3.2.2 All species cover\_Protected Area 10ha

Across the nine 10x10m quadrats surveyed, 52 flora species were recorded: 36 native and 16 exotic species.

Table 5 lists all species with a modified Braun-Blanquet score of 1 or more and shows that the native Kangaroo Grass had the greatest coverage across the large 10x10m quadrats, while the high threat perennial Sweet Vernal Grass also had significant coverage, although three other native grasses had the same score.

**Table 5. List of species scoring 1 or more in the 10ha Protected area \* = exotic spp**

Scientific name	Common name	Modified Braun Blanquet score	Actual cover (%)
<i>Themeda triandra</i>	Kangaroo Grass	4	50-75
<i>Anthoxanthum odoratum</i> *	Sweet Vernal Grass	2	5-20
<i>Lachnagrostis filiformis</i>	Common Blown-grass	2	5-20
<i>Poa labillardierei</i>	Common Tussock-grass	2	5-20
<i>Rytidosperma setaceum</i>	Bristly Wallaby Grass	2	5-20
<i>Rytidosperma racemosum</i>	Slender Wallaby Grass	1	<5
<i>Dichelachne crinita</i>	Plume grass	1	<5
<i>Schoenus apogon</i>	Common Bog-sedge	1	<5
<i>Haloragis heterophylla</i>	Varied Raspwort	1	<5
<i>Hypochaeris glabra</i> *	Smooth Cats-ear	1	<5
<i>Hypochaeris radicata</i> *	Flatweed	1	<5
<i>Holcus lanatus</i> *	Yorkshire Fog	1	<5
<i>Hypericum gramineum</i>	Small St John's Wort	1	<5
<i>Caesia calliantha</i>	Blue-grass Lily	1	<5
<i>Briza maxima</i> *	Greater Quaking -grass	1	<5

### 3.3 Species diversity (species inventory walks)

#### 3.3.1 EPBC Offset area

In the second assessment of species diversity (species inventory walks), a total of 42 flora species - 25 native species and 17 exotic species - were recorded in the 3ha EPBC Offset area during the species inventory walk. Results are listed in Appendix 3.

#### 3.3.2 Protected area

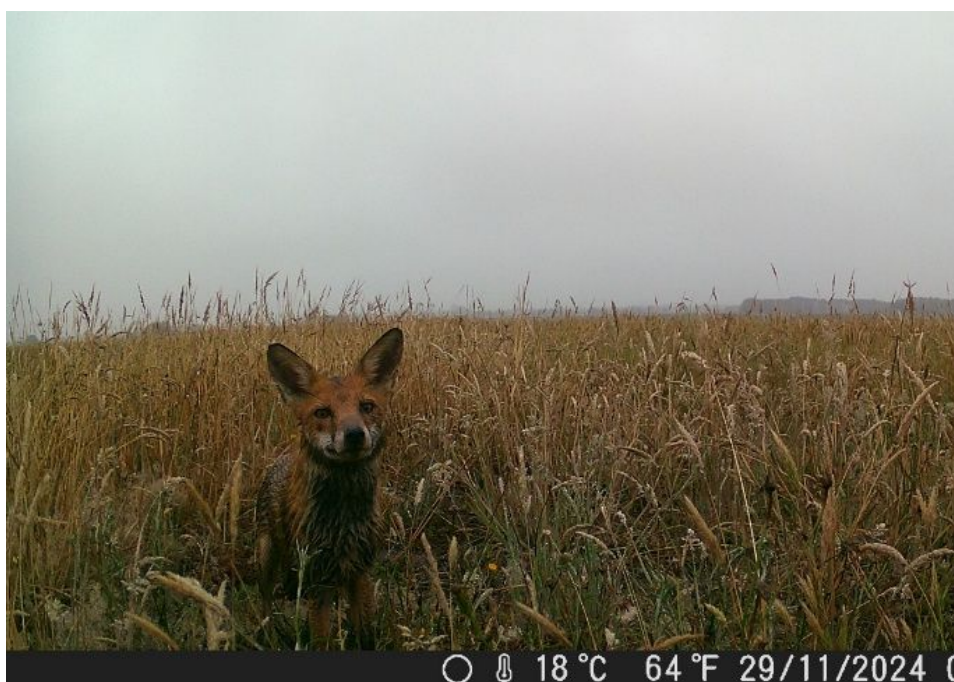
In the second assessment of species diversity (species inventory walks), a total of 51 flora species - 33 native species and 14 exotic species - were recorded in the 10ha Protected area during the species inventory walk. Results are listed in Appendix 3.

### 3.4 Photo point monitoring

In an attempt to establish more meaningful photo point monitoring at the site, new monitoring points were set up at two mowed and two unmowed transects within the EPBC offset area; photos were taken at the start of each season (i.e. September, December, April and June) and are included in Appendix 2. Further discussion is included in the section on biomass monitoring (3.6).

### 3.5 Fauna surveys

As in previous years, there was no evidence of feral animals noted during the surveys. However, trail cam images, installed at the first of the Year 6 visits (September 2024), showed both hares and foxes (Plate 2) in October and November 2024. Ecologic NRM engaged Rangeview Conservation to undertake pest animal control, and four foxes and one hare were dispatched by shooting over one night in January 2025. The camera was removed before the ecological burn and reinstalled in May 2025 – hares and foxes were detected again.



**Plate 2. Fox on site November 2024**



### 3.6 Biomass monitoring

In the 3ha EPBC Offset area, the average score from all 18 quadrats was **6 – monitor for thickening** (Table 6). In the 10ha Protected Area, the average score was **3 – requires disturbance**. There was good concurrence between observer scores. All photographs are included in Appendix 4 and examples are included below.

**Table 6. Results from the 18 1x1m quadrats monitored by biomass in 2023.**

Transect and location	3ha EPBC Offset Area	10ha Protected Area
T1 at 5m	9	5
T1 at 45m	9	3
T2 at 5m	8	4
T2 at 45m	3	1
T3 at 5m	8	4
T3 at 45m	6	2
T4 at 5m	3	1
T4 at 45m	7	4
T5 at 5m	8	5
T5 at 45m	6	1
T6 at 5m	6	5
T6 at 45m	4	6
T7 at 5m	7	1
T7 at 45m	4	3
T8 at 5m	5	5
T8 at 45m	4	3
T9 at 5m	10	2
T9 at 45m	4	2
<b>AVERAGE</b>	<b>6</b>	<b>3</b>



**Plate 3. A quadrat at T3 45m that scored 6 in the EPBC offset area**

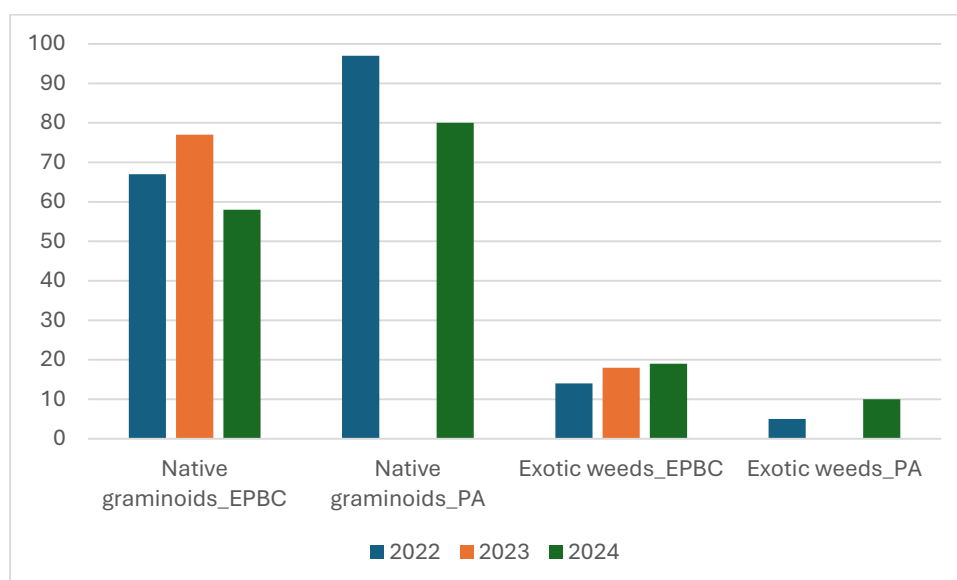


**Plate 4. A quadrat at T& 45m that scored 3 in the Protected Area**

## 4 DISCUSSION

### 4.1 Percentage covers

The last ecological burn on these grasslands was in 2021. Since then, monitoring has taken place at the EPBC Offset area every year, and in the Protected Area in 2022 and 2024 (full scale monitoring over the whole site is not recommended in the OMP and the 2023 monitoring at the EPBC offset was additional). Native graminoid cover peaked in the second year after the fire in the EPBC offset while, despite considerable control efforts, exotic weeds have slowly increased (Figure 4). The OMP has a target of <5% weed cover ideally by end of Year 5 (not achieved and reported on in last year's annual report) and to be attained by Year 10. Unfortunately, the 5% weed cover in the Protected Area doubled between Years 5 and 6. It is hoped that concerted weed efforts following the ecological burn in 2025 will allow control of these weeds to be achieved.



**Figure 4. Mean percentage cover of native graminoids and exotic weeds in the EPBC offset and Protected Areas over the last three years.**

### 4.2 High threat herbaceous weeds

Table 3 of the OMP lists 17 high threat herbaceous weed species that were recorded on site (Ethos NRM, 2018). DEECA has asked which of these species are still present and which were treated in Year 6. That information is presented in Table 7 below which shows that 11 of those 17 are still present of which 10

were treated in Year 6. Full details of when and how control occurred are included in the Daily Works and Sprays Records that accompany this report.

**Table 7. The 17 high threat herbaceous weed spp from OMP; those still present and those treated in Year 6.**

Scientific name	Common name	Present in Year 6	Treated in Year 6
<i>Cirsium vulgare</i>	Spear Thistle	Y	Y
<i>Hypericum perforatum</i>	St John's Wort	N	
<i>Agrostis capillaris</i>	Brown-top Bent	Y	Y
<i>Aira spp.</i>	Hair Grass	Y	N
<i>Cynodon dactylon</i>	Couch	Y	Y
<i>Cenchrus clandestinum</i>	Kikuyu	Y	Y
<i>Phalaris aquatica</i>	Toowomba Canary Grass	Y	Y
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	Y	Y
<i>Bromus catharticus</i>	Prairie Grass	N	
<i>Erigeron spp.</i> <sup>1</sup>	Fleabane <sup>1</sup>	Y	Y
<i>Dactylis glomerata</i>	Cocksfoot	Y	Y
<i>Festuca arundinacea</i>	Tall Fescue	N	
<i>Holcus lanatus</i>	Yorkshire Fog	Y	Y
<i>Rumex dumosus</i>	Dock	Y	Y
<i>Solanum nigrum</i>	Blackberry Nightshade	N	

<sup>1</sup> Three *Erigeron* (formerly *Conyza*) species are found at West Sale: *E. canadensis*, *E. bonariensis* and *E. primulifolius*; all were recorded and treated in Year 6.

The OMP also listed another 12 herbaceous weeds to be controlled. However, in 2022 Ethos NRM observed that several species considered low threat in the OMP were now acting as high threat weeds at the site. Both weed species lists in the OMP were revisited using the Arthur Rylah Institute rankings of species and this increased the number of high threat weed species by seven. Since 2022, weed control has included these new species.

Appendix 5 lists all herbaceous weed species recorded since management began and shows that there have been 40 herbaceous weed species recorded at West Sale, 36 of which are considered high threat; 25 of those high threat weed species were treated in Year 6.

The OMP (Table 5) stated that the total cover of all herbaceous and grassy weeds across the entire site was 20%, of which 15% were high threat species; no details are given about how these coverages were estimated. DEECA requested that this estimate was updated for this year's report. It is challenging to do this objectively and perhaps the best estimates are from the 50x50cm quadrats, 162 of which were assessed in 2024. These show that weed levels were at 19% in the 3ha EPBC offset and 80% of species were high threat, while in the 10ha Protected area weeds covered 10% of the area, and 90% were high threat species. These coverages are averaged and presented in Table 8.

**Table 8. Update of Table 5 from OMP**

Zone	Total cover of all herbaceous and grassy weeds % (including high threat herbaceous and grassy weeds)		Total cover high threat herbaceous and grassy weeds %	
1A	2018 20%	2024 15%	2018 15%	2024 65%



### 4.3 Woody weed species

The OMP listed two woody weed species (African Boxthorn and Blackberry) which had to be eliminated. Table 9 shows that five woody weed species have now been recorded at West Sale; one has been eliminated, and the others were all treated in Year 6. Woody weed targets (<1%) are being met.

**Table 9. Woody weeds recorded at West Sale, whether still present and whether treated in Year 6**

Scientific name	Common name	Present in Year 6	Treated in Year 6
<i>Acacia implexa</i>	Lightwood	Y	Y
<i>Kunzea eridoides</i>	Burgan	Y	Y
<i>Lycium ferocissimum</i>	African Boxthorn	N	
<i>Prunus</i> sp.	Fruit tree	Y	Y
<i>Rubus fruticosus</i>	Blackberry	Y	Y

### 4.4 Native species diversity

Two methods of assessing species diversity (species inventory walks and the 10x10m all species quadrats) are used. Both showed that native species diversity had declined at EPBC offset since Year 5 (Table 10). This decline is probably because of increasing competition from the grasses, native and exotic, over time since the last burn.

Native species diversity has been constant at the Protected Area (Table 10) despite the increase in weed cover. Of interest is the fact that new species continue to appear at the grassland. Varied Raspwort *Haloragis heterophylla* has not been previously recorded at the Aerodrome and noted at high enough coverage to appear on the all-species quadrats list of species scoring at least 1 on the Braun-Blanquet score. The native Wiry Rush *Juncus homalocaulis* was also recorded for the first time.

**Table 10. Results of the two methods of recording species diversity at the 3ha EPBC offset**

Date	Species inventory walk		All species quadrats	
	EPBC Offset 2023 Yr4	EPBC Offset 2024 Yr6	EPBC Offset 2023 Yr4	EPBC Offset 2024 Yr6
Native species	31	26	28	25
Exotic species	19	16	15	16

**Table 11. Results of the two methods of recording species diversity at the 10ha Protected Area**

Date	Species inventory walk		All species quadrats	
	Protected Area 2023 Yr 4	Protected Area 2024 Yr 6	Protected Area 2023 Yr 4	Protected Area 2024 Yr 6
Native species	32	32	30	36
Exotic species	15	18	16	16

We have sought to boost diversity with plantings of tubestock from the list of all native species recorded at the grasslands. We have noted in the last three years that when areas of dense weeds are sprayed, ground is bared and then other weeds invade. We are seeking to address this issue by establishing natives in these areas. Another reason to plant tubestock is to reintroduce species that have not been recorded recently. For example, Matted Bush-pea *Pultenea pedunculata* has not been observed since the original monitoring occurred in 2014. We observed it growing adjacent to the northern boundary of the offset where it appears to have thrived in an area which is regularly mown and kept very short as it is beside the main runway. Seed was collected in 2024 and tubestock will be planted out when ready. Other species from which we have collected seed, that are still being grown on include Common Plume Grass *Dichelachne crinita*, Sheep's Burr *Acaena ovina* and Prostrate Bossiaea *B. prostrata*. Where possible we collected seeds and had this grown on but we have also purchased tubestock from more common and widespread species such as Bulbine and Chocolate lilies to populate formerly weedy areas. Species, numbers, and locations of tubestock planted in June 2026 are listed in Table 12.



**Plate 5. Matted Bush-pea**

**Table 12. Species planted at West Sale Airport offset grassland in 2025**

Scientific name	Common name	Numbers	Planting location
<i>Arthropodium strictum</i>	Chocolate Lily	35	Offset area T2
<i>Austrostipa mollis</i>	Supple Spear Grass	15	SE area of central drain
<i>Bulbine bulbosa</i>	Bulbine Lily	50	Offset Area T1
<i>Dichondra repens</i>	Kidney-weed	5	Offset area T2
<i>Microlaena stipoides</i>	Weeping Grass	15	SE area of central drain
<i>Poa labillardieri</i>	Common Tussock-grass	220	SE area of central drain
<i>Poa morrissii</i>	Soft Tussock-grass	50	SE area of central drain
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	200	In south-west area
<i>Rytidosperma geniculata</i>	Knead Wallaby Grass	15	SE area of central drain
<i>Themeda triandra</i>	Kangaroo Grass	100 25	100 in SE area of central drain 25 in south-west corner of offset

## 4.5 Exotic species diversity

Exotic species diversity has been relatively static in recent years (Table 10 and Table 11). Three new species recorded in Year 6 were Pigeon Grass *Setaria* sp., Hairy Hawkbit *Leontodon saxatilis* and Timothy Grass *Phleum pratense*. Only one Pigeon Grass plant was noted (and removed), while a patch of Hawkbit was found adjacent to the drain that dissects the site; some were removed, and the area was gps-ed for follow up. Timothy Grass was found in one of the Protected Area quadrats and all plants were dead-headed; this area will be searched in Year 7 to see if the grass reappears.

## 4.6 Biomass management

Biomass management was achieved this year through an ecological burn undertaken by local CFA brigades on 17 April 2025. The history of burns across each of the grassland patches is shown in Figure 5 to demonstrate that mosaic burning occurs at a property scale at the airport's grasslands. A mixture of 70:30 diesel/unleaded fuel was used to light the fire at noon on 17 April 2025. The fire burned for approximately one hour and brigades patrolled the edges, wetting down any smoldering areas. In Year 5, biomass management was undertaken on a trial basis by mowing four of the nine transects in the 3ha EPBC Offset. Photopoint monitoring, included in Appendix 4, shows that the mowing impact persisted and the clear difference between the mowed and unmowed transects was obvious post-burn. This difference was also detected during biomass monitoring: the mowed transects scored **8 – monitor for thickening**, while the unmowed transects scored **3 – requires disturbance**. The mowing created a good mosaic in the grasslands. The mowing had the added advantage of making weeds obvious. It was easy to weed wipe and/or manually remove Yorkshire Fog, Sweet Vernal Grass, Onion Weed and the two Flatweed species with no impact on adjacent native species as they were so visible; the same could not be said for the adjacent unmown areas.

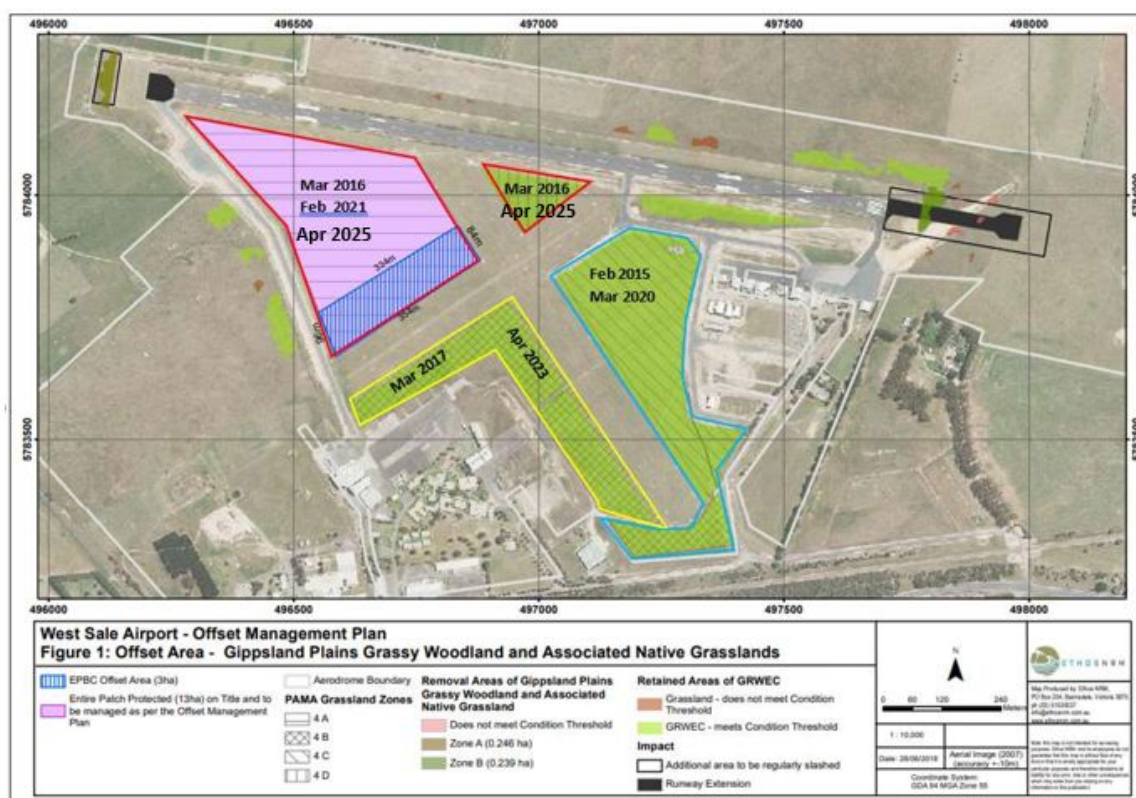


Figure 5. History of ecological burns at West Sale – overlain on Figure 1 from the OMP (Ethos NRM, 2018).





**Plate 6. The ecological burn begins at West Sale**

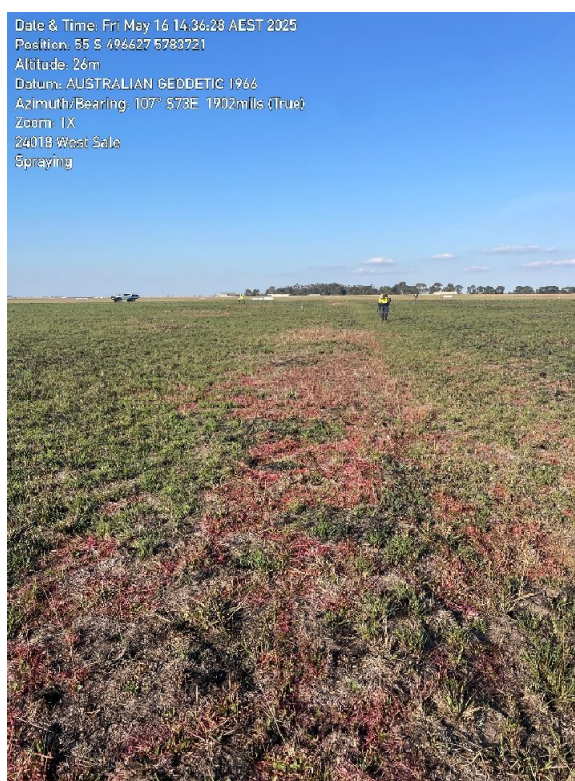


**Plate 7. Burn completed**





**Plate 8. The weedy central drain still obvious after the fire**



**Plate 9. Weed control on the central drain one month post-fire**

Plate 8 show that some weeds survived the burn and many *Paspalum* tussocks were observed to still have green bases. Follow up weed control began four weeks later when sufficient growth had occurred to ensure herbicide uptake happened; two crews of four undertook extensive weed control and replanting in May and June 2025.

It was interesting to observe which native species appeared post-fire. Kidney-weed *Dichondra repens*, not recorded on site since the original assessment, Sheep's-burr, and Woodruff were among the first native species to appear post fire but the native Narrow-leaf Plantain *Plantago gaudichaudii* appeared to be most vigorous with significant numbers appearing one month post-fire (**Plate 10**) and plants flowering two months post-fire (**Plate 11**). It is, therefore, perhaps not surprising that the weedy Plantains have also been stimulated by the fire; Plate 12 shows the vigorous growth of Ribwort; many plants were sprayed during the June visit.





**Plate 10. Significant growth of the native Plaintain one month post-fire**



**Plate 11. Native Plaintain flowering two months post-fire**



**Plate 12. Vigorous Ribwort *Plantago lanceolata* growth two months post-fires; plants sprayed**



**Plate 13. Planting native tubestock to help tackle weeds in the central drain**



## 5 YEAR 6 MANAGEMENT PLAN TARGETS

As outlined in the annual report template, many of the Year 6 targets for West Sale Airport grassland offset are being met.

- No vehicles access the offset site
- Fences are maintained
- Woody weed cover meets the <1% target
- No new woody weed species have been encountered
- Two new herbaceous weeds have been recorded.
- Good hare and fox control has been achieved.

For herbaceous weeds the target was to reduce cover of all listed high threat herbaceous weeds to <5% by end of Year 5. This target has not been met in Year 6. It is hoped that extensive weed control following the ecological burn in April 2025 will result in significantly reduced weed loads in Year 7.

Further details of management at each site visit are included in the Daily Works and Sprays Records attached to this report.



**Plate 14. A native bee visits Bindweed**



**Plate 15. Seed from Matted Bush-pea**



## 6 REFERENCES

- DAWE. (2020). *Threatened species & ecological communities*. Retrieved from Australian Government Department of Agriculture, water and the Environment: <https://www.environment.gov.au/biodiversity/threatened>
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- DEWHA. (2010). *Gippsland Red Gum Grassy Woodland and Associated Native Grassland EPBC Policy Statement 3.22 Department of the Environment, Water, Heritage and the Arts*. Australia Government, Commonwealth of Australia.
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- Ethos NRM. (2023). *Assessment of the EPBC Offset Area at West Sale Airport. A report for the Australian Government's Department of Climate Change, Energy, Environment and Water*.
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- Zeeman et al. (2015). *Melbourne's grasslands: Long-term grassland monitoring field methods*. Zeeman, B.J.; Lunt, I.D.; Kendal D; McDonnell, M.J.; Morgan, J.W. <http://dx.doi.org/10.7910/DVN/NR6DUZ>, Harvard Dataverse, V1.

## 7 APPENDICES

### Appendix 1 List of recommendations and DCCEEW letter of approval

List of recommendations from the 2023 review of the OMP – all but Recommendation 4 were accepted by DCCEEW

Recommendation 1: implement the new monitoring and management outlined in Table 10.

Recommendation 2: continue Species Inventory Walks as described in (Zeeman et al., 2015) across both the 3ha EPBC Offset and the 10ha Protected Area.

Recommendation 3: continue to assess weed cover and diversity using the 10x10m Species Diversity quadrats and the Species Inventory walks.

Recommendation 4: consider relocating the EPBC Offset (a suggested location is in Figure 9) to improve prospect of achieving <5% grass weed cover by 2028 and capture a higher diversity of native species.

Recommendation 5: map all areas where weed cover is dense so that weed management can be targeted and establish three extra transects in the western part of the EPBC Offset.

Recommendation 6: collect seed from species with a very localized distribution and sow across site to improve abundance. Collection to follow Florabank Guidelines.

Recommendation 7: refine weed control to ensure all weed species with a score of 13.2 or higher as outlined in (White et al., 2018) are addressed.

Recommendation 8: grasslands at West Sale airport should be burnt in a mosaic at the property scale with a three to five year cycle per patch .

Recommendation 9: undertake a mosaic mow across the 13ha in the winter of 2024 – with no more than 50% of the site mowed. Mow to a height of 10cm and remove all cut material from site, as advised in the OMP.

Recommendation 10: refine weed management in the 3ha EPBC Offset area, consider small scale scalping of very weedy areas followed by hand sowing of seed collected elsewhere from the airport grasslands .

Recommendation 11: continue to target all weed invasions within the 10ha Protected Area to maintain the relatively low weed cover there.

Recommendation 12: Ongoing control should focus on physical removal where possible. Herbicide control of weeds should be increased significantly post-fire: the exotic grasses will germinate in the autumn following a burn and are easily identified.



EPBC ref: 2017/8106

Mr Theo Christopher  
Airport Manager  
Wellington Shire Council  
18 Desailly Street  
Sale VIC 3850

Via email: [theoc@wellington.vic.gov.au](mailto:theoc@wellington.vic.gov.au)

**Approval of the Assessment of the EPBC Offset Area at West Sale Airport survey report for West Sale Airport Runway Extension, Victoria**

Dear Mr Christopher

Thank you for your correspondence of 21 December 2022 to the Department of Climate Change, Energy, the Environment and Water, seeking approval of the *EPBC Offset Area at West Sale Airport: A report for the Australian Government's Department of Climate Change, Energy, the Environment and Water and Wellington Shire Council. Final, September 2023*, in accordance with condition 3(A) of the above project under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). I note the final version of the survey report was submitted on 15 December 2023.

Officers of the department have advised me on the survey report and the requirements of the conditions of the approval for this project. On this basis, and as a delegate of the Minister for the Environment and Water (the Minister), I have decided to approve the *Assessment of the EPBC Offset Area at West Sale Airport: A report for the Australian Government's Department of Climate Change, Energy, the Environment and Water and Wellington Shire Council Final, September 2023*.

The survey was directed to assess the effects of the February 2021 controlled burn on the status of the Gippsland Red Gum Grassy Woodland and Associated Native Grasslands ecological community in the offset site, and to determine whether management prescriptions for the offset are appropriate. It was required to assess whether the EPBC offset area still meets the listing criteria for the ecological community, and recommend changes to the management program in the plan and its implementation.

The report has made twelve recommendations to improve the management of the offset. I am satisfied that eleven of the recommendations should be implemented. I note however that Recommendation 4, was to consider relocating the offset site. I have considered this recommendation and do not agree to moving the offset site. Weed management is a key component of the *West Sale Airport – Runway Extension EPBC Offset Management Plan: Gippsland Red Gum Grassy Woodland and Associated Native Grasslands, Version 2, July 2018* (the OMP), and should be undertaken in accordance with the approved plan.

Recommendation 8 which relates to burning the entire offset site every three to five years should be implemented on a trial basis. The revised OMP should describe how the trial will be conducted, and set out requirements to monitor any impacts on the offset for at least the next two burns as well as corrective actions to address any issues that may arise.

Condition 3A of the approval requires the approval holder to implement all the recommendations in the approved survey report and any requirements made by the Minister which are based on the findings of the survey report. In accordance with condition 3B, you must now incorporate the eleven endorsed recommendations into the OMP and submit this to the department for approval within 6 months of this decision.

As you are aware, the department has an active monitoring program which includes monitoring inspections, desk top document reviews and audits. Please ensure that you maintain accurate records of all activities associated with, or relevant to, the conditions of approval so that they can be made available to the department on request.

Should you require any further information please contact Post Approvals, cc Sam Gitahi by email to [PostApproval@dcceew.gov.au](mailto:PostApproval@dcceew.gov.au).

Yours sincerely

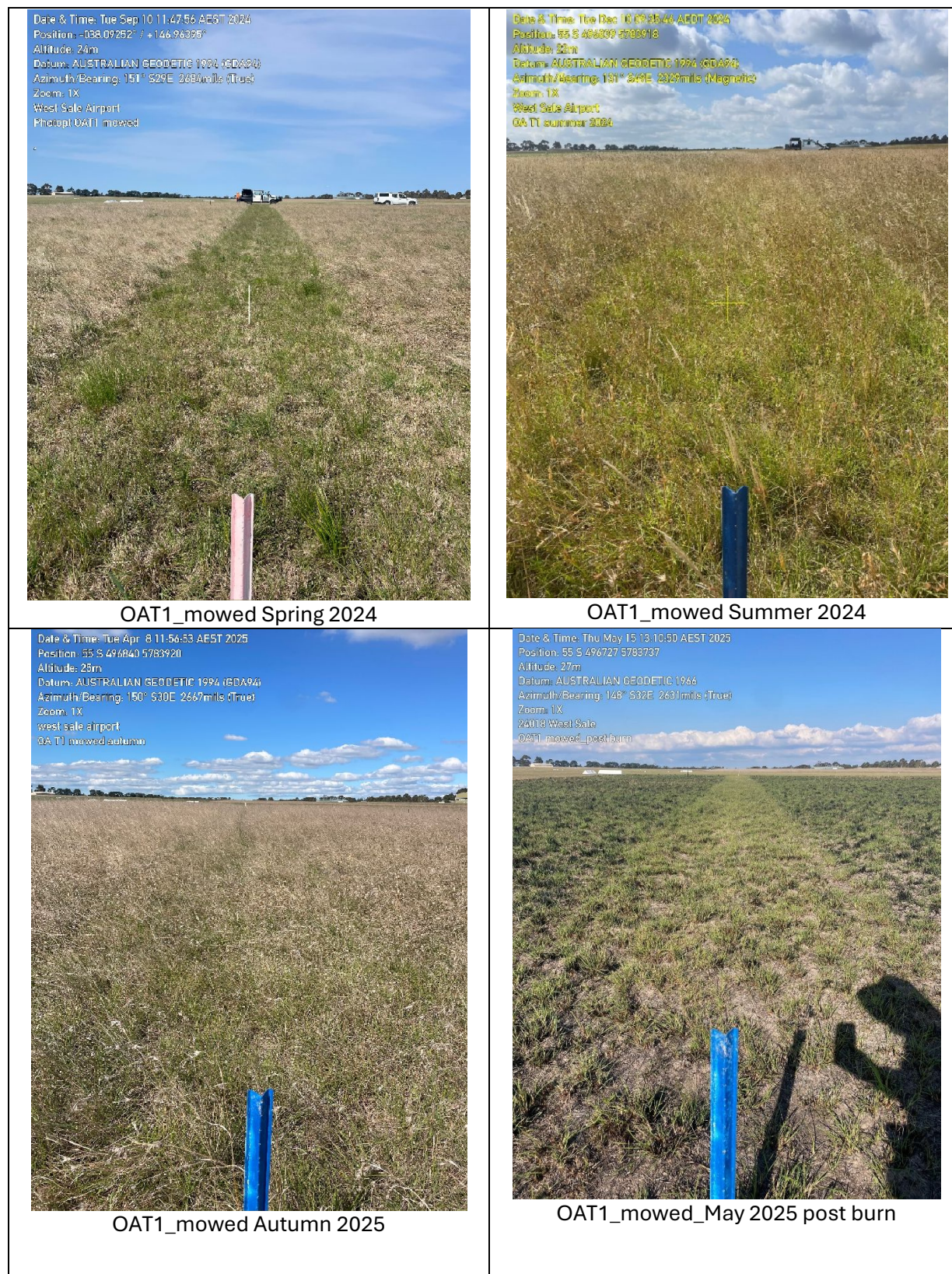


Rachel Short  
Branch Head  
Environment Assessments (Vic and Tas) and Post Approvals  
Nature Positive Regulation Division

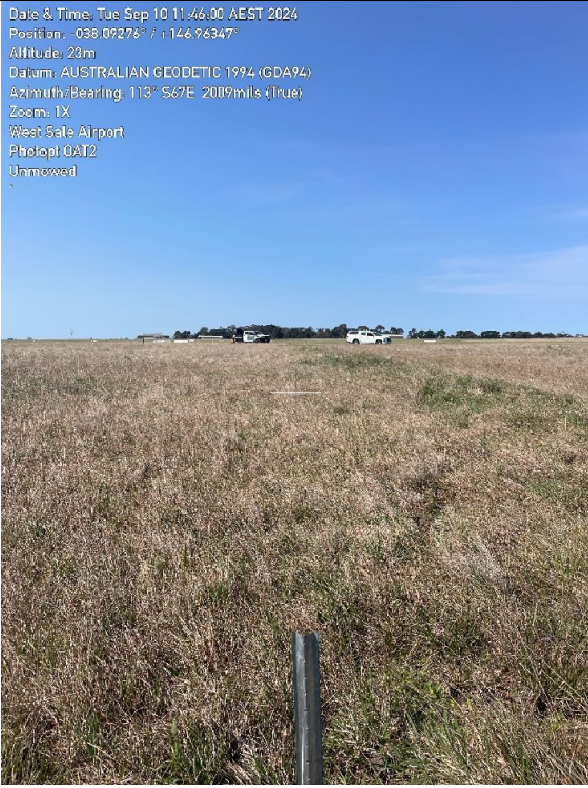



12 July 2024



## Appendix 2 Photopoints mowed v unmowed transects year 6





<p>Date &amp; Time: Tue Sep 10 11:46:00 AEST 2024 Position: -038.09276° / 146.96347° Altitude: 23m Datum: AUSTRALIAN GEODETIC 1994 (GDA94) Azimuth/Bearing: 113° S67E 2009mils (True) Zoom: 1X West Sale Airport Photo: OAT2 Unmowed</p>  <p>OAT2_unmowed Spring 2024</p>	<p>Date &amp; Time: Tue Dec 10 09:44:47 AEST 2024 Position: 55 S 496595 578308 Altitude: 23m Datum: AUSTRALIAN GEODETIC 1994 (GDA94) Azimuth/Bearing: 192° S88E 1436mils (Magnetic) Zoom: 1X West Sale Airport OAT2 summer 2024</p>  <p>OAT2_unmowed Summer 2024</p>
<p>Date &amp; Time: Tue Apr 8 12:17:16 AEST 2025 Position: 55 S 496595 578309 Altitude: 23m Datum: AUSTRALIAN GEODETIC 1994 (GDA94) Azimuth/Bearing: 106° S74E 1864mils (True) Zoom: 1X West Sale Airport OAT2 unmowed autumn</p>  <p>OAT2_unmowed Autumn 2025</p>	<p>Date &amp; Time: Thu May 15 13:13:36 AEST 2025 Position: 55 S 496684 5783709 Altitude: 26m Datum: AUSTRALIAN GEODETIC 1966 Azimuth/Bearing: 103° S77E 1881mils (True) Zoom: 1X 24016 West Sale OAT2 unmowed_post burn</p>  <p>OAT2_unmowed May 2025 post burn</p>



Date & Time: Tue Sep 10 11:36:39 AEST 2024  
Position: -038.09322° / +146.96239°  
Altitude: 24m  
Datum: AUSTRALIAN GEODETIC 1994 (GDA94)  
Azimuth/Bearing: 131° S49E 2329mils (True)  
Zoom: 1X  
West Sale Airport  
Photopoint OAT4



OAT4\_unmowed Spring 2024

Date & Time: Tue Nov 10 10:21:18 AEDT 2024  
Position: 55 S 494701 5783867  
Altitude: 20m  
Datum: AUSTRALIAN GEODETIC 1994 (GDA94)  
Azimuth/Bearing: 129° S51E 2293mils (Magnetic)  
Zoom: 1X  
West Sale Airport  
OAT4 summer 2024



OAT4\_unmowed Summer 2024

Date & Time: Tue Apr 8 12:36:11 AEST 2025  
Position: 55 S 494718 5783847  
Altitude: 26m  
Datum: AUSTRALIAN GEODETIC 1994 (GDA94)  
Azimuth/Bearing: 145° S35E 2578mils (True)  
Zoom: 1X  
West Sale Airport  
OAT4 un-mowed autumn



OAT4\_unmowed Autumn 2025

Date & Time: Thu May 15 13:16:40 AEST 2025  
Position: 55 S 494603 5783662  
Altitude: 26m  
Datum: AUSTRALIAN GEODETIC 1994  
Azimuth/Bearing: 140° S39E 2502mils (True)  
Zoom: 1X  
24018 West Sale  
OAT4 un-mowed post burn



OAT4\_unmowed May 2025 post burn

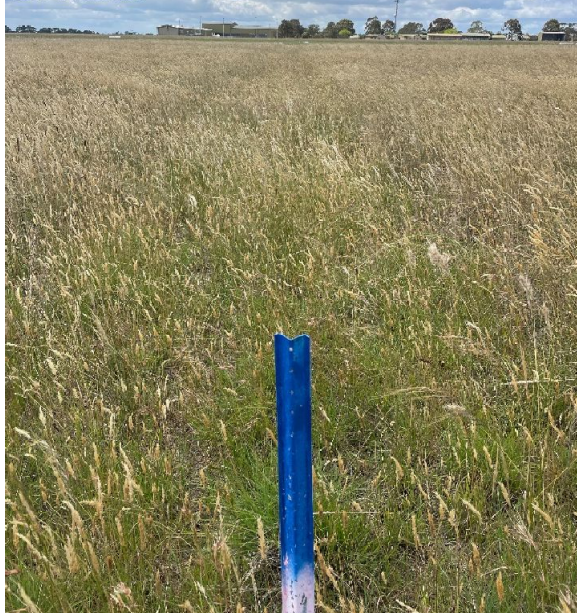


Date & Time: Tue Sep 10 11:29:37 AEST 2024  
Position: -038 09406° / +146 96103°  
Altitude: 27m  
Datum: AUSTRALIAN GEODETIC 1994 (GDA94)  
Azimuth/Bearing: 138° S42E 2453mils (True)  
Zoom: 1X  
West Sale Airport  
Photop: OAT9



OAT9\_mowed Spring 2024

Date & Time: Tue Dec 10 11:25:21 AEDT 2024  
Position: 55 S 496582 5783754  
Altitude: 25m  
Datum: AUSTRALIAN GEODETIC 1994 (GDA94)  
Azimuth/Bearing: 127° S50E 2258mils (Magnetic)  
Zoom: 1X  
West Sale Airport  
OAT9 summer 2024



OAT9\_mowed Summer 2024

Date & Time: Tue Apr 8 12:43:59 AEST 2025  
Position: 55 S 496583 5783751  
Altitude: 27m  
Datum: AUSTRALIAN GEODETIC 1994 (GDA94)  
Azimuth/Bearing: 137° S42E 2436mils (True)  
Zoom: 1X  
West Sale Airport  
OAT9 mowed autumn



OAT9\_mowed Autumn 2025

Date & Time: Thu May 15 10:19:54 AEST 2025  
Position: 55 S 496470 5783568  
Altitude: 30m  
Datum: AUSTRALIAN GEODETIC 1994  
Azimuth/Bearing: 121° S39E 2507mils (True)  
Zoom: 1X  
24018 West Sale  
19 mowed



OAT9\_mowed May 2025 post burn





**New photopoints established May 2025 in weedy south-west corner**



## Appendix 3 Species Inventory Lists

All flora species at the 10ha Protected Area recorded during the Species Inventory Walk

Species name	Common name	Time to detection
<i>Anthoxanthum odoratum</i> *	Sweet Vernal Grass	0:00:01
<i>Holcus lanatus</i> *	Yorkshire Fog	0:00:10
<i>Dactylis glomeratus</i> *	Cocksfoot	0:00:18
<i>Plantago lanceolata</i> *	Ribwort	0:00:35
<i>Briza maxima</i> *	Greater Quaking-grass	0:00:59
<i>Poa labillardieri</i>	Tussock Grass	0:01:20
<i>Themeda triandra</i>	Kangaroo Grass	0:01:30
<i>Dichelachne crinita</i>	Longhair Plume-grass	0:01:40
<i>Tricoryne elatior</i>	Yellow Rush-lily	0:02:00
<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass	0:02:10
<i>Rytidosperma racemosum</i>	Slender Wallaby-grass	12:02:30
<i>Caesia calliantha</i>	Blue Grass-lily	0:02:40
<i>Eragrostis trachycarpa</i>	Rough-grain Love-grass	0:03:00
<i>Sonchus olaraceous</i> *	Sow Thistle	0:04:00
<i>Hypochaeris radicata</i> *	Flatweed	0:04:50
<i>Agrostis venusta</i>	Graceful Bent	0:05:10
<i>Wahlenbergia multicaulis</i>	Many-tufted Bluebell	0:06:20
<i>Hypochaeris glabra</i> *	Smooth Cats-ear	0:06:40
<i>Lomandra filiformis</i>	Wattle Mat-rush	0:07:00
<i>Centaurium tenuiflorum</i> *	Slender Centaury	0:07:10
<i>Asperula conferta</i>	Common Woodruff	0:08:10
<i>Austrostipa rudis</i>	Veined Spear-grass	0:10:20
<i>Burchardia umbellata</i>	Milkmaids	0:10:30
<i>Distichlis distichophylla</i> *	Stinkweed	0:12:20
<i>Sonchus asper</i> *	Rough Sow Thistle	0:13:00
<i>Lythrum hyssopifolia</i>	Hyssop Loosestrife	0:13:10
<i>Briza minima</i> *	Lesser Quaking -grass	0:13:50
<i>Euchiton involucratu</i> s	Star Cudweed	0:15:00
<i>Haloragis heterophylla</i>	Variable Raspwort	0:15:30
<i>Wahlenbergia gracilis</i>	Australian Bluebell	0:16:15
<i>Bulbine bulbosum</i>	Bulbine Lily	0:16:50
<i>Romulea rosea</i> *	Onion weed	0:17:30
<i>Centaurium erythraea</i> *	Common Centuary	0:17:45
<i>Thelymitra pauciflora</i>	Sun Orchid	0:19:20
<i>Convolvus erubescens</i>	Pink Bindweed	0:19:30



Species name	Common name	Time to detection
<i>Acaena ovina</i>	Sheep's-burr	0:20:40
<i>Plantago gaudichaudii</i>	Narrow-leaf Plantain	0:22:00
<i>Hypericum gramineum</i>	Small St John's Wort	0:23:00
<i>Juncus holoschoenus</i>	Joint-leaf Rush	0:23:25
<i>Schoenus apogon</i>	Bog Sedge	0:27:20
<i>Rubus fruticosus</i> *	Blackberry	0:29:45
<i>Anthosachne scaber</i>	Common Wheatgrass	0:30:20
<i>Oxalis perennans</i>	Wood Sorrel	0:34:23
<i>Carex tereticaulis</i>	Hollow Sedge	0:37:31
<i>Leptorhynchus tenuifolius</i>	Wiry Buttons	0:44:41
<i>Calcocephalus citreus</i>	Lemon Beauty-heads	0:50:20
<i>Lysimachia arvensis</i> *	Scarlet Pimpernel	0:50:50
<i>Erigeron canadiensis</i> *	Fleabane	0:52:15
<i>Erigeron primulifolius</i> *	Rough Conyza	0:53:50
<i>Laphangium luteoalbum</i>	Jersey Cudweed	0:56:20

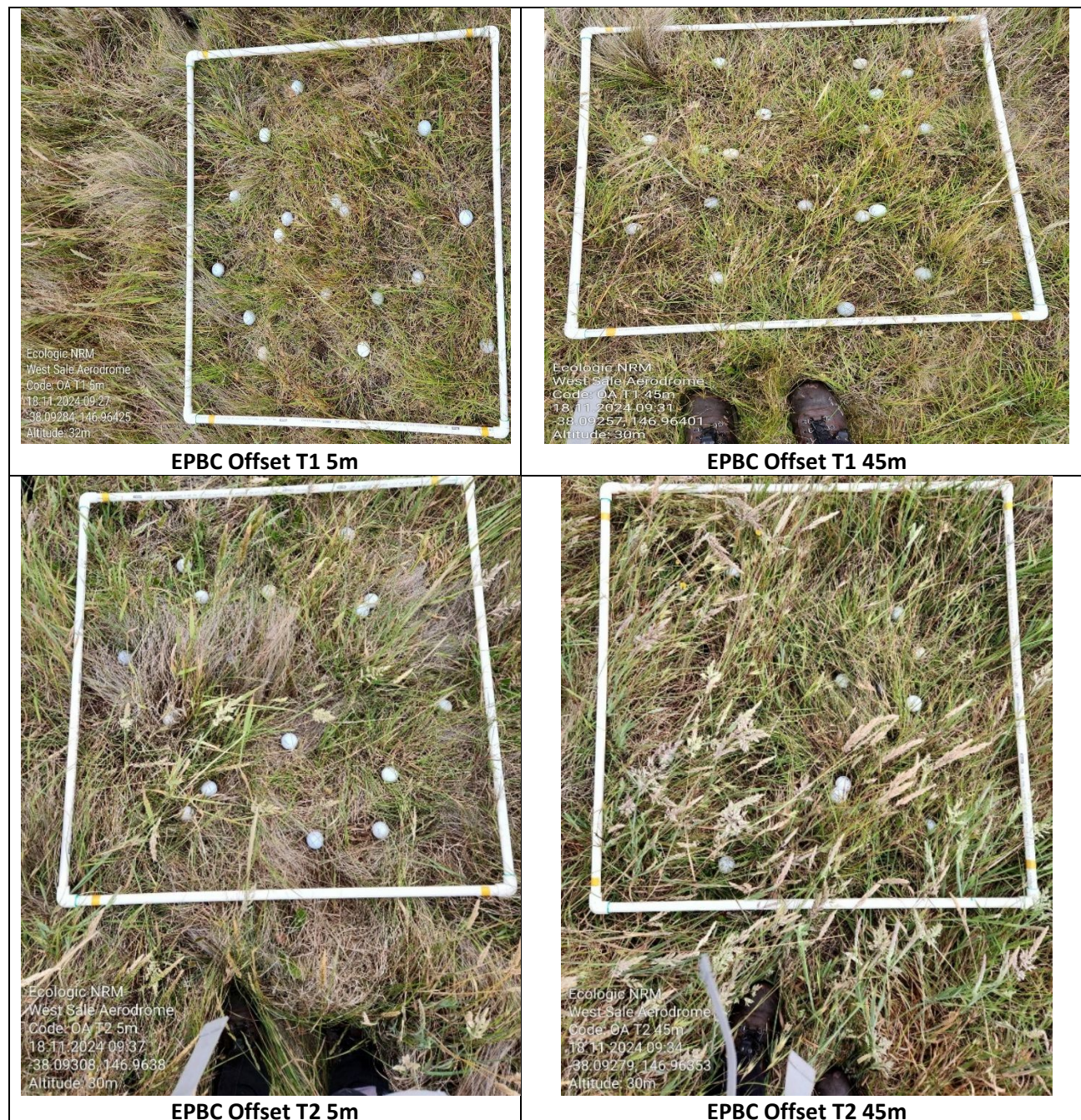
All flora species at the 3ha EPBC Offset recorded during the Species Inventory Walk

Species name	Common name	Time to detection
<i>Themeda triandra</i>	Kangaroo Grass	0:00:08
<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass	0:00:29
<i>Briza minima</i> *	Lesser Quaking -grass	0:00:40
<i>Rytidosperma racemosum</i>	Clustered Wallaby-grass	0:00:50
<i>Hypochaeris glabra</i> *	Smooth Cats-ear	0:06:10
<i>Anthoxanthum odoratum</i> *	Sweet Vernal Grass	0:01:10
<i>Austrostipa rudis</i>	Spear Grass	0:01:23
<i>Plantago lanceolata</i> *	Ribwort	0:01:35
<i>Holcus lanatus</i> *	Yorkshire Fog	0:01:45
<i>Dactylis glomeratus</i> *	Cocksfoot	0:20:20
<i>Paspalum dilitatum</i> *	Paspalum	0:20:40
<i>Poa labillardieri</i>	Tussock Grass	0:03:10
<i>Oxalis perennans</i>	Wood Sorrel	0:03:30
<i>Plantago gaudichaudii</i>	Narrow-leaf Plantain	0:03:40
<i>Juncus homalocaulis</i>	Wiry rush	0:03:56
<i>Rumex brownii</i>	Slender Dock	0:04:20
<i>Juncus subsecundus</i>	Finger rush	0:04:40
<i>Tricoryne elatior</i>	Yellow Rush-lily	0:04:50
<i>Dichelachne crinita</i>	Longhair Plume-grass	0:05:00

Species name	Common name	Time to detection
<i>Eragrostis trachycarpa</i>	Rough-grained Love-grass	0:05:20
<i>Briza maxima</i> *	Greater Quaking-grass	0:05:40
<i>Romulea rosea</i> *	Onion weed	0:06:20
<i>Hypochaeris radicata</i> *	Flatweed	0:06:40
<i>Agrostis capillaris</i> *	Brown Top-bent	0:07:50
<i>Wahlenbergia multicaulis</i>		0:09:20
<i>Caesia calliantha</i>	Blue Grass-lily	0:09:30
<i>Thelymitra pauciflora</i>	Sun Orchid	0:10:30
<i>Lomandra filiformis</i>	Wattle Mat-rush	0:10:50
<i>Schoenus apogon</i>	Bog Sedge	0:11:20
<i>Agrostis venusta</i>	Graceful Bent	0:40:10
<i>Euchiton japonicus</i>	Cudweed	0:12:10
<i>Centaureum tenuiflorum</i> *	Slender Centaury	0:12:20
<i>Erigeron canadiensis</i> *	Fleabane	0:15:20
<i>Cirsium arvensis</i> *	Spear Thistle	0:17:10
<i>Aira sp.*</i>	Hair Grass	0:18:20
<i>Laphangium luteoalbum</i>	Jersey Cudweed	0:18:50
<i>Euchiton involucatus</i>		0:19:00
<i>Lysimachia arvensis</i> *	Scarlet Pimpernel	0:19:25
<i>Convolvus erubescens</i>	Pink Bindweed	0:20:10
<i>Hypericum gramineum</i>	Small St John's Wort	0:20:40
<i>Wahlenbergia gracilis</i>	Australian Bluebell	0:29:10
<i>Burchardia umbellata</i>	Milkmaids	0:29:40



## Appendix 4 Biomass monitoring photographs







**EPBC Offset T3 5m**



**EPBC Offset T3 45m**



**EPBC Offset T4 5m**



**EPBC Offset T4 45m**





**EPBC Offset T5 5m**



**EPBC Offset T5 45m**



**EPBC Offset T6 5m**



**EPBC Offset T6 45m**





**EPBC Offset T7 5m**



**EPBC Offset T7 45m**



**EPBC Offset T8 5m**



**EPBC Offset T8 45m**





**EPBC Offset T9 5m**



**EPBC Offset T9 45m**

## Appendix 5. Weed species

All weeds noted in 2018 listed. New species recorded since then are in bold and species with a threat score of >13.2 in the Arthur Rylah are highlighted in red and have been considered high threat in recent years

R = Recorded T = Treated A = Absent

**HERBACEOUS/GRASSY WEED SPECIES (Woody weeds are listed separately below this table)**

Botanical name	Common name	High Threat	Sept 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Apr 2025	May 2025	June 2025	% cover OMP	% cover 2025
<b><i>Arcotheca calendula</i></b>	<b>Capeweed</b>	Y										<1	A
<b><i>Avena barbata</i></b>	<b>Bearded Oat</b>	Y										<1	A
<i>Cirsium vulgare</i>	Spear Thistle	Y			T	T	T			T		<1	<1
<i>Hypericum perforatum</i>	St John's Wort	Y										<1	A
<i>Agrostis capillaris</i>	Brown-top Bent-grass	Y			R	T	R		R			15	<1
<i>Aira spp.</i>	Hair Grass	Y			R	R						2	<1
<i>Cynodon dactylon</i> var. <i>dactylon</i>	Couch	Y							T	T	T	5	<1
<i>Cenchrus clandestinum</i>	Kikuyu	Y	T	T	R	R	R	T	T	T	T	5	<1
<i>Phalaris aquatica</i>	Toowoomba Canary Grass	Y		T		T						5	<1



Botanical name	Common name	High Threat	Sept 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Apr 2025	May 2025	June 2025	% cover OMP	% cover 2025
<i>Sporobolus indicus</i> <i>var. africanus</i>	Rat-tail Grass	Y										5	<1
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	Y	T	T	T	R	R					1	15
<i>Bromus catharticus</i>	Prairie Grass	Y										1	<1
<i>Erigeron canadiensis</i> and <i>bonariensis</i>	Fleabane	Y		T	T	T	T		T	T		1	<1
<i>Dactylis glomerata</i>	Cocksfoot	Y				T			T	T		1	<1
<i>Lolium arundinaceum</i>	Tall Fescue	Y			T							1	<1
<i>Holcus lanatus</i>	Yorkshire Fog Grass	Y	T	T	T	T	R		T	T	T	1	<5
<b><i>Juncus capitatus</i></b>	<b>Captitate Rush</b>	<b>Y</b>										<b>1</b>	<b>A</b>
<i>Paspalum dilatatum</i>	Paspalum	Y	T	T		R	R	T	T	T	T	1	<5
<i>Rumex dumosus</i>	Dock	Y				T						1	<1
<i>Solanum nigrum</i>	Blackberry Nightshade	Y										1	A
<b><i>Sonchus asper</i></b>	<b>Milk Thistle</b>	<b>Y</b>				T	T		T			<b>1</b>	<b>&lt;1</b>
<i>Sonchus oleraceus</i>	Sow Thistle	Y			T	T	T		T			1	<1

Botanical name	Common name	High Threat	Sept 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Apr 2025	May 2025	June 2025	% cover OMP	% cover 2025
<i>Briza maxima</i>	Large Quaking-grass	Y				R						1	<5
<i>Briza minor</i>	Lesser Quaking-grass	Y				R						1	<1
<i>Centaureum erythraea</i>	Common Centaury	Y			T	T	T					1	<1
<i>Hypochaeris glabra</i>	Flatweed	Y	T	T	T	T	T		T	T		1	<5
<i>Hypochaeris radicata</i>	Cat's Ear	Y	T	T	T	T	T		T	T		1	<5
<i>Lysimachia arvensis</i>	Pimpernel	Y			T	T						1	<1
<i>Plantago coronopus</i>	Buck's-horn Plantain	Y							R			1	<1
<i>Plantago lanceolata</i>	Ribwort	Y	R		T	T			T		T	1	<1
<i>Romulea rosea</i>	Onion Weed	Y	T		R							1	<1
<i>Rumex acetosella</i> spp. agg.	Sheep Sorrel											1	<1
<i>Trifolium arvense</i>	Hare's Foot Clover											1	A
<i>Trifolium repens</i> var. <i>repens</i>	White Clover											1	A
<i>Vulpia bromoides</i>	Squirrel-tail Fescue		R	R	R							1	A
<i>Erigeron primulifolius</i>	Rough Fleabane	Y	T		T	T				T		NA	<1

Botanical name	Common name	High Threat	Sept 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Apr 2025	May 2025	June 2025	% cover OMP	% cover 2025
<i>Dittrichia graveolens</i>	Stinkweed	Y	R		T							NA	<1
<i>Disa bracteata</i>	South African Orchid	Y										NA	<1
<i>Leontodon saxatilis</i> <sup>1</sup>	Hairy Hawkbit	Y				T						NA	<1
<i>Setaria sp.</i>	Pigeon grass	Y							T			NA	<1

<sup>1</sup> New record in 2024 NA= not applicable as species were not recorded on site at time of OMP

#### WOODY WEED SPECIES

Botanical name	Common name	High Threat	Sept 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Apr 2025	May 2025	June 2025	% cover OMP	% cover 2025
<i>Acacia implexa</i>	Lightwood	Y			T					T		NA	<1
<i>Kunzea eridoides</i>	Burgan	Y							T			NA	<1
<i>Lycium ferocissimum</i>	African Box Thorn	Y										<1	A
<i>Prunus.</i>	Fruit tree	Y	R	T								NA	<1
<i>Rubus fruticosus</i>	Blackberry	Y	R	R	R	R	R				T	<1	<1

NA= not applicable as species were not recorded on site at time of OMP