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Tharbogang Waste Management Centre - Weed Control Plan



Lot 181-185, 202 and 201 // DP 756035, Mccann Road, Hillside Drive and Slopes Road, Tharbogang, NSW

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Glossary and abbreviations

Acronym	Description
GCC	Griffith City Council
KPI	Key Performance Indicators
LCA	Local Control Authority
MZ	Management Zone
NSW	New South Wales
WCP	Weed Control Plan
WoNS	Weeds of National Significance
*	Denotes exotic species

1 Introduction



Figure 1.1). This WCP will guide the treatment of weed species listed as priority weeds for the Riverina and Weeds of National Significance (WoNS) within the study area. The study area includes a biodiversity offset area for the expansion of the Tharbogang Waste Management Centre. This portion of the study area is currently being managed in accordance with the Conservation Agreement between the Minister Administering the *National Parks and Wildlife Act 1974* and GCC. However, the monitoring of the offset area will end in 2026, at which point in time this WCP will guide the management of weeds within the offset area.

Priority weeds are plants that have the potential to pose a biosecurity risk to human health, the economy, community and environment. In New South Wales (NSW) the administration of priority weeds is a State Government responsibility under the *Biosecurity Act 2015*. The *Biosecurity Act 2015* is implemented and enforced by the Local Control Authority (LCA), in this instance GCC. In accordance with Part 3 (22) of the *Biosecurity Act 2015*, any person who knows, or ought reasonably to know, the biosecurity risk posed or likely to be posed by biosecurity matter on their land, has a biosecurity duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised. This WCP has been prepared to identify the priority weeds and WoNS within the study area, their location, recommended treatment methods and ongoing monitoring of priority weeds and WoNS within the study area to inform GCC with the information required to prevent, eliminate and minimise the biosecurity risk within the study area.

A number of environmental weeds have been identified in the study area during past surveys (Eco Logical Australia 2011). This WCP focusses on the treatment of priority weeds and WoNS within the study area, although a list and treatment methods for environmental weeds that have the potential to be more problematic has also been included. The environmental weeds in the study area are generally limited to annual herbaceous weeds and exotic grasses that proliferate following suitable weather, although generally occur in low abundance and cover during dry conditions. The priority weeds and WoNS in the study area are perennial species, some of which are accustomed to growing in dry conditions.



Figure 1.1: Study area.

2 Site assessment

2.1 Methods

The study area was traversed to identify, locate and map the extent of priority weeds and WoNS on 14 and 15 October 2019 by Bruce Mullins (Principal Ecologist and Director) and Thomas Hickman (Ecologist) over a total of 40 person hours. Data from the surveys conducted as part of the 2019 monitoring in biodiversity offset area was also used in this WRC (Ecoplanning 2019). Field surveys for the 2019 monitoring were conducted on 16, 17 and 18 September 2019.

Traverses approximately 75-100 m apart were conducted across the study area (**Figure 2.1**) and focussed on areas more likely to contain priority weeds and WoNS as a result of past disturbance, proximity to the landfill and old homesteads. Traverses were conducted more closely in the south of the study area in proximity to the landfill, whereas traverses in the north of the study area were more widely spaced. Weather conditions were warm, with no rain recorded in the 24 hours prior to the field survey (**Table 2.1**).

Table 2.1: Daily weather observation at Griffith Airport AWS (8 km to the southeast).

Date	Temp. (°C)		Rainfall (mm)	Max. wind	
	Min.	Max.		Direction	Speed (km/h).
13/10/2019	9.6	25.7	0	35	NNE
14/10/2019	15.2	31.5	0	35	NW
15/10/2019	10.7	28.9	0	41	W

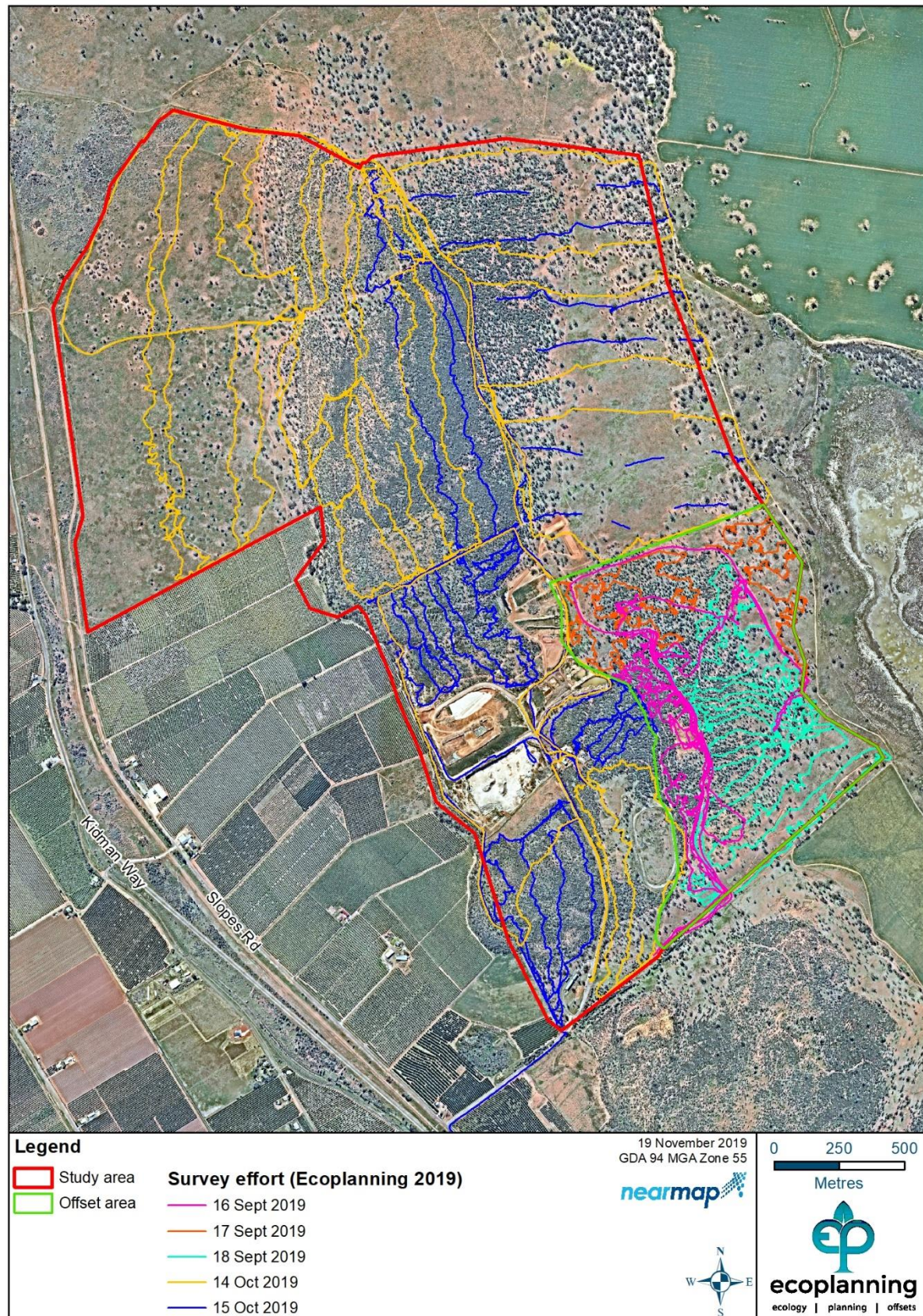


Figure 2.1: Survey effort in the study area.

2.2 Results

Weeds of National Significance and priority weeds

Field survey identified a total of six priority weeds listed under the NSW *Biosecurity Act 2015* for the Riverina within the study area, five of which are WoNS (**Table 2.2** and Figure 2.2 and **Figure 2.3**). Additional WoNS and priority weeds, including *Opuntia aurantiaca** (Tiger Pear) and *Rubus fruticosus** (Blackberry) have also been recorded in the study area (Eco Logical Australia 2011), although were not recorded during the field survey conducted for this WCP.

The most abundant priority weed was *Opuntia stricta** (Prickly Pear) (**Figure 2.4**), which occurred in varying abundance and cover, although was generally absent from the north western portion of the study area. A high abundance and cover of *Opuntia stricta** was observed in the southern portion of the study area, particularly surrounding the landfill, Blue Dot Speedway and along the western perimeter of the study area. Large established *Opuntia stricta** occurred in the southern portion of the study area, in some instances found growing up to 4 m in height and with a diameter at ground level of 40-50 cm. New recruits often occurred around the established plants, and were often forming from large fallen cladodes that had begun to root and spread vegetatively (**Figure 2.5**). Away from core infestations, individuals typically consisted of smaller individuals that are more likely to have spread by seed.

*Lycium ferocissimum** (African Boxthorn) (**Figure 2.6**) was the next most abundant priority weed although, unlike *Opuntia stricta**, was generally restricted to the northern and north western portion of the study area, with scattered individuals in the southern portion of the study area. *Lycium ferocissimum** appeared to prefer the more open sections in the north west portion of the study area and adjacent to track edges. A reasonable number of the *Lycium ferocissimum** in the north western portion of the study area appeared to have been sprayed, as the plant had few leaves remaining. However, it is also possible that the plants are under stress from dry conditions.

Additional weeds found in low abundance across the study area included *Asparagus asparagoides* (Bridal Creeper) (**Figure 2.7**) and *Bryophyllum delagoense** (Mother-of-millions). *Asparagus asparagoides** occurred sporadically in the central and far southern portion of the study area and relatively few plants were found (approximately 15-20 individuals). The patch of *Bryophyllum delagoense** was confined to a small areas approximately 2 m². A patch of *Cylindropuntia leptocaulis** and *Cylindropuntia spinosior** (Walkingstick Cactus) (**Figure 2.8**) approximately 6 m² was located approximately 100 m to the east of the weigh bridge. These species were not located elsewhere in the study area, and were likely planted, or dumped in the past.

Table 2.2: Priority weeds and WoNS.

Common name	Scientific name	WoNS	Duty
African Boxthorn	<i>Lycium ferocissimum</i>	Y	Prohibition on dealings <i>Must not be imported into the State or sold</i>
Bridal Creeper	<i>Asparagus asparagoides</i>	Y	
Common pear	<i>Opuntia stricta</i>	Y	

Common name	Scientific name	WoNS	Duty
Walkingstick Cactus	<i>Cylindropuntia spinosior</i> (as <i>Cylindropuntia</i> spp.)	Y	
	<i>Cylindropuntia leptocaulis</i> (as <i>Cylindropuntia</i> spp.)	Y	
Mother-of-millions	<i>Bryophyllum</i> sp.	N	Regional Recommended Measure <i>Land managers should mitigate the risk of new weeds being introduced to their land. The plant should be eradicated from the land and the land kept free of the plant. The plant should not be bought, sold, grown, carried or released into the environment. Notify local control authority if found.</i>

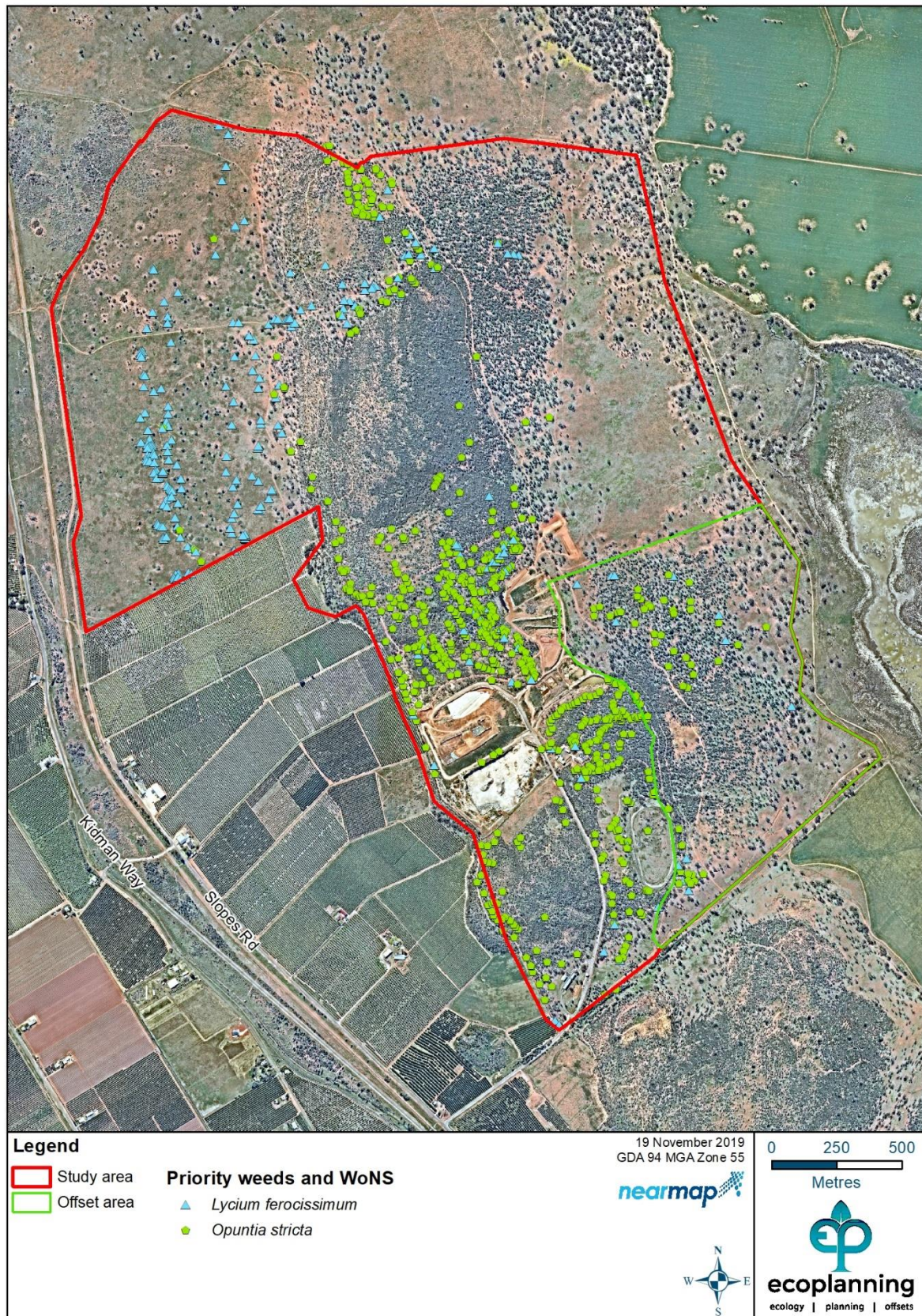


Figure 2.2: *Lycium ferocissimum** and *Opuntia stricta** in the study area.



Figure 2.3: *Asparagus asparagoides**, *Bryophyllum delagoense** and *Cyllindropuntia* spp. * in the study area.



Figure 2.4: *Opuntia stricta** infestation with large established individuals.



Figure 2.5: *Opuntia stricta** cladodes that have rooted and formed established plants.



Figure 2.6: *Lycium ferocissimum**



Figure 2.7: *Asparagus asparagoides**



Figure 2.8: A dumped area of *Cylindropuntia leptocaulis** and *Cylindropuntia spinosior**.

Environmental weeds

A number of environmental weeds have been recorded during field survey for the WCP and past field survey in the study area (Eco Logical Australia 2011 and Ecoplaning 2019). The treatment of environmental weeds is not the focus of the WCP, given the size of the study area, and the large infestation of WoNS and priority weeds in the study area, which are currently of higher priority for treatment. Nevertheless, environmental weeds are a threat to native vegetation, and if not controlled may spread further throughout the study area. As such, it may be necessary to sporadically target environmental weeds in the study area to reduce their abundance and cover.

A list of environmental weeds within the study area is included in **Table 2.3**. This list does not include all environmental weeds, and specifically includes species that were observed to be most abundant in the study area, and therefore considered more problematic. The species listed in **Table 2.3** are typically biennial and perennial species that are less influenced by rainfall, unlike annual species, and tend to persist longer in the study area. Treatment methods for environmental weeds, including those species listed in **Table 2.3** are included in **Appendix A**. Key Performance Indicators (KPIs) have not been specified for environmental weeds, although the overall aim for environmental weeds within the first five years of management is to contain existing infestations and prevent their further spread throughout the study area.

Table 2.3: Environmental weeds in the study area.

Scientific name	Common name
<i>Alternanthera pungens</i>	Khaki Weed
<i>Arctotheca calendula</i>	Capeweed
<i>Asphodelus fistulosus</i>	Onion Weed
<i>Cortaderia selloana</i>	Pampas Grass
<i>Echium plantagineum</i>	Paterson's Curse
<i>Echium vulgare</i>	Vipers Bugloss
<i>Eragrostis cilianensis</i>	Stinkgrass
<i>Heliotropium europaeum</i>	Potato Weed
<i>Hypericum perforatum</i>	St Johns Wort
<i>Marrubium vulgare</i>	White Horehound
<i>Ricinus communis</i>	Castor Oil
<i>Rosa rubiginosa</i>	Sweet Briar
<i>Xanthium spinosum</i>	Bathurst Burr

3 Weed control

3.1 Weed management techniques

Weed management will be carried out using primary and secondary weed control followed by ongoing maintenance. Weed control will include manual removal (hand-pulling, mattocking or digging), stem injecting (drill and fill and pad injection) and careful spot spraying. Disturbance of the soil during the weed management process should be minimised at all times (Buchanan 1989, Bradley 1988) and mechanical removal techniques should generally be avoided given the sensitivity of the site. Weed control objectives and treatment techniques are outlined below (**Appendix A**) in accordance with weed type. *Opuntia stricta** treatment is further discussed below (see **Section 3.4**)

3.2 Primary and secondary weed control

Primary weed control is the initial removal of weed species and is typically when a majority of the weed biomass is removed. Secondary weed control involves repeated follow-up treatments during the restoration phase after primary treatment has triggered an ecological response. Whilst some treatment of priority weeds and WoNS was observed during the field assessment, a majority of the study area is in a primary, or secondary weed control stage. Some areas of the site constitute maintenance weed control, specifically where *Opuntia stricta** consists of small scattered individuals in the central and southern western portions of the study area.

3.3 Maintenance

Maintenance is the long-term management of a site to prevent weeds from becoming re-established after primary and secondary work. Substantial effort should be focussed on reducing the weed seed bank, preventing new outbreaks of priority weeds and WoNS and removing weeds prior to seeding and establishment.

3.4 *Opuntia stricta** treatment

*Opuntia stricta** is the dominant priority weed onsite, hence its treatment will constitute a reasonable proportion of the time and resources spent controlling weeds in the study area. The treatment of *Opuntia stricta** will be achieved using a combination of manual removal, stem injecting (drill and fill and pad injection) and careful spot spraying. Stem injection will be the preferred method of treatment for large individuals exceeding 1 m in height. Stem injecting large individuals will reduce the amount of biomass required to be transported into landfill, and the potential for cladodes to break off and spread around the site, as the plants will be left in-situ.

The drill and fill method should be used for large *Opuntia stricta** with established trunks (see **Figure 2.4**), whereas pad injection should be used as the preferred option for medium to large sized individuals that are too large (i.e. >1 m high) to be spot sprayed without causing off target damage to surrounding native vegetation. Hand weeding is the preferred method for controlling small to moderate *Opuntia stricta** (<1 m in height), particularly where it occurs in low abundance, such as new or expanding areas within the central portion of the study area. Spot spraying will consist of foliar spraying, which will only be used on small to medium (<1 m

high) plants when wind speeds are low, although is the least preferable treatment method, as native shrubs and groundcovers are likely to be affected by the spray drift.

3.5 Weed disposal

The best practice control manual for *Austrocyllindropuntia*, *Cylindropuntia* and *Opuntia* species (Sheehan and Potter 2017) identifies a number of appropriate disposal methods. *Opuntia stricta** that has previously been mechanically removed in the study area has been disposed of within the landfill. Deep burial is the safest form of disposal for cacti (Sheehan and Potter 2017) and this will continue to be the preferred method for disposing of all *Opuntia stricta**, *Cylindropuntia leptocaulis** and *Cylindropuntia spinosior**. It is considered best practice to ensure that all vegetative matter is permanently buried to no less than 1 m below the soil surface (Sheehan and Potter 2017).

All biomass is to be disposed off in the landfill, as the principal method of opuntoid cacti reproduction in Australia is by vegetative means. Therefore, fragments of cladodes not appropriately disposed of can give rise to new plants if not properly disposed by ensuring that all vegetated material is removed. All seeding material that may be dislodged during removal of the plants will be bagged, and buried along with the vegetative material. The removal and disposal of *Opuntia stricta** is likely to constitute a reasonable proportion of the overall weed control in the study area. As such, stem injection using neat Roundup Biactive® is recommended for all large individuals (**Appendix A**), which will allow these plants to be treated in situ and reduce the amount of biomass requiring removal and disposal in landfill.

All *Bryophyllum delagoense** and *Asparagus asparagoides** will be removed by hand, bagged and also disposed of in the landfill. *Lycium ferocissimum** can either be left in situ where treated with foliar sprays or piled following cut and painting of the stems.

3.6 Weed management zones

The study area has been split into different management zones (MZs) to reflect the varying densities of *Opuntia stricta** and (**Figure 3.1**) *Lycium ferocissimum** (**Figure 3.2**). The remaining priority weeds and WoNS in the study area have not been separated into different MZs, as their distribution across the study area is limited (Error! Reference source not found.). *Asparagus asparagoides**, *Bryophyllum delagoense**, *Cylindropuntia leptocaulis** and *Cylindropuntia spinosior** will be eradicated from the study area within year one. **Table 3.1** separates the study area into different MZs for the priority weeds and WoNS recorded in the study area based on weed density (rare or isolated, medium or heavy infestation). Each of the MZs is given a priority for treatment (ranging from 1-3), 1 being high, 2 being moderate and 3 being a low priority for treatment, and a description is provided detailing proposed management of the species based on the MZ.



Figure 3.1: *Opuntia stricta** MZs.

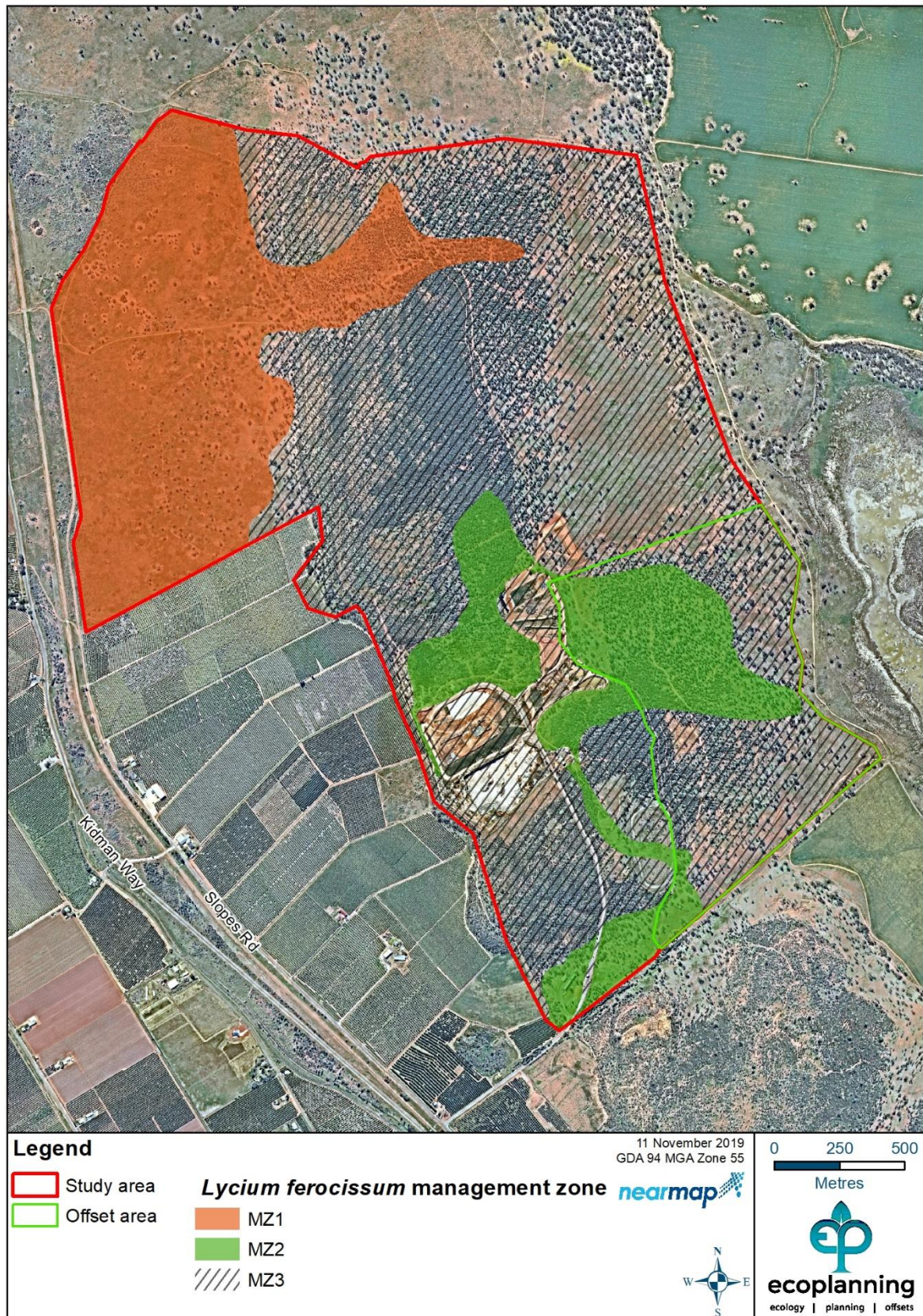


Figure 3.2: *Lycium ferocissimum** MZs.

Table 3.1: MZs for the priority weeds and WoNS identified in the study area.

Scientific Name	Management Zone	Weed Density	Management Objective	Priority	Description
<i>Lycium ferocissimum</i> *	1	Heavy	Contain and eventual eradication	3	<i>Lycium ferocissimum</i> * will be contained and prevented from spreading into adjoining MZs. Where possible, individuals should be treated prior to seeding and prevented from becoming more densely populated within the MZ. The removal of <i>Lycium ferocissimum</i> * should be conducted systematically within the MZ by initially targeting those individuals in the eastern portion of the MZ, and then gradually targeting all individuals towards the western perimeter of the MZ.
	2	Medium	Eradicate	2	<i>Lycium ferocissimum</i> * in the MZ consists of individuals adjacent to tracks, or in areas of where small-scale disturbance has occurred. Management of this MZ will consist of eradicating all individuals and preventing the further spread of seed into the adjoining MZ3.
	3	Rare or isolated	Eradicate and prevent	1	Management of this MZ will consist of preventing the establishment of new weeds from becoming established in the MZ. A small number of <i>Lycium ferocissimum</i> * occur through the MZ and will be eradicated as a matter of priority. Regular maintenance sweeps will be conducted through the zone
<i>Opuntia stricta</i> *	1	Heavy	Contain and eventual eradication	3	All large established individuals in the MZ will be treated as a matter of priority. Large individuals are likely to be prolifically seeding and would facilitate the further spread of propagules into adjoining MZs. The density of <i>Opuntia stricta</i> * will be reduced in this MZ, with the aim of initially eradicating all individuals around the perimeter of the zone, working inwards towards the core infestation.
	2	Medium	Eradicate	1	This MZ has a lower density of <i>Opuntia stricta</i> * than MZ2 and typically contains fewer of the large established individuals. The aim in this MZ is to prevent the further spread of <i>Opuntia stricta</i> * throughout the MZ and

Scientific Name	Management Zone	Weed Density	Management Objective	Priority	Description
					into MZ3. This MZ applies to scattered areas through the central and northern portion of the study area and is otherwise surrounded by isolated individuals. Treatment of <i>Opuntia stricta</i> * in this MZ will initially focus on those patches situated in the northern portion of the study area, with the aim of eradicating the infestations in a southerly direction (i.e. towards the core infestation associated with MZ1).
	3	Rare or isolated	Eradicate and prevent	1	Management of this MZ will consist of preventing new weeds from becoming established in the MZ. A small number of <i>Opuntia stricta</i> * occur through the MZ and will be eradicated as a matter of priority. Regular maintenance sweeps will be conducted through the zone
<i>Asparagus asparagoides</i> *	Entire study area	Rare or isolated	Eradicate	1	Eradication of the few areas identified in the study area, following which new infestation will be prevented from becoming re-established by conducting regular maintenance sweeps across the study area.
<i>Cylindropuntia leptocaulis</i> *					
<i>Cylindropuntia spinosior</i> *					
<i>Bryophyllum delagoense</i> *					

4 Performance criteria, monitoring and reporting

Monitoring will measure the success of the weed control program, specifically whether:

- the KPIs set out for each of the priority weeds and WoNS (see **Appendix A**) within the study area have been met, or are on track to being met.
- certain treatment methods have been more successful than others. This would trigger a change to the preferred treatment method, choice of herbicide, or dilution rate.
- new priority weeds or WoNS become established within the study area that were not initially identified in this WCP.

The bush regeneration contractor will monitor the success of the WCP and document this in an annual report for the site. The report will determine the effectiveness of the works undertaken by conducting an assessment against the KPIs specified in **Appendix A** and. A revised map of weed distribution will be prepared every two years by the bush regeneration contract to assist in determining the overall reduction in extent of priority weeds and WoNS across the study area. After five years of being implemented, the WCP will undergo a periodic review and revision to determine the success of the weed control works and make any necessary changes to the recommendations in the WCP to ensure that KPIs are on track to being met.

A quarterly report will be completed by the bush regeneration contractors to document the work conducted onsite, which will be consolidated and form the basis of the annual report. The quarterly report will contain, but will not be limited to the following:

- priority weeds and WoNS targeted and the treatment method utilised;
- environmental weeds treated and the treatment methods utilised
- an approximation of the time spent in each MZ and task (i.e. manual removal, spot spraying and stem injection);
- whether works comprise primary, secondary or maintenance works;
- any observations, such as the occurrence of new weed species;
- comments on the success of treatment methods and the rate of survival of species treated by spot spraying and stem injection;
- herbicide and other chemicals used, including quantity, dilution rate, species targeted and other relevant information;
- climatic conditions which may have influenced weed germination and growth; and
- the weight of *Opuntia stricta** biomass removed and disposed of in landfill.

The KPIs outlined in **Appendix A** are based on the eradication of priority weeds and WoNS within given MZs. Measuring KPIs according to reduction in weed cover (i.e. density), or abundance was not considered appropriate, given the large scale of the site, and the growth form of *Opuntia stricta** and *Lycium ferocissimum**, which generally has a sparse cover and with exception for core infestation of *Opuntia stricta**, are scattered across the study area.

5 References

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Sheehan, M.R. and Potter, S (2017). Managing Opuntoid Cacti in Australia: Best practice control manual for *Austrocylindropuntia*, *Cylindropuntia* and *Opuntia* species. Department of Primary Industries and Regional Development (WA), Perth.

Appendix A Weed treatment methods

Weeds of National Significance and priority weeds

Zone	Objective	Target Species	Method	Key Performance Indicators		
				Year 1	Year 5	Year 10
All	Control, eradicate and prevent further establishment	<i>Opuntia stricta</i>	<ul style="list-style-type: none"> <i>Opuntia stricta</i> will be treated using a combination of manual removal (hand-pulling, mattocking or digging), stem injecting (drill and fill and pad injection) and careful spot spraying. Stem injecting is the preferred method for large individuals exceeding 1 m in height. Drill and fill will be used for large individuals with an established trunk. Pad injection will be used for individuals >1 m that don't have large trunks which can be easily drilled into. All plants treated by stem injecting will be spray with a red or blue spray paint to assist in ongoing monitoring of treatment success. Manual removal is the preferred method of treatment for small to medium sized individuals (<1 m). Spot spraying of <i>Opuntia stricta</i>* should be limited to degraded areas, during dry periods and only on individuals of small to medium size (<1 m high). Spot spraying should be limited to the core infestations of <i>Opuntia stricta</i>* (i.e. MZ1) where manual removal, or stem injection may not be the most viable treatment method, given the high abundance of 	<ul style="list-style-type: none"> Eradication of <i>Opuntia stricta</i>* in MZ3 Eradication of <i>Opuntia stricta</i>* across 25% of MZ2 All Large <i>Opuntia stricta</i>* (>2 m) in MZ1 treated by drill and fill, or pad injection 	<ul style="list-style-type: none"> <i>Opuntia stricta</i>* eradicated across MZ2 <i>Opuntia stricta</i>* reduced across 50% of MZ1. Scattered individuals (<30 cm in height) may be present at low densities. 	<ul style="list-style-type: none"> Eradication of <i>Opuntia stricta</i> across all MZs



Zone	Objective	Target Species	Method	Key Performance Indicators		
				Year 1	Year 5	Year 10
			<p>individuals.</p> <ul style="list-style-type: none"> All <i>Opuntia stricta</i>* vegetative matter removed manually will be collected and disposed of in the landfill. Individuals that have been spot sprayed or treated by stem injecting can be left in situ. 			
All	Control, eradicate and prevent further establishment	<i>Lycium ferocissimum</i>	<ul style="list-style-type: none"> <i>Lycium ferocissimum</i> will be treated using a combination of cut and painting with neat Roundup Biactive® and spot spraying (i.e. Grazon®) and should follow the rate specified on the label. Cut and painting with neat Roundup Biactive® should be the preferred method of treatment for large individuals (>2 m tall), as obtaining good coverage with a foliar spray can be difficult, and would likely result in substantial spray drift. <i>Lycium ferocissimum</i> treated by cut and painting can be piled, or left in situ, by elevating the cut stem so it is not sitting directly on the ground. Cut and painting should also be the preferred treatment method when the plant is experience dye back from drought or stress, as foliar sprays are unlikely to be effective. 	<ul style="list-style-type: none"> Eradication of <i>Lycium ferocissimum</i> in MZ1 Eradication of <i>Lycium ferocissimum</i> across 25% of MZ2 Containment of <i>Lycium ferocissimum</i> in MZ1, with no new individuals occurring 	<ul style="list-style-type: none"> <i>Lycium ferocissimum</i> eradicated in MZ2. <i>Lycium ferocissimum</i> reduced across 75% of MZ1 with a focus on the individuals in the eastern portion of the MZ 	<ul style="list-style-type: none"> <i>Lycium ferocissimum</i> eradicated across all MZs.
All	Eradicate and prevent further establishment	<i>Asparagus asparagoides</i>	<ul style="list-style-type: none"> <i>Asparagus asparagoides</i> will be treated by manually removing all underground tubers using a hand trowel, mattock or spade. <i>Asparagus asparagoides</i> will be removed 	<i>Asparagus asparagoides</i> eradicated by the end of year one and ongoing.		



Zone	Objective	Target Species	Method	Key Performance Indicators		
				Year 1	Year 5	Year 10
			prior to seeding, and all tubers and seed will be bagged and disposed of in the landfill.			
All	Eradicate and prevent further establishment	<i>Cylindropuntia leptocaulis</i>	<ul style="list-style-type: none"> The target species will be treated by manual removal. All vegetative and seeding material will be removed and disposed of in the landfill. 	<i>Cylindropuntia leptocaulis</i> eradicated by the end of year one and ongoing.		
All	Eradicate and prevent further establishment	<i>Bryophyllum delagoense</i>	<ul style="list-style-type: none"> <i>Bryophyllum delagoense</i> will be treated by manual removal. Care should be taken as plantlets may detach from the leaves during removal and establish as new plants. Plants removed by hand will be immediately bagged to prevent the potential for the plant to spread further across the study area. All vegetative and seeding material will be removed and disposed of in the landfill. 	<i>Bryophyllum delagoense</i> eradicated by the end of year one and ongoing.		



Environmental weeds

Objective	Target Species	Method
Control and suppress exotic grasses and herbaceous weeds	<i>Alternanthera pungens</i> , <i>Arctotheca calendula</i> , <i>Asphodelus fistulosus</i> , <i>Cortaderia selloana</i> , <i>Echium plantagineum</i> , <i>Echium vulgare</i> , <i>Eragrostis cilianensis</i> , <i>Heliotropium europaeum</i> , <i>Hypericum perforatum</i> , <i>Marrubium vulgare</i> and <i>Xanthium spinosum</i>	<ul style="list-style-type: none"> Exotic grasses and herbaceous weeds will be treated by brushcutting in late spring to early summer, after flowering, but prior to seeding. Where appropriate, exotic grasses and herbaceous weeds will be treated using a suitable specific, or non-specific herbicide, such as Roundup Biactive®, Fusilade® for grasses, or Starane Advanced® for herbaceous weeds. Spot spraying should be avoided where off target damage to native species would occurs. Hand removal will be the preferred treatment method in these areas and will be conducted when time permits. The focus of exotic grasses and herbaceous weed treatment within the first five years of implementing this WCP will be limited to containing existing infestations and reducing their extent where possible.
Control and suppress woody weeds	<i>Ricinus communis</i> and <i>Rosa rubiginosa</i>	<ul style="list-style-type: none"> Given the low cover and abundance of these species in the study area, their treatment should be achieved by cut and painting with neat Roundup Biactive®. Spot spraying with (i.e. Grazon®) is acceptable in areas where off target damage to native species would not occur, although would require follow up to ensure that the species have been successfully eradicated.