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Hillier Park Code Amendment

Flora & Fauna
Environmental Report



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EXECUTIVE SUMMARY

This document provides a summary of the flora and fauna present at 52 and 66 Hillier Road, Hillier. A code amendment has been proposed to cover the land-use overlay from Rural Park to Residential Park. Two field surveys were conducted by Succession Ecology to assess the vegetation on site for any environmental matters that may restrict this code amendment, map any vegetation protected under the *Native Vegetation (NV) Act 1991*, and map any Significant or Regulated Trees. From this assessment, 31 scattered trees/clusters and 0.29 ha of native bushlands were found (*NV Act 1991*) and 15 Significant/Regulated trees. The remaining vegetation consisted of weed species and non-native plantings. Tracks and scats of native and non-native fauna were observed, but no signs of threatened native fauna were recorded. Given this, there are no environmental matters of significance that would restrict this area from being developed into residential housing. It is recommended that the large River Red Gum (*Eucalyptus camaldulensis*) be retained in the northern area of the site. Further, there are multiple Declared weeds on site (*Landscape South Australia Act 2016*) that will require management.



1.0 INTRODUCTION

1.1 General

URPS is proposing to rezone two blocks of land at 52 and 66 Hillier Road, Hillier, from a Rural Park to a Residential Park. This Code Amendment will enable the expansion of the existing Hillier Residential Park located on the eastern side of the land. The site is a 23.02 ha vacant block with some infrastructure and degraded native and non-native vegetation (Figure 1). The Southern end of the block faces Hillier Road, which supports local traffic, and there is residential housing adjacent to the land on the eastern side. The northern end of the site abuts the Gawler River.

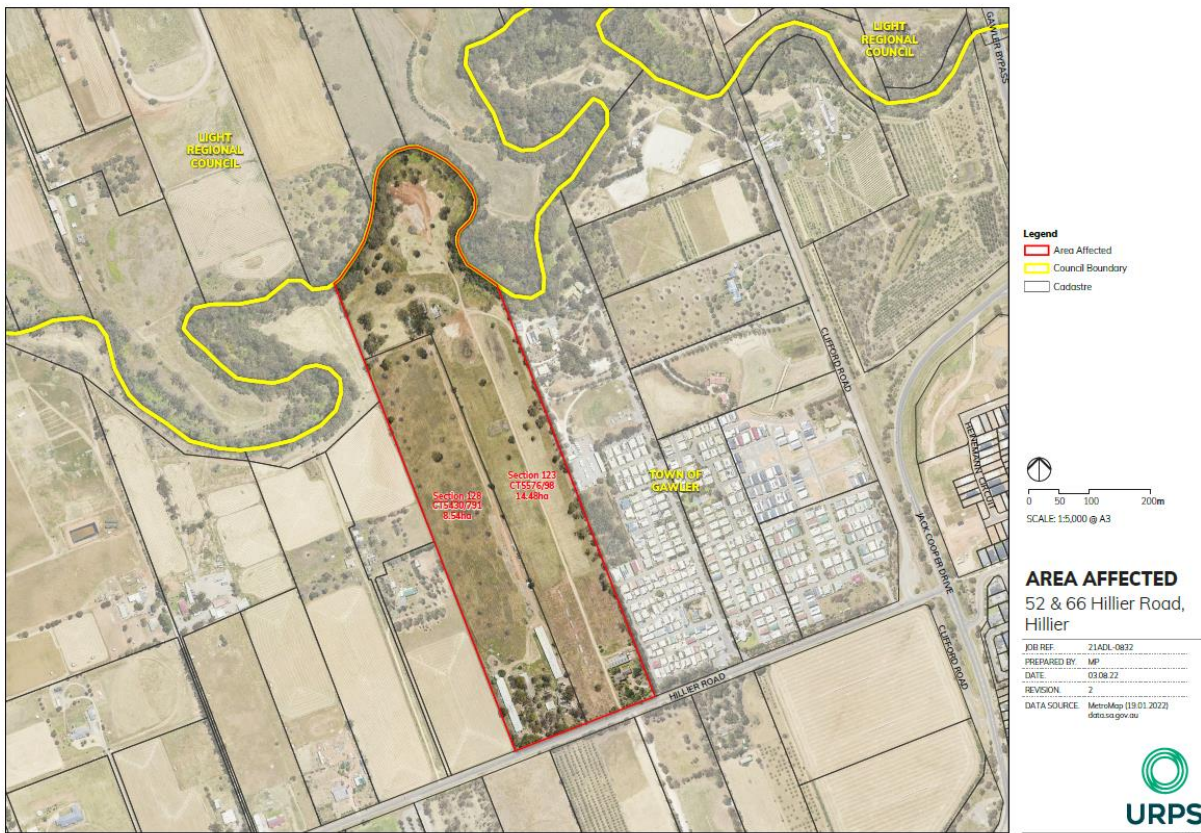


Figure 1: The housing development extension that was assessed for flora and fauna of significance, Area Affected indicated in yellow.



1.2 Study Area

1.2.1 Administrative Boundaries & Overlays

The site is located on the border of two IBRA Regions: the Eyre Yorke Block and Flinders Lofty Block. It is within the Northern and Yorke Landscape Board and the Gawler Council. Relevant overlays include the Native Vegetation Overlay (*NV Act 1991*), Regulated and Significant Tree Overlay (*Planning, Development and Infrastructure [PDI] Act 2016*) and the Flooding & Bushfire Hazard overlay (*Planning and Design Code 2021*).

1.2.2 Land Use

The two properties have historically been used for agriculture and livestock and are surrounded by land uses such as rural residential, agricultural and livestock production.



2.0 METHODOLOGY

2.1 Desktop Assessment

A preliminary desktop assessment was conducted to identify threatened flora and fauna that may be impacted by the proposed works.

2.1.1 Preliminary mapping

Preliminary mapping of vegetation was used to determine the extent of remnant vegetation (protected under the *NVA 1991*), and presence of any declared plants (under the *Landscape South Australia (LSA) Act 2019*) or environmental weeds in the sites proposed for works.

2.1.2 Database searches

Database searches were used to determine the range of threatened flora and fauna species and ecological communities, protected under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* and *National Parks and Wildlife (NPW) Act 1972*, that are likely to occur in the area within a 5 km buffer. The search tools used include:

- [A Protected Matters Search](#) to identify matters of national significance under the *EPBC Act 1999*, including threatened species and ecological communities.
- [A Biological Database of South Australia \(BDBSA\) search](#) using NatureMaps and Atlas of Living Australia (ALA) to determine flora species recorded within a 5 km radius of the site and species listed under the *NPW ACT 1972*.
- [Appendices in the NVC Bushland and Scattered Tree Assessment Manuals](#) to determine scattered trees species that provide suitable habitat for threatened fauna.
- [DEH \(in progress\) unpublished and provisional list of Threatened Ecosystems](#) to identify threatened and rare ecosystems.

Additional database searches were used to determine the suite of weed species present in the area (BDBSA, NatureMaps and ALA) and to identify any local phytophthora risk sites.

2.2 Field assessment

A vegetation survey was conducted at 52 and 66 Hillier Road to identify any environmental risks associated with the proposed works. The assessments addressed native vegetation protected under the *NVA 1991*, Regulated and Significant Trees *PDI Act 2016* and *PDI Regulations (General) 2017*, weeds (Declared and environmental) and phytophthora risk. The survey covered an area of 23.02 ha.

2.2.1 Native Vegetation protected under NVA 1991

Native vegetation was assessed using SAM and BAM (<0.5 ha) methodologies as defined by the Native Vegetation Council (NVC 2020). The assessments included identifying the species present, photographing the vegetation and collecting a series of health criteria to support an evaluation of the habitat.



2.2.2 Significant and Regulated Trees

The *PDI Act 2016* and *PDI Regulations 2017* describe a 'regulated tree' as any tree within The Regulated and Significant Tree Overlay that has a trunk circumference greater than 2 metres when measured at 1 m above natural ground level. Multi-stemmed trees can be considered regulated if the total circumference is 2 m or more, and the average is 0.625 m or more at 1 m above natural ground level.

A 'significant tree' is any tree within The Regulated and Significant Tree Overlay that has a trunk circumference greater than 3 metres when measured at 1 m above natural ground level. Multi-stemmed trees can be considered regulated if the total circumference is 3 m or more, and the average is 0.625 m or more at 1 m above natural ground level. Any tree identified as significant in Part 10 of the Planning and Design Code is also considered a 'significant tree'.

Trees protected under the *Native Vegetation Act 1991* are exempt from the Significant and Regulated Trees sub-regulations, according to the *PDI Regulations 2017*.

2.2.3 Amenity Vegetation

The amenity vegetation survey included an assessment of non-native vegetation and native vegetation that did not fit under the *NVA 1991*. The assessment mapped any

- native and non-native plants (gardens areas; hedges; young native plantings etc.)

The Amenity Vegetation Assessment enabled a calculation of the area (m²) of amenity vegetation that will need to be removed.

2.2.4 Weeds

Declared and Environmental weeds described in the *LSA Act 2019, Landscape SA (General) Regulations 2020* and on the DIT Environmental Weeds List (2017) were identified. Recommendations for the safe management and removal of these will be provided based on the requirements defined by the Department of Primary Industries and Regions (PIRSA).



3.0 RESULTS

3.1 Desktop Assessment

3.1.1 Threatened Flora

A NatureMaps search identified 15 threatened species protected under the *NPW Act 1972* within a 5 km radius of the site. No threatened species were identified in a Protected Matters search, however due to the seasonality of defining features (e.g., seed heads of *Austrostipa spp.*), it is possible that some species were present on site but unable to be identified to species level.

Table 1: A likelihood analysis of threatened flora protected under the EPBC Act 1999 and the NPW Act 1972. SOURCE: BDSA (1), ALA (2), NatureMaps (3), Observed (4), Protected Matters Search (5). NPW Act: Endangered (E), Vulnerable (V), Rare (R). EPBC Act: Extinct (EX), Critically Endangered (CR), Endangered (EN), Vulnerable (VU).

Species (common name)	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments (Table 2)
<i>Acacia iteaphylla</i> (Flinders Ranges Wattle)	R	-	3	2018	Found in hills on rocky outcrops or in valleys along rocky creeks (Flora of Australia, 2021).	Unlikely – unsuitable habitat.
<i>Acacia pendula</i> (Weeping Myall)	V	-	3	2018	Grows mainly on floodplains in fertile alluvial clay, sometimes dominant in woodland and open woodland (Flora of Australia, 2021).	Likely – potentially found around creek line.
<i>Aristida australis</i>	R	-	3	2018	Found in sandy soils of the Southern Mount Lofty Ranges, Lake Eyre, and Eastern Flinders Ranges (Grasses of Australia, 2002)	Unlikely – unsuitable habitat.
<i>Austrostipa gibbosa</i> (Swollen Spear-grass)	R	-	3	2018	Growing in rich loamy soil along creeks and seasonally wet areas in woodland and grassland (Seeds of SA, 2021).	Likely – possibly found around the creek line.
<i>Austrostipa multispiculis</i> (Many-flowered Spear-grass)	R	-	3	2018	Found in grasslands and eucalypt woodland (DEW, 2017).	Possible – may grow in the grassland however this area is heavily dominated by weeds.
<i>Bothriochloa macra</i> (Red-leg Grass)	R	-	3	2018	Found in woodland and grassland. In foothills, not generally in high rainfall forests (DEW, 2017).	Possible – may grow in the grassland however this area is heavily dominated by weeds.
<i>Choretrum chrysanthum</i> (Yellow Sour-bush)	R	-	3	2017	Grows in sand, loam and sandy-clay in mallee and eucalypt woodland (DEWNR, 2012).	Unlikely – unsuitable habitat.
<i>Crassula sieberiana</i> (Sieber's Crassula)	E	-	3	2017	Found in rock ledges and in crevices and on seasonally inundated ground. Also occur in Peppermint Box grassy woodland and semi-arid areas (VicFlora, 2022).	Unlikely – unsuitable habitat.



Species (common name)	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments (Table 2)
<i>Dianella longifolia</i> var. <i>grandis</i> (Yellow-anther Flax-lily)	R	-	3	2017	Grassy woodland (Seeds of SA, 2021).	Unlikely – unsuitable habitat.
<i>Leptorhynchos elongatus</i> (Lanky Buttons)	E	-	3	2017	Woodland and grassland on sandy to sandy-loam soils (Seeds of SA, 2021).	Possible – may grow in the grassland however this area is heavily dominated by weeds.
<i>Maireana rohlachii</i> (Rohrlarch's Bluebush)	R	-	3	2018	Found on heavy soils or in seasonally wet areas (Royal Botanical Gardens of Victoria, 2022).	Likely – suitable habitat and records within the last 10 years.
<i>Pterostylis lepida</i> (Halbury Rusyhood)	E	EN	3	1999	Grows in mallee woodland with a dense shrub layer on plains (Atlas of Living Australia, 2022).	Unlikely – unsuitable habitat and record is not recent.
<i>Ptilotus angustifolius</i> (Narrow-leaf Yellow-tails)	E	-	3	2012	Found in arid regions of SA (Hammer, 2018).	Unlikely – unsuitable habitat.
<i>Rumex dumosus</i> (Wiry Dock)	R	-	3	2012	Grasslands and heavy clay soils (Flora of Victoria, 2021).	Possible – may grow in the grassland however this area is heavily dominated by weeds.
<i>Thelymitra batesii</i> (Bate's Sun-orchid)	R	-	3	2005	Heathy woodlands and heathy open forest on sandy and gravelly clay loam soils (Seeds of SA, 2021).	Unlikely – this site is degraded and heavily dominated by weed species.

Table 2: Criteria for the likelihood of occurrence of species within the survey area.

Likelihood	Criteria
Highly Likely/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.
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.



3.1.2 Threatened Fauna

A Protected Matters search found that no threatened fauna species listed under the *EPBC Act 1999* are known, or have habitat known to occur within a 5km radius of either site 1 or 2 within the last 25 years. A NatureMaps search identified 12 fauna species that are listed as threatened under the *NPW Act 1972*, that have been observed within a 5 km radius of this site within the last 25 years.

Table 3: A likelihood analysis of threatened fauna protected under the *EPBC Act 1999* and the *NPW Act 1972*. SOURCE: BDSA (1), ALA (2), NatureMaps (3), Observed (4), Protected Matters Search (5). NP&W Act: Endangered (E), Vulnerable (V), Rare (R). EPBC Act: Extinct (EX), Critically Endangered (CR), Endangered (EN), Vulnerable (VU).

Species (common name)	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments (Table 2)
<i>Hieraetus morphnoides</i> (Little Eagle)	V	-	3	2017	Seen over woodland, forested land and open country. Avoids heavy forest (Birdlife Australia, 2021).	Possible – prefer open country and avoid heavily forested areas.
<i>Stagonopleura guttata</i> (Diamond Firetail)	V	-	3	2018	Occurs in a wide range of Eucalypt dominated habitat with a grassy understorey (DEW, 2019).	Unlikely – unsuitable habitat.
<i>Emydura macquarii</i> (Murray River Turtle)	V	-	3	2017	Occurs throughout many of the rivers of the eastern half of Australia (Atlas of Living Australia, 2022).	Likely – a recent record in the Gawler River.
<i>Falco peregrinus</i> (Peregrine Falcon)	R	-	3	2018	Use a broad range of habitats from rainforest to arid. Need abundant prey and secure nest sites (DEH, 2009).	Possible – utilise a broad range of habitats. However not likely to be many secure nest sites.
<i>Falco subniger</i> (Black Falcon)	R	-	3	2017	Nomadic, preferring sparse woodlands, scrubby grasslands and farmlands (Birds SA, 2021).	Possible – they prefer sparse woodlands and grasslands.
<i>Falcunculus frontatus frontatus</i> (Eastern Shriketit)	R	-	3	2018	Found in a variety of habitats, including woodlands, scattered trees, forested gullies. Rarely feeds near the ground (Australian Museum, 2020).	Possible – uses a range of habitat including scattered trees.
<i>Neophema elegans elegans</i> (Elegant Parrot)	R	-	3	2010	Wide range of open habitats, including grasslands, shrublands, mallee, woodlands and thickets, bluebush plains, heathlands, saltmarsh and farmland (Birdlife Australia, 2021).	Possible – inhabit a range of open habitats including grasslands.
<i>Neophema splendida</i> (Scarlet-chested Parrot)	R	-	3	2017	Arid, usually waterless habitats preferring Mallee and Mulga habitats (Birdlife Australia, 2019).	Unlikely – unsuitable habitat.
<i>Turnix varius varius</i> (Painted Buttonquail)	R	-	3	1996	Various Eucalypt habitats, with a preference for areas with leaf litter (DEW, 2019).	Unlikely – unsuitable habitat and record is not recent.



Species (common name)	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments (Table 2)
<i>Trichosurus vulpecula</i> (Common Brushtail Possum)	R	-	3	2018	Inhabits woodland, forests, heath and urban areas using trees with hollows for nesting (Australian Museum, 2020).	Likely – there is urban landscape on the edge of the site. Also, trees are present at the site that they can nest in.
<i>Lophoictinia isura</i> (Square-tailed Kite)	E	-	3	2007	Mainly inhabits open eucalypt forests and woodlands, often dominated by stringybarks, peppermints or box-ironbark eucalypts. Also occur along edges of dense forests and along road verges with remnant or planted trees (Birdlife Australia, 2022).	Unlikely – unsuitable habitat.
<i>Parvipsitta pusilla</i> (Little Lorikeet)	E	-	3	2012	Forages primarily in canopy of open Eucalyptus forest and woodland. Often inhabit and nest within riparian habitats (OEH, 2022).	Possible – potentially inhabit and nest in the trees in close proximity to the river.

3.1.3 Threatened Ecological Communities

No threatened ecosystems described in the *EPBC Act 1999* or the South Australian provisional list of threatened ecosystems (DEH in progress) were identified during the survey.



3.2 Field Assessment



0 0.05 0.1 0.2 0.3 0.4 Kilometers



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- Parcel Cadastre Boundaries
- River Red Gum Woodland with Native Grass Understorey
- Riparian Woodlands
- Infrastructure and Planted Vegetation
- Recent Plantings
- Weedy Grasslands
- Scattered Trees (NVA)
- REG
- SIG



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Figure 2: Vegetation present at 52 and 66 Hillier Road, as recorded in 2022 field assessments. REG: Regulated Trees, SIG: Significant Trees (under the PDI Regulations 2017)



3.2.1 Flora

Vegetation on site consists of a mixture of native woodlands, planted vegetation and weedy grasslands. The area has a history of disturbance, with historic clearance and recent disturbance from vehicle tracks, infrastructure, dumping and weed incursion (Figure 3). Site has been somewhat maintained through mowing and removal of large non-native trees. Remnant native vegetation is present at the northern end of the site, with intact River Red Gum (*Eucalyptus camaldulensis*) riparian woodlands. As is seen through most of the Gawler River, there is a high density and diversity of weed species, including multiple Declared weeds (*Landscape South Australia Act 2016*) throughout the riverbanks. Native vegetation is also present in scattered trees throughout the site (Figure 2 and 4), as well as two isolated patches of native grasslands (Figure 2 and 5). The native grasslands are, however, highly degraded, with a high density of weed species and limited native diversity. Trees along the eastern boundary of the property and surrounding the house in the southern end of Section 128 are a mixture of native and non-native planted vegetation. Despite some of the species being locally native, since they are planted, they are not protected under the *Native Vegetation Act 1991*. Twenty-five of these planted trees are, however, considered to be Significant and Regulated Trees due to their large size. A summary of the protected vegetation is shown in Table 4. There has been a recent planting (within the last 5 years) of native trees and shrubs, on the southern boundary of Section 123. The remaining vegetation on site is a weedy grassland, with a mixture of environmental and Declared weed species (Figure 6 and 7).

Results from the desktop assessment showed three threatened flora species assessed as likely to use the site: *Acacia pendula* (Weeping Myall), *Austrostipa gibbosa* (Swollen Spear-grass) and *Maireana rohrlachii* (Rohrlarch's Bluebush). However, none of these species were identified in the field surveys. Population size, extent, structure, continuity or survivability of these species is unlikely to be impacted by a code amendment to this area.

Vegetation plantings at the southern end of the site is considered amenity vegetation as it provides some aesthetic value, and screening of infrastructure. Weedy grasslands have low amenity value.

Table 4: Summary of vegetation present at 52 and 56 Hillier Road.

Vegetation protected under the <i>NV Act 1991</i>	31 scattered trees/clusters
	0.29 ha of bushlands
Vegetation protected under the <i>PDI Act 2016</i>	9 Significant Trees
	16 Regulated Trees



Figure 3: Vegetation disturbance impacts



Figure 4: Eucalyptus camaldulensis (River Red Gum)



Figure 5: Native grass species: *Enneapogon nigricans* (top left), *Enteropogon acicularis* (top right), *Austrostipa* spp. (bottom)



Figure 6: Weedy grasslands



Figure 7: Declared weed species observed on site, from left to right: Artichoke Thistle, Prickly Pear, African Boxthorn, Salvation Jane.



3.2.2 Declared Weeds:

Nine Declared weeds were recorded on site during August/September field surveys. These weed species require control, as outlined by the *Landscape SA Act 2019*. A summary of the management requirements is provided in (Table 5).

Table 5: Declared weeds present on site and the relevant legislative management requirements. *Categories of Declared weeds relates to the level of fines relevant to each plant species, as defined under the PDI Regulations 2017.

	<i>Asparagus fern</i>	<i>Artichoke Thistle</i>	<i>Salvation Jane</i>	<i>Montpellier Broom</i>	<i>African Boroom</i>	<i>Common Olive</i>	<i>Prickly Pear</i>	<i>Aleppo Pine</i>	<i>Athel Pine</i>
Category*	2	3	3	2	2	2	2	2	3
Landowners in this region to take reasonable steps to kill plants and prevent their spread	X	X	X	X	X	X	X	X	X
Boards may recover certain costs from owners of land adjoining road reserves	X	X	X	X	X	X	X	X	X
Must not be transported on a public road, including as a contaminant of anything		X			X		X	X	X
Must not be sold or traded in any way, including as a contaminant of anything		X			X		X	X	X
Follow local regulations specific for this species						X			
Must not be imported into the region							X		



3.2.3 Fauna

Field surveys found 12 native bird species, one frog and one lizard using the site. Six introduced species of fauna were recorded through tracks and scats. A summary of fauna recorded on site is shown in Table 6. Fauna would be most likely to use the area to the north of the site, where vegetation is denser and there is plenty of large *Eucalyptus* trees for birds to perch and nest in. Some nests were recorded in the scattered trees throughout the site. The area to the south of Section 128 had lots of bird activity due to the density of trees there and is expected to have moderate reptile activity as there is plenty of scrap metal and large logs that they can hide under.

No threatened fauna were recorded on site. Results from the desktop assessment showed two threatened species assessed as likely to use the site: Murray River Turtle and Common Brushtail Possum. These species are vulnerable and rare (relatively) under the *NPW Act 1972*. While it is likely that the Murray River Turtle will use the Gawler River as habitat, it is unlikely that any developments on this site will impact the river vegetation or the creek line itself. The Common Brushtail Possum is also likely to use the vegetation on site, particularly the hollows of large River Red Gum trees. The trees most likely to be utilised by this species are concentrated to the northern end of the site. Any changes to zoning of this site is not expected to impact the population size, extent, structure, continuity or survivability of these species. The habitat present on site is not critical to the survival of these species, or recovery.



Figure 8: Bearded Dragon (*Pogona barbata*)



Table 6: Fauna species recorded at 52 and 66 Hillier Park.

Species Name	Common Name	Native
Birds		
<i>Anthochaera carunculata</i>	Red Wattlebird	✓
<i>Columba livia domestica</i>	Feral Pigeon	
<i>Corvus coronoides</i>	Australian Raven	✓
<i>Elanus axillaris</i>	Black-shouldered kite	✓
<i>Eolophus roseicapilla</i>	Galah	✓
<i>Grallina cyanoleuca cyanoleuca</i>	Magpielark	✓
<i>Hirundo neoxena neoxena</i>	Welcome Swallow	✓
<i>Manorina melanocephala</i>	Noisy Miners	✓
<i>Ocyphaps lophotes</i>	Crested Pigeon	✓
<i>Passer domesticus domesticus</i>	House Sparrow	
<i>Petrochelidon nigricans</i>	Tree Martin	
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	✓
<i>Rhipidura leucophrys</i>	Willy-wag tail	✓
<i>Sturnus vulgaris vulgaris</i>	Common Starling	
<i>Taeniopygia guttata castanotis</i>	Zebra Finches	✓
<i>Trichoglossus moluccanus moluccanus</i>	Rainbow Lorikeet	✓
<i>Turdus merula merula</i>	Common Blackbird	
Mammals		
<i>Oryctolagus cuniculus</i>	Rabbit (European Rabbit)	
Reptiles and Amphibians		
<i>Crinia signifera</i>	Common Froglet	✓
<i>Pogona barbata</i>	Eastern Bearded Dragon	✓



4.0 CONCLUSION

The site is a highly modified area consisting mostly of invasive plants and scattered trees, both native and planted. Native biodiversity and habitat availability is restricted to the northern end of the site, along the Gawler River. This area is a floodplain that is lower than the rest of the site, and as such it is unlikely that the area will be developed in future. Given this, there are no matters of environmental significance that would be impacted by a code amendment to this site.



5.0 REFERENCES

- Atlas of Living Australia. (2022). *Emydura macquarii* (Murray River Turtle).
- Atlas of Living Australia. (2022). *Pterostylis lepida* (Halbury Rusyhood).
- Australian Museum. (2020). Species Profile: Common Brushtail Possum.
- Australian Museum. (2020). Species Profile: *Falcunculus frontatus*, Eastern Shrike-tit.
- Birdlife Australia. (2021). Species Profile: *Falco subniger*, Black Falcon.
- Birdlife Australia. (2021). Species Profile: *Hieraaetus morphnoides*, Little Eagle.
- Birdlife Australia. (2021). Species Profile: *Lophoictinia isura*, Square-tailed Kite.
- Birdlife Australia. (2021). Species Profile: *Neophema elegans*, Elegant Parrot.
- Birdlife Australia. (2019). Species Profile: *Neophema splendida*, Scarlet Chested Parrot.
- DEH. (2009). Threatened Species Profile: *Falco peregrinus*, Peregrine Falcon.
- Development Regulations 2008 (SA).
- DEW. (2017). Native Grasses: a regional guide
- DEW. (2019). Threatened Species Fact Sheet: *Stagonopleura guttata*, Diamond Firetail.
- DEW. (2019). Threatened Species Fact Sheet: *Turnix varius varius*, Painted Buttonquail.
- DEWNR. (2012). Flora of South Australia (5th ed.).
- Environmental Protection and Biodiversity Conversation Act 1999 (Aus).
- Flora of Australia. (2021). Species Profile: *Acacia iteaphylla*, Flinders Ranges Wattle.
- Flora of Australia. (2021). Species Profile: *Acacia pendula*, Weeping Myall.
- Flora of Victoria. (2021). Species Profile: *Rumex dumosus*, Wiry Dock.
- Grasses of Australia. (2002). Species Profile: *Aristida australis*
- Hammer, T. A. (2018). The noble and the exalted: multidisciplinary approach to resolving a taxonomic controversy within *Ptilotus* (Amaranthaceae). *Australian Systematic Botany*, 31(3) 262-280.
- Landscape South Australia Act 2019 (SA).
- National Parks and Wildlife Act 1972 (SA).
- Native Vegetation Act 1991 (SA).
- Office of Environment & Heritage, 2022, Threatened Species Profile: Little Lorikeet, <https://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=20111>
- Planning, Development, and Infrastructure Act 2016 (SA).
- Royal Botanical Gardens of Victoria. (2022). Species Profile: *Maireana rohrlachii*, Rohrlach's Bluebush.



Seeds of SA. (2021). Species Profile: *Austrostipa gibbosa*, Swollen Spear-grass.

Seeds of SA. (2021). Species Profile: *Dianella longifolia* var. *grandis*, Yellow-anther Flax-lily.

Seeds of SA. (2021). Species Profile: *Leptorhynchus elongatus*, Lanky Buttons.

Seeds of SA. (2021). Species Profile: *Thelymitra batesii*, Bate's Sun-orchid.

VicFlora. (2022). Species Profile: *Crassula sieberiana*, Sieber's Crassula.