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# Tharbogang Quarry and Landfill Offset Monitoring Annual Monitoring Report 2019



**Lots 181 and 182 // DP 756035**

Prepared for: Griffith City Council

**6 January 2020**

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# Glossary and abbreviations

Acronym	Description
DNG	Derived native grassland
LLS	Local Land Services
MZ	Management Zone
OEH	Office of Environment and Heritage

# 1. Introduction

Ecoplanning was commissioned to prepare the Annual Monitoring Report 2019 to comply with the Conservation Agreement between the Minister Administering the *National Parks and Wildlife Act 1974* and Griffith City Council for Tharbogang Quarry and Landfill (2015). This report complies with Annexure D of the Conservation Agreement, to satisfy a commitment made to secure a biodiversity offset relating to the expansion of the existing landfill and quarry. The subject site is located at Lots 181 and 182 in Deposited Plan 756035 (known as Tharbogang Quarry and Landfill), approximately 10 km northwest of Griffith.

Monitoring of the Conservation Area is undertaken annually, with this report documenting year 4 of monitoring under the Conservation Agreement.

The Conservation Agreement requires that the annual monitoring report is to include:

- a description of all completed management actions undertaken in the previous 12 month period
- copies of all receipts from third party contractors engaged by the owner to undertake management actions listed in items 1 and 2 of Annexure C to the Conservation Agreement
- completed monitoring data sheets (including photographs) using the template provided in Table 4 of Annexure D to the Conservation Agreement (below) and also including quarterly inspection data and stock impact data collected by the owner
- a discussion of the changes recorded at photo monitoring points and quadrats
- a discussion of the condition of Conservation Values
- a discussion of effectiveness of any management actions implemented
- recommendations and proposed management actions to be performed in following year.

## 2. Monitoring methodology

Monitoring was consistent with Annexure D of the Conservation Agreement and previous monitoring, and included:

- Photos point sampling
- Collection of Biometric data and previous locations
- Fauna monitoring
- Walk through assessment.

Monitoring occurred from the 16 to 18 September 2019.

Four photos (one in each cardinal direction) were taken at each of the eight monitoring photo points and six Biobanking monitoring points. Notes were taken on the presence of weeds, erosion, vegetation condition. Vegetation condition and management issues were compared to previous years.

Floristic data were collected at each of the six Biobanking monitoring sites in accordance with the Biobanking Assessment Methodology (2014) and compared with baseline data (collected in 2015), data from 2018 and benchmark data.

Surveys for microchiropteran bats were conducted in each management zone. The sites surveyed were the same as those in 2016, 2017 and 2018. An Anabat Express and Anabat Swift were used for the survey. Echolocation calls were recorded over two nights and were activated 1 hour before sunset until 1 hour after sunrise.

Bird surveys were undertaken at the same sites as in 2016, 2017 and 2018: one site in DNG (MZ1), two in open woodland (MZ2) and two in woodland (MZ3) and one in *Callitris* Woodland. At each 2 ha site, a 20 minute survey was conducted in the morning and at dusk over two days. All birds seen or heard were recorded.

The Conservation Area was traversed to record opportunistic sightings within the Conservation Area. The current survey recorded weed species, evidence of pest animals, natural regeneration of previously disturbed areas and sightings of threatened species.

### 3. Completed management actions

Table 3.1: Management actions for Year 4, 2019 monitoring period.

Management action	Timing	Status
Monitoring Biobanking monitoring plots and photo points	Year 4	Complete – results of monitoring are provided
Recommend weed management thresholds and commence weed management actions in the Conservation Area in Year 1	Years 1 - 4	Weed management occurred during 2019
Pest animal control (local co-ordination with LLS and OEH)	Years 1 - 10	No pest animal control actions were undertaken.
	Years 1 – 4 Initial Rabbit Control	No pest animal control actions were undertaken. No Rabbits, evidence of Rabbits, were observed during the survey.
	Years 1-10 Fox Control	No pest animal control actions were undertaken. Foxes were observed in the Conservation Area.
	Years 1 – 10 Feral Goat Control	No pest animal control actions were undertaken. No Feral Goats, or evidence of Feral Goats were observed during monitoring.
	Years 1 – 10 Feral Cat Control	No pest animal control actions were undertaken. No Feral Cats, or evidence of Feral Cats, were observed during the survey.
Fire management hazard reduction burn	Years 1 – 10	No fire management actions were undertaken.
Maintain vehicle access to Conservation Area for fire management, weed and fencing management.	Year 2-10 Maintain tracks and fire breaks	Tracks were inspected during the monitoring period. No action was required
Fencing, gates and signage	Year 1	The boundary of the Conservation Area has been fenced and signage erected. Western fence line completed in 2017. The northern boundary fence completed in 2018.
	Year 2-10 – maintain fences and gates	Fences and gates re-inspected during monitoring.

<b>Management action</b>	<b>Timing</b>	<b>Status</b>
Quarterly inspections and stock management data	Years 1 - 10	Inspections were conducted in April, June, September and December 2019. No grazing occurred in year 4.
Annual Reports for Monitoring Program	Years 1 -10	Monitoring was conducted in September 2019.

## 4. Photo monitoring points and quadrats

*Photo point 1 (PP1) (from top left bearing N, E, S, W).*

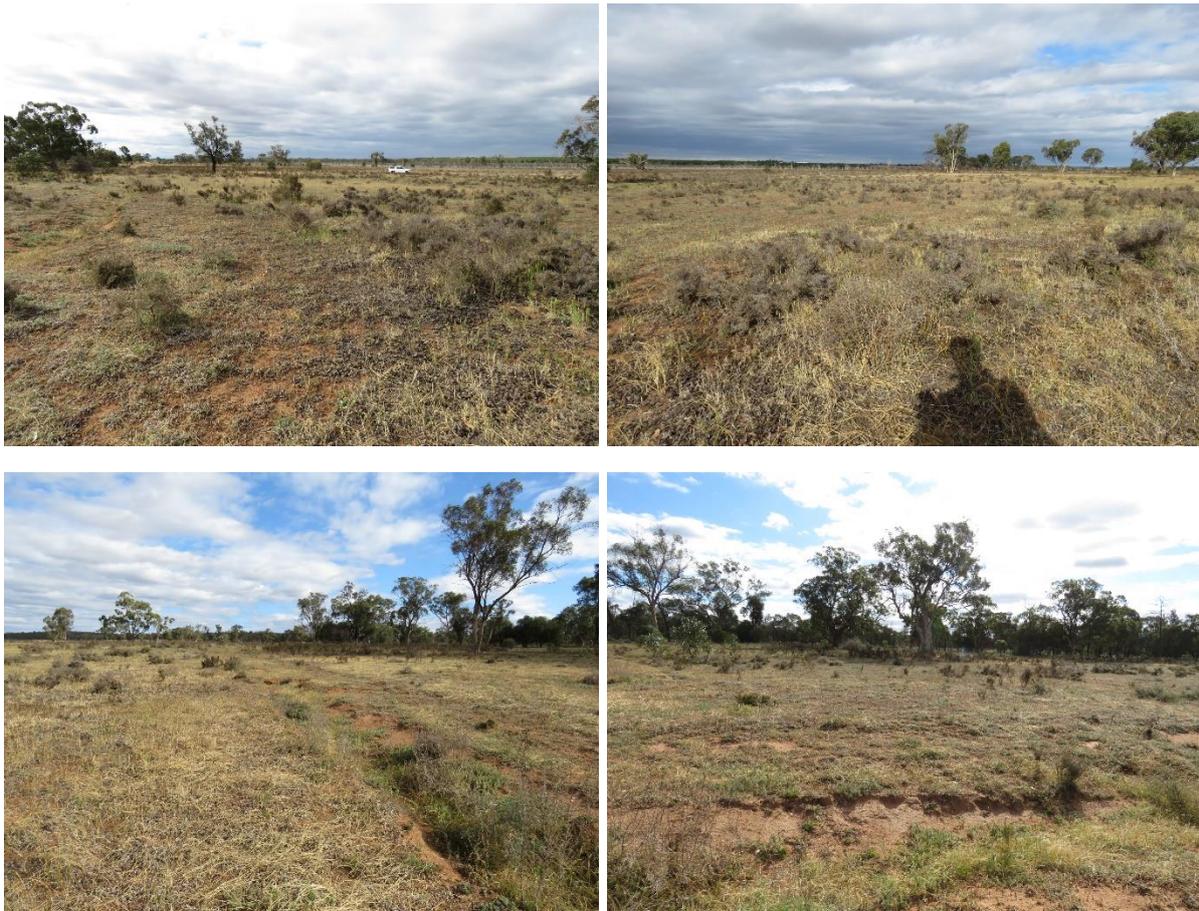
This photo point monitors an eroded channel and pasture weeds. During baseline survey erosion of the channel appeared stable and weeds were primarily *Echium plantagineum*\* (Paterson's Curse), *Arctotheca calendula*\* (Capeweed), *Hordeum leporinum*\* (Barley Grass) and *Romulea rosea*\* (Onion Grass).

Erosion: Monitoring in 2019 did not observe any active erosion.

Vegetation - general: Vegetation height and biomass was low due to below average rainfall. Some weeds that were previously dominant (*Arctotheca calendula*\* and *E. plantagineum*\*) provided a low cover in 2019.

Vegetation cover: Groundcover was estimated to be 42% in the area surrounding the photo point in 2019, which is higher than the groundcover in 2018 (30%), but lower than the estimated groundcover in 2017 (90%).

Canopy trees: Tree canopies appeared to be in good condition. There was a higher recruitment number of canopy species in 2019 (2/2) compared to 2018 (0/2).



*Photo point 2 (PP2) (from top left bearing N, E, S, W)*

Photo point monitors an eroded channel, pasture weeds and woodland heath. During baseline survey common weeds were *Echium plantagineum*, *Hordeum leporinum*, *Arctotheca calendula* and *Opuntia stricta*. The canopy was in a relatively good condition with scattered regeneration of *Callitris glaucophylla* and eucalypts. Erosion appeared inactive along the drainage line and stabilised by vegetation cover.

Erosion: Monitoring in 2019 did not observe active erosion.

Vegetation – general: Vegetation height was similar to plant height in 2018. A predominantly dry year and cooler start to spring resulted in a similar biomass to 2018.

Vegetation cover: The groundcover was slightly more in 2019 (~41%) than in 2018 (~20%) in the area surrounding the photo point. Canopy cover was slightly lower in 2019 (10%) to 2018 (15%), while midstorey cover was the same (10%).

Weeds: Contractors had sprayed *Opuntia* sp., however, plants still appeared “greenish” and were not completely dead.

Canopy trees: Tree canopies appeared to be in good condition. There was scattered regeneration of both *Callitris glaucophylla* and *Eucalyptus populnea*. The recruitment of canopy species was higher in 2019 compared to 2018.

Rubbish: Rubbish has blown in from the tip.



*Photo point 3 (PP3) (from top left bearing N, E, S, W)*

Photo point monitors a weed infested area, which during baseline survey included priority weeds *Lycium ferocissimum*, *Marrubium vulgare* and *Opuntia* sp. and other weeds such as *Hordeum leporinum*, *Echium plantagineum* and *Arctotheca calendula*. The eucalypt canopy was in good condition with regeneration observed around the photo point.

Vegetation - general: Vegetation height was higher than in 2018, with an apparent higher cover of grasses.

Vegetation cover: The groundcover was estimated to be ~40% groundcover in the area surrounding the photo point, with a high cover of litter. Canopy and midstorey cover was similar to previous years.

Weeds: Contractors had sprayed *Marrubium vulgare* and *Lycium ferocissimum* and all individuals found were dead.

Canopy trees: Regeneration of *Eucalyptus populnea* was observed. There were no signs of canopy dieback.



*Photo point 4 (from top left bearing N, E, S, W)*

Photo point monitors priority weeds and eucalypt health. Priority weeds observed in the baseline survey included *Lycium ferocissimum*, *Marrubium vulgare* and *Opuntia* sp. Other weeds at the site included *Echium plantagineum* and *Hordeum leporinum*. Some minor dieback of eucalypts was observed in the south, with scattered regrowth of *Callitris* observed in the west.

Vegetation - general: Vegetation height was similar to 2017. A predominantly dry year maintained a low biomass.

Vegetative cover: The ground cover was estimated to be 50% in the area surrounding the photo point, which is the same as the 2018 estimate. Litter cover continued to be high, as in previous years, at ~45%. There was no change to canopy and midstorey cover.

Weeds: *Lycium ferocissimum* were still dead. *Marrubium vulgare* were in moderate condition, still appearing affected by spraying but still alive.

Canopy trees: There were no signs of canopy dieback. Canopy trees appeared to be in good condition.



*Photo point 5 (from top left bearing N, E, S, W)*

Photo point monitors priority weeds and eucalyptus health. Vegetation was dominated by areas of low growing, native dominated ground covers. Canopy was in good condition with no evidence of dieback and eucalypt recruitment observed in the south. The threatened species Superb Parrot and Grey-crowned Babbler were observed in the area.

Vegetation – general: Vegetation height was higher than in 2019 than in 2018.

Vegetative cover: The ground cover was moderate in the area surrounding the photo point in 2019 (35%). The canopy and midstorey cover were estimated at 10% and 1%, respectively, as in 2017.

Weeds: *Marrubium vulgare* had been treated but have resprouted. *Hordeum leporinum* and *Sisymbrium erysimoides* were also present in the ground layer.

Canopy trees: There were no signs of canopy dieback. Canopy trees appeared to be in good condition.



*Photo point 6 (from top left bearing N, E, S, W)*

Photo point monitors priority weeds and eucalyptus health. During baseline survey dense infestations of the priority weed *Opuntia* sp. were recorded. Significant effort has been applied to the area to remove *Opuntia* sp. from the area.

Erosion: Monitoring in 2019 did not observe active erosion around the drainage line.

Vegetation – general: Vegetation height low as in previous years. *Opuntia* sp. that were visible in previous years are dead and/or have been removed. A low cover of *Echium plantagineum* and *Arctotheca calendula* was recorded.

Vegetative cover: The ground cover was moderate in the area surrounding the photo point (40%). The canopy cover was estimated at 10% and midstorey at 5%.

Weeds: *Opuntia* sp. had been predominantly successful, with several plants removed from site.

Canopy trees: There were no signs of canopy dieback. Regeneration of *Eucalyptus populnea* and *Callitris glaucophylla* were observed. Canopy trees appeared to be in good condition.

Rubbish: Rubbish has blown in from the tip.



*Photo point 7 (from top left bearing N, E, S, W)*

Photo point monitors eucalyptus health and regrowth, and general woodland health. During baseline monitoring, regrowth of *Callitris* was observed but did not form a thicket, with stags present. Eucalypt regrowth was also present with minor dieback in the canopy. The vegetation is generally low and sparse with few weeds.

Vegetation – general: Biomass was low with a low cover of weeds.

Vegetative cover: The vegetation ground cover was low (~21%) in the area surrounding the photo point. Estimated canopy cover was 5% and the midstorey cover was 10%.

Threatened species sightings: One vulnerable species, *Phoenicia goodenovii* (Red-capped Robin), was recorded.

Weeds: *Lycium ferocissimum* was recorded with *Hordeum leporinum*, *Echium plantagineum* and *Arctotheca calendula* also present.

Canopy trees: There were no new signs of canopy dieback and canopy regeneration is present. Canopy trees appeared to be in good condition.



*Photo point 8 (from top left bearing N, E, S, W)*

Photo point monitors priority weeds, perimeter track, pasture weeds and eucalypt health. During baseline survey the priority weed *Lycium ferocissimum* was recorded, with a high abundance of other weeds (*Arctotheca calendula*, *Hordeum leporinum* and *Sisymbrium erysimoides*) in the area. Eucalypts were generally healthy with no sign of dieback, except for minor dieback in advanced regrowth in the south.

Vegetation – general: Vegetation height was low. A predominantly dry year maintained a reduced biomass.

Vegetative cover: The ground cover was approximately 42% and weeds species were dominant surrounding the photo point. The canopy cover estimate was consistent at 5% and the midstorey cover was approximately 1%.

Fire breaks: In good condition.

Weeds: Contractors had sprayed *Lycium ferocissimum* and *Marrubium vulgare*. There was minor resprouting of *Lycium ferocissimum*.

Canopy trees: There were no signs of canopy dieback. Regeneration of *Eucalyptus populnea* and *Callitris glaucophylla* were observed. Canopy trees were in good condition.



*Photo point 9 (BOA1) (from top left bearing N, E, S, W)*

This photo point monitors Biobanking plot located in open woodland. During baseline survey the plot was in good condition with a high abundance and diversity of native flora (*Austrostipa scabra*, *Goodenia pusilliflora* and *Hyalosperma semisterile*) with a low cover of weeds (24%). Low levels of dieback in eucalypt were recorded within the area. Regrowth of *Callitris* was scattered.

Vegetation – general: *Austrostipa scabra* and *Rytidosperma* sp. were the dominant native grasses in the plot, and *Hyalosperma semisterile* had a cover of 10%. A full species list is provided in **Appendix A**.

Vegetative cover: There was disparity between data collected along the 50 m transect and total cover estimates from plot data. Plot data estimated that vegetative cover was very low at approximately 30-35%, while the transect determined native vegetation cover to be >80%. This is an artefact of the systematic sampling approach along the transect. Exotic cover was estimated at 30% along the transect. In 2017, native ground cover was 56%, and exotic cover was 6%. The canopy and midstorey were present, but did not score along the 50 m transect.

Canopy trees: Regeneration of *Eucalyptus populnea*, *Callitris glaucophylla* and *Pittosporum angustifolium* were observed. Canopy trees were in good condition.

Rubbish: Rubbish had blown from the tip into the area.



*Photo point 10 (BOA2) (from top left bearing N, E, S, W)*

This photo point monitors a Biobanking plot located in woodland. During baseline survey the plot had a high cover of weeds (*Bromus* sp., *Vulpia* sp., *Echium plantagineum*, and *Hypochaeris radicata*), but high diversity of native flora (*Austrostipa scabra* and *Rytidosperma* sp.). The area was generally in good health with no signs of dieback.

Vegetation – general: Vegetation height low. A high cover of native species was present with *Austrostipa scabra*, *Callitris glaucophylla*, *Hyalosperma semisterile*, *Rhodanthe diffusa* and *Rytidosperma* sp. common, but only composed about 6% of the ground layer. The exotic species *Echium plantagineum* and *Arctotheca calendula* were common and composed 15% of the ground layer. A full species list is provided in **Appendix A**.

Vegetative cover: The native ground cover was higher than previous years with 38% cover along the transect in the biometric plot. Exotic cover increased to 36% in 2019.

Canopy trees: There were no signs of canopy dieback. Regeneration of *Callitris glaucophylla* was observed. Canopy trees appeared to be in good condition. Growth is noted in regenerating canopy species.

Rubbish: Rubbish had blown from the tip into the area.



*Photo point 11 (BOA3) (from top left bearing N, E, S, W)*

This photo point monitors Biobanking plot located in open woodland. During baseline survey the plot was in good condition with a high abundance and diversity of native flora (*Austrostipa scabra* and *Goodenia pusilliflora*) with a moderate cover of weeds (*Vulpia* sp. and *Arctotheca calendula*).

Vegetation – general: *Austrostipa scabra*, *Rytidosperma* sp., *Goodenia pusilliflora*, *Calotis hispidula*, *Rhodanthe diffusa* and *Hyalosperma semisterile* were common ground covers species. The exotic species *Arctotheca calendula* and *Echium plantagineum* were the most common weeds. Native species richness was the highest recorded since monitoring commenced (n=36) (**Table 4.1**). A full species list is provided in **Appendix A**.

Vegetative cover: The native ground cover estimated in the plot was approximately 30-35% while transect data was approximately 88% cover in the biometric plot in 2018. Exotic cover was approximately 3% in the lot and 48% along the transect.

Canopy trees: There were no signs of canopy dieback. Regeneration of *Callitris glaucophylla* and *Eucalyptus populnea* were observed. Canopy trees appeared to be in good condition.



*Photo point 12 (BOA4) (from top left bearing N, E, S, W)*

This photo point monitors a Biobanking plot located in derived native grassland (DNG) and was a former gravel extraction pit. During baseline survey both native and exotic vegetation were established within the photo monitoring point (*Austrostipa scabra* and *Rytidosperma* sp. dominant), including young canopy species. The priority weed *Opuntia* sp. was present.

Vegetation – general: Vegetation height was low. *Austrostipa scabra* and *Rytidosperma* sp. were dominant ground cover, and each exotic species recorded was estimated to have a cover of 1% or less, with relatively low abundance. Native species richness was the highest recorded since monitoring commenced (n=29) (**Table 4.1**). A full species list is provided in **Appendix A**.

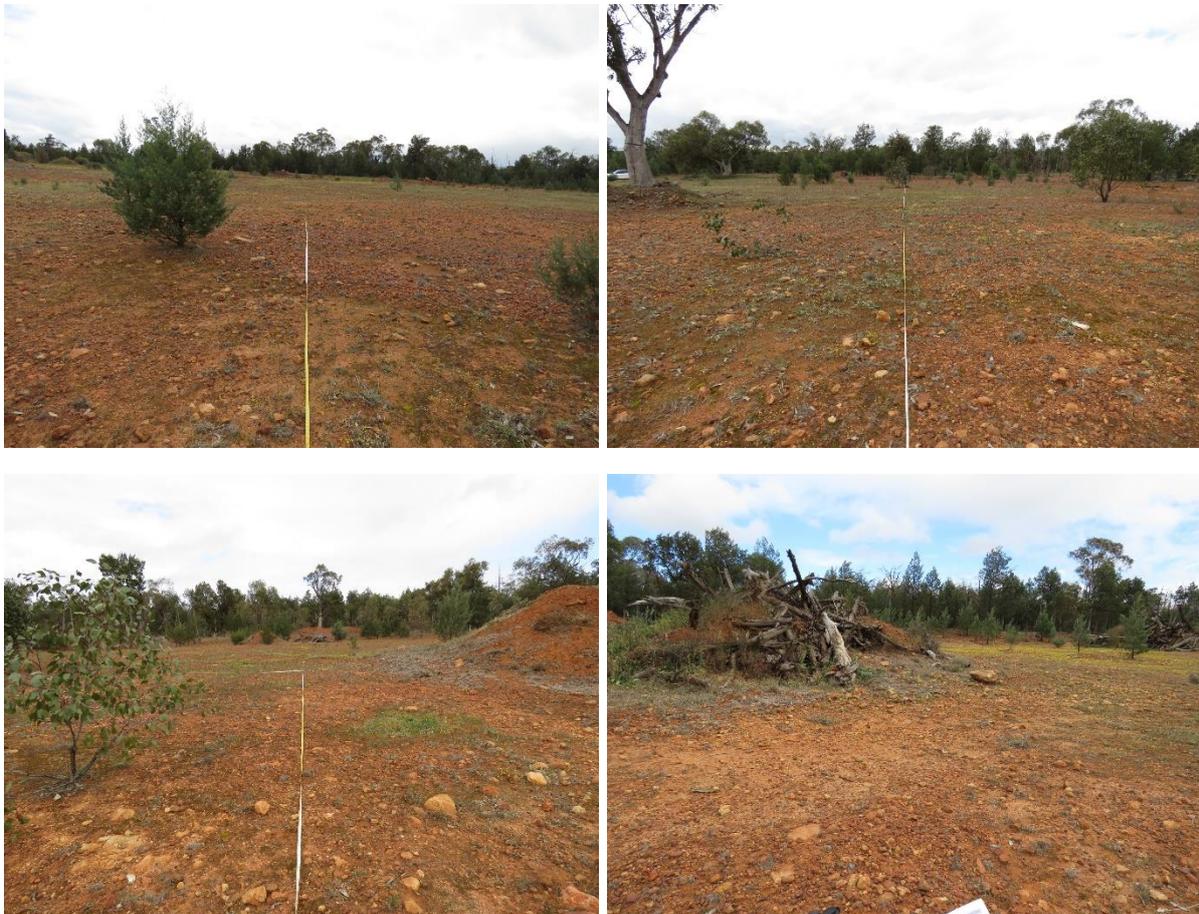
Vegetative cover: The native ground cover was low in the plot (~5%) and about 72% in the biometric plot. Exotic cover was low in the plot but 28% along the transect.

Weeds: *Opuntia* sp. in the plot was still living.

Threatened species sightings: The vulnerable species, *Pomatostomus temporalis temporalis* (Grey-crowned Babbler) was recorded.

Perimeter trail: The perimeter trail near the site had been regraded since 2016 monitoring.

Canopy trees: Regeneration of *Eucalyptus populnea* and *Callitris glaucophylla* were observed. Growth is noted in the regenerating canopy species from 2015.



*Photo point 13 (BOA5) (from top left bearing N, E, S, W)*

This photo point monitors Biobanking plot located in a *Callitris* thicket. The start point is located on the edge of the thicket so that an increase in the size of the thicket to the west can be observed. During baseline survey *Callitris* were mostly low growing resulting in a “lock-up”, composed of dense *Callitris* to 4 m and 40% cover. The groundcover comprised both native and exotic species (*Austrostipa scabra*, *Cheilanthes sieberi*, *Stuartina muelleri*, *Hordeum leporinum* and *Sisymbrium erysimoides* common).

Vegetation – general: Vegetation ground cover within the plot was low, with weeds, such as *Arctotheca calendula* and *Echium plantagineum* common. *Rhodanthe pygmaea*, *Austrostipa scabra* and *Rytidosperma* sp. had the highest cover. A full species list is provided in **Appendix A**.

Vegetative cover: The native ground cover was 13% in the plot and 86% along the transect. Exotic cover was 20% in the plot and 36% along the transect increased.

Weeds: *Opuntia* sp. was recorded in the plot.

Canopy trees: Regeneration of *Callitris glaucophylla* and *Eucalyptus populnea* were observed.

Threatened species sightings: Two vulnerable species, *Pomatostomus temporalis temporalis* (Grey-crowned Babbler) and *Phoenicia goodenovii* (Red-capped Robin) were recorded.

Perimeter trail: The perimeter trail is in good condition.



*Photo point 14 (BOA6) (from top left bearing N, E, S, W)*

Photo point monitors Biobanking plot located in woodland. During the baseline survey the plot had a high cover of weeds (*Arctotheca calendula*, *Bromus* sp., *Echium plantagineum* and *Medicago* sp.), but also had a high diversity of native flora (*Dichopogon fimbriatum*, *Austrostipa scabra*, *Triptilodiscus pygmaea* and *Stuartina muelleri*). The area was generally in good health with some old stags present.

Vegetation – general: Weeds were the most common ground cover, dominated by *Arctotheca calendula*. There were a number of native species recorded, with *Austrostipa scabra* and *Rytidosperma* sp. the most common species. A full species list is provided in **Appendix A**.

Vegetative cover: The native ground cover was 16% cover in the biometric plot and 54% along the transect. Exotic cover was high in the plot and 56% along the transect.

Weeds: *Opuntia* sp. had not been treated.

Canopy trees: There were no signs of canopy dieback. Regeneration of *Callitris glaucophylla* and *Eucalyptus populnea* were observed. Canopy trees appeared to be in good condition.



Table 4.1: Plant community type benchmarks and quadrat scores as at September 2019 (in bold), with the range of values from monitoring periods across all years (in brackets). Values within benchmark are highlighted in green.

Quadrat number	Native species richness	Overstorey cover %	Mid-storey cover %	Ground cover – grasses %	Ground cover – shrubs %	Ground cover – other %	Exotic cover	Number of trees with hollows	Proportion overstorey regen.	Total length of fallen logs (m)
<i>Benchmark:</i>	>=23	14-27	33-38	5-22	0-21	0-20	N/A	>=3	1	>=33
BOA1	<b>38</b> (26-38)	<b>0</b> (0)	<b>0.5</b> (0.5-5)	<b>62</b> (10-72)	<b>0</b> (0-30)	<b>80</b> (15-80)	<b>30</b> (6-52)	<b>0</b> (0)	<b>1</b> (0-1)	<b>0</b> (0-0.5)
BOA2	<b>36</b> (22-41)	<b>0</b> (0-4)	<b>6</b> (4-12.1)	<b>4</b> (0-6)	<b>4</b> (0-4)	<b>34</b> (0-34)	<b>36</b> (2-52)	<b>0</b> (0)	<b>0.67</b> (0-0.67)	<b>51</b> (37-51)
BOA3	<b>36</b> (22-36)	<b>0</b> (0-2.1)	<b>4</b> (1.1-5)	<b>20</b> (10-52)	<b>4</b> (0-12)	<b>68</b> (4-68)	<b>48</b> (10-78)	<b>0</b> (0)	<b>1</b> (0-1)	<b>5</b> (2-5)
BOA4	<b>29</b> (21-29)	<b>0</b> (0)	<b>3</b> (0-3)	<b>22</b> (5-48)	<b>4</b> (0-4)	<b>50</b> (5-50)	<b>28</b> (2-28)	<b>0</b> (0)	<b>1</b> (0-1)	<b>0</b> (0)
BOA5	<b>34</b> (20-38)	<b>0</b> (0)	<b>11.5</b> (11.5-30.5)	<b>8</b> (0-16)	<b>0</b> (0-1)	<b>78</b> (0-78)	<b>36</b> (4-42)	<b>0</b> (0)	<b>1</b> (0-1)	<b>5</b> (1-5)
BOA6	<b>28</b> (18-36)	<b>23.5</b> (14.5-23.7)	<b>0</b> (0-17.5)	<b>16</b> (4-16)	<b>8</b> (0-8)	<b>38</b> (0-38)	<b>56</b> (2-70)	<b>1</b> (1)	<b>1</b> (0-1)	<b>22</b> (14-22)

## 5. Condition of conservation values

Conservation values refers to the biodiversity values of the Conservation Area and are specified in Annexure B of the Conservation Agreement.

Despite low annual rainfall, Native Species Richness was within benchmark at all sites. Only BOA 1 was within benchmark for Native Species Richness in 2018.

The cover of Ground Cover Shrubs was within benchmark at all sites, while the cover of Ground Cover Grasses was within benchmark for sites BOA 3 to 6.

The cover of Ground Cover Other was well above benchmark, which was much higher than 2018 data. Scores for this attribute along the 50 m transect were the highest recorded since monitoring commenced. *Calotis hispidulus*, *Rhodanthe diffusa* and *Hyalosperma semisterile* were dominant Ground Cover Other species. Overstorey cover and midstorey cover was similar to previous years.

The cover of exotic species was much higher than 2018 data. *Arctotheca calendula* and *Echium plantagineum* were common at most sites and were the species that primarily contributed to an increased score in exotic species cover.

**Figure 6.1** illustrates the distribution of weeds in the Conservation Area. Several weeds were dead or not found during the survey. Follow up spraying is required for some weeds as some have resprouted or remain untreated. Weed control has proven to be effective for most *Lycium ferocissimum* (African Boxthorn), although some have resprouted. Many of the *Opuntia stricta* were dead and/or had been removed from site, however, there are several small “pups” that will need treatment/removal. Several *Marrubium vulgare* had been sprayed, but there was some regrowth on some plants that require follow up treatment. Very few *Xanthium spinosum* were found in the 2019 survey. As an annual species, it is presumed that conditions were not suitable for the species to germinate and grow in 2019.

The 2019 survey recorded 42 species of birds within the Conservation Area during the bird surveys with three additional species recorded incidentally (**Appendix A**). Two of these species are listed under the *Biodiversity Conservation Act 2016* (Grey-crowned Babbler and Robin and Superb Parrot), and three species (Rufous Songlark, Little Raven and White-winged Triller) were recorded for the first time. However, it is likely that there has been confusion or misidentification of *Corvus* species. Previously, Little Crow (*Corvus bennetti*) has been observed on site, however, closer analysis of calls during the 2019 survey identified Little Raven (*Corvus mellori*). Australian *Corvus* species are difficult to identify and calls are the most reliable means of identification. Nevertheless, the calls of Little Crow and Little Raven have many similarities.

Only one species, Common Starling, is considered a pest species. Full species list in **Appendix A**.

The 2019 survey recorded 13 species of microbat within the Conservation Area during bat surveys (**Appendix A**). This is five more than the 2018 survey which recorded eight species of microbat. Two threatened microbats were recorded that have not been previously recorded: Little Bent-winged Bat (*Miniopterus australis*) and Large Bent-winged Bat (*Miniopterus orianae oceanensis*).

## 6. Effectiveness of management actions

The following management actions have been undertaken within the Conservation Area in the past twelve months.

### 6.1 Monitoring Biobanking monitoring plots and photos points

Monitoring of Biobanking monitoring plots and photo points was undertaken in the 2019 period. Monitoring methodology followed the management action outlined in Table 4 Annexure C Monitoring Program of the Conservation Agreement (2015) and **Table 3.1** of this report. No significant deviations from baseline monitoring occurred in the 2019 monitoring period.

### 6.2 Annual reports for monitoring program

This Annual Monitoring Report meets the specifications in Annexure D Monitoring Program of the Conservation Agreement (2015).

### 6.3 Weed management

Weed management occurred on the 10-11 April, 25-26 June, 16 and 31 July 2019 (**Appendix D**). Previous weed treatment is evident with many weeds found dead or not found during the survey (**Figure 6.1**). Some *Opuntia stricta* had been treated and removed from the Conservation Area. Resprouting was observed on *Lycium ferocissimum* (African Boxthorn) and *Marrubium vulgare* (Horehound) and following up spraying is required.

Most of the *Xanthium spinosum* (Bathurst Burr) observed in 2018 were not recorded in 2019. This is likely to weather conditions over the previous 12 months.

**Figure 6.2** shows the weeds that require treating (i.e. not the weeds that were recorded as dead or not found).

### 6.4 Pest management

There was no evidence of Rabbits, Feral Cat or Feral Goat observed during the monitoring program. Foxes were observed during quarterly inspections and the monitoring period. Pest control measures have not commenced.

### 6.5 Fire trail and vehicle access

All trails were in fair to good condition.

### 6.6 Fencing

All fencing was observed to be in good condition and working order.

## 6.7 Quarterly inspections

Quarterly inspections of the Conservation Area were conducted in April, June, September and December 2019 by Riverina Agriconsultants. The inspections include commentary on:

- Erosion
- Weeds
- Vegetation cover
- Litter cover
- Dieback
- Soil stability
- Feral animals

The only actions arising from the quarterly inspections were to monitor and control weeds.

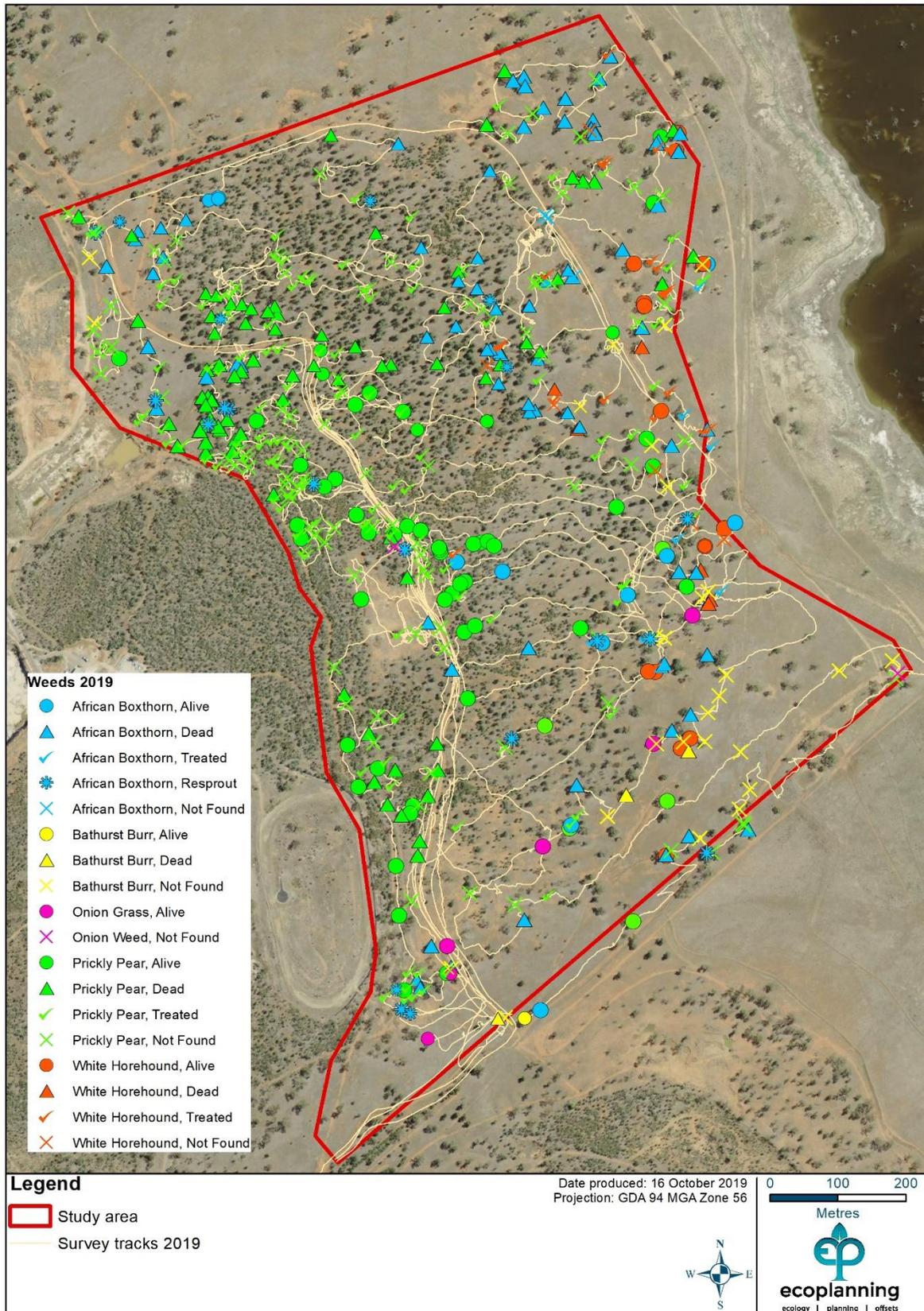


Figure 6.1: Weed observations in the Conservation Area.

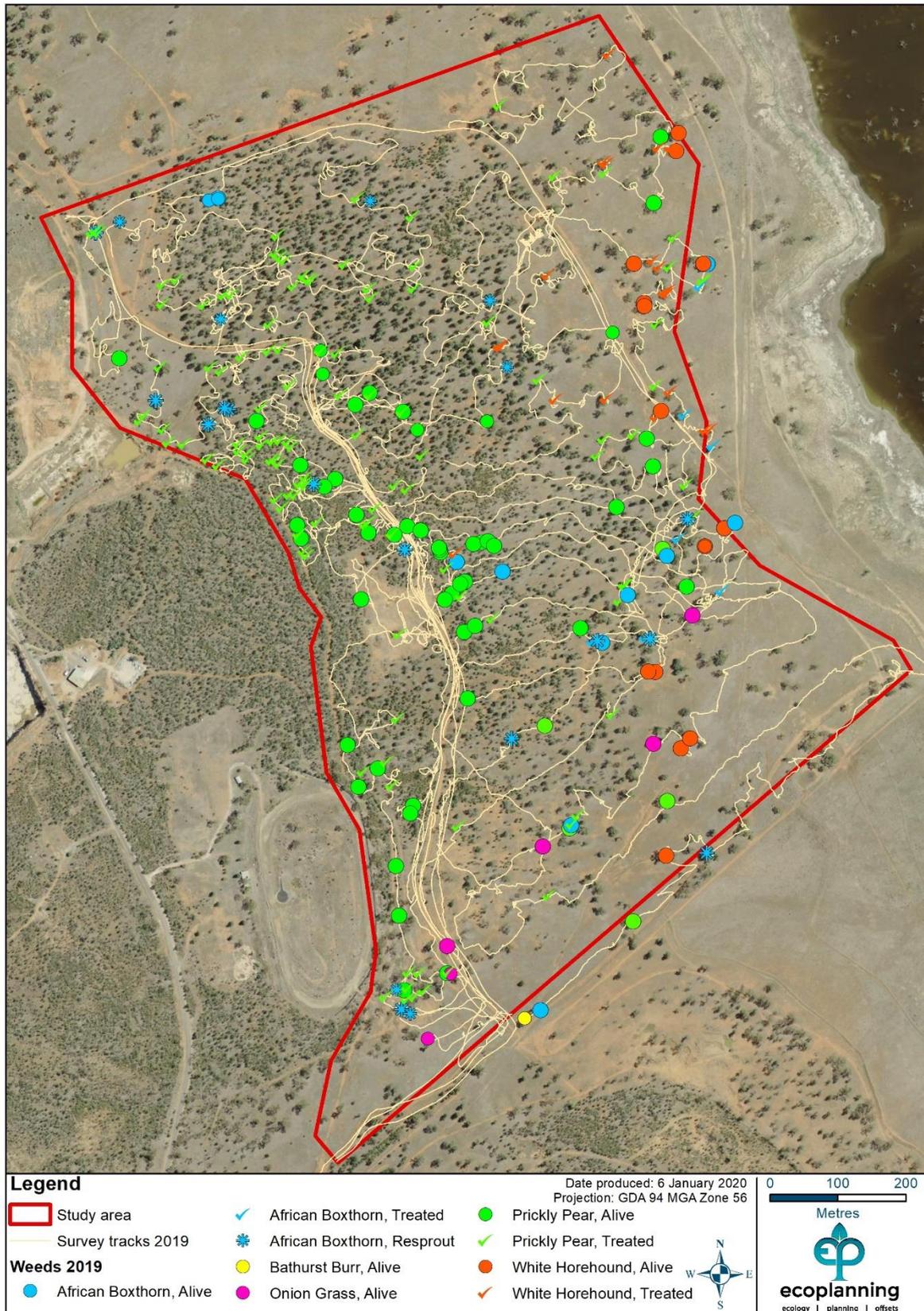


Figure 6.2: Weeds recorded as living, treated or resprouting in the Conservation Area.

## 7. Recommendations

The following is recommended for the Conservation Area:

- Fox control is recommended for the Conservation Area in accordance with the Conservation Agreement.
- Conduct secondary treatment for *Lycium ferocissimum*, *Opuntia* sp. and *Marrubium vulgare* as required. Consider digging out small *Opuntia* sp. rather than spraying.
- Conduct primary treatment for *Xanthium spinosum* should weather conditions in summer result in plant germination.
- Maintain quarterly inspections. In particular, monitoring weed growth along the northern perimeter track.

# Appendix A: Species list

## Biobanking plot species lists

Species Name	Common Name	BOA1				BOA2				BOA3				BOA4				BOA5				BOA6					
		2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019		
<b>Exotic species</b>																											
<i>Aira cupaniana</i>																			x					x			
<i>Arctotheca calendula</i>	Capeweed	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x	x	x	x	
<i>Bromus rubens</i>							x				x		x		x		x				x		x			x	
<i>Bromus sp.</i>			x		x	x	x	x	x	x	x			x	x			x	x	x		x	x	x	x	x	
<i>Capsella bursa-pastoris</i>	Shepherd's Purse												x													x	
<i>Carthamus lanatus</i>	Saffron Thistle												x		x	x	x					x	x				
<i>Cirsium vulgare</i>	Spear Thistle																	x									
<i>Echium plantagineum</i>	Patterson's Curse	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x			x	x	x		x	
<i>Eragrostis ep.</i>																									x		
<i>Erodium cicutarium</i>	Common Crowfoot										x																
<i>Hedypnois rhagadioloides</i>	Cretan Weed	x			x						x			x	x												
<i>Hordeum leporinum</i>	Barley Grass	x	x			x	x		x	x												x	x	x	x		
<i>Hypochaeris glabra</i>		x				x	x					x												x	x		
<i>Hypochaeris radicata</i>	Catsear	x	x		x	x	x		x	x	x		x	x	x							x	x	x		x	
<i>Lactuca serriola</i>	Prickly Lettuce		x			x	x																	x			
<i>Leptorhynchos sp.</i>					x																						
<i>Lolium rigidum</i>	Wimmera Ryegrass						x		x															x	x		x

Tharbogang Quarry and Landfill Offset Monitoring 2019

Species Name	Common Name	BOA1				BOA2				BOA3				BOA4				BOA5				BOA6			
		2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019
<i>Lycium ferocissimum</i>	African Boxthorn				x																				
<i>Medicago laciniata</i>	Cut-leaved Medic	x	x	x	x					x	x	x	x					x					x		x
<i>Medicago minima</i>	Woolly Burr Medic				x	x	x	x	x				x	x	x		x								
<i>Medicago truncatula</i>	Barrel Medic		x	x	x		x	x	x	x	x			x	x		x			x				x	x
<i>Medicago</i> sp.						x											x	x				x			
<i>Opuntia stricta</i>															x		x		x		x		x		
<i>Opuntia</i> sp.	Prickly Pear													x		x			x				x		
<i>Pentaschistis airoides</i>	False Hairgrass						x		x				x								x				x
<i>Raphanus raphanistrum</i>	Wild Radish					x																			
<i>Romulea rosea</i>	Onion Grass				x			x	x		x	x	x							x	x			x	x
<i>Silene tridentata</i>	Catchfly													x			x					x			
<i>Sisymbrium erysimoides</i>	Smooth Mustard	x				x	x		x	x				x			x	x				x	x		x
<i>Sisymbrium irio</i>	London Rocket	x				x			x													x			x
<i>Sonchus oleraceus</i>	Common Sowthistle	x			x	x			x	x			x	x			x	x				x	x		x
<i>Trifolium arvense</i>	Haresfoot Clover					x	x		x	x			x					x			x	x	x		x
<i>Trifolium glomeratum</i>	Clustered Clover						x				x							x					x		
<i>Trifolium</i> sp.									x				x									x			x
<i>Veronica arvensis</i>	Wall Speedwell					x				x								x							
<i>Vulpia myuros</i>	Rat's Tail Fescue								x				x												
<i>Vulpia</i> sp.		x	x	x	x	x	x	x		x	x	x		x	x		x	x	x			x	x	x	x
Unknown dead thistle																									
Unknown grass													x												

Tharbogang Quarry and Landfill Offset Monitoring 2019

Species Name	Common Name	BOA1				BOA2				BOA3				BOA4				BOA5				BOA6			
		2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019
<b>Native species</b>																									
<i>Actinobole uliginosum</i>	Flannel Cudweed	x	x		x	x	x		x	x	x		x					x	x		x	x	x		x
<i>Aphanes australiana</i>									x				x								x	x			
<i>Aristida behriana</i>	Bunch Wiregrass	x	x		x		x	x		x	x				x	x	x			x					
<i>Aristida</i> sp.													x												
<i>Arthropodium minus</i>	Small Vanilla Lily		x	x	x													x		x	x	x	x	x	x
<i>Atriplex semibaccata</i>	Creeping Saltbush		x	x		x	x	x		x	x			x	x	x	x								
<i>Austrostipa aristiglumis</i>	Plains Grass																								
<i>Austrostipa bigeniculata</i>		x	x	x	x		x	x		x	x	x	x							x					
<i>Austrostipa scabra</i>	Speargrass	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Austrostipa</i> sp.							x																		
<i>Brachychiton populneus</i>	Kurrajong					x	x	x	x																
<i>Brachyscome lineariloba</i>	Hard-headed Daisy	x																							
<i>Bulbine bulbosa</i>	Bulbine Lily	x			x	x			x		x		x	x			x	x		x		x			x
<i>Bulbine semibarbata</i>																		x							
<i>Calandrinia eremaea</i>					x	x			x				x					x			x	x			x
<i>Callitris glaucophylla</i>	White Cypress Pine	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Calotis hispidula</i>	Bogan Flea	x		x	x	x	x		x	x	x	x	x			x	x	x	x		x	x			x
<i>Chamaesyce drummondii</i>	Caustic Weed				x												x								
<i>Cheilanthes sieberi</i>	Mulga Fern	x	x			x	x	x	x	x	x	x	x					x	x	x	x	x	x	x	x
<i>Chenopodium desertorum</i>																							x	x	x
<i>Chenopodium</i> sp.																							x		

Tharbogang Quarry and Landfill Offset Monitoring 2019

Species Name	Common Name	BOA1				BOA2				BOA3				BOA4				BOA5				BOA6				
		2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	
<i>Chloris</i> sp.		x	x	x	x	x				x	x	x					x	x	x							
<i>Chrysocephalum apiculatum</i>	Common Everlasting	x	x		x					x	x		x	x	x	x	x	x		x						
<i>Convolvulus erubescens</i> complex								x			x	x	x		x	x	x									
<i>Convolvulus</i> sp.														x												
<i>Crassula colorata</i>			x																x					x		
<i>Crassula decumbens</i>																							x			
<i>Crassula</i> sp.		x			x	x			x	x			x				x			x	x				x	
<i>Dianella</i> sp.		x	x	x	x																					
<i>Dichelachne</i> sp.																	x						x			
<i>Dichopogon fimbriatum</i>	Chocolate Lily		x	x	x			x			x	x	x						x	x	x			x	x	x
<i>Dichopogon</i> sp.		x				x				x									x					x		
<i>Einadia nutans</i>	Climbing Saltbush	x	x							x	x						x	x	x				x	x		
<i>Einadia nutans</i> subsp. <i>nutans</i>		x		x	x	x			x				x										x			x
<i>Enchylaena tomentosa</i>	Ruby Saltbush	x	x	x	x	x	x	x	x					x	x	x	x		x	x	x	x	x	x	x	x
<i>Enteropogon acicularis</i>								x																		
<i>Erodium crinitum</i>	Blue Storksbill	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x		x	x	x	x	x	x	x
<i>Eucalyptus populnea</i>	Poplar Box	x	x	x	x								x	x	x	x			x		x	x	x		x	
<i>Euphorbia</i> sp.																										
<i>Goodenia cycloptera</i>		x	x	x	x																					
<i>Goodenia pusilliflora</i>		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x	
<i>Hyalosperma semisterile</i>		x	x	x				x	x																	
<i>Hyalosperma</i> sp.																										

Tharbogang Quarry and Landfill Offset Monitoring 2019

Species Name	Common Name	BOA1				BOA2				BOA3				BOA4				BOA5				BOA6			
		2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019
<i>Hyalosperma</i> sp. 2		x															x				x				
<i>Isoetopsis graminifolia</i>	Grass Cushion	x			x	x			x	x		x	x	x			x	x			x	x			
<i>Maireana enchylaenoides</i>	Wingless Fissure Weed	x	x	x	x	x	x	x	x	x	X	x	x	x		x	x	x	x	x	x	x	x	x	
<i>Maireana excavata</i>	Bottle Bluebush	x	x	x	x	x	x	x	x	x	X	x	x		x	x	x				x	x		x	
<i>Millotia myosotidifolia</i>	Broad-leaved Millotia																x				x				
<i>Minuria leptophylla</i>														x	x	x	x								
<i>Ophioglossum lusitanicum</i>	Adders Tongue	x				x																			
<i>Ophioglossum</i> sp.										x															
<i>Oxalis perennans</i>		x			x	x	x		x	x		x	x		x	x	x	x	x	x	x	x	x	x	
<i>Pittosporum angustifolium</i>		x	x	x	x																				
<i>Pterostylis bicolor</i>	Black-tip Greenhood																x								
<i>Ptilotus spathulatus</i>	Pussy Tails	x	x	x	x									x	x	x	x								
<i>Ranunculus sessiliflorus</i>						x			x														x		
<i>Rhodanthe corymbiflora</i>	Small White Sunray								x								x								
<i>Rhodanthe diffusa</i>			x	x		x	x	x	x	x	x	x	x	x	x	x				x	x		x	x	
<i>Rhodanthe laevis</i>	Smooth Sunray																				x				
<i>Rhodanthe pygmaea</i>	Pygmy Sunray	x		x	x	x			x	x	x		x	x			x				x				
<i>Rytidosperma</i> sp.		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
<i>Salsola australis</i> (syn. <i>S. kali</i> and <i>S. tragus</i> )	Soft Roly Poly	x	x			x	x	x						x	x										
<i>Sclerolaena</i> sp.				x	x																				
<i>Senna artemisioides</i>	Silver Cassia					x		x	x																
<i>Sida corrugata</i>	Corrugated Sida	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x			x	x	x	x	

Tharbogang Quarry and Landfill Offset Monitoring 2019

Species Name	Common Name	BOA1				BOA2				BOA3				BOA4				BOA5				BOA6			
		2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019	2015	2017	2018	2019
<i>Sida cunninghamii</i>	Ridged Sida	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Solanum esuriale</i>	Quena									x	x					x									
<i>Solanum</i> sp.										x															
<i>Spergularia</i> sp.																		x							
<i>Stackhousia monogyne</i>	Creamy Stackhousia					x	x	x	x	x								x	x			x			
<i>Stuartina muelleri</i>	Spoon Cudweed					x			x	x								x	x			x	x		x
<i>Thysanotus patersonii</i>	Twining Fringe Lily																	x				x			
<i>Tricoryne elatior</i>	Yellow Autumn-lily				x		x	x	x	x	x	x	x									x		x	x
<i>Triptilodiscus pygmaeus</i>	Common sunray	x			x	x			x	x	x		x					x	x			x	x		x
<i>Vittadinia cuneata</i>	Fuzzweed		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x			x	x	x
<i>Wahlenbergia communis</i>	Tufted Bluebell								x																
<i>Wahlenbergia</i> sp.		x			x	x												x	x					x	
<i>Wahlenbergia</i> sp. (broad leaf)										x															
<i>Wurmbea dioica</i>	Early Nancy					x			x															x	
<i>Xerochrysum bracteatum</i>	Golden Everlasting		x		x	x	x		x	x								x	x			x	x		x
<i>Unknown Asteraceae</i>																									x
Unknown grass																		x	x						x

## Bird survey species list 2019

Species Name	Common Name	BC Act Listing	EPBC Act Listing	BOA2	BOA3	BOA4	BOA5	BOA6	Bird 6	Incidental	Previously recorded
<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater					X	X	X	X		X
<i>Acanthiza apicalis</i>	Inland Thornbill										X
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill					X	X		X		X
<i>Acanthiza nana</i>	Yellow Thornbill			X		X	X		X		X
<i>Acanthiza reguloides</i>	Buff-rumped Thornbill										X
<i>Acanthiza uropygialis</i>	Chestnut-rumped Thornbill					X			X		X
<i>Aphelocephala leucopsis</i>	Southern Whiteface								X		X
<i>Aquila audax</i>	Wedge-tailed Eagle										X
<i>Artamus cyanopterus</i>	Dusky Woodswallow	V									X
<i>Artamus leucorhynchus</i>	White-breasted Woodswallow										X
<i>Artamus personatus</i>	Masked Woodswallow										X
<i>Artamus superciliosus</i>	White-browed Woodswallow										X
<i>Barnardius zonarius</i>	Australian Ringneck			X	X	X	X	X	X		X
<i>Cacatua leadbeateri</i>	Major Mitchell's Cockatoo	V									X
<i>Chalcites basalis</i>	Horsefield's Bronze-Cuckoo								X		X
<i>Chroicocephalus novaehollandiae</i>	Silver Gull					X					X
<i>Cincloramphus mathewsi</i>	Rufous Songlark							X			
<i>Colluricincla harmonica</i>	Grey Shrike-thrush										X
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike			X	X	X	X	X	X		X
<i>Corcorax melanorhamphos</i>	White-winged Chough				X		X	X	X		X
<i>Corvus bennetti</i>	Little Crow										X
<i>Corvus coronoides</i>	Australian Raven			X	X	X	X	X			X
<i>Corvus mellori</i>	Little Raven			X	X	X	X	X	X		
<i>Cracticus nigrogularis</i>	Pied Butcherbird				X				X		X
<i>Cracticus tibicen</i>	Australian Magpie			X	X	X	X	X	X		X
<i>Cracticus torquatus</i>	Grey Butcherbird			X	X	X	X	X	X		X

Species Name	Common Name	BC Act Listing	EPBC Act Listing	BOA2	BOA3	BOA4	BOA5	BOA6	Bird 6	Incidental	Previously recorded
<i>Dacelo novaeguineae</i>	Laughing Kookaburra										X
<i>Dicaeum hirundinaceum</i>	Mistletoebird										X
<i>Eolophus roseicapilla</i>	Galah			X	X		X	X			X
<i>Eopsaltria australis</i>	Eastern Yellow Robin						X				X
<i>Falco berigora</i>	Brown Falcon			X		X					X
<i>Falco cenchroides</i>	Nankeen Kestrel										X
<i>Falco subniger</i>	Black Falcon										X
<i>Geopelia placida</i>	Peaceful Dove									X	X
<i>Gerygone fusca</i>	Western Gerygone					X			X		X
<i>Grallina cyanoleuca</i>	Magpie Lark			X	X	X	X	X	X		X
<i>Haliastur sphenurus</i>	Whistling Kite			X	X	X	X	X			X
<i>Lalage sueurii</i>	White-winged Triller					X	X		X		
<i>Manorina flavigula</i>	Yellow-throated Miner			X	X	X	X	X	X		X
<i>Melopsittacus undulatus</i>	Budgerigar									X	
<i>Milvus migrans</i>	Black Kite			X	X	X	X	X	X		X
<i>Northiella haematogaster</i>	Blue Bonnet			X	X	X		X	X		X
<i>Nymphicus hollandicus</i>	Cockatiel			X	X	X	X	X	X		X
<i>Ocyphaps lophotes</i>	Crested Pigeon			X	X	X	X	X	X		X
<i>Pachycephala rufiventris</i>	Rufous Whistler					X			X		X
<i>Pardalotus striatus</i>	Straited Pardalote			X	X				X		X
<i>Pelecanus conspicillatus</i>	Australian Pelican			X		X	X		X		X
<i>Petrochelidon nigricans</i>	Tree Martin					X					X
<i>Petroica goodenovii</i>	Red-capped Robin						X		X		X
<i>Phalacrocorax carbo</i>	Black Cormorant										X
<i>Phaps chalcoptera</i>	Common Bronzewing				X	X					X
<i>Plectorhyncha lanceolata</i>	Striped Honeyeater			X		X		X			X
<i>Polytelis swainsonii</i>	Superb Parrot	V								X	X
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler	V		X	X	X	X	X	X		X
<i>Psephotus haematonotus</i>	Red-rumped Parrot			X	X	X	X	X	X		X

Species Name	Common Name	BC Act Listing	EPBC Act Listing	BOA2	BOA3	BOA4	BOA5	BOA6	Bird 6	Incidental	Previously recorded
<i>Rhipidura albiscapa</i>	Grey Fantail			X		X	X		X		X
<i>Rhipidura leucophrys</i>	Willie Wagtail				X			X	X		X
<i>Smicrornis brevirostris</i>	Weebil										X
<i>Struthidea cinerea</i>	Apostlebird				X			X	X		X
<i>Sturnus vulgaris</i>	Common Starling			X	X	X		X	X		X
<i>Taeniopygia bichenovii</i>	Double-barred Finch										X
<i>Threskiornis moluccus</i>	Australian White Ibis			X		X		X	X		X
<i>Todiramphus sanctus</i>	Sacred Kingfisher										X
<i>Zosterops lateralis</i>	Silvereye										X

### Bat survey species list 2019

Species Name	Common Name	BC Act Listing	EPBC Act Listing	2016	2017	2018	2019
<i>Austronomus australis</i>	White-striped Freetail Bat			X			X
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat			X	X	X	X
<i>Chalinolobus morio</i>	Chocolate Wattled bat			X	X	X	X
<i>Chalinolobus picatus</i>	Little Pied Bat	V		X	X		
<i>Miniopterus australis</i>	Little Bent-winged Bat	V					X
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V					X
<i>Mormopterus (Ozimops) kitcheneri</i>	South-western Freetail Bat			X			
<i>Mormopterus (Ozimops) petersi</i>	Inland Freetail Bat			X	X	X	X
<i>Mormopterus (Ozimops) planiceps</i>	South-eastern Freetail Bat				X	X	X
<i>Nyctophilus sp.</i>	Long-eared Bat			X	X	X	X
<i>Rhinolophus megaphyllus</i>	Eastern Horseshoe Bat						X
<i>Scotorepens balstoni</i>	Inland Broad-nosed Bat			X	X	X	X
<i>Scotorepens greyii</i>	Little Broad-nosed Bat			X	X	X	X
<i>Vespadelus baverstocki</i>	Inland Forest Bat	V		X			
<i>Vespadelus darlingtoni</i>	Large Forest Bat				X		
<i>Vespadelus regulus</i>	Southern Forest Bat			P			X
<i>Vespadelus vulturnus</i>	Little Forest Bat			X	X	X	X

X = Definite, P = Possible

# Appendix B: Completed monitoring data sheets (including photos)

## Photo Point 1

Monitoring Data Sheet			
Monitoring Point Number	PP 1	Date	17/9/19
1. Site Photo(s)	5757 - 5760 (N-W)		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	5%		
Midstorey:	1%		
Groundcover(grass):	5%		
Groundcover (shrub):	2%		
Groundcover (other):	5%		
Native species richness:			
Proportion of canopy species regenerating	2/2.		
Exotic cover			
30%			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel/fire breaks			Nil
Weeds			Romulea, Arctotheca Hordeum, Echium
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil
Erosion			stable
Fencing			Nil

Photo Point 2

Monitoring Data Sheet			
Monitoring Point Number	PP2	Date	18/9/18
1. Site Photo(s)	5844 - 5847 (W-S)		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	10%		
Midstorey:	10%		
Groundcover(grass):	5%		
Groundcover (shrub):	1%		
Groundcover (other):	5%		
Native species richness:			
Proportion of canopy species regenerating		2/2	
Exotic cover			
		30%	
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			N/A
Threatened species sightings			N/A
Fire event/fuel/fire breaks			N/A - track nearby
Weeds			Echinops, Hardenia Arctotheca, Opuntia
Pest animals			N/A
Visitor impact/vehicles			Track nearby
Rubbish dumping			Blown rubbish
Erosion			Stable
Fencing			N/A

Photo Point 3

Monitoring Data Sheet			
Monitoring Point Number	PP3	Date	17/9/19
1. Site Photo(s)	5745 - 5748 (W-S)		
2. Floristic BioMetric attributes			
Native cover	-		
Overstorey:	5%		
Midstorey:	1%		
Groundcover(grass):	5%		
Groundcover (shrub):	5%		
Groundcover (other):	10%		
Native species richness:			
Proportion of canopy species regenerating	1/1		
Exotic cover	25%		
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel/fire breaks			Nil
Weeds			Hordeum, Lolium Echinium, Lycium dead
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil
Erosion			Nil
Fencing			Nil

Photo Point 4

Monitoring Data Sheet			
Monitoring Point Number	PP4	Date	17/9/19
1. Site Photo(s)	5753 - 5756		
2. Floristic BioMetric attributes			
Native cover	<del>40%</del>		
Overstorey:	10%		
Midstorey:	5%		
Groundcover(grass):	5%		
Groundcover (shrub):	5%		
Groundcover (other):	10%		
Native species richness:			
Proportion of canopy species regenerating	2/2.		
Exotic cover	30%		
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			
Threatened species sightings			
Fire event/fuel/fire breaks			
Weeds			
Pest animals			
Visitor impact/vehicles			
Rubbish dumping			
Erosion			
Fencing			

Photo Point 5

Monitoring Data Sheet			
Monitoring Point Number	PP5	Date	17/9/19
1. Site Photo(s)	5749 - 5752 (w-s)		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	10%		
Midstorey:	1%		
Groundcover(grass):	5%		
Groundcover (shrub):	5%		
Groundcover (other):	15%		
Native species richness:			
Proportion of canopy species regenerating	10% → 2/2		
Exotic cover			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			N/A
Threatened species sightings			Superb Parrot, GCB.
Fire event/fuel/fire breaks			N/A
Weeds			Sisymbrium erys Hordeum, Marrubium
Pest animals			
Visitor impact/vehicles			
Rubbish dumping			
Erosion			
Fencing			

Photo Point 6

Monitoring Data Sheet			
Monitoring Point Number	PP6	Date	18/9/19
1. Site Photo(s)	5840-5843 (w-s)		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	10%		
Midstorey:	5%		
Groundcover(grass):	5%		
Groundcover (shrub):	5%		
Groundcover (other):	5%		
Native species richness:			
Proportion of canopy species regenerating			
2/2			
Exotic cover			
25%			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel/fire breaks			Nil - track nearby
Weeds			Arctotheca Echium
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Blown rubbish
Erosion			Stable
Fencing			Nil

Photo Point 7

Monitoring Data Sheet			
Monitoring Point Number	PP7	Date	18/9/19
1. Site Photo(s)	5857 - 5860	(W-S)	
2. Floristic BioMetric attributes			
Native cover			
Overstorey:			5%
Midstorey:			10%
Groundcover(grass):			5%
Groundcover (shrub):			1%
Groundcover (other):			15%
Native species richness:			
Proportion of canopy species regenerating			2/2
Exotic cover			
5%			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Red capped Robin
Fire event/fuel/fire breaks			Nil
Weeds			Lycium      Arctotheca Hordeum      Echium
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil
Erosion			Nil
Fencing			Nil

Photo Point 8

Monitoring Data Sheet			
Monitoring Point Number	188	Date	17/9/19
1. Site Photo(s)	5761 - 5764 (W-S)		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	5%		
Midstorey:	1%		
Groundcover(grass):	5%		
Groundcover (shrub):	2%		
Groundcover (other):	5%		
Native species richness:			
Proportion of canopy species regenerating			
1/2			
Exotic cover			
30%			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			NA
Threatened species sightings			Nil
Fire event/fuel/fire breaks			load.
Weeds			Hordeum, Echinochloa, Arctotheca, Lycium regenerating
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			<del>at</del> Mura
Erosion			Nil
Fencing			NA

BOA1

Monitoring Data Sheet			
Monitoring Point Number	BOA1	Date	17/9/19
1. Site Photo(s)	5741 - 5744		
2. Floristic BioMetric attributes			
Native cover	E		
Overstorey:	19%		
Midstorey:	5%		
Groundcover(grass):	10%		
Groundcover (shrub):	19%		
Groundcover (other):	25%		
Native species richness:			
Proportion of canopy species regenerating	2/2		
Exotic cover	10%		
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Callitris
Threatened species sightings			Nil
Fire event/fuel/fire breaks			Nil. - track nearby
Weeds			Acrotheca, Echinium
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil
Erosion			Nil
Fencing			Nil

BOA2

Monitoring Data Sheet			
Monitoring Point Number	BOA2	Date	16/9/19
1. Site Photo(s)	5692-5695		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	5%		
Midstorey:	10%		
Groundcover(grass):	5%		
Groundcover (shrub):	19%		
Groundcover (other):	75%		
Native species richness:			
Proportion of canopy species regenerating	1/2		
Exotic cover			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			Nil
Fire event/fuel/fire breaks			"
Weeds			Arcto, Echinin
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil
Erosion			Nil
Fencing			Nil

BOA3

Monitoring Data Sheet			
Monitoring Point Number	BOA <del>2</del> 3	Date	16/9/19
1. Site Photo(s)	5688 - 5691		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	5%		
Midstorey:	5%		
Groundcover(grass):	30%		
Groundcover (shrub):	1%		
Groundcover (other):	15%		
Native species richness:			
Proportion of canopy species regenerating		2/2	
Exotic cover			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			—
Threatened species sightings			Superb Parrot
Fire event/fuel/fire breaks			Nil
Weeds			Arctotheca, Echinium, Vulpia
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			Nil
Erosion			Nil
Fencing			Nil

BOA4

Monitoring Data Sheet			
Monitoring Point Number	BOA 4	Date	17/9/19
1. Site Photo(s)	5733 - 5736		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	10%		
Midstorey:	10%		
Groundcover(grass):	50%		
Groundcover (shrub):	10%		
Groundcover (other):	50%		
Native species richness:			
Proportion of canopy species regenerating		2/2	
Exotic cover			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Yes, callitric recruits
Threatened species sightings			ACB
Fire event/fuel/fire breaks			nil
Weeds			Arctotheca, Carthamus Echium
Pest animals			Red Fox scats
Visitor impact/vehicles			nil
Rubbish dumping			Blown rubbish
Erosion			nil
Fencing			Nil

BOA5

Monitoring Data Sheet			
Monitoring Point Number	BOA5	Date	17/9/19
1. Site Photo(s)	5737 - 5740		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	8%		
Midstorey:	25%		
Groundcover(grass):	5%		
Groundcover (shrub):	1%		
Groundcover (other):	25%		
Native species richness:			
Proportion of canopy species regenerating	2/2		
Exotic cover			
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Callitriche
Threatened species sightings			Red capped Robin
Fire event/fuel/fire breaks			Nil
Weeds			Arctotheca Echium
Pest animals			Nil
Visitor impact/vehicles			nil
Rubbish dumping			Blown rubbish
Erosion			Nil
Fencing			Nil

BOA6

Monitoring Data Sheet			
Monitoring Point Number	BOA 6	Date	18/9/19
1. Site Photo(s)	5836 - 5839		
2. Floristic BioMetric attributes			
Native cover			
Overstorey:	15%		
Midstorey:	5%		
Groundcover(grass):	5%		
Groundcover (shrub):	1%		
Groundcover (other):	15%		
Native species richness:			
Proportion of canopy species regenerating		2/2	
Exotic cover		25%	
3. Opportunistic observations	GPS coordinates	Photo number	Observations
Natural regeneration of disturbed areas			Nil
Threatened species sightings			GCB
Fire event/fuel/fire breaks			Nil
Weeds			<del>None</del> Echium, Arctotheca
Pest animals			Nil
Visitor impact/vehicles			Nil
Rubbish dumping			blown rubbish
Erosion			Nil
Fencing			Nil

## Appendix C: Completed quadrat data sheets

THARBOGANG OFFSET MONITORING

Date: 16/9/19

Observers: Bm + TH

Species Name	Common Name	BOA 1	BOA 2	BOA 3	BOA 4	BOA 5	BOA 6
<b>Exotics</b>							
<i>Aira cupaniana</i>							
<i>Arctotheca calendula</i>	Capeweed	√ 2 500	√ 10,5000	√ 1,50	√ 1,100	√ 10 1000	√ 20 600
<i>Avena fatua</i>	Wild Oats			√ 4,5	√ <1,500	√ <1 100	√ <1 10
<i>Bromus rubens</i>							√ <1 500
<i>Bromus sp.</i>		√ <1 10	√ <1,500				
<i>Carthamus lanatus</i>	Saffron Thistle			√ <1,1	√ 1,500	√ <1 1	
<i>Centaurea sp.</i>							
<i>Cirsium vulgare</i>	Spear Thistle						
<i>Echium plantagineum</i>	Paterson's Curse	√ 1 500	√ 5,1000	√ 1,500	√ <1 100	√ 10 1000	√ 5 500
<i>Erodium cicutarium</i>	Common Crowfoot						
<i>Hedypnois rhagadioloides</i>		√ 1 1000		√ <1,50	√ <1 100		
<i>Hordeum leporinum</i>	Barley Grass		√ <1,20			√ <1 20	√ <1 50
<i>Hypochaeris glabra</i>							
<i>Hypochaeris radicata</i>	Catsear	√ <1 50	√ 1,500	√ <1,100	√ <1 100	√ 1 1000	√ <1 50
<i>Iris sp.</i>							
<i>Lactuca seriola</i>	Prickly Lettuce						
<i>Lepidium sp.</i>							
<i>Lolium rigidum</i>	Wimmera Ryegrass		√ <1,100	√ <1,10	√ <1 500		√ <1 10
<i>Rostratula pumila</i>							
<i>Medicago laciniata</i>	Cut-leaved Medic	√ <1 500		√ <1,1			√ <1 10
<i>Medicago minima</i>	Woolly Burr Medic	√ <1 10	√ <1,10	√ <1,20	√ <1 50		
<i>Medicago polymorpha</i>	Burr Medic						
<i>Medicago sp.</i>							
<i>Capsella bursa-pastoris</i>				√ <1,10			√ <1 1
brassicaceae sl					√ <1 2		√ <1 2
<i>Lycium ferocissimum</i>		√ <1 1					

Species Name	Common Name	BOA 1	BOA2	BOA3	BOA4	BOA5	BOA6
<i>Medicago truncatula</i>	Barrel Medic	√ < 1 20	√ < 1, 1		√ < 1 20		√ < 1 100
<i>Opuntia stricta</i>	Prickly Pear				√ < 1 3	√ < 1 1	
<i>Opuntia</i> sp.							
<i>Pentaschistis airoides</i>	False Hairgrass		√ < 1, 500	√ < 1, 20		√ < 1 100	√ < 1 500
<i>Polygonum aviculare</i>	Wireweed						
<i>Raphanus raphanistrum</i>	Wild Radish						
<i>Silene tridentata</i>	Catchfly				√ < 1 2		
<i>Sisymbrium erysimoides</i>			√ < 1, 50		√ < 1 50	√ < 1 500	√ < 1 100
<i>Sisymbrium irio</i>	London Rocket		√ < 1, 50				√ < 1 50
<i>Sonchus asper</i>	Prickly Sowthistle						
<i>Sonchus oleraceus</i>	Common Sowthistle	√ < 1 10	√ < 1, 5	√ < 1, 10	√ < 1 3	√ < 1 20	√ < 1 2
<i>Trifolium arvense</i>	Haresfoot Clover		√ 1, 1000	√ 1, 1000		√ < 1 20	√ < 1 500
<i>Trifolium</i> sp.			√ < 1, 1	√ < 1, 1			√ < 1 50
<i>Veronica arvensis</i>							
<i>Vulpia myuros</i>	Rat's Tail Fescue		√ < 1, 500	√ < 1, 500			
<i>Vulpia</i> sp.		√ < 1 500			√ < 1 500	< 1 20	√ < 1 1000
<b>Natives</b>							
<i>Actinobole uliginosum</i>	Flannel Cudweed	√ < 1 20	√ < 1, 10	√ < 1, 10		√ < 1 10	√ < 1 500
<i>Aphanes australiana</i>			√ < 1, 10	√ < 1, 10		√ < 1 100	
<i>Aristida behriana</i>	Bunch Wiregrass	√ < 1 1			√ < 1 50		
<i>Arthropodium minus</i>	Small Vanilla Lily	√ < 1 10				√ < 1 100	√ < 1 1
<i>Arthropodium</i> sp.							
<i>Atriplex semibaccata</i>	Creeping Saltbush				√ < 1 2		
<i>Atriplex</i> sp.							
<i>Austrostipa aristiglumis</i>	Plains Grass						
<i>Austrostipa bigeniculata</i>		√ < 1 1		√ < 1, 1			
<i>Romulea rosea</i>		√ < 1 20	√ < 1, 50	√ < 1, 50		√ < 1 50	√ < 1 50
<i>Aristida</i> sp.				√ < 1, 5			
Unknown grass (weed)				√ < 1, 5			

Species Name	Common Name	BOA 1	BOA2	BOA3	BOA4	BOA5	BOA6
<i>Austrostipa scabra</i>	Speargrass	√ 5 500	√ 1,100	√ 1,100	√ 2 500	√ 1 100	√ 5 500
<i>Austrostipa</i> sp.							
<i>Brachychiton populneus</i>	Kurrajong		√ 4,1				
<i>Brachyscome lineariloba</i>	Hard-headed Daisy						
<i>Bulbine bulbosa</i>	Bulbine Lily	√ 21 2	√ 41,1	√ 41,3	√ 41 1		√ 41 3
<i>Bulbine semibarbata</i>							
<i>Calandrinia eremaea</i>		√ 41 20	√ 41,100	√ 41,20		√ 41 100	√ 41 50
<i>Callitris glaucophylla</i>	White Cypress Pine	√ 5 4	√ 5,20	√ 5,20	√ 41 3	√ 20 500	√ 10 20
<i>Calotis hispidula</i>	Bogan Flea	√ 2 1000	√ 1,500	√ 3,1000	√ 41 500	√ 1 1000	√ 1 500
<i>Cassia artemisioides</i> (Serina)			√ 41,1				
<i>Cassia</i> sp.							
<i>Chamaesyce drummondii</i>	Caustic Weed	√ 41 1			√ 41 1		
<i>Cheilanthes sieberi</i>	Mulga Fern		√ 41,10	√ 41,5		√ 41 500	√ 41 500
<i>Chenopodium desertorum</i> subsp. <i>desertorum</i>							√ 41 3
<i>Chenopodium nitriaceum</i>	Nitre Goosefoot						
<i>Chenopodium</i> sp.							
<i>Chloris</i> sp.		√ 41 1					
<i>Chloris truncata</i>	Windmill Grass						
<i>Chrysocephalum apiculatum</i>	Common Everlasting	√ 41 2		√ 41,1	√ 41 3	√ 41 2	
<i>Convolvulus erubescens</i> complex				√ 41,1	√ 41 10		
<i>Convolvulus</i> sp.							
<i>Crassula colorata</i>							
<i>Crassula decumbens</i> var <i>decumbens</i>							
<i>Crassula</i> sp.		√ 41 1000	√ 41,1000	√ 41,100		√ 41 50	√ 41 1000
<i>Dianella</i> sp.		√ 41 20					

Species Name	Common Name	BOA 1	BOA2	BOA3	BOA4	BOA5	BOA6
<i>Dichelachne</i> sp.							
<i>Dichopogon fimbriatum</i>	Chocolate Lily	√ 1 100	√ 21,50	√ 1,100		√ 1 500	√ 5 1000
<i>Dichopogon</i> sp.							
<i>Einadia nutans</i>	Climbing Saltbush						
<i>Einadia nutans</i> subsp <i>nutans</i>		√ <1 3	√ 4,2	√ 21,3	√ <1 2	√ <1 5	√ <1 5
<i>Enchylaena tomentosa</i>	Ruby Saltbush	√ <1 10	√ 21,20	√ 21,2	√ <1 10	√ <1 20	√ <1 10
<i>Erodium crinitum</i>	Blue Storksbill	√ <1 50	√ 21,500	√ 21,100	√ 21 10	√ <1 100	√ <1 100
<i>Eucalyptus populnea</i>	Poplar Box	√ <1 1		√ <1,1	√ 5 3	√ <1 1	√ <1 1
<i>Euphorbia</i> sp.							
<i>Goodenia cycloptera</i>		√ <1 100			√ <1 50	√ 1 500	
<i>Goodenia fascicularis</i>							
<i>Goodenia pusilliflora</i>		√ <1 500	√ 21,100	√ 5,1000	√ <1 100	√ <1 50	√ <1 100
<i>Homopholis proluta</i>							
<i>Hyalosperma glutinosum</i> subsp. <i>glutinosum</i>			√ 1,500	√ 5,1000			
<i>Hyalosperma semisterile</i>		√ 10 5000	√ 2,500	√ 5,1000	√ 1 500	√ <1 100	√ <1 500
<i>Hyalosperma</i> sp.							
<i>Isoetopsis graminifolia</i>	Grass Cushion	√ <1 50	√ 21,20	√ 21,100	√ <1 10	√ <1 10	
<i>Maireana enchylaenoides</i>	Wingless Fissure Weed	√ <1 10	√ 21,20	√ 21,5	√ <1 10	√ <1 20	√ <1 20
<i>Maireana excavata</i>		√ 1 500	√ 21,2	√ 1,500	√ <1 5		√ <1 5
<i>Millotia myosotidifolia</i>						√ 3 100	
<i>Minuria leptophylla</i>					√ <1 10		
<i>Ophioglossum lusitanicum</i>	Adders Tongue						
<i>Ophioglossum</i> sp.							
<i>Oxalis perennans</i>		√ <1 5	√ 21,1	√ 21,1	√ <1 1	√ <1 20	√ <1 10
<i>Pittosporum phylliraeoides</i>		√ <1 10					
<i>Pterostylis bicolor</i>	Black-tip Greenhood						

*Leptomyrchos* sp

√ <1 500

Species Name	Common Name	BOA 1	BOA2	BOA3	BOA4	BOA5	BOA6
<i>Ptilotus spathulatus</i>	Pussy Tails	✓ <1 10			✓ <1 3		
<i>Ranunculus sessiliflorus</i>			✓ <1, 3				
<i>Rhodanthe corymbiflora</i>	Small White Sunray		✓ <1, 1		✓ <1 1		
<i>Rhodanthe diffusa</i>			✓ 1, 500	✓ 5, 1000		✓ 3 1000	✓ 3 1000
<i>Rhodanthe pygmaea</i>	Pygmy Sunray	✓ 1 1000	✓ <1, 5	✓ <1, 100	✓ <1 10	✓ <1 1	
<i>Rytidosperma</i> sp.		✓ 5 1000	✓ 1, 100	✓ 3, 100	✓ 2 500	✓ 1 500	✓ 2 500
<i>Salsola australis</i> (formerly <i>S. kali</i> and <i>S. tragus</i> )	Soft Roly Poly						
<i>Sclerolaena</i> sp. grey lopper?		✓ <1 2					
<i>Sida corrugata</i>	Corrugated Sida	✓ <1 5		✓ <1, 5	✓ <1 5	✓ <1 2	✓ <1 2
<i>Sida cunninghamii</i>	Ridged Sida	✓ <1 20	✓ <1, 20	✓ <1, 10	✓ <1 20	✓ <1 10	✓ <1 5
<i>Solanum esuriale</i>	Quena						
<i>Spergularia</i> sp.							
<i>Stackhousia monogyna</i>	Creamy Stackhousia		✓ <1, 20			✓ <1 100	
<i>Stuartina muelleri</i>	Spoon Cudweed		✓ <1, 10	✓ <1, 50		✓ <1 100	✓ <1 100
<i>Thysanotus patersonii</i>						✓ <1 1	
<i>Tricoryne elatior</i>	Yellow Autumn-lily	✓ <1 1	✓ <1, 5	✓ <1, 5			✓ <1 50
<i>Triptilodiscus pygmaeus</i>	Common sunray	✓ <1 100	✓ <1, 20	✓ <1, 50		✓ <1 20	✓ <1 100
<i>Velleia paradoxa</i>							
<i>Vittadinia cuneata</i>	Fuzzweed	✓ <1 100	✓ <1, 5	✓ <1, 5	✓ <1 100		
<i>Wahlenbergia</i> (broad leaf) sp.							
<i>Wahlenbergia communis</i>	Tufted Bluebell		✓ <1, 5				
<i>Wahlenbergia</i> sp.		✓ <1 20		✓ <1, 1			
<i>Wurmbea dioica</i>			✓ <1, 2			✓ <1 1	
<i>Xerochrysum bracteatum</i>	Golden Everlasting	✓ <1 20	✓ <1, 100	✓ <1, 5	✓ <1 20	✓ <1 100	✓ <1 20
Unknown Asteraceae							
Unknown grass						✓ <1 10	

*Rhodanthe laevis*

## Appendix D: Weed management receipt

# M.I.A. SPRAYING SERVICE



ABN 79 958 186 159  
 PO BOX 553, GRIFFITH NSW 2680  
 UHF 37 • MOBILE: 0428 676 207



PC.....

Specialising in Pest Control and Crop Spraying

## HERBICIDE & PESTICIDE REPORT

2701  
 TAX INVOICE

Client: Griffith City Council  
 Farm: .....  
 Address: .....  
 Paddock No: ..... Crop: .....  
 Crop Stage: .....

TIME	WEATHER	WIND DIRECTION	VELOCITY
	<u>Fine</u>	<u>S</u>	<u>Light</u>

**PESTICIDE 1:** Name Grayon Extra  
 Rate per Hectare 1 Lt per 100 Lt  
 L or Kg per Tank.....  
**PESTICIDE 1:** Name Veg Dye  
 Rate per Hectare 500ml per 100 Lt  
 L or Kg per Tank.....  
**PESTICIDE 1:** Name Order No 15225 pp70  
 Rate per Hectare .....  
 L or Kg per Tank.....  
 WETTING AGENT/ADJAVANT: Sprinta 100ml per 100 Lt  
 Rate pr 100 L water: .....

**AUTHORISED FOR PAYMENT**

Purchase Order Yes  No

PO # \_\_\_\_\_ G/R # \_\_\_\_\_

OR \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_

Comments: Bike Veg Dye Water Grayon Extra  
8" 2-5 Lt 500ml 5 Lt.  
6

Griffith City Council  
  
 Griffith City Council  
 500ml

07 MAY 2019

RECEIVED BY

Griffith City Council  
  
 7 MAY 2019  
 RECEIVED BY  
 CUSTOMER SERVICE RP

OPERATOR: Roy  
 DATE: 10-4-2019 11-4-2019  
 CLIENTS SIGNATURE: .....

COST \$ 1,953-75  
 GST \$ 195-37  
 TOTAL \$ 2149-12  
 TOTAL AMOUNT PAYABLE:  
**\$ 2149-12**  
**CASH/CHEQUE**  
**7 DAY ACCOUNT**  
 (unless prior arrangements made)

2% Book keeping fees apply on overdue accounts

# M.I.A. SPRAYING SERVICE



ABN 79 958 186 159

PO BOX 553, GRIFFITH NSW 2680  
UHF 37 • MOBILE: 0428 676 207



PC .....

Specialising in Pest Control and Crop Spraying

## HERBICIDE & PESTICIDE REPORT

2640  
TAX INVOICE

Client: *Griffith City Council*

Farm: .....

Address: .....

Paddock No: ..... Crop: .....

Crop Stage: .....

TIME	WEATHER	WIND DIRECTION	VELOCITY
	<i>Fine</i>	<i>E</i>	<i>Light</i>
	<i>Fine</i>	<i>NE to NW</i>	<i>Light to strong</i>
	<i>Fine</i>	<i>W</i>	<i>medium strong</i>

**PESTICIDE 1:** Name *Grazon Extra*  
Rate per Hectare *1 Lt per 100 Lt*  
L or Kg per Tank .....

**PESTICIDE 1:** Name *Veg Dye*  
Rate per Hectare *500 ml per 100 Lt*  
L or Kg per Tank .....

**PESTICIDE 1:** Name .....

Rate per Hectare .....

L or Kg per Tank .....

WETTING AGENT/ADJAVANT: *spinter 250 ml per 100 Lt*  
Rate pr 100 L water: .....

Comments: *Land Filt*

	<i>Bike</i>	<i>Grazon Extra</i>	<i>Dye</i>	<i>spinter</i>
	<i>4 1/2</i>	<i>2</i>	<i>1</i>	<i>500 ml</i>
	<i>6 1/2</i>	<i>2</i>	<i>1 1/2</i>	<i>500 ml</i>
	<i>7</i>	<i>5</i>	<i>2 1/2</i>	<i>500 ml</i>
	<i>5 1/2</i>	<i>2</i>	<i>2</i>	<i>300 ml</i>
	<i>23 1/2 hrs</i>	<i>11 lts</i>	<i>6 1/2 lts</i>	<i>1-9 lts</i>

*Spraying on offset land.*

COST	\$ <i>369.6 - 75</i>
GST	\$ <i>36.9 - 6.7</i>
TOTAL	\$ <i>406.6 - 4.2</i>
<b>TOTAL AMOUNT PAYABLE:</b>	
	\$ <i>4066-42</i>
<b>CASH/CHEQUE</b>	
<b>7 DAY ACCOUNT</b>	
<small>(unless prior arrangements made)</small>	

OPERATOR: *Roy*  
DATE: *25-6-2018 26-6-2018 16-7-2018 31-7-2018*  
CLIENTS SIGNATURE: .....

2% Book keeping fees apply on overdue accounts