

**Reconnaissance Flora and
Vegetation Survey
Pinjarra Racecourse
Pinjarra**



Prepared for: Coterra Environment

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EXECUTIVE SUMMARY

This report has been prepared by Del Botanics on behalf of Coterra Environment. Del Botanics was engaged to undertake a Reconnaissance Flora and Vegetation Survey at the Pinjarra Racecourse, Pinjarra. The survey areas are shown on **Figure 1**, the total area of the site surveyed is approximately 3.35 hectares. The extent of the site is shown in **Figure 2**.

One Vegetation Community at a local level was recorded during the survey. No species of Threatened (T), Priority Flora or Threatened Ecological Communities (TEC's) under the *Biodiversity Conservation Act 2016* and listed by Department of Biodiversity Conservation and Attractions (DBCA) and under the *Environment Protection and Biodiversity Conservation (EPBC) Act, 1999* , were located during the time of the survey. The vegetation condition is "Completely Degraded".

Based on the results of this survey, Del Botanics is of the opinion that development of the site would not pose significant or unacceptable impacts on the flora and vegetation with consideration to the following recommendations:

- Retain large mature *Eucalyptus rudis* trees where possible for fauna habitat.

STATEMENT OF LIMITATIONS

This environmental report has been prepared in accordance with the scope of services set out in the original quotation. In preparing the report, Del Botanics has relied on data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report. Del Botanics has not verified the accuracy or completeness of the data to the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report are based in whole or in part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Del Botanics will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, unavailable, misrepresented or otherwise not fully disclosed.

In accordance with the scope of services, Del Botanics has relied on the data and has conducted environmental field monitoring in the preparation of the report. The nature and extent of monitoring conducted is described in the report. Within the limitations imposed by the scope of services, the monitoring, and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care. No other warranty, express or implied, is made.

The report has been prepared for the benefit of the Client and for no other party. Del Botanics assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report. Other parties should not rely upon the report or the accuracy or completeness of any conclusions, and should make their own enquiries and obtain independent advice in relation to such matters.

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1. INTRODUCTION

1.1 BACKGROUND

This report has been prepared by Del Botanics on behalf of Coterra Environment. Del Botanics was engaged to undertake a Reconnaissance Flora and Vegetation Survey at the Pinjarra Racecourse, Pinjarra. The survey areas are shown on **Figure 1**, the total area of the site surveyed is approximately 3.35 hectares. The extent of the site is shown in **Figure 2**.

1.2 PURPOSE OF THIS REPORT

This report was prepared to document the vegetation communities and condition that occurs on site. The flora species and vegetation were used to determine the significance of the site in regards to Threatened and Priority Flora and Threatened Ecological Communities.

In summary this report provides:

- An assessment of vegetation communities and condition.

2. DESKTOP ASSESSMENT

2.1 RECONNAISSANCE FLORA AND VEGETATION SURVEY

A Reconnaissance Flora and Vegetation Survey was undertaken by gathering background information on the target area and undertaking a reconnaissance survey to verify the accuracy of the background study; to further delineate and characterise the flora and the range of vegetation units present in the target area; and to identify potential impacts.

2.2 DECLARED RARE AND PRIORITY FLORA

Species of Flora acquire “Threatened” “Presumed Extinct” or “Priority” conservation status where populations are restricted geographically or threatened by local processes. The Department of Biodiversity, Conservation and Attractions (DBCA) recognise these threats and subsequently applies regulations towards population protection and species conservation. The DBCA enforces regulations under the *Biodiversity Conservation Act 2016* to conserve Threatened species and protect significant populations. Priority Flora species are potentially rare or threatened and are classified in order of threat. Threatened and Priority Flora category definitions are listed in **Table 1**.

Table 1: Definition of Rare and Priority Flora Species (DEC 2012)

Conservation Code	Category
T	<p>Threatened Flora (Declared Rare Flora – Extant). Schedule 1 under the Wildlife Conservation Act 1950 Rare Flora Notice Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such</p> <p>Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria: CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild. EN: Endangered –considered to be facing a very high risk of extinction in the wild. VU: Vulnerable - considered to be facing a high risk of extinction in the wild</p>
X	<p>Presumed Extinct Flora (Declared Rare Flora – Extinct) Schedule 2 under the Wildlife Conservation Act 1950 Rare Flora Notice Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such.</p>
P1	<p>Priority One: Poorly-known species Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes</p>
P2	<p>Priority Two: Poorly-known species Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.</p>
P3	<p>Priority Three: Poorly-known species Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them..</p>
P4	<p>Priority Four: Rare, Near Threatened and other species in need of monitoring (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>
P5	<p>Priority Five: Conservation Dependent species Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years</p>

A search of the Department of Biodiversity, Conservation and Attractions (DBCA) NatureMap Species Report identified twenty four Threatened and Priority flora species within a 5 km buffer of the site. No Threatened or Priority Flora were located during the survey. Flora species are listed below, in **Table 2.**

Table 2: NatureMap listed species

Species Name	Common Name	Conservation Code
<i>Aponogeton hexatepalus</i>	Stalked Water Ribbons	P4
<i>Boronia tenuis</i>	Blue Boronia	P4
<i>Caladenia huegelii</i>	Grand Spider Orchid	T
<i>Caladenia speciosa</i>		P4
<i>Dillwynia dillwynioides</i>		P3
<i>Diuris drummondii</i>	Tall Donkey Orchid	T
<i>Diuris purdiei</i>	Purdie's Donkey Orchid	T
<i>Drakaea elastica</i>	Glossy-leaved Hammer Orchid	T
<i>Drakaea micrantha</i>		T
<i>Drosera occidentalis</i>	Western Sundew	P4
<i>Grevillea bipinnatifida</i> subsp. <i>pagna</i>		P1
<i>Grevillea manglesii</i> subsp. <i>ornithopoda</i>		P2
<i>Johnsonia pubescens</i> subsp. <i>cygnorum</i>		P2
<i>Microtis quadrata</i>		P4
<i>Ornduffia submersa</i>		P4
<i>Ptilotus sericostachyus</i> subsp. <i>roseus</i>		P1
<i>Schoenus benthamii</i>		P3
<i>Schoenus pennisetis</i>		P3
<i>Stylidium aceratum</i>		P3
<i>Stylidium longitubum</i>	Jumping Jacks	P4
<i>Synaphea</i> sp. Pinjarra Plain (A.S. George 17182)		T
<i>Synaphea stenoloba</i>		T
<i>Tripterococcus</i> sp. <i>Brachylobus</i> (A.S. George 14234)		P4
<i>Verticordia plumosa</i> var. <i>ananeotes</i>		T

2.3 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT (1999) – SPECIES LEVEL SIGNIFICANCE

The *Environment Protection and Biodiversity Conservation* (EPBC) Act, 1999 promotes the conservation of biodiversity by providing strong protection for plants at a species level. Section 178 and 179 provides the lists and categories of threatened species under the Act and is presented in **Table 3** below.

Table 3: Categories of Threatened Species (EPBC Act, Section 179, 1999)

1	<p>Extinct A native species is eligible to be included in the extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.</p>
2	<p>Extinct in the Wild A native species is eligible to be included in the extinct in the wild category at a particular time if, at that time:(a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.</p>
3	<p>Critically Endangered A native species is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.</p>
4	<p>Endangered A native species is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.</p>
5	<p>Vulnerable A native species is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria..</p>
6	<p>Conservation Dependant A native species is eligible to be included in the conservation dependent category at a particular time if, at that time: (a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species.</p>

A search of the EPBC Protected Matters site was undertaken within a 5km radius of the site. The search result noted twelve flora species likely to occur in the area. Two flora species have been listed as Vulnerable, eight species as Endangered and two species as Critically Endangered. Two Threatened Ecological Communities are listed as likely to occur in the area. The search results are listed in **Table 4** and **5**.

No Threatened or Priority Flora were located during the survey. No Threatened Ecological Communities were recorded during the survey.

Table 4: EPBC listed flora species

Species Name	Conservation Code	Type of Presence
<i>Andersonia gracilis</i> Slender Andersonia	Endangered	Species or species habitat may occur within area
<i>Caladenia huegelii</i> Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid	Endangered	Species or species habitat may occur within area
<i>Diuris micrantha</i> Dwarf Bee-orchid [Vulnerable	Species or species habitat known to occur within area
<i>Diuris purdiei</i> Purdie's Donkey-orchid	Endangered	Species or species habitat known to occur within area
<i>Drakaea elastic</i> Glossy-leafed Hammer Orchid, Glossy-leafed Hammer Orchid, Warty Hammer Orchid	Endangered	Species or species habitat likely to occur within area
<i>Drakaea micrantha</i> Dwarf Hammer-orchid	Vulnerable	Species or species habitat likely to occur within area
<i>Eucalyptus x balanites</i> Cadda Road Mallee, Cadda Mallee	Endangered	Species or species habitat may occur within area
<i>Synaphea</i> sp. Fairbridge Farm (D. Papenfus 696) Selena's <i>Synaphea</i>	Critically Endangered	Species or species habitat known to occur within area
<i>Synaphea</i> sp. Pinjarra Plain (A.S. George 17182)	Endangered	Species or species habitat likely to occur within area
<i>Synaphea</i> sp. Serpentine (G.R. Brand 103)	Critically Endangered	Species or species habitat may occur within area
<i>Synaphea stenoloba</i> Dwellingup <i>Synaphea</i>	Endangered	Species or species habitat known to occur within area
<i>Thelymitra stellata</i> Star Sun-orchid	Endangered	Species or species habitat may occur within area

Table 5: EPBC listed Threatened Ecological Communities

Name	Status	Type of Presence
Banksia Woodlands of the Swan Coastal Plain	Endangered	Community likely to occur within area
Clay Pans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area

3. FIELD ASSESSMENT

3.1 FLORA AND VEGETATION

A survey was undertaken on 1st April 2019. The site was surveyed for flora, vegetation communities and condition. A flora species list is available in **Appendix A**.

The site assessment was undertaken by transvering the property by foot, flora species and vegetation communities and conditions were noted during the survey.

3.2 THREATENED AND PRIORITY FLORA

No species of Threatened (T) or Priority Flora were recorded during the survey. The results are based on a Reconnaissance Survey. Due to the condition of the site being completely degraded and parkland cleared, it is unlikely that these species will occur.

3.3 VEGETATION COMMUNITIES

One vegetation community was recorded at a local scale during the survey. The vegetation is best described as Parkland Cleared. The dominant species consists of *Corymbia calophylla*, *Eucalyptus rudis*, *Eucalyptus gomphocephala* and **Eucalyptus botryoides* over exotic grassland. Vegetation communities are shown on **Figure 3**.

3.4 VEGETATION CONDITION

The Vegetation Condition was rated according to the Vegetation Condition Scale commonly used in the Perth Metropolitan Region (Government of WA 2000). The definitions are described in **Table 6** below. The vegetation condition is “Completely Degraded”. This is shown on **Figure 4**.

Table 6: Vegetation Condition Scale (Taken from Bush Forever (Government of WA 2000))

Vegetation Condition	Definition
Pristine (1)	Pristine or nearly so, no obvious signs of disturbance.
Excellent (2)	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good (3)	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing
Good (4)	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded (5)	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded (6)	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

4. CONCLUSIONS AND RECOMMENDATIONS

One Vegetation Community at a local level was recorded during the survey. No species of Threatened (T), Priority Flora or Threatened Ecological Communities (TEC's) under the *Biodiversity Conservation Act 2016* and listed by Department of Biodiversity Conservation and Attractions (DBCA) and under the *Environment Protection and Biodiversity Conservation (EPBC) Act, 1999*, were located during the time of the survey. The vegetation condition is "Completely Degraded".

Section A is completely degraded and is devoid of any native vegetation, this area will not require a clearing permit.



Section A – Plantation of **Eucalyptus botyoides*

Section B is also completely degraded, however still retains an area of remnant *Eucalyptus rudis* (W.A Flooded Gum). In some cases there are hybridised *Eucalyptus rudis* with *Eucalyptus camaldulensis*. This area will required a clearing permit as there is remnant native vegetation on site.



Section B - *Eucalyptus rudis* x *Eucalyptus camaldulensis* (Hybrid)



Section B - *Eucalyptus rudis*



Section B - Completely Degraded, however still retains some *Eucalyptus rudis*

Section C is in completely degraded vegetation condition. It does however contain 2 areas of remnant native vegetation and will require a clearing permit. A large number of the native trees, *Eucalyptus gomphocephala*, *Corymbia calophylla* and *Corymbia haematoxylon* have been historically planted, however there are two distinct areas of remnant native trees and also two individual *Nuystia floribunda* tree's (W.A Christmas Tree) in this area. There is an area to the north east of Section C that has a number of large, mature, remnant *Eucalyptus rudis*. These trees would be predicted to be over 200 years old and have a number of hollows in various sizes and are in good condition. These trees are significant and provide valuable fauna habitat. The other area is a stand remnant of *Corymbia calophylla*. There is evidence that Black Cockatoo's are utilizing the *Corymbia calophylla* and *Corymbia haematoxylon* as a food source. These areas are shown on **Figure 3**.



Section C - large mature *Eucalyptus rudis*



Section C – Stand of remnant *Corymbia calophylla*



Section C – *Nuystia floribunda*

Based on the results of this survey, Del Botanics is of the opinion that development of the site would not pose significant or unacceptable impacts on the flora and vegetation with consideration to the following recommendations:

- Retain large mature *Eucalyptus rudis* trees where possible for fauna habitat;

5. REFERENCES

Beard J. S. (1990). *Plant life of Western Australia*. Kangaroo Press, Perth.

Environmental Protection Authority (2001a). Position Statement No. 2. *Environmental Protection of Native Vegetation in Western Australia*. EPA, Perth.

Environmental Protection Authority (2001b). Position Statement No. 3. *Terrestrial biological surveys as an element of biodiversity protection*. EPA, Perth.

Environmental Protection Authority (2003a). Guidance statement No. 10. *Guidance for the Assessment of Environmental Factors – Level of assessment for proposals affecting natural areas within the System 6 Region and Swan Coastal Plain portion of the System 1 Region*. EPA, Perth.

Environmental Protection Authority (2003b). Guidance statement No. 51. *Guidance for the Assessment of Environmental Factors – Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia*. EPA, Perth.

Western Australian Herbarium (2019). *FloraBase - The Western Australian Flora*. Department of Biodiversity, Conservation and Attractions

FIGURES



FIGURE 1 - SITE LOCATION

1:8000 @A4
0 100 200 300 400 m



FIGURE 2 - EXTENT OF SURVEY AREA

1:3000 @A4
0 50 100 150 m

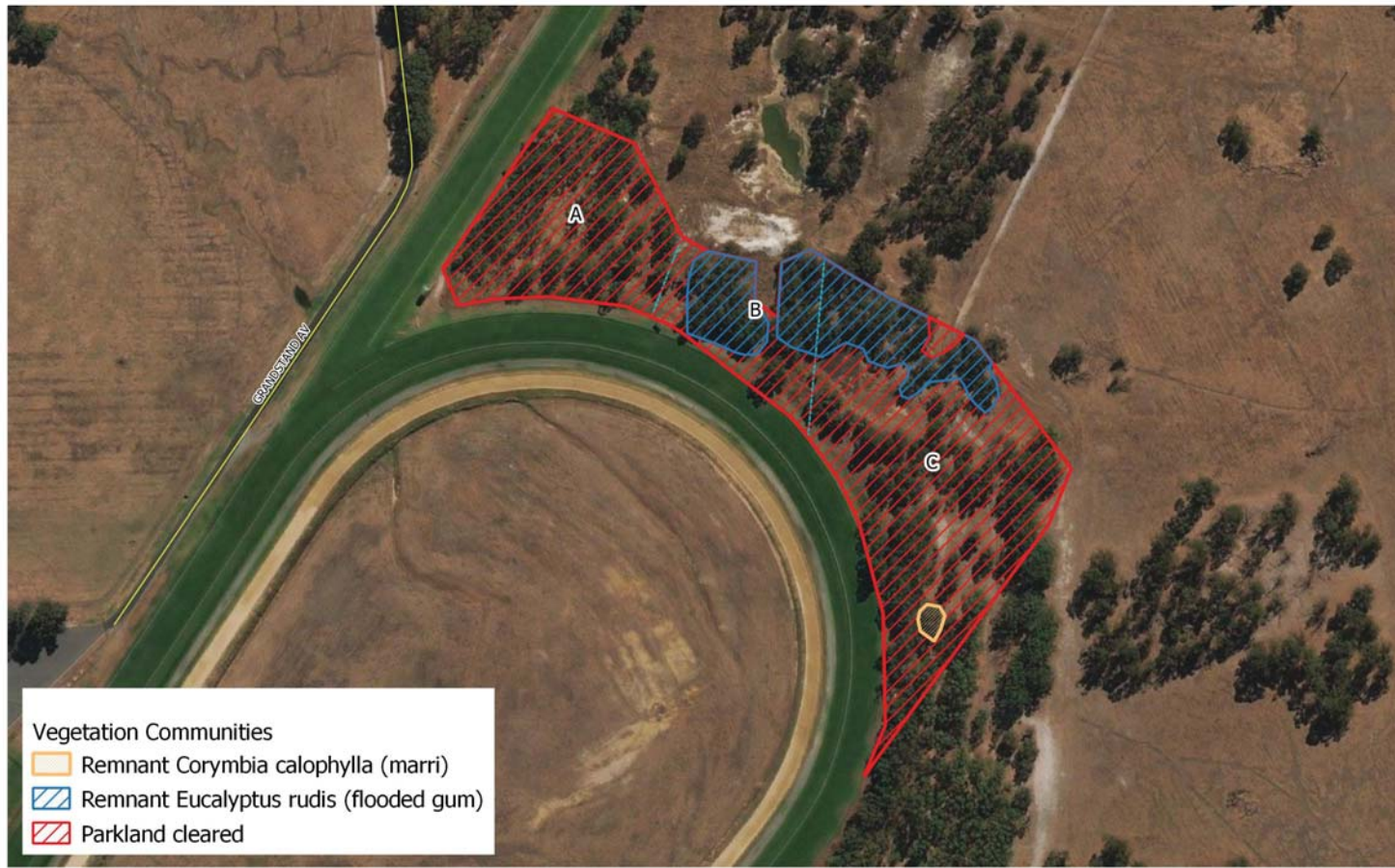



FIGURE 3 - VEGETATION COMMUNITIES

 1:3000 @A4
 0 50 100 150 m




FIGURE 4 - VEGETATION CONDITION



APPENDIX A
FLORA SPECIES RECORDED IN SECTION

Del Botanics
FIELD SHEET – FLORA AND VEGETATION SURVEY
Level 1 Assessment

Job Code: Pinjarra Racecourse	Date: 01/04/19	Site: Section A
Disturbance: High	Vegetation Description: Parkland Cleared	Vegetation Condition: Completely Degraded
Observations: Area completely devoid of native vegetation. No clearing permit required		
Coll No.	Taxon	
	<i>*Eucalyptus botyoides</i>	
	<i>*Lotus angustissimus</i>	
	<i>*Pennisetum clandestinum</i>	
	<i>*Romulea rosea</i>	

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FIELD SHEET – FLORA AND VEGETATION SURVEY
Level 1 Assessment

Job Code: Pinjarra Racecourse	Date: 01/04/19	Site: Section B
Disturbance: High	Vegetation Description: Parkland Cleared	Vegetation Condition: Completely Degraded
Observations: Currently retains some remnant native trees. This area will require a clearing permit.		
Coll No.	Taxon	
	<i>Eucalyptus rudis</i>	
	<i>Eucalyptus camaldulensis</i>	
	<i>*Pennisetum clandestinum</i>	
	<i>*Romulea rosea</i>	
	<i>*Lotus angustissimus</i>	
	<i>*Eucalyptus sp</i>	
	<i>Eucalyptus camaldulensis x Eucalyptus rudis (hybrid)</i>	
	<i>*Eragrostis curvula</i>	
	<i>*Cynodon dactylon</i>	
	<i>*Rumex sp</i>	
	<i>*Juncus sp</i>	
	<i>*Dittrichia graveolens</i>	

Del Botanics
FIELD SHEET – FLORA AND VEGETATION SURVEY
Level 1 Assessment

Job Code: Pinjarra Racecourse	Date: 01/04/19	Site: Section C
Disturbance: High	Vegetation Description: Parkland Cleared	Vegetation Condition: Completely Degraded
Observations: Currently retains some remnant native trees. This area will require a clearing permit		
Coll No.	Taxon	
	<i>Juncus plaaidus</i>	
	* <i>Rumex sp</i>	
	* <i>Eragrostis curvula</i>	
	* <i>Cynodon dactylon</i>	
	<i>Corymbia calophylla</i>	
	<i>Corymbia haematoxylon</i>	
	<i>Nuystia floribunda</i>	
	* <i>Eucalyptus sp</i>	
	<i>Eucalyptus gomphocephala</i>	
	* <i>Eucalyptus botryoides</i>	
	* <i>Ehrharta calycina</i>	
	* <i>Avena fatua</i>	
	* <i>Cucumis myriocarpus</i>	
	* <i>Pennisetum clandestinum</i>	
	* <i>Solanum nigrum</i>	