Walker Corporation Pty Ltd

Native Vegetation Clearance Data Report - Riverlea Precinct 3A

Clearance under the Native Vegetation Regulations 2017

September 2025

Confidential

Question today
Imagine tomorrow
Create for the future

Native Vegetation Clearance Data Report - Riverlea Precinct 3A
Clearance under the Native Vegetation Regulations 2017

Walker Corporation Pty Ltd

WSP
Level 17, 83 Pirie Street
Adelaide SA 5000
GPO Box 398
Adelaide SA 5001

Tel: +61 8 8405 4300
Fax: +61 8 8405 4301
wsp.com

Rev	Date	Details
A	04/09/2025	Draft
B	25/09/2025	Final

	Name	Date	Signature
Prepared by:	Ned Piscioneri (NVC accredited consultant)	26/08/2025	
Reviewed by:	Hayley Merigot (NVC accredited consultant)	27/08/2025	
Approved by:	Hayley Merigot (NVC accredited consultant)	28/08/2025	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

Table of contents

List of tables

List of figures

List of appendices

Attachments

Abbreviations

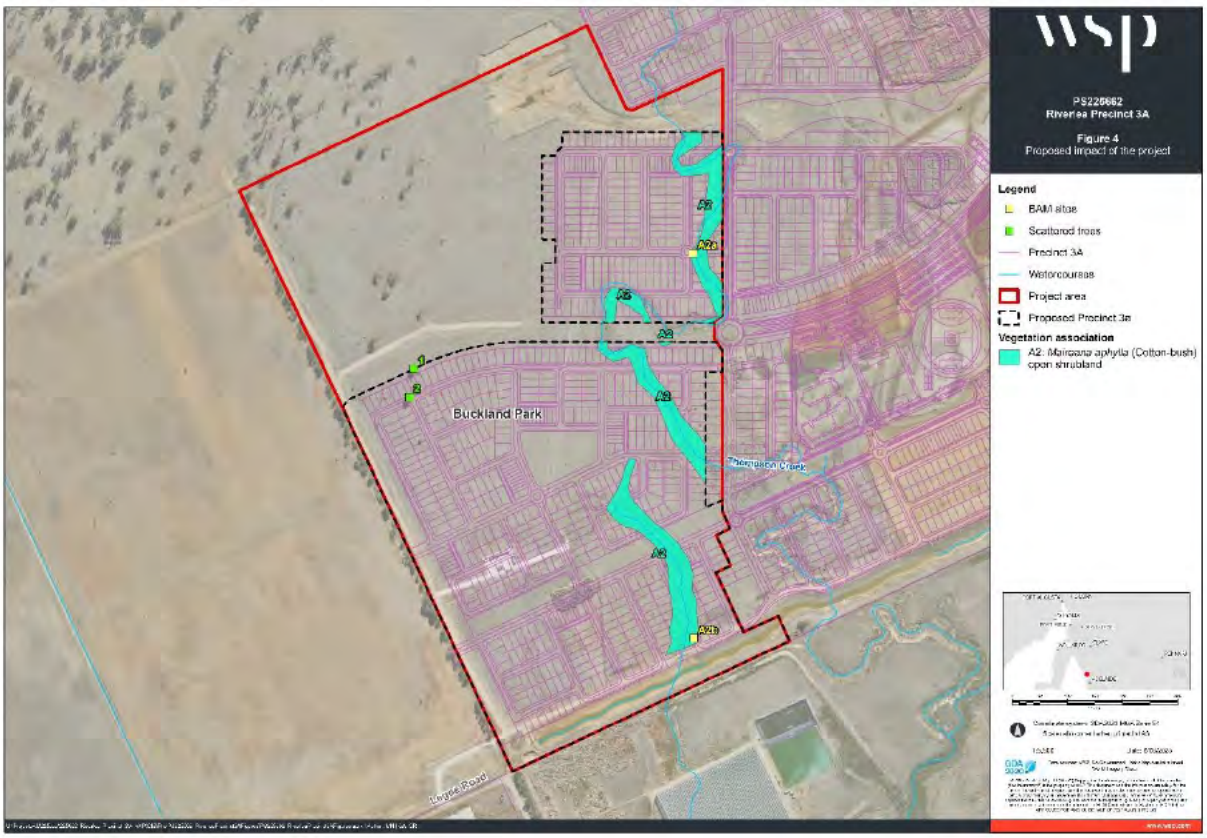
AEIS	Amended environmental impact assessment
BAM	Bushland assessment method
BDBSA	Biological database of South Australia
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DEW	Department for Environment and Water (South Australian)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ha	hectare(s)
IBRA	Interim Biogeographical Regionalisation of Australia
km	Kilometre(s)
NP&W Act	*National Parks and Wildlife Act 1972*
NV Act	*Native Vegetation Act 1991*
NVC	Native Vegetation Council
PMST	Protected Matters Search Tool
Project	Riverlea Precinct 3A at Riverlea Park
Project area	The area shown in Figure 2.1 in Riverlea Park
SA	South Australia
SEB	Significant Environmental Benefit
sp.	Species
ssp.	Sub-species
STAM	Scattered Tree Assessment Method
TEC	Threatened Ecological Community
var.	Variety
VA	Vegetation Association

1 Application information

Applicant Details			
Applicant	Walker Buckland Park Developments Pty Ltd		
Key Contact	M) E)		
Landowner	Walker Corporation Pty Ltd Vosporos Pty Ltd (landowner permission provided in Attachment 1)		
Site Address	Corner of Tippets Bridge Road and Legoe Road, Riverlea Park SA 5120		
Local Government Area	City of Playford	Hundred	Port Adelaide
Title ID	CT/6288/348 CT/6288/349 CT/6317/911 (previously CT/6288/350) CT6288/351	Parcel ID	D132334 A9010 D132334 A9011 D138539 9301 (previously D132334 A9012) D132334 A9013

Summary of Proposed Clearance	
Purpose of clearance	Clearance is required for the construction of a residential subdivision.
Native Vegetation Regulation	Regulation 12(35) — Residential subdivision
Description of the vegetation under application	— 3.84 ha of A2: *Maireana aphylla* (Cotton-bush) open shrubland. — Two scattered trees of species *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum) in good condition. — 46.32 ha of exotic vegetation not subject to the *Native Vegetation Act 1991*.
Total proposed clearance - area (ha) and number of trees	3.84 ha and two scattered trees are proposed to be cleared.
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation Overlay

Summary of Proposed Clearance



Mitigation Hierarchy	**Avoidance** Much of the higher biodiversity value in the general area, is further north and north-west in the broader Precinct 3 area. These environmentally significant areas are proposed to be retained as open woodland reserves. The Precinct 3A development area is on previously cleared farmland with scattered trees and other limited patches of remnant native vegetation. Out of a total of 50.16 ha of vegetation proposed to be impacted, 46.32 ha is exotic vegetation (cleared farmland). A row of established, planted mature trees (mainly of species *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum)) follow the western boundary of the project area. Walker proposes to retain as many of these planted, established trees as possible. These trees will assist in providing windbreaks and shade, enhance the amenity and biodiversity of the area, and help to provide further habitat for fauna including threatened fauna. In addition, retaining these established trees will minimise impact on soil disturbance and sedimentation from water runoff. **Minimization** Walker specifically chose the Precinct 3A area because much of the area is degraded and highly modified due to ploughing, recent livestock grazing, and high levels of weed infestation. Native vegetation within Precinct 3A is mainly confined along the Thompson Creek with the remainder of the project area comprising native scattered trees over introduced grasses and herbs. Therefore, the development minimises the extent of native vegetation clearance, while contemplating future planning and development scenarios for the remaining Precinct 3 area. **Rehabilitation or restoration** As a part of Precinct 3A and the broader Riverlea Park major development, the applicant has established and will continue to establish several man-made waterways to better manage water in the greater area given the area is historically prone to flood waters after significant rainfall events. The establishment of these waterways will not only help the applicant better mitigate against potential flooding events but also provide habitat for threatened and migratory shorebird species, inland and away from the coast in an area largely cleared and devoid of suitable habitat. Previously established drainage channels within the Riverlea development have resulted in the natural regeneration of native flora species including *Tecticornia* sp. (Samphire) and *Sueda australis* (Austral Seablite). The project proposes to facilitate sustainable urban development while balancing other issues such as flooding and stormwater management. The stormwater management measures include implementing a series of gravity-fed drainage channels that will direct and clean stormwater flows. The graded channels are typically within areas comprising high concentrations of non-native vegetation previously cleared, modified or utilised for agricultural activities such as cropping and grazing. These open stormwater drainage channels will incorporate native species landscaping where possible. There is evidence that the stormwater management measures, such as the construction of stormwater channels, are encouraging biodiversity, particularly habitat for

Summary of Proposed Clearance

	water birds which is important given the sites proximity to the Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara. Walker intends to undertake weed control within the project area to improve the quality of the remaining vegetation throughout the Riverlea site and enhance the amenity value of the development. In addition, weed control, including control of Declared Weeds under the LSA Act, will minimise the impacts of existing exotic species on biological diversity and other natural resources. Further, Walker's contractor/s must prepare and implement appropriate soil and erosion management control measures. Vegetation removal will follow recommendations to control and prevent the spread of Declared Weeds found within the project area. The Precinct 3A subdivision provides a formal open space area centrally within the layout. Walker's landscape design of proposed reserves will incorporate amenity plantings of some locally native vegetation species (where practical) to provide habitat for fauna and enhance local ecosystems that past agricultural land use has degraded. In areas near the housing development, formal revegetation/landscaping works may include planting of some non-local or otherwise different vegetation from what previously occurred in that location. However, they will still encourage subsequent natural regeneration of native flora species such as samphire and *Sueda australis* (Austral Seablite), particularly further down the channel, where regeneration and revegetation will reduce erosion and turbidity (sediment controls) and improve drainage water quality. Regenerating areas will also be fenced from agricultural activities to avoid further degradation by livestock.
Proposed significant environmental benefit (SEB) offset	The proponent proposes to achieve the SEB by paying into the Native Vegetation Fund. The total SEB offset required for the clearance of **two** scattered trees and **3.84 ha** of native vegetation is **$57,233.76 (including GST)**, which includes a **$2,983.75** administration fee.

2 Purpose

2.1 Clearance description

Walker Buckland Park Developments Pty Ltd (Walker) has engaged WSP to complete a Native Vegetation Data Report for Riverlea Precinct 3A at Riverlea Park (the project).

The objective of these works was to undertake a native vegetation assessment for the project. This assessment included the following elements:

- A desktop study to confirm the presence and status of threatened flora and fauna protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and State *National Parks and Wildlife Act 1972* (NP&W Act) in the project area;
- A survey of native vegetation in the project area during a site reconnaissance using the Native Vegetation Council (NVC) endorsed Scattered Trees Assessment Method (STAM) and Bushland Assessment Method (BAM); and
- The calculation of Significant Environmental Benefit (SEB) offset requirements based on the impact footprint. The calculated SEB requirement will be informed by the results of the desktop and field assessment outcomes.

2.2 Project background

The project area is located on private property, which contains four certificate titles embracing a total of 130.35 ha of land. The project area falls within the City of Playford council and Green Adelaide Landscape Management Region. The area is within the Master Planned Neighbourhood zone, at high risk of flooding and receives a mean annual rainfall of 413 mm (Department for Environment and Water, 2025b). The area surveyed consists of a mixture of native scattered trees, a portion of the Thompson Creek and introduced grasses and herbs. Portions of the Thompsons Creek were dammed several years ago (perpetually blocked off by the adjoining property owner to the south), as part of that site's redevelopment. The Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara is approximately 1.6 km to the west of the project area.

The Interim Biogeographical Regionalisation of Australia (IBRA) identifies geographically distinct bioregions based on common climate, geology, landform, native vegetation and species information. The bioregions are further refined into subregions and environmental associations. The Project Area is located in the Eyre Yorke Block IBRA Bioregion, St Vincent IBRA Subregion and Mallala IBRA Environmental Association. Approximately 8% (87,402 ha) of the St Vincent IBRA Subregion and approximately 3% (5874 ha) of the Mallala IBRA Environmental Association is mapped as remnant vegetation. Of this, 5% (4,732 ha) and 2% (103 ha) is formerly conserved and protected, respectively (Thackway & Cresswell, 1995).

The broader site borders the Gawler River to the north and has historically been prone to flood waters associated with significant rainfall events within the Gawler River catchment. Hence, site conditions dictate the raising of all future finished ground levels to ensure urban lands are higher than predicted floodwater flows to address flood risk, including the threat of floodwater breakouts from the Gawler River. In addition, much of the Riverlea development site has high (often fluctuating) groundwater levels with elevated salinity. The Council and other service authorities require all services (water, sewer, stormwater connections, power, etc.), including graded ground and trench levels that achieve the necessary falls for stormwater and greywater dispersion for the development, to be above groundwater levels.

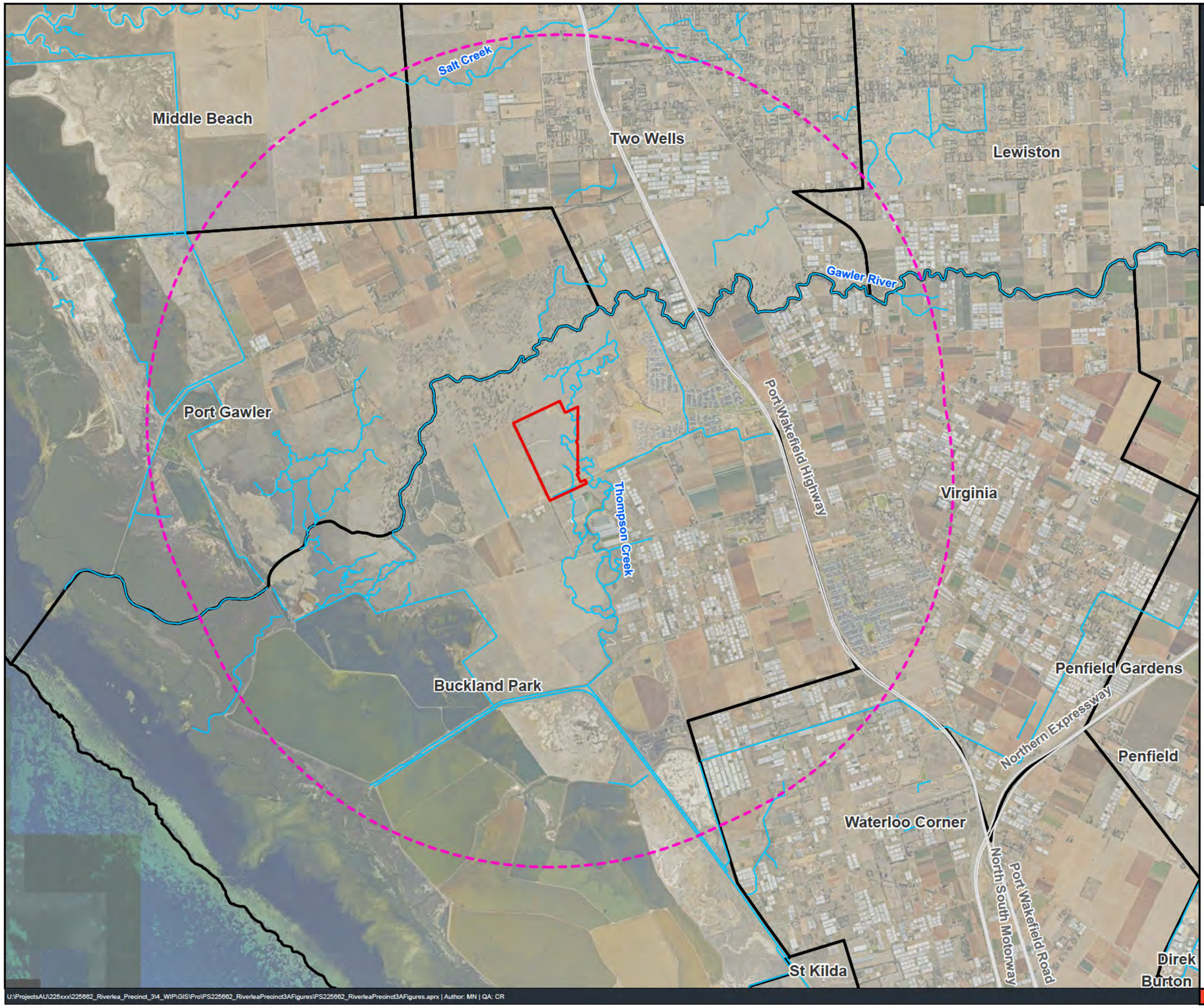
2.3 General location map

The general location of the project area is provided in Figure 2.1.

2.4 Details of proposal

Walker seeks to undertake the third phase of approvals for the Riverlea major development. Precincts 1 and 2 are approved, and significant construction has commenced. Further preliminary investigations and work are still required over a significant proportion of the Precinct 3 area to initiate an amended environmental impact assessment (AEIS) application. In the interim, Walker aims to commence an AEIS process over a small portion of the Precinct 3 area (aptly called Precinct 3A – the focus of this report), as it already has a few approvals in place, has far fewer planning issues associated with the area, and forms a logical and compact extension of the existing approved subdivision (namely Precinct 2). The proposed layout of Precinct 3A (as at 5 August 2025) is provided in Figure 2.2.

.

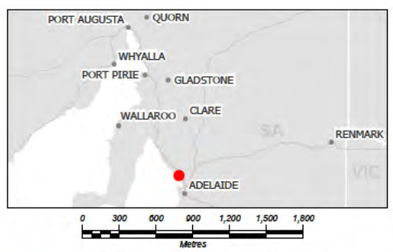


PS225662
Riverlea Precinct 3A

Figure 2.1
Project Area Map

Legend

- Roads
- Watercourses
- Locality
- Project area
- 5km buffer around the project area



Coordinate system: GDA2020 MGA Zone 54
Scale ratio correct when printed at A3

1:50,000 Date: 6/08/2025

GDA 2020

Data sources: WSP, SA Government, MetroMap Australia latest

www.wsp.com

U:\ProjectsAU\225xxx\225662_Riverlea_Precinct_3\4_WIP\GIS\Pro\PS225662_RiverleaPrecinct3AFigures\PS225662_RiverleaPrecinct3AFigures.aprx | Author: MN | QA: CR

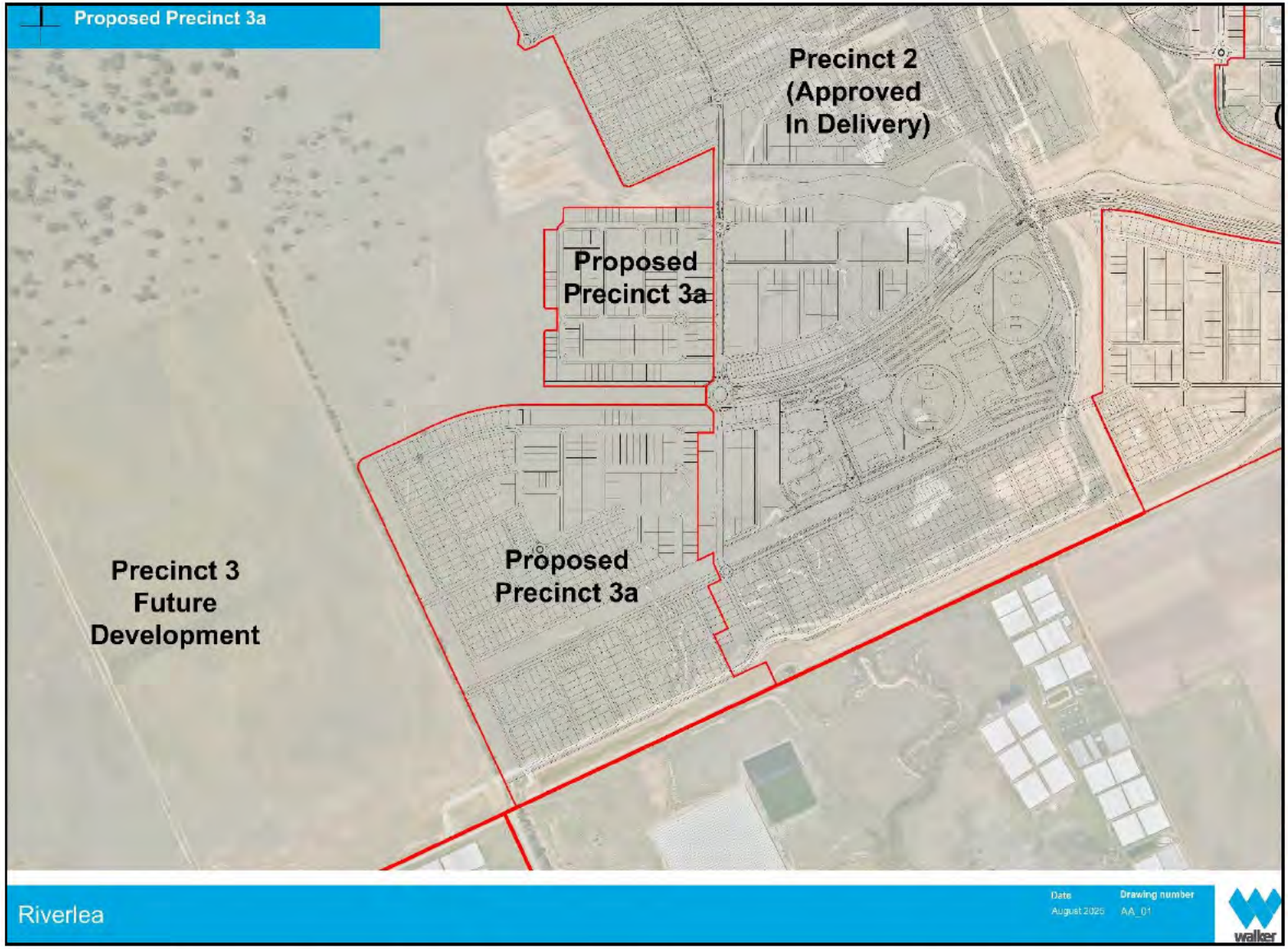


Figure 2.2 Design layout for Precinct 3a in the Riverlea housing development (as at 5 August 2025 – supplied by Walker).

2.5 Approvals required or obtained

All projects in South Australia are subject to approvals under multiple state and federal (Commonwealth) legislation, to ensure proper management of environmental, social and cultural impacts. The regulatory approvals that are required for this project are listed in Table 2.1.

Table 2.1 Legislative and regulatory requirements.

Legislative Framework	Permit Required (Y/N)	Comment
Environment Protection and Biodiversity Conservation Act 1999	N	No approval is required.
Planning, Design and Infrastructure Act 2016	Y	Approval is required for this project.
Native Vegetation Act 1991	Y	Previous applications have been applied for as a part of the broader Riverlea Subdivision and may be required with future precincts. Clearance under the *Native Vegetation Regulations 2017* is the subject of this proposal.
Landscape South Australia Act 2019	Y	A Water Affecting Permit may be required given proposed impacts to drainage lines in the project area. A permit to transport Declared weeds on a public road may also be required for this project. Declared weeds have been recorded in the project area.
Aboriginal Heritage Act 1988	Y	Required if any sites, objects or remains are uncovered during the project. Relevant sites under the Act have been previously identified in the broader area.
National Parks and Wildlife Act 1972	Y	The required permit is held by WSP (E27445-2).

2.6 Native Vegetation Regulation

The project will require assessment against the Principles of Clearance under the *Native Vegetation Act 1991*. This project is in accordance with Division 5 of the *Native Vegetation Regulations 2017*, which allows for the clearance of native vegetation in relation to specific activities as set out in Schedule 1, Parts 4, 5 or 6 of the Regulations. The Project is considered to be permitted under the following regulation:

Regulation 12(35) — Residential subdivision

1. Clearance of vegetation in connection with the division of land for use for residential purposes (including clearance for the construction of roads and other infrastructure), provided that—
    1. any development authorisation for the division of the land and for the use of the land for residential purposes required by or under the *Planning, Development and Infrastructure Act 2016* has been obtained; and
    2. the [Native Vegetation] Council has been given written notification of the full extent of the clearance expected to occur in connection with the division of the land.
2. Subclause **(1)** does not apply to —
    1. clearance of vegetation established in accordance with a condition of a consent for clearance of vegetation; or
    2. clearance that would be contrary to —
        i. a condition of a consent for clearance of vegetation; or
        ii. a condition imposed in connection with clearance of vegetation permitted under these [native vegetation] regulations; or
        iii. a condition in respect of clearance permitted under the revoked [native vegetation] regulation

2.7 Development application Information

The planning and design code zones and overlays that are relevant to the project area are provided in Table 2.2. Both the Native Vegetation and Regulated and Significant Tree overlays apply.

Table 2.2 Planning and Design Codes zones and overlays.

Zones	Master Planned Neighbourhood - MPN
Overlay	Affordable Housing
	Defence Aviation Area
	Hazards (Flooding)
	Hazards (Bushfire – General)
	Native Vegetation
	Prescribed Wells Area
	Regulated and Significant Tree
	Water Resources

3 Methodology

3.1 Desktop assessment

To determine the potential for any nationally or State threatened fauna or flora species and Threatened Ecological Communities (TECs) to occur within the project area, a desktop study was undertaken and included a 5 km buffer surrounding the project area (study area).

3.1.1 PMST report

To identify the nationally threatened flora and fauna, migratory fauna and TECs protected under the EPBC Act a search of the study area using the Protected Matters Search Tool (PMST) was conducted on 15 July 2025 (Department of Climate Change, Energy, the Environment and Water, 2025b). Only the species that are likely or known to occur within the study area were assessed against the likelihood of occurrence (Table 3.1). Any species considered exclusively marine and therefore confined to that environment including marine birds (e.g. albatross, petrel, shearwater) as well as marine mammals (whales, dolphins, turtles), sharks and fish were not assessed against the likelihood of occurrence as the project area is considered entirely terrestrial.

3.1.2 BDBSA data extract

To identify flora and fauna species that have been previously recorded within the study area, data was extracted from the South Australian Department for Environment and Water Biological Database of South Australia (BDBSA) on 9 July 2025 (Department for Environment and Water, 2025a) record set number DEWNRBDBSA250707-1.

The data on the BDBSA is an amalgamation of species records from the South Australian Museum, conservation organisations, private consultancies, Birds SA, Birdlife Australia and the Australasian Wader Study Group, which meet the Department for Environment and Water's (DEW) standards for data quality, integrity and maintenance. A species likelihood of occurrence was only assessed if they were recorded after 1995 and a had a spatial reliability of less than 1 km.

3.1.3 Likelihood of occurrence

The criteria for the likelihood of occurrence of threatened species within the Study area is outlined in Table 3.1.

Table 3.1 Criteria for the likelihood of occurrence of species within the Study area.

Likelihood	Criteria
Highly likely and / or known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or the species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provides limited habitat or feeding resources for the species. Recorded within 20 -40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.

Likelihood	Criteria
Unlikely	Recorded within the previous 20 years, but the area provides no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter. Recorded within 20 -40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.

3.2 Flora assessment

The vegetation assessment was undertaken on 17 July 2025 by NVC Accredited Consultants Hayley Merigot and Ned Piscioneri in accordance with the Bushland Assessment Method (BAM) and Scattered Tree Assessment Method (STAM) (Native Vegetation Council, 2024a, 2024b).

3.2.1 Bushland assessment method

The BAM is used to assess areas of native vegetation for the purpose of clearance and calculating the Significant Environmental Benefit (SEB) offset. The BAM is derived from the Nature Conservation Society of South Australia's Bushland Condition Monitoring methodology (Croft, Pedler, & Milne, 2007, 2008a, 2008b, 2009; Milne & Croft, 2012; Milne & McCallum, 2012).

The *Bushland Assessment Manual* (Native Vegetation Council, 2024a) details the requirements of site selection/stratification and assessment protocols, and the biodiversity value components assessed and the factors that influence these components.

The Conservation Significance Scores were calculated from direct observations of flora and direct and historical observations of fauna species of conservation significance. All fauna assessed as highly likely to occur in native vegetation patches during the desktop assessment, were included in the BAM scoresheets. Species determined as unlikely to occur within the project area and marine and/or wetland species were omitted from the scoresheets.

3.2.2 Scattered tree assessment method

The *Scattered Tree Clearance Assessment in South Australia: Streamlining, Guidelines for Assessment and Rural Industry Extension report* (Cutten & Hodder, 2002) outlines the requirement for conducting the scattered tree assessment method (STAM). The STAM will be used to assess trees in the following cases:

- Individual scattered trees where the canopy does not overlap; or
- Dead native trees; or
- Clumps of trees where there is contiguous overlapping canopies and if the clump is small (approximately <0.1 ha); and
- For both scattered trees and clumps:
  - The introduced species make up the majority of the ground layer;
  - <5% of the ground cover is covered by scattered colonising native species; and
  - Introduced pasture or crops surround the area around the trees.

The *Scattered Tree Assessment Manual* (Native Vegetation Council, 2024b) provided the details of the scattered tree Point Scoring System. Using the information from the BDBSA data extract and the lists of scattered tree using fauna in the *Scattered Tree Assessment Manual*, the number of fauna species that use scattered trees were entered into the Scattered Tree Scoresheet. The habitat suitability of each tree was assessed, and it was determined whether it would likely be utilised by a threatened fauna species. All fauna assessed as highly likely to occur in native scattered trees during the desktop assessment, were included in the STAM scoresheet.

3.3 Fauna assessment

3.3.1 Field assessment

During the native vegetation clearance assessment all opportunistic fauna encounters were recorded. These encounters include direct encounter, observed, tracks, scats, burrows, nests and other signs of presence. Once observed the species, number of individuals, GPS location, detection methodology (sight, sound, or sign) and habitat were recorded.

Areas that contain potential habitat for fauna species, especially threaten species, were recorded and marked using a GPS. Habitat areas containing refuge sites such as hollows, on trees were also noted.

4 Assessment outcomes

4.1 Vegetation assessment

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

The project area is on clay, loam soils and has been previously used for agricultural purposes including cropping and livestock grazing. The vegetation in the project area primarily consists of native scattered trees over introduced grasses and herbs. The Thompson creek runs through the project area and is dominated by native shrubs such as *Marieana aphylla* (Cotton-bush). The overstorey in the project area is dominated by *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum) present as scattered trees. Overstorey species in the project area were generally in good condition with a number of hollows in mature trees which could provide habitat for fauna species including those listed as threatened. There were also several dead trees which could provide further habitat for wildlife. Vegetation, particularly understorey vegetation in the project area contained a high number of introduced species.

One vegetation associations (VA) proposed to be impacted was identified and mapped within the project area:

- A2: *Maireana aphylla* (Cotton-bush) open shrubland.

A total of 31 flora species, including 18 introduced flora species were recorded within the project area. Timing of the survey likely influenced this result with the flowering of annual spring forbs and grasses yet to occur. No flora species listed as threatened under the EPBC Act or NP&W Act were recorded during the field assessment. Flora species recorded during the survey are provided in Appendix A.

Four introduced flora species that are Declared Weeds under the LSA Act were recorded in the project area, of which two are also Weeds of National Significance (WoNS):

- *Cynara cardunculus* ssp. *flavescens* (Artichoke Thistle).
- *Echium plantagineum* (Salvation Jane).
- *Lycium ferocissimum* (African Boxthorn) (also a WoNS).
- *Solanum elaeagnifolium* (Silver-leaf Nightshade) (also a WoNS).

Specific Declared Weed and WoNS information on the recommended manual and chemical control options, legal obligations for landholders, restrictions on their movement and sale, reporting requirements, as well as links to state policies is available on the Department of Primary Industries and Regions (PIRSA) website: https://pir.sa.gov.au/biosecurity/weeds/controlling-weeds

A total of 24 fauna species, comprising 23 birds and one mammal including four introduced species (Appendix B) were recorded in the project area. No fauna species listed as threatened under the EPBC or NP&W Acts were recorded.

4.1.2 Vegetation association proposed to be impacted

VA 2 is represented by two BAM assessment sites (A2a and A2b). The summary in Table 4.1 provides the Total biodiversity score for a representative 1 hectare which has been multiplied by the total clearance area (3.84 ha).

Details of the vegetation association proposed to be impacted is provided in Table 4.1. A total of 3.84 ha is proposed to be impacted by the project.

Site specific bushland assessment scoresheets are provided in Attachment 2.

Table 4.1 Summary of VA A2.

Vegetation Association A2	***Maireana aphylla* (Cotton-bush) open shrubland.**
Benchmark Community	NA 7.1 Riparian Woodlands

BAM Site Photo A2b, Photo Direction: South, Waypoint: -34.66026, 138.51260

General description	Degraded remnant drainage line connected to the Thompson Creek, dominated by *Maireana aphylla* (Cotton-bush) primarily over a range of exotic herbs and grasses. Overstorey species are absent with understorey species consisting of *Enchylaena tomentosa* var. *tomentosa* (Ruby Saltbush) and a range of introduced species such as *Aizoon pubescens* (Coastal Galenia) and *Oxalis pes-caprae* (Soursob). Cotton-bush individuals are generally in good condition and may provide habitat for some fauna species including some listed as threatened. Three introduced species that are Declared Weeds under the LSA Act were recorded.		
	Overstorey	Midstorey	Understorey
	N/A	*Maireana aphylla* (Cotton-bush)	**Aizoon pubescens* (Coastal Galenia) **Avena barbata* (Bearded Oat) *Enchylaena tomentosa* var. *tomentosa* (Ruby Saltbush) **Mesembryanthemum nodiflorum* (Slender Iceplant) **Oxalis pes-caprae* (Soursob)
Threatened species or community	This vegetation association does not support or constitute a TEC. No species listed as threatened under EPBC or NP&W Acts were observed during the field assessment. This VA is a remnant and degraded drainage line connected to Thompson Creek. At certain times of the year and with the right conditions, water may be present. As such, this VA may provide habitat for fauna including threatened and migratory fauna. A total of 20 nationally or State listed fauna, and nine migratory species were assessed as highly likely or likely to occur in the project area. See Sections 4.2.4 and 4.2.5 for more information.		

Vegetation Association A2	*Maireana aphylla* (Cotton-bush) open shrubland.				
Landscape context score	A2a: 1.23	Vegetation Condition Score	A2a: 6.53	Conservation significance score	A2a: 1.10
	A2b: 1.23		A2b: 14.53		A2b: 1.10
Unit biodiversity Score	A2a: 8.84	Area (ha)	A2a: 1	Total biodiversity Score	A2a: 8.84
	A2b: 19.66		A2b: 1		A2b: 19.66

4.1.3 Scattered trees proposed to be impacted

A total of two scattered trees are proposed to be impacted. Both trees are of the species *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum) and are in good condition with a number of hollows which could provide habitat for fauna species including those listed as threatened. Details of the scattered trees proposed to be impacted are provided in Table 4.2 and Table 4.3. Further information on scattered trees is provided in the scattered tree assessment scoresheet (Attachment 3). Scattered tree using fauna species in the project area are provided in Appendix E.

4.1.4 Site maps with proposed impact

The proposed impact of the project is provided in Figure 4.1. A total of 3.84 ha and two scattered trees are proposed to be impacted by the project.

Table 4.2 Summary of Tree 1.

Tree ID – 1	
Tree spp. *Eucalyptus camaldulensis* ssp. *camaldulensis*	Looking south, easting: 271552, northing: 6162307
Number of trees – 1	
Height (m) – 11.5	
Hollows – 2 small 1 medium	
Diameter (cm) – 132.5	
Canopy dieback (%) – 20	
Total Biodiversity Score – 4.45	

In good condition with three hollows that may provide habitat for fauna including threatened fauna. The tree will provide perching, foraging, roosting and breeding habitat for threatened fauna including:

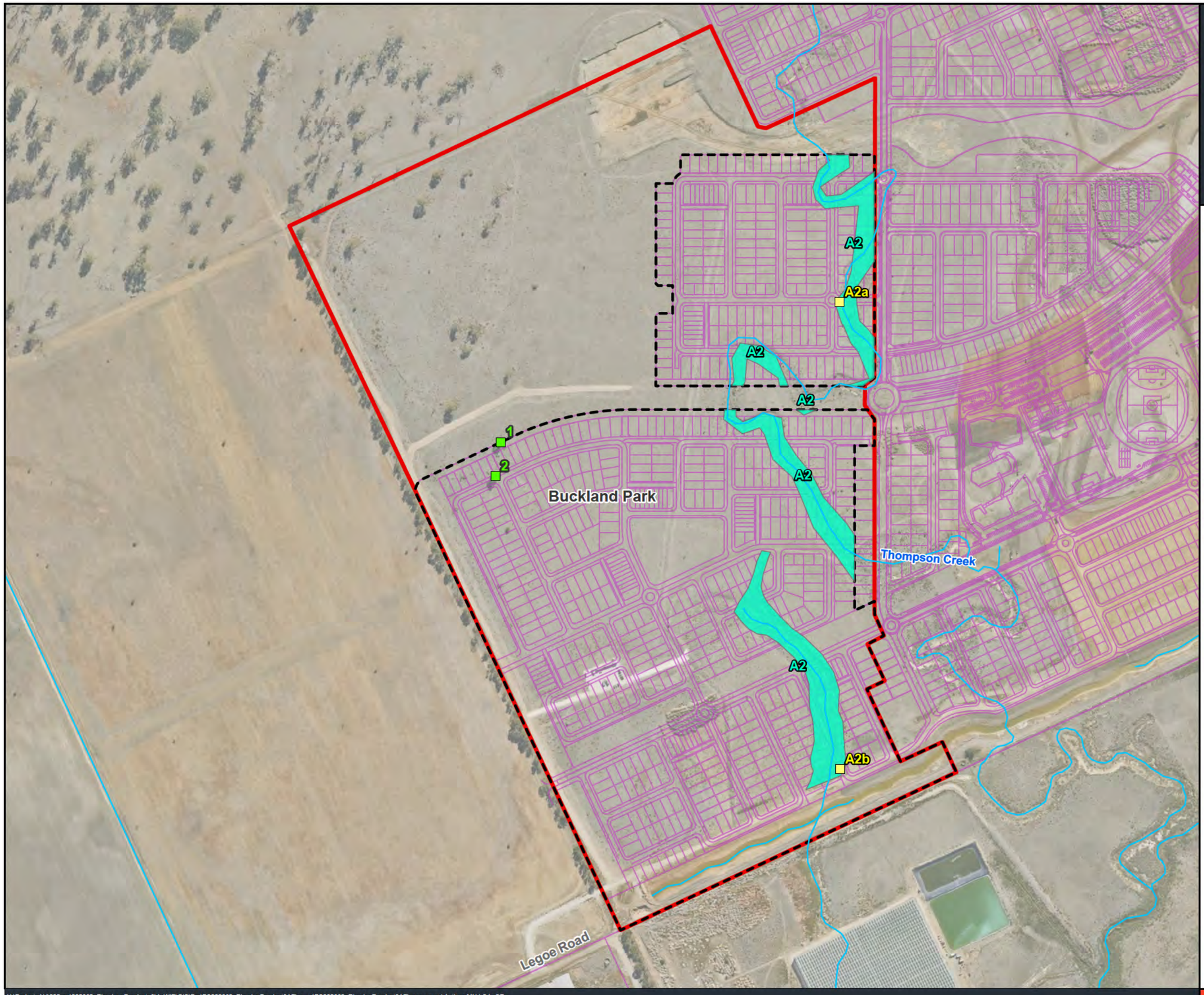
- Black Falcon (*Falco subniger*) (State Rare).
- Common Brushtail Possum (*Trichosurus vulpecula*) (State Rare).
- Elegant Parrot (*Neophema elegans*) (State Rare).
- Grey-headed Flying-fox (*Pteropus poliocephalus*) (nationally Vulnerable and State Rare).
- Little Eagle (*Hieraaetus morphnoides*) (State Vulnerable).
- Peregrine Falcon (*Falco peregrinus*) (State Rare).

Table 4.3 Summary of Tree 2.

Tree ID – 2	
Tree spp. *Eucalyptus camaldulensis ssp. camaldulensis*	
Number of trees – 1	Looking south, easting: 271544, northing: 6162256
Height (m) – 9.5	
Hollows – 1 small 2 large	
Diameter (cm) – 153.0	
Canopy dieback (%) – 15	
Total Biodiversity Score – 6.56	

In good condition with three hollows (one large hollow pictured above) that may provide habitat for fauna including threatened fauna. The tree will provide perching, foraging, roosting and breeding habitat for threatened fauna including:

- Black Falcon (*Falco subniger*) (State Rare).
- Common Brushtail Possum (*Trichosurus vulpecula*) (State Rare).
- Elegant Parrot (*Neophema elegans*) (State Rare).
- Grey-headed Flying-fox (*Pteropus poliocephalus*) (nationally Vulnerable and State Rare).
- Little Eagle (*Hieraaetus morphnoides*) (State Vulnerable).
- Peregrine Falcon (*Falco peregrinus*) (State Rare).



PS225662
Riverlea Precinct 3A

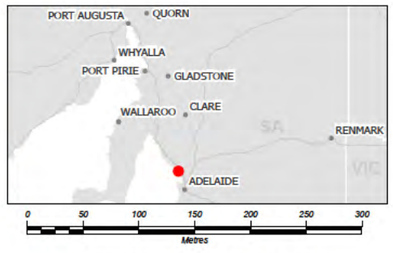
Figure 4.1
Proposed impact of the project

Legend

- BAM sites
- Scattered trees
- Precinct 3A
- Watercourses
- Project area
- Proposed Precinct 3a

Vegetation association

- A2: *Maireana aphylla* (Cotton-bush) open shrubland



Coordinate system: GDA2020 MGA Zone 54
Scale ratio correct when printed at A3

1:5,500 Date: 6/08/2025

GDA 2020

Data sources: WSP, SA Government, MetroMap Australia latest World Imagery Maxar

4.2 Threatened species assessment

4.2.1 *Matters of National Environmental Significance*

The PMST identified a total of two Matters of National Environmental Significance (MNES) relevant to the project area. This included:

- 1 TEC and 53 listed threatened species; and
- 62 listed migratory species.

Each MNES that is identified as known to occur within the study area is discussed in greater detail below.

Focusing on species identified as known to occur by the PMST report only, a total of seven marine species (threatened and/or migratory) including five marine fish, mammals, reptiles or shark and two marine birds (albatross or prion) were considered exclusively marine and were not assessed against the likelihood of occurrence as the project area is considered entirely terrestrial. Therefore, a total of 14 threatened species and 19 migratory species (which excludes those species also listed as threatened) are the relevant MNES to the project identified by the PMST and are discussed further below.

4.2.2 *Threatened Ecological Communities*

The PMST identified one TEC as likely to occur within 5 km of the project area. The nationally Vulnerable Subtropical and Temperate Coastal Saltmarsh was assessed as unlikely to occur based on the desktop and field assessments which highlighted a lack of salt tolerant vegetation present and no tidal influence in the project area.

Table 4.4 Threatened Ecological Communities listed as potentially occurring within 5 km of the project area.

Threatened Ecological Community	Threatened Category	Habitat information	Likelihood of presence
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	The Subtropical and Temperate Coastal Saltmarsh TEC consists of salt tolerant vegetation that is under regular or intermittent tidal influence. In SA, saltmarsh communities that are inudated by weather assisted tides or have groundwater connectivity may also qualify as this TEC. This community often occurs in the Gulfs of SA and regularly comprises *Atriplex* spp., *Tecticornia* spp. and *Frankenia* spp. among others (Department of Climate Change, Energy, the Environment and Water, 2013).	Unlikely – only a small amount of salt tolerant vegetation was recorded during the field assessment (*Atriplex semibicatta* (Berry Saltbush)) and there is no tidal influence in the project area.

Source: Protected Matters Search Tool (Department of Climate Change,, Energy, the Environment and Water, 2025b)

4.2.3 Threatened flora

One nationally listed threatened flora species was identified by the PMST search as potentially occurring within 5 km of the project area, but it was assessed as unlikely to occur in the project area. A BDBSA search found an additional four State listed flora species with records since 1995 within 5 km of the project area. Based on known distributions, records, and suitability of habitat, two State threatened flora species were assessed as possible to occur within the project area:

- *Atriplex australasica* (State Rare).
- *Maireana decalvans* (Black Cotton-bush) (State Endangered).

The full likelihood of occurrence assessment for threatened flora species is provided in Table 4.5 with the location of BDBSA records of threatened flora species within 5 km of the project area (since 1995) provided in Appendix C.

4.2.4 Threatened fauna

A total of 23 nationally listed threatened fauna species were identified by the PMST as potentially occurring or by the BDBSA search with records within 5 km of the project area. Based on known distributions, records, and suitability of habitat, eight nationally listed threatened fauna species was assessed as highly likely or likely to occur:

- Common Greenshank (*Tringa nebularia*) (nationally Endangered and Migratory).
- Curlew Sandpiper (*Calidris ferruginea*) (nationally Critically Endangered and State Endangered).
- Eastern Curlew (*Numenius madagascariensis*) (nationally Critically Endangered and Migratory and State Endangered).
- Grey Plover (*Pluvialis squatarola squatarola*) (nationally Vulnerable and Migratory).
- Grey-headed Flying-fox (*Pteropus Poliocephalus*) (nationally Vulnerable and State Rare).
- Red Knot (*Calidris canutus rogersi*) (nationally Vulnerable and State Endangered).
- Sharp-tailed Sandpiper (*Calidris acuminata*) (nationally Vulnerable)
- Slender-billed Thornbill (Gulf St Vincent) (*Acanthiza iredalei rosinae*) (nationally and State Vulnerable).

In addition, based on known distributions, records, and suitability of habitat nine nationally listed threatened fauna species were assessed as possible to occur in the project area.

A BDBSA search found an additional 28 State listed threatened fauna species with records within 5 km of the project area. Based on known distributions, records, and suitability of habitat, nine State listed threatened fauna species were assessed as highly likely or likely to occur in the project area:

- Australasian Darter (*Anhinga novaehollandiae novaehollandiae*) (State Rare).
- Banded Stilt (*Cladorhynchus leucocephalus*) (State Vulnerable).
- Black Falcon (*Falco subniger*) (State Rare).
- Common Brushtail Possum (*Trichosurus vulpecula*) (State Rare).
- Elegant Parrot (*Neophema elegans elegans*) (State Rare).
- Great Crested Grebe (*Podiceps cristatus australis*) (State Rare).
- Little Eagle (*Hieraaetus morphnoides*) (State Vulnerable).
- Little Egret (*Egretta garzetta nigripes*) (State Rare).
- Peregrine Falcon (*Falco peregrinus macropus*) (State Rare).

In addition, based on known distributions, records, and suitability of habitat 11 State listed threatened fauna species were assessed as possible to occur in the project area.

The full likelihood of occurrence assessment for threatened fauna species is provided in Table 4.5 with the location of BDBSA records of threatened flora species within 5 km of the project area (since 1995) provided in Appendix D.

Table 4.5 Listed threatened flora and fauna species identified as potentially occurring within 5 km of the project area.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Plants								
Atriplex australasica		R		1	2022		Found mostly in the southern Mount Lofty Ranges and Murray regions, with scattered records on York Peninsula, Kangaroo Island and South-east, growing in blackish soil near the coast (Seeds of South Australia, 2024)	Possible – Very recent records and some suitable habitat is present in the project area. Not observed during the field assessment.
Brachyscome paludicola	Swamp Daisy	R		1	2006		Found along the Murray River and in the South-east of South Australia, growing on inundated clay soils and common in seasonally wet, red gum dominated flats (Seeds of South Australia, 2024).	Unlikely – Recorded within the last 20 years, some suitable habitat (red gum flats) is present but not observed in the project area.
Maireana decalvans	Black Cotton-bush	E		1	2024		Found in heavy seasonally waterlogged soil. Recorded in the Mount Lofty Ranges and in Danggali Conservation Park, Murray region (Seeds of South Australia, 2024).	Possible – Very recent records and some suitable habitat (seasonally waterlogged soil) is present in the project area. Not observed during the field assessment.
Maireana rohrlachii	Rohrlach's Bluebush	R		1	1998		Often on slightly saline and/or gypseous, sandy loam soils, often fringing lakes or in seasonally wet areas (VicFlora, 2025).	Unlikely – Not recorded in the past 20 years and not observed during the field assessment.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Tecticornia flabelliformis	Bead Glasswort	V	VU	2		Known	Endemic to southern Australia where it is found in within saline wetlands on coastal clay flats (sabkha) over gypsum deposits (fragipans) or on the margins of inland salt lakes. Bead glasswort generally occurs on periodically (but not regularly) inundated depressions on clay and occasionally sandy soils, often (but not always) in saline areas (Department of Climate Change, Energy, the Environment and Water, 2024i)	Unlikely – No past records but some suitable habitat is present. Not observed during the field assessment.
Birds								
Acanthiza iredalei rosinae	Slender-billed Thornbill (Gulf St Vincent)	V	VU	1	2024	Known	The subspecies is patchily distributed around the northern shores of the Gulf of St Vincent, South Australia, from St Kilda to Ardrossan. It is mainly restricted to chenopod shrublands, particularly samphire dominated by *Tecticornia arbuscula* (Shrubby glasswort), on narrow coastal saline mudflats usually within 20m of a tidal channel or saline lake (Department of the Environment, 2015).	Highly likely – Very recent records and some suitable habitat is present nearby (*Tecticornia* spp.).

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Anhinga novaehollandiae novaehollandiae	Australasian Darter	R		1	2023		The Darter is found in wetlands and sheltered coastal waters. It prefers smooth, open waters, for feeding, with tree trunks, branches, stumps or posts fringing the water, for resting and drying its wings. Most often seen inland, around permanent and temporary water bodies at least half a metre deep, but may be seen in calm seas near shore, fishing (BirdLife Australia, 2025).	Highly likely – Very recent records and some suitable habitat exists along Thompson creek and in man-made waterways in the project area, although it is not preferred.
Ardea intermedia plumifera	Plumed Egret	R		1	2015		Frequents freshwater wetlands, pastures, croplands and tidal mudflats and floodplains (Pizzey & Knight, 2024)	Possible – Recorded in the last 10 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Arenaria interpres interpres	Ruddy Turnstone	R	VU	1	2006	Known	Occurs in Australia in the summer non-breeding season, widespread, occurs in coastal regions. Prefers rocky shores or beaches with rotting seaweed (Department of Climate Change, Energy, the Environment and Water, 2024d)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Biziura lobata menziesi	Musk Duck	R		1	2024		Found where there is deep water with extensive bordering reedbeds, e.g. freshwater marshes, swamps and lakes. They are also to be found in estuaries (e.g. Murray estuary), lagoons and sheltered coasts (Birds SA, 2025)	Possible – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred as this species often prefers larger, deeper bodies of water.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Botaurus poiciloptilus	Australasian Bittern	E	EN	1	2002	Known	Freshwater wetlands and rarely in estuaries or tidal wetlands, favouring wetlands dominated by sedges, rushes and reeds growing over a muddy or peaty substrate (TSSC 2019). (Threatened Species Scientific Committee, 2019).	Unlikely – Not recorded in the last 20 years and there is limited habitat (sedges, rushes and reeds) for this species to shelter in.
Bubulcus ibis coromandus	Eastern Cattle Egret	R		1	2007		The Cattle Egret occurs in shallow, open and fresh wetlands including meadows and swamps with low emergent vegetation and abundant aquatic flora. They are often found in open paddocks, pastures, croplands and drains (Pizzey & Knight, 2024).	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Calidris acuminata	Sharp-tailed Sandpiper		VU	1	2024	Known	Sharp-tailed sandpipers occur within all states of Australia. They are found mostly in the south-east and are widespread in both inland and coastal locations. The species also occurs in both freshwater and saline habitats. The species utilises fresh and hypersaline environments, feeding along the edge of water on mudflats, coastal and inland wetlands, and sewage pond (Department of Climate Change, 2024e)	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Calidris canutus rogersi	Red Knot	E	VU	1	2020	Known	This species breeds in the Arctic, however in the non-breeding season they are strictly coastal bird, frequenting tidal mudflats or sandflats, sandy beaches of sheltered coasts, rocky shelves, bays, lagoons and harbours, occasionally also oceanic beaches and saltmarshes (Department of Climate Change, Energy, the Environment and Water, 2024f)	Highly likely – Recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Calidris ferruginea	Curlew Sandpiper	E	CR	1	2023	Known	Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters (Department of Climate Change, Energy, the Environment and Water, Department of Climate Change, 2023a).	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Calidris tenuirostris	Great Knot	E	VU	1	2015	Known	This species inhabits intertidal mudflats and sandflats in sheltered coasts, including bays, harbours and estuaries. They forage on the moist mud, and they often roost on beaches or in nearby low vegetation, such as mangroves or dune vegetation (Department of Climate Change, Energy, the Environment and Water, 2024a)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Cereopsis novaehollandiae novaehollandiae	Cape Barren Goose	R		1	2002		The Cape Barren Goose is found on the south-eastern coast of Australia, the southern coast of Western Australia and in south-eastern Victoria. It is found on offshore islands, usually granite, in areas of pasture, tussock grass or low heathy scrub. They are a grazing bird, feeding predominantly on the common island tussock grass *Poa poiformis* (Birds in Backyards, 2025).	Possible – Not recorded in the last 20 years and it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Charadrius mongolus mongolus	Lesser Sand Plover	E	EN, Mi	1, 2	2015	Known	The lesser sand plover breeds in the northern hemisphere and undertakes annual migrations to and from southern feeding grounds for the austral summer. Within Australia, the lesser sand plover is widespread in coastal regions and has been recorded in all states. During the non-breeding season, the species is almost strictly coastal, preferring sandy beaches, mudflats of coastal bays and estuaries, sand-flats and dunes near the coast and occasionally frequenting mangrove mudflats in Australia (Threatened Species Scientific Committee, 2016).	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Cladorhynchus leucocephalus	Banded Stilt	V		1	2024		Banded Stilts are found mainly in saline and hypersaline (very salty) waters of the inland and coast, typically large, open and shallow (BirdLife Australia, 2025)	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Corcorax melanorhamphos	White-winged Chough	R		1	2002		Found in open woodlands and forests. They prefer the wetter areas, with lots of leaf-litter, for feeding, and available mud for nest building. (Pizzey & Knight, 2024)	Unlikely – Not recorded in the last 20 years and there is limited suitable habitat in the project area.
Coturnix ypsilophora australis	Brown Quail	V		1	2020		Cryptic species that occurs in dense crops (especially oats), irrigated pastures, rank grasslands and sedgelands, especially where native species predominate, and often bordering swamps (Department for Environment and Heritage, 2008)	Possible – Recent records and some suitable habitat exists in degraded understorey adjacent scattered trees in the project area.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Egretta garzetta nigripes	Little Egret	R		1	2024		Found in tidal mudflats, saltmarshes, mangroves and freshwater wetlands (Pizzey & Knight, 2024)	Highly Likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Falco peregrinus macropus	Peregrine Falcon	R		1	2023		The Peregrine Falcon is found in most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas. It requires abundant prey and secure nest sites, and prefers coastal and inland cliffs or open woodlands near water, and may even be found nesting on high city buildings (BirdLife Australia, 2025)	Highly likely – Very recent records and suitable habitat (scattered trees) are present in the project area for perching, roosting and breeding.
Falco subniger	Black Falcon	R		1	2023		The Black Falcon is found along tree-lined watercourses and in isolated woodlands, mainly in arid and semi-arid areas (BirdLife Australia, 2025)	Highly likely – Very recent records and suitable habitat (scattered trees) are present in the project area for perching, roosting and breeding.
Falcunculus frontatus frontatus	Eastern Shriketit	R		1	2023		Eucalyptus woodlands and forest, within a wide range of woodland/forest communities. Prefers dense grasslands, often on the edges of open forests, and bracken (BirdLife Australia, 2025)	Unlikely – Despite very recent records, there is no suitable habitat (connected and unfragmented woodland) present in the project area.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Gallinago hardwickii	Latham's Snipe	R	VU, Mi	1, 2	2012	Known	Latham's Snipe occurs in soft wet ground or shallow water with tussocks and other growth; wet parts of paddocks; irrigated areas; scrub or open woodland; samphire saltmarshes and mangrove fringes (Department of Climate Change, Energy, the Environment and Water, 2024g)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Haematopus fuliginosus fuliginosus	Sooty Oystercatcher	R		1	2023		The Sooty Oystercatcher is strictly coastal, usually within 50 m of the ocean. It prefers rocky shores, but will be seen on coral reefs or sandy beaches near mudflats. It breeds on offshore islands and isolated rocky headlands (Birds in Backyards, 2025)	Unlikely – Despite very recent records this species is primarily observed within close proximity to the coast and there is no suitable habitat (beaches, rocky or shingle coasts) present in the project area.
Haematopus longirostris	Pied Oystercatcher	R		1	2024		The Australian Pied Oystercatcher inhabits mudflats, sandbanks, sandy ocean beaches, and less often along rocky or shingle coasts. It is rarely recorded far from the coast (Birds in Backyards, 2025)	Unlikely – Despite very recent records this species is primarily observed within close proximity to the coast and there is no suitable habitat (beaches, rocky or shingle coasts) present in the project area.
Haliaeetus leucogaster	White-bellied Sea Eagle	E		1	2023		Found in coastal habitats (especially those close to the sea-shore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands (Department of Agriculture, Water and the Environment, 2020b)	Possible – Very recent records and suitable habitat (scattered trees) are present in the project area for perching, although not preferred. May occur as a flyover only.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Hieraaetus morphnoides	Little Eagle	V		1	2014		Widespread over diverse habitats; forest, woodland, open scrub, tree-lined watercourses of interior Australia such as the Murray River. Prefers areas where open country intermixes with wooded or forested hills, as in farmland, irrigated land (Morcombe, 2021).	Likely – Recorded in the last 20 years and there is suitable habitat (scattered trees) present in the project area for perching, roosting and breeding.
Hylacola cauta cauta	Shy Heathwren	R		1	2000		Inhabits mallee woodlands with a relatively dense understorey of shrubs and heath plants (NSW Government, 2025).	Unlikely – Not recorded in the last 20 years and there is limited suitable habitat (dense understorey) in the project area.
Ixobrychus dubius	Black-backed Bittern	E		1	2001		The Australian Little Bittern occurs locally across south-eastern and south-western Australia (during spring and summer). It occurs in diverse freshwater habitats, mainly where tall rushes, reeds, Typha (cumbungi), shrub thickets or other dense cover is inundated by at least 30cm of water. It can be found in vast swamps, it often inhabits small patches of dense wetland vegetation such as Typha along drains or in small urban lakes (BirdLife Australia, 2025)	Unlikely – Not recorded in the last 20 years and there is limited habitat (tall rushes and reeds) for this species to shelter in.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Limosa lapponica baueri	Bar-tailed Godwit	R	EN, Mi	1, 2	2021	Known	In Australia, Alaskan bar-tailed godwit mainly occurs along the north and east coasts. In South Australia it has mostly been recorded around coasts from Lake Alexandrina to Denial Bay. Bar-tailed godwits usually forage near the edge of water or in shallow water within tidal estuaries and harbours. Roosting tends to occur on large intertidal sandflats, spits, and banks (Department of Climate Change, Energy, the Environment and Water, 2024h)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Limosa limosa melanuroides	Black-tailed Godwit	R	EN, Mi	1, 2	2016	Known	During the austral summer non-breeding season, black-tailed godwits are found in all states and territories of Australia; however, coastal regions support the highest densities of the species. Black-tailed godwits exhibit substantial site-specific differences in their foraging behaviour. Feeding habitat includes areas of mud or soft, wet sand within sandflats, intertidal mudflats, saltmarshes, and the beaches of oceanic coastlines, bays, and estuaries. They are usually found in sheltered bays, estuaries, and lagoons with large intertidal mudflats and/or sandflats. Further inland, the species can also be found around muddy lakes and within wetlands with water less than 10 cm deep (Department of Climate Change, Energy, the Environment and Water, Department of Climate Change, 2024b)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Neophema chrysogaster	Orange-bellied Parrot	E	CR	1	2006		Orange-bellied Parrots live in coastal and sub-coastal areas, preferring peninsulas and islands. They live in low scrublands, shore heathlands and salt marshes as well as grassy areas. They are migratory birds that breed in Tasmania in the summer months and migrate to the southern coast of mainland Australia, as far west as The Coorong in South Australia, and east in Victoria to Westernport Bay (Department of Environment, Land, Water and Planning, 2016)	Unlikely – Recorded in the last 20 years but there is no suitable habitat (heathlands or scrublands) present in the project area.
Neophema chrysostoma	Blue-winged Parrot	V	VU	1, 2	2012	Known	The Blue-winged Parrot inhabits a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones. The species can also be seen in altered environments such as airfields, golf-courses and paddocks (Department of Climate Change, Energy, the Environment and Water, 2023b).	Possible – Recorded in the last 20 years and there is some suitable habitat (hollow bearing scattered trees and open grassy woodland) present or in close proximity to the project area.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Neophema elegans elegans	Elegant Parrot	R		1	2024		The Elegant Parrot occurs in eastern parts of South Australia, north to the Flinders Ranges and west to the Eyre Peninsula. It can be found in a wide variety of habitats, including grasslands, shrublands, mallee, woodlands and thickets, bluebush plains, heathlands, saltmarsh and farmland (BirdLife Australia, 2025)	Highly likely – Very recent records and there is some suitable habitat (hollow bearing scattered trees and open grassy woodland) present or in close proximity to the project area.
Neophema petrophila zietzi	Rock Parrot	R		1	2024		Occurs along the coast, adjacent or on rocky islands, sandy beaches often near cliffs and headlands (Pizzey & Knight, 2024)	Possible – Very recent records although this species prefers coastal habitat and rocky shores which do not occur in the project area.
Numenius madagascariensis	Eastern Curlew	E	CR, Mi	1, 2	2024	Known	This species is widespread in coastal regions in the northeast and south of Australia and scattered in other coastal areas. It is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons (Department of Climate Change, Energy, the Environment and Water, 2023d)	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Oxyura australis	Blue-billed Duck	R		1	2016		Prefers large dams and lakes and well-vegetated freshwater swamps (Pizzey & Knight, 2024)	Possible – Recorded in the last 10 years and some suitable habitat exists in man-made waterways in the project area, although it is not preferred. This species often prefers larger, deeper bodies of water.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Plegadis falcinellus	Glossy Ibis	R		1	2013		Glossy Ibis are a rare to uncommon species in South Australia. They are most likely to be found in the Murray Mallee region along the River Murray and lakes Albert and Alexandria, or in the South East or North East of the state. They favour shallow freshwater lakes, swamps, sewage ponds, floodplains etc. They are less common in sheltered marine habits. They are also found in rice fields (Birds SA, 2025).	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Pluvialis squatarola squatarola	Grey Plover		VU, Mi	1, 2	2024	Known	The Grey Plover is almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts (Department of Climate Change, Energy, the Environment and Water, 2024c)	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Podiceps cristatus australis	Great Crested Grebe	R		1	2024		Favouring large deep open bodies of freshwater, the Great Crested Grebe is most commonly found inhabiting rivers, lagoons, lakes, swamps, reservoirs, salt fields, estuaries and bays (Birds in Backyards, 2025)	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Rostratula australis	Australian Painted Snipe	E	EN	1, 2	2000	Known	Occurs in shallow freshwater (occasionally brackish) wetlands, both ephemeral and permanent, such as lakes, swamps, claypans, inundated or waterlogged grassland/saltmarsh, dams, rice crops, sewage farms and bore drains, rushes and reeds, low scrub, Muehlenbeckia spp. (lignum), open timber or samphire (Department of Climate Change, Energy, the Environment and Water, 2022)	Possible – Not recorded in the last 20 years but some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Spatula rhynchotis	Australasian Shoveler	R		1	2019		Prefers fresh and saline lakes and well-vegetated freshwater wetlands. Also occurs in coastal inlets, floodwaters and sewage ponds (Morcombe, 2021)	Possible – Recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Stagonopleura guttata	Diamond Firetail	V	VU	1, 2	2003	Known	Endemic to Australia, occurring mainly on the inland slopes of the Great Dividing Range and in the AMLR/Eyre Peninsula region of SA. Reside in a wide range of Eucalypt dominated vegetation communities that have a grassy understorey, including woodland, forest and mallee. Most occur on the inland slopes of the Great Dividing Ranges, with only small pockets near the coast (Department of Climate Change, Energy, the Environment and Water, 2023c)	Possible – Not recorded in the last 20 years but some suitable habitat (scattered trees and a grassy understorey) exists in the project area. Past records in very close proximity to the project area.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Sterna hirundo longipennis	Common Tern	R		1	2000		Prefers offshore waters, beaches, bays, estuaries and is sometimes found on sandflats and salt fields (Pizzey & Knight, 2024)	Possible – Not recorded in the last 20 years but some suitable habitat exists in man-made waterways in the project area, although it is not preferred.
Sternula albifrons sinensis	Little Tern	E	VU	1	2005		Frequents coastal waters, bays, inlets and saline or brackish lakes and salt fields (Department of Climate Change, Energy, the Environment and Water, 2025a)	Possible – Recorded in the last 20 years and some suitable habitat exists in man-made waterways in the project area, although it is not preferred.
Sternula nereis nereis	Australian Fairy Tern	E	VU	1, 2	2020	Known	Habitat essentially marine: sheltered coasts, bays, inlets, estuaries, coastal lagoons, ocean beaches – rarely out to sea or out of sight of land. Also occurs in wetlands near the coast, including salt ponds and lakes. Favours sites with sand spits and small sand islets in river-mouth channels (Department of Agriculture, Water and the Environment, 2020a)	Unlikely – Recorded in the last 10 years but there is minimal suitable habitat (ocean beaches, lagoons) present in the project area.
Stictonetta naevosa	Freckled Duck	V		1	2012		Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds (Birds in Backyards, 2025)	Possible – Recorded in the last 20 years and some suitable habitat exists in man-made waterways in the project area, although it is not preferred. This species often prefers deeper bodies of water.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Thinornis cucullatus cucullatus	Eastern Hooded Plover	V	VU	1, 2	2007	Known	The hooded plover (eastern) is widely dispersed in south-eastern Australia. This species inhabits ocean beaches, particularly wide beaches backed by dunes with large amounts of seaweed, creek mouths and inlet entrances. It may also occur on near-coastal saline and freshwater lakes and lagoons, tidal bays and estuaries, on rock platforms, or on rocky or sandy reefs close to shore (Department of the Environment, 2014)	Unlikely – Recorded in the last 20 years but there is minimal suitable habitat (ocean beaches and sandy beaches) present in the project area.
Tringa nebularia	Common Greenshank		EN, Mi	1, 2	2024	Known	Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass (Department of Climate Change, Energy, the Environment and Water, 2024j)	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Xenus cinereus	Terek Sandpiper	R	VU, Mi	1, 2	2010	Known	Primarily restricted to coastal regions, but has been observed in the NT, NSW, WA and SA. Occurs on tidal mudflats, estuaries, coastal swamps and salt fields (Department of Climate Change, Energy, the Environment and Water, 2024k)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Zapornia tabuensis	Spotless Crake	R		1	2001		Mostly found in well vegetated freshwater wetlands with rushes and reeds. Will also frequent muddy areas, reedbeds or wetlands (Willson & Bignall, 2009)	Unlikely – Not recorded in the last 20 years and there is limited habitat (rushes and reeds) for this species to shelter in.
Mammals								

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Pteropus poliocephalus	Grey-headed Flying-fox	R	VU	1, 2	2020		Grey-headed Flying-foxes forage up to 40 km from their roost at Botanic Park each night. Food plants are typically planted trees, both native and exotic, that provide fruit or a rich source of nectar (Department of Agriculture, Water and the Environment, 2021) This species is likely to occur within the project area; however, they would only be expected to visit for short periods if suitable flower or fruit resources are available.	Likely – Very recent records and there are some suitable food resources (*Eucalyptus* sp.) in the project area. The nearest known breeding camp in Botanic Park, Adelaide, is approximately 30 km away.
Trichosurus vulpecula	Common Brushtail Possum	R		1	2021		Utilises various woodland habitats and suburban environs. Feeds on flowers, fruit, buds and leaves of native vegetation. Requires hollows (within dead or alive tree) or on ground for daytime nesting (van Dyck & Strahan, 2008).	Highly likely – Very recent records and there is suitable habitat (hollow bearing trees) in the project area.

Source; 1- BDBSA, 2 - Protected matters search tool,
NP&W Act; E= Endangered, V = Vulnerable, R= Rare
EPBC Act; CR = Critically endangered, EN = Endangered; VU = Vulnerable; Mi = Migratory

4.2.5 Migratory species

A total of 19 nationally listed migratory species were identified by the PMST search as potentially occurring within 5 km of the project area. Based on known distributions, records, and suitability of habitat, nine nationally listed migratory species were assessed as highly likely or likely to occur within the project area:

- Common Sandpiper (*Actitis hypoleucos*) (nationally Migratory and State Rare)
- Double-banded Plover (*Charadrius bicinctus bicinctus*) (nationally Migratory).
- Fork-tailed Swift (*Apus pacificus pacificus*) (nationally Migratory).
- Marsh Sandpiper (*Tringa stagnatilis*) (nationally Migratory).
- Pacific Golden Plover (*Pluvialis fulva*) (Nationally Migratory and State Rare).
- Pectoral Sandpiper (*Calidris melanotos*) (nationally Migratory and State Rare).
- Red-necked Stint (*Calidris ruficollis*) (nationally Migratory).
- Sanderling (*Calidris alba alba*) (nationally Migratory and State Rare).
- Whimbrel (*Numenius phaeopus variegatus*) (nationally Migratory and State Rare).

In addition, based on known distributions, records, and suitability of habitat seven nationally listed migratory species were assessed as possible to occur within the project area.

The full likelihood of occurrence assessment for migratory species is provided in Table 4.6.

Given the projects proximity to the Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara, a large amount of threatened and migratory shorebird species were highlighted in the PMST report with many species also previously recorded in the study area. Many of these species have specific habitat requirements including but not limited to tidal mudflats or saltmarsh and are generally confined to coastal areas and wetlands. A portion of the Thompson Creek and man-made waterways occur in the project area and may provide suitable habitat for threatened and migratory species, although this habitat is unlikely to be preferred and since the damming of Thompson Creek, the creek is not frequently inundated. In addition, a portion of the Thompson Creek is also proposed to be impacted as a part of the project (see Figure 4.1 – vegetation association A2). As a part of Precinct 3A and the broader Riverlea Park major development, the applicant has established and will continue to establish several man-made waterways to better manage water in the greater area given the area is historically prone to flood waters after significant rainfall events. The establishment of these waterways will not only help the applicant better mitigate against potential flooding events but also provide habitat for threatened and migratory shorebird species, inland and away from the coast in an area largely cleared and devoid of suitable habitat.

Table 4.6 Listed migratory species identified as potentially occurring within 5 km of the project area.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Birds								
Actitis hypoleucos	Common Sandpiper	R	Mi	1, 2	2024	Known	Found along all coastlines of Australia and in many areas inland. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. Has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties (Geering, Agnew , & Harding, 2007; Higgins & Davies, 1996).	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Apus pacificus pacificus	Fork-tailed Swift		Mi	1, 2	2024		Widespread but almost exclusively aerial. Mostly occur over inland plains, over cliffs and beaches and sometimes well out to sea or in dry or open habitats (Higgins, 1999).	Likely – Very recent records but this species is almost exclusively aerial. May occur as flyover only.
Calidris alba alba	Sanderling	R	Mi	1, 2	2024	Known	In South Australia they are widespread between the Victorian border and Kingston, and also occur on The Coorong, the mouth of the Murray River, then west and northwest to Kangaroo Island, Yorke and Eyre Peninsulas to Streaky Bay. The species is almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks. (Higgins & Davies, 1996).	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Calidris melanotos	Pectoral Sandpiper	R	Mi	1, 2	2024	Known	This species prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands (Higgins & Davies, 1996).	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Calidris pugnax	Ruff	R	Mi	1, 2	2004	Known	In Australia the Ruff is found on generally fresh, brackish of saline wetlands with exposed mudflats at the edges. It is found in terrestrial wetlands including lakes, swamps, pools, lagoons, tidal rivers, swampy fields and floodlands (Higgins & Davies, 1996).	Possible – Not recorded in the last 20 years but some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Calidris ruficollis	Red-necked Stint		Mi	1, 2	2024	Known	This species inhabits coastal and intertidal mudflats, sheltered inlets, bays and lagoons. It has also been known to use freshwater, brackish and saltwater wetlands and less often, sandy beaches and rocky shorelines (BirdLife Australia, 2025).	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Calidris subminuta	Long-toed Stint	R	Mi	1, 2	2008	Known	Long-toed Stint prefer shallow freshwater or brackish wetlands including lakes, swamps, river floodplains, streams, lagoons and sewage ponds. The species is also fond of areas of muddy shoreline, growths of short grass, weeds, sedges, low or floating aquatic vegetation, reeds, rushes and occasionally stunted samphire (Higgins & Davies, 1996).	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Charadrius bicinctus bicinctus	Double-banded Plover		Mi	1, 2	2021	Known	Prefers wide beaches, tidal mudflats, saltmarsh and wide sparsely vegetated margins of saline and freshwater wetlands (Pizzey & Knight, 2024).	Likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Charadrius veredus	Oriental Plover		Mi	2		Known	Breeding visitor that initially inhabits coastal areas such as estuarine mudflats and sandbanks, on sandy or rocky ocean beaches or nearby reefs. Individuals then move to flat, open, semi-arid or arid grasslands, where the grass is short and sparse, and interspersed with hard, bare ground (Pedler, 1982)	Unlikely – No past records despite some suitable habitat along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Limicola falcinellus	Broad-billed Sandpiper		Mi	2		Known	Prefers tidal mudflats, reefs, saltmarsh, freshwater wetlands, sewage ponds and muddy areas (Pizzey & Knight, 2024)	Unlikely – No past records despite some suitable habitat along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Numenius minutus	Little Curlew		Mi	1, 2	1998	Known	The Little Curlew can be found in dry grasslands, floodplains, margins of drying swamps and tidal mudflats, saltfields and sewage ponds (Pizzey & Knight, 2024)	Possible – Not recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Numenius phaeopus variegatus	Whimbrel	R	Mi	1, 2	2017	Known	Most commonly found in estuaries, mangroves, tidal mudflats and flooded paddocks or sewage ponds (Pizzey & Knight, 2024)	Likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Pandion haliaetus cristatus	Eastern Osprey	E	Mi	1, 2	2007	Known	Prefers coastal and terrestrial wetlands and require a range of habitats from coastal cliffs, estuaries, mangroves and large lakes for foraging (Department of Agriculture, Water and the Environment, 2020b)	Possible – Recorded in the last 20 years and suitable habitat (scattered trees) are present in the project area for perching and roosting.
Phalaropus lobatus	Red-necked Phalarope		Mi	1, 2	2006	Known	An irregular summer migrant to Australia where it occurs in shallow pools, commercial saltfields, tidal mudflats, beaches, saltmarsh and freshwater wetlands (Pizzey & Knight, 2024)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Pluvialis fulva	Pacific Golden Plover	R	Mi	1, 2	2024	Known	Occurs in a variety of habitats from estuaries to mudflats, saltmarshes and on the margins of shallow open inland swamps and paddocks (Pizzey & Knight, 2024)	Highly likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Scientific name	Common name	NP&W Act	EPBC Act	Data source	Date of last record	PMST likelihood	Species known habitat preferences	Likelihood of use for habitat
Tringa brevipes	Grey-tailed Tattler	R	Mi	1, 2	2004	Known	Inhabits estuaries, tidal mudflats, mangroves and shallow river margins both coastal and inland (Pizzey & Knight, 2024)	Possible – Not recorded in the last 20 years but some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Tringa glareola	Wood Sandpiper	R	Mi	1, 2	2008	Known	Freshwater swamps, lakes, flooded pasture; less frequently brackish waters, occasionally mangroves (Morcombe, 2021)	Possible – Recorded in the last 20 years and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Tringa stagnatilis	Marsh Sandpiper		Mi	1, 2	2022	Known	Marsh Sandpipers inhabit fresh or brackish (slightly salty) wetlands such as rivers, water meadows, sewage farms, drains, lagoons and swamps (Birds in Backyards, 2025).	Likely – Very recent records and some suitable habitat exists along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.
Tringa totanus	Common Redshank		Mi	2		Known	Recorded in scattered locations around Australia including in the ICI Saltfields, St Kilda and Bool Lagoon in South Australia. Prefers sheltered coastal wetlands such as bays, river estuaries, lagoons, inlets and saltmarsh (with bare open flats and banks of mud) (Higgins & Davies, 1996)	Unlikely – No past records despite some suitable habitat along Thompson creek when inundated and in man-made waterways in the project area, although it is not preferred.

Source; 1- BDBSA, 2 - Protected matters search tool
NP&W Act; E = Endangered, R = Rare
EPBC Act; Mi = Migratory

4.3 Cumulative impacts

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

The cumulative impacts must consider all the clearance that is likely to result from the application, including both direct and indirect impacts. Past native vegetation clearance applications have been submitted and approved in the area as a part of the Riverlea Park major development, including but not limited to Precinct 2 and associated with the management of water and drainage in the broader area.

4.3.1 Direct impacts

The project will result in the clearance of up to two scattered trees of species *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum) and 3.84 ha of *Maireana aphylla* (Cotton-bush) open shrubland (A2).

4.3.2 Indirect impacts

Indirect impacts of the project include but are not limited to:

- Temporary noise generation, which may impact fauna species, including those species listed as threatened or migratory in the area during construction.
- Possible alteration to local hydrology with an increase in non-permeable surfaces, though impacts to vegetation are unlikely to extend further than clearance applied for under this application.
- Any potential impacts on the root zone of vegetation, such as adding fill to adjust ground level, compaction of soils, severing of roots through trenching for infrastructure, and the construction of hard surfaces which may reduce the infiltration of water. WSP recommends obtaining advice from a qualified arborist to ensure tree protection zones are protected, and the use of minimal impact methods for construction in sensitive areas.
- Any possible impacts from temporary dust generation during construction works, including smothering of vegetation.
- Portions of the Thompson Creek outside the project area in the broader Riverlea Park major development have already been modified as a part of previous stages of development. Further modification of the Thompson Creek is proposed as a part of this application and may result in a change in vegetation composition and density in the project area. As a part of this precinct and with past and future stages of the development, areas of the Thompson Creek are proposed to be cleared and ultimately filled for housing. The application of fill across the broader development is necessary as a part of flood mitigation. Until modification of the Thompson Creek as a part of the broader Riverlea Park major development is completed, the effects of modifying and changing the flow and direction of this waterway are unknown but should be considered as a part of this application and in any future applications.

4.4 Mitigation hierarchy

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

In addressing the Mitigation Hierarchy for the Precinct 3A area, Walker has considered the main themes of: **a) avoiding native vegetation clearance**, and where avoidance cannot be achieved, **b) minimising the extent of clearance**, and **c) rehabilitation measures** that restore habitat and degraded ecosystems. Walker is also conscious of minimising impacts on biological diversity, soil, water, and other natural resources, threatened species and ecological communities under the EPBC Act, and NP&W Act.

Avoidance – outline measures taken to avoid clearance of native vegetation.
e.g. making adjustments to the location, design, size or scale of the activity in order to reduce the scale of the impact.

Much of the higher biodiversity value in the general area, is further north and north-west in the broader Precinct 3 area. These environmentally significant areas are proposed to be retained as open woodland reserves. The Precinct 3A development area is on previously cleared farmland with scattered trees and other limited patches of remnant native vegetation. Out of a total of 50.16 ha of vegetation proposed to be impacted, 46.32 ha is exotic vegetation (cleared farmland). A row of established, planted mature trees (mainly of species *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum)) follow the western boundary of the project area – see Figure 4.2. Walker proposes to retain as many of these planted, established trees as possible. These trees will assist in providing windbreaks and shade, enhance the amenity and biodiversity of the area, and help to provide further habitat for fauna including threatened fauna. In addition, retaining these established trees will minimise impact on soil disturbance and sedimentation from water runoff.

Based on the existing topographical investigations, it is apparent that historic farming practices have significantly degraded many sensitive natural features within the project area. Coupled with a few restoration strategies in open space areas, stormwater channels, weed management, etc., development in the project area should progressively improve the overall biodiversity and amenity of the area.

Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative).
e.g. located the development in area where vegetation is sparser or more degraded or does not contain threatened species, etc.

Walker specifically chose the Precinct 3A area because much of the area is degraded and highly modified due to ploughing, recent livestock grazing, and high levels of weed infestation. Native vegetation within Precinct 3A is mainly confined along the Thompson Creek with the remainder of the project area comprising native scattered trees over introduced grasses and herbs. Therefore, the development minimises the extent of native vegetation clearance, while contemplating future planning and development scenarios for the remaining Precinct 3 area.

Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.
e.g. if clearance is only temporary, actions take to re-establish the vegetation after clearance has occurred.

As a part of Precinct 3A and the broader Riverlea Park major development, the applicant has established and will continue to establish several man-made waterways to better manage water in the greater area given the area is historically prone to flood waters after significant rainfall events. The establishment of these waterways will not only help the applicant better mitigate against potential flooding events but also provide habitat for threatened and migratory shorebird species, inland and away from the coast in an area largely cleared and devoid of suitable habitat. Previously established drainage channels within the Riverlea development have resulted in the natural regeneration of native flora species

including *Tecticornia* sp. (Samphire) and *Sueda australis* (Austral Seablite) as shown in Figure 4.3 near the Riverlea Discovery Centre.

The project proposes to facilitate sustainable urban development while balancing other issues such as flooding and stormwater management. The stormwater management measures include implementing a series of gravity-fed drainage channels that will direct and clean stormwater flows. The graded channels are typically within areas comprising high concentrations of non-native vegetation previously cleared, modified or utilised for agricultural activities such as cropping and grazing. These open stormwater drainage channels will incorporate native species landscaping where possible. There is evidence that the stormwater management measures, such as the construction of stormwater channels, are encouraging biodiversity, particularly habitat for water birds (see Figure 4.4 and Figure 4.5) which is important given the sites proximity to the Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara.

Walker intends to undertake weed control within the project area to improve the quality of the remaining vegetation throughout the Riverlea site and enhance the amenity value of the development. In addition, weed control, including control of Declared Weeds under the LSA Act (see Section 4.1.1), will minimise the impacts of existing exotic species on biological diversity and other natural resources. Further, Walker's contractor/s must prepare and implement appropriate soil and erosion management control measures. Vegetation removal will follow recommendations to control and prevent the spread of Declared Weeds found within the project area.

The Precinct 3A subdivision provides a formal open space area centrally within the layout. Walker's landscape design of proposed reserves will incorporate amenity plantings of some locally native vegetation species (where practical) to provide habitat for fauna and enhance local ecosystems that past agricultural land use has degraded. In areas near the housing development, formal revegetation/landscaping works may include planting of some non-local or otherwise different vegetation from what previously occurred in that location. However, they will still encourage subsequent natural regeneration of native flora species such as samphire and *Sueda australis* (Austral Seablite), particularly further down the channel, where regeneration and revegetation will reduce erosion and turbidity (sediment controls) and improve drainage water quality. Regenerating areas will also be fenced from agricultural activities to avoid further degradation by livestock.

Offset - any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.
The NVC will only consider an offset once avoidance, minimization and restoration have been documented and fulfilled. The SEB Policy explains the biodiversity offsetting principles that must be met.

The regeneration of native vegetation within the proposed channels and detention basin will ultimately provide some environmental benefit; however, this does not meet the parameters under the NV Act and *Native Vegetation Regulations 2017* to apply as a reduction in SEB points of loss. Any adverse impact on native vegetation or ecosystems that cannot be avoided or minimised will be offset by implementing an SEB that outweighs that impact. Notwithstanding this, an offset in the form of a payment into the Native Vegetation Fund is also the preferred option for Walker Buckland Park Developments Pty Ltd.

Figure 4.2 Planted *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum) along the western boundary of the project area.

Figure 4.3 Regenerating *Sueda australis* (Austral Seablite) near the Riverlea Discovery Centre.

Figure 4.4 Water bird species including *Anas gracilis gracilis* (Grey Teal) and *Anas superciliosa* (Pacific Black Duck) in a stormwater wetland channel near Riverlea Discovery Centre.

Figure 4.5 Water bird species including Grey Teal (*Anas gracilis gracilis*) and Pacific Black Duck (*Anas superciliosa*) in an area nearing landscaping completion adjacent the project area.

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

The Native Vegetation Council will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The Native Vegetation Council will consider all the Principles of clearance of the Act as relevant, when considering an application referred under the *Planning, Development and Infrastructure Act 2016*. Assessment against the Principles of Clearance for the project are provided in Table 4.7.

Table 4.7 Assessment against the Principles of Clearance.

<table>
<tr><th>Principle of clearance</th><th>Considerations</th></tr>
<tr><td>Principle 1(a) - it comprises a high level of diversity of plant species</td><td>
<u>Relevant information</u>
A total of 31 flora species included 13 native and 18 introduced were recorded in the project area during the field assessment. The number of flora species and the bushland plant diversity score for VA A2 is provided below. VA A2 was surveyed using two or more sites and therefore the numbers below are averaged for this association.
<table>
<tr><th>Vegetation association</th><th>Native species</th><th>Introduced species</th><th>Bushland plant diversity score</th></tr>
<tr><td>A2</td><td>8</td><td>14</td><td>10</td></tr>
</table>
<u>Assessment against the principles</u>
At Variance
A2
Moderating factors that may be considered by the NVC
Amount of clearance related to area of remnant
The amount of native vegetation within a 5 km radius of the project area, is approximately 942 ha (12%) (Department for Environment and Water, 2025b). The total clearance for the Project is 3.84 ha which equates to 0.41 % of native vegetation within a 5 km radius.
</td></tr>
</table>

Principle 1(b) - significance as a habitat for wildlife	**Relevant information** A total of 24 fauna species, comprising 23 birds and one mammal including four introduced species were recorded in the project area during the field assessment. No fauna species listed as threatened under the EPBC or NP&W Acts were recorded. During the desktop assessment of the project, eight nationally listed threatened fauna species and nine State listed threatened fauna species were assessed as highly likely or likely to occur in the project area (see Section 4.2.4). In addition, nine nationally listed migratory species were assessed as highly likely or likely to occur within the project area (see Section 4.2.5). Many of these species have been previously recorded within 5 km of the project area from the neighbouring Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara but they may use suitable habitat (primarily Thompson Creek – VA A2 when inundated, and man-made waterways) in the project area. Some species identified as a part of the desktop assessment have specific habitat requirements which were not present in the project area such as dense understorey (often preferred by species such as Brown Quail and Shy Heathwren). In contrast, some habitat features such as hollow-bearing trees were present in the project area and provide habitat for species such as Elegant Parrot and Common Brushtail Possum. As a part of Precinct 3A and the broader Riverlea Park major development, the applicant has established and will continue to establish several man-made waterways to better manage water in the greater area given the area is historically prone to flood waters after significant rainfall events. The establishment of these waterways will not only help the applicant better mitigate against potential flooding events but also provide habitat for threatened and migratory shorebird species, inland and away from the coast in an area largely cleared and devoid of suitable habitat. Threatened and migratory bird species such as waders are known to utilise industrialised or modified waterbodies such as sewerage ponds and saltfields. Many bird species observed in the project area during the field assessment were observed utilising native vegetation under application and man-made waterways that exist within the project area and nearby. The small size of the project area means that it is unlikely to support a resident population of any species but may provide some foraging habitat. Vegetation along the Thompson Creek in the project area (VA A2) may provide a corridor for movement between other areas of native vegetation in the broader area, particularly after significant rainfall, when the banks may be waterlogged or damp. Species such as the White-fronted Chat (*Epthianura albifrons*) were observed moving between patches of *Maireana aphylla* (Cotton-bush) in VA A2 of the project area. However, the avoidance and inclusion of native vegetation as a part of reserves in Precinct 3A and the broader Precinct 3, and the establishment of several man-made waterways in the project area and for the broader Riverlea Park major development will also provide a corridor for movement for threated and migratory species.

Principle of clearance	Considerations
	The threatened fauna score and unit biodiversity score for VA A2 in the project area is provided below. VA A2 was surveyed using two or more sites and therefore the numbers below are averaged for this association. | Vegetation association	Threatened fauna score	Unit biodiversity score | | A2 | 0.10 | 14.01 | The threatened fauna score and biodiversity score for both scattered trees proposed to be impacted in the project area is provided below: | Scattered Tree No.	Fauna Habitat Score	Unit biodiversity score | | 1 | 1.80 | 4.45 | | 2 | 1.80 | 6.56 | **Assessment against the principles** **Seriously at Variance** — A2, Tree 1 and Tree 2

Moderating factors that may be considered by the NVC

Impact Significance

The area of vegetation under application, is largely open, contains a variety of introduced flora species and does not contain patches of dense understorey suitable for species such as:

— Brown Quail (*Coturnix ypsilophora australis*) (State Vulnerable).

— Shy Heathwren (*Hylacola cauta cauta*) (State Enadngered).

The area is unlikely to constitute critical habitat for these species.

The project area is not a known camp for Grey-headed Flying-fox (*Pteropus poliocephalus*) (nationally Vulnerable and State Rare), and therefore does not constitute critical habitat for this species.

The project area does contain mature hollow-bearing trees which may be suitable for use by species such as:

— Common Brushtail Possum (*Trichosurus vulpecula*) (State Rare).

— Elegant Parrot (*Neophema elegans elegans*) (State Rare).

Any clearance of hollow-bearing trees may impact suitable habitat for these species but given the amount of surrounding suitable habitat in the general vicinity, any impact is likely to be small.

The number of scattered trees (two trees) and small area of vegetation under application (3.84 ha) in the project area is native vegetation in poor condition which is unlikely to provide important or critical habitat for any other threatened species and is unlikely to:

— lead to a long-term decrease in the size of a population.

— reduce the area of occupancy of a species.

— fragment an existing population into two or more populations.

— decrease availability of habitat such that the extent of a species is likely to decline.

— result in invasive species becoming established in the threatened species habitat.

— interfere with the recovery of a species.

Common species

For common species occurring within the project area, areas of native vegetation will exist in the broader area, providing habitat for these species. The area of clearance is not considered essential habitat to maintain local populations of common species.

Principle of clearance	Considerations
	Non-essential habitat The habitat under application is not considered important or critical habitat for any of the listed threatened or migratory species which have been assessed as potentially occurring within the project area. There is native vegetation near the project area (i.e. saltmarsh and coastal vegetation in the Adelaide International Bird Sanctuary National Park – Winaityinaityi Pangkara) which provides habitat for listed threatened or migratory species and woodland along the Gawler River that provides habitat for woodland species As such, the clearance will have a negligible impact on fauna species local populations over the long term (i.e. next 20 to 50 years).
Principle 1(c) - plants of a rare, vulnerable or endangered species	**Relevant information** No flora species listed as threatened under the EPBC Act or NP&W Act were recorded during the field assessment. The desktop assessment did not identify many small /inconspicuous or spring annual species which have the potential to occur in the project area. This is likely due to the location of the project, in the broader Adelaide metropolitan zone and in an area historically dominated by agricultural and farming practices. However, one nationally listed and four State listed threatened flora species were identified in the desktop assessment as potentially occurring in the project area. Two State threatened flora species were assessed as possible to occur within the project area (see Section 4.2.3). Targeted surveys for threatened flora species, particularly those that flower or set seed outside of when the field assessment was undertaken, has not been completed. This is particularly relevant to herbs, forbs and orchid species that only flower in spring. It is possible that some threatened flora species may occur in the project area but were undetectable at the time of the field assessment. However, no threatened herbs, forbs or orchid species were assessed as potentially occurring in the project area during the desktop assessment and as such targeted surveys to identify threatened species during spring were not required. Both scattered trees proposed to be impacted in the project area are of the species *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum) which is not listed as threatened under the EPBC Act or NP&W Act. The vegetation association and both scattered trees mapped in the project area had a threatened flora score of 0.
	Assessment against the principles Not at variance

Principle of clearance	Considerations
	Moderating factors that may be considered by the NVC N/A
Principle 1(d) - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered.	**Relevant information** No threatened communities under the EPBC Act or threatened ecosystems under the DEW Provisional list of threatened ecosystems are considered present within the clearance area. The database searches indicated that one TEC is likely to occur: — Subtropical and Temperate Coastal Saltmarsh – nationally Vulnerable Only a small amount of salt tolerant vegetation was recorded during the field assessment (*Atriplex semibaccata* (Berry Saltbush)) and there is no tidal influence in the project area. Considering both the desktop and field components of this assessment, the Subtropical and Temperate Coastal Saltmarsh TEC was assessed as unlikely to occur in the project area. The vegetation association mapped in the project area had a threatened community score of 1.
	Assessment against the principles Not at variance
	Moderating factors that may be considered by the NVC N/A

<table>
<tr><th>Principle of clearance</th><th>Considerations</th></tr>
<tr><td>Principle 1(e) - it is significant as a remnant of vegetation in an area which has been extensively cleared.</td><td>
<u>Relevant information</u>

The project area occurs in the St Vincent IBRA Subregion and Mallala IBRA Association. Large areas of the St Vincent IBRA Subregion have been cleared for agriculture, with remnant vegetation mostly confined to road verges and fragmented blocks. Remnancy figures are provided below.

<table>
<tr><td>Subregion</td><td>Remnancy</td><td>Association</td><td>Remnancy</td></tr>
<tr><td>St Vincent</td><td>3</td><td>Mallala</td><td>8</td></tr>
</table>

Vegetation within the project area was in poor condition and has been subject to grazing and weed infestation with understorey vegetation subject to clearance in the past.

Total Biodiversity Score – 65.79

<u>Assessment against the principles</u>

Seriously at Variance

Moderating factors that may be considered by the NVC

Quality of remnant

Vegetation in the project area is in poor condition, largely comprising introduced flora species and will continue to degrade. Its long-term persistence is unlikely given development in the broader area.
</td></tr>
<tr><td>Principle 1(f) – it is growing in, or in association with, a wetland environment</td><td>
<u>Relevant information</u>

VA A2 forms part of the Thompson Creek and contains vegetation such as Marieana aphylla (Cotton-bush) and Suaeda australis (Austral Seablite) and is considered in association with a wetland environment.

Tree 1 and Tree 2 are not considered in association with a wetland environment.
</td></tr>
</table>

Principle of clearance	Considerations
	Assessment against the principles Seriously at Variance – VA A2 Not at Variance – Tree 1 and Tree 2
	Moderating factors that may be considered by the NVC *Quality of wetland* This portion of the Thompson Creek is highly degraded, and in poor condition. It contains a large amount introduced flora species, including Declared Weeds under the LSA Act.
Principle 1(g) - it contributes significantly to the amenity of the area in which it is growing or is situated.	**Relevant information** The project area is located in Riverlea Park, adjacent to areas primarily used for agriculture and cropping. Scattered trees and native vegetation in the area enhance the landscape and any proposed removal (particularly of scattered trees that are large or contain a number of hollows) in the project area may have an effect on the surrounding landscape and its character, especially given the lack of native vegetation in the broader area. The project area and broader Riverlea Park is also known to be of significant cultural value.
	Moderating factors that may be considered by the NVC N/A

4.6 Risk assessment

The level of risk associated with this project is a Level 4 as summarised in Table 4.8.

Table 4.8 Summary of the level of risk associated with the application.

Total clearance	No. of trees	2
	Area (ha)	3.84
	Total Biodiversity Score	65.79
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1(b)
Risk assessment outcome		Level 4

4.7 Native Vegetation Council guidelines

Not Applicable

5 Clearance summary

Vegetation association A2 was surveyed using two BAM sites (A2a and A2b), the impact summary provided in Table 5.1 for this VA is based on a 1-hectare average of these sites. Scattered trees proposed to be impacted in the project area are summarised in Table 5.2.

Table 5.1 Clearance summary table.

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	2	10	1	0	0.1	14.25	3.84	54.78	1			60.26	$45,165.62	$2,484.11
						Total	**3.84**	**54.78**				**60.26**	**$45,165.62**	**$2,484.11**

Table 5.2 Scattered tree summary.

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee
1	1	1.8	0	4.45	1.0	4.90	$3,672.73	$202.00
2	1	1.8	0	6.56	1.0	7.22	$5,411.65	$297.64
Total	**2**			**11.01**		**12.12**	**$9,084.38**	**$499.64**

Economies of Scale Factor	0.5
Rainfall (mm) Factor	413

SEB Uplift Factor	1.10
SEB Points of Gain/ha Factor	7.0
Management Cost ($/ha)	$25,408

Table 5.3 Total summary table.

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	65.79	72.38	$54,250.00	$2,983.75	**$57,233.76**

6 Significant Environmental Benefits

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

Achieving an SEB

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

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

☐ Use SEB Credit that the proponent has established.

☐ Apply to have SEB Credit assigned from another person or body.

☐ Apply to have an SEB to be delivered by a Third Party.

☒ Pay into the Native Vegetation Fund.

Payment of SEB

The SEB Policy states that if a SEB is required as a result of an approved activity undertaken under the Regulations, the applicant has a choice of either providing an on-ground SEB or a Payment SEB. However, if a proposed clearance will have an offset obligation of greater than 150 SEB Points Required, the NVC will first request that a reasonable attempt be made to identify an on-ground SEB before a payment will be accepted.

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

The total SEB offset required for the clearance of **two** scattered trees and **3.84 ha** of native vegetation is **$57,233.76**, which includes a **$2,983.75** administration fee.

7 Limitations

This Report is provided by WSP Australia Pty Limited (WSP) for Walker Corporation Pty Ltd (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 27 June 2025 and agreement with the Client dated 24 September 2025 (Agreement).

PERMITTED PURPOSE

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (Permitted Purpose).

QUALIFICATIONS AND ASSUMPTIONS

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (Conclusions) are based in whole or in part on information provided by the Client and other parties identified in the report (Information), those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

WSP has prepared the Report without regard to any special interest of any person other than the Client when undertaking the services described in the Agreement or in preparing the Report.

USE AND RELIANCE

This Report should be read in its entirety and must not be copied, distributed or referred to in part only. The Report must not be reproduced without the written approval of WSP. WSP will not be responsible for interpretations or conclusions drawn by the reader. This Report (or sections of the Report) should not be used as part of a specification for a project or for incorporation into any other document without the prior agreement of WSP.

WSP is not (and will not be) obliged to provide an update of this Report to include any event, circumstance, revised Information or any matter coming to WSP's attention after the date of this Report. Data reported and Conclusions drawn are based solely on information made available to WSP at the time of preparing the Report. The passage of time; unexpected variations in ground conditions; manifestations of latent conditions; or the impact of future events (including (without limitation) changes in policy, legislation, guidelines, scientific knowledge; and changes in interpretation of policy by statutory authorities); may require further investigation or subsequent re-evaluation of the Conclusions.

This Report can only be relied upon for the Permitted Purpose and may not be relied upon for any other purpose. The Report does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise. It is the responsibility of the Client to accept (if the Client so chooses) any Conclusions contained within the Report and implement them in an appropriate, suitable and timely manner.

In the absence of express written consent of WSP, no responsibility is accepted by WSP for the use of the Report in whole or in part by any party other than the Client for any purpose whatsoever. Without the express written consent of WSP, any use which a third party makes of this Report or any reliance on (or decisions to be made) based on this Report is at the sole risk of those third parties without recourse to WSP. Third parties should make their own enquiries and obtain independent advice in relation to any matter dealt with or Conclusions expressed in the Report.

DISCLAIMER

No warranty, undertaking or guarantee whether expressed or implied, is made with respect to the data reported or the Conclusions drawn. To the fullest extent permitted at law, WSP, its related bodies corporate and its officers, employees and agents assumes no responsibility and will not be liable to any third party for, or in relation to any losses, damages or expenses (including any indirect, consequential or punitive losses or damages or any amounts for loss of profit, loss of revenue,

loss of opportunity to earn profit, loss of production, loss of contract, increased operational costs, loss of business opportunity, site depredation costs, business interruption or economic loss) of any kind whatsoever, suffered on incurred by a third party.

Bibliography

BirdLife Australia. (2025). *BirdLife Australia - Find a bird - Online Resource*.

Birds in Backyards. (2025). *Bird Finder*. https://www.birdsinbackyards.net/finder

Birds SA. (2025). *Bird Directory*. https://birdssa.asn.au/birddirectory/

Croft, S., Pedler, J., & Milne, T. (2007). *Bushland Condition Monitoring Manual – Northern Agricultural & Yorke Peninsula Regions.* A. Nature Conservation Society of South Australia.

Croft, S., Pedler, J., & Milne, T. (2008a). *Bushland Condition Monitoring Manual – Eyre Peninsula Region.* A. Nature Conservation Society of South Australia.

Croft, S., Pedler, J., & Milne, T. (2008b). *Bushland Condition Monitoring Manual – Southern Mt Lofty Ranges Region*. A. Nature Conservation Society of South Australia.

Croft, S., Pedler, J., & Milne, T. (2009). *Bushland Condition Monitoring Manual – Murray Darling Basin Region.* A. Nature Conservation Society of South Australia.

Cutten, J. L., & Hodder, M. W. (2002). *Scattered Tree Clearance Assessment in South Australia: streamlining, guidelines for assessment and rural industry extention*.

Department for Environment and Heritage. (2008). *Threatened Species Profile - Brown Quail (Coturnix ypsilophora australis)* (Threatened Species Profile, Issue.

Department for Environment and Water. (2025a). *Biological Databases of South Australia*.

Department for Environment and Water. (2025b). *NatureMaps*. http://data.environment.as.gov.au/NatureMaps/Pages/default.aspx

Department of Agriculture, Water and the Environment. (2020a). *National Recovery Plan for the Australian Fairy Tern (Sternula nereis nereis)*.

Department of Agriculture, Water and the Environment. (2020b). *Wildlife Conservation Plan for Seabirds.*

Department of Agriculture, Water and the Environment. (2021). *National Recovery Plan for the Grey-headed Flying-fox Pteropus poliocephalus*.

Department of Climate Change, Energy, the Environment and Water. (2022). *National Recovery Plan for the Australian Painted Snipe (Rostratula australis)*.

Department of Climate Change, Energy, the Environment and Water. (2023a). *Conservation Advice for Calidris ferruginea (curlew sandpiper)*.

Department of Climate Change, Energy, the Environment and Water. (2023b). *Conservation Advice for Neophema chrysostoma (blue-winged parrot)*.

Department of Climate Change, Energy, the Environment and Water. (2023c). *Conservation Advice for Stagonopleura guttata (diamond firetail)*.

Department of Climate Change, Energy, the Environment and Water. (2023d). *Conservation Advice for Numenius madagascariensis (far eastern curlew).*

Department of Climate Change, Energy, the Environment and Water. (2024a). *Conservation Advice for Calidris tenuirostris (great knot).*

Department of Climate Change, Energy, the Environment and Water. (2024b). *Conservation Advice for Limosa limosa (black-tailed godwit)* (Department of Climate Change, Energy, the Environment and Water, Issue. https://environment.gov.au/biodiversity/threatened/species/pubs/845-conservation-advice-05012024.pdf

Department of Climate Change, Energy, the Environment and Water. (2024c). *Conservation Advice for Pluvialis squatarola (grey plover)*.

Department of Climate Change, Energy, the Environment and Water. (2024d). *Conservation Advice for Arenaria interpres (ruddy turnstone).*

Department of Climate Change, Energy, the Environment and Water. (2024e). *Conservation Advice for Calidris acuminata (sharp-tailed sandpiper)*.

Department of Climate Change, Energy, the Environment and Water. (2024f). *Conservation Advice for Calidris canutus (red knot)*.

Department of Climate Change, Energy, the Environment and Water. (2024g). *Conservation Advice for Gallinago hardwickii (Latham's snipe)*.

Department of Climate Change, Energy, the Environment and Water. (2024h). *Conservation Advice for Limosa lapponica baueri (Alaskan bar-tailed godwit)*.

Department of Climate Change, Energy, the Environment and Water. (2024i). *Conservation Advice for Tecticornia flabelliformis (bead glasswort)*. http://www.environment.gov.au/biodiversity/threatened/species/pubs/82664-conservation-advice-20082024.pdf.

Department of Climate Change, Energy, the Environment and Water. (2024j). *Conservation Advice for Tringa nebularia (common greenshank).*

Department of Climate Change, Energy, the Environment and Water. (2024k). *Conservation Advice for Xenus cinereus (terek sandpiper).*

Department of Climate Change, Energy, the Environment and Water. (2025a). *Conservation Advice for Sternula albifrons (little tern).* E. Department of Climate Change, the Environment and Water. http://www.environment.gov.au/biodiversity/threatened/species/pubs/82849-conservation-advice-05032025.pdf.
Department of Climate Change, Energy, the Environment and Water. (2025b). *Protected Matters Search Tool* https://pmst.awe.gov.au/#/map?lng=132.82470703125003&lat=-28.420391085674304&zoom=6&baseLayers=Imagery,ImageryLabels
Department of Environment, Land, Water and Planning. . (2016). *National Recovery Plan for the Orange-bellied Parrot, Neophema chrysogaster*.
Department of Sustainability, Environment, Water, Population and Communities. (2013). *Conservation Advice for Subtropical and Temperate Coastal Saltmarsh*. E. Department of Sustainability, Water, Population and Communities. http://www.environment.gov.au/biodiversity/threatened/communities/pubs/118-conservation-advice.pdf.
Department of the Environment. (2014). *Conservation Advice Thinornis rubricollis rubricollis hooded plover (eastern)*. http://www.environment.gov.au/biodiversity/threatened/species/pubs/66726-conservation-advice.pdf.
Department of the Environment. (2015). *Conservation Advice Acanthiza iredalei rosinae slender-billed thornbill (Gulf St Vincent).*
Geering, A. L., Agnew , L., & Harding, S. (2007). *Shorebirds of Australia.* . CSIRO Publishing.
Higgins, P., & Davies, S. (1996). *Handbook of Australian, New Zealand and Antarctic Birds. Volume Three - Snipe to Pigeon*. Oxford University Press.
Higgins, P. J. (1999). *Handbook of Australian, New Zealand and Antarctic Birds. Volume Four - Parrots to Dollarbird.* Oxford University Press.
Milne, T., & Croft, T. (2012). *Bushland Condition Monitoring Manual – Benchmark Communities of the South East*. A. Nature Conservation Society of South Australia.
Milne, T., & McCallum, B. (2012). *Bushland Condition Monitoring Manual – Benchmark Communities of Kangaroo Island*. A. Nature Conservation Society of South Australia.
Morcombe, M. (2021). *Field Guide to Australian Birds (Digital)*. Steve Parish Publishing.
Native Vegetation Council. (2024a). *Bushland Assessment Manual*.
Native Vegetation Council. (2024b). *Scattered Tree Assessment Manual*.
NSW Government. (2025). *Threatened biodiversity profile search*.
Pedler, L. (1982). An Oriental Plover in the Mid-north of South Australia. *South Australian Ornithologist*, 28:207.
Pizzey, G., & Knight, F. (2024). *Birds of Australia*. Gibbon Media.
Seeds of South Australia. (2024). *Seeds of South Australia*. https://spapps.environment.sa.gov.au/seedsofsa/
Thackway, R., & Cresswell, I. (1995). *An Interim Biogeographic Regionalisation for Australia: a framework for setting priorities in the National Reserves System Cooperative Program Version 4*. A. N. C. Agency.
Threatened Species Scientific Committee. (2016). *Conservation Advice Charadrius mongolus Lesser sand plover*. http://www.environment.gov.au/biodiversity/threatened/species/pubs/879-conservation-advice-05052016.pdf
Threatened Species Scientific Committee. (2019). *Conservation Advice Botaurus poiciloptilus Australasian Bittern*.
van Dyck, S., & Strahan, R. (2008). *The mammals of Australia*.
VicFlora. (2025). *VicFlora Flora of Victoria*.
Willson, A., & Bignall, J. (2009). *Regional Recovery Plan for Threatened Species and Ecological Communities of Adelaide and the Mount Lofty Ranges, South Australia*.

Appendix A

List of flora species observed in the project area

Table A.1 List of flora species observed in the project area.

Scientific Name	Common Name	NP&W Act	EPBC Act	A2	Scattered Tree	Declared Weed	WoNS
Acacia victoriae ssp. *victoriae*	Elegant Wattle						
*Aizoon pubescens**	Coastal Galenia			✓			
Atriplex semibaccata	Berry Saltbush			✓			
Austrostipa sp.	Spear-grass			✓			
*Avena barbata**	Bearded Oat			✓			
Cynara cardunculus ssp. *flavescens**	Artichoke Thistle			✓		✓	
Cynodon dactylon var. *dactylon**	Couch			✓			
*Echium plantagineum**	Salvation Jane			✓		✓	
Einadia nutans ssp. *nutans*	Climbing Saltbush			✓			
Enchylaena tomentosa var. *tomentosa*	Ruby Saltbush			✓			
*Erodium cicutarium**	Cut-leaf Heron's-bill			✓			
Eucalyptus camaldulensis ssp. *camaldulensis*	River Red Gum				✓		
Eucalyptus porosa	Mallee Box				✓		
Ficinia nodosa	Knobby Club-rush			✓			
*Heliotropium europaeum**	Common Heliotrope			✓			
Hordeum sp.*	Barley			✓			
*Lycium ferocissimum**	African Boxthorn			✓		✓	✓
Maireana aphylla	Cotton-bush			✓			
Maireana brevifolia	Short-leaf Bluebush			✓			
*Malva parviflora**	Small-flower Marshmallow			✓			

Scientific Name	Common Name	NP&W Act	EPBC Act	A2	Scattered Tree	Declared Weed	WoNS
Medicago sp.*	Medic			✓			
*Mesembryanthemum nodiflorum**	Slender Iceplant			✓			
Nitraria billardierei	Nitre-bush			✓			
*Oxalis pes-caprae**	Soursob			✓			
*Panicum hillmanii**	Witch-grass			✓			
*Rhagodia spinescens**	Spiny Saltbush			✓			
Romulea rosea var. *australis**	Common Onion-grass			✓			
Salsola australis	Buckbush			✓			
*Solanum elaeagnifolium**	Silver-leaf Nightshade			✓		✓	✓
Suaeda australis	Austral Seablite			✓			
*Taraxacum gracilens**	Red-seed Dandelion			✓			

* Introduced species
A2: *Maireana aphylla* (Cotton-bush) open shrubland.
WoNS: Weed of National Significance

*Introduced species

Appendix B

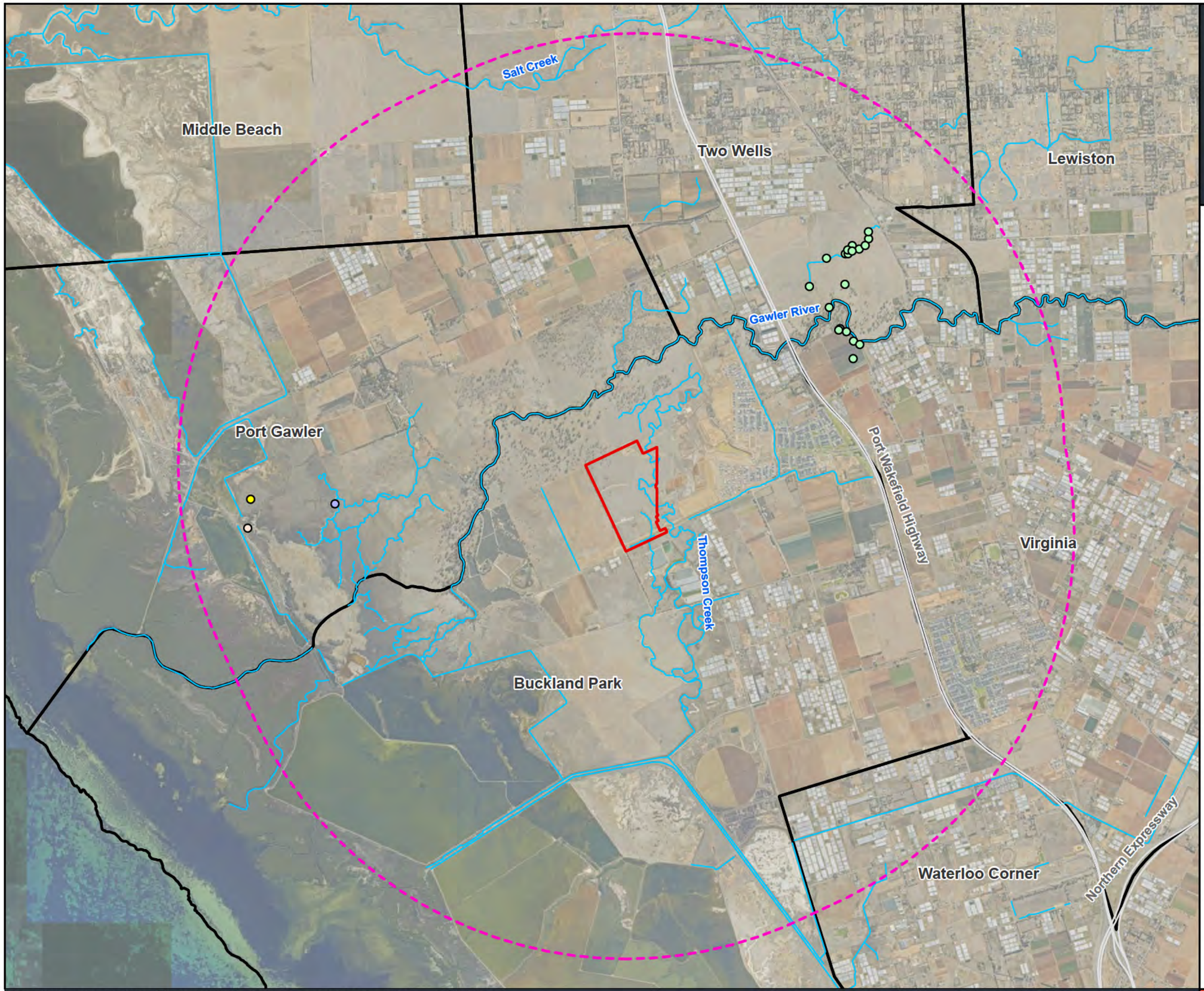
List of fauna species observed in the project area

Table B.1 List of fauna species observed in the project area.

Scientific Name	Common Name	NP&W Act	EPBC Act
Acanthiza chrysorrhoa leighi	Yellow-rumped Thornbill		
Anas gracilis gracilis	Grey Teal		
Anas superciliosa	Pacific Black Duck		
Cacatua sanguinea gymnopis	Little Corella		
Chenonetta jubata	Maned Duck		
*Columba livia**	Feral Pigeon		
Corvus mellori	Little Raven		
Cygnus atratus	Black Swan		
Epthianura albifrons	White-fronted Chat		
Falco berigora berigora	Brown Falcon		
Falco cenchroides cenchroides	Nankeen Kestrel		
Gavicalis virescens	Singing Honeyeater		
Grallina cyanoleuca cyanoleuca	Magpielark		
Gymnorhina tibicen	Australian Magpie		
Haliastur sphenurus	Whistling Kite		
Hirundo neoxena neoxena	Welcome Swallow		
*Lepus europaeus**	European Brown Hare		
Pardalotus striatus	Striated Pardalote		
*Passer domesticus domesticus**	House Sparrow		
Platycercus elegans	Crimson Rosella		
Psephotus haematonotus haematonotus	Red-rumped Parrot		
Rhipidura leucophrys leucophrys	Willie Wagtail		
*Sturnus vulgaris vulgaris**	Common Starling		
Tadorna tadornoides	Australian Shelduck		
* Introduced species			

Appendix C

BDBSA flora record located within 5 km of the project area



wsp

PS225662
Riverlea Precinct 3A

Figure C.1
Threatened Flora Map

Legend

- Roads
- Watercourses
- Locality
- Project area
- 5km buffer around the project area

Threatened flora

- *Atriplex australasica* (NP&W: R)
- *Brachyscome paludicola* (Swamp Daisy) (NP&W: R)
- *Maireana decalvans* (Black Cotton-bush) (NP&W: E)
- *Maireana rohrlachii* (Rohrlach's Bluebush) (NP&W: R)

Coordinate system: GDA2020 MGA Zone 54
Scale ratio correct when printed at A3

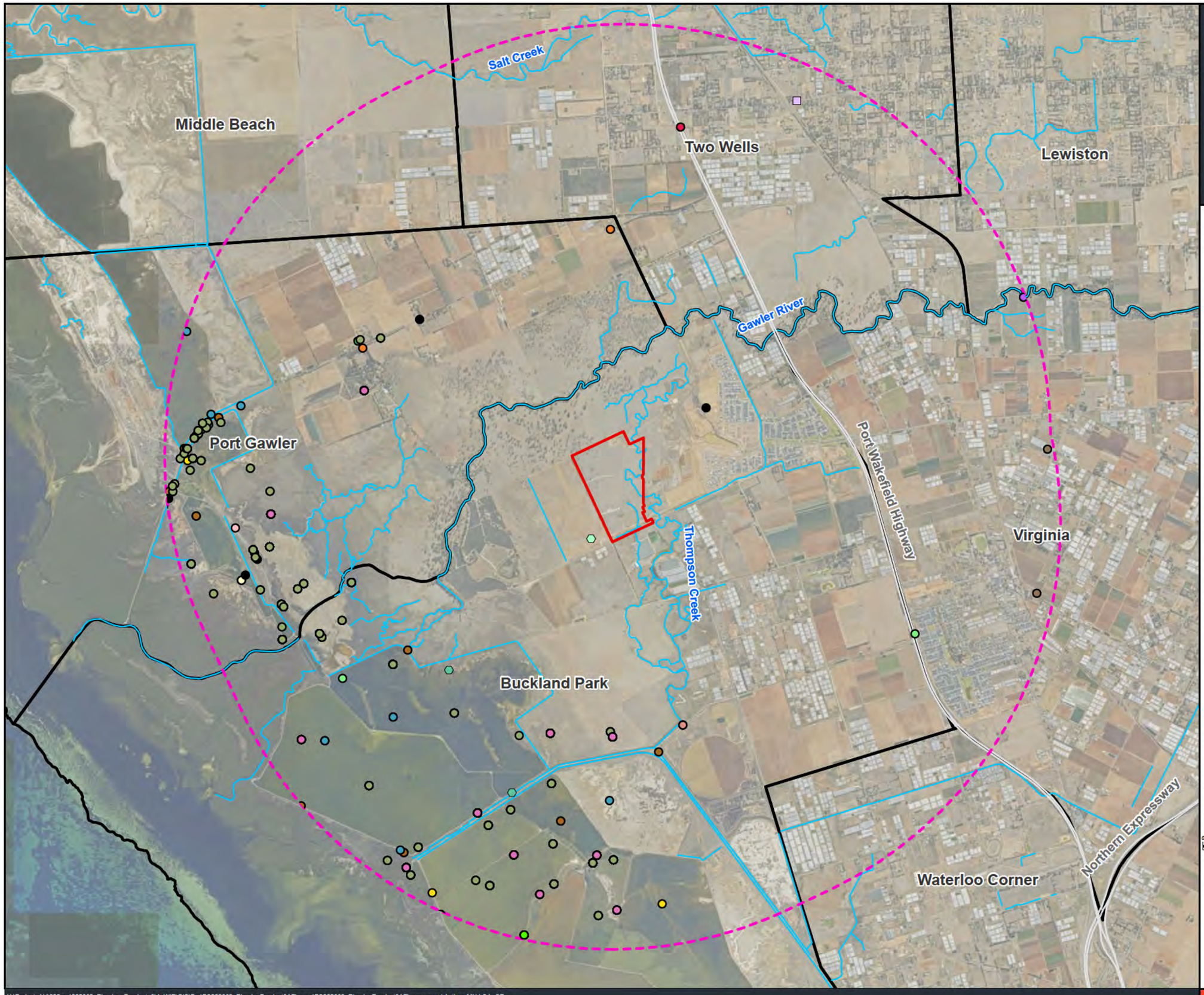
1:45,000 Date: 6/08/2025

GDA 2020

Data sources: WSP, SA Government, MetroMap Australia latest

Appendix D

BDBSA fauna record located within 5 km of the project area



wsp

PS225662
Riverlea Precinct 3A

Figure D.1
Threatened and Migratory Fauna Map (A-L)

Legend

- Roads
- Watercourses
- Locality

Threatened and migratory fauna

- Australasian Darter *(Anhinga novaehollandiae novaehollandiae)* (NP&W: R)
- Australasian Shoveler *(Spatula rhynchotis)* (NP&W: R)
- Banded Stilt *(Cladorhynchus leucocephalus)* (NP&W: V)
- Bar-tailed Godwit *(Limosa lapponica bauer)* (EPBC: EN, Mi; NP&W: R)
- Black Falcon *(Falco subniger)* (NP&W: R)
- Black-backed Bittern (Australian Little Bittern) *(Ixobrychus dubius)* (NP&W: E)
- Black-tailed Godwit *(Limosa limosa melanuroides)* (EPBC: EN, Mi; NP&W: R)
- Blue-billed Duck *(Oxyura australis)* (NP&W: R)
- Blue-winged Parrot *(Neophema chrysostoma)* (EPBC: VU; NP&W: V)
- Brown Quail *(Coturnix ypsilophora australis)* (NP&W: V)
- Cape Barren Goose *(Cereopsis novaehollandiae novaehollandiae)* (NP&W: R)
- Common Brushtail Possum *(Trichosurus vulpecula)* (NP&W: R)
- Common Greenshank *(Tringa nebularia)* (EPBC: EN, Mi)
- Common Sandpiper *(Actitis hypoleucos)* (EPBC: Mi; NP&W: R)
- Common Tern *(Sterna hirundo longipennis)* (NP&W: R)
- Diamond Firetail *(Stagonopleura guttata)* (EPBC: VU; NP&W: V)
- Double-banded Plover *(Charadrius bicinctus bicinctus)* (EPBC: Mi)
- Eastern Cattle Egret *(Bubulcus ibis coromandus)* (NP&W: R)
- Eastern Osprey *(Pandion haliaetus cristatus)* (EPBC: Mi; NP&W: E)
- Eastern Shriketit *(Falcunculus frontatus frontatus)* (NP&W: R)
- Elegant Parrot *(Neophema elegans elegans)* (NP&W: R)
- Fairy Tern *(Sternula nereis nereis)* (EPBC: VU; NP&W: E)
- Freckled Duck *(Stictonetta naevosa)* (NP&W: V)
- Glossy Ibis *(Plegadis falcinellus)* (NP&W: R)
- Great Crested Grebe *(Podiceps cristatus australis)* (NP&W: R)
- Great Knot *(Calidris tenuirostris)* (EPBC: VU; NP&W: E)
- Grey Plover *(Pluvialis squatarola squatarola)* (EPBC: VU, Mi)
- Grey-headed Flying-fox *(Pteropus poliocephalus)* (EPBC: VU; NP&W: R)
- Grey-tailed Tattler *(Tringa brevipes)* (EPBC: Mi; NP&W: R)
- Latham's Snipe *(Gallinago hardwickii)* (EPBC: VU, Mi; NP&W: R)
- Lesser Sand Plover *(Charadrius mongolus mongolus)* (EPBC: EN, Mi; NP&W: E)
- Little Curlew *(Numenius minutus)* (EPBC: Mi)
- Little Eagle *(Hieraaetus morphnoides)* (NP&W: V)
- Little Egret *(Egretta garzetta nigripes)* (NP&W: R)
- Little Tern *(Sternula albifrons sinensis)* (NP&W: E)
- Long-toed Stint *(Calidris subminuta)* (EPBC: Mi; NP&W: R)

Coordinate system: GDA2020 MGA Zone 54
Scale ratio correct when printed at A3

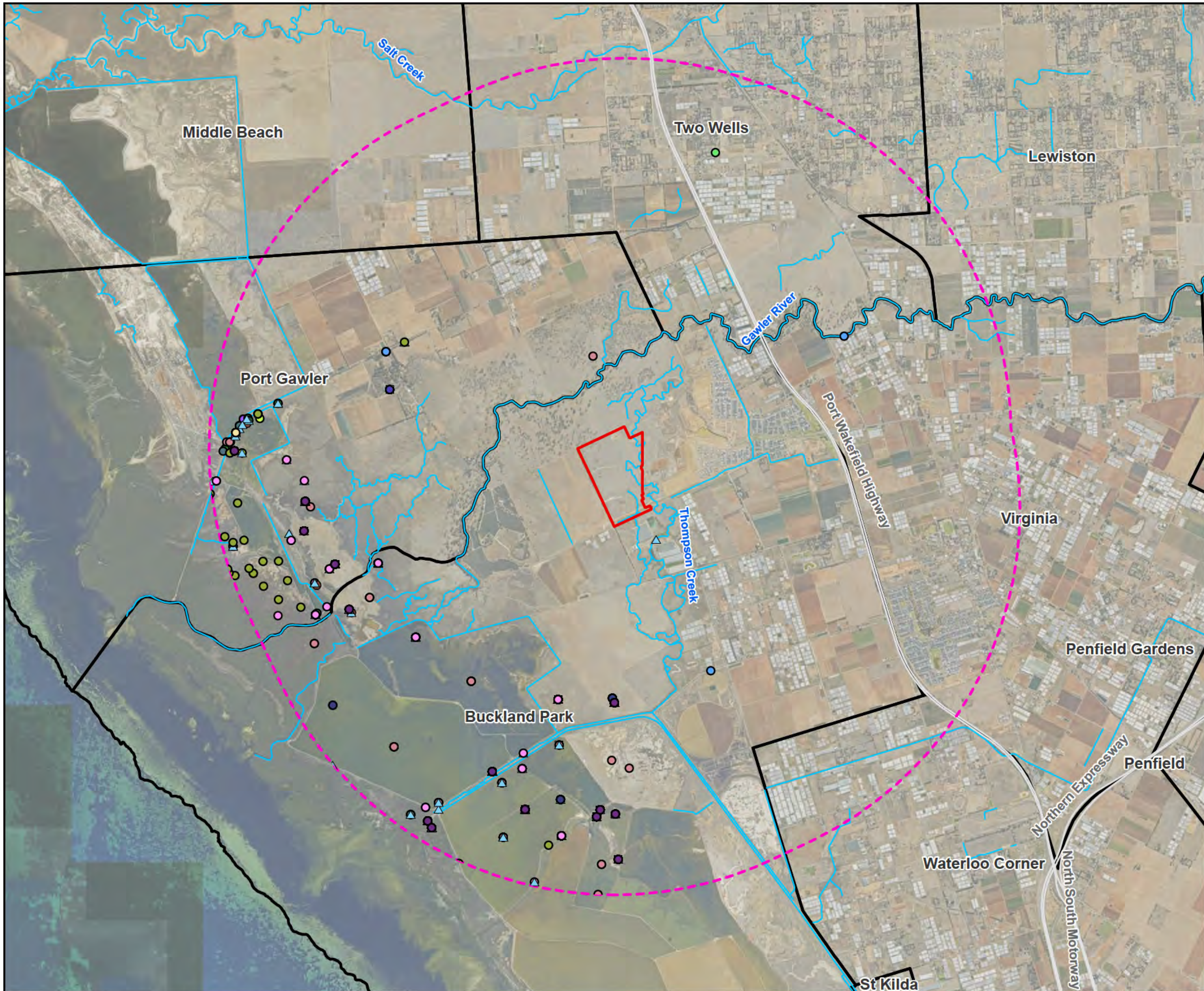
1:45,000 Date: 7/08/2025

GDA 2020

Data sources: WSP, SA Government, MetroMap Australia latest World Imagery Maxar

PS225662
Riverlea Precinct 3A

Figure D.2
Threatened and Migratory Fauna Map (M-Z)



Legend

- Roads
- Watercourses
- Locality

Threatened and migratory fauna

- Marsh Sandpiper (*Tringa stagnatilis*) (EPBC: Mi)
- Musk Duck (*Biziura lobata menziesi*) (NP&W: R)
- Pacific Golden Plover (*Pluvialis fulva*) (EPBC: Mi; NP&W: R)
- Pacific Swift (*Apus pacificus pacificus*) (EPBC: Mi)
- Pectoral Sandpiper (*Calidris melanotos*) (EPBC: Mi; NP&W: R)
- Peregrine Falcon (*Falco peregrinus macropus*) (NP&W: R)
- Pied Oystercatcher (*Haematopus longirostris*) (NP&W: R)
- Plumed Egret (*Ardea intermedia plumifera*) (NP&W: R)
- Red Knot (ssp. rogersi) (*Calidris canutus rogersi*) (EPBC: VU; NP&W: E)
- Red-necked Phalarope (*Phalaropus lobatus*) (EPBC: Mi)
- Red-necked Stint (*Calidris ruficollis*) (EPBC: Mi)
- Rock Parrot (*Neophema petrophila zietzi*) (NP&W: R)
- Ruddy Turnstone (*Arenaria interpres interpres*) (EPBC: VU; NP&W: R)
- Ruff (*Calidris pugnax*) (EPBC: Mi; NP&W: R)
- Sanderling (*Calidris alba alba*) (EPBC: Mi; NP&W: R)
- Sharp-tailed Sandpiper (*Calidris acuminata*) (EPBC: VU)
- Shy Heathwren (*Hylacola cauta*) (NP&W: R)
- Slender-billed Thornbill (Gulf St Vincent) (*Acanthiza iredalei rosinae*) (EPBC: VU; NP&W: V)
- Sooty Oystercatcher (*Haematopus fuliginosus fuliginosus*) (NP&W: R)
- Spotless Crake (*Zapornia tabuensis*) (NP&W: R)
- Terek Sandpiper (*Xenus cinereus*) (EPBC: VU, Mi; NP&W: R)
- Whimbrel (*Numenius phaeopus variegatus*) (EPBC: Mi; NP&W: R)
- White-bellied Sea Eagle (*Haliaeetus leucogaster*) (NP&W: E)
- White-winged Chough (*Corcorax melanorhamphos*) (NP&W: R)
- Wood Sandpiper (*Tringa glareola*) (EPBC: Mi; NP&W: R)

0 500 1,000 1,500 2,000 2,500 3,000
Metres

Coordinate system: GDA2020 MGA Zone 54
Scale ratio correct when printed at A3

1:50,000

Date: 7/08/2025

Data sources: WSP, SA Government, MetroMap Australia latest World Imagery Maxar

Appendix E

Scattered Tree Using Species

E1 Scattered tree using fauna species in the project area

Scientific name	Common name	EPBC Act	NP&W Act	YP	Resource use	Habitat / status
Birds						
Falco subniger	Black Falcon		R	RA	P, N	s
Falco peregrinus macropus	Peregrine Falcon		R	EN	P, H, N	w/r
Hieraaetus morphnoides	Little Eagle		V	CR	P	w
Neophema elegans elegans	Elegant Parrot		R	RA	P, H	w
Mammals						
Trichosurus vulpecula	Common Brushtail Possum		R	EN	H, N, F	w/r
Pteropus poliocephalus	Grey-headed Flying-fox	VU	R	RA	P, F	r

EPBC Act: VU = Vulnerable

NP&W Act: V = Vulnerable, R = Rare

YP: RA = Rare, EN = Endangered, CR = Critically Endangered

Resource use: P = perching/roosting, N = nesting, H = using hollow for nesting/roosting, F = feeding

Habitat/status: s = seasonal (includes waterbirds using trees near seasonal wetlands, seasonal and nomadic species), w = woodland birds that occasionally use adjacent scattered trees, r = species that can reside in scattered trees.

Sources: BSBSA records within 5 km of the Project area (Department for Environment and Water, 2025a). Scattered Tree Assessment Manual (Native Vegetation Council, 2024b).