Native Vegetation Clearance

Nuriootpa Traders Transport Distribution Warehouse Development

Data Report

Clearance under the *Native Vegetation Regulations 2017*

17/1/2023

Prepared by Ecosphere Ecological Solutions

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1. Application information

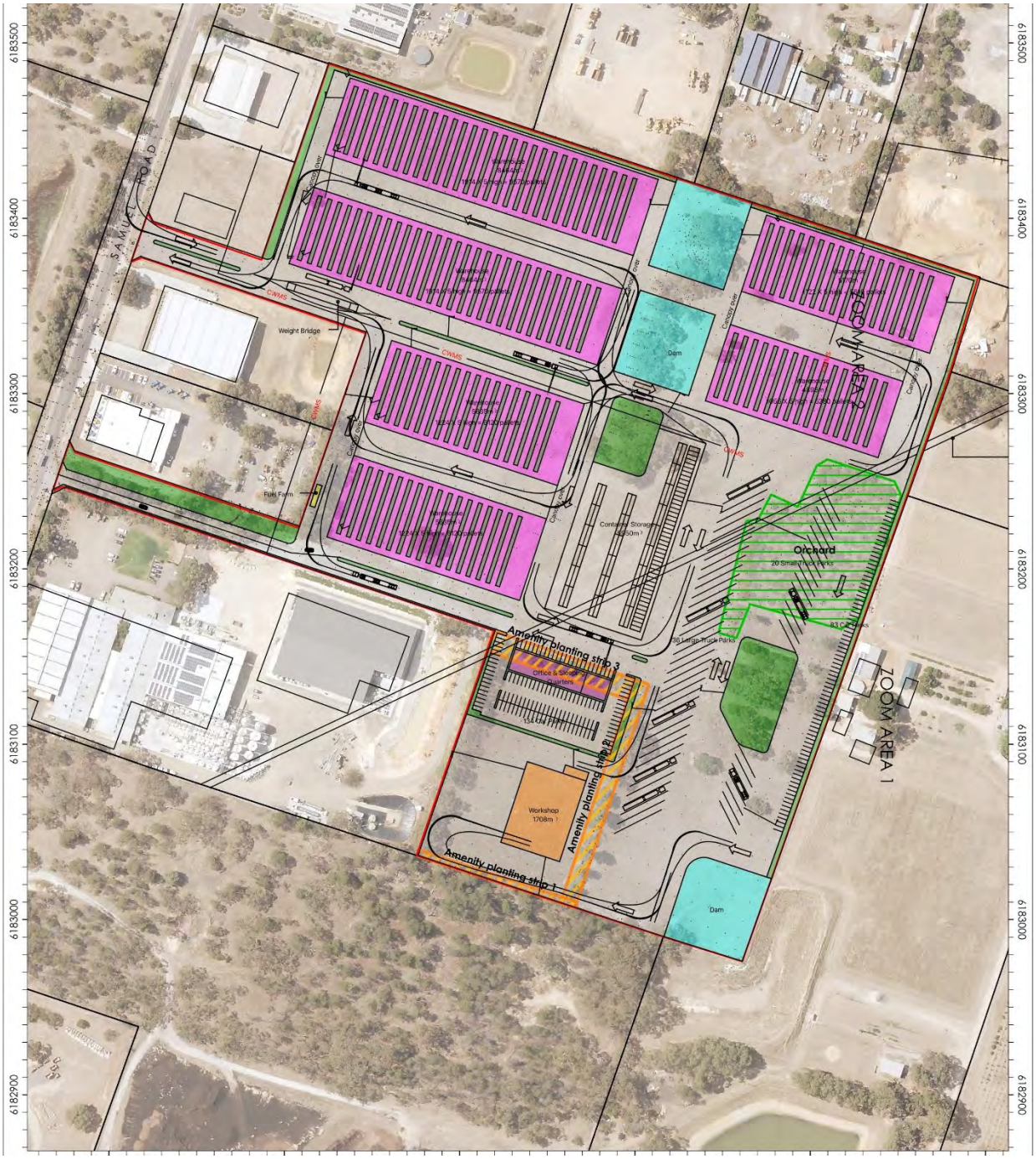
Application Details

Applicant:	Nuriootpa Traders Pty Ltd		
Key contact:	[redacted], Jaytex Construction [redacted]		
Landowner:	Industrial and Commercial Developments Pty Ltd.		
Site Address:	Lot 102 Samuel Road, Nuriootpa SA, 5355		
Local Government Area:	The Barossa Council	Hundred:	Nuriootpa
Title ID:	CT6160/23	Parcel ID	D110043AL102

Summary of proposed clearance

Purpose of clearance	The proposed development is for a change of land use to "warehouse" for transport distribution, including the construction of the following: • 6 warehouse buildings and a container storage area. • Associated office. • Associated workshop. • Associated "store". • Associated accommodation. • Associated pump room and tanks. • Associated parking of vehicles and provision of vehicle manoeuvring areas. • Fencing (chain-wire, Colorbond and acoustic). • 2 swales (for runoff flow regulation) • 1 retention dam
Native Vegetation Regulation	Schedule 1 Part 6 Clause 34 – Infrastructure
Description of the vegetation under application	Scattered trees within allotment comprised of Mixed *Eucalyptus leucoxylon* ssp. *leucoxylon* (SA Blue-gum), *E. odorata* (Peppermint Box) and *Callitris gracilis* (Native Pine) Open Woodland over exotic grassland.
Total proposed clearance - area (ha) and number of trees	31 scattered trees are proposed for clearance.
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation

Map of proposed clearance area



Mitigation hierarchy	The transport warehouse facility layout has been refined to reduce the number of trees required for clearance as well as to avoid larger patches of trees and trees of high value. Landscaping has been planned to accommodate areas of trees where possible and will be enhance using indigenous species with a range of habitat qualities that will help with foraging resources for birds.
SEB Offset proposal	Payment of $38,836.98

2. Purpose of clearance

2.1 Description

The subject land is comprised within Allotment 102 Samuel Road, Nuriootpa – CT CT6160/23 (Figure 1). The allotment is approximately 12.9 hectares in size with a subtle gradient rising from the South-west to North-east. The site is located on the outskirts of Nuriootpa within the strategic employment zone and has a rural character, with large allotments primarily accommodating industry, vineyards, farming activities, and patches of remnant vegetation. Some allotments also comprise detached dwellings. The allotment is predominantly cleared with clusters of remnant and emergent native scattered trees, planted amenity trees, emergent woody weeds and horticultural shrubs. Understorey ground cover was dominated by pasture grasses and clovers, primarily Phalaris, indicating this area is subject to wet soil conditions during winter.

The proposed development is applying for a change of land use to "warehouse" for transport distribution (Figure 2), including the construction of the following:

- 6 warehouse buildings and a container storage area.
- Associated office.
- Associated workshop.
- Associated "store".
- Associated accommodation.
- Associated pump room and tanks.
- Associated parking of vehicles and provision of vehicle manoeuvring areas.
- Fencing (chain-wire, Colorbond and acoustic).

2.2 Background

IBRA

The Interim Biogeographical Regionalisation of Australia (IBRA) was developed in 1993-94 and is endorsed by all levels of government as a key tool for identifying land for conservation under Australia's Strategy for the National Reserve System 2009-2030 (DoEE 2012). IBRA identifies geographically distinct bioregions based on common climate, geology, landform, native vegetation, and species information. The bioregions are further refined into subregions and environmental associations. The Project area falls within the Flinders Lofty Block IBRA Bioregion and is characterised by a Mediterranean climate, with predominantly winter rainfall, hot summers and mild winters. The subregion is the Mt Lofty Ranges which has a remnancy of 15% and at a finer scale, falls within the Barossa Environmental Association which has 7% remnant native vegetation.

NVIS Mapping

There is Native Vegetation Floristic Areas - NVIS - Statewide South Australian government vegetation mapping applicable to this allotment. The southern access to the site from Samuel Road contains native *Callitris gracilis* forest and woodland. The south-eastern corner of the allotment also borders onto this block of native vegetation. Nearby areas associated with remnant vegetation blocks describe *Eucalyptus odorata* Woodlands, *Callitris gracilis* woodlands and *Eucalyptus camaldulensis* woodlands associated with the north Para River.

Administrative boundaries

The Project area is in the Barossa Council Local Government Area (LGA) and the Hundred of Nuriootpa. It falls within the Northern and Yorke Landscape Management Area.

2.4 General location map

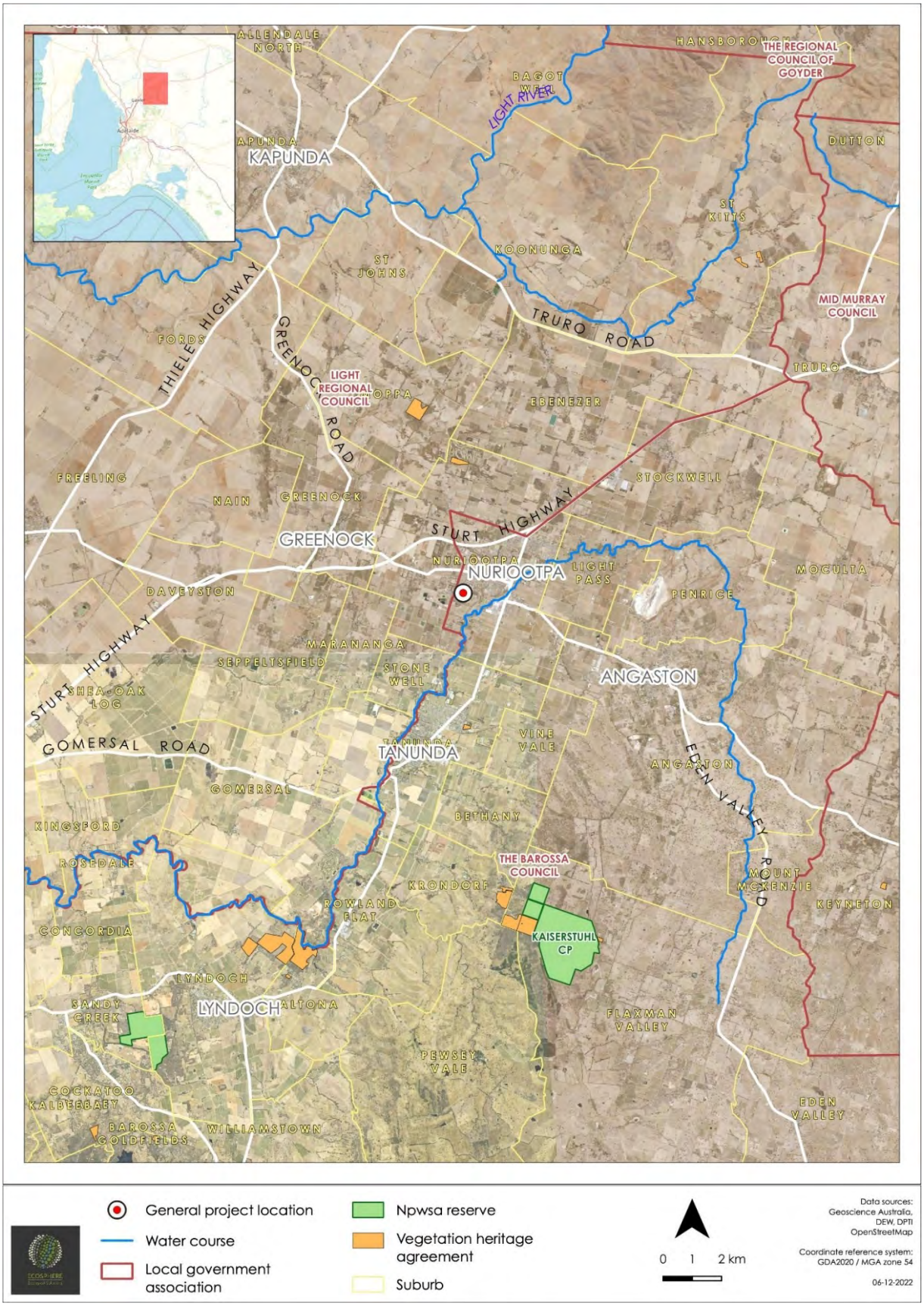


Figure 1. Location of project site.

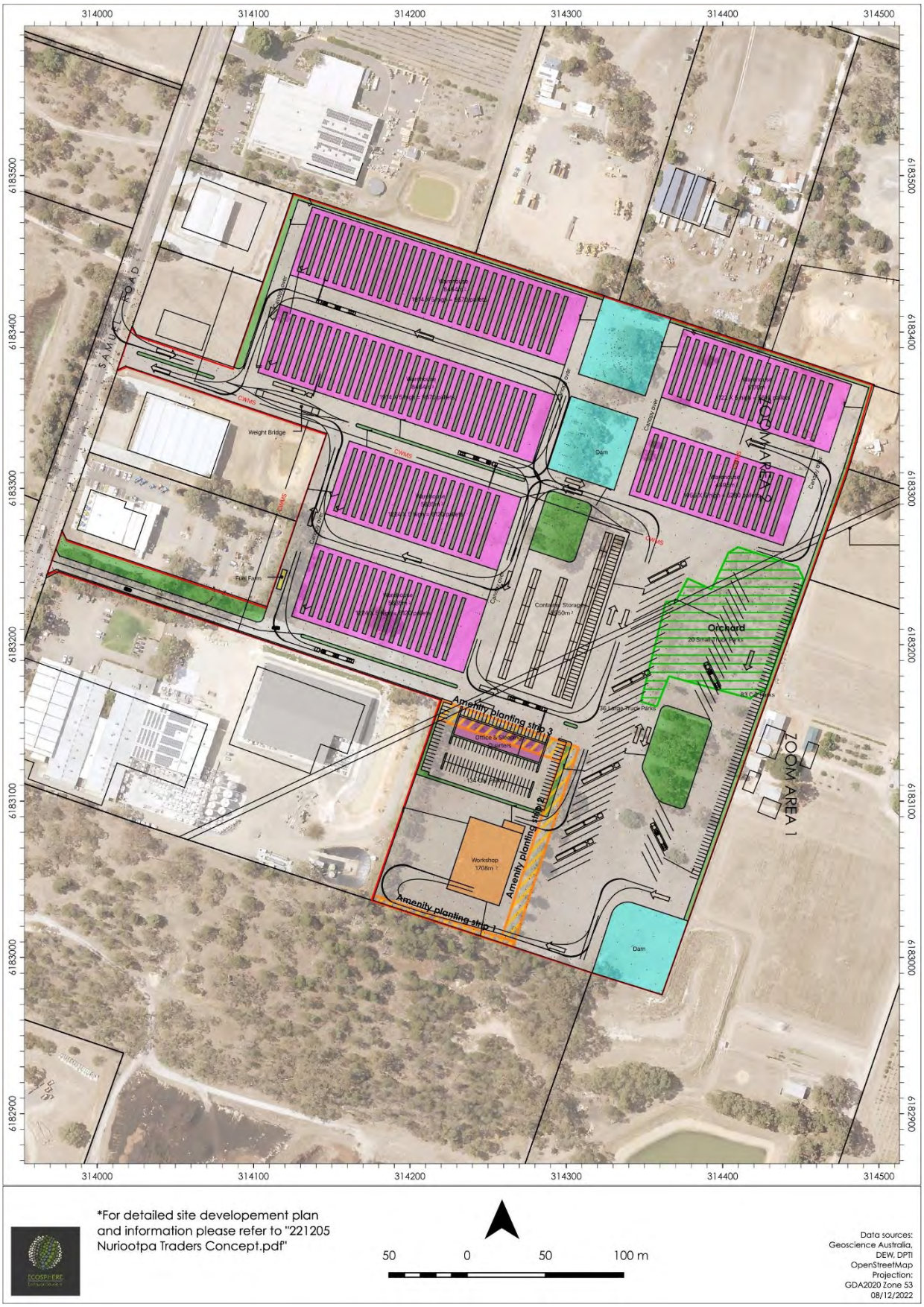


Figure 2. Proposed project footprint.

2.5 Details of the proposal

The project involves the construction of:

- "warehouse" buildings.
- Associated "office".
- Associated workshop.
- Associated "store".
- Associated pump room and tanks.
- Associated car parking and vehicle manoeuvring areas.
- Fencing (chain-wire, colorbond and acoustic).
- 3 dams (for runoff collection and control)

2.6 Approvals **required** *or* **obtained**

A summary of key legislation relating to flora and fauna consideration and their relevance to the proposed project is provided in Table 1 below.

The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides protection for matters of national environmental significance (NES). Any action that has, will have or is likely to have a significant impact on matters of NES requires referral under the EPBC Act.

Any clearance of native vegetation in South Australia requires approval under the relevant legislation.

Native plants and animals in South Australia are protected under the *National Parks and Wildlife Act 1972* (NPW Act). Under this Act, it is an offence to take a native plant or protected animal without approval. Conservation significant flora and fauna species listed on Schedules 7, 8, or 9 of the NPW Act potentially occur within the Project area.

From July 1, 2020, the *Landscape South Australia Act 2019* (LSA Act) replaced the *Natural Resources Management Act 2004* (NRM Act), as the key framework for managing the state's land, water, pest plants and animals, and biodiversity across the state.

Table 1. Legislative Summary

Legislation	Summary	Relevance
Commonwealth		
Environment Protection and Biodiversity Conservation Act 1999	To protect 'matters of national environmental significance' (MNES): • World Heritage properties • National Heritage properties • wetlands of international importance (Ramsar wetlands) • listed threatened species and ecological communities • migratory species • Commonwealth marine areas • the Great Barrier Reef Marine Park • nuclear actions (including uranium mining).	Where an activity may trigger requirements of the EPBC Act, this legislation must be considered. Any action that has, will have, or is likely to have a significant impact on a matter of national environmental significance requires referral and approval. Significant penalties apply. To determine whether an action is likely to have a significant impact on a matter of national environmental significance, refer to the Significant Impact Guidelines (Commonwealth of Australia 2009) at: http://www.environment.gov.au/epbc/publications/pubs/nes-guidelines.pdf.
South Australia		
National Parks and Wildlife Act 1972	Allows for the protection of habitat and wildlife through the establishment of parks and reserves (both on land and in State waters); provides for the protection of native flora and fauna; identifies flora and fauna species considered to be of	A person must not "take" a native plant, protected animal or the eggs of a protected animal without approval (s.48A). Significant penalties apply. To take a native plant means to remove the plant or part of the plant, from the place in which it is

Legislation	Summary	Relevance
	conservation significance (under Schedules 7, 8, and 9 of the Act); and provides for the use of approved wildlife through a system of permits allowing certain actions, i.e. keeping and selling (s.58), harvesting (s.60G), farming (s.60C), hunting (s.68A), releasing (s.55) and undertaking scientific research (s.53) on/of native fauna species, and for the taking of plants (s.49).	growing; or to damage the plant. To take a protected animal means to remove, hunt, catch, restrain, kill or injure an animal, or attempt to do so. A person may take non-prescribed plant species from private land with the consent of the owner; however, these species may also be covered under the *Native Vegetation Act 1991*. There are several non-complying activities in parks and reserves that result in penalty (parts 4-6).
Native Vegetation Act 1991	To preserve, enhance and manage the State's native vegetation; provide a regulatory framework to control clearance of vegetation; and provide incentives and assistance to landowners to encourage them to preserve and enhance native vegetation. The Act protects all native vegetation that naturally occurs, i.e., vegetation which has not been planted. This includes all naturally occurring local native plants, from small ground covers and native grasses to mallee scrub and tall trees. It does not cover planted trees. Approval is required for the clearance of native vegetation. Clearance is defined as: • the killing or destruction of native vegetation • the removal of native vegetation • the severing of branches, limbs, stems or trunks of native vegetation • the burning, poisoning and slashing of native vegetation • any other substantial damage to native vegetation including activities such as the draining for the reclamation of wetlands or flooding of land, grazing land where stock have been excluded for more than ten years.	Persons wanting to clear native vegetation must apply for a permit from the Native Vegetation Council (NVC) (ss.7,14), unless exempt under the regulations. The NVC will consider the impacts of the proposed clearance and may grant consent, refuse consent or grant consent subject to certain conditions (s.29). A net environment benefit is generally conditional on an approval being granted. Significant penalties apply if a person clears native vegetation without the permission of the NVC (s.26). The NVC can also take civil enforcement proceedings in the District Court for an order that the native vegetation be re-instated (s.31). The Act also provides the opportunity for landholders to enter into voluntary "Heritage Agreement(s)" to ensure vegetation on private land is protected for perpetuity (s.23).
Landscape South Australia Act 2019	From July 1, 2020, the *Landscape South Australia Act 2019* (LSA Act) replaced the *Natural Resources Management Act 2004*, as the key framework for managing the state's land, water, pest plants and animals, and biodiversity across the state.	Under the South Australian LSA Act landholders have a legal responsibility to manage declared pest plants and animals and prevent land and water degradation. A key priority of landscape boards is to support local communities and landowners to be solely responsible for sustainably managing their region's landscapes with an emphasis on land and water management, pest animal and plant control, and biodiversity. This includes providing greater funding and partnership opportunities with local community organisations to deliver on ground works and projects.
Planning Development and Infrastructure Act 2016	The Planning and Design Code is the cornerstone of the new system and has replaced all council development plans to become the sole source of	Any activity that damages a 'regulated tree' or 'significant tree' is 'development', and as such requires a development approval. Specifically, development approval is required for removal,

Legislation	Summary	Relevance
	planning policy for assessing development applications. The *Development Act 1993* has been replaced by the new Act state-wide and is no longer operational. The *Planning Development and Infrastructure Act 2016* provides provision for the protection of 'regulated trees' and 'significant trees.	killing or destruction, branch or limb lopping, ringbarking, or topping, or any other substantial damage to a regulated or significant tree, including to its root system other than maintenance pruning. Significant fines apply if breaches are proven.

2.7 Native Vegetation Regulation

Schedule 1 Part 6 Clause 34 – Infrastructure, to allow clearance of vegetation incidental to the construction or expansion of a building or infrastructure (and associated services) where the Minister has declared that the clearance is in the public interest.

2.8 Development Application information (if applicable)

Under the *Planning Development and Infrastructure Act 2016* the site is currently zoned Strategic Employment.

Overlays that apply to this site include:

- Character Preservation District (Township)
- Hazards (Bushfire - Medium Risk)
- Hazards (Flooding - Evidence Required)
- Native Vegetation
- Prescribed Water Resources Area
- Water Protection Area
- Water Resources

3. Method

Desktop study

3.1.1 Protected Matters Search Tool (PMST) – EPBC Act

The online Protected Matters Search Tool was used to determine MNES under the EPBC Act relevant to the Project area (DCCEEW 2022). The PMST is maintained by the Commonwealth Department of Climate Change Energy the Environment and Water (DCCEEW) and was used to identify flora and fauna species or ecological communities of national environmental significance that may occur or likely to have suitable habitat within the Project areas. Nationally threatened species potentially occurring within the sites were identified from this source.

3.1.2 Biological Database of South Australia (BDBSA) – NPW Act

A Biological Database of South Australian (BDBSA) Supertable search was obtained from the South Australian Department for Environment and Water (DEW) on 21st November 2022 to identify flora and fauna species previously recorded within a 5 km buffer around the Project area (DEW 2020). The BDBSA is comprised of an integrated collection of corporate databases which meet DEWNR standards for data quality, integrity and maintenance. In addition to DEWNR biological data the BDBSA also includes data from partner organisations (Birds Australia, Birds SA, Australasian Wader Study Group, SA Museum, and other State Government Agencies). This data is included under agreement with the partner organisation for ease of distribution, but they remain owners of the data and should be contacted directly for further information.

3.1.3 Assessment of the likelihood of occurrence

The likelihood of each threatened flora and fauna species occurring within the Project areas was assessed. A likelihood of occurrence rating (Highly Likely / Known, Likely, Possible and Unlikely) was assigned to each threatened species identified in the desktop PMST and BDBSA search (Table 2).

Table 2. Likelihood criteria summary.

Likelihood	Criteria
Highly Likely/Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is largely intact and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides species habitat which is largely intact.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area does not provide species habitat which is largely intact. Recorded within 20 -40 years, survey effort is considered adequate, habitat is present and intact, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within 20 -40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. or: No records within the previous 40 years despite suitable habitat being known to occur in the area. or: No records despite adequate survey effort.

3.2 Field Survey

The field survey was conducted on 1st December 2022 by NVC accredited ecologist Andrew Sinel with assistance from ecologist Imogen Marshall. The field survey included a vegetation survey and fauna assessment. All sites were assessed using the Scattered Tree Assessment Methodology (STAM) (NVC 2020).

3.3 Vegetation survey

The NVC scattered tree assessment method is suitable for assessing scattered trees in the following instances:

- Individual scattered trees (i.e., canopy does not overlap). Spatial distribution of trees may vary from approach what would be considered their original distribution (pre-European) through to single isolated trees in the middle of a paddock or;
- Dead trees (when a dead tree is considered native vegetation) or;
- Clumps of trees (contiguous overlapping canopies) if the clump is small (~<0.1 ha) and;
- For both scattered trees and clumps;
    - the ground layer comprising wholly or largely of introduced species
    - some scattered colonising native species may be present, but represents <5% of the ground cover
    - the area around the trees consists of introduced pasture or crops.

3.4 Fauna survey

Existing records and knowledge of species habitat preferences have been used to determine the species likely to use the landscape present as either permanent or transient habitat. Species likelihoods are based on Table 2.

4. Assessment Outcomes

4.1 Vegetation Assessment

General description of the vegetation, the site and matters of significance

The project area is located approximately 60 km north-east of Adelaide's CBD and 200 m south of Nuriootpa's urban fringe. The surrounding land use is predominantly commercial and agricultural. No water courses are present within the project area. The closest water course to the property is an unclassified stream (order 3) approximately 450m east of the property boundary. The property has a gentle upward gradient from north to south with a high point in the south-western corner. The soil type with the property was sand over clay.

The vegetation within the property was primarily cleared paddock but had patches of both native and exotic vegetation. Lightly wooded areas comprised of *Eucalyptus leucoxylon* (SA Blue-gum), *Eucalyptus odorata* (Peppermint Box) and *Callitris gracilis* (Native Pine) were present as two main patches of clumps of trees. Native trees of significant size and value are located within these wooded patches. A *Prunus sp.* orchard is located on the eastern boundary of the property. An amenity planting was located at the south-west corner of the allotment as strips along fence lines comprised of *Acacia iteaphylla*, *Acacia provincialis*, *Melaleuca sp*., *Corymbia sp.*, and *Callistemon viminalis*. The understorey across the entirety of the property was predominantly exotic grass and forb species.

Details of the vegetation associates/scattered trees proposed to be impacted

Scattered trees assessed within the project area are listed in Table 3. Photographs of each of the scattered trees can be found in Appendix 5.

A total of 173 individual trees plus amenity planting strips were assessed within the allotment of which 114 trees were remnant or emergent native vegetation and 59 were exotic species (Table 3). From project refinement and layout changes, the resultant number of trees overlapping with infrastructure was 31 native trees and 6 exotic trees. 21 native trees with a circumference of >2m at 1 height form the ground were recorded within the allotment (14 regulated 7 significant) and the refinements resulted in reducing the clearance of trees greater than 2m circumference to 5 (3 regulated, 2 significant). See Figure 3 to Figure 5 for locations of individual trees.

Table 3. Summary of scattered trees

Tree ID	Species	No. of Individuals	Height	Diameter	Canopy Dieback	Hollows	Removal	General Comments	Photo #
1	*Olea europaea*	1	5	24	0		Y		1
2	*Acacia iteaphylla*	1	5	38	0		Y		2
3	*Olea europaea*	1	7	35	0		Y		3
4	*Eucalyptus leucoxylon*	1	17	101	10		N		4
5	*Eucalyptus leucoxylon*	1	14	96	80		Y		5
6	*Callitris gracilis*	1	10	42	5		N		6
7	*Eucalyptus leucoxylon*	1	16	49	10		N		7
8	*Callitris gracilis*	1	12	48	10		N		8
9	*Eucalyptus leucoxylon*	1	12	82	70		N		9
10	*Callitris gracilis*	1	9	48	10		N		10
11	*Callitris gracilis*	1	9	41	10		N		11
12	*Callitris gracilis*	1	9	48	5		N		12
13	*Eucalyptus odorata*	3	5	23	60		N		13
14	*Eucalyptus leucoxylon*	1	17	67	10		Y		14
15	*Eucalyptus odorata*	1	2	46	90		Y		15
16	*Callitris gracilis*	1	9	34	25		Y		16
17	*Callitris gracilis*	1	9	38	15		Y		17
18	*Callitris gracilis*	1	9	42	10		Y		18
19	*Eucalyptus odorata*	1	10	41	40		N		19
20	*Callitris gracilis*	1	10	45	10		N		20
21	*Eucalyptus odorata*	1	10	47	5		N		21
22	*Callitris gracilis*	1	9	29	5		N		22
23	*Callitris gracilis*	1	9	30	5		N		23
24	*Callitris gracilis*	4	9	31	5		N		24
25	*Olea europaea*	1	4	16	0		N		25
26	*Callitris gracilis*	1	6	33	15		N		26
27	*Callitris gracilis*	1	8	41	5		N		27

Tree ID	Species	No. of Individuals	Height	Diameter	Canopy Dieback	Hollows	Removal	General Comments	Photo #
28	*Callitris gracilis*	1	6	25	10		N		28
29	*Eucalyptus leucoxylon*	1	24	147	5		N		29
30	*Eucalyptus odorata*	1	14	48	10		N		30
31	*Callitris gracilis*	1	10	45	60		N		31
32	*Callitris gracilis*	1	9	46	15		N		32
33	*Eucalyptus odorata*	1	8	38	40		Y		33
34	*Callitris gracilis*	1	9	44	5		Y		34
35	*Callitris gracilis*	1	5	44	10		Y		35
36	*Callitris gracilis*	1	9	43	5		Y		36
37	*Callitris gracilis*	1	6	33	5		Y		37
38	*Olea europaea*	1	4	18	0		Y		38
39	*Eucalyptus leucoxylon*	1	8	57	5		Y		39
40	*Eucalyptus leucoxylon*	1	8	41	5		Y		40
41	*Eucalyptus leucoxylon*	1	6	31	5		Y		41
42	*Eucalyptus leucoxylon*	1	7	30	5		Y		42
43	*Eucalyptus leucoxylon*	20	5	15	10		N		43
44	*Olea europaea*	40	2	5	0		N		44
45	*Eucalyptus leucoxylon*	1	18	117	10		N		45
46	*Eucalyptus odorata*	1	13	45	10		N		46
47	*Eucalyptus leucoxylon*	1	3	10	0		N		47
48	*Eucalyptus leucoxylon*	1	17	77	5		N		48
49	*Olea europaea*	1	4	10	0		N		49
50	*Eucalyptus leucoxylon*	1	7	26	5		N		50
51	*Eucalyptus leucoxylon*	1	7	17	5		N		51
52	*Eucalyptus leucoxylon*	1	2	6	0		Y		52
53	*Eucalyptus odorata*	1	10	35	15		N		53
54	*Eucalyptus odorata*	1	9	40	80		N		54
55	*Eucalyptus leucoxylon*	1	15	48	5		N		55

Tree ID	Species	No. of Individuals	Height	Diameter	Canopy Dieback	Hollows	Removal	General Comments	Photo #
56	*Olea europaea*	6	1.5	5	0		N		56
57	*Eucalyptus leucoxylon*	1	15	57	5		N		57
58	*Eucalyptus odorata*	1	17	82	5		Y	Outstanding example of species. Pruning required, loss factor 0.6.	58
59	*Eucalyptus leucoxylon*	1	10	110	20	3 Large, 2 Medium	Y		59
60	*Eucalyptus leucoxylon*	1	12	67	60		N		60
61	*Eucalyptus odorata*	1	7	57	40		N	Tree laying on side, still moderately healthy.	61
62	*Eucalyptus leucoxylon*	1	14	44	5		N		62
63	*Eucalyptus odorata*	1	5	50	90		N		63
64	*Eucalyptus odorata*	1	11	74	20		N		64
65	*Eucalyptus odorata*	1	13	62	30		Y		65
66	*Eucalyptus leucoxylon*	1	9	36	5		Y		66
67	*Eucalyptus leucoxylon*	1	9	43	5		Y		67
68	*Eucalyptus leucoxylon*	1	5	14	5		Y		68
69	*Eucalyptus odorata*	1	10	66	30		N		69
70	*Eucalyptus odorata*	1	13	62	20		N		70
71	*Eucalyptus odorata*	1	10	28	15		N		71
72	*Eucalyptus leucoxylon*	1	17	91	10		N		72
73	*Olea europaea*	3	1	2	0		N		73
74	*Olea europaea*	1	2	5	0		N		74
75	*Eucalyptus odorata*	1	15	77	5		N		75
76	*Eucalyptus leucoxylon*	1	18	95	5		N		76
77	*Eucalyptus leucoxylon*	1	12	32	5		Y		77
78	*Eucalyptus leucoxylon*	1	13	43	10		Y		78
79	*Eucalyptus leucoxylon*	1	12	39	5		Y		79
80	*Eucalyptus leucoxylon*	1	5	16	5		Y		80
81	*Eucalyptus leucoxylon*	1	18	101	10		N		81
82	*Eucalyptus leucoxylon*	1	15	38	10		N		82

Tree ID	Species	No. of Individuals	Height	Diameter	Canopy Dieback	Hollows	Removal	General Comments	Photo #
83	*Eucalyptus odorata*	3	12	44	30		N		83
84	*Eucalyptus leucoxylon*	1	6	49	80		N	Tree laying on side, still alive	84
85	*Eucalyptus odorata*	1	7	33	40		N	Tree laying on side, still alive	85
86	*Eucalyptus leucoxylon*	1	17	89	10		N		86
87	*Eucalyptus leucoxylon*	1	18	88	10		N		87
88	*Eucalyptus odorata*	1	13	74	5		N		88
89	*Eucalyptus leucoxylon*	1	6	43	20		N		89
90	*Eucalyptus leucoxylon*	1	17	95	15		N		90
91	*Callitris gracilis*	1	4	47	90		N		91
92	*Eucalyptus leucoxylon*	1	6	13	5		N		92
93	*Eucalyptus leucoxylon*	1	8	28	5		Y		93
94	*Eucalyptus leucoxylon*	1	8	52	10		Y		94
95	*Corymbia maculata*	1		59	0		Y		95
96	*Eucalyptus leucoxylon*	1	18	110	10		N		96
97	*Eucalyptus leucoxylon*	1	20	87	5		Y		97
98	*Eucalyptus leucoxylon*	1	3	6	0		Y		98
99	*Eucalyptus leucoxylon*	1	17.6	57	5		Y		99
100	*Acacia provincialis*	1	7	16	10		N		100
101	*Acacia iteaphylla*	1	3	5	0		Y		101
Amenity planting 1	See comments	17	n/a	n/a	n/a		Y	3 *Acacia iteaphylla*, 3 *Melaleuca armillaris*, 9 *Corymbia citriodora*, 2 *Melaleuca nesophila*. No regulated or significant trees.	102
Amenity planting 2	See comments	34	n/a	n/a	n/a		Y	14 *Corymbia maculata*, 5 *Melaleuca nesophila*, 7 *Melaleuca armillaris*, 4 *Acacia iteaphylla*, 4 *Callistemon viminalis*. No regulated or significant trees.	103
Amenity planting 3	See comments	18	n/a	n/a	n/a		Y	8 *Corymbia citriodora*, 4 *Acacia iteaphylla*, 3 *Melaleuca armillaris*, 2 *Melaleuca nesophila*, 1 *Callistemon viminalis*. No regulated or significant trees.	104

Site map showing areas of proposed impact

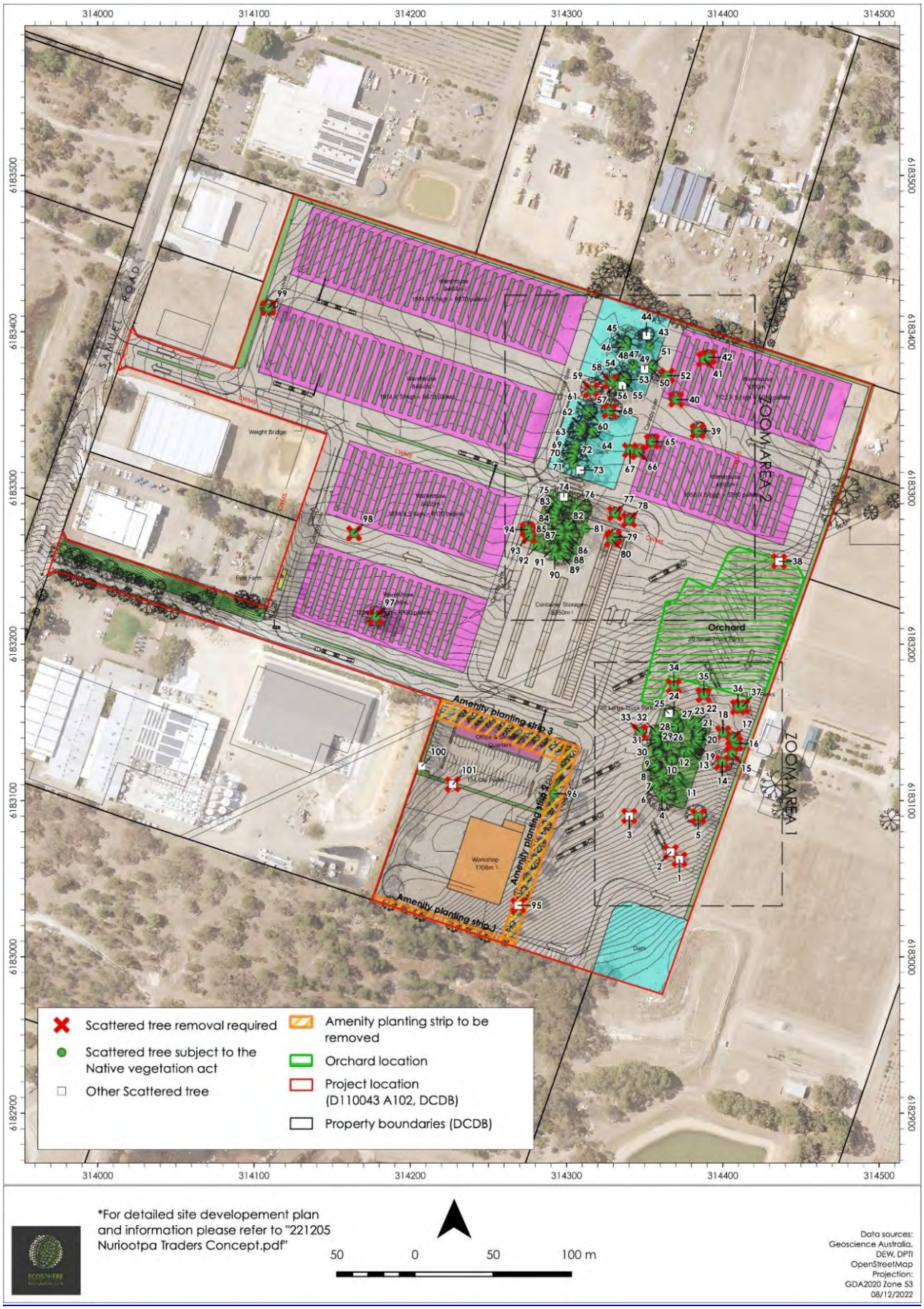


Figure 3. Project layout showing proposed vegetation clearance.

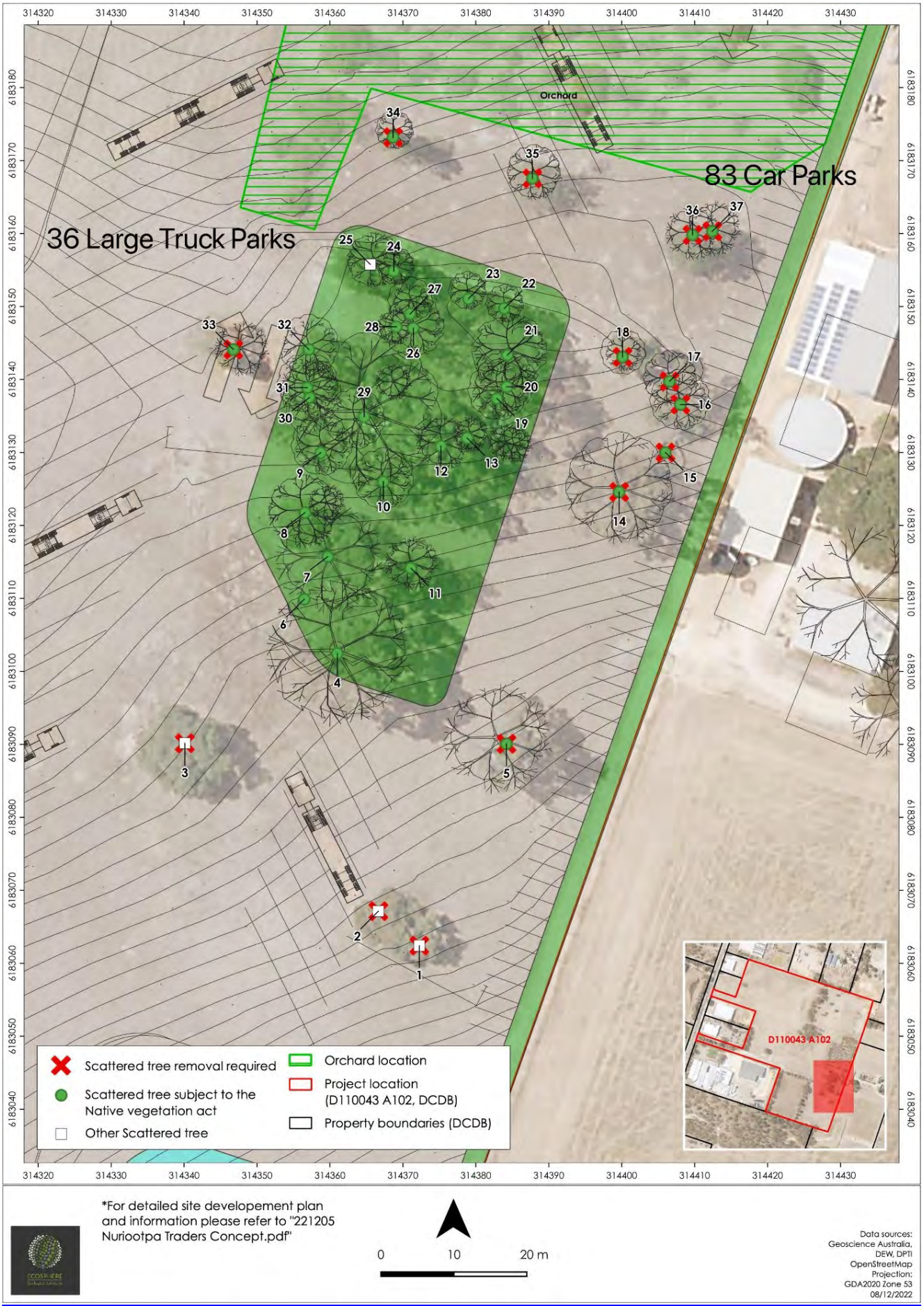


Figure 4. Zoom area 1

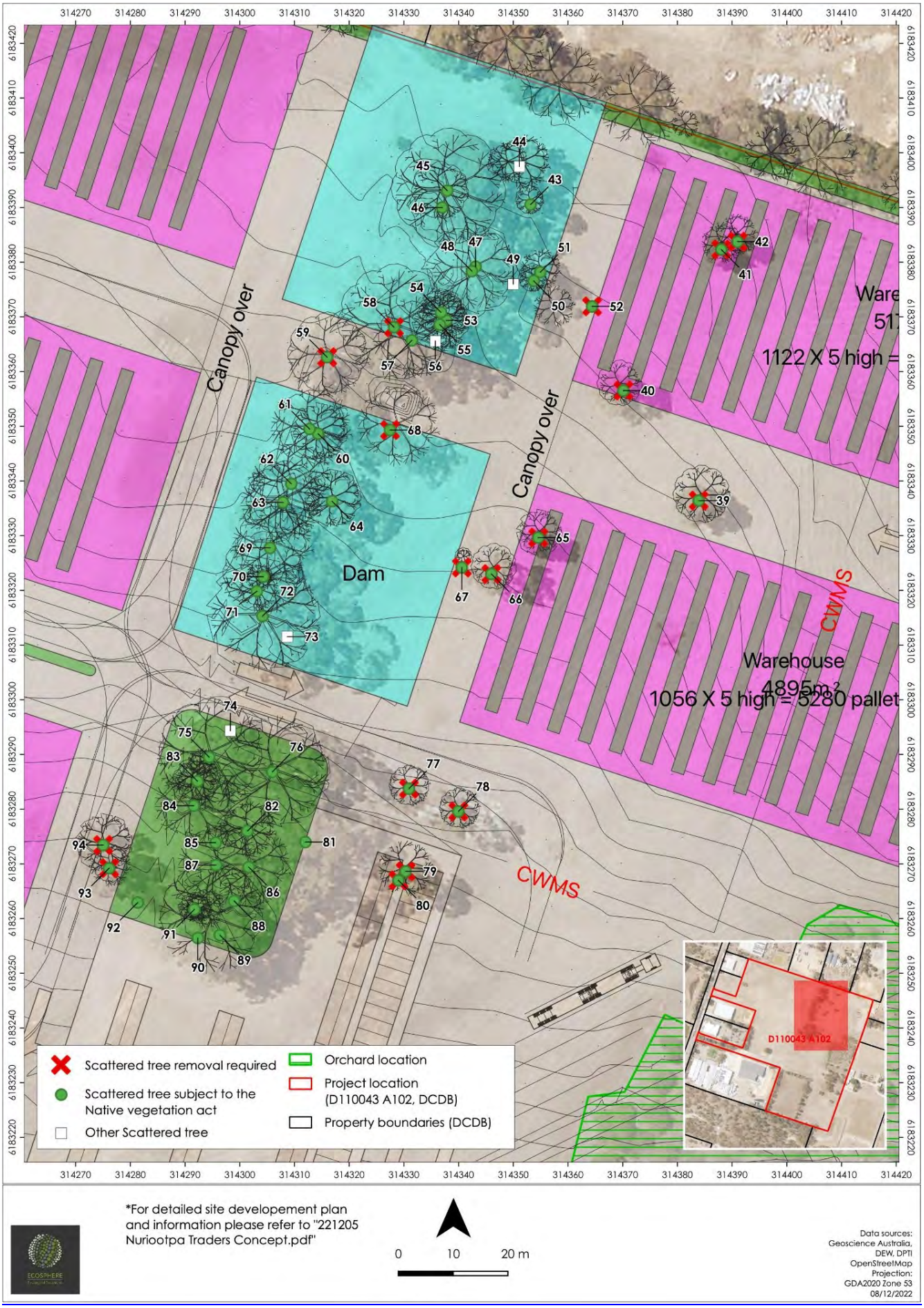


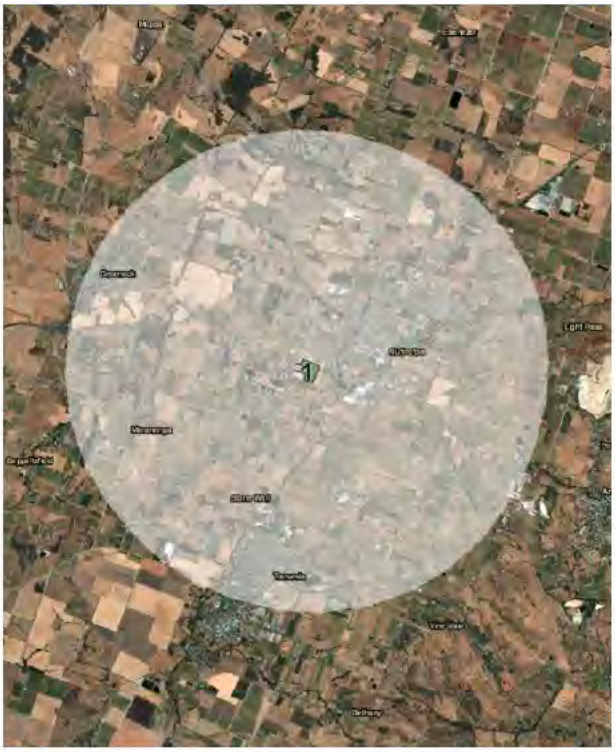
Figure 5. Zoom area 2

4.2 Threatened Species assessment

4.2.1 Matters of National Significance

A total of 27 listed threatened species and 11 migratory species were identified by the EPBC Act PMST report as potentially occurring or having suitable habitat potentially occurring within 5 km of the project area (Table 4) (DCCEEW 2022). The relevant MNES protected under the EPBC Act are discussed in detail below.

Table 4. PMST Summary

Search Area (5km Buffer)	Matters of National Environmental Significance	Identified within search area
	World Heritage Properties	0
	National Heritage Places	0
	Wetlands of International Importance (RAMSAR)	0
	Great Barrier Reef Marine Park	0
	Commonwealth Marine Area	0
	Listed Threatened Ecological Communities	2
	Listed Threatened Species	27
	Listed Migratory Species	11
	Other Matters Protected by the EPBC	
	Commonwealth Lands	0
	Commonwealth Heritage Places	0
	Listed Marine Species	17
	Whales and Other Cetaceans	0
	Critical Habitats	0
	Commonwealth Reserves Terrestrial	0
	Australian Marine Parks	0
	Habitat Critical to the Survival of Marine Turtles	0
	Extra Information	
	State and Territory Reserves	4
	Regional Forest Agreements	0
	Nationally Important Wetlands	0
	EPBC Act Referrals	4
	Key Ecological Features	0
	Biologically Important Areas	0
	Bioregional Assessments	0
	Geological and Bioregional Assessments	0

4.2.2 Threatened ecological communities

Two Threatened Ecological Communities (TEC) were found in the PMST as potentially occurring within 5 km of the project area. A summary of these TEC and comment about their likelihood of occurrence in the project area are provided in Table 5.

Table 5. Threatened Ecological Communities identified by the PMST as potentially occurring within 5km of the project area.

Threatened Ecological Community	EPBC Status	Likelihood of Occurrence in the Project Area
Iron-grass Natural Temperate Grassland of South Australia	Critically Endangered	Unlikely.
Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia	Critically Endangered	Unlikely.

4.2.3 Nationally threatened flora

Twelve flora species listed as threatened under the EPBC Act were identified in the PMST report as potentially occurring or having suitable habitat within the Project area (Table 6). One species of national conservation significance had historical records within 5 km of the project area. *Olearia pannosa* subsp. *pannosa* (Silver Daisy-bush) is listed as vulnerable (Figure 6).

4.2.4 State threatened flora

Fifteen flora species of state conservation significance had historical records from the BDBSA (Table 6 7 Figure 6). *Acacia iteaphylla* (Flinders Ranges Wattle) (SA:R) is present as a planted tree within the project area. However, this species is not native to the biogeographical area of the project site where it is considered a volunteer weed.

A list of all flora species with historical records within 5 km of the Project area is in shown Appendix 3.

Table 6. Threatened flora species listed under the EPBC Act and NPW Act identified in the PMST (Source 5) and Naturemaps (Source 3) database searches within 5 km of the project area.

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
Acacia iteaphylla	Flinders Ranges Wattle		R	3	30/06/2000	Mostly confined to heavy alluvial or basalt-derived soils. Growing in area as volunteer weed only.	Present as a planted tree.
Acacia menzelii	Menzel's Wattle	VU		5		Menzel's Wattle is endemic to South where it occurs discontinuously from Mt Hack (Northern Flinders Ranges) to Brachina, in the north, near Burra and to the Murray Bridge area.	Unlikely
Acacia pendula	Weeping Myall		V	3	21/03/2001	Only in area as planted amenity species.	Unlikely
Austrostipa densiflora	Fox-tail Spear-grass		R	3	22/02/2018	Occurs almost exclusively amongst rocks or on very shallow soil overlying rock, and most common in drier elevated sites.	Unlikely
Austrostipa tenuifolia			R	3	30/11/2005	Callitris dominated woodlands.	Likely
Bothriochloa macra	Red-leg Grass		R	3	25/11/2011	Common in disturbed sites such as roadsides	Likely
Brachyscome ciliaris var. *subintegrifolia*			R	3	1/08/2004	Widely distributed, occurring in every Australian state. Somewhat restricted in terms of habitat, favouring red earths and grey sands over limestone or clay, in disturbed areas and on the margins of salt pans.	Unlikely
Caladenia argocalla	White-beauty Spider-orchid	EN		5		Prefers open grassy herb land under light, in a mixed Eucalypt and Callitris forest. The species is also noted to occur on hills and slopes in open forest dominated by Drooping She Oak and in Eucalypt woodlands with a grassy understory	Unlikely
Caladenia tensa	Greencomb Spider-orchid, Rigid Spider-orchid	EN		5		Generally found in Heathy Woodland or Mallee on sands and sandy loams. Broadly considered secure but some forms may prove to be distinct species. No habitat available onsite, Highly Unlikely and not observed within Project area.	Unlikely
Centrolepis cephaloformis subsp. *cephaloformis*	Cushion Centrolepis		R	3	14/11/1996	Wetlands	Unlikely
Daviesia benthamii subsp. *humilis (NC)*	Mallee Bitter-pea		R	3	1/08/2004	Grows in mallee, on sandy or loamy soils, usually calcareous.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
Dianella longifolia var. *grandis*	Pale Flax-lily		R	3	31/03/2013	Ephemeral zones and woodlands	Unlikely
Dodonaea procumbens	Trailing Hop-bush	VU		5		Ephemeral drainage lines within open grasslands and hills	Unlikely
Dodonaea subglandulifera	Peep Hill Hop-bush	EN		5		Populations of the Peep Hill Hop-bush occur primarily on low hills on loamy soils associated with rocky (limestone, slate, shale) These low hills occur to the east of the range country, just before the vegetation changes to mallee flats. The species has also been recorded from plains country in sandy soils over limestone.	Unlikely
Echinopogon ovatus	Rough-beard Grass		R	3	31/03/2013	A fairly common species of moist forests, frequently associated with a rocky or skeletal substrate.	Unlikely
Eucalyptus behriana	Broad-leaf Box		R	3	4/04/2011	In this area, scattered within *E. odorata* and E. *leucoxylon* woodland on low hills, more likely to west of project site and consistent with existing records.	Possible
Euphrasia collina subsp. *osbornii*	Osborn's Eyebright	EN		5		The species has generally been recorded as growing in mallee scrubland (Barker 1982) but has also been found growing in sclerophyll forest and sometimes in sclerophyll woodland associated with Stringybark. Unlikely within Project area.	Unlikely
Glycine latrobeana	Clover Glycine, Purple Clover	VU		5		Native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy ground layer	Unlikely
Isoetes drummondii subsp. *drummondii*	Plain Quillwort		R	3	9/10/1996	Semi aquatic species is usually found growing in mud or temporary water and in damp depressions	Unlikely
Maireana rohrlachii	Rohrlach's Bluebush		R	3	21/03/2002	Open hills and grasslands often occurring on ridges and hillslopes.	Unlikely
Olearia pannosa subsp. *pannosa*	Silver Daisy-bush	VU	V	3, 5	28/09/2010	Small to medium size perennial suckering shrub to 1.5 m high. Found in mallee, woodland and forest communities. In the Northern and Yorke region it usually grows in woodlands but is known in a few moderate	Possible

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
						rainfall mallee areas. Not observed within Project area.	
Prasophyllum pallidum	Pale Leek-orchid	VU		5		Grows singly or in small groups on the more fertile soils of woodland and well-grassed open forests. Unlikely within Project area.	Unlikely
Prasophyllum pruinosum	Plum Leek-orchid	EN		5		Recorded in a range of open woodland habitats; usually with an overstorey of Pink Gum (*Eucalyptus fasciculosa*), South Australian Blue Gum (*E. leucoxylon*), *Acacia* and *Callitris gracilis*.	Unlikely
Ptilotus erubescens	Hairy-tails		R	3	31/03/2013	Occasional on relatively fertile soils supporting grassland and woodland communities	Possible
Rumex dumosus	Wiry Dock		R	3	1/08/2004	In grasslands and disturbed grassy areas; mostly on clayey soils.	Unlikely
Senecio macrocarpus	Large-fruit Fireweed, Large-fruit Groundsel	VU		5		The Yellow Swainson-pea Swainsona pyrophila is a short-lived, fire-adapted species that occurs in mallee vegetation communities in inland south-eastern Australia, where it is widely distributed from the northern Eyre Peninsula, South Australia, east to north-western Victoria and western New South Wales.	Unlikely
Thelymitra matthewsii	Spiral Sun-orchid	VU		5		Favours open forests and woodlands in well-drained sand and clay loams. It is a post-disturbance coloniser. It has been recorded as growing on gravely soils in disturbed areas of low coastal in swampy soils on lateritic podsol on gently sloping plateaus or from sand overlying limestone on undulating plain.	Unlikely

Source; 1- BDBSA, 2 - AoLA, 3 – NatureMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – others
Conservation status: Aus.: Australia (Environment Protection and Biodiversity Conservation Act 1999). SA: South Australia (National Parks and Wildlife Act 1972). Conservation codes: EN/E: Endangered. VU/V: Vulnerable, R: Rar

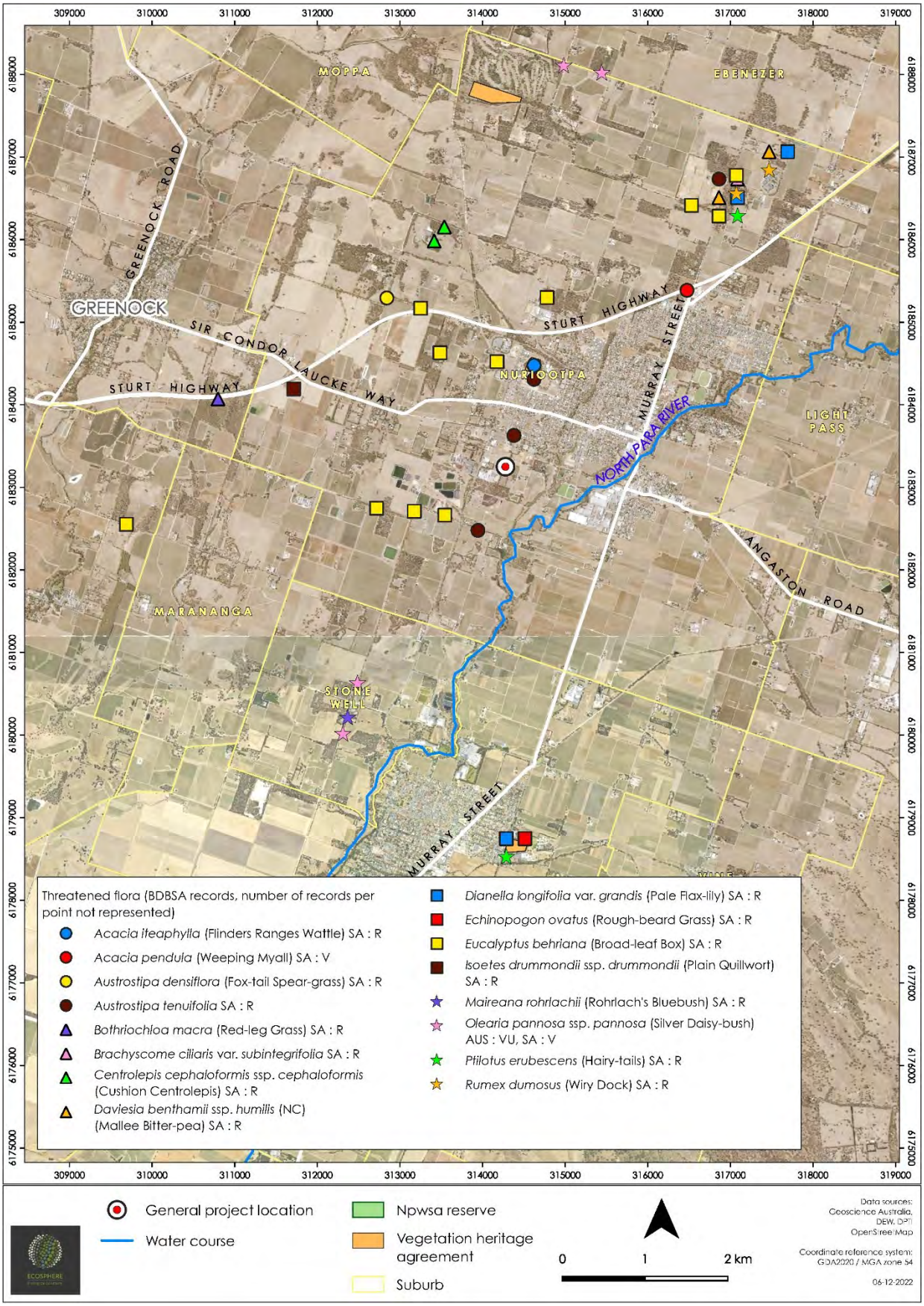


Figure 6. Threatened flora previously recorded within 5km of the project site.

4.2.5 Nationally threatened fauna

Fifteen fauna species listed as threatened under the EPBC Act were identified in the PMST report as potentially occurring or having suitable habitat within the project area (Table 7). This included ten birds, two reptiles, two mammals and one frog species. No species of national conservation significance had historical records within 5 km of the Project area (Table 7).

4.2.6 Migratory species

Eleven migratory species listed under the EPBC Act were highlighted as potentially present within 5km of the project area. None were considered likely to occur within the project area.

4.2.7 State threatened fauna

Four fauna species of state conservation significance had historical records from the Naturemaps BDBSA search within 5km. All state listed species were considered likely to utilise the project area and included:

- *Corcorax melanorhamphos* (White-winged Chough)
- *Melithreptus gularis* (Black-chinned Honeyeater)
- *Stagonopleura guttata* (Diamond Firetail)
- *Trichosurus vulpecula* (Common Brushtail Possum)

White-winged chough were observed on site during the field assessment.

A list of all flora species with records within 5 km of the Project area is shown in Appendix 4.

Table 7. Threatened fauna species and migratory listed under the EPBC Act and NPW Act identified in the PMST (Source 5) and BDBSA (Source 3) database searches within 5 km of the project area.

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
Birds							
Actitis hypoleucos	Common Sandpiper	Mi		5		The Common Sandpiper mainly breeds in parts of Europe and Asia, and occasionally Africa. Found along all coastlines of Australia and in many areas inland, the species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats.	Unlikely
Apus pacificus	Fork-tailed Swift	Mi		5		The Fork-tailed Swift is a non-breeding visitor to all states and territories of Australia. In South Australia, the Fork-tailed Swift is widespread from the Victorian border west to the Spencer Gulf. In Australia, the Fork-tailed Swift is almost exclusively aerial.	Unlikely
Botaurus poiciloptilus	Australasian Bittern	EN		5		In Australia, the Australasian Bittern occurs from south-east Queensland to south-east South Australia as far as the Adelaide Region, southern Eyre Peninsula, Tasmania and in the southwest of Western Australia It favours wetlands with tall dense vegetation	Unlikely
Calidris acuminata	Sharp-tailed Sandpiper	Mi		5		The Sharp-tailed Sandpiper spends the non-breeding season in Australia. In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	Unlikely
Calidris ferruginea	Curlew Sandpiper	CR, Mi		5		In Australia, curlew sandpipers occur around the coasts and are also widespread inland. In Australia, curlew sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand.	Unlikely
Calidris melanotos	Pectoral Sandpiper	Mi		5		In South Australia, the Pectoral Sandpiper is found mostly in the south-east, from north to the Murray River and west to Yorke Peninsula. The species is found at coastal lagoons, estuaries,	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
						bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands	
Corcorax melanorhamphos	White-winged Chough		R	3	18/10/2019	White-winged Choughs are found in open forests and woodlands. They tend to prefer the wetter areas, with lots of leaf-litter, for feeding, and available mud for nest building, no habitat present within project area.	Known
Falco hypoleucos	Grey Falcon	VU		5		The species occurs in arid and semi-arid Australia, including the Murray-Darling Basin, Eyre Basin, central Australia, and Western Australia (Marchant and Higgins 1993). The species is mainly found where annual rainfall is less than 500 mm, except when wet years are followed by drought, when the species might become marginally more widespread.	Unlikely
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	Mi		5		Latham's Snipe breed in Japan and far eastern Russia during the northern hemisphere summer. Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia. The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia.	Unlikely
Grantiella picta	Painted Honeyeater	VU		5		The species prefers woodlands which contain a higher number of mature trees, as these host more mistletoes. It is more common in wider blocks of remnant woodland than in narrower strips.	Unlikely
Leipoa ocellata	Malleefowl	VU		5		The Malleefowl is found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee and/or acacias. A sandy substrate and abundance of leaf litter are required for breeding.	Unlikely
Melithreptus gularis	Black-chinned Honeyeater		V	3	28/11/2003	Upper levels of open eucalypt forests and woodlands dominated by box and ironbark eucalypts. It is often found along waterways, especially in arid and semi-arid areas and in northern Australia. It is occasionally seen in gardens and street trees.	Likely
Motacilla cinerea	Grey Wagtail	Mi		5		The Grey Wagtail has a strong association with water, particularly rocky substrates along water courses but also lakes	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
						and marshes. The species is a rare non-breeding summer visitor to northern Australia.	
Motacilla flava	Yellow Wagtail	Mi		5		The Yellow Wagtail is a regular wet season visitor to northern Australia. The species is considered a vagrant to Victoria, South Australia and southern Western Australia.	Unlikely
Myiagra cyanoleuca	Satin Flycatcher	Mi		5		The Satin Flycatcher is found in tall forests, preferring wetter habitats such as heavily forested gullies	Unlikely
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	CR, Mi		5		Primarily coastal distribution rarely recorded inland. During the non-breeding season in Australia, the eastern curlew is most associated with sheltered coasts, especially estuaries, bays, harbours, inlets, and coastal lagoons.	Unlikely
Pedionomus torquatus	Plains-wanderer	CR		5		Plains-wanderers are distributed across north-central Victoria, southern New South Wales (NSW) around the Riverina region, eastern South Australia, and west-central Queensland. Plains-wanderers inhabit sparse native grasslands and are often absent from areas where grass becomes too dense or too sparse. They nest amongst native grasses and herbs, or sometimes amongst crops, feeding on a mixture of seeds, invertebrates, and leaves.	Unlikely
Polytelis anthopeplus monarchoides	Regent Parrot (eastern)	VU		5		The Regent Parrot (eastern) primarily inhabits riparian or littoral River Red Gum (*Eucalyptus camaldulensis*) forests or woodlands and adjacent Black Box (*E. largiflorens*) woodlands. Nearby open mallee woodland or shrubland, usually with a ground cover of spinifex (Triodia) or other grasses, supporting various eucalypts.	Unlikely
Rostratula australis	Australian Painted Snipe	EN		5		The Australian painted snipe occurs in shallow freshwater (occasionally brackish) wetlands, both ephemeral and permanent, such as lakes, swamps, claypans, inundated or waterlogged grassland/saltmarsh, dams, rice crops, sewage farms and bore drain.	Unlikely
Stagonopleura guttata	Diamond Firetail		V	3	28/02/2019	Open woodlands and grasslands as well a coastal heathland.	Likely
Tringa nebularia	Common Greenshank, Greenshank	Mi		5		The Common Greenshank is found in Europe, Africa, Asia, Melanesia and Australasia. The Common Greenshank does not breed in Australia; however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
						Australia. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass.	
Zoothera lunulata halmaturina	South Australian Bassian Thrush, Western Bassian Thrush	EN		5		Woodlands with dense understory, this species will forage in the ground layer.	Unlikely
Mammals							
Isoodon obesulus obesulus	Southern Brown Bandicoot	EN		5		Very dense understory in forests and woodlands. Usually associated with very dense heath or riparian areas infested with blackberry.	Unlikely
Pteropus poliocephalus	Grey-headed Flying-fox	VU		5		Grey-headed Flying-foxes have been recorded intermittently in South Australia for many decades, with a permanent camp only becoming established in Adelaide from 2010. Since 2010, Grey-headed Flying-fox numbers increased incrementally in Adelaide with regular monitoring revealing that there are now approximately 22,000 bats residing here. In South Australia, Grey-headed Flying-foxes feed in tree canopies on blossom and nectar of banksias, grevilleas, tea-trees and gum trees e.g. spotted and Lemon-scented gums and fleshy fruit	Possible as very occasional visitor
Trichosurus vulpecula	Common Brushtail Possum		R	3	29/08/2018	The Common Brushtail Possum (Trichosurus vulpecula) has been recently listed as rare in South Australia due to suffering a significant decline in abundance and reduction in its range across the state, mainly brought about by loss of habitat and predation. They are commonly found at night in the canopies of eucalypt and She-oak woodlands, mainly feeding on the leaves, flowers and fruits.	Likely
Reptiles							
Aprasia pseudopulchella	Flinders Ranges Worm-lizard	VU		5		Flinders Ranges Worm Lizard burrows freely in loose sand and soil, under rocks and litter in open woodland, native tussock grassland, riparian habitats and rocky isolates. Prefers stony soils or clay soils with a stony surface.	Unlikely
Tiliqua adelaidensis	Pygmy Blue-tongue Lizard, Adelaide Blue-tongue Lizard	EN		5		Occupies spider holes on open grasslands where no historical soil disturbance has occurred.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of habitat use
Frog							
Litoria raniformis	Growling Grass Frog, Southern Bell Frog, Green and Golden Frog	VU		5		Dependent on permanent freshwater lagoons for breeding. Utilises dense vegetation, soil cracks, fallen timber and debris as sources of refuge particularly on frequently inundated floodplains.	Unlikely

Source; 1- BDBSA, 2 - AoLA, 3 – NatueMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – others
Conservation status: Aus.: Australia (Environment Protection and Biodiversity Conservation Act 1999). SA: South Australia (National Parks and Wildlife Act 1972). Conservation codes: EN/E: Endangered. VU/V: Vulnerable, R: Rare, Mi: Migratory

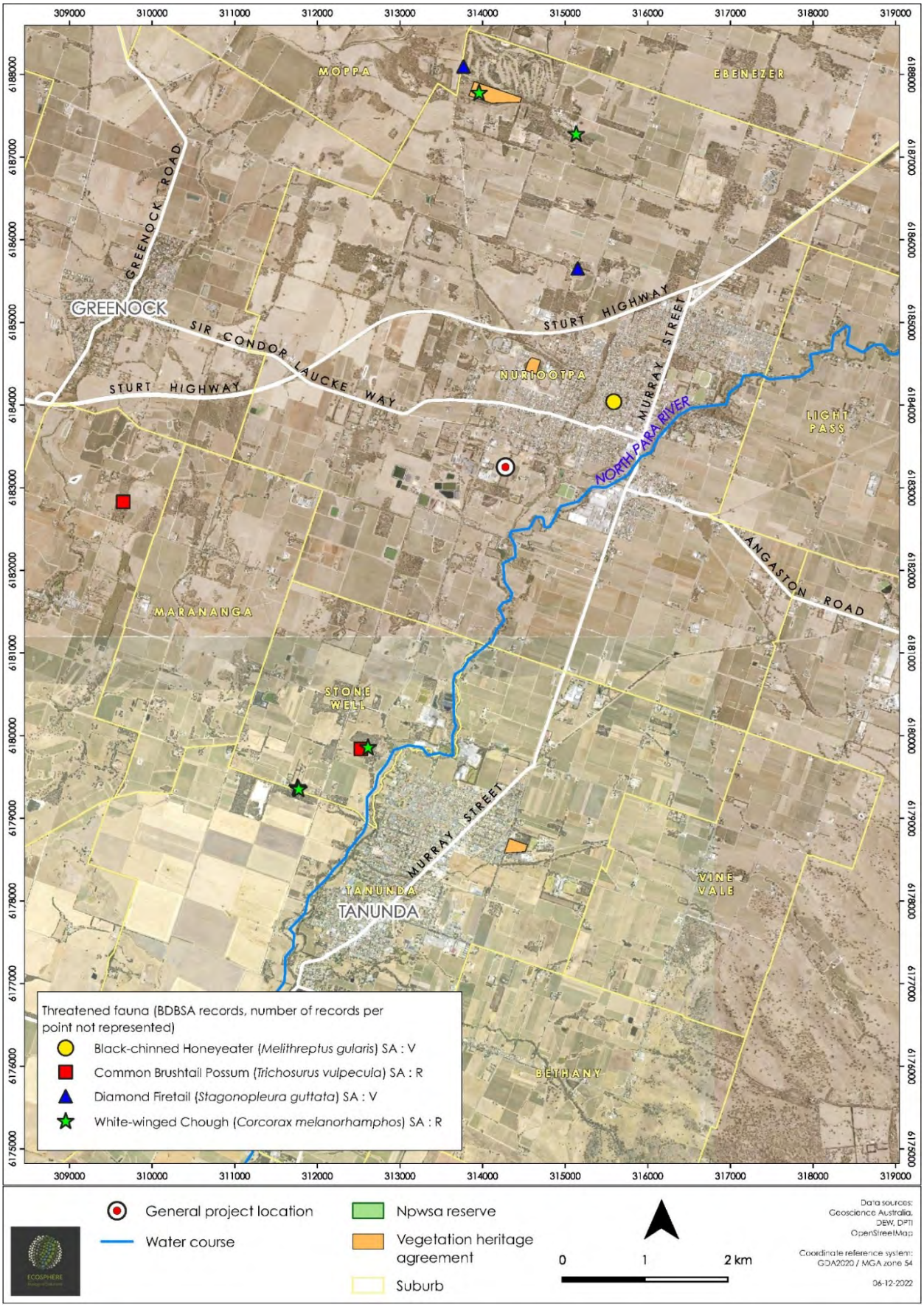


Figure 7. Threatened fauna previously recorded within 5km of the project site.

4.3 Cumulative impact

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must consider the potential cumulative impact, both direct and indirect, that is reasonably likely to result from a proposed clearance activity.

Trees located within the two swales reserved for surface water runoff collection and flow regulation, although not directly impacted by the clearance, may be indirectly impacted if periods of prolonged inundation occur. Prolonged inundation of the trees may lead to reduced tree health and potentially tree death.

4.4 Address the Mitigation Hierarchy

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must have regard to the mitigation hierarchy. The NVC will also consider, with the aim to minimize, impacts on biological diversity, soil, water and other natural resources, threatened species or ecological communities under the EPBC Act or listed species under the NP&W Act.

a) Avoidance – outline measures taken to avoid clearance of native vegetation

The project layout has been refined to avoid areas of high-density trees and trees of high habitat value. Whilst the original layout required the clearance of 88 native trees, the new refined new layout requires the clearance of 31 trees. This measure has allowed for the avoidance of the clearance of 57 native trees. Furthermore, the original layout required the clearance of 21 large (>200cm circumference), high habitat value trees. The refined layout proposes only 4 of these trees for clearance with a further 1 tree proposed for pruning. This avoids the clearance of 17 large, high value trees.

b) Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative).

The project layout has been refined to minimise the impact to the lightly wooded patches within the site. The majority of the trees proposed for clearance occur as single isolated trees or in small, isolated clumps of trees. Thereby the impact on more intact habitat patches within the project area is minimised. Numerous trees have been incorporated into areas set aside as bio retention swales which are implemented for the purpose of retaining rainfall.

The stormwater detention basin is expected to be empty for all frequent/minor storms with runoff only temporarily flowing through the invert of the basin into the outlet pipe. During the 5% AEP, stormwater will be restricted by the outlet pipe and fill the basin temporarily before being discharged downstream at the designed pre-development rate. Existing vegetation within the basin will only be inundated to a depth of approx. 0.5m for a maximum duration of 1-2 days as the runoff dissipates and is therefore unlikely to be affected by the stormwater regime. This is not expected to cause any declines in health to trees and may improve aquifer recharge and subsequently longer-term health of the trees given climate change forecasts for reduced average rainfall. Placement of this basin has prevented the requirement for removal of 11 scattered trees.

c) Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.

The nature of the project does not lend itself to significant rehabilitation however the retention of amenity trees associated with the southern boundary would maintain a buffer between an industrial facility and the intact remnant vegetation in the allotment south. The concept designs have set aside approximately 16,300m^2 for landscaping (Figure 8). Locally indigenous species including *Hakea rugosa, Hardenbergia violacea, Myoporum parvifolia, Enchylaena tomentosa* and *Lomandra* c.v. will aid in providing refuge and foraging resources for small birds and complement the retained large trees. Areas have been selected to allow for small distances between patches and includes the use of 2:1 batters instead of hard concrete walls for changes in levels across the site and small areas at the ends of carparking sections. This results in smaller bird species being able to 'skip' through the area without

being exposed to large sections of no plantings which otherwise effectively fragments area of amenity plantings and the remnant vegetation at the southern end of the site in an otherwise heavily industrialised zone.

Figure 8. Landscaping plan updates (shown by green hatched and blue areas).

d) Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.

The NVC will only consider an offset once avoidance, minimization and restoration have been documented and fulfilled. The SEB Policy explains the biodiversity offsetting principles that must be met.

4.5 Principles of Clearance (Schedule 1, *Native Vegetation Act 1991*)

The Native Vegetation Council will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The Native Vegetation Council will consider all the Principles of clearance of the Act as relevant, when considering an application referred under the *Planning, Development and Infrastructure Act 2016*.

Principle of clearance	Considerations
Principle 1a - it comprises a high level of diversity of plant species	Relevant information Seven native plant species were recorded in the bushland assessments. The NVC benchmark for remnant native vegetation assesses a native plant diversity score of less than 10 as not at variance with the principle. The seven species recorded were: • *Eucalyptus leucoxylon* • *Eucalyptus microcarpa* • *Callitris gracilis*
	Assessment against the principles Not at variance
	Moderating factors that may be considered by the NVC N/A
Principle 1b - significance as a habitat for wildlife	Relevant information Four threatened species have previously been recorded within 5km of the project site. All of these species were considered likely to use the vegetation in the project area (listed below). None of the species are expected to be impacted by the clearance. • *Corcorax melanorhamphos* (White-winged Chough) SA: R • *Melithreptus gularis* (Black-chinned Honeyeater) SA: V • *Stagonopleura guttata* (Diamond Firetail) SA: V • *Trichosurus vulpecula* (Common Brushtail Possum) SA: R All trees had a fauna habitat score of 1.4 and unit biodiversity scores ranging from 0.20 to 8.32.
	Assessment against the principles Seriously at Variance – all trees proposed for removal
	Moderating factors that may be considered by the NVC Patches of intact habitat and large trees of high habitat value were prioritised when refining the project layout. The retention of lightly wooded patches within the site as well as the retention of 17 of the 21 large, high habitat value trees within the site allows for the retention of important habitat and canopy cover. Thereby, habitat for wildlife is retained within the project area and movement of wildlife through the area is unlikely to be affected.
Principle 1c - plants of a rare, vulnerable or endangered species	Relevant information No threatened plant species were recorded in the scattered tree or bushland assessments.
	Assessment against the principles Not at variance.
	Moderating factors that may be considered by the NVC N/A

***Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered*:**	Relevant information Although Peppermint Box (*Eucalyptus odorata*) grassy woodlands are listed as a critically endangered ecological community, the vegetation within the property area containing *Eucalyptus odorata* does not meet the guidelines to be classed as this threatened community. This is because *Eucalyptus odorata* cannot be classed as the sole dominant species in the woodland and the minimum requirement of greater than 15 native species, of which at least three are native broad-leaved herbaceous species not on the disturbance resistant list and at least two are native perennial grass species, is not met.
	Assessment against the principles Not at variance
	Moderating factors that may be considered by the NVC N/A
Principle 1e - it is significant as a remnant of vegetation in an area which has been extensively cleared.	Relevant information The IBRA Association percentage vegetation remnancy (%) is 7 and the IBRA Subregion percentage vegetation remnancy (%) is 15. The Total Biodiversity Score for all scattered trees proposed for removal is 190.94.
	Assessment against the principles Seriously at variance – all trees proposed for removal
	Moderating factors that may be considered by the NVC Of the approximately 12.9 ha property, approximately 1 ha is covered by native vegetation (approximately 7.7%). This is slightly greater than the 7% native vegetation remnancy of the IBRA association but lower than the 8% remnancy within the surrounding 5km radius. Therefore, the vegetation within the property can be considered a significant remnant. Of the 1 ha of native vegetation within the property, approximately 0.8ha of native vegetation will be retained. The native vegetation proposed for removal consists mostly of single isolated trees of isolated clumps of trees. The trees retained are mostly within larger patches of remnant woodland. The retention of the larger wooded patches which contain both mature and emergent trees in important for ensuring the longevity of these patches of native vegetation.
Principle 1f - it is growing in, or in association with, a wetland environment.	Relevant information None of the vegetation proposed for clearance is associated with wetland environments.
	Assessment against the principles Not at variance
	Moderating factors that may be considered by the NVC N/A
Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.	Relevant information
	N/A
	Moderating factors that may be considered by the NVC N/A

Principles of Clearance (h-m) will be considered by comments provided by the local NRM Board or relevant Minister. The Data Report should contain information on these principles where relevant and where sufficient information or expertise is available.

4.6 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	31
	Area (ha)	n/a
	Total biodiversity Score	52.306
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1b
Risk assessment outcome		Level 4

4.7 NVC Guidelines

Provide any other information that demonstrates that the clearance complies with any relevant NVC guidelines related to the activity.

5. Clearance summary

Scattered trees Summary table

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee
2	1	1.4	0	1.3272136	1	1.39	$941.23	$51.77
11	1	1.4	0	3.4757694	1	3.65	$2,464.93	$135.57
12	1	1.4	0	0.2353017	1	0.25	$166.87	$9.18
13	1	1.4	0	1.2258449	1	1.29	$869.34	$47.81
14	1	1.4	0	1.9203122	1	2.02	$1,361.84	$74.90
15	1	1.4	0	2.1161699	1	2.22	$1,500.74	$82.54
29	1	1.4	0	1.1156826	1	1.17	$791.22	$43.52
30	1	1.4	0	2.2376892	1	2.35	$1,586.92	$87.28
31	1	1.4	0	1.0964561	1	1.15	$777.58	$42.77
32	1	1.4	0	2.2162298	1	2.33	$1,571.70	$86.44
33	1	1.4	0	1.0382523	1	1.09	$736.30	$40.50
34	1	1.4	0	1.2407244	1	1.30	$879.89	$48.39
35	1	1.4	0	1.0431445	1	1.10	$739.77	$40.69
36	1	1.4	0	0.4893637	1	0.51	$347.05	$19.09
37	1	1.4	0	0.5095338	1	0.54	$361.35	$19.87
45	1	1.4	0	0.1800705	1	0.19	$127.70	$7.02
50	1	1.4	0	6.5390303	1	6.87	$4,637.32	$255.05
51	1	1.4	0	3.9310681	1	4.13	$2,787.82	$153.33
57	1	1.4	0	4.0159696	1	4.22	$2,848.03	$156.64
58	1	1.4	0	0.9932579	0.6	0.63	$422.64	$23.25
59	1	1.4	0	1.1302286	1	1.19	$801.53	$44.08
60	1	1.4	0	0.2842388	1	0.30	$201.58	$11.09
67	1	1.4	0	1.0888755	1	1.14	$772.20	$42.47
68	1	1.4	0	1.3556746	1	1.42	$961.41	$52.88
69	1	1.4	0	1.2672253	1	1.33	$898.69	$49.43
70	1	1.4	0	0.3054717	1	0.32	$216.63	$11.91
83	1	1.4	0	0.5172716	1	0.54	$366.84	$20.18
84	1	1.4	0	1.1260367	1	1.18	$798.56	$43.92
86	1	1.4	0	4.7082413	1	4.94	$3,338.97	$183.64
87	1	1.4	0	0.1960249	1	0.21	$139.02	$7.65
88	1	1.4	0	3.3794731	1	3.55	$2,396.64	$131.82
Total	**31**			**52.306**		**54.50**	**$36,812.31**	**$2,024.68**

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	52.306	54.50	$36,812.31	$2,024.68	$38,836.98

Economies of Scale Factor	**0.5**
Rainfall (mm)	**505**

6. Significant Environmental Benefit

A Significant Environmental Benefit (SEB) is required for approval to clear under Division 5 of the *Native Vegetation Regulations 2017*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

☐ Establish a new SEB Area on land owned by the proponent.

☐ Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. _____

☐ Apply to have SEB Credit assigned from another person or body. The application form needs to be submitted with this Data Report.

☐ Apply to have an SEB to be delivered by a Third Party. The application form needs to be submitted with this Data Report.

☒ Pay into the Native Vegetation Fund.

PAYMENT SEB

If a proponent proposes to achieve the SEB by paying into the Native Vegetation Fund, summary information must be provided on the amount required to be paid and the manner of payment:

To fulfil the SEB obligation under the current plan, a payment of $36,812.31 plus an administration fee of $2,024.68 totalling $38,836.98 is required.

7. Appendices

Appendix 1. Bushland, Rangeland or Scattered Tree Vegetation Assessment Scoresheets associated with the proposed clearance and SEB Area (to be submitted in Excel format)

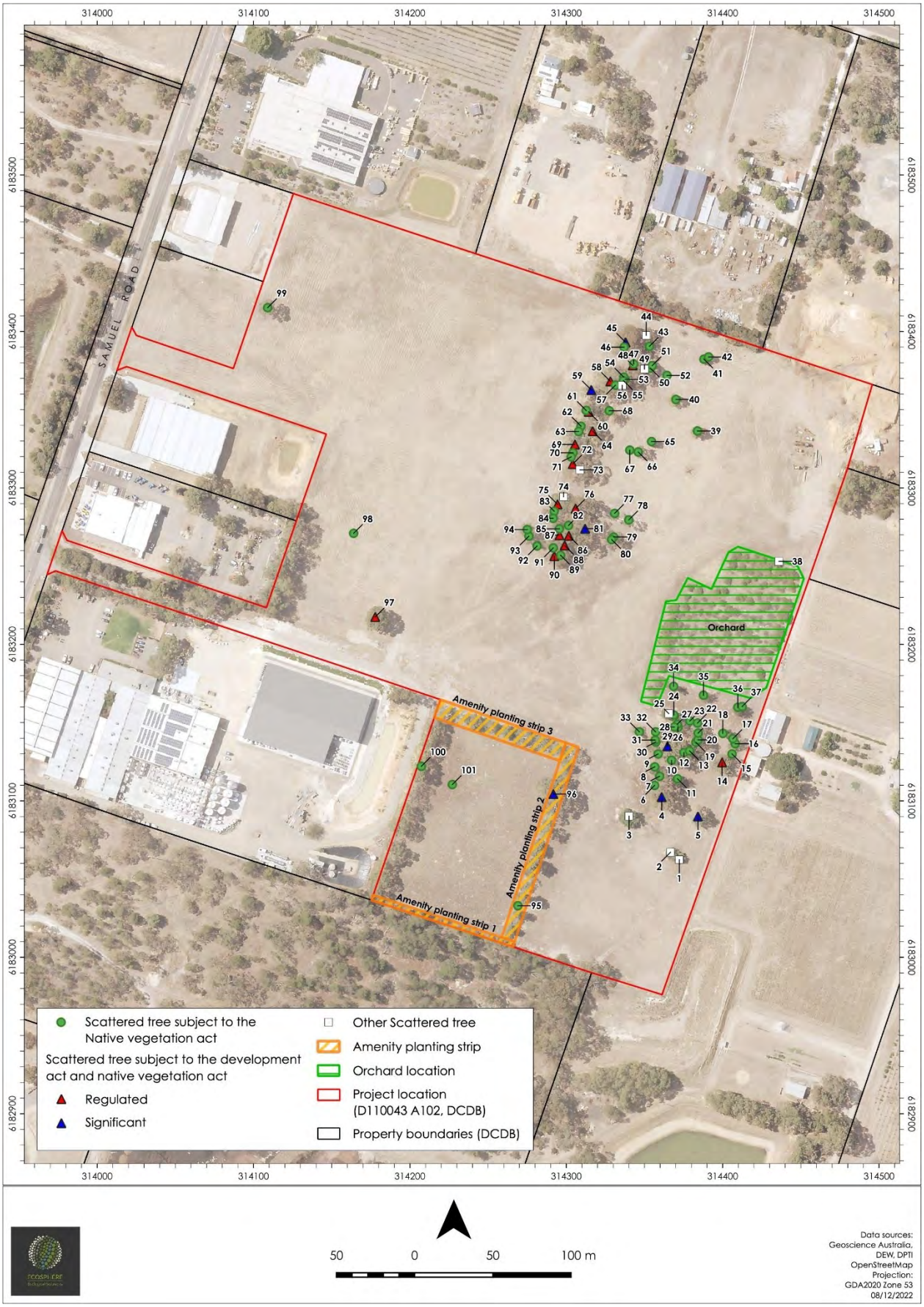
Landscapes Region	**N&Y**			**Total Biodiversity Score**	205.93		
Mean Annual Rainfall (mm)	**505**			**Total SEB Points required**	**54.50**		
Economies of Scale factor	**0.5**			**Payment $ (GST exclusive)**	**$36,812.31**		
				Admin fee (GST inclusive)	**$2,024.68**		
IBRA Association	**Barossa**			**Total SEB $ required**	**$38,836.98**		
Tree Species	**Number of Trees (total)**	**Number of trees (proposed removed)**	**Number of trees (proposed pruning)**	**Total SEB Points required**	**Payment in NV Fund (GST Exclusive)**	**Administration fee (GST Inclusive)**	**Total**
Eucalyptus leucoxylon ssp leucoxylon	64	19	1	29.56	$19,964.45	$1,098.04	$21,062.49
Callitris preissii	25	7	0	12.44	$8,404.42	$462.24	$8,866.66
Eucalyptus odorata	25	4	0	12.50	$8,443.44	$464.39	$8,907.83
0	0	0	0	0.00	$0.00	$0.00	$0.00

Tree No.	Species description)	Number of trees in a clump (enter 1 for individual trees)	Height (m)	Diameter at 1m above ground level (cm)	Dieback %	Number of Hollows			Suitability for fauna threatened species				Threatened sp.	Remnancy IBRA Assoc. % veg remaining	Loss Factor	Species	Fauna habitat Score	Threatened flora score	Biodiversity score (Max 15) (Score per tree)	Total biodiversity score	SEB Points Req.	Total SEB Payment $
									Number of species				Tree species is: R = Rare V = Vulnerable E = Endangered									
						Small	Medim	Large	Uncommon	NP&W Act - Rare	NP&W Act - Endangered or Vulnerable (exclude EBPC Spp)	EPBC Listed spp.										
1	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	17.0	101.18	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.26	4.26	0.00	$0.00
2	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	14.0	96.49	80				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.33	1.33	1.39	$988.29
3	*Callitris preissii*	1	10.0	41.68	5				12	2	2			7	0.0	Callitris preissii	1.4	0	2.39	2.39	0.00	$0.00
4	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	16.0	49	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	2.24	2.24	0.00	$0.00
5	*Callitris preissii*	1	12.0	48	10				12	2	2			7	0.0	Callitris preissii	1.4	0	3.63	3.63	0.00	$0.00
6	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	12.0	82	70				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.19	1.19	0.00	$0.00
7	*Callitris preissii*	1	9.0	48	10				12	2	2			7	0.0	Callitris preissii	1.4	0	2.24	2.24	0.00	$0.00
8	*Callitris preissii*	1	9.0	41.18	10				12	2	2			7	0.0	Callitris preissii	1.4	0	2.10	2.10	0.00	$0.00
9	*Callitris preissii*	1	9.0	48	5				12	2	2			7	0.0	Callitris preissii	1.4	0	2.32	2.32	0.00	$0.00
10	*Eucalyptus odorata*	3	5.0	23	60				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	0.28	0.85	0.00	$0.00
11	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	17.0	67	10				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	3.48	3.48	3.65	$2,588.18
12	*Eucalyptus odorata*	1	2.0	46	90				12	2	2			7	1.0	Eucalyptus odorata	1.4	0	0.24	0.24	0.25	$175.21
13	*Callitris preissii*	1	9.0	34	25				12	2	2			7	1.0	Callitris preissii	1.4	0	1.23	1.23	1.29	$912.81
14	*Callitris preissii*	1	9.0	38	15				12	2	2			7	1.0	Callitris preissii	1.4	0	1.92	1.92	2.02	$1,429.93
15	*Callitris preissii*	1	9.0	42	10				12	2	2			7	1.0	Callitris preissii	1.4	0	2.12	2.12	2.22	$1,575.77
16	*Eucalyptus odorata*	1	10.0	41	40				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	1.93	1.93	0.00	$0.00
17	*Callitris preissii*	1	10.0	45	10				12	2	2			7	0.0	Callitris preissii	1.4	0	2.38	2.38	0.00	$0.00
18	*Eucalyptus odorata*	1	10.0	47.21	5				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	3.30	3.30	0.00	$0.00
19	*Callitris preissii*	1	9.0	29	5				12	2	2			7	0.0	Callitris preissii	1.4	0	1.29	1.29	0.00	$0.00
20	*Callitris preissii*	1	9.0	30	5				12	2	2			7	0.0	Callitris preissii	1.4	0	1.32	1.32	0.00	$0.00
21	*Callitris preissii*	4	9.0	30.68	5				12	2	2			7	0.0	Callitris preissii	1.4	0	1.34	5.35	0.00	$0.00
22	*Callitris preissii*	1	6.0	33	15				12	2	2			7	0.0	Callitris preissii	1.4	0	0.64	0.64	0.00	$0.00
23	*Callitris preissii*	1	8.0	40.5	5				12	2	2			7	0.0	Callitris preissii	1.4	0	1.97	1.97	0.00	$0.00
24	*Callitris preissii*	1	6.0	25	10				12	2	2			7	0.0	Callitris preissii	1.4	0	0.55	0.55	0.00	$0.00
25	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	24.0	147	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	8.32	8.32	0.00	$0.00
26	*Eucalyptus odorata*	1	14.0	47.51	10				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	4.03	4.03	0.00	$0.00
27	*Callitris preissii*	1	10.0	45	60				12	2	2			7	0.0	Callitris preissii	1.4	0	1.23	1.23	0.00	$0.00
28	*Callitris preissii*	1	9.0	46	15				12	2	2			7	0.0	Callitris preissii	1.4	0	2.12	2.12	0.00	$0.00
29	*Eucalyptus odorata*	1	8.0	38	40				12	2	2			7	1.0	Eucalyptus odorata	1.4	0	1.12	1.12	1.17	$830.78
30	*Callitris preissii*	1	9.0	44	5				12	2	2			7	1.0	Callitris preissii	1.4	0	2.24	2.24	2.35	$1,666.26
31	*Callitris preissii*	1	5.0	44	10				12	2	2			7	1.0	Callitris preissii	1.4	0	1.10	1.10	1.15	$816.46
32	*Callitris preissii*	1	9.0	43	5				12	2	2			7	1.0	Callitris preissii	1.4	0	2.22	2.22	2.33	$1,650.28
33	*Callitris preissii*	1	6.0	33	5				12	2	2			7	1.0	Callitris preissii	1.4	0	1.04	1.04	1.09	$773.12
34	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	8.0	56.84	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.24	1.24	1.30	$923.89
35	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	8.0	41	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.04	1.04	1.10	$776.76

Tree No.	Species description)	Number of trees in a clump (enter 1 for individual trees)	Height (m)	Diameter at 1m above ground level (cm)	Dieback %	Number of Hollows			Suitability for fauna threatened species				Threatened sp.	Remnancy IBRA Assoc. % veg remaining	Loss Factor	Species	Fauna habitat Score	Threatened flora score	Biodiversity score (Max 15) (Score per tree)	Total biodiversity score	SEB Points Req.	Total SEB Payment $
									Number of species				Tree species is; R = Rare V = Vulnerable E = Endangered									
						Small	Medim	Large	Uncommon	NP&W Act - Rare	NP&W Act - Endangered or Vulnerable (exclude EBPC Spp)	EPBC Listed spp.										
36	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	6.0	31	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.49	0.49	0.51	$364.40
37	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	7.0	30	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.51	0.51	0.54	$379.42
38	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	20	5.0	15	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.28	5.53	0.00	$0.00
39	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	18.0	117.44	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.76	4.76	0.00	$0.00
40	*Eucalyptus odorata*	1	13.0	45	10				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	3.95	3.95	0.00	$0.00
41	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	3.0	10	0				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.23	0.23	0.00	$0.00
42	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	17.0	77.23	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	3.93	3.93	0.00	$0.00
43	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	7.0	25.61	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.46	0.46	0.00	$0.00
44	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	7.0	17	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.36	0.36	0.00	$0.00
45	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	2.0	6	0				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.18	0.18	0.19	$134.09
46	*Eucalyptus odorata*	1	10.0	35	15				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	2.09	2.09	0.00	$0.00
47	*Eucalyptus odorata*	1	9.0	40.46	80				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	0.62	0.62	0.00	$0.00
48	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	15.0	48.3	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	2.20	2.20	0.00	$0.00
49	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	15.0	57	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	2.39	2.39	0.00	$0.00
50	*Eucalyptus odorata*	1	17.0	82	5				12	2	2			7	1.0	Eucalyptus odorata	1.4	0	6.54	6.54	6.87	$4,869.19
51	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	10.0	110	20		2	3	13	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	3.93	3.93	4.13	$2,927.21
52	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	12.0	67	60				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.11	1.11	0.00	$0.00
53	*Eucalyptus odorata*	1	7.0	56.87	40				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	1.26	1.26	0.00	$0.00
54	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	14.0	44	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	2.00	2.00	0.00	$0.00
55	*Eucalyptus odorata*	1	5.0	50	90				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	0.39	0.39	0.00	$0.00
56	*Eucalyptus odorata*	1	11.0	73.54	20				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	4.10	4.10	0.00	$0.00
57	*Eucalyptus odorata*	1	13.0	62.08	30				12	2	2			7	1.0	Eucalyptus odorata	1.4	0	4.02	4.02	4.22	$2,990.43
58	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	9.0	35.74	5				12	2	2			7	0.6	Eucalyptus leucoxylon ssp leucox	1.4	0	0.99	0.99	0.63	$443.77
59	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	9.0	43	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.13	1.13	1.19	$841.61
60	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	5.0	14	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.28	0.28	0.30	$211.65
61	*Eucalyptus odorata*	1	10.0	66.1	30				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	3.30	3.30	0.00	$0.00
62	*Eucalyptus odorata*	1	13.0	62.37	20				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	4.29	4.29	0.00	$0.00
63	*Eucalyptus odorata*	1	10.0	28	15				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	1.36	1.36	0.00	$0.00
64	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	17.0	91.29	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.09	4.09	0.00	$0.00
65	*Eucalyptus odorata*	1	15.0	77	5				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	6.34	6.34	0.00	$0.00

Tree No.	Species description)	Number of trees in a clump (enter 1 for individual trees)	Height (m)	Diameter at 1m above ground level (cm)	Dieback %	Number of Hollows			Suitability for fauna threatened species				Threatened sp.	Remnancy IBRA Assoc. % veg remaining	Loss Factor	Species	Fauna habitat Score	Threatened flora score	Biodiversity score (Max 15) (Score per tree)	Total biodiversity score	SEB Points Req.	Total SEB Payment $
									Number of species				Tree species is; R = Rare V = Vulnerable E = Endangered									
						Small	Medim	Large	Uncommon	NP&W Act - Rare	NP&W Act - Endangered or Vulnerable (exclude EBPC Spp)	EPBC Listed spp.										
66	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	18.0	94.5	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.47	4.47	0.00	$0.00
67	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	12.0	32	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.09	1.09	1.14	$810.81
68	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	13.0	43	10				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.36	1.36	1.42	$1,009.48
69	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	12.0	39	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.27	1.27	1.33	$943.62
70	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	5.0	16.4	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.31	0.31	0.32	$227.46
71	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	18.0	101.08	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.45	4.45	0.00	$0.00
72	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	15.0	38	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.40	1.40	0.00	$0.00
73	*Eucalyptus odorata*	3	12.0	43.57	30				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	2.57	7.72	0.00	$0.00
74	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	6.0	48.6	80				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.33	0.33	0.00	$0.00
75	*Eucalyptus odorata*	1	7.0	33.12	40				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	0.59	0.59	0.00	$0.00
76	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	17.0	89	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.05	4.05	0.00	$0.00
77	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	18.0	88	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.21	4.21	0.00	$0.00
78	*Eucalyptus odorata*	1	13.0	74.25	5				12	2	2			7	0.0	Eucalyptus odorata	1.4	0	6.20	6.20	0.00	$0.00
79	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	6.0	43	20				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.55	0.55	0.00	$0.00
80	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	17.0	95	15				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.02	4.02	0.00	$0.00
81	*Callitris preissii*	1	4.0	47.37	90				12	2	2			7	0.0	Callitris preissii	1.4	0	0.32	0.32	0.00	$0.00
82	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	6.0	13	5				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.30	0.30	0.00	$0.00
83	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	8.0	28	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.52	0.52	0.54	$385.18
84	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	8.0	51.62	10				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	1.13	1.13	1.18	$838.49
85	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	18.0	109.59	10				12	2	2			7	0.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.61	4.61	0.00	$0.00
86	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	20.0	86.63	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	4.71	4.71	4.94	$3,505.92
87	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	3.0	5.83	0				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	0.20	0.20	0.21	$145.97
88	*Eucalyptus leucoxylon ssp leucoxylon (see map)*	1	17.6	57	5				12	2	2			7	1.0	Eucalyptus leucoxylon ssp leucox	1.4	0	3.38	3.38	3.55	$2,516.47

Appendix 2. Significant and Regulated Trees within the project area.


314000
314100
314200
314300
314400
314500
6183500
6183400
6183300
6183200
6183100
6183000
6182900
SAMUEL ROAD
Orchard
Amenity planting strip 3
Amenity planting strip 2
Amenity planting strip 1
Scattered tree subject to the Native vegetation act
Scattered tree subject to the development act and native vegetation act
Regulated
Significant
Other Scattered tree
Amenity planting strip
Orchard location
Project location (D110043 A102, DCDB)
Property boundaries (DCDB)
50
0
50
100 m
Data sources: Geoscience Australia, DEW, DPTI OpenStreetMap
Projection: GDA2020 Zone 53
08/12/2022

Appendix 3. Flora Species List

Scientific Name	Common Name	Date of Last Record
Acacia acinacea	Wreath Wattle	29/11/2019
Acacia calamifolia	Wallowa	15/11/2002
Acacia calamifolia (NC)	Wallowa	15/11/2002
Acacia euthycarpa	Wallowa	29/11/2019
Acacia hakeoides	Hakea Wattle	19/07/2022
Acacia iteaphylla	Flinders Ranges Wattle	30/06/2000
Acacia myrtifolia	Myrtle Wattle	29/11/2019
Acacia paradoxa	Kangaroo Thorn	4/11/2019
Acacia pendula	Weeping Myall	21/03/2001
Acacia pycnantha	Golden Wattle	19/07/2022
Acacia retinodes	Wirilda	27/12/2008
Acacia retinodes var. (NC)	Silver Wattle	4/06/2002
Acacia sp.	Wattle	29/11/2019
Acacia spinescens	Spiny Wattle	4/04/2011
Acaena echinata	Sheep's Burr	19/07/2022
Acrotriche affinis	Ridged Ground-berry	1/04/2004
Agave americana var. (NC)	Century Plant	17/04/2002
Aira cupaniana	Small Hair-grass	1/08/2004
Aira sp.	Hair-grass	1/04/2004
Allium sp.		19/07/2022
Allium triquetrum	Three-cornered Garlic	2/10/2014
Allocasuarina pusilla	Dwarf Oak-bush	21/03/1997
Allocasuarina sp.	Sheoak/Oak-bush	29/11/2019
Allocasuarina verticillata	Drooping Sheoak	29/11/2019
Amyema miquelii	Box Mistletoe	19/07/2022
Anthosachne scabra	Native Wheat-grass	19/07/2022
Apodasmia brownii	Coarse Twine-rush	31/03/2013
Arctotheca calendula	Cape Weed	19/07/2022
Aristida behriana	Brush Wire-grass	1/08/2004
Arthropodium fimbriatum	Nodding Vanilla-lily	10/01/2017
Arthropodium strictum	Common Vanilla-lily	19/07/2022
Arundo donax	Giant Reed	17/04/2002
Asparagus asparagoides (NC)	Bridal Creeper	4/06/2002
Asparagus asparagoides f.	Bridal Creeper	19/07/2022
Asparagus asparagoides f. asparagoides	Bridal Creeper	19/07/2022
Asparagus declinatus		7/08/2014
Asperula conferta	Common Woodruff	19/07/2022
Asphodelus fistulosus	Onion Weed	21/03/2001
Asteriscus spinosus	Golden Pallensis	1/08/2004
Atriplex sp.	Saltbush	29/11/2019
Austrostipa blackii	Crested Spear-grass	10/01/2017
Austrostipa curticoma	Short-crest Spear-grass	1/08/2004
Austrostipa densiflora	Fox-tail Spear-grass	22/02/2018

Scientific Name	Common Name	Date of Last Record
Austrostipa drummondii	Cottony Spear-grass	14/11/1996
Austrostipa elegantissima	Feather Spear-grass	19/07/2022
Austrostipa flavescens	Coast Spear-grass	14/11/1996
Austrostipa mollis	Soft Spear-grass	31/03/2013
Austrostipa nodosa	Tall Spear-grass	31/03/2013
Austrostipa pilata	Prickly Spear-grass	1/11/2007
Austrostipa semibarbata	Fibrous Spear-grass	31/03/2013
Austrostipa setacea	Corkscrew Spear-grass	14/11/1996
Austrostipa sp.	Spear-grass	19/07/2022
Austrostipa tenuifolia		30/11/2005
Avellinia festucoides	Avellinia	14/11/1996
Avena barbata	Bearded Oat	19/07/2022
Avena fatua	Wild Oat	25/11/2011
Avena sp.	Oat	15/10/2002
Banksia marginata	Silver Banksia	15/11/2002
Blennospora drummondii	Dwarf Button-flower	14/11/1996
Bothriochloa macra	Red-leg Grass	25/11/2011
Brachyloma ericoides ssp.	Brush Heath	14/11/1996
Brachyloma ericoides ssp. ericoides	Brush Heath	31/03/2013
Brachypodium distachyon	False Brome	20/09/2018
Brachyscome ciliaris var. subintegrifolia		1/08/2004
Brachyscome perpusilla	Tiny Daisy	20/09/2018
Brassica sp.		13/01/2004
Brassica tournefortii	Wild Turnip	1/08/2004
Briza maxima	Large Quaking-grass	20/09/2018
Briza minor	Lesser Quaking-grass	1/08/2004
Bromus diandrus	Great Brome	29/11/2019
Bromus diandrus (NC)	Great Brome	13/01/2004
Bromus hordeaceus ssp. hordeaceus	Soft Brome	4/11/2019
Bromus rubens	Red Brome	1/08/2004
Bromus sp.	Brome	1/11/2006
Bulbine bulbosa	Bulbine-lily	31/03/2013
Bulbine sp.	Bulbine-lily	29/08/2018
Bursaria spinosa ssp.	Bursaria	20/08/2018
Bursaria spinosa ssp. spinosa	Sweet Bursaria	19/07/2022
Caesia calliantha	Blue Grass-lily	20/08/2018
Caladenia sp.	Spider-orchid	31/03/2013
Caladenia tentaculata	King Spider-orchid	3/10/2019
Calandrinia sp.	Purslane/Parakeelya	31/03/2013
Callistemon rugulosus	Scarlet Bottlebrush	29/11/2019
Callistemon sp.	Bottlebrush	17/11/1999
Callitris gracilis	Southern Cypress Pine	10/01/2017
Calocephalus citreus	Lemon Beauty-heads	19/07/2022
Calostemma purpureum	Pink Garland-lily	20/08/2018

Scientific Name	Common Name	Date of Last Record
Calotis hispidula	Hairy Burr-daisy	20/09/2018
Calytrix tetragona	Common Fringe-myrtle	31/03/2013
Carduus tenuiflorus	Slender Thistle	1/08/2004
Carex sp.	Sedge	29/11/2019
Carpobrotus modestus	Inland Pigface	30/06/2000
Carpobrotus sp.	Pigface	21/05/2002
Cassinia arcuata	Drooping Cassinia	20/09/2018
Cassinia arcuata (NC)	Drooping Cassinia	7/08/2014
Cassytha pubescens	Downy Dodder-laurel	12/06/1995
Cassytha sp.	Dodder-laurel	30/06/2000
Cenchrus clandestinus	Kikuyu	25/03/2004
Cenchrus longisetus	Feather-top	17/09/2002
Cenchrus longispinus	Spiny Burr-grass	31/03/2013
Cenchrus setaceus	Fountain Grass	17/11/1999
Centaurea calcitrapa	Star Thistle	21/03/2002
Centaurea solstitialis	St Barnaby's Thistle	21/03/2002
Centaurium erythraea	Common Centaury	1/08/2004
Centaurium sp.	Centaury	14/11/1996
Centaurium tenuiflorum	Branched Centaury	10/01/2017
Centrolepis cephaloformis ssp. cephaloformis	Cushion Centrolepis	14/11/1996
Centrolepis strigosa ssp. strigosa	Hairy Centrolepis	14/11/1996
Cerastium glomeratum	Common Mouse-ear Chickweed	14/11/1996
Chamaecytisus palmensis	Tree Lucerne	7/08/2014
Cheilanthes austrotenuifolia	Annual Rock-fern	20/09/2018
Cheilanthes sp.	Rock-fern	10/01/2017
Cheiranthera alternifolia	Hand-flower	1/11/2006
Chenopodium album	Fat Hen	21/05/2002
Chenopodium desertorum ssp.	Desert Goosefoot	20/09/2018
Chenopodium desertorum ssp. desertorum	Frosted Goosefoot	1/08/2004
Chloris truncata	Windmill Grass	1/11/2006
Chorizandra enodis	Black Bristle-rush	1/08/2004
Chrysanthemoides monilifera ssp. monilifera	Boneseed	20/08/2018
Chrysocephalum apiculatum	Common Everlasting	31/03/2013
Chrysocephalum apiculatum (NC)	Common Everlasting	1/11/2006
Chrysocephalum semipapposum	Clustered Everlasting	19/07/2022
Clematis microphylla	Old Man's Beard	19/07/2022
Clematis microphylla var. microphylla (NC)	Old Man's Beard	1/11/2006
Convolvulus erubescens (NC)	Australian Bindweed	27/11/2002
Convolvulus remotus	Grassy Bindweed	1/08/2004
Convolvulus sp.	Bindweed	21/05/2002
Conyza bonariensis	Flax-leaf Fleabane	21/05/2002
Correa sp.	Correa	29/11/2019
Cotoneaster simonsii	Cotoneaster	4/06/2002
Craspedia variabilis	Billy-buttons	31/03/2013

Scientific Name	Common Name	Date of Last Record
Crassula colligata ssp.		20/09/2018
Crassula colorata var.	Dense Crassula	1/08/2004
Crassula colorata var. acuminata	Dense Crassula	14/11/1996
Crassula colorata var. colorata	Dense Crassula	14/11/1996
Crassula decumbens var. decumbens	Spreading Crassula	20/09/2018
Crassula sieberiana ssp. tetramera (NC)	Australian Stonecrop	14/11/1996
Crassula sp.	Crassula/Stonecrop	20/08/2018
Crassula tetragona ssp. robusta	Crassula	17/04/2002
Cymbonotus preissianus	Austral Bear's-ear	29/08/2018
Cynara cardunculus ssp. flavescens	Artichoke Thistle	19/07/2022
Cynodon dactylon (NC)	Couch	13/01/2004
Cynodon dactylon var.	Couch	29/11/2019
Cynodon dactylon var. dactylon	Couch	31/03/2013
Cynosurus cristatus	Crested Dog's-tail Grass	25/11/2011
Cynosurus echinatus	Rough Dog's-tail Grass	1/11/2006
Cyperaceae sp.	Sedge Family	4/11/2019
Cyperus gymnocaulos	Spiny Flat-sedge	29/11/2019
Cyperus sp.	Flat-sedge	4/11/2019
Cytisus scoparius	English Broom	22/05/2002
Dactylis glomerata	Cocksfoot	19/07/2022
Danthonia sp. (NC)	Wallaby-grass	13/01/2004
Daucus glochidiatus	Native Carrot	20/09/2018
Daviesia arenaria	Sand Bitter-pea	31/03/2013
Daviesia benthamii ssp. (NC)	Spiny Bitter-pea	1/08/2004
Daviesia benthamii ssp. humilis (NC)	Mallee Bitter-pea	1/08/2004
Daviesia brevifolia	Leafless Bitter-pea	21/03/1997
Dianella brevicaulis/revoluta var.	Black-anther Flax-lily	21/03/1997
Dianella longifolia var. grandis	Pale Flax-lily	31/03/2013
Dianella revoluta var.		1/11/2006
Dianella revoluta var. revoluta	Black-anther Flax-lily	19/07/2022
Dichondra repens	Kidney Weed	1/08/2004
Dillwynia hispida	Red Parrot-pea	31/03/2013
Dillwynia sericea	Showy Parrot-pea	31/03/2013
Dittrichia graveolens	Stinkweed	1/11/2006
Dodonaea viscosa ssp.	Sticky Hop-bush	29/11/2019
Dodonaea viscosa ssp. spatulata	Sticky Hop-bush	31/03/2013
Drosera glanduligera	Scarlet Sundew	14/11/1996
Drosera peltata (NC)	Pale Sundew	14/11/1996
Drosera whittakeri	Scented Sundew	19/07/2022
Drosera whittakeri ssp. (NC)		1/08/2004
Echinopogon ovatus	Rough-beard Grass	31/03/2013
Echium plantagineum	Salvation Jane	19/07/2022
Ehrharta calycina	Perennial Veldt Grass	31/03/2013
Ehrharta longiflora	Annual Veldt Grass	29/11/2019

Scientific Name	Common Name	Date of Last Record
Ehrharta sp.	Veldt Grass	4/11/2019
Einadia nutans ssp.	Climbing Saltbush	20/09/2018
Einadia nutans ssp. nutans	Climbing Saltbush	10/01/2017
Enchylaena tomentosa var.	Ruby Saltbush	19/07/2022
Enchylaena tomentosa var. tomentosa	Ruby Saltbush	22/05/2002
Enneapogon nigricans	Black-head Grass	27/11/2002
Eragrostis barrelieri	Pitted Love-grass	11/06/2015
Eragrostis curvula	African Love-grass	1/05/2016
Eragrostis minor	Small Stink-grass	1/08/2004
Erodium botrys	Long Heron's-bill	1/08/2004
Erodium cicutarium	Cut-leaf Heron's-bill	20/09/2018
Erodium sp.	Heron's-bill/Crowfoot	19/07/2022
Eucalyptus behriana	Broad-leaf Box	4/04/2011
Eucalyptus camaldulensis ssp.	River Red Gum	29/11/2019
Eucalyptus camaldulensis var. camaldulensis (NC)	River Red Gum	30/06/2000
Eucalyptus cladocalyx (NC)	Sugar Gum	21/03/2002
Eucalyptus gracilis	Yorrell	4/06/2002
Eucalyptus incrassata	Ridge-fruited Mallee	4/06/2002
Eucalyptus leptophylla	Narrow-leaf Red Mallee	15/11/2002
Eucalyptus leptophylla (NC)	Narrow-leaf Red Mallee	15/11/2002
Eucalyptus leucoxylon ssp.	South Australian Blue Gum	29/11/2019
Eucalyptus leucoxylon ssp. leucoxylon	South Australian Blue Gum	31/03/2013
Eucalyptus leucoxylon ssp. pruinosa	Inland South Australian Blue Gum	19/07/2022
Eucalyptus odorata	Peppermint Box	19/07/2022
Eucalyptus odorata (NC)	Peppermint Box	4/04/2011
Eucalyptus socialis ssp.	Beaked Red Mallee	29/11/2019
Eucalyptus sp.		29/11/2019
Euphorbia drummondii (NC)		1/08/2004
Euphorbia terracina	False Caper	17/11/1999
Eutaxia microphylla	Common Eutaxia	1/11/2006
Eutaxia microphylla var. microphylla (erect) (NC)	Common Eutaxia	14/11/1996
Exocarpos cupressiformis	Native Cherry	20/09/2018
Foeniculum vulgare	Fennel	9/12/2009
Fraxinus angustifolia ssp. angustifolia	Narrow-leaved Ash	2/10/2014
Freesia leichtlinii	Freesia	20/08/2018
Fumaria capreolata	White-flower Fumitory	9/12/2009
Galium aparine	Cleavers	9/12/2009
Galium divaricatum	Slender Bedstraw	14/11/1996
Galium gaudichaudii (NC)	Rough Bedstraw	14/11/1996
Galium migrans (NC)	Loose Bedstraw	1/08/2004
Galium murale	Small Bedstraw	20/09/2018
Gazania linearis	Gazania	17/09/2002
Gazania sp.	Gazania	31/03/2013
Geranium sp.	Geranium	20/09/2018

Scientific Name	Common Name	Date of Last Record
Gladiolus undulatus	Wild Gladiolus	29/11/2019
Glycyrrhiza glabra	Liquorice	9/12/2009
Gnaphalium indutum ssp. indutum	Tiny Cudweed	14/11/1996
Gomphocarpus cancellatus	Broad-leaf Cotton-bush	25/03/2004
Gonocarpus elatus	Hill Raspwort	10/01/2017
Goodenia blackiana	Native Primrose	20/09/2018
Goodenia paradoxa	Spur Velleia	14/11/1996
Goodenia pinnatifida	Cut-leaf Goodenia	19/07/2022
Gramineae sp.	Grass Family	29/11/2019
Grevillea ilicifolia ssp.	Holly-leaf Grevillea	1/08/2004
Grevillea ilicifolia var. ilicifolia (NC)	Holly-leaf Grevillea	22/05/2002
Grevillea lavandulacea ssp. lavandulacea	Spider-flower	31/03/2013
Grevillea lavandulacea var. (NC)	Spider-flower	21/03/1997
Grevillea lavandulacea var. lavandulacea (NC)	Spider-flower	30/06/2000
Hackelia suaveolens	Sweet Hound's-tongue	14/11/1996
Hakea rostrata	Beaked Hakea	21/03/1997
Hakea rugosa	Dwarf Hakea	31/03/2013
Hardenbergia violacea	Native Lilac	20/09/2018
Helichrysum leucopsideum	Satin Everlasting	1/11/2006
Helminthotheca echioides	Ox-tongue	29/11/2019
Hibbertia exutiacies	Prickly Guinea-flower	14/11/1996
Hibbertia riparia (NC)	Guinea-flower	21/03/1997
Hibbertia sp.	Guinea-flower	7/08/2014
Hibbertia virgata	Twiggy Guinea-flower	15/11/2002
Holcus lanatus	Yorkshire Fog	1/08/2004
Hordeum glaucum	Blue Barley-grass	15/10/2002
Hordeum sp.		19/07/2022
Hordeum sp. (NC)	Barley-grass	29/11/2019
Hydrocotyle callicarpa	Tiny Pennywort	14/11/1996
Hypericum perforatum ssp. veronense	St John's Wort	1/08/2004
Hypochaeris glabra	Smooth Cat's Ear	20/09/2018
Hypochaeris radicata	Rough Cat's Ear	1/11/2006
Hysterobaeckea behrii	Silver Broombush	31/03/2013
Iridaceae sp.		10/01/2017
Iris albicans	Flag Iris	31/03/2013
Iris germanica	Flag Iris	4/11/2019
Iris germanica (NC)	Flag Iris	22/05/2002
Iris sp.	Iris	13/01/2004
Isoetes drummondii ssp. drummondii	Plain Quillwort	9/10/1996
Isolepis marginata	Little Club-rush	14/11/1996
Juncus capitatus	Dwarf Rush	14/11/1996
Juncus subsecundus	Finger Rush	1/11/2006
Kennedia prostrata	Scarlet Runner	31/03/2013
Kunzea pomifera	Muntries	31/03/2013

Scientific Name	Common Name	Date of Last Record
Lactuca serriola (NC)	Prickly Lettuce	21/03/2001
Lactuca serriola f.	Prickly Lettuce	29/11/2019
Lagenophora gunniana	Coarse Bottle-daisy	20/08/2018
Lagurus ovatus	Hare's Tail Grass	1/04/2004
Leontodon rhagadioloides	Cretan Weed	20/09/2018
Lepidium africanum	Common Peppercress	19/07/2022
Lepidosperma canescens	Hoary Rapier-sedge	1/07/2002
Lepidosperma carphoides	Black Rapier-sedge	31/03/2013
Lepidosperma concavum (NC)	Spreading Sword-sedge	1/04/2004
Lepidosperma curtisiae	Little Sword-sedge	31/03/2013
Lepidosperma hispidulum	Spreading Sword-sedge	31/03/2013
Lepidosperma sp.	Sword-sedge/Rapier-sedge	30/06/2000
Lepidosperma viscidum	Sticky Sword-sedge	1/11/2006
Leptomeria aphylla	Leafless Currant-bush	31/03/2013
Leptorhynchos squamatus ssp. squamatus	Scaly Buttons	1/11/2006
Leptospermum myrsinoides	Heath Tea-tree	31/03/2013
Levenhookia dubia	Hairy Stylewort	20/09/2018
Lichen sp.		14/11/1996
Linum marginale	Native Flax	1/11/2006
Lolium rigidum	Wimmera Ryegrass	27/11/2002
Lolium sp.	Ryegrass	29/11/2019
Lomandra collina	Sand Mat-rush	31/03/2013
Lomandra densiflora	Soft Tussock Mat-rush	23/08/2022
Lomandra juncea	Desert Mat-rush	31/03/2013
Lomandra leucocephala ssp. robusta	Woolly Mat-rush	22/05/2002
Lomandra micrantha ssp.	Small-flower Mat-rush	10/01/2017
Lomandra micrantha ssp. micrantha	Small-flower Mat-rush	31/03/2013
Lomandra multiflora ssp. dura	Hard Mat-rush	19/07/2022
Lomandra nana	Small Mat-rush	19/07/2022
Lomandra sororia	Sword Mat-rush	31/03/2013
Lomandra sp.	Mat-rush	1/08/2004
Lycium ferocissimum	African Boxthorn	19/07/2022
Lysiana exocarpi ssp. exocarpi	Harlequin Mistletoe	7/08/2014
Lysimachia arvensis	Pimpernel	20/09/2018
Maireana brevifolia	Short-leaf Bluebush	1/08/2004
Maireana enchylaenoides	Wingless Fissure-plant	19/07/2022
Maireana rohrlachii	Rohrlach's Bluebush	21/03/2002
Malva parviflora	Small-flower Marshmallow	19/07/2022
Marrubium vulgare	Horehound	31/03/2013
Medicago polymorpha	Burr-medic	29/11/2019
Medicago sp.	Medic	16/11/1999
Melaleuca lanceolata	Dryland Tea-tree	29/11/2019
Melaleuca sp.	Tea-tree	17/11/1999
Microseris walteri	Yam Daisy	20/09/2018

Scientific Name	Common Name	Date of Last Record
Microtis frutetorum		14/11/1996
Microtis sp.	Onion-orchid	31/03/2013
Moenchia erecta	Erect Chickweed	1/08/2004
Moraea flaccida	One-leaf Cape Tulip	31/03/2013
Moraea setifolia	Thread Iris	1/08/2004
Moss sp.		14/11/1996
Neurachne alopecuroidea	Fox-tail Mulga-grass	1/11/2006
Not naturalised in SA sp.		13/01/2004
Oenothera stricta ssp. stricta	Common Evening Primrose	31/03/2013
Olea europaea ssp.	Olive	29/11/2019
Olea europaea ssp. europaea	Olive	31/03/2013
Olearia decurrens	Winged Daisy-bush	21/03/2001
Olearia pannosa ssp. pannosa	Silver Daisy-bush	28/09/2010
Onopordum acaulon	Horse Thistle	4/06/2002
Opuntia sp.		7/08/2014
Opuntia sp. (NC)	Prickly Pear	21/03/2002
Oxalis perennans	Native Sorrel	19/07/2022
Oxalis perennans/exilis	Native Oxalis	20/09/2018
Oxalis pes-caprae	Soursob	19/07/2022
Ozothamnus retusus	Notched Bush-everlasting	29/08/2018
Ozothamnus sp.	Bush-everlasting	21/03/2002
Palmae sp.	Palm Family	29/11/2019
Panicum capillare var. brevifolium	Witch-grass	1/08/2004
Panicum decompositum var. decompositum	Native Millet	13/01/2004
Panicum effusum var. effusum	Hairy Panic	25/11/2011
Panicum sp.	Panic/Millet	31/03/2013
Parapholis incurva	Curly Ryegrass	14/11/1996
Paspalum dilatatum	Paspalum	13/01/2004
Pauridia glabella var. glabella	Tiny Star	29/08/2018
Pauridia vaginata var. vaginata	Yellow Star	7/08/2014
Pentameris airoides ssp. airoides	False Hair-grass	14/11/1996
Pentameris pallida	Pussy Tail	1/08/2004
Petrorhagia dubia	Velvet Pink	10/01/2017
Phalaris aquatica	Phalaris	29/11/2019
Phalaris sp.	Canary Grass	1/08/2004
Phoenix canariensis	Canary Island Palm	4/11/2019
Phoenix dactylifera	Date Palm	17/04/2002
Phragmites australis	Common Reed	17/04/2002
Phyllopodium cordatum		14/11/1996
Pimelea humilis	Low Riceflower	31/03/2013
Pimelea stricta	Erect Riceflower	1/11/2006
Pinus halepensis	Aleppo Pine	10/01/2017
Pinus radiata	Radiata Pine	22/05/2002
Pinus sp.	Pine	4/11/2019

Scientific Name	Common Name	Date of Last Record
Piptatherum miliaceum	Rice Millet	29/11/2019
Plantago lanceolata var.	Ribwort	1/08/2004
Plantago lanceolata var. lanceolata	Ribwort	14/11/1996
Plantago sp.	Plantain	20/09/2018
Poa bulbosa	Bulbous Meadow-grass	20/09/2018
Poa crassicaudex	Thick-stem Tussock-grass	1/08/2004
Polygonum aviculare	Wireweed	4/11/2019
Polygonum aviculare (NC)	Wireweed	21/05/2002
Populus sp.	Poplar	21/05/2002
Prunus dulcis	Almond	4/11/2019
Prunus sp.	Plum	27/11/2002
Psilurus incurvus	Bristle-tail Grass	14/11/1996
Pterostylis biseta	Two-bristle Greenhood	18/10/2019
Pterostylis biseta (NC)	Two-bristle Greenhood	14/11/1996
Pterostylis sp.	Greenhood	20/08/2018
Ptilotus erubescens	Hairy-tails	31/03/2013
Ptilotus spathulatus	Pussy-tails	10/01/2017
Pultenaea largiflorens	Twiggy Bush-pea	10/01/2017
Pultenaea tenuifolia	Narrow-leaf Bush-pea	31/03/2013
Ranunculus sessiliflorus var. sessiliflorus	Annual Buttercup	1/08/2004
Rapistrum rugosum ssp. rugosum	Turnip Weed	4/06/2002
Rhagodia parabolica	Mealy Saltbush	21/03/2002
Rhamnus alaternus	Blowfly Bush	19/07/2022
Romulea minutiflora	Small-flower Onion-grass	2/10/2014
Romulea rosea var. australis	Common Onion-grass	31/03/2013
Romulea sp.	Onion-grass	19/07/2022
Rosa canina	Dog Rose	17/04/2002
Rosa sp.	Wild Rose/Briar	27/11/2002
Rubus sp.	Blackberry	1/08/2004
Rumex acetosella	Sorrel	31/03/2013
Rumex conglomeratus	Clustered Dock	1/11/2006
Rumex crispus	Curled Dock	19/07/2022
Rumex dumosus	Wiry Dock	1/08/2004
Rumex sp.	Dock	4/11/2019
Rytidosperma auriculatum	Lobed Wallaby-grass	1/08/2004
Rytidosperma caespitosum (NC)	Common Wallaby-grass	1/11/2006
Rytidosperma erianthum	Hill Wallaby-grass	1/08/2004
Rytidosperma fulvum	Leafy Wallaby-grass	31/03/2013
Rytidosperma geniculatum	Kneed Wallaby-grass	1/08/2004
Rytidosperma setaceum	Small-flower Wallaby-grass	4/04/2011
Rytidosperma sp.	Wallaby-grass	19/07/2022
Salsola australis	Buckbush	4/06/2002
Salvia verbenaca var.	Wild Sage	19/07/2022
Salvia verbenaca var. verbenaca	Wild Sage	14/11/1996

Scientific Name	Common Name	Date of Last Record
Santalum acuminatum	Quandong	20/08/2018
Scabiosa atropurpurea	Pincushion	1/08/2004
Scaevola albida	Pale Fanflower	20/08/2018
Schinus molle	Pepper-tree	13/01/2004
Schoenus apogon	Common Bog-rush	1/08/2004
Schoenus breviculmis	Matted Bog-rush	1/08/2004
Senecio glossanthus (NC)	Annual Groundsel	30/06/2000
Senecio pinnatifolius var. lanceolatus	Variable Groundsel	31/03/2013
Senecio quadridentatus	Cotton Groundsel	20/09/2018
Senna artemisioides ssp. petiolaris		17/04/2002
Senna artemisioides ssp. X coriacea	Broad-leaf Desert Senna	21/03/2002
Setaria verticillata	Whorled Pigeon-grass	21/05/2002
Sisymbrium officinale	Hedge Mustard	21/03/2001
Solanum nigrum	Black Nightshade	1/08/2004
Solenogyne dominii	Smooth Solenogyne	1/08/2004
Sonchus oleraceus	Common Sow-thistle	19/07/2022
Sonchus oleraceus (NC)	Common Sow-thistle	17/04/2002
Sonchus sp.	Sow-thistle	16/11/1999
Sorghum halepense	Johnson Grass	17/04/2002
Sparaxis tricolor	Tricolor Harlequin Flower	20/09/2018
Stackhousia sp.	Candles	20/09/2018
Stellaria media	Chickweed	14/11/1996
Stenanthera conostephioides	Flame Heath	31/03/2013
Stuartina muelleri	Spoon Cudweed	20/09/2018
Styphelia humifusa	Cranberry Heath	20/08/2018
Teucrium racemosum	Grey Germander	1/08/2004
Themeda triandra	Kangaroo Grass	1/11/2006
Thysanotus patersonii	Twining Fringe-lily	20/09/2018
Trachymene pilosa	Dwarf Trachymene	14/11/1996
Tribulus terrestris	Caltrop	31/03/2013
Tricoryne elatior	Yellow Rush-lily	14/11/1996
Trifolium angustifolium	Narrow-leaf Clover	19/07/2022
Trifolium arvense var. arvense	Hare's-foot Clover	4/11/2019
Trifolium campestre	Hop Clover	10/01/2017
Trifolium glomeratum	Cluster Clover	1/08/2004
Trifolium scabrum	Rough Clover	10/01/2017
Trifolium sp.	Clover	29/11/2019
Trifolium subterraneum	Subterranean Clover	1/08/2004
Triglochin centrocarpum (NC)	Dwarf Arrowgrass	14/11/1996
Ulex europaeus	Gorse	13/01/2004
Veronica persica	Persian Speedwell	1/08/2004
Vicia sativa ssp.	Common Vetch	1/11/2006
Vicia sativa ssp. sativa	Common Vetch	31/03/2013
Vicia sp.	Vetch	19/07/2022

Scientific Name	Common Name	Date of Last Record
Vinca major	Blue Periwinkle	29/11/2019
Vitis vinifera	Grape Vine	27/11/2002
Vittadinia cervicularis var. cervicularis	Waisted New Holland Daisy	1/08/2004
Vittadinia cuneata var.	Fuzzy New Holland Daisy	1/08/2004
Vittadinia gracilis	Woolly New Holland Daisy	1/11/2006
Vittadinia sp.	New Holland Daisy	10/01/2017
Vulpia bromoides	Squirrel-tail Fescue	14/11/1996
Vulpia fasciculata	Sand Fescue	14/11/1996
Vulpia myuros f.	Fescue	17/11/1999
Vulpia myuros f. myuros	Rat's-tail Fescue	14/11/1996
Vulpia sp.	Fescue	10/01/2017
Wahlenbergia gracilenta	Annual Bluebell	20/09/2018
Wahlenbergia stricta ssp. stricta	Tall Bluebell	14/11/1996
Walwhalleya proluta (NC)	Rigid Panic	1/08/2004
Watsonia meriana cv. Bulbillifera (NC)	Bulbil Watsonia	21/03/2002
Wurmbea dioica ssp. dioica	Early Nancy	29/08/2018
Wurmbea sp.	Nancy	20/08/2018
Yucca gloriosa	Yucca	17/04/2002
Zaluzianskya divaricata	Spreading Night-phlox	20/09/2018

Appendix 4. Fauna Species List

Scientific Name	Common Name	Date of Last Record
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	3/01/2018
Acanthiza nana	Yellow Thornbill	26/10/2016
Anas gracilis gracilis	Grey Teal	26/10/2016
Anthochaera carunculata	Red Wattlebird	18/10/2019
Anthochaera chrysoptera chrysoptera	Little Wattlebird (mainland SA)	9/02/2012
Artamus cyanopterus	Dusky Woodswallow	26/10/2016
Cacatua sanguinea gymnopis	Little Corella	13/10/2017
Carduelis carduelis britannica	European Goldfinch	16/11/2017
Cincloramphus mathewsi	Rufous Songlark	26/10/2016
Climacteris picumnus picumnus	Brown Treecreeper	18/10/2019
Colluricincla harmonica	Grey Shrikethrush	3/01/2018
Coracina novaehollandiae	Black-faced Cuckooshrike	15/01/2018
Corcorax melanorhamphos	White-winged Chough	18/10/2019
Corvus mellori	Little Raven	16/11/2017
Crinia signifera	Common Froglet	13/11/2005
Ctenotus spaldingi	Eastern Striped Skink	24/02/2017
Dacelo novaeguineae novaeguineae	Laughing Kookaburra	3/01/2018
Dicaeum hirundinaceum hirundinaceum	Mistletoebird	26/10/2016
Egretta novaehollandiae	White-faced Heron	16/11/2017
Eolophus roseicapilla	Galah	16/11/2017
Fulica atra australis	Eurasian Coot	26/10/2016
Gambusia holbrooki	Eastern Gambusia	18/03/2018
Geopelia cuneata	Diamond Dove	9/02/2012
Geopelia placida placida	Peaceful Dove	16/11/2017
Glossopsitta concinna	Musk Lorikeet	18/10/2019
Grallina cyanoleuca cyanoleuca	Magpielark	1/02/2018
Gymnorhina tibicen	Australian Magpie	1/02/2018
Hemiergis decresiensis	Three-toed Earless Skink	24/02/2017
Lepus europaeus	European Brown Hare	29/08/2018
Lerista bougainvillii	Bougainville's Skink	23/02/2017
Limnodynastes dumerilii	Banjo Frog	23/02/2017
Limnodynastes tasmaniensis	Spotted Marsh Frog	13/11/2005
Litoria ewingii	Brown Tree Frog	13/11/2005
Macropus fuliginosus	Western Grey Kangaroo	29/08/2018
Manorina melanocephala	Noisy Miner	3/01/2018
Melithreptus gularis	Black-chinned Honeyeater	28/11/2003
Menetia greyii	Dwarf Skink	23/02/2017
Merops ornatus	Rainbow Bee-eater	26/10/2016
Microcarbo melanoleucos melanoleucos	Little Pied Cormorant	26/10/2016
Morethia obscura	Mallee Snake-eye	23/02/2017
Neobatrachus pictus	Burrowing Frog	28/10/2016
Ocyphaps lophotes lophotes	Crested Pigeon	3/01/2018
OLIGOCHAETA sp.	oligichaete worms	22/05/2008
Oryctolagus cuniculus	Rabbit (European Rabbit)	29/08/2018
Pachycephala rufiventris rufiventris	Rufous Whistler	26/10/2016
Pardalotus striatus substriatus	Striated Pardalote	18/10/2019
Passer domesticus domesticus	House Sparrow	15/01/2018
Phaps chalcoptera	Common Bronzewing	18/10/2019
Philypnodon grandiceps	Big-headed Gudgeon	18/03/2018
Phylidonyris novaehollandiae	New Holland Honeyeater	15/01/2018
Platycercus elegans	Crimson Rosella	18/10/2019

Scientific Name	Common Name	Date of Last Record
Pogona vitticeps	Central Bearded Dragon	21/02/2017
Pomatostomus superciliosus	White-browed Babbler	18/10/2019
Psephotus haematonotus	Red-rumped Parrot	15/09/2020
Psephotus haematonotus haematonotus	Red-rumped Parrot (eastern SA except NE)	10/01/2017
Pseudocheirus peregrinus	Common Ringtail Possum	24/11/2019
Pseudonaja textilis	Eastern Brown Snake	21/02/2017
Ptilotula penicillata	White-plumed Honeyeater	18/10/2019
Rhipidura leucophrys leucophrys	Willie Wagtail	3/01/2018
Stagonopleura guttata	Diamond Firetail	28/02/2019
Sturnus vulgaris vulgaris	Common Starling	18/10/2019
Tachyglossus aculeatus	Short-beaked Echidna	10/10/2016
Taeniopygia guttata castanotis	Zebra Finch	3/01/2018
Threskiornis molucca molucca	Australian White Ibis	23/04/2020
Tiliqua rugosa	Sleepy Lizard	23/02/2017
Tiliqua scincoides	Eastern Bluetongue	26/10/2016
Tinca tinca	Tench	18/03/2018
Trichosurus vulpecula	Common Brushtail Possum	29/08/2018
Turdus merula merula	Common Blackbird	3/01/2018
Tyto javanica delicatula	Eastern Barn Owl	10/10/2016
Vulpes vulpes	Fox (Red Fox)	10/01/2017
Zosterops lateralis	Silvereye	16/11/2017

Appendix 5. Scattered Tree Photos

Tree 1

Tree 2

Tree 3

Tree 4

Tree 5

Tree 6

Tree 7

Tree 8

Tree 9

Tree 10

Tree 11

Tree 12

Tree 13

Tree 14

Tree 15

Tree 16

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Tree 96

Tree 97

Tree 98

Tree 99

Tree 100

Tree 101

Tree 102 (Amenity Planting 1)

Tree 103 (Amenity Planting 2)

Tree 104 (Amenity Planting 3)