



# State Sports Park Vegetation Management and Restoration Plan

# State Sports Park Vegetation Management and Restoration Plan

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Version 2

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## GLOSSARY AND ABBREVIATION OF TERMS

BFL	Bush For Life
CBD	Central Business District
DAWE	Department of Agriculture, Water, and the Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water (formerly DAWE)
DEW	Department for Environment and Water
EAAF	East Asian Australasia Flyaway
EBS Ecology	Environmental and Biodiversity Services Pty Ltd – trading as EBS Ecology
Environmental weed	Native or exotic species that invade and degrade native vegetation
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
Ha	Hectare
IBRA	Interim Biogeographic Regionalisation for Australia, Version 7
km(s)	Kilometre(s)
LGA	Local Government Area
mm	millimetres
MNES	Matters of National Environmental Significance, as defined by the EPBC Act
MP	the Management Plan (referring to weed and vegetation management)
Native vegetation	A plant or plants of a species indigenous to South Australia (including dead trees >600mm diameter, and planted vegetation protected under the Native Vegetation Act such as SEB's or Heritage Agreements).
NatureMaps	Initiative of Department for Environment and Water that provides a common access point to maps and geographic information about South Australia's natural resources in an interactive online mapping format
NP	National Park
NPW Act	<i>National Parks and Wildlife Act 1972</i>
NPWS SA	National Parks and Wildlife Service SA
NVC	Native Vegetation Council
NVIS	National Vegetation Information System, mapping available at <a href="http://environment.gov.au/land/native-vegetation/national-vegetation-information-system">http://environment.gov.au/land/native-vegetation/national-vegetation-information-system</a>
ORSR	Office for Recreation Sport and Racing

<i>Pers. comms.</i>	Personal communications
Project Area	State Sports Park, Gepps Cross SA 5094
PMST	Protected Matters Search Tool
Remnant vegetation	Native vegetation that remains in much the same form and composition in the same location since European settlement
RMSC	Roma Mitchell Secondary College
SA	South Australia(n)
sp.	Species
spp.	Species (plural)
ssp.	Subspecies
SSP	State Sports Park
SSPMP	State Sports Park Master Plan
TEC	Threatened Ecological Community
VMRP	Vegetation Management and Restoration Plan (for State Sports Park)
WSUD	Water-sensitive Urban Design
WoNS	Weed of National Significance

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**Attachments**

**Attachment 1:** Report Maps - PDF (EX220325\_Attachment1\_SSP\_ReportMaps\_20221212)



# 1 INTRODUCTION

The Office for Recreation, Sport, and Racing (ORSR) has engaged EBS Ecology (EBS) as part of a Memorandum of Administrative Arrangement (MoAA) with Green Adelaide to undertake an ecological assessment and create a Vegetation Management and Restoration Plan (VMRP) to support the State Sports Park (SSP) Master Plan (2022). EBS initially reviewed the SSP Master Plan to gain a better understanding of the focus for greening and restoration. The State Sports Park Trail Plan was developed in 2022, as a subsidiary plan to the Master Plan, and provides additional context around access to and visitor usage of the Park.

The SSP is a sports precinct and has been zoned as an area for recreation located in the heart of Gepps Cross. Due to its size and location in middle-suburbia, as well as its considerable open space and environmental values, its potential for habitat, biodiversity, urban cooling, nature education outcomes are considerable. The Master Plan outlines a vision for this, and this includes significantly increasing access and visitation, both active and motorised. The SSP VMRP aims to improve the environmental aspects of the park, which includes increasing the greening and habitat connectivity across the park as well as the following the overall guiding principles of the park as stated in the SSP Master Plan.

## 1.1 Scope and Objectives

Weed control and revegetation works have been planned as part of the SSP Master Plan; and a more detailed assessment of vegetation management priorities is required to achieve the objectives of the Master Plan. Cognisant of the vision and multiple recreation, environment, sporting and community objectives of the Master Plan, the scope of works is to:

- Identify management recommendations for biodiversity outcomes:
  - Including the control of declared weeds;
- Identify habitat restoration opportunities, consistent with the SSP Master Plan:
  - Identify potential options for weed interception points on watercourses;
  - Identify restoration options with regionally threatened species and communities; and
  - Increase greening, tree cover and revegetation for cooling and biodiversity across the site.

## **2 PROJECT AREA BACKGROUND INFORMATION**

### **2.1 Site description**

The SSP is located within the northern suburbs of Adelaide, approximately 12 km north of Adelaide CBD in the suburb of Gepps Cross and is approximately 100 hectares (ha) in size. The Project Area is bounded by multiple main roads including Main North Road, Briens Road and Grand Junction Road and approximately 5.6 km southeast of the Barker Inlet and St Kilda Wetlands of National Importance (Figure 1).

The Master Plan refers to the Greater SSP, which includes all of the open space land, the Roma Mitchell Secondary College, the Croatian Sports Centre, Gepps Cross Park and Unity park, which contains a lake that serves as a location for biofiltration of stormwater. This area is considered as a whole in the Master Plan to ultimately manage activity and outcomes consistently across the whole area (150 ha). This SSP VMRP focuses on the SSP rather than the Greater SSP scope, but is cognisant of conditions and spatial relationships with other land in the Greater SSP.

### **2.2 Cultural significance**

The SSP resides on the land of the Adelaide Plains, which is the traditional lands of the Kaurna people.

### **2.3 Surrounding land use**

The Project Area environs is highly urbanised and most of the land to the east and the south of the SSP consists of residential land, which includes the suburbs of Northfield and Clearview (5085) and Gepps Cross (5094). The west side of the Project Area is bound by Woolworths Distribution Centre and numerous other shopping complexes. Pooraka (5095) bounds the northern end of the Project Area, and contains facilities open to the public such as a Primary School, Church and Unity Park.

### **2.4 Post-settlement History**

Historically, the land was first developed as Montage Farms in 1842 and was comprised of 53 smaller blocks of land. Between 1909 and 1928, five blocks of that land were purchased by Abattoirs authority where the land was used for grazing, cropping, a centralised meat works and stock markets. It wasn't until 1999 that the abattoir was closed and eventually the land was transferred to the State Government as park of Adelaide's second generation of parklands, which was then legislated as the Metropolitan Open Space System (MOSS). In 1988, the State Hockey Centre was opened and then in 1993, the Adelaide Super Drome was opened. The year 1993 also saw the beginning of Foresters Forest, which involved numerous community groups planting 12 different vegetation associations which hold cultural/historical relevance to Australia. This included Sugar Gums, Red Gums, Flinders Ranges Native Pine, and Salmon Gums. In 2000, the land for roads and stormwater management and the City Levels Bikeway were transferred to the City of Port Adelaide Enfield and the land for the Roma Mitchell Secondary College was transferred in 2012.

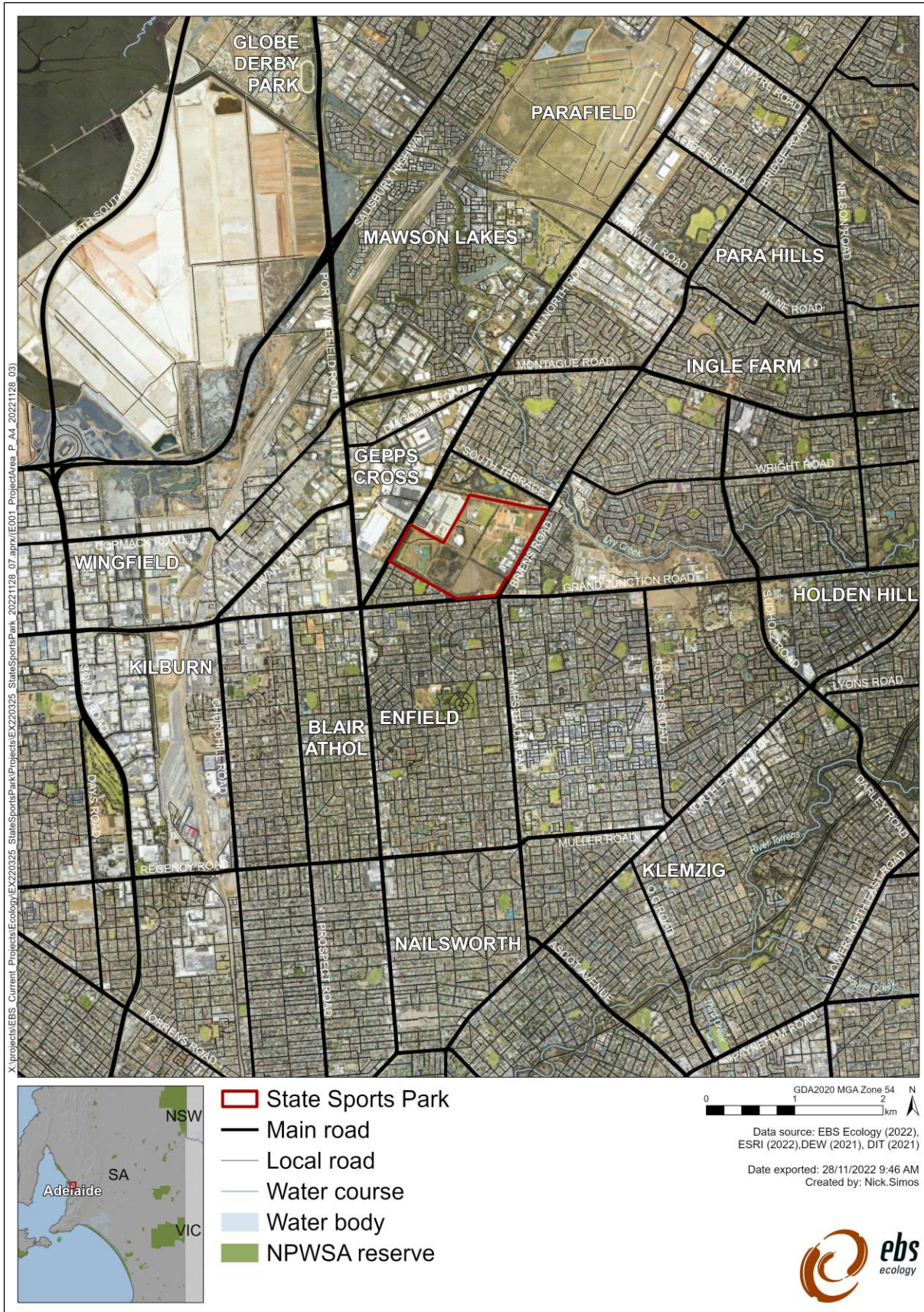


Figure 1. The State Sport Park Project Area.

## 2.5 Current use

Currently, the SSP has multiple uses which can be summarised as follows:

- The Super-Drome and Wind Tunnel;
- State Hockey Centre;
- The State Centre of Football;
- Croatian Sports Centre;
- Foresters Forest;
- Roma Mitchell Secondary College;
- Unity Park is located to the north edge of State Sports Park and is home to the Cross Keys BMX Club, Dog Park, and Unity Ponds/wetlands (harvesting and reuse);
- Gepps Cross Park is located to the South of State Sports Park and include lacrosse and cricket facilities;
- The Levels Bikeway dissects State Sports Park South to North; and
- Four interconnected stormwater detention basins drain to the park's south-west corner. Unity Ponds takes water from two additional basins established as part of the State Centre of Football in 2022.

## 2.6 Master Plan

Jensen PLUS was commissioned to assist the Office for Recreation Sport and Racing (ORSR) and the Park's key stakeholders with the development of a Master Plan for the development of State Sports Park (SSP). The State Sports Master Plan has unveiled a new green, connected, recreation and mix-use park, which will become an asset for Adelaide and the northern suburbs (SSMP 2021). The development of the SSP Master Plan was a collaboration of the following key stakeholders:

- City of Port Adelaide Enfield;
- City of Salisbury;
- Department for Education;
- Green Adelaide;
- Foresters Forest Management Committee;
- Football SA;
- South Australian National Football League;
- South Australian Cricket Association; and

- Croatian Sports Centre

The Plan incorporates existing features as well as the upgrading and addition of new activity precincts. This included:

- A new Criterion Track with links to an upgraded Cross Keys BMX track in Unity Park and the Bikeway.
- A new 'wind tunnel' was to be built on the velodrome's southwest corner but will now be built at Mile End adjacent the athletics Stadium .
- Foresters Forest will be well-managed and walking, picnicking and nature play, with revegetation of the park incorporating stormwater detention basins and green corridors and trails.
- The State Hockey Centre will be revitalised and considered for other uses such as rugby and lacrosse and share its some of its facilities with a new Archery Hub.
- The Sports Park Village with mixed-use activities that support sports and recreation activities.
- The Bikeway will become a cycling lane on the new road in from Grand Junction Road, be re-routed through the Village, and continue through to Mawson Lakes.
- A new Community Recreation Precinct will allow multiple sports to be played on flexible fields and courts, alongside picnic, play and event spaces.
- The new State Centre of Football (soccer) has been built adjacent Roma Mitchell Secondary College and the Croatian Sports Centre.
- The new road in from Briens Road, Matildas Drive, will also provide access to the new Girls Campus at Roma Mitchell Secondary College. The school will share car parking, sports and café facilities provided by the Football Centre.
- Stormwater runoff will be diverted to Unity Ponds for re-use from the new road, carparks, building and pitches, and Unity Park will extend across the Old Rail Corridor to meet the Centre's 5-aside pitches.
- Opportunity to implement environmental and social sustainability principles and to provide pa precedent for future developments of ESD opportunities focus on active lifestyles, wellness, inclusiveness, greening and healthy eating.

### 3 ENVIRONMENTAL SETTING

#### 3.1 Administrative boundaries

The Project Area is within the Green Adelaide Landscape Management Region, the Local Government Area of Port Adelaide Enfield, the Hundred of Yatala, and the County of Adelaide.

#### 3.2 Climate

The climate was taken from the closest weather station (Parafield Airport weather station (023013)), which is approximately 9.4 km from the SSP. The weather at this location is classified as Mediterranean, with cool wet winters and dry warm summers. The mean annual maximum temperature at this location is around 23.2 degrees Celsius with a minimum of 11.2. The mean rainfall for this area is around 426.9 mm (Figure 2).

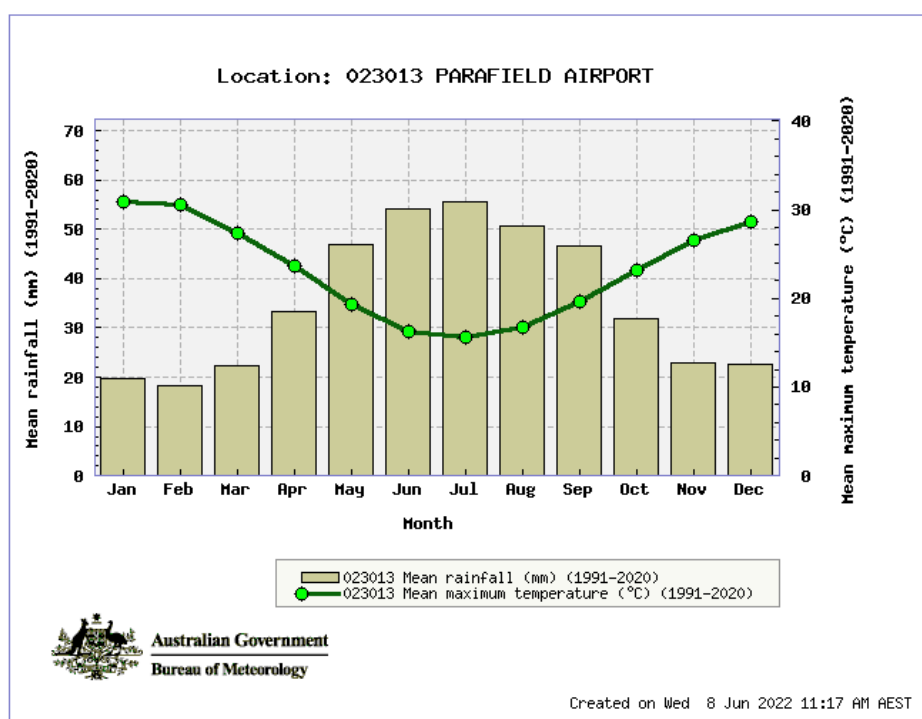


Figure 2. Mean annual maximum temperature and rainfall for the last 30 years (1991-2020) from Bureau of Meteorology (BOM) (2022).

### 3.3 Interim Biogeographical Regionalisation of Australia

Interim Biogeographical Regionalisation of Australia (IBRA) is a landscape-based approach to classifying the land surface across a range of environmental attributes, which is used to assess and plan for the protection of biodiversity. The northwest side of the Project Area falls within the Eyre York Block IBRA Bioregion, the St Vincent Subregion, and the Parham and Mallala IBRA Environmental Association. The native vegetation remnancy within the Parham Environmental Association is 44% (16,432 ha) of the association mapped as remnant native vegetation, of which 7% (1,076 ha) is formally conserved in NPW Reserves or Heritage Agreements. The remnancy within the Mallala Environmental Association is low with 3% (5,874) of which, 2% is formally conserved.

The southeastern edge of the Project Area falls within the Flinders Lofty Block IBRA Bioregion, the Mount Lofty Ranges Subregion, and the Rosedale IBRA Environmental Association. The native vegetation remnancy within the Rosedale IBRA Environmental Association, is low with 5% (3,089 ha) mapped as remnant vegetation of which, 11% (331 ha) if formally conserved.

## 4 METHODS

### 4.1 Desktop assessment

#### 4.1.1 Database searches

Desktop research was undertaken in preparing this report. This included database searches and a review of literature relevant to the Project Area to determine if any ecological constraints exist for the proposed Project. These searches helped to identify a list of threatened species and ecological communities and Matters of National Environmental Significance (MNES) that are known or likely to occur in the Project Area.

The following databases and resources were reviewed:

- Commonwealth Protected Matters Search Tool (PMST) to identify all MNES potentially within 5 km of the Project Area. MNES include threatened species, ecological communities and migratory species listed under the EPBC Act.
- Records, within 5 km of the Project Area from the South Australian Government's Biological Databases of South Australia (BDBSA), extracted from NatureMaps [23/06/2022].
- Species Profile and Threats Database (SPRAT) for entities listed under the EPBC Act, available at <https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.
- Other relevant websites, reports, fact sheets and papers.

### 4.2 Field Assessment

A field assessment was undertaken on the 26<sup>th</sup> of May 2021 by two EBS ecologists E. West and G. Wilson.

Weed species and associations were identified and mapped across the whole property with a species list collected, including of exotic planted garden plants and Australian species (where possible).

Native vegetation across the property was highly degraded and consisted largely of planted and non-local native plants and therefore Nature Conservation Society South Australia Bushland Assessment Methods (BAM) were not appropriate for assessing the vegetation. Instead, native vegetation was broadly mapped and categorised by quality, and assessed in terms of rehabilitation priorities.

#### 4.2.1 Vegetation condition assessment

Vegetation management zones were assessed based on the vegetation community present and its condition using *Stokes et. al.* (2006) guidelines as a basis for classification of condition (Table 1).



**Table 1. Condition scoring used to assess vegetation within SSP.**

Condition Rating	Overview Condition	Description
1	Excellent	Very little or no sign of alien vegetation in the understorey*; resembles probable pre-European condition.
2	Good	High proportion of native species and native cover in the understorey*; reasonable representation of probable pre-European vegetation.
3	Moderate	Substantial invasion of aliens but native understorey* persists; for example, may be a low proportion of native species and a high native cover, or a high proportion of native species and low native cover.
4	Poor	The understorey* consists predominately of alien species, although a small number of natives persist.
5	Very Poor	The understorey* consists only of alien species.
*Or all strata if the upper and lower strata are difficult to distinguish		
(Adapted from 'Guide to Roadside Vegetation Survey Methodology for South Australia,' Stokes et al 1998).		

#### 4.2.2 Fauna

All native and exotic vertebrate fauna species opportunistically encountered during the field survey (directly observed, or tracks, scats, burrows, nests, and other signs of presence) were recorded across the Project Area. Potential fauna refuge sites, such as hollows, rock crevices and creek lines were noted as an indication of availability of suitable habitat. Particular attention was given to identifying potential habitat for threatened species. For each opportunistic fauna observation, the species, number of individuals, GPS location, detection methodology (sight, sound, or sign) and habitat were recorded. No targeted surveys were undertaken. The Scattered Tree Assessment Manual (STAM) and Bushland Assessment Manual (BAM) (NVC 2020) were utilised to create a fauna suitability table to assess the fauna habitat within the Project Area (Table 2).

**Table 2. Fauna habitat suitability.**

Rating	Examples
Very Low	Minimal foraging habitat but no nesting habitat. No hollows or fallen timber/debris.
Low	Limited amounts of foraging or nesting habitat.
Moderate	Adequate foraging and nesting habitat, lack of understorey with minimal fallen debris.
High	Good foraging and nesting habitat, lots of fallen timber/debris. OR flowering trees > 10 meters in height small, medium, and large hollows.

### 4.3 Limitations

Due to the size of the Project Area, not all vegetation patches were searched in detail throughout the extent of the Project Area. Additionally, some flora species may have gone undetected where flora was surveyed due to seasonal conditions and / or timing of the survey (e.g., if they were dormant, inconspicuous, or lacked distinguishable features such as flowers or seeds at the time of survey). Certain planted non-indigenous Australian species were not able to be identified to a species level due to a lack of identification features such as buds, flowers, or seeds.

Fauna records were limited to opportunistic observations at the time of the survey and may not have been undertaken within the optimal survey time for species of interest (i.e., dawn / dusk for birds). Therefore, species additional to those recorded during the field survey are likely to occur within the Project Area.

## 5 BIODIVERSITY ASSETS

### 5.1 Native Vegetation

Since 1843, the State Sports Park has had a long history of vegetation clearance and grazing. However, based on NatureMaps (2022), it is likely that the pre-European vegetation consisted of three main vegetation associations (Figure 3):

- *Acacia ligulata* (Umbrella Bush), *A. acinacea* (Gold Dust Wattle) and *Pomaderris paniculosa* (Inland Pomaderris) Shrubland;
- *Rytidosperma* ssp. (Wallaby Grass) + *Austrostipa* ssp. (Spear-grass) Tussock Grassland; and
- *Eucalyptus porosa* (Mallee Box) +/- *E. socialis* ssp. *socialis* (Summer Red Mallee) Woodland.

Currently, only small fragments of the pre-European tussock grasslands remain, however it is in poor condition mainly dominated by exotic grasses such as *Cenchrus clandestinus* (Kikuyu). These open exotic grassy areas are sparsely interspersed with native grasses such as *Enneapogon nigricans* (Black-head Grass), *Rytidosperma caespitosum* (Common Wallaby-grass) and *Austrostipa* spp. (Spear-grass). Small clusters of the native forb *Vittadinia gracilis* (Wolly New Holland Daisy) are also present. No other remnant shrubland or woodlands remains, native indigenous species such as *Acacia pycnantha* and *Callitris* sp. have self-seeded from planted individuals (Figure 4). Most of the vegetation that exists is comprised of planted local native such as *E. porosa* and planted exotic species, particularly within Foresters Forest. Naturally, weeds have recruited and now dominate most of the Project Area.

Other native species that have recruited within the Project Area include sedges and herbs. Drainage zones and basins contained the highest density of native riparian species such as *Ficinia nodosa* (Knobby Club-rush) and *Typha domingensis* (Cumbungi) and *Chloris truncata* (Windmill Grass).

A total of 44 native flora species (including planted indigenous species) were identified during the field survey (Appendix 1: State Sports Park flora list). It is important to note that this is not an exhaustive list, and that other species were not visible during the time of the autumn survey. Other planted amenity vegetation (i.e., non-indigenous species) were not identified to a species level.

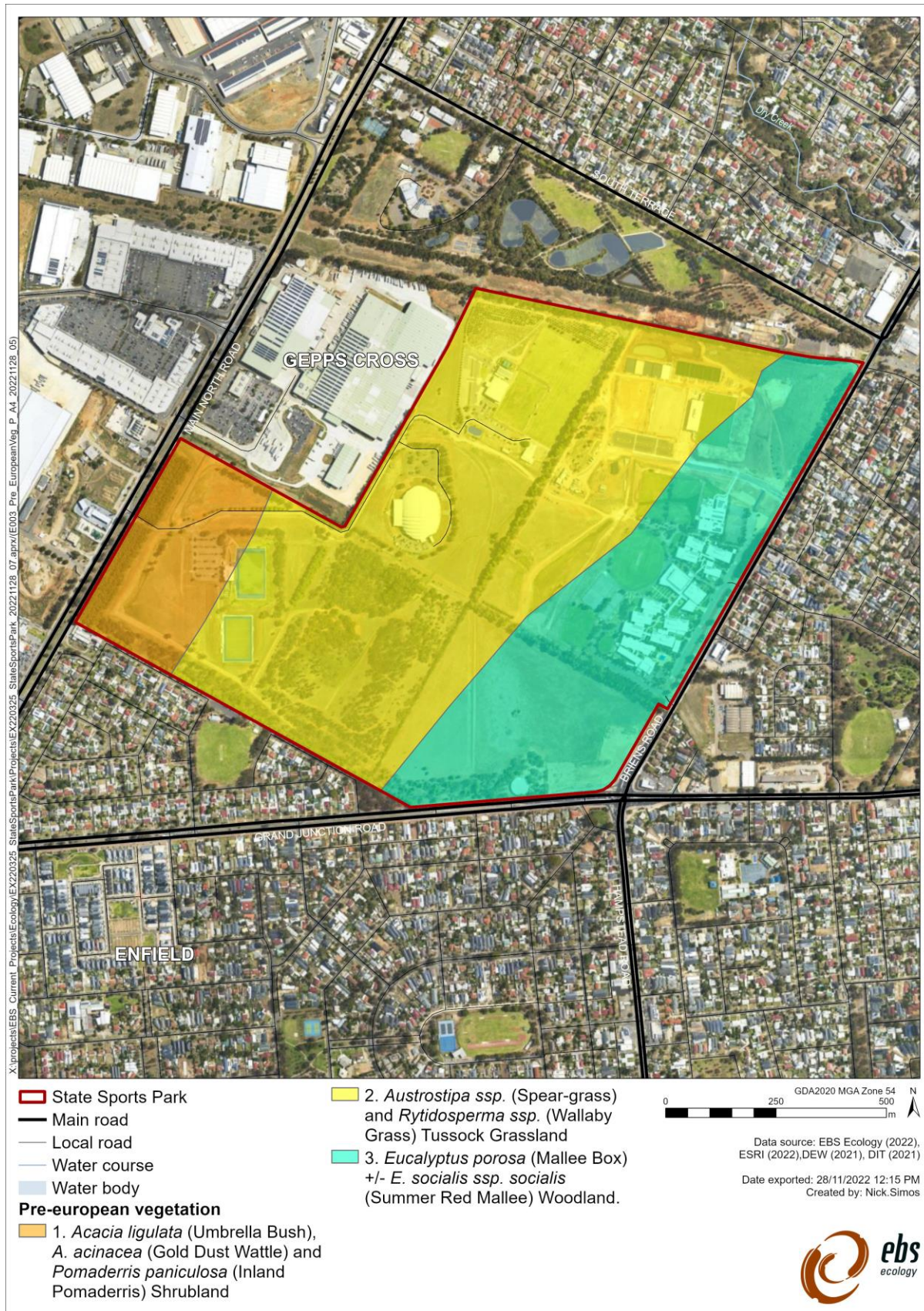


Figure 3. Pre-European vegetation Map (NatureMaps, 2022).

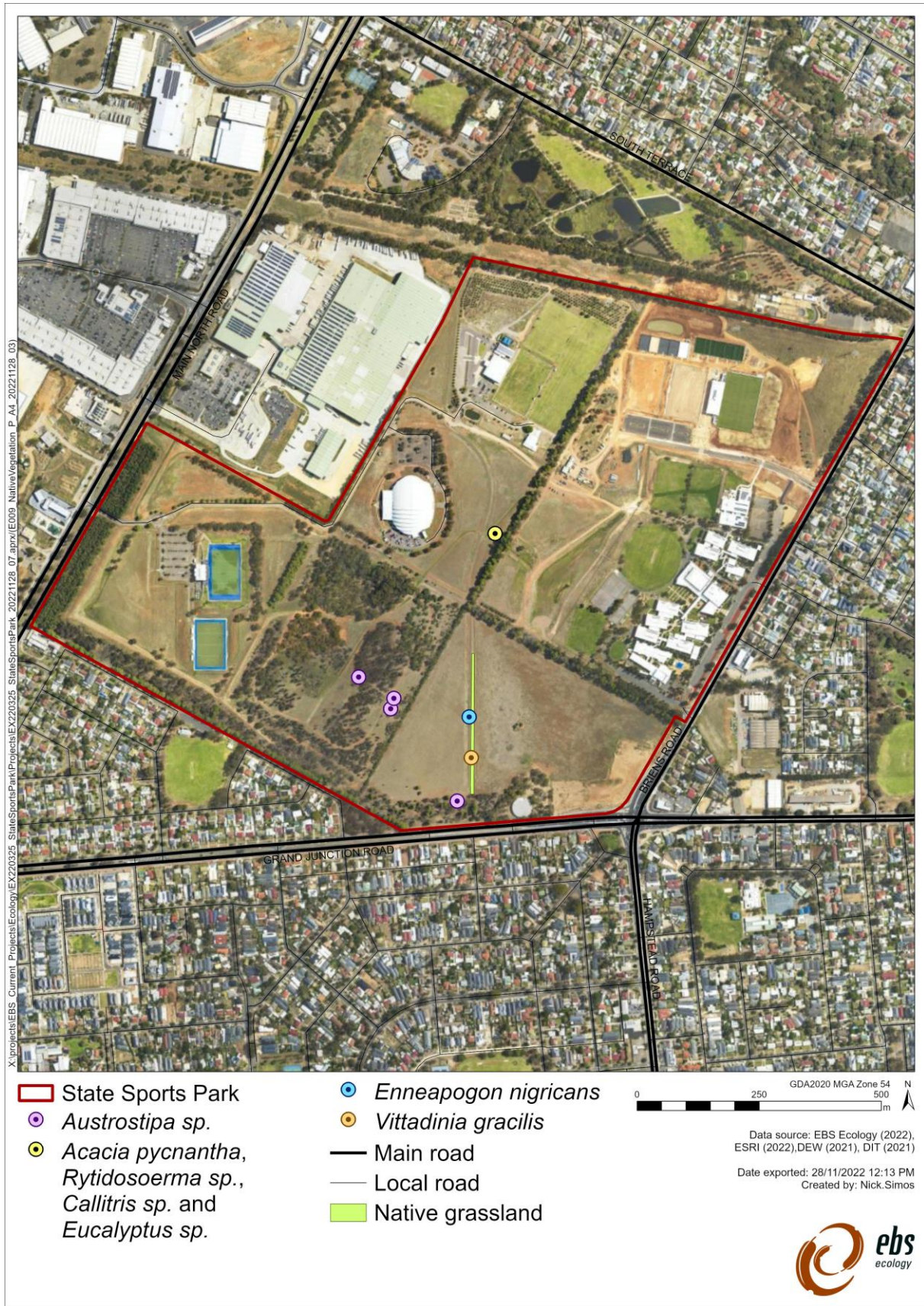


Figure 4. Self-seeded and regenerated native vegetation within the Project Area.

## 5.2 Foresters Forest

Foresters Forest was established in 1993 as a tribute to Graham Blackwell, a forester who embraced community forestry. Foresters Forest contains the highest diversity of flora and fauna species and is a high biodiversity asset within the SSP. Large pockets of exotic and non-indigenous South Australia flora exist within the Foresters Forest. However, it still provides necessary habitat and resources to local fauna and great amenity value in a highly urbanised area. However, this area still requires intense weed control and revegetation to maintain and increase the biodiversity within the SSP. This is discussed later in Section 8 (Vegetation Management and Practices).

This forest contains 12 different forests and woodlands and is a diverse mix of native indigenous species to South Australia along with iconic species from around Australia and one exotic planting of *Schinus molle* (Peppercorn) native to South America. The 12 different vegetation associations and their individual condition ratings can be summarised as follows:

1. *Eucalyptus camaldulensis* (River Red Gum) Open Forest in Moderate condition (Figure 5);
2. *E. cornuta* (Yate) Open Forest over *Acacia pendula* (Weeping myall) in Moderate condition (Figure 6);
3. *E. largiflorens* (Black Box) and *E. porosa* (Mallee Box) Mallee over *A. pycnantha* (Golden Wattle) and *A. acinacea* (Gold-dust Wattle) in Good condition (Figure 7);
4. *E. salmonophloia* (Salmon Gum) Low Open Forest over *Acacia spp.* in Moderate condition (Figure 8);
5. *E. socialis* Open Mallee over *Melaleuca lanceolata* (Dry-land Tea-tree) in Moderate condition (Figure 9).
6. *Callitris gracilis* (Slender Cypress-pine) and *C. glaucophylla* (White Cypress-pine) Very Low Open Forest in Moderate condition (Figure 10);
7. *E. leucoxylon* (Blue Gum) and *E. fasciculosa* (Pink Gum) Low Woodland over *Allocasuarina verticillata* (Drooping Sheoak) in Good condition (Figure 11);
8. *Casuarina pauper* (Black Oak) and *A. aneura* (Mulga) Very Low Woodland in Moderate condition (Figure 12);
9. *E. cladocalyx* (Sugar Gum) Low Woodland in Poor condition (Figure 13);
10. *E. sideroxylon* (Ironbark) Low Woodland in Poor condition (Figure 14);
11. *E. astringens* (Brown Mallet) Very Low Woodland over *A. acuminata* (Jam Wattle) Poor condition (Figure 15); and
12. *Schinus molle* (Peppercorn) Very Low Open Forest in Very Poor condition (Figure 16).



Figure 5. *Eucalyptus camaldulensis* (River Red Gum) Open Forest



Figure 6. *E. cornuta* (Yate) Open Forest over *Acacia pendula* (Weeping myall).



Figure 7. *E. largiflorens* (Black Box) and *E. porosa* (Mallee Box) Mallee over *A. pycnantha* (Golden Wattle) and *A. acinacea* (Gold-dust Wattle).



Figure 8. *E. salmonophloia* (Salmon Gum) Low Open Forest over *Acacia* sp.



Figure 9. *E. incrassata* Open Mallee over *Melaleuca lanceolata*



Figure 10. *Callitris gracilis* and *C. glaucophylla* (White Cypress-pine) Very Low Open Forest.



Figure 11. *E. leucoxylon* (Blue Gum) and *E. fasciculosa* (Pink Gum) Low Woodland over *Allocasuarina verticillata* (Drooping Sheoak).



Figure 12. *Casuarina pauper* (Black Oak) and *A. aneura* (Mulga) Very Low Woodland.



Figure 13. *E. cladocalyx* (Sugar Gum) Low Woodland.



Figure 14. *E. sideroxylon* (Ironbark) Low Woodland.



Figure 15. *E. astringens* (Brown Mallet) Very Low Woodland over *A. acuminata* (Jam Wattle).



Figure 16. *Schinus molle* (Peppercorn) Very Low Open Forest.



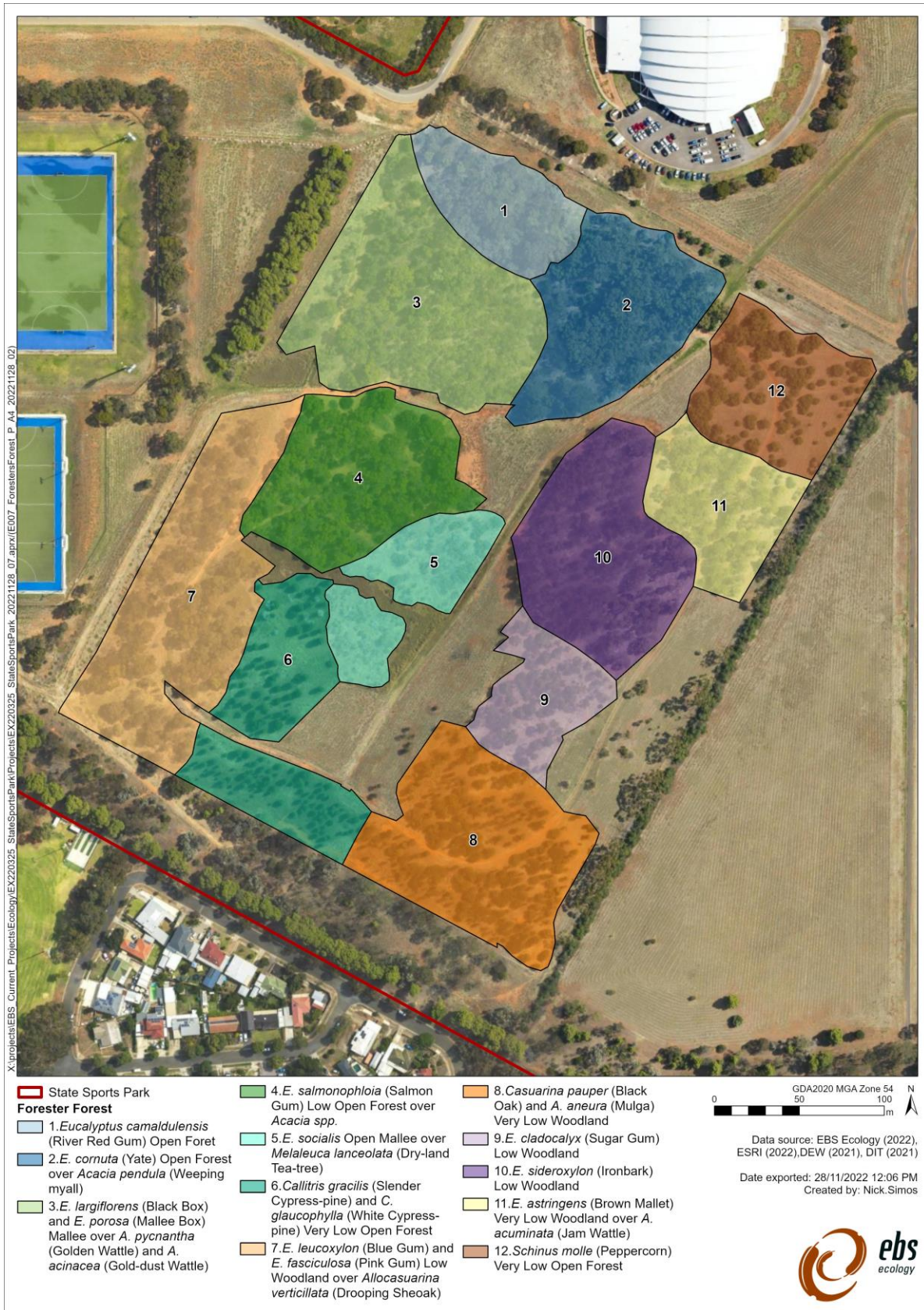


Figure 17. Vegetation associations defined within Foresters Forest.

## 5.3 Flora

### 5.3.1 Significant flora

A PMST was generated to identify any Threatened Ecological Communities (TEC) or threatened species that may be of concern within the Project Area (see section 10.2 - for full threatened flora species list). Three listed TEC were outlined in the PMST as follows:

- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia – Endangered;
- Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia– Critically Endangered; and
- Subtropical and Temperate Coastal Saltmarsh – Vulnerable.

The field assessment confirmed that there were no TEC's, or threatened species observed within the Project Area.

Only plantings of the State Rare *Eucalyptus fasciculosa* (Pink Gum) were identified within the smooth-barked woodland of Foresters Forest.

## 5.4 Fauna

A total of 30 fauna species were observed within the Project Area, 23 of which were native fauna species, six were introduced. This included one amphibian, one reptile and 22 birds (Table 3). None of these species are threatened under the EPBC or NPW Acts.

**Table 3. Fauna species recorded within the Project Area.**

*	Scientific name	Common name	Conservation status	
			Aus	SA
<b>AMPHIBIANS</b>				
	<i>Crinia signifera</i>	Common Eastern Froglet		
<b>AVES</b>				
	<i>Anthochaera carunculata</i>	Red Wattlebird		
	<i>Cacatua galerita</i>	Sulphur Crested Cockatoo		
	<i>Cacatua sanguinea</i>	Little Corella		
	<i>Chenonetta jubata</i>	Australian Wood Duck		
*	<i>Columba livia domestica</i>	Feral Pigeon		
	<i>Dacelo novaeguineae</i>	Laughing Kookaburra		
	<i>Dicaeum hirundinaceum</i>	Mistletoebird		
	<i>Egretta novaehollandiae</i>	White-faced Heron		
	<i>Elanus axillaris</i>	Black-shouldered Kite		
	<i>Eolophus roseicapilla</i>	Pink Galah		
	<i>Grallina cyanoleuca</i>	Magpie-lark		

*	Scientific name	Common name	Conservation status	
			Aus	SA
	<i>Gymnorhina tibicen</i>	Australian Magpie		
	<i>Hirundo neoxena</i>	Welcome Swallow		
	<i>Lichenostomus virescens</i>	Singing Honeyeater		
	<i>Manorina melanocephala</i>	Noisy Miner		
	<i>Ocyphaps lophotes</i>	Crested Pigeon		
	<i>Pardalotus striatus</i>	Striated Pardalote		
	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater		
	<i>Platycercus elegans</i>	Crimson Rosella		
	<i>Platycercus eximius</i>	Eastern Rosella		
	<i>Rhipidura leucophrys</i>	Willie Wagtail		
*	<i>Streptopelia chinensis</i>	Spotted Dove		
*	<i>Sturnus vulgaris</i>	Common Starling		
	<i>Threskiornis moluccus</i>	Australian White Ibis		
	<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet		
*	<i>Turdus merula</i>	Common Blackbird		
<b>MAMMALIA</b>				
*	<i>Canis lupus familiaris</i>	Domestic Dog		
*	<i>Lepus europaeus</i>	European Hare		
<b>REPTILIA</b>				
	<i>Tiliqua scincoides</i>	Eastern Blue-tongue Lizard		

Aus: Australia (*Environment Protection and Biodiversity Conservation Act 1999*). SA: South Australia (*National Parks and Wildlife Act 1972*). Conservation codes: CE: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R: Rare. \*: Introduced.

#### 5.4.1 Significant fauna

No significant fauna was observed within the Project Area.

A simple 5 km NatureMaps search was undertaken to identify any potential threatened species that may inhabit the Project Area. The State Rare woodland bird species such as the Scarlet Robin (*Petroica boodang ssp. boodang*) and Elegant Parrot (*Neophema elegans ssp. elegans*) may utilise highly wooded areas such as Foresters Forest. Other threatened mammals such as the State Rare Common Brushtail Possum (*Trichosurus vulpecula*) and the nationally Vulnerable Grey-headed Flying Fox (*Pteropus poliocephalus*) may utilise larger scattered trees for foraging resources and nesting purposes (see section 10.3 for a full threatened species list).

The Project Area is also located approximately 6.3 km southeast of the coastal Adelaide International Bird Sanctuary National Park- Winaityinaityi Pangkara (NP). This Bird Sanctuary is situated at the southern end of the East Asian Australasia Flyaway (EAAF), making it one of the key feeding and roosting sites for migratory birds (NPWSSA 2022). Currently, no suitable habitat exists within the Project Area for these species. However, future plans to incorporate wetlands as a part of the new SSP, may encourage wetland dwelling species.

**5.4.2 Fauna habitat**

Fauna habitat varied across the Project Area (Figure 22). Open grasslands provided very low habitat value due to the lack of native vegetation (especially larger shrubs and trees) for foraging and nesting resources, high prevalence of weeds and the lack of other structural features such as rocks and logs, which are important habitat features for reptiles and invertebrates. Areas that have low habitat value included basin areas and drainage lines as these areas had some foraging and nesting habitat due to the increase in native species. However, these areas are small in size and are dominated by weed species. Moderate habitat was observed where woodlands occurred, however these areas lacked structural diversity (shrubs, tussock grasses etc). Areas with high habitat value consisted of vegetation that had a mixture of structural diversity, lots of litter and debris or scattered trees that contain numerous hollows of varying sizes. This was typically observed within a majority of the *E. cladocalyx* (Sugar Gum) trees planted along the borders of the Project Area.



Figure 18. Area of very low habitat value within the Project Area



Figure 19. Area with low habitat value within the Project Area



Figure 20. Area of moderate habitat within the Project Area.



Figure 21. Area of high habitat value within the Project Area

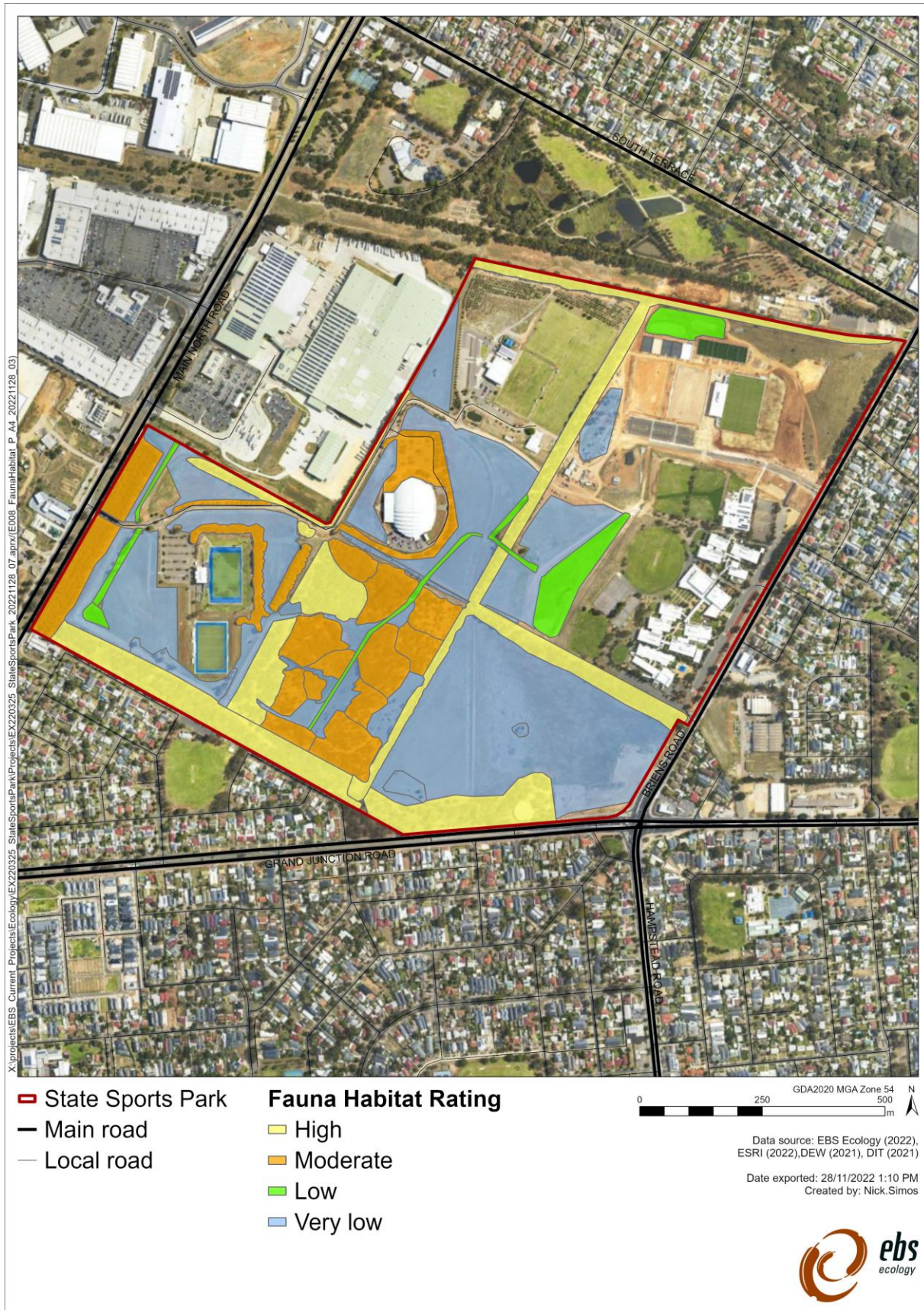


Figure 22. Fauna habitat ratings mapped across the Project Area.

## 6 THREATS TO BIODIVERSITY

### 6.1 Weeds

A total of 37 weed species were recorded across the site during the field assessment (excluding planted Australia species). This includes two Weeds of National Significance (WoNS) and 10 Declared weeds (excluding those already listed as WoNS). Due to the highly urbanised nature of the site, numerous garden plants have self-seeded throughout the Project Area, including *Polygala myrtifolia* (Polygala), *Pheonix canariensis* (Canary Island Palm) and *Watsonia meriana* var. *bulbillifera* (Bulbil Watsonia). A full list of weeds can be found in Appendix 1: State Sports Park flora list. It is likely that additional weed species may be present within the reserve, but not observed during the survey due to survey timing or low prevalence, for example *Xanthium spinosum* (Bathurst burr) and *Tribulus terrestris* (Caltrop). Only one small patch of Caltrop was observed during the field survey, it is likely that this species is prevalent elsewhere in the Project Area (Figure 23).

The SSP has a significant amount of Declared woody weeds, such as *Olea europaea* (Olive) and WoNS *Lycium ferocissimum* (African Boxthorn) (Figure 24). Other woody species that have self-seeded from historical (1993) plantings include *Schinus molle* (Peppercorn) and the Declared *Pinus halepensis* (Aleppo Pine). All these species tend to form thickets and outcompete native species, eventually degrading the natural landscape. Whilst difficult and labour intensive to control, due to the high seed load of many of these species, it is recommended that intensive effort is applied to control these species early in the program as it will become more difficult following revegetation efforts. Scattered environmental weeds are also prominent within the SSP and this includes species such as *Asphodelus fistulosus* (Onion Weed) and *Acacia saligna* (Golden Wreath Wattle). Other environmental weeds that were prolific throughout the Project Area but not mapped included grass species such as *Cenchrus clandestinus* (Kikuyu), *Avena barbata* (Bearded Oat) and *Cynodon dactylon* (Couch Grass) (Figure 25).

Due to historical clearing and grazing, herbaceous and non-woody weeds including non-native plants dominated across the SSP. Some species are particularly invasive, are not yet widespread and / or pose a particular risk to the biodiversity value of the park, and therefore should be targeted as a priority for weed control. This includes species such as *Echium plantagineum* (Salvation Jane), *Cynara cardunculus* (Wild Artichoke), *Eragrostis curvula* (African Lovegrass) and *Solanum elaeagnifolium* (Silver-leaf Nightshade).

Approximately 28 ha of the park remains cleared and is dominated by landscaped grasses such as Kikuyu grass. However, these grasses have now invaded drainage lines and depressions, resulting in a displacement of native species, which can have an impact on the biological and physical nature of these areas.

#### 6.1.1 Priority weeds

Weeds pose an ongoing management challenge, and a variety of management methods are required to control various weed species. Appendix 4: lists WoNS, Declared weeds and significant weeds for priority management

## State Sports Park Vegetation Management and Restoration Plan

within the SSP and describes the nature of their threat to biodiversity and preferred control methods. Methods of weed control are described in detail in section 10.4. Refer to *Weed Control Handbook for Declared Plants in South Australia* (PIRSA, 2018), or seek expert advice for details on recommended herbicide use and application.





Figure 23. Declared weeds located within the southwest side of the Project Area.

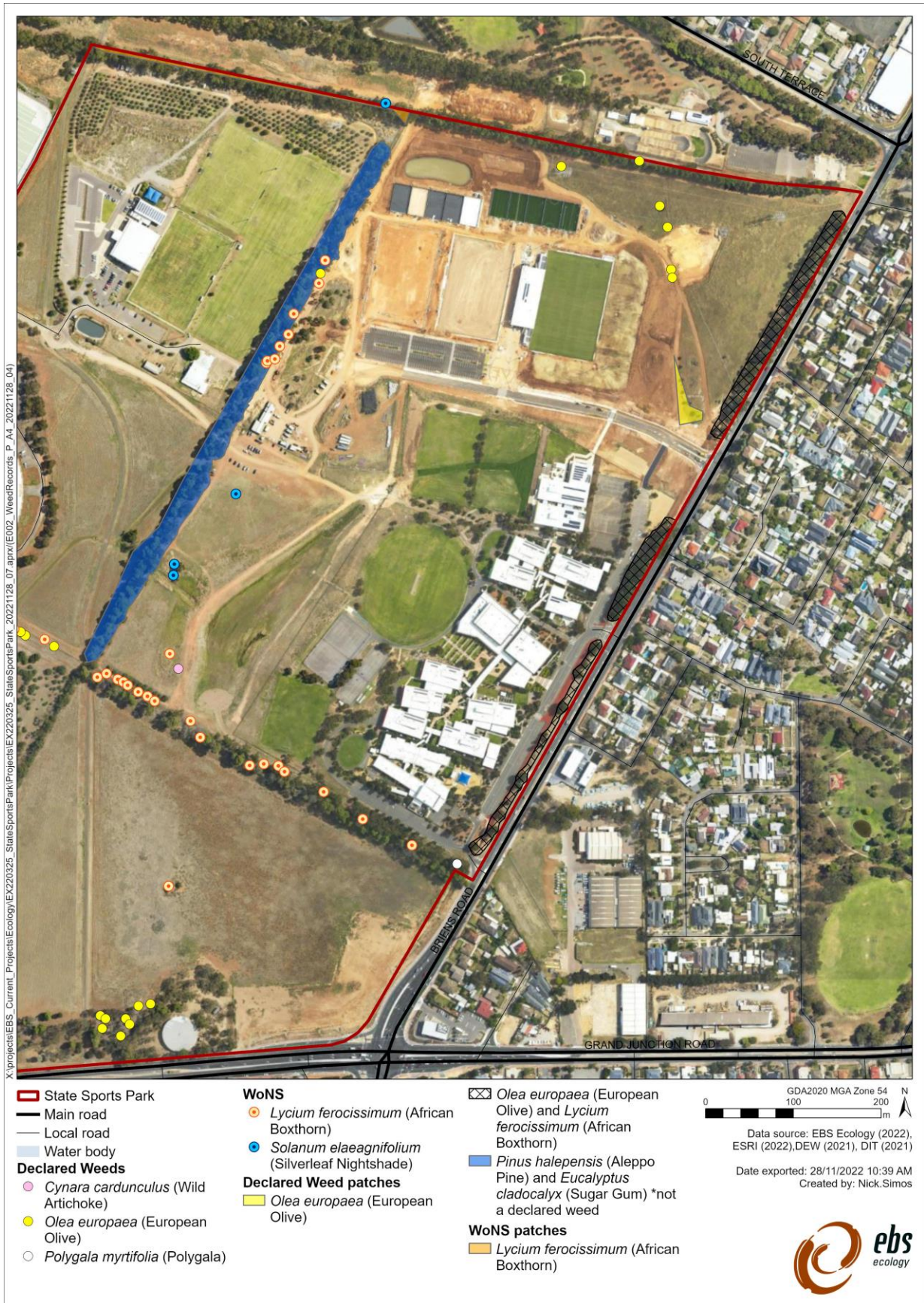


Figure 24. Declared weeds located on the northeast side of the Project Area.



Figure 25. Environmental weeds located within the southwest side of the Project Area.

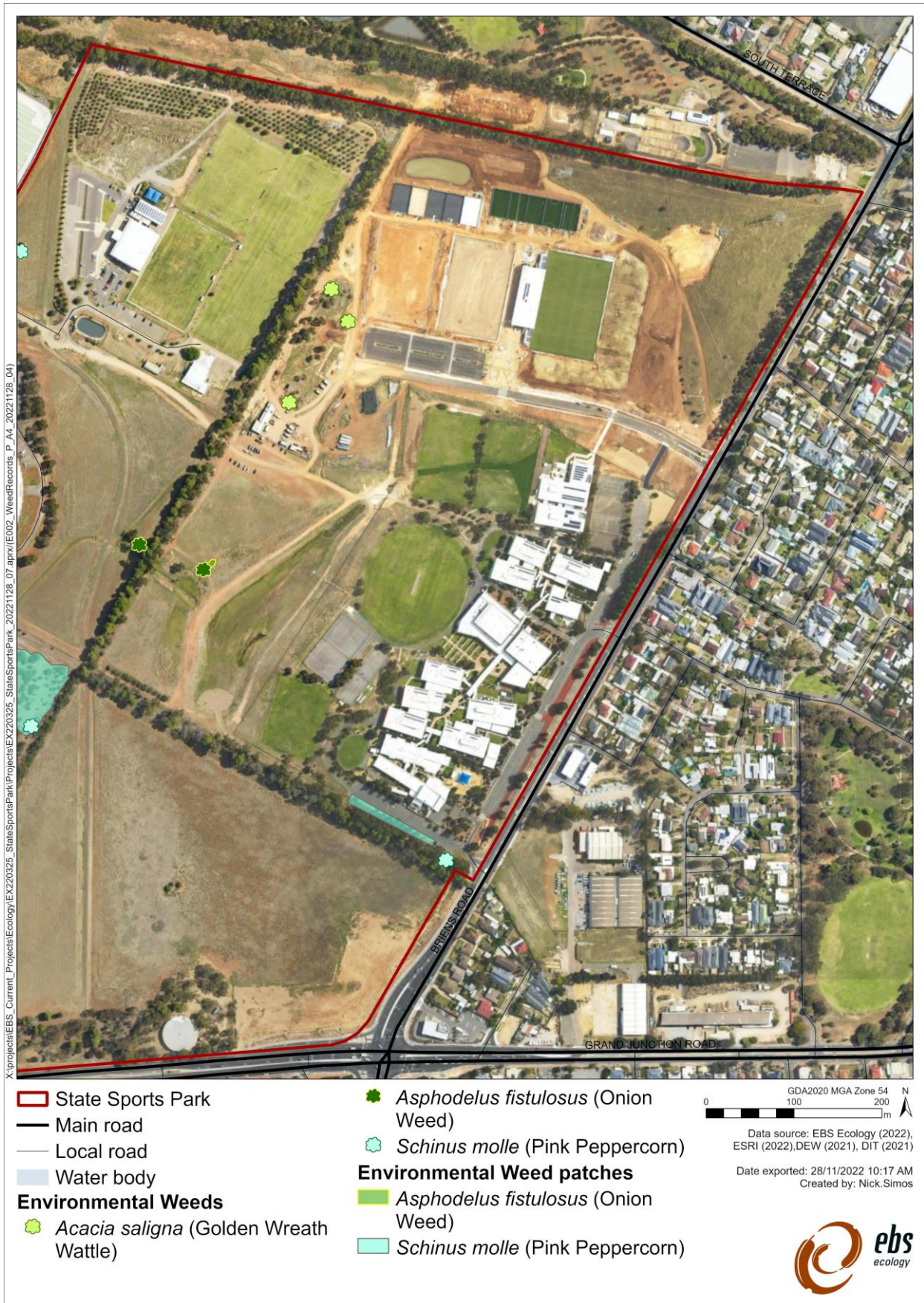


Figure 26. Environmental weeds located within the northeast side of the Project Area.

## 6.2 Pest animals

A total of five introduced fauna species were observed within the Project Area. This includes three birds and two mammals (Table 3). Pest animals present an ongoing management threat to all-natural areas, where they reduce survivorship of native fauna, and impact on native vegetation through grazing.

### 6.2.1 Pest birds

Horticultural, environmental, and social pest bird species threaten biodiversity by competing with native species for food resources and nesting sites. The Spotted Dove (*Spilopelia chinensis*), Common Starling (*Sturnus vulgaris*) and Common Blackbird (*Turdus merula*) were observed foraging and flying within the Project Area. The Common Blackbird and the Common Starling are seed vectors for Olive and African Boxthorn due to the edible berries produced by these species. The Common Starling is also an aggressive competitor when it comes to native birds for nest hollows. The most effective forms of control include acoustic, visual deterrents and physical methods (DPIR 2021).

### 6.2.2 Pest mammals

Urban parklands provide refuges for animals which can exploit urban resources such as foxes (*Vulpes vulpes*). Similarly, parklands provide hunting grounds for both feral and domesticated pets, in particular cats, which are allowed to roam free. These predators pose significant threats to any wildlife remaining in the patch, with reduced vegetation and ground shelter (logs and rocks) features minimising the amount of protection native animals can find. Control options for these animals are difficult in urban environments, where the use of poison baits is not suitable due to the risk to domestic pets. Many of the issues stem from irresponsible domestic pet ownership, where cats are allowed to roam free, resulting in widespread predation on native wildlife such as frogs, small birds, small mammals, and reptiles. Other than legislative / policy changes, the main method of controlling this issue is by encouraging responsible pet ownership and using educational / interpretive material to educate people on the biodiversity values to protect in their area.

A number of dogs were observed roaming free within Foresters Forest, this area of the SSP contained the highest diversity of native bird species. Many native Australian animals are attacked by domestic dogs each year. One of the objectives of the SSPVMRP is to increase the biodiversity value of the SSP and as a result, increasing fauna habitat and suitability. Therefore, managing the interaction between domestic dogs and native wildlife is extremely important. Numerous management strategies on protecting wildlife from domestic dogs are outlined in a community engagement guide (DPIE 2020). They offer solution such as structural, community engagement, signs, as well as simple monitoring methods (Refer to DPIE 2020 for more detailed information).

Two European Hares (*Lepus europaeus*) were observed within Foresters Forest, specifically within the African Lovegrass grasslands (Management Zone 1.2, refer to section 7.1.2 for more detailed information). This species can cause significant damage to the re-establishment of native vegetation by browsing on vegetation, especially the bark of young trees and shrubs, which makes Hares problematic at revegetation sites. Unlike Rabbits, the Hare does not shelter in warrens and burrows, instead they rest in a shallow

depression in the ground called a form. Removing areas that the Hares use as forms, in this case removal of African Lovegrass infestation will create open space and decrease the amount of nesting habitat for this species. Other options for controlling Hares may include exclusion fencing, tree guards, trapping and repellents (Agriculture Victoria 2022). Hare populations should be managed prior to undertaking revegetation works to reduce potential risk of this species foraging on regenerating plants.

### **6.2.3 Invertebrate pests**

European honeybees (*Apis mellifera*) are often an understated threat to native species, and are publicised as important pollinators, and at risk of extinction. Recognition is finally emerging that feral colonies of bees cause significant conflict with native flora and fauna, and as such the NSW Scientific Committee has determined that competition from feral honeybees is a Key Threatening Process to biodiversity (NSW DPIE, 2021). Impacts include:

- Competing with native species (birds, microbats, mammals, and native insects) for floral resources and tree hollows ~20% of Australia's birds are hollow nesting;
- Reducing pollen / nectar availability for nectarivores, removing up to 80% of floral resources provided; and
- Reducing seed set and limiting long-distance pollination services for native flora.

The impact of feral honeybees is highly visible at the SSP, with a large number of old *E. cladocalyx* trees, with hollows that take over 100 years to develop, being filled with feral bee colonies.

Management measures are difficult and can be controversial due to the profile of bees as a welcome inhabitant of natural spaces, however, management should coincide with education programs and may include:

- The application of appropriate insecticide to nests and subsequent hollow restoration to enable its reuse by native species.
- The use of 'swarm traps' to draw colonies from hollows into hives.
- Remote application of insecticide via foragers using feeding stations.
- Policy implementation to encourage use of managed hives for agriculture and use of hive infrastructure such as queen excluders to help reduce swarming.

## **6.3 Hydrology**

A long history of clearing and grazing within the SSP has likely resulted in changes to the local hydrology of the area, including:

- Increased runoff and erosion (no plants to slow the flow);
- Limited uptake of water into the soil and water table (no plants to slow the flow and catch / absorb water), caused by lack of deep-rooted native grasses;
- Increased spread of weed seed in a downward direction; and

- Changes to creek and catchment – erosion, weed invasion, pollution, nutrient loading etc.

As surrounding areas have been developed, stormwater management has become an increasingly important issue within the SSP. Currently, the SSP contains four detention/retention basins, three in the south west and one to the east of the Roma Mitchell Secondary Collage (RMSC) (Figure 31). These basins are connected by numerous weedy and eroded drainage lines that are located across the Project Area. Two additional basins will be constructed at the State Centre of Football to direct most of the eastern area runoff into Unity Ponds, this water then will be recycled and harvested.

It is likely that the many ornamental species that occur within the Project Area are due to seeds transported from urban stormwater runoff. These basins and drainage lines are largely invaded by Kikuyu, which limits the establishment of other native species, reducing the habitat available to local fauna species, along with altered nutrient recycling, increased erosion, reduced soil, and water quality. There is also a lack of deep-rooted species that would help to support the uptake of water and minimise erosion. Identifying areas that are most susceptible to the invasion of weeds through water inflow points is key to controlling movement of these species.

### **6.3.1 Weed interception points**

Weed Intercept Points (*pers comms.* Jason Van Weenen, DEW) are points in the landscape where water enters or exits an area, providing an opportunity to intercept weed propagules and prevent their spread. A number of potential Weed Intercept Points have been identified within the SSP in order to help control the invasion of exotic species through stormwater. Two stormwater inlets enter into the park from Briens Road, and two outlets are present, with one draining onto Main North Road taking water towards the Barker Inlet Wetlands. The second outlet drains at the north end of the Project Area and diverts water into the Unity Ponds. These two inlets and two outlets may be beneficial locations for potential Weed Intercept Points (Figure 27).

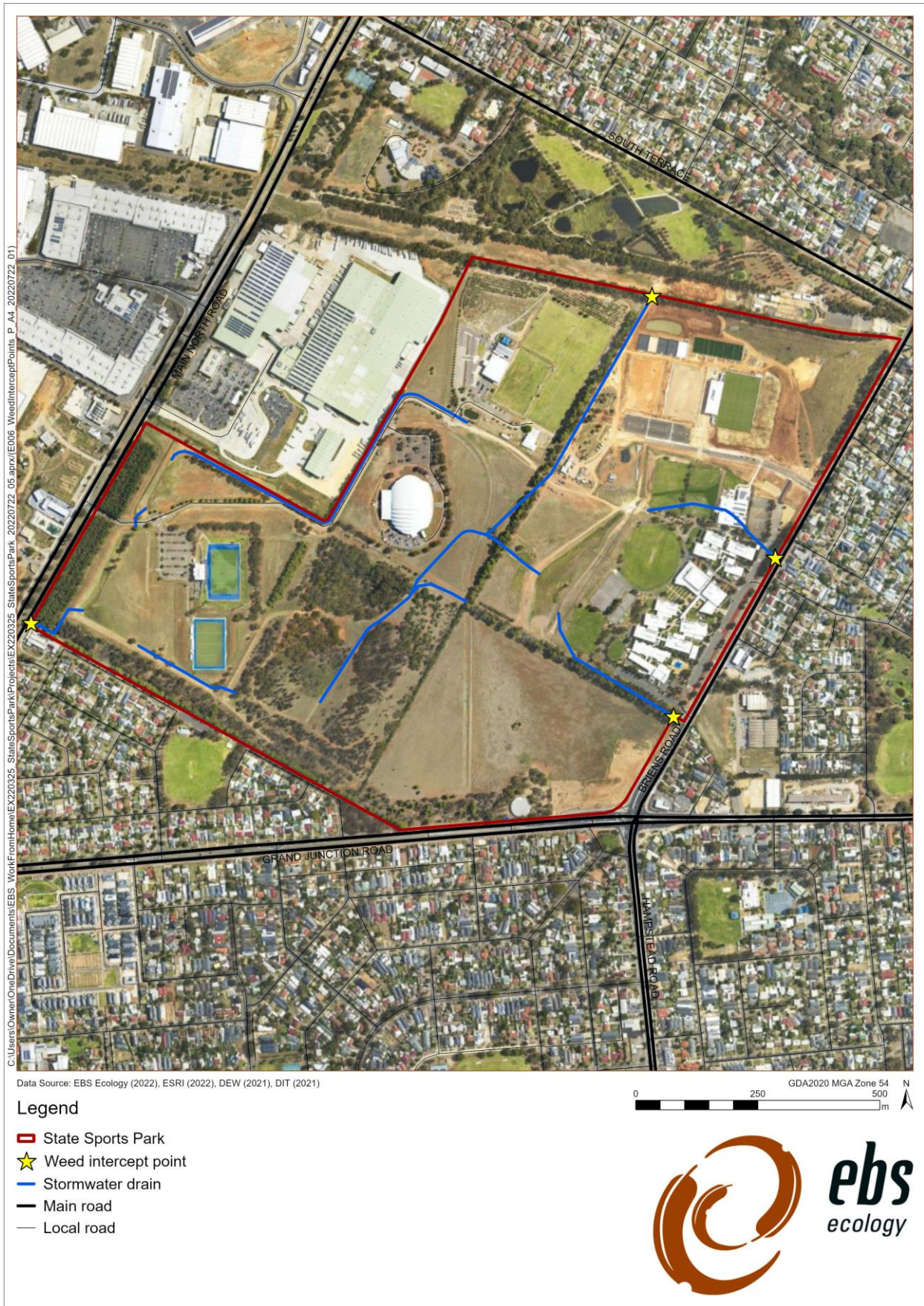


Figure 27. Stormwater drains with weed intercept points within the Project Area.



## 6.4 Climate change

Australia has experienced warming of 0.09 degrees Celsius (°C) per decade since 1911 and mean temperatures are projected to continue rising this century. By 2030 mean annual temperatures in Australia are projected to increase by 0.6 to 1.3 °C (compared to 1986-2005), with the magnitude of change going forward, dependent on the trajectory of global emissions (Hancock et al 2019). The SSP Master Plan aim to increase greening and therefore resulting in urban cooling across the Project Area.

Climate projections vary across the continent, however the climate change projections for this region are within the *Southern Australia super cluster*, identified by the Climate Change in Australia online guide (CSIRO, 2022). It has an extensive coastal zone and a diversity of local climates, predominantly Mediterranean, with high winter rainfall and low summer rainfall. Predicted trends include:

- Average temperatures will increase in all seasons
- More hot days, fewer frosts
- Decreasing winter and spring rainfall
- Increased intensity of extreme rainfall events
- Mean sea level rise increases, and increases in extreme sea level events; and
- Harsher fire weather climate

Specifically, the Adelaide region falls within the *Southern and South-western Flatlands* and the trends in this cluster include:

- Average temperature will continue to increase in all seasons (very high confidence);
- More hot days and warm spells project are projected (very high confidence);
- Fewer frosts are projected (high confidence);
- A continuation of the trend of decreasing winter rainfall is project (high confidence) and a decrease in spring rainfall (high confidence);
- More time spent in drought (high confidence);
- Average sea level will continue to rise, and height of extreme sea-level events will also increase (very high confidence); and
- Harsher fire-weather climate in the future (high confidence).

While climate change and its spectrum of forecast impacts may be inevitable, with careful management and consideration based on understanding of these projections, revegetation and restoration programs can be designed to build resilience and adaptiveness into existing ecosystems, so that they remain useful as habitat, wildlife corridors, and biodiverse community spaces into the future. Urban greening as outlined in the SSP Master Plan will help to naturally cool the area and help reduce the effects of climate change.

## 7 MANAGEMENT ZONES

Management can be divided into three primary zones based on their historical use and / or ecology. These zones have then been divided into secondary zones to enable a more targeted approach for prioritisation and future management. The area (ha) and condition of each secondary zone has also been established (refer to Table 1 for the rating system). Overall, the condition of these areas varies from very poor to moderate with a majority of these areas in poor condition, which being the understorey consisting predominately of alien plant species with a small number of natives persisting. These management zones are summarised in Table 4, presented Figure 29, Figure 30 and Figure 31 and are described in detail in Sections 7.1 to 7.3

Priority areas for management zones are highlighted in Table 4. Areas that have be prioritized for management are based on the condition of these areas. Areas that are in very poor condition should be considered for immediate action (High priority) such as **Area 1.2 (African Lovegrass grassland)** followed by vegetation that is poor condition (Medium priority) and moderate condition (Low priority).

**Table 4. Management Zones.**

Zone	Area (ha)	Secondary Zone	Area (ha)	Condition	Priority	Management summary
Zone 1: Grassland	32.91	Area 1.1: Kikuyu grassland with Coastal Galenia and Soursobs	29.11	4	Medium	African Lovegrass management and removal
		Area 1.2: African Lovegrass grassland.	0.29	5	High	Broad scale work to prepare for and reduce competition with new revegetation.
		Area 1.3: Kikuyu grassland with scattered trees.	3.51	3	Low	
Zone 2: Planted	28.17	Area 2.1: Foresters Forest	10.51	5 to 2 (refer to section 5.2 for individual assessment).	High-Low	Maintenance, preventing escapees, removing highly invasive species.
		Area 2.2: Boundary/windbreak trees	10.60	3	Low	
		Area 2.3: Southern boundary mixed woodland	4.38	3	Low	Aesthetic improvements by revegetation of understorey species.
		Area 2.4: Canary Island Pine plantation (western edge)	2.68	3	Low	
Zone 3: Riparian	3.37	Area 3.2: Drainage lines	1.04	4	Medium	Targeted Kikuyu removal and exotic riparian species
		Area 3.3: Basins	2.33	4	Medium	Aesthetic improvements by native revegetation along riparian zine

\* 1: Excellent, 2: Good, 3: Moderate, 4: Poor, 5: Very Poor.

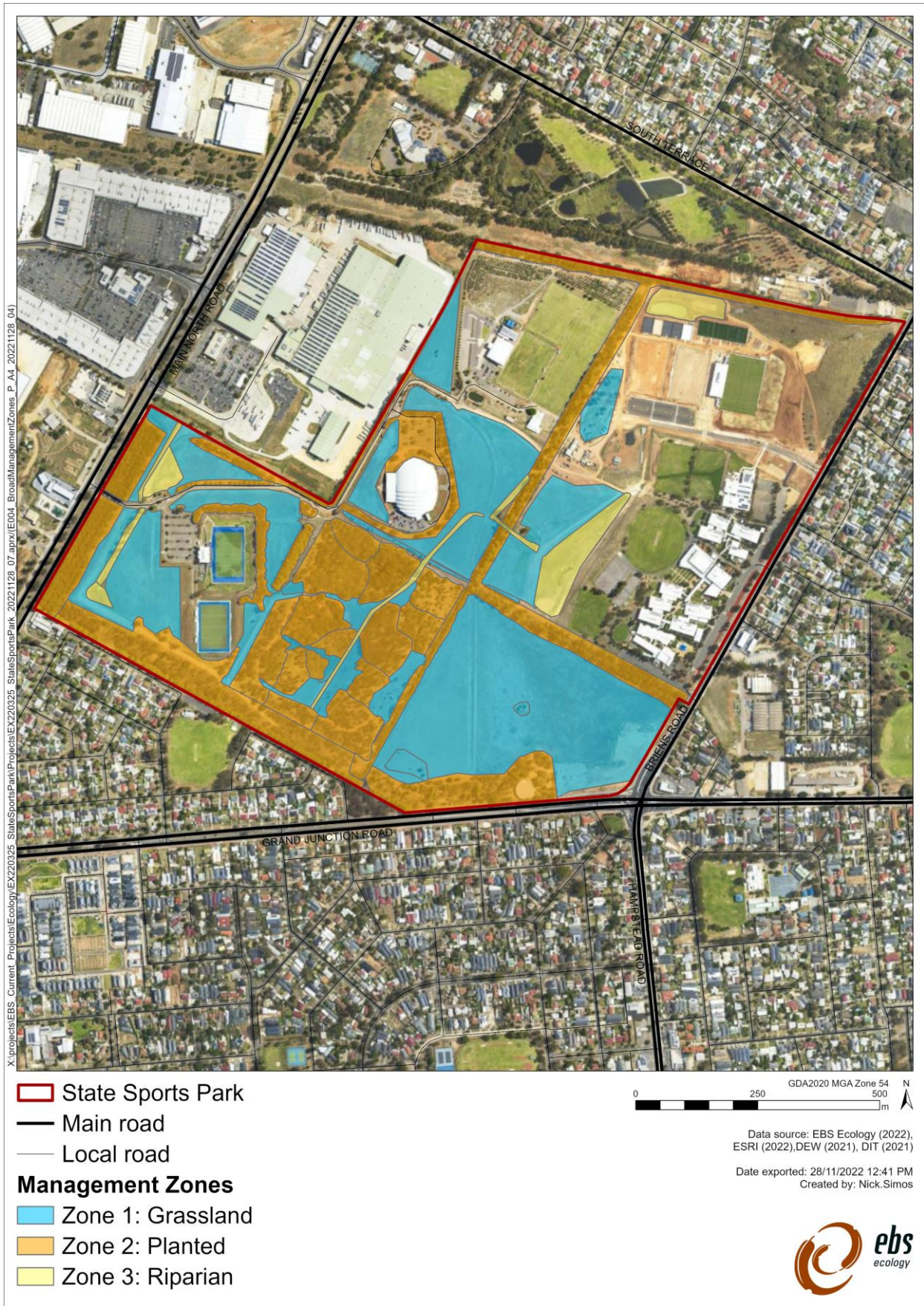


Figure 28. Broad Management Zones divided across the State Sports Park.

## 7.1 Management Zone 1: Grasslands

Exotic grassland constitutes 32.91 ha of the SSP. This area is dominated by cleared land now dominated by weeds with very little native vegetation. Management Zone 1 has been subdivided into three other zones (Figure 29):

- Secondary Management Zone 1.1 – Kikuyu Grassland with Coastal Galenia and Soursobs (Table 5);
- Secondary Management Zone 1.2 – African Lovegrass Grassland (Table 6); and
- Secondary Management Zone 1.3 – Kikuyu Grassland with Scattered Trees (Table 7).

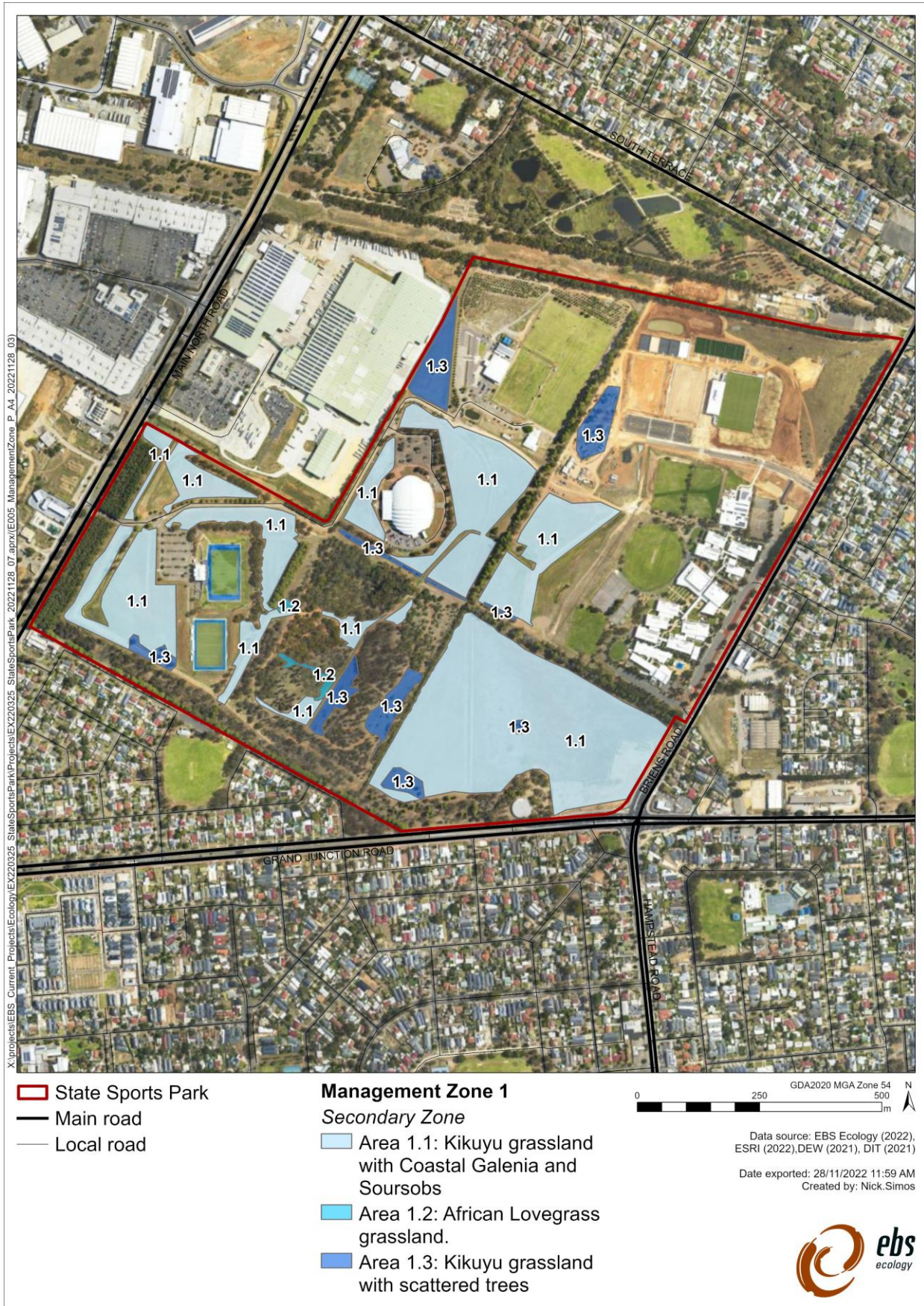



Figure 29. Management Zone 1 located within the Project Area.

**7.1.1 Secondary management zone 1.1 (Kikuyu grassland with Coastal Galenia and Soursobs)**


**Table 5. Secondary management zone 1.1 (Kikuyu grassland with Coastal Galenia and Soursobs).**

<b>General Description</b>	Open grassland predominantly dominated by Kikuyu, Coastal Galenia and Soursobs.
<b>Overstorey species</b>	NA
<b>Midstorey species</b>	NA
<b>Understorey species</b>	<i>Austrostipa</i> spp. (Spear Grass) <i>Cenchrus clandestinus</i> (Kikuyu)* <i>Chloris truncata</i> (Windmill Grass) <i>Cynara cardunculus</i> ssp. <i>flavescens</i> (Wild artichoke) * <i>Echium plantagineum</i> (Salvation Jane) * <i>Enneapogon nigricans</i> (Black-head Grass) <i>Galenia pubescens</i> (Coastal Galenia) * <i>Malva</i> sp. (Marshmallow)* <i>Oxalis pes-caprae</i> (Soursob) * <i>Rytidosperma</i> spp. (Wallaby Grass) <i>Solanum elaeagnifolium</i> (Silver-leaf Nightshade) ** <i>Vittadinia gracilis</i> (Woolly New Holland Daisy).
<b>Weed dominance</b>	<i>Cenchrus clandestinus</i> (Kikuyu) <i>Oxalis pes-caprae</i> (Soursob) <i>Galenia pubescens</i> (Coastal Galenia)
<b>Declared weeds</b>	Salvation Jane Silver-leaf Nightshade – WoNS Wild artichoke
<b>Management priority</b>	Medium
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Herbicide control (broad scale) prior to planting.</li> <li>2. Non-herbicide control (hand pulling establishing weeds).</li> <li>3. Consider for scalping treatment and revegetation.</li> <li>4. New tree planting and greening</li> </ol>
<b>Native Vegetation condition</b>	Poor (4), only a few scattered individuals of <i>Rytidosperma</i> sp. and <i>Austrostipa</i> sp.
<b>Comments</b>	<p>Novel weeds such as Kikuyu and Galenia dominate the grassland towards the western side of the Project Area.</p> <p>Silver-leaf nightshade becomes more predominate as you move further east. Only one individual of Wild Artichoke exists within the Project Area (see Figure 24).</p>
<b>Photo point (looking southeast)</b>	

\* weed, \*\* declared weed

**7.1.2 Secondary management zone 1.2 (African Lovegrass grassland)**


**Table 6. Secondary management zone 1.2 (African Lovegrass grassland).**

<b>General Description</b>	Areas where African Lovegrass has dominated, only occurs within Foresters Forest. Usually, these infestations take place where there is no upper storey (light restrictive) and very little mid storey. These infestations take place along the boundary of the Forest.
<b>Overstorey species</b>	NA
<b>Midstorey species</b>	NA
<b>Understorey species</b>	<i>Eragrostis curvula</i> (African Lovegrass) ** <i>Oxalis pes-caprae</i> (Soursob) *
<b>Weed dominance</b>	<i>Eragrostis curvula</i> (African Lovegrass) <i>Oxalis pes-caprae</i> (Soursob)
<b>Declared weeds</b>	African Lovegrass
<b>Management priority</b>	High
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Herbicide control (broad scale) prior to planting</li> <li>2. Non-herbicide control (hand pulling establishing weeds).</li> <li>3. Consider for scalping treatment and revegetation</li> </ol>
<b>Native Vegetation condition</b>	Very Poor (5). No native species present.
<b>Comments</b>	<p>This is a highly invasive weed. Due to the highly trafficked area, it is recommended that control for this is undertaken as soon as possible to stop the spread of this species further throughout the Project Area.</p> <p>These areas are preferred nesting sites for species such as the Hare; removing these infestations will help to manage Hare populations within the Project Area, which will benefit future revegetation.</p>
<b>Photo point (southwest)</b>	

\* weed, \*\* declared weed

7.1.3 Secondary management zone 1.3 (Kikuyu grassland with scattered trees)

Table 7. Secondary management zone 1.3 (Kikuyu grassland with scattered trees).

<b>General Description</b>	Largely self-seeded trees exotic trees with an understorey consisting of exotic forbs. A few planted native species exist throughout the Project Area. Small clusters of <i>Austrostipa sp.</i> are scattered within these areas.
<b>Overstorey species</b>	<i>Eucalyptus camaldulensis</i> (River Red Gum) <i>Eucalyptus spp.</i>
<b>Midstorey species</b>	<i>Lycium ferocissimum</i> (African Boxthorn) ** <i>Olea europaea ssp. europaea</i> (European Olive) ** <i>Pinus halepensis</i> (Aleppo Pine) <i>Schinus Molle</i> (Peppercorn) * <i>Acacia saligna</i> *
<b>Understorey species</b>	<i>Avena barbata</i> (Bearded Oat) * <i>Oxalis pes-caprae</i> (Soursob) * <i>Austrostipa spp.</i>
<b>Weed dominance</b>	<i>Avena barbata</i> (Bearded Oat) <i>Lycium ferocissimum</i> (African Boxthorn) <i>Olea europaea ssp. europaea</i> (European Olive) <i>Oxalis pes-caprae</i> (Soursob) <i>Pinus halepensis</i> (Aleppo Pine) <i>Schinus Molle</i> (Peppercorn)
<b>Declared weeds</b>	African Boxthorn European Olive
<b>Management priority</b>	Low
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Herbicide control (broad scale) prior to planting.</li> <li>2. Non-herbicide control (hand pulling smaller juveniles' weeds).</li> <li>3. New tree planting and greening.</li> </ol>
<b>Native Vegetation condition</b>	Moderate (3). Small number of natives persist.
<b>Comments</b>	<p>Exotic species have generally established along fence lines. Native planted species are sporadic, usually clusters of native grasses are present below native plantings.</p> <p>It is recommended that the removal of these species is undertaken prior to revegetation works as these are easily self-seeding species (African Boxthorn, Olive etc).</p>
<b>Photo point (looking west)</b>	

\* weed, \*\* declared weed



## 7.2 Management Zone 2: Planted

Planted vegetation equates to a total of 28.17 ha within the Project Area (Figure 30). These areas contain the greatest diversity of planted flora species and fauna species and are a great biodiversity asset to the Project. Management Zone 2 is subdivided into four subzones:

- Secondary management zone 2.1 – Foresters Forest (Table 8);
- Secondary management zone 2.2 – Boundary/Windbreak Trees (Table 9);
- Secondary management zone 2.3 – Southern Boundary Mixed Woodland (Table 10); and
- Secondary management zone 2.4 – Canary Island Pine Plantation (Table 11).

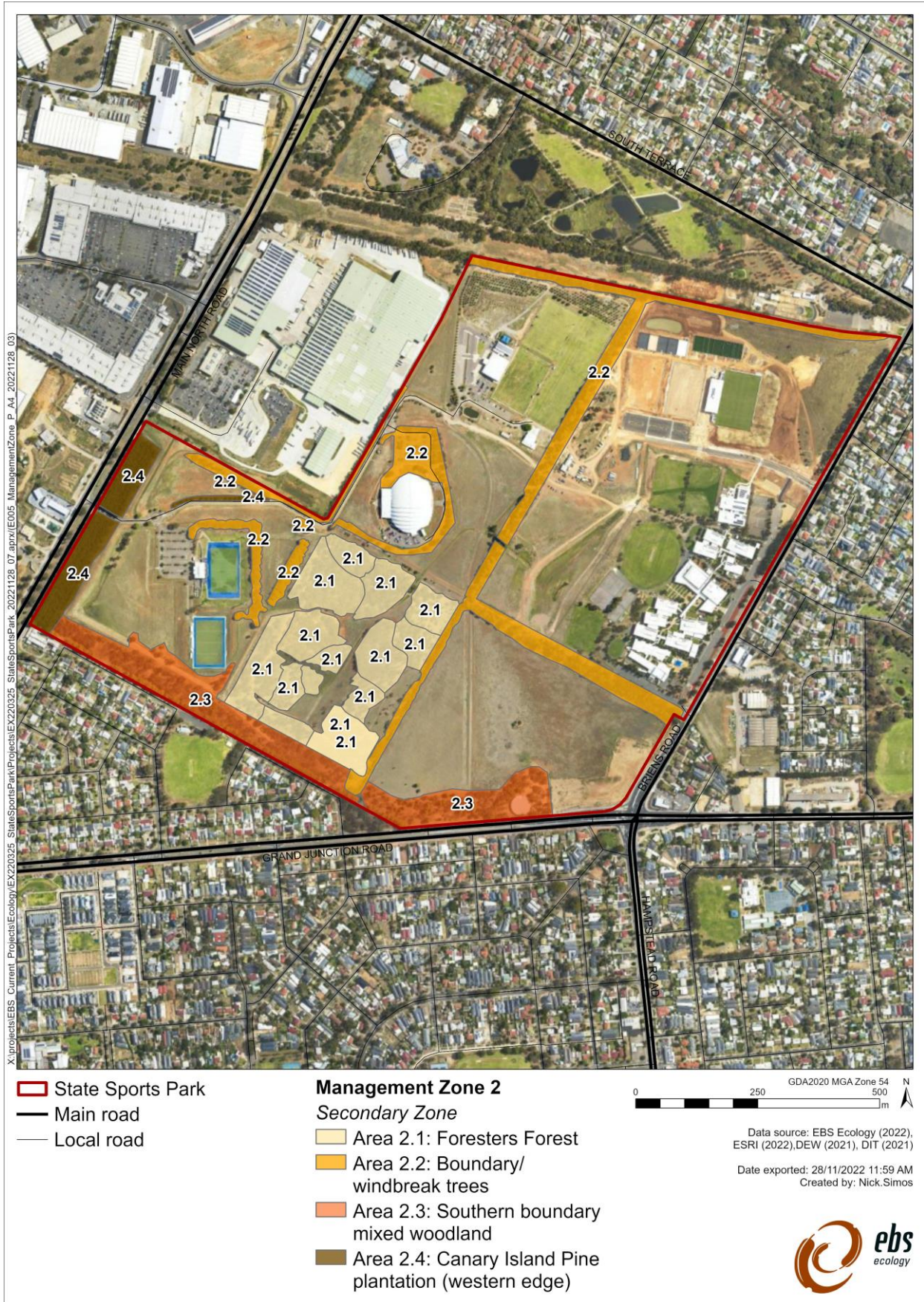


Figure 30. Management Zone 2 located within the Project Area.

## 7.2.1 Secondary management zone 2.1 (Foresters Forest)

Table 8. Secondary management zone 2.1 (Foresters Forest).

<b>General Description</b>	Twelve (12) different woodlands and forests that contain both local native species, non-indigenous south Australian species, and exotic species.
<b>Overstorey species</b>	<i>Callitris spp.</i> <i>Eucalyptus spp.</i> <i>Schinus molle</i> (Peppercorn)*
<b>Midstorey species</b>	<i>Acacia spp.</i> <i>Allocasuarina verticillata</i> (Drooping Sheoak) <i>Melaleuca lanceolata</i>
<b>Understorey species</b>	<i>Cenchrus clandestinus</i> (Kikuyu) * <i>Galenia pubescens</i> (Coastal Galenia) ** <i>Malva sp.</i> (Marshmallow) * <i>Oxalis pes-caprae</i> (Soursob) * <i>Solanum elaeagnifolium</i> (Silver-leaf Nightshade) **
<b>Weed dominance</b>	<i>Cenchrus clandestinus</i> (Kikuyu) <i>Galenia pubescens</i> (Coastal Galenia) <i>Oxalis pes-caprae</i> (Soursob)
<b>Declared weeds</b>	Silver-leaf Nightshade – WoNS
<b>Management priority</b>	High-Low <ul style="list-style-type: none"> <li>• Location of self-seeded weeds and declared weeds are the highest priority area 12 (refer to Figure 23, Figure 24, Figure 25 and Figure 26);</li> <li>• Areas that lack structural variety are of a medium priority include areas 4,5,6, 8, 9 10 and 11 (refer to Figure 17)</li> <li>• Lower priority areas in include area 1,2 3 and 7 (refer to Figure 17).</li> </ul>
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Remove self-seeded woody weeds (<i>Pinus halepensis</i>, <i>Lycium ferocissimum</i> and <i>Schinus molle</i>);</li> <li>2. Control herbaceous exotic species such as soursobs</li> <li>3. Control the hare population</li> <li>4. Tree thinning in line with the SSMP</li> <li>5. Revegetation of indigenous species and non-indigenous species (dependent of which area you are targeting).</li> </ol>
<b>Native Vegetation condition</b>	Very Poor to Good (5-2).
<b>Comments</b>	Refer to section 5.2 on the specific woodland communities' descriptions, each community varies slightly on management and restoration plans based on original planting designs. Weed dominance varied from site to site within Foresters Forest. Refer to section 6.1 on the specific weed invasion at these sites. This is a high priority area due to the history and the good habitat and amenity value this area provides.

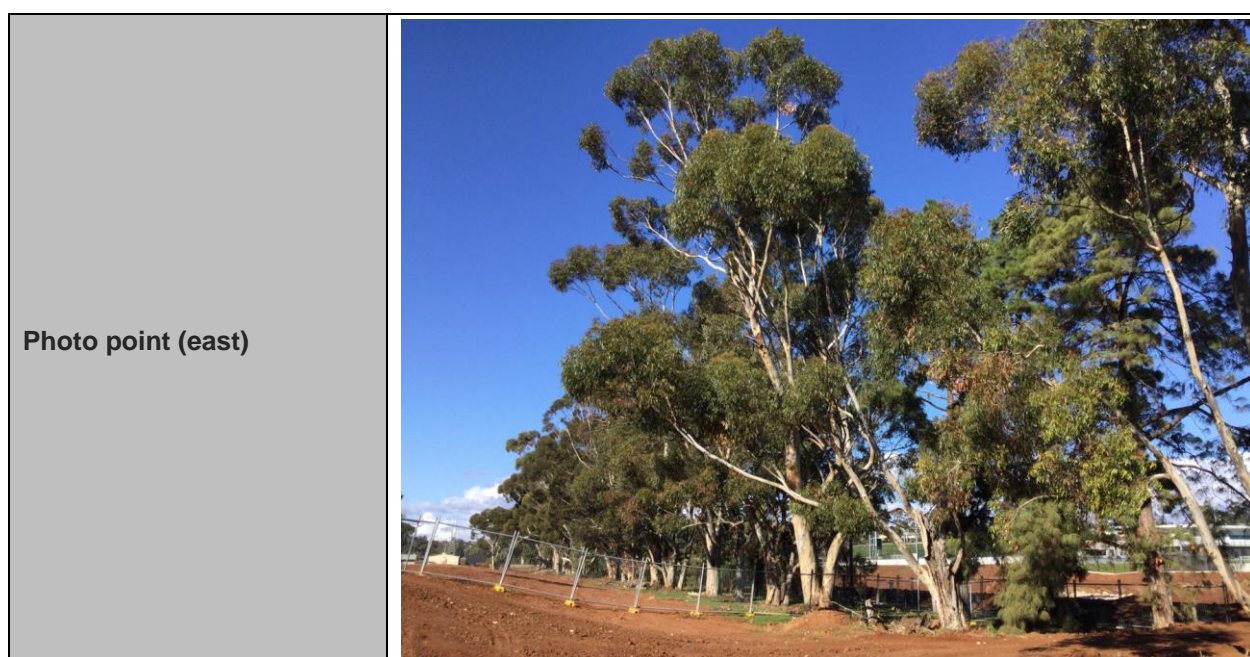


\* weed, \*\* declared weed

**7.2.2 Secondary management zone 2.2 (Boundary/windbreak trees)**

Table 9. Secondary management zone 2.2. Boundary/windbreak trees.

<b>General Description</b>	Planted windbreak/boundary trees
<b>Overstorey species</b>	<i>Eucalyptus spp.</i> <i>Callitris gracilis</i> <i>Acacia spp.</i> <i>E. cladocalyx</i> (Sugar Gum) <i>Pinus halepensis</i> (Aleppo Pine) *
<b>Midstorey species</b>	<i>Lycium ferocissimum</i> (African Boxthorn) ** <i>Olea europaea</i> (European Olive) **
<b>Understorey</b>	<i>Oxalis pes-caprae</i> (Soursob) * <i>Piptatherum miliaceum</i> (Rice Millet) *
<b>Weed dominance</b>	<i>Lycium ferocissimum</i> (African Boxthorn) <i>Olea europaea</i> (European Olive)
<b>Declared weeds</b>	African Boxthorn European Olive
<b>Management priority</b>	Low
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Control woody weeds such as African Boxthorn, European Olives, and self-seeded Aleppo Pines.</li> <li>2. Revegetate midstorey and understorey with local indigenous species.</li> <li>3. Prune rather than remove and retain branches or trunks and use as structural habitat features.</li> </ol>
<b>Native Vegetation condition</b>	Moderate (3). Understorey consists of mainly alien species. Native vegetation only consisted of planted Sugar Gums
<b>Comments</b>	Large, planted trees that have high habitat suitability due to the large size and numerous medium to large hollows. Pines are a food source for numerous cockatoo species including Yellow-tailed Black Cockatoo. Olive and Boxthorn dominate the mid-storey throughout these plantings and need to be controlled to prevent further self-seeding.




\* weed, \*\* declared weed

### 7.2.3 Secondary management zone 2.3 (Southern boundary mixed woodland)

Table 10. Secondary management zone 2.3. southern boundary mixed woodland


<b>General Description</b>	Mixed revegetated species
<b>Overstorey species</b>	<i>Eucalyptus</i> spp. <i>Pinus halepensis</i> (Aleppo Pine) *
<b>Midstorey species</b>	<i>Acacia</i> spp. <i>Callistemon</i> spp. <i>Callitris</i> spp. <i>Lycium ferocissimum</i> (African Boxthorn) ** <i>Olea europaea</i> (European Olive) **
<b>Understorey</b>	<i>Asphodelus fistulosus</i> (Onion Weed) * <i>Austrostipa nodosa</i> <i>Austrostipa</i> spp. (Spear-grass) <i>Avena barbata</i> (Bearded Oat) * <i>Enchylaena tomentosa</i> (Ruby Saltbush) <i>Rytidosperma</i> spp. (Wallaby Grass)
<b>Weed dominance</b>	<i>Pinus halepensis</i> (Aleppo Pine) <i>Lycium ferocissimum</i> (African Boxthorn)
<b>Declared weeds</b>	Aleppo Pine African Boxthorn
<b>Management priority</b>	Low
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Remove self-seeded woody weeds (<i>Pinus halepensis</i>, <i>Lycium ferocissimum</i> and <i>Schinus molle</i>);</li> <li>2. Control herbaceous exotic species such as soursobs</li> <li>3. On-going wood-weed control</li> </ol>
<b>Native Vegetation condition</b>	Moderate (3). Mostly native vegetation is planted. However, some remnant grasses are present.
<b>Comments</b>	This area does provide a good habitat value with high species diversity of different structural layers. However self-seeding Pine individuals are densely scattered throughout this area and should be controlled. On-going

	<p>maintenance in the area will be required due to the numerous large Pines planted along the edge of the Project boundary.</p>
<p>Photo point (southeast)</p>	

\* weed, \*\* declared weed

**7.2.4 Secondary management zone 2.4 (Canary Island Pine plantation)**

Table 11. Secondary management zone 2.4. Canary Island pine plantation.

<b>General Description</b>	Canary Island Pine plantation (western edge)
<b>Overstorey species</b>	<i>Pinus canariensis</i> (Canary Island Pine) *
<b>Midstorey species</b>	<i>Lycium ferocissimum</i> (African Boxthorn) ** <i>Olea europaea</i> (European Olive) **
<b>Understorey species</b>	<i>Galenia pubescens</i> (Coastal Galenia) * <i>Oxalis pes-caprae</i> (Soursob) *
<b>Weed dominance</b>	<i>Galenia pubescens</i> (Coastal Galenia) * <i>Oxalis pes-caprae</i> (Soursob) *
<b>Declared weeds</b>	African Boxthorn European Olive
<b>Management priority</b>	Low
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Remove self-seeded woody weeds (<i>Pinus halepensis</i>, <i>Lycium ferocissimum</i> and <i>Schinus molle</i>);</li> <li>2. Control herbaceous exotic species such as soursobs</li> <li>3. On-going wood-weed removal</li> </ol>
<b>Native Vegetation condition</b>	Moderate (3). No native vegetation present within the Area.
<b>Comments</b>	This area does provide a good buffer from Main North Road. However, on-going maintenance will be required to ensure that no individual self-seed throughout the rest of the park.
<b>Photo point (southwest)</b>	

\* weed, \*\* declared weed

### **7.3 Management Zone 3: Riparian Zones**

Riparian zones in the Project Area consist of drainage lines and basins and these areas area make up 3.37 ha of the Project Area (Figure 31). This Management Zone is divided into two subzones:

- Secondary management zone 3.1 – Drainage Lines (Table 12); and
- Secondary management zone 3.2 - Stormwater Detention Basins (Table 13).



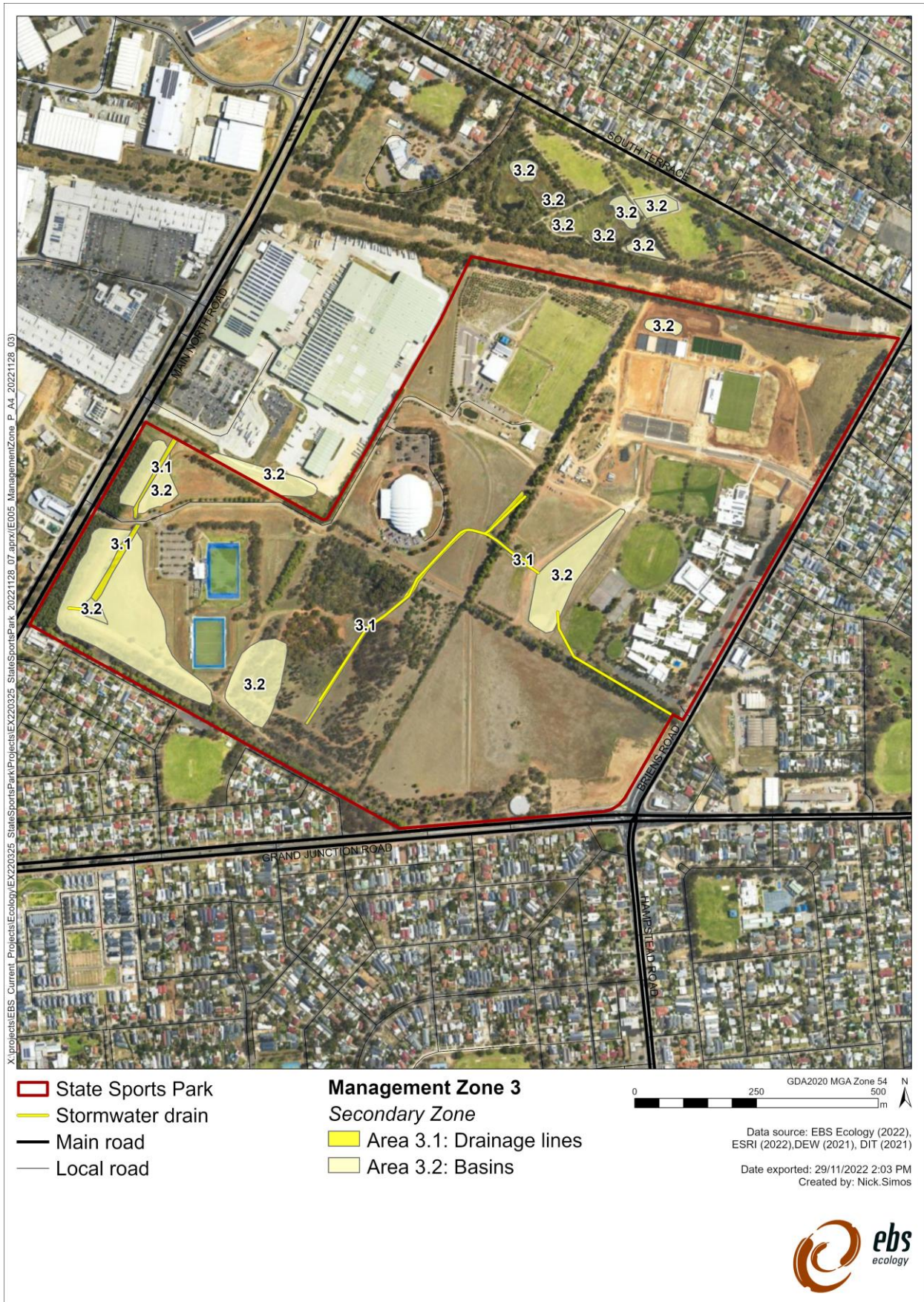



Figure 31. Management Zone 3 located within the Project Area.

7.3.1 Secondary management zone 3.1 (drainage lines)


Table 12. Secondary management zone 3.1 (drainage lines)

<b>General Description</b>	Currently, the drainage lines throughout the Project Area are dominated by Kikuyu and Couch grass with other exotic herbs and forbs. Some areas contain scattered native species such as <i>Ficinia nodosa</i> .  These drainage lines take all the water to the SW of the park and away.
<b>Overstorey species</b>	NA
<b>Midstorey species</b>	NA
<b>Understorey species</b>	<i>Cenchrus clandestinus</i> (Kikuyu) * <i>Chloris truncata</i> (Windmill Grass) <i>Cynodon dactylon</i> (Couch Grass) * <i>Ficinia nodosa</i> (Knobby Club-rush) <i>Paspalum dilatatum</i> (Paspalum) * <i>Plantago lanceolata</i> var. <i>lanceolata</i> (Ribwort)*
<b>Weed dominance</b>	<i>Cenchrus clandestinus</i> (Kikuyu) <i>Chloris truncata</i> (Windmill Grass) <i>Paspalum dilatatum</i> (Paspalum)
<b>Declared weeds</b>	NA
<b>Management priority</b>	Medium
<b>Proposed management actions</b>	<ol style="list-style-type: none"> <li>1. Hand pull weeds within the riparian zone</li> <li>2. Spot spray Kikuyu along the edge of the riparian zone</li> <li>3. Revegetate within these zone to limit weeds recruiting</li> <li>4. Redirect eastern stormwater to the Unity Ponds for filtration and harvesting</li> </ol>
<b>Native Vegetation condition</b>	Poor (4).
<b>Comments</b>	A few native species are scattered throughout these areas and care should be taken then removing weeds. Improving these lines will help with water flow and minimise erosion. It would also create additional fauna habitat.
<b>Photo point (south)</b>	

\* weed, \*\* declared weed

7.3.2 Secondary management zone 3.1 (stormwater detention basins)

Table 13. Secondary management zone 3.2 (stormwater detention basins).

<b>General Description</b>	Currently, four stormwater detention basins exist within the Project Area. These contain a mixture of native and exotic species.
<b>Overstorey species</b>	NA
<b>Midstorey species</b>	<i>Typha domingensis</i> (Narrow-leaf Bullrush)
<b>Understorey species</b>	<i>Carex sp.</i> <i>Cenchrus clandestinus</i> (Kikuyu) * <i>Chloris truncata</i> (Windmill Grass) <i>Cynodon dactylon</i> (Couch Grass) * <i>Cyperus congestus</i> (Clustered flat-sedge) * <i>Ficinia nodosa</i> (Knobby Club-rush) <i>Paspalum dilatatum</i> (Paspalum) * <i>Plantago lanceolata var. lanceolata</i> (Ribwort)*
<b>Weed dominance</b>	<i>Cenchrus clandestinus</i> (Kikuyu) <i>Chloris truncata</i> (Windmill Grass) <i>Paspalum dilatatum</i> (Paspalum)
<b>Declared weeds</b>	NIL
<b>Management priority</b>	<ol style="list-style-type: none"> <li>1. Remove and control exotic weeds and grasses.</li> <li>2. Revegetate with native species and thin out where possible.</li> <li>3. Consider the development of wetland areas.</li> </ol>
<b>Proposed management actions</b>	Medium
<b>Native Vegetation condition</b>	Poor (4). Numerous native species are growing within these basins.
<b>Comments</b>	Once revegetated and established, these areas will provide great amenity and habitat value to the area. Revegetating with a mixed structural layer such as trees, shrubs, and grasses.
<b>Photo point (southeast)</b>	

\* weed, \*\* declared weed

## 8 VEGETATION MANAGEMENT PRINCIPLES AND PRACTICES

Historically, the Project Area has been subject to long term degradation by clearing and grazing, resulting in the introduction of exotic species. Currently, the Project Area is largely comprised of highly modified exotic grasslands as well as both locally indigenous and exotic planted vegetation. Few patches of naturally occurring native or remnant vegetation remain, which consist of grasses and forbs. Natural regeneration of planted species such as *Acacias* (Wattles) and *Allocasuarina* sp. (Sheoaks) are also present within Foresters Forest. The current vegetation within the Project Area provides a corridor for fauna species through a highly modified landscape. Additionally, several patches of planted Sugar Gums contained a significant number of hollows, likely to be utilised by less conspicuous or nocturnal species and utilised for nesting, either by birds or other fauna. Overall, the vegetation present within the SSP lacks a variety of structural elements (i.e., upper stratum, mid stratum and ground stratum). The Project Area contains a high weed species cover and richness, resulting in a lack of native species recruitment. This has led to the degradation of the site over time. Therefore, immediate action is required to restore and rehabilitate this area.

Greening and habitat creation are key principles of the SSP Master Plan. Modifying the current conditions to favour native species and to disadvantage exotic species is the key to long-term success (Prober and Thiele 2005) and will help to support these key principles. The following aims will help to ensure that there is an increase in green space and habitat across the park, which can be enjoyed by the general public in a safe manner and support local fauna species:

- Suppress invasive weed species (further discussed in section 8.1);
- Implementation of Weed Intercept Points and Water Safe Urban Designs (WSUD) to manage stormwater and to increase habitat across the park (further discussed in section 8.2);
- Vegetation selection and management consistent with attracting people into the Park and the safety needs associated with this (further discussed in section 8.3);
- Reintroduce ecological communities and threatened species likely to have been present prior to European settlement (further discussed in section 8.3.1);
- Provide habitat for local fauna species (further discussed in section 8.4);
- Provide public green spaces and increase the public amenity value (further discussed in section 8.4); and
- Monitor the success of restoration efforts and changes in fauna species over time (further discussed in section 8.4).

## 8.1 Weed Control

One of the primary threats to biodiversity within the SSP is weed invasion. The current plan aims to prioritise the weed management across the park, to provide strategic direction for future management activities (refer to Appendix 4: on the specific weed management protocols). The following recommendations are aimed at reducing the possible impacts on native vegetation / revegetation and also ensuring that future impacts are minimised. It is also important to note that areas that are largely dominated by weeds and provide habitat and resources for native wildlife should look at replacing the habitat before full removal of weedy species. The overall weed control recommendations for the Project are listed below:

- Follow Priority weed species threat and management (See section 10.4).
- Weed management strategies (including weed hygiene procedures) should be implemented to ensure that weed species are not introduced to the construction area or spread throughout the construction area. This includes any material which is disposed of off-site (i.e., excess fill material). If this occurs, specific management strategies will need to be developed and implemented at the time;
- Broadleaf selective herbicides are the best for native species recruitment (*pers comms.* Grant Glazier, EBS Restoration);
- Control of the declared and environmental weed species should be undertaken as a priority, to reduce the likelihood of spreading these species within the Project Area;
- Weed control work should be undertaken by a suitably qualified person as extreme caution must be taken when working adjacent to and in areas containing native vegetation / revegetation; and
- The SSPVMP should be reviewed and adjusted regularly, depending on the outcome of each control method. This will ensure success of the overall restoration program.
- Weed control should be implemented prior to revegetation activities;
- Pest control should also be implemented, where feasibly possible.

## 8.2 Weed intercept points

Weed Interception Points are areas where waste, sediment and pollutant traps should be placed to reduce the amount of litter, sediment, nutrients, pesticides, heavy metals, and exotic seeds entering the SSP (Figure 27). Drainage lines should act as biofilters, which are basins or trenches that are filled with porous material and act as a filter and growing media for planted vegetation. These materials retain stormwater runoff, reducing the volume and rate from a drainage area, as well as remove pollutants.

WSUD within an urban environment include landscape aesthetics and an increase in biodiversity, with planting of local native species likely to result in increased habitat for native fauna species (Payne et al. 2015). Refer to the Adoption Guidelines for Stormwater Biofiltration systems (author, 2015) for further information on stormwater biofiltration.

### 8.3 Revegetation for habitat creation and urban greening

Greening and habitat creation will be implemented by revegetation practices across the following sections of the SSP (Figure 32). Revegetation practices aim to improve biodiverse habitat for local fauna species as well as provide green spaces and urban cooling for the general public. This can be achieved by reintroducing plant species which were once local to the region improving good quality remnant vegetation by infilling and establishing small clusters of vegetation as habitat refuges for native fauna species within areas devoid of native vegetation. Often the best form of revegetation is encouraging the natural regeneration of species that are currently present. Natural regeneration of indigenous species such as *Acacia pycnantha* (Golden Wattle) and *Allocasuarina verticillata* (Drooping Sheoak) is already occurring within Foresters Forest. Other pockets of native species exist across the Project Area (Figure 4). For maximising biodiversity in revegetation, the following should also be considered:

- Protect and enhance the existing native vegetation such as Foresters Forest;
- Select local indigenous species (see section 10.5). Local native species, grown from native seeds or plant material are generally the preferred choice for revegetation, as they provide the greatest long-term benefits because they:
  - are best suited to the local conditions and are well suited to regenerating without assistance;
  - maximise biodiversity in the local area and provide the best habitat for local wildlife;
  - benefit the health of existing remnants; and
  - will maintain the natural character of the local landscape (Greening Australia 2003).
- Establish local species in the right place for best results.

Revegetation approaches should be based around the three management zones (as discussed in section 7) and planted in areas highlighted in the Environmentally Sustainable Design (ESD) (Figure 32). The revegetation plans for these three management zones will aim to reflect the vegetation of pre-European vegetation of the Adelaide Plains (Table 14).

**Table 14. Revegetation plan for each management zone.**

Management Zone	Pre-European community	Landscape	ESD
<b>Management zone 1: Grasslands</b>	1. <i>Austrostipa</i> spp. (Spear-grass) and <i>Rytidosperma</i> spp. (Wallaby Grass) Grassland	Plains	Greening and habitat creation
<b>Management zone 2– Planted</b>	2. <i>Eucalyptus porosa</i> (Malleebox) Woodland; and 3. <i>Acacia ligulata</i> (Umbrella Bush), <i>A. acinacea</i> (Gold Dust Wattle) and <i>Pomaderris paniculosa</i> (Inland Pomaderris) Shrubland;	Plains	Greening and habitat creation
<b>Management zone 3 – Riparian zone</b>	4. <i>E. camaldulensis</i> (River Red Gum) and <i>E. leucoxylon</i> (Blue Gum) Woodland over <i>Ficinia nodosa</i> (Knobby Club-rush and <i>Cyperus</i> spp.	Watercourse/wetlands	Stormwater detention

- Consider the ratio and densities of different plants being established

- as a general rule, when considering the ratio and density of plants when rehabilitating, it is recommended that in a forest environment, this should be 20% overstorey trees and 80% shrubs/ground covers (Greening Australia 2003). However, appropriate ratio and densities should be implemented to ensure the safety of the general public.
- Maximise both structural and species diversity
  - having a mixed range of upper, mid and understorey species for a variety of different classes will also encourage a variety of fauna species.
- Ensure there is sufficient habitat connectivity
  - areas of high biodiversity are more likely to exist where there are effective linkages, allowing the movement of birds and other animals facilitating pollinations and recruitment of native species.
- Consider staged revegetation and succession
  - planting overstorey species first to help weed control and once understorey weeds are controlled plant understorey natives. Plant pioneer species such as *Acacias sp.* or *Cassinias sp.*
  - Protect tube stock from pests such as hares with tree guards.

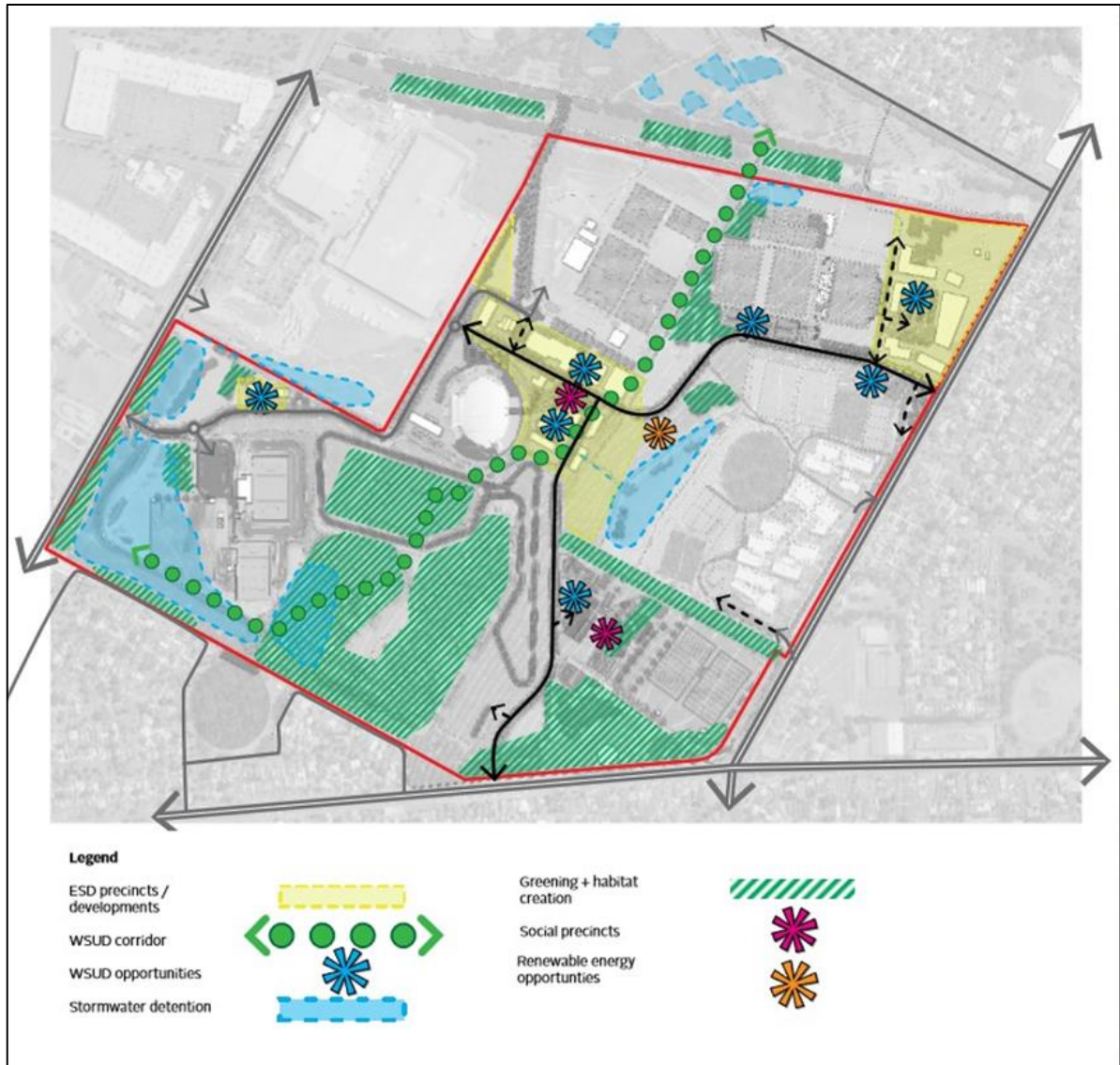


Figure 32. Environmentally Sustainable Design (SSP Master Plan 2022, Page 61).



### 8.3.1 Threatened species reintroduction

Trees For Life and Green Adelaide have a partnership, which is focused on the Bush For Life (BFL) program. Traditionally this has involved volunteers caring for the highest quality bushland. Over the last 12 months, this partnership has been expanded to involve some propagation and planting of a selection of rare or locally extinct grassy woodland plants. The goal of this project is to re-introduce some of the rarest species back into Green Adelaide to ensure their survival, to improve their conservation status, to increase the species diversity on sites and to provide an ongoing seed supply for the seed bank. Historically, these species have disappeared from the Green Adelaide region (metropolitan Adelaide) due to land management practices, the introduction of weeds and disturbance through grazing practices and the construction of developments.

The BFL program generally encourages natural regeneration of native species by removing competition from weeds. In this case, these species are no longer present above or below ground (in the seedbank) so there is no ability for them to recover naturally without intervention. Therefore, the following seven threatened South Australian species have been chosen as part of the revegetation program (Table 15). In addition to these seven species, there is proposal to establish some other rare plant species at the site (*pers. comms* Stuart Collard, Green Adelaide).

**Table 15. Threatened species that will be reintroduced into SSP.**

Species Name	Common Name	State Rating (SA)	National Rating (AUS)
<i>Brachyscome diversifolia</i>	Tall Daisy	Endangered	
<i>Swainsona behriana</i>	Southern Swainson-pea	Vulnerable	
<i>Podolepis jaceoides</i>	Showy Copper Wire Daisy	Rare	
<i>Pycnosorus chrysanthes</i>	Golden Billy Buttons	Endangered	
<i>Dianella longifolia grandis</i>	Arching Flax Lily	Rare	
<i>Cullen parvum</i>	Small Scurf-pea	Vulnerable	
<i>Glycine latrobeana</i>	Clover Glycine	Vulnerable	Vulnerable

The SA Seed Conservation Centre at the Adelaide Botanic Gardens have been guiding this project through species selection, seed collection, seed pre-treatment and advice around propagation and planting design. Seed has been collected from closest-possible populations which are often some distance from sites. However, as these species are naturally rare there is no risk of genetic swamping or weed potential. The sites have been selected for their suitability for these plants: open woodland or grasslands with very low weed load. Volunteers will be involved in planting and caring for these plants. This project will also allow some experimentation with sites, conditions and management regimes which are most suitable for these species. The aim is to plant them across a range of these factors and monitor the result.

## 8.4 Further habitat considerations

Biodiversity features such as trees with numerous hollows, wet zones, and woodlands, currently provide good fauna habitat within the SSP. However, these areas are limited and only exist in small pockets within the SSP. Along with revegetation, the following habitat features should also be considered to increase the biodiversity within the park as well as increase community engagement:

- Consider revegetation by design for target fauna species for example:

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- Plant 'island' shrub vegetation to provide suitable nesting, sheltering and foraging habitat for smaller woodland bird species such as wrens and the State threatened Red-capped Robin (*Petroica goodenovii*). However, keeping in mind the safety of the general public.
- Plant large swales of *Gahnia filum* (Thatching grass) within drainage lines and basins of the park to increase habitat connectivity and foraging resources for the Yellowish sedge-skipper (*Hesperilla flavescens*).
- Retain and increase woody and rocky debris within the park (including riparian zones) to increase reptile, invertebrate diversity and to provide habitat to riparian species;
- Ensure that laterally branching tree species such as *Eucalyptus spp.* are placed near riparian zones to provide perching habitat for wetland species such as Herons and Cormorants;
- Consider lighting choices, having sensitive lighting for nocturnal species such as the Common Brushtail Possum (*Trichosurus vulpecula*) may assist with nurturing the presence of the species on site;
- Install bird and possum boxes as well as bee hotels to encourage native bees within the area;
- Provide public education and signage on responsible pet ownership; and
- Provide a Nature Play Space to immerse the general public within nature and to educate on the importance of urban greening and biodiversity;
- Monitoring protocols should be fit-for-purpose and able to be undertaken by citizen scientists:
  - Maintenance is critical to the success of any revegetation project; particularly where large numbers of smaller understorey species are planted. Weed control will need to be ongoing if any revegetation program is to be successful.
- Removal of old tree guards around trees planted at Foresters Forest.

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## 10 APPENDICES

### 10.1 Appendix 1: State Sports Park flora list

Family/Species name	Common name	Location within Project Area
<b>AIZOACEAE</b>		
<i>Aizoon pubescens</i> **	Coastal Galenia	Dominant species in the understorey
<b>ANACARDIACEAE</b>		
<i>Schinus molle</i> **	Pepper-tree	Apart of Foresters Forest and seedlings scattered throughout Project Area
<b>ARECACEAE</b>		
<i>Phoenix canariensis</i> **	Canary Island Palm	One individual in Foresters Forest
<b>BORAGINACEAE</b>		
<i>Echium plantagineum</i> **	Salvation Jane	Scattered in grassy understorey – <b>Declared.</b>
<b>CASUARINACEAE</b>		
<i>Allocasuarina verticillata</i>	Drooping Sheoak	Foresters Forest
<i>Casuarina pauper</i>	Black Oak	Foresters Forest
<b>CHENOPODIACEAE</b>		
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	Roadside plantings
<i>Rhagodia parabolica</i>	Mealy Saltbush	Planted roadside vegetation
<i>Rhagodia spinescens</i>	Spiny saltbush	Roadside plantings
<b>COMPOSTIAE</b>		
<i>Cynara cardunculus</i> ssp. <i>flavescens</i> **	Wild Artichoke	One individual in grassy understorey – <b>Declared.</b>
<i>Sonchus oleraceus</i> **	Common Sow-thistle	Scattered in grassy understorey
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy	Scattered in grassy understorey
<b>CRUCIFERAE</b>		
<i>Lepidium africanum</i> **	Common Peppercross	Scattered in grassy understorey and wet depressions
<i>Rapistrum rugosum</i> ssp. <i>rugosum</i> **	Turnip Weed	Scattered in grassy understorey
<i>Sisymbrium erysimoides</i> **	Smooth Mustard	Scattered in grassy understorey
<b>CUPRESSACEAE</b>		
<i>Callitris glaucophylla</i>	White Cypress-pine	Foresters Forest
<i>Callitris gracilis</i>	Southern Cypress-pine	Foresters Forest, roadside planting
<b>CYPERACEAE</b>		
<i>Carex</i> sp.		Scattered in drainage lines and wet depressions
<i>Cyperus congestus</i> **	Clustered flat-sedge	Prolific in drainage lines and wet depressions
<i>Ficinia nodosa</i>	Knobby-club Rush	Scattered in drainage lines and wet depressions
<b>GERANIACEAE</b>		
<i>Erodium</i> sp.		Seedlings scattered throughout Project Area
<b>GRAMINEAE</b>		
<i>Austrostipa nodosa</i>	Tall Spear-grass	Remnant clusters scattered throughout Project Area
<i>Austrostipa</i> sp.	Spear-grass	Remnant clusters scattered throughout Project Area
<i>Avena barbata</i> **	Bearded Oat	Scattered in grassy understorey
<i>Bromus diandrus</i> **	Great Brome	Scattered in grassy understorey
<i>Cenchrus clandestinus</i> **	Kikuyu	Dominant grass across the Project Area
<i>Chloris truncata</i>	Windmill Grass	Scattered in grassy understorey, high density in damp depressions
<i>Cynodon dactylon</i> **	Couch	Dominant grass across the Project Area
<i>Ehrharta calycina</i> **	Perennial Veldt Grass	Scattered in grassy understorey
<i>Enneapogon nigricans</i>	Black-head Grass	Scattered in grassy understorey

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Family/Species name	Common name	Location within Project Area
<i>Eragrostis curvula</i> **	African Lovegrass	Numerous clusters located in Foresters Forest – <b>Declared</b>
<i>Paspalum dilatatum</i> **	Paspalum	High densities located in damp depressions
<i>Piptatherum miliaceum</i> **	Rice Millet	Scattered in grassy understorey
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	Scattered in grassy understorey
<b>IRIDACEAE</b>		
<i>Watsonia meriana</i> var. <i>bulbillifera</i> **	Bulbil Watsonia	One cluster in Foresters Forest – <b>Declared.</b>
<b>LABIATAE</b>		
<i>Salvia verbenaca</i> var. <i>verbenaca</i> **	Wild Sage	Scattered in grassy understorey
<b>LEGUMINOSAE</b>		
<i>Acacia acinacea</i>	Gold-dust Wattle	Foresters Forest
<i>Acacia acuminata</i> *	Jam Wattle	Foresters Forest
<i>Acacia aneura</i>	Mulga	Foresters Forest
<i>Acacia brachybotrya</i>	Grey Wattle	Foresters Forest
<i>Acacia brachystachya</i>	Umbrella Mulga	Foresters Forest
<i>Acacia iteaphylla</i>	Flinders Ranges Wattle	Scattered throughout southern edge
<i>Acacia ligulata</i>	Umbrella Wattle	Foresters Forest
<i>Acacia paradoxa</i>	Prickly Acacia	Foresters Forest
<i>Acacia pendula</i>	Weeping Myall	Foresters Forest
<i>Acacia pycnantha</i>	Golden Wattle	Foresters Forest
<i>Acacia saligna</i> *	Golden Wreath Wattle	Foresters Forest
<i>Acacia</i> sp.		Foresters Forest
<i>Acacia stenophylla</i>	River Cooba Wattle	Foresters Forest
<i>Medicago</i> sp.**		Scattered in grassy understorey
<i>Trifolium</i> sp.**		Scattered in grassy understorey
<b>LILIACEAE</b>		
<i>Asphodelus fistulosus</i> **	Onion Weed	Scattered in grassy understorey
<b>LORANTHACEAE</b>		
<i>Lysiana exocarpi</i> ssp. <i>exocarpi</i>	Harlequin Mistletoe	Growing on trees within Foresters Forest
<b>MALVACEAE</b>		
<i>Malva parviflora</i> **	Small-flower Marshmallow	Scattered throughout grassy understorey
<b>MYRTACEAE</b>		
<i>Eucalyptus astringens</i> *	Brown Mallet	
<i>Eucalyptus camaldulensis</i>	River Red Gum	Foresters Forest, Roadside planting
<i>Eucalyptus cladocalyx</i> ssp. <i>cladocalyx</i>	Eyre Peninsula Sugar Gum	Foresters Forest
<i>Eucalyptus cladocalyx</i> ssp. <i>crassa</i>	Kangaroo Island Sugar Gum	Foresters Forest
<i>Eucalyptus cladocalyx</i> ssp. <i>petila</i>	Flinders Ranges Sugar Gum	Foresters Forest
<i>Eucalyptus cornuta</i> *	Yate	Foresters Forest,
<i>Eucalyptus cretata</i> *	Chalky Mallee	Roadside planting
<i>Eucalyptus erythrocorys</i> *	Red-capped Gum	Roadside planting
<i>Eucalyptus fasciculosa</i>	Pink Gum	Foresters Forest, Roadside planting
<i>Eucalyptus incrassata</i>	Ridged fruited Mallee	Foresters Forest
<i>Eucalyptus largiflorens</i>	Black Box	Foresters Forest, Roadside planting
<i>Eucalyptus leucoxylon</i>	South Australian Blue Gum	Foresters Forest, Roadside planting
<i>Eucalyptus porosa</i>	Mallee Box	Foresters Forest, Roadside planting
<i>Eucalyptus salmonophloia</i> *	Salmon Gums	Foresters Forest, Roadside planting
<i>Eucalyptus sideroxylon</i> *	Ironbark	Foresters Forest
<i>Eucalyptus socialis</i>	Red Mallee	Foresters Forest
<i>Melaleuca lanceolata</i>	Dry-land Tea-tree	Foresters Forest
<b>OLEACEAE</b>		
<i>Olea europaea</i> ssp. <i>europaea</i> **	Olive	Scattered throughout the Project Area – <b>Declared.</b>
<b>ONAGRACEAE</b>		
<i>Epilobium hirtigerum</i>	Hairy Willow-herb	Cluster in southwest basin
<b>OXALIDACEAE</b>		
<i>Oxalis perennans</i>	Native Sorrell	Scattered throughout grassy understorey
<i>Oxalis pes-caprae</i> **	Soursob	Dominant forb within the grassy understorey
<b>PINACEAE</b>		

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Family/Species name	Common name	Location within Project Area
<i>Pinus canariensis</i> *	Canary Island Pine	Boarded along the western edge of the Project Area.
<i>Pinus halepensis</i> **	Aleppo Pine	Scattered throughout Project Area – <b>Declared</b>
<b>PITTOSPORACEAE</b>		
<i>Bursaria spinosa ssp. spinosa</i>	Sweet Bursaria	Foresters Forest
<i>Pittosporum angustifolium</i>	Native Apricot	Foresters Forest
<b>PLANTAGINACEAE</b>		
<i>Plantago coronopus ssp. coronopus</i> **	Bucks-horn Plantain	Scattered throughout grassy understorey
<i>Plantago lanceolata var. lanceolata</i> **	Ribwort	Scattered throughout grassy understorey
<i>Polygonum aviculare</i> **	Wireweed	Scattered throughout grassy understorey
<b>POLYGALACEAE</b>		
<i>Emex australis</i> **	Three corner jack	Scattered across the SSP.
<i>Polygala myrtifolia</i> **	Myrtle-leaf Milkwort	A cluster located in River Red Gum woodland in Foresters Forest – <b>Declared.</b>
<b>POLYGONACEAE</b>		
<i>Persicaria decipiens</i>	Slender Knotweed	Cluster in southwest basin
<i>Rumex sp.</i> **		Cluster in southwest basin
<b>SAPINDACEAE</b>		
<i>Dodonaea viscosa</i>	Sticky Hop-bush	Foresters Forest
<b>SOLANACEAE</b>		
<i>Lycium ferocissimum</i> **	African Boxthorn	Dominant woody weed scattered throughout Project Area - <b>WoNS</b>
<i>Solanum elaeagnifolium</i> **	Silver-leaf Nightshade	Scattered throughout grassy understorey – <b>WoNS.</b>
<b>TYPHACEAE</b>		
<i>Typha domingensis</i>	Cumbungi	Dominant species throughout basins
<b>ULMACEAE</b>		
<i>Ulmus sp.</i> **		One individual located in Project Area
<b>ZYGOPHYLLACEAE</b>		
<i>Tribulus terrestris</i> **	Caltrop	This species had died off and only one isolated patch was identified during the field survey – <b>Declared.</b>

\*indicates non-indigenous species, but native to Australia, \*\* indicates introduced species, not native to Australia.

## 10.2 Appendix 2: NatureMaps list of threatened flora 5 km from Project Area

Scientific name	Common name	Conservation status	
		Aus	SA
<b>CHENOPODIACEAE</b>			
<i>Sclerolaena muricata</i> var. <i>villosa</i>	Five-spine Bindyi		R
<b>CRASSULACEAE</b>			
<i>Crassula sieberiana</i>	Sieber's Crassula		E
<b>GRAMINEAE</b>			
<i>Aristida australis</i>			R
<i>Austrostipa gibbosa</i>	Swollen Spear-grass		R
<i>Austrostipa multispiculis</i>	Many-flowered Spear-grass		R
<i>Bothriochloa macra</i>	Red-leg Grass		R
<i>Rytidosperma tenuius</i>	Short-awn Wallaby-grass		R
<b>JUNCACEAE</b>			
<i>Juncus radula</i>	Hoary Rush		V
<b>LEGUMINOSAE</b>			
<i>Acacia dodonaeifolia</i>	Hop-bush Wattle		R
<i>Acacia iteaphylla</i>	Flinders Ranges Wattle		R
<b>POTAMOGETONACEAE</b>			
<i>Potamogeton ochreatus</i>	Blunt Pondweed		R
<b>RUTACEAE</b>			
<i>Leionema hillebrandii</i>	Mount Lofty Phebalium		R
<b>ZANNICHELLIACEAE</b>			
<i>Zannichellia palustris</i>			R



## 10.3 Appendix 3: NatureMaps list of threatened fauna 5 km from Project Area

Scientific name	Common name	Conservation status	
		Aus	SA
<b>AVES</b>			
<i>Actitis hypoleucos</i>	Common Sandpiper		R
<i>Anhinga novaehollandiae</i> ssp. <i>novaehollandiae</i>	Australasian Darter		R
<i>Anthochaera chrysoptera</i>	Little Wattlebird	ssp	
<i>Biziura lobata menziesi</i>	Musk Duck		R
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	E
<i>Bubulcus ibis coromandus</i>	Eastern Cattle Egret		R
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	E
<i>Calidris melanotos</i>	Pectoral Sandpiper		R
<i>Calidris pugnax</i>	Ruff		R
<i>Calidris subminuta</i>	Long-toed Stint		R
<i>Cereopsis novaehollandiae</i> ssp. <i>novaehollandiae</i>	Cape Barren Goose		R
<i>Cladorhynchus leucocephalus</i>	Banded Stilt		V
<i>Corcorax melanorhamphos</i>	White-winged Chough		R
<i>Coturnix ypsilophora australis</i>	Brown Quail		V
<i>Egretta garzetta nigripes</i>	Little Egret		R
<i>Falco peregrinus macropus</i>	Peregrine Falcon		R
<i>Falco subniger</i>	Black Falcon		R
<i>Falcunculus frontatus</i> ssp. <i>frontatus</i>	Eastern Shrike-tit		R
<i>Gallinago hardwickii</i>	Latham's Snipe		R
<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle		E
<i>Hieraaetus morphnoides</i>	Little Eagle		V
<i>Hirundapus caudacutus</i> ssp. <i>caudacutus</i>	White-throated Needletail	ssp	V
<i>Lewin pectoralis</i> ssp. <i>pectoralis</i>	Lewin's Rail		V
<i>Limosa limosa</i> ssp. <i>melanuroides</i>	Black-tailed Godwit		R
<i>Neophema elegans</i> ssp. <i>elegans</i>	Elegant Parrot		R
<i>Oxyura australis</i>	Blue-billed Duck		R
<i>Pachycephala inornata</i>	Gilbert's Whistler		R
<i>Petroica boodang</i> ssp. <i>boodang</i>	Scarlet Robin		R
<i>Plegadis falcinellus</i>	Glossy Ibis		R
<i>Pluvialis fulva</i>	Pacific Golden Plover		R
<i>Podiceps cristatus australis</i>	Great Crested Grebe		R
<i>Rostratula australis</i>	Australian Painted-snipe	EN	E
<i>Spatula rhynchotis</i>	Australasian Shoveler		R
<i>Sternula nereis</i> ssp. <i>nereis</i>	Fairy Tern	VU	E
<i>Stictonetta naevosa</i>	Freckled Duck		V
<i>Tringa glareola</i>	Wood Sandpiper		R
<i>Xenus cinereus</i>	Terek Sandpiper		R
<b>MAMMALIA</b>			
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	R
<i>Trichosurus vulpecula</i>	Common Brushtail Possum		R

Aus: Australia (*Environment Protection and Biodiversity Conservation Act 1999*). SA: South Australia (*National Parks and Wildlife Act 1972*). Conservation codes: CE: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R: Rare.

**10.4 Appendix 4: Priority weed species threat and management summaries (APCC 2001; PIRSA, 2018).**

Weed species	Threat	Nature of Infestation at SSP	Preferred Control Methods
<p>African Boxthorn (<i>Lycium ferocissimum</i>)</p> <p>WoNS</p>	<ul style="list-style-type: none"> <li>- Exerts water stress on surrounding desirable vegetation including large trees.</li> <li>- Harbours pest animals (foxes, rabbits).</li> <li>- Forms dense, impenetrable thickets.</li> </ul>	<ul style="list-style-type: none"> <li>- Scattered shrubs in all vegetated areas of SSP.</li> </ul>	<ul style="list-style-type: none"> <li>- Mechanical removal (seedlings).</li> <li>- Cut and swab (non-selective).</li> <li>- Drill and fill (non-selective).</li> </ul>
<p>African Lovegrass (<i>Eragrostis curvula</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Produces a large number of tiny seeds.</li> <li>- Becomes abundant where there is a lack of competition from other pasture plants.</li> <li>- Causes displacement of native species.</li> <li>- Largely unpalatable to native fauna resulting in an impact on food sources for local fauna.</li> </ul>	<ul style="list-style-type: none"> <li>- Large clusters of African lovegrass were scattered throughout Foresters Forest.</li> <li>- Requires immediate, repeated and ongoing efforts to minimise infestation and prevent further establishment.</li> </ul>	<ul style="list-style-type: none"> <li>- Manual removal</li> <li>- Slashing to promote fresh growth, then spot spray with a grass selective from January-March.</li> </ul>
<p>Aleppo Pine (<i>Pinus halepensis</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Fast growing, drought tolerant Mediterranean species, widely planted as a wind break.</li> <li>- Reproduces by seed which are shed during summer.</li> <li>- Up to 90% of seeds can germinate but seedling survival is low.</li> <li>- Once established, growth is rapid, and the dense branches exclude other plants from the site.</li> <li>- Seeds dispersed by wind (up to 40m from parent plant), and by black cockatoos that feed on the seeds.</li> </ul>	<ul style="list-style-type: none"> <li>- Juvenile pines are scattered throughout the Project Area.</li> <li>- Mature pines at the western end provides feeding habitat for Sulphur-created Cockatoos and may provide potential foraging habitat for Yellow-tailed Black Cockatoos.</li> <li>- Recommend removing and controlling self-seeding juveniles.</li> </ul>	<ul style="list-style-type: none"> <li>- Fell and remove (cut close to ground).</li> <li>- Follow up to remove seedlings.</li> <li>- Monitor area for seedlings and juveniles and remove.</li> <li>- Drill and fill.</li> </ul>
<p>Bulbil Watsonia (<i>Watsonia meriana</i> var. <i>bulbillifera</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Perennial herb that competes with native vegetation.</li> </ul>	<ul style="list-style-type: none"> <li>- One Cluster located in the <i>E. largiflorens</i> mallee.</li> <li>- Limited individuals currently reside in the Project Area, so management as soon as possible is recommended</li> </ul>	<ul style="list-style-type: none"> <li>- Brushoff herbicide or a broadleaf herbicide is effective control for this species.</li> <li>- Backpack spray during September and November</li> </ul>

Weed species	Threat	Nature of Infestation at SSP	Preferred Control Methods
			<ul style="list-style-type: none"> <li>- Slashing 2-3 weeks prior increases effectiveness</li> </ul>
<p>Caltrop (<i>Tribulus terrestris</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Prevalent after late spring and early summer rains (&gt;5mm), germinating rapidly, flowering within 21 days and producing up to 4000 seeds which are easily dispersed by animals and soil movement.</li> <li>- Seeds release slowly (one at a time from the burr) and can persist in soil for up to 5 years.</li> <li>- Potentially toxic to native fauna, burrs can cause injuries to feet, mouth and stomach.</li> </ul>	<ul style="list-style-type: none"> <li>- One individual was observed to the north of the Super drome. It is likely that numerous other clusters exist but were not observed during the field assessment</li> </ul>	<ul style="list-style-type: none"> <li>- Spot spray with a selective herbicide as soon as fresh juvenile growth appears to prevent seed set.</li> </ul>
<p>Three corner jack (<i>Emex australis</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Winter growing annual</li> <li>- Stems prostrate to semi-erect with seeds in hard burrs each with three spines.</li> </ul>	<ul style="list-style-type: none"> <li>- Observed opportunistically during the steering meeting (6/12/2022) within Foresters Forest</li> <li>- Likely to be scattered throughout the Project Area</li> </ul>	<ul style="list-style-type: none"> <li>- Spot spray with a selective herbicide as soon as juveniles appear.</li> </ul>
<p>Kikuyu (<i>Pennisetum clandestinus</i>)</p> <p>Environmental Weed</p>	<ul style="list-style-type: none"> <li>- Forms dense thicket mats, smothering the ground and preventing understorey establishment or recruitment of overstorey species.</li> <li>- Creates a fire hazard and can be difficult to extinguish in established stands.</li> </ul>	<ul style="list-style-type: none"> <li>- This species dominated most areas across the Project Area, making it hard to control.</li> <li>- Management is recommended in more sensitive areas such as drainage lines and wet depressions.</li> </ul>	<ul style="list-style-type: none"> <li>- Brush-cut low to ground in late winter and early spring, treat regrowth (after ~4-6 weeks) with non-selective herbicide (i.e., glyphosate).</li> <li>- Pre-planting weed control recommended if understorey species to be introduced into revegetation zone.</li> </ul>
<p>Olive (<i>Olea europaeus</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Forms dense stands which shade out the ground layer and shrubs.</li> <li>- Highly flammable.</li> <li>- Dispersed by birds, foxes, and water.</li> </ul>	<ul style="list-style-type: none"> <li>- Widespread across the SSP</li> <li>- Occurs in all stages from large mature trees and as establishing, juvenile and seedling plants</li> </ul>	<ul style="list-style-type: none"> <li>- Seedlings / young plants:                             <ul style="list-style-type: none"> <li>o pull or grub (winter / moist soil).</li> </ul> </li> <li>- Trees / larger plants (Nov-Feb):</li> </ul>

Weed species	Threat	Nature of Infestation at SSP	Preferred Control Methods
	<ul style="list-style-type: none"> <li>- Allelopathy changes the soil composition and may cause dieback to native tree species.</li> </ul>	<p>throughout the park. Previously treated individuals have shown signs of regrowth</p> <ul style="list-style-type: none"> <li>- Requires immediate, repeated and ongoing efforts to minimise infestation and prevent further establishment.</li> </ul>	<ul style="list-style-type: none"> <li>o Drill and fill.</li> <li>o Cut and swab.</li> <li>- Saplings and smaller plants (Spring, Sept-Nov)               <ul style="list-style-type: none"> <li>o Basal bark spray (20-25°C, on unstressed plants).</li> </ul> </li> <li>- If in inaccessible location and difficult to remove, drill and fill in spring and then burn the following winter.</li> </ul>
<p>Onion Weed (<i>Asphodelus fistulosus</i>)</p> <p>Environmental</p>	<ul style="list-style-type: none"> <li>- High rate of seed production typical of opportunist plants</li> <li>- A pioneer species and will stabilise in sandy soils where there is very little competition</li> <li>- 95-100% germinate in autumn</li> <li>- Seeds can be carried in wind-blown soil and movement is influenced</li> </ul>	<ul style="list-style-type: none"> <li>- Clusters of onion weed were only prominent within the eastern side of the Project Area, near RMSC</li> </ul>	<ul style="list-style-type: none"> <li>- Onion weed does not complete well with native perennial species and revegetation is the best method in controlling this species.</li> </ul>
<p>Peppercorn (<i>Schinus molle</i>)</p> <p>Environmental</p>	<ul style="list-style-type: none"> <li>- Weed of riparian zone, woodlands and grasslands.</li> <li>- This species can get up to 10 meters in height</li> <li>- Seeds dispersed by birds and other animals</li> <li>- This species reproduced mainly by seed but also spreads by suckering</li> </ul>	<ul style="list-style-type: none"> <li>- Numerous individuals have self-seeded from historical plantings in Foresters Forest.</li> <li>- Individuals range from small seedling to medium sized trees</li> </ul>	<ul style="list-style-type: none"> <li>- Manual removal:               <ul style="list-style-type: none"> <li>o Pull out small seedling's plants</li> <li>o Use a tree popper to uproot establish bushes.</li> </ul> </li> <li>- Trees / larger plants:               <ul style="list-style-type: none"> <li>o Drill and fill.</li> <li>o Cut and swab.</li> </ul> </li> <li>- Cut stump with stem injection</li> </ul>

Weed species	Threat	Nature of Infestation at SSP	Preferred Control Methods
<p>Polygala (<i>Polygala myrtifolia</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Perennial shrub that invades and compete with native vegetation (specifically coastal vegetation)</li> </ul>	<ul style="list-style-type: none"> <li>- One cluster located on the edge of the River Reg Gum Woodland in Foresters Forest.</li> </ul>	<ul style="list-style-type: none"> <li>- Manual removal:                             <ul style="list-style-type: none"> <li>o pull or grub (winter / moist soil).</li> <li>o Use a tree popper to uproot establish bushes.</li> </ul> </li> <li>- Cut stump any time of the year.</li> <li>- Spot spray August to September.</li> </ul>
<p>Salvation Jane (<i>Echium plantagineum</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Highly competitive with large flat rosettes which smother emergent seedlings.</li> <li>- Seeds remain dormant in soil for many years and cultivation stimulates germination. Mowing or grazing the flowering plants encourages new shoots that then flower out of season.</li> <li>- Annual nature contributes to erosion on slopes in drier months.</li> <li>- Flowers July to January, sets seed (prolifically) from August to March and germinates from March to May. Plants die off December to February.</li> <li>- Seeds spread readily on hill slopes aided by water runoff.</li> </ul>	<ul style="list-style-type: none"> <li>- Small cluster observed on the western edge of Foresters Forest (east of Hockey Courts).</li> <li>- Likely to be prevalent across the property dependent on seasonal conditions.</li> </ul>	<ul style="list-style-type: none"> <li>- Compress disturbed soil and cover with litter; remove all plant material to prevent re-establishment.</li> <li>- Broadleaf herbicide will kill this species and retain native grasses.</li> <li>- Consider scalping sections to remove soil seedbank and then using these as revegetation patches.</li> <li>- Difficult to treat where it forms a monoculture as herbicide will leave bare soil open to further weed invasion.</li> </ul>
<p>Soursob (<i>Oxalis pes-caprae</i>)</p>	<ul style="list-style-type: none"> <li>- Bulbous perennial.</li> <li>- This species only spreads as bulbs are moved in contaminated soil, nursery stock.</li> </ul>	<ul style="list-style-type: none"> <li>- Soursobs are the dominate weed scattered throughout the Project Area.</li> </ul>	<ul style="list-style-type: none"> <li>- Spot spray with a broadleaf herbicide.                             <ul style="list-style-type: none"> <li>o Most effective in Autumn to early Winter after tuber is depleted.</li> </ul> </li> </ul>

Weed species	Threat	Nature of Infestation at SSP	Preferred Control Methods
			<ul style="list-style-type: none"> <li>○ Spraying after flowering when bulbils have formed is ineffective.</li> </ul>
<p>Wild Thistle (<i>Cynara cardunculus</i>)</p> <p>Declared</p>	<ul style="list-style-type: none"> <li>- Perennial herb that outcompetes other plants by releasing chemicals into the soil that inhibit growth.</li> <li>- Invades grasslands, open woodlands and wetlands.</li> <li>- Spines restrict the movement of wildlife.</li> </ul>	<ul style="list-style-type: none"> <li>- Only one individual was observed in an open grassland to the west of Roma Mitchell School.</li> <li>- Undertake weed control as soon as possible to stop the establishment of more individuals.</li> </ul>	<ul style="list-style-type: none"> <li>- Manual removal                             <ul style="list-style-type: none"> <li>○ pull or grub plants at rosette stage</li> </ul> </li> <li>- Sport Spray pre flowering stage.</li> </ul>

## 10.5 Appendix 5. Revegetation Species\*

Species Name	Common Name	Status	Management zone		
			1	2	3
<b>Upper Storey – Tree layer</b>					
<i>Acacia pycnantha</i>	Golden Wattle		✓	✓	
<i>Acacia retinodes</i> var. <i>retinodes</i> (Swamp form)	Swamp Wattle				✓
<i>Allocasuarina verticillata</i>	Drooping Sheoak		✓	✓	✓
<i>Callitris gracilis</i>	Southern Cypress Pine		✓	✓	
<i>Eucalyptus camaldulensis</i> var. <i>camaldulensis</i>	River Red Gum				✓
<i>Eucalyptus porosa</i>	Mallee Box		✓	✓	
<i>Eucalyptus socialis</i>	Beaked Red Mallee		✓	✓	
<b>Middle Storey – tall shrub layer</b>					
<i>Acacia acinacea</i>	Wreath Wattle		✓	✓	
<i>Acacia paradoxa</i>	Kangaroo Thorn		✓	✓	
<i>Callistemon sieberi</i>	River Bottlebrush				✓
<i>Bursaria spinosa</i>	Bursaria		✓	✓	
<i>Dodonaea viscosa</i>	Sticky Hop-bush		✓	✓	
<i>Pittosporum angustifolium</i>	Native Apricot		✓	✓	
<b>Under storey – low shrub layer</b>					
<i>Acacia ligulata</i>	Umbrella bush		✓		✓
<i>Correa glabra</i>	Rock Correa		✓	✓	
<i>Correa glabra</i>	Rock Correa		✓	✓	
<i>Cullen australasicum</i>	Tall Scurf-pea		✓	✓	✓
<i>Dianella longifolia</i> var. <i>grandis</i>	Pale Flax-lily	State: R	✓	✓	
<i>Dianella revoluta</i> var. <i>revoluta</i>	Black-anther Flax-lily		✓	✓	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush		✓	✓	
<i>Goodenia ovata</i>	Hop Goodenia		✓	✓	✓
<i>Hardenbergia violacea</i>	Native Lilac		✓	✓	
<i>Kennedia prostrata</i>	Scarlet Runner		✓	✓	
<i>Maireana brevifolia</i>	Short-leaf Bluebush		✓	✓	
<i>Myoporum viscosum</i>	Sticky boobialla		✓	✓	
<i>Olearia ramulosa</i>	Twiggy Daisy Bush		✓	✓	
<i>Pimelea glauca</i>	Smooth Riceflower		✓	✓	
<i>Vittadinia blackii</i>	New Holland Daisy		✓	✓	
<b>Under Storey – Grasses and sedges</b>					
<i>Austrostipa mollis</i>	Soft Spear-grass		✓	✓	✓
<i>Austrostipa nodosa</i>	Tall Spear-grass		✓	✓	✓
<i>Carex appressa</i>	Tall Sedge				✓
<i>Carex inversa</i>	Knob Sedge				✓
<i>Cyperus vaginatus</i>	Stiff Flat-sedge				✓
<i>Ficinia nodosa</i>	Knobby Club-rush				✓
<i>Dichanthium sericeum</i> ssp. <i>humilius</i>	Annual Silky Blue-grass				✓
<i>Gahnia filum</i>	Thatching Grass				✓
<i>Juncus pallidus</i>	Pale Rush				✓
<i>Juncus pauciflorus</i>	Loose-flower Rush				✓
<i>Poa labillardieri</i> var. <i>labillardieri</i>	Common Tussock-grass		✓	✓	✓
<i>Rytidosperma caespitosa</i>	Common Wallaby-grass		✓	✓	✓
<i>Rytidosperma setacea</i>	Small-flower Wallaby-grass		✓	✓	✓
<i>Schoenoplectus pungens</i>	Spiky Club-rush				✓
<i>Schoenoplectus validus</i>	River Club-rush				✓
<i>Themeda triandra</i>	Kangaroo Grass		✓	✓	
<i>Cymbopogon ambiguus</i>	Lemon Grass		✓	✓	✓
<i>Cyperus gymnocaulos</i>	Spiny Flat-sedge				✓
<i>Lomandra multiflora</i>	Hard Mat-rush		✓		

State Sports Park Vegetation Management and Restoration Plan

Species Name	Common Name	Status	Management zone		
			1	2	3
<b>Understorey – Ground Layer</b>					
<i>Arthropodium strictum</i>	Chocolate Lily		✓	✓	
<i>Brachyscome diversifolia</i>	Tall Daisy	State: EN		✓	
<i>Caladenia cardiochila</i>	Heart-lipped Spider-orchid			✓	
<i>Calostemma purpureum</i>	Pink garland lily		✓	✓	
<i>Cullen parvum</i>	Small Scurf-pea	State: V		✓	
<i>Eclipta platyglossa ssp. platyglossa</i>	Yellow Twin-heads			✓	
<i>Erodium crinitum</i>	Blue Heron's-bill		✓		
<i>Eryngium rostratum</i>	Blue Devil	State: V	✓		
<i>Glycine latrobeana</i>	Clover Glycine	State: V National: VU		✓	
<i>Podolepis jaceoides</i>	Showy Podolepis	State: R		✓	
<i>Pycnosorus chrysanthes</i>	Golden Billy-buttons	State: E		✓	
<i>Swainsona behriana</i>	Behr's Swainson-pea	State: V		✓	

\* note this is not an exhaustive list, further consultation around what species to plant and in what density should be considered.





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