

Native Vegetation Clearance

Springwood Development Village 3

Data Report

Clearance under the *Native Vegetation Regulations 2017*

31 August 2020

Prepared by NVC Accredited Consultant M. Laws (EBS Ecology)



Native Vegetation Clearance Springwood Development Village 3 Data Report

31 August 2020

Version F2

Prepared by EBS Ecology for Springwood Development Nominees Pty Ltd

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Cover photograph: Musk Lorikeet (*Glossopsitta concinna*) utilising a scattered tree hollow within the Project Area.

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Glossary and abbreviations

| | |
|---------------------|--|
| BDBSA | Biological Database of South Australia (maintained by DEW) |
| DAWE | Department of Agriculture, Water and the Environment (Commonwealth) |
| DEW | Department for Environment and Water (South Australia) |
| EBS | Environment and Biodiversity Services Pty Ltd (trading as EBS Ecology) |
| EPBC Act | <i>Environmental Protection and Biodiversity Conservation Act 1999</i> |
| ha | Hectare(s) |
| IBRA | Interim Biogeographical Regionalisation of Australia |
| km | Kilometre(s) |
| NatureMaps | Initiative of DEW that provides a common access point to maps and geographic information about South Australia's natural resources in an interactive online mapping format |
| NPW Act | <i>National Parks and Wildlife Act 1972</i> |
| NV Act | <i>Native Vegetation Act 1991</i> |
| NVC | Native Vegetation Council |
| PMST | Protected Matters Search Tool (under the EPBC Act; maintained by DAWE) |
| Project | Springwood Development Village 3 |
| Project Area | 6.909 ha area encompassing the Springwood Development Village 3 |
| SA | South Australia(n) |
| Search Area | 5 km buffer of the Project Area considered in the desktop assessment database searches |
| SEB | Significant Environmental Benefit |
| sp. | Species |
| spp. | Species (plural) |
| Springwood | Springwood Development Nominees Pty Ltd |
| ssp. | Sub-species |
| STAM | Scattered Tree Assessment Method |
| TEC | Threatened Ecological Community |
| var. | Variety (a taxonomic rank below that of species and subspecies, but above that of form) |

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1. Application information

Table 1. Application details.

| | | | |
|-------------------------------|---|------------------|-----------------------------|
| Applicant: | Springwood Development Nominees Pty Ltd | | |
| Key contact: | Anthony Andolfatto Senior Development Manager | | |
| Landowners: | Springwood Development and Ames, Bruggerman & Priestley (see Attachment 1 – Springwood Land Tenure Plan). | | |
| Site Address: | Between Bosley Way and Balmoral Track, Gawler East SA 5118 | | |
| Local Government Area: | Gawler | Hundred: | Barossa (105200) |
| Title ID: | CT/6238/923, CT/6162/334 | Parcel ID | D124197 Q7048, D28814 A4 |

Table 2. Summary of the proposed clearance.

| | |
|---|--|
| Purpose of clearance | Clearance required for the construction of a residential subdivision. |
| Native Vegetation Regulation | Regulation 12(35) – Residential subdivision |
| Description of the vegetation under application | <ul style="list-style-type: none"> • 25 large <i>Eucalyptus porosa</i> (Mallee Box) trees. • 2 medium <i>Eucalyptus porosa</i> (Mallee Box) trees. |
| Total proposed clearance - area (ha) and number of trees | 27 scattered trees are proposed to be cleared. |
| Level of clearance | <p>Level 4 (>20 trees, Total Biodiversity Score of <250, seriously at variance with Principle of Clearance(b) – wildlife habitat)</p> <p>The NVC should consider the following moderating factors to determine if the clearance is seriously at variance or at variance with Principle of Clearance(b):</p> <p>Is the clearance likely to:</p> <ul style="list-style-type: none"> • Lead to a long-term decrease in the size of a population; • Reduce the area of occupancy of the species; • Fragment an existing population into two or more populations; • Adversely affect habitat critical to the survival of a species; • Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline; • Result in invasive species that are harmful to a threatened species becoming established in the threatened species habitat; and • Interfere with the recovery of the species. <p>Is <i>Eucalyptus porosa</i> (Mallee Box) underrepresented within the IBRA Environmental Association or IBRA Subregion.</p> |
| Overlay (Planning and Design Code) | Native Vegetation Overlay |



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Mitigation hierarchy

Avoid

Areas of the highest density trees are of particularly high value with many having large hollows and provide other habitat values such as food and roosting resources. Springwood has avoided the areas of highest vegetation cover where practical and maintains over 70 ha of open space.

Minimise

Prior to development commencing, a Vegetation Management Plan and a Construction Environmental Management Plan will be prepared so as to guide the future development of the site. Reserves have been incorporated into the strategic design where remnant trees are present where possible in a bid to reduce SEB requirements while also improving the amenity value of the development.

Rehabilitate / restore

The project engineers have included a preliminary stormwater treatment strategy for the site. This considers the drainage for the Springwood Development and includes elements such as macrophyte beds, shallow wetland ponds and ecological sponges / reed beds. Kellogg Brown and Root who undertook ecological assessments of the entire project area between 2008 and 2010, provided input into the most suitable sites and has assisted in the initial stormwater treatment planning. The wetland systems and ponds along the eastern section of the Springwood Creek avoids the important reptile habitat areas, all of the remnant trees and will allow for development of biologically productive riparian habitats in what is currently a weed infested gully.

SEB Offset proposal

Payment of \$102,907.24 (includes administration fee of \$5,364.83)

2. Purpose of clearance

2.1 Description

EBS Ecology (EBS) was engaged by Springwood Development Nominees Pty Ltd (Springwood) to undertake a native vegetation clearance assessment for Village 3 of the Springwood Development (the Project), a residential subdivision in Gawler East creating an additional 1,201 allotments (across 10 villages).

The Project involves the clearance of 27 scattered *Eucalyptus porosa* (Mallee Box) trees.

Objectives

The objectives of the native vegetation clearance assessment were to:

- Undertake a desktop assessment of the likelihood of occurrence 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* (NPW Act);
- Assess native vegetation within the Project Area for clearance using the Native Vegetation Council (NVC) endorsed Scattered Tree Assessment Method (STAM); and
- Calculate the Significant Environmental Benefit (SEB) offset requirements based on the impact footprint.

2.2 Background

Previous surveys

The entire Springwood Development site was first assessed in November 2008 and then seasonally through to 2010 by Kellogg Brown & Root (KBR) on behalf of Delfin Lend Lease. These surveys involved rigorous ecological assessments of the area utilising both flora and fauna survey methods (KBR 2010; Attachment 2). This included the use of pitfall trapping to analyse inconspicuous species such as small reptiles and mammals. A number of ecological constraints were identified within this report and this directed the future planning of the Springwood Development with a view to avoiding key areas where possible.

In March 2019, EBS was engaged by Arcadian Property to undertake a review of the KBR report and Springwood Development site to determine if the ecological conditions present at the time of the 2008–2010 surveys and identified species of conservation significance were still relevant to the current Springwood Masterplan (EBS 2019; Attachment 3).

EBS (2019) undertook a desktop assessment involving searching Commonwealth and State databases to identify threatened species potentially occurring or known from the proposed Springwood Development site, as well as relevant matters of national environmental significance and other matters protected under the EPBC Act and the NPW Act. A review of other available background information sources such as NatureMaps was also conducted. EBS also undertook a field survey in March 2019, which largely focussed on ground-truthing the ecological values/constraints as presented in KBR (2010) and included a roaming fauna survey.

The reports by KBR (2010) and EBS (2019) should be read in conjunction with this Native Vegetation Clearance Data report for detailed information of the flora, fauna and ecological communities within the entire Springwood Development site.

Previous and future villages of the development

The Springwood Development includes a total 11 villages plus the Village Centre (see Attachment 4 – Springwood Village Staging Plan). Works have been completed in the majority of Village 1 in the northeast corner of the Springwood Development site, which was devoid of native vegetation having been previously used for cropping (see Figure 7.5 Native Vegetation Areas in KBR (2010)). Between the 11 villages, approximately 74 hectares (ha) of open space has been incorporated into the design, equating to 34% of the overall Springwood Development site (Attachment 4).

Additional to the impacts to native vegetation within Village 3, scattered *Eucalyptus porosa* (Mallee Box) trees and/or *Eucalyptus porosa* Open Woodland will be impacted within Village 5. Furthermore, several planted trees, including regulated and significant trees will be impacted by the development, mainly within Villages 2, 4, 7 and 8 (Attachment 4). Overall, removal of 47 regulated and 40 significant trees is required, including one regulated and nine significant within Village 3.

Two small areas (approximately 1.4 ha) of critically endangered Iron-grass Natural Temperate Grassland of South Australia EPBC Act Threatened Ecological Community (TEC) was identified along the unnamed creek within the Springwood Development site by KBR (2010; see Figure 7.1 Matters of National Environmental Significance). At the time of the survey, the TEC was in moderate to good condition, despite having been exposed to excessive grazing and severe trampling-compaction pressure by livestock and grazing by rabbits in the past. Although the occurrence had moderate to heavy weed infestations, the native flora species diversity was considered to be reasonable with 16 species recorded and more expected following the cessation of stock grazing (KBR 2010). EBS (2019) confirmed the TEC and still be present and in relatively good condition in terms of tussock density and size. It was not possible to make an accurate assessment as the herbaceous species diversity during the March 2019 survey due to very poor conditions from a seasonal perspective. A road is proposed between Villages 8 and 9 that will impact this TEC (Attachment 4).

Current and surrounding land use

The current land use of the Springwood Development site is primarily farmland. There is also a disused sand quarry, which occupies 61.71 ha of the northwest of the site, and a tributary of the South Para River. The surrounding land consists of residential and farmland.

Administrative boundaries

The Springwood Development site falls within the Gawler and Barossa Local Government Areas, Northern and Yorke Landscape Region, Barossa Hundreds and Adelaide County.

Bioregions

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 Flinders Lofty Block IBRA Bioregion, Mount Lofty Ranges IBRA Subregion and Rosedale IBRA Environmental Association.

Approximately 15% (46,342 ha) of the Mount Lofty Ranges IBRA Subregion and approximately 5% (3,089 ha) of the Rosedale IBRA Environmental Association is mapped as remnant vegetation. Of this, 27% (12,706 ha) and 11% (331 ha) is formerly conserved and protected, respectively.

2.3 General location map

The location of Springwood Development Village 3 Project Area is display in Figure 1. The Project Area covers a total area of 6.909 ha, which includes 6.424 ha of allotments and 0.485 ha of areas that will be impacted by earthworks. The Project Area is approximately 3 kilometres (km) east of Gawler.

2.4 Details of the proposal

The layout of the entire Springwood Development is illustrated in Figure 2. The Springwood Village Staging Plan is provided in Attachment 4. The Springwood Tree Retention Plan is provided in Attachment 5. The Springwood Village 3 Design Plans are provided in Attachment 6.

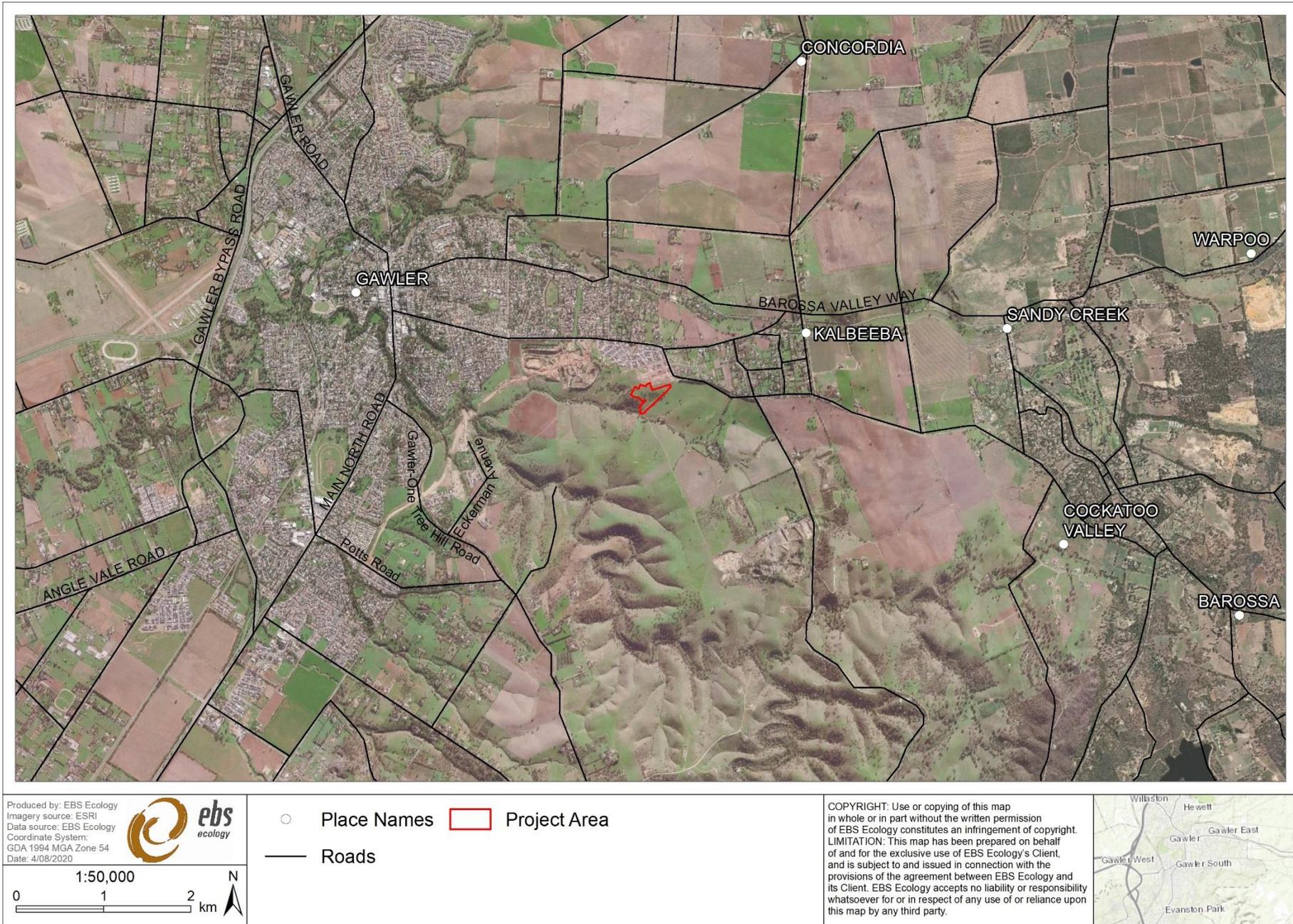


Figure 1. Location of the Springwood Development Stage 3 Project Area.

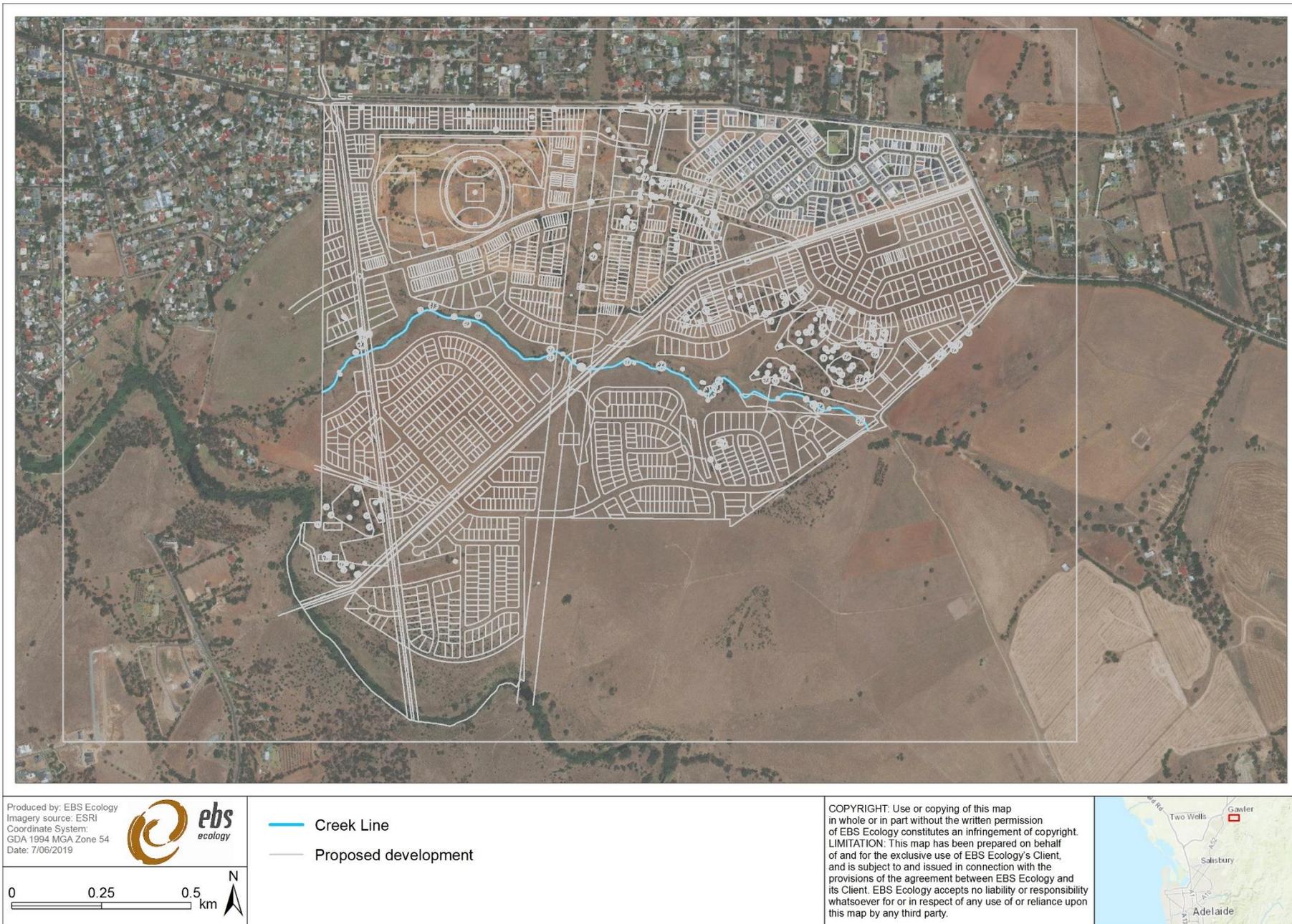


Figure 2. The entire proposed Springwood Development.

2.5 Approvals required or obtained

Approval obtained

The following approval has been obtained:

- Regulation 42 under the *Development Act 1993* – Development Application numbers 490/D026/19 and 960/D025/19, Development Approval granted 13 February 2020 (Attachment 7).

The Development Approvals includes consent to clear 47 regulated and 40 significant trees (one regulated and nine significant within Village 3). The regulated and significant trees within Village 3 are also indigenous, remnant native trees defined as 'Native Vegetation' under the *Native Vegetation Act 1991* (NV Act). Therefore, these trees may not be cleared without the consent of the NVC under the NV Act. Subregulation 5 of the Development Regulations describes the circumstances in which the Regulated and Significant tree provisions would not apply, including to a tree that may not be cleared without the consent of the NVC under the NV Act. Therefore, regulated and significant tree legislation does not apply to the trees within the Village 3 Project Area, which are considered in this Native Vegetation Clearance Application.

Approvals required

The following approvals are/may be required:

- Referral under the EPBC Act due to the proposed impact to the Iron-grass Natural Temperate Grassland of South Australia TEC within the Springwood Development site (KBR 2010; EBS 2019); and
- Springwood have statutory obligations under the *Aboriginal Heritage Act 1988*, *Landscape South Australia Act 2019* and NV Act.

2.6 Native Vegetation Regulation

An assessment against the Principles of Clearance under the *Native Vegetation Act 1991* is not required as the clearance associated with the 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—
 - (a) any development authorisation for the division of the land and for the use of the land for residential purposes required by or under the *Development Act 1993* has been obtained; and
 - (b) 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—
 - (a) clearance of vegetation established in accordance with a condition of a consent for clearance of vegetation; or
 - (b) 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] regulations.

2.7 Development Application information (if applicable)

The Springwood Development was granted Development Approval under Regulation 42 under the *Development Act 1993* for Development Application numbers 490/D025/19 and 960/D026/19 on 13 February 2020 (Attachment 7).

The Springwood Development falls within the Residential (Gawler East) Zone and Native Vegetation Overlay. The relevant Subzone is not yet known as the Gawler Local Government Area is part of Phase Three of the Planning Reform Implementation, which is set to be implemented in late 2020.

3. Method

3.1 Desktop assessment

A desktop assessment was undertaken to determine the potential for any threatened flora and fauna species, and TECs (both Commonwealth and State listed) to occur within the Project Area. This was achieved by undertaking database searches using a 5 km buffer of the Project Area (Search Area).

PMST report

A Protected Matters Search Tool (PMST) report was generated on 10 August 2020 to identify nationally threatened flora and fauna, and migratory species under the EPBC Act relevant to the Project Area (DAWE 2020). Only species and TECs identified in the PMST report that are likely or known to occur within the Search Area were assessed for their likelihood of occurrence within the Project Area.

BDBSA data extract

A data extract from the Biological Database of South Australia (BDBSA) was obtained from NatureMaps to identify flora and fauna species that have been recorded within 5 km of the Project Area (DEW 2020; data extracted 10 August 2020). The BDBSA is comprised of an integrated collection 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 SA Department for Environment and Water's (DEW) standards for data quality, integrity and maintenance. Only species with records since 1995 and within 1 km spatial reliability (reliable records) were assessed for their likelihood of occurrence.

3.2 Flora assessment

The flora assessment was undertaken by NVC Accredited Consultant Mark Laws on 29 July 2020 in accordance with the Scattered Tree Assessment Method (STAM) (NVC 2020).

The STAM is derived from the Scattered Tree Clearance Assessment in South Australia: Streamlining, Guidelines for Assessment and Rural Industry Extension report (Cutten and Hodder 2002). The STAM is suitable for assessing scattered trees in the following instances:

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

Details of the scattered tree Point Scoring System are outlined in the Scattered Tree Assessment Manual (NVC 2020).

The numbers of uncommon and threatened scattered tree using fauna species entered into the Scattered Tree Scoresheet were calculated by cross-referring the BDBSA data extract (see Section 3.1) and the lists of scattered tree using fauna in the Scattered Tree Assessment Manual (NVC 2020). The resource use of each species identified was considered when determining each tree's suitability for threatened fauna species (e.g. species that only use hollows in scattered trees were only assigned to scattered trees containing hollows).

3.3 Fauna assessment

All native and exotic fauna species opportunistically encountered (directly observed, or tracks, scats, burrows, nests and other signs of presence) during the native vegetation clearance assessment were recorded. Potential fauna refuge sites, such as hollows, rock crevices and creek lines were noted as an indication of availability of suitable habitat. Particular attention was paid to identifying habitat for threatened species. For each opportunistic fauna observation, the species, number of individuals, GPS location, detection methodology (sight, sound or sign) and habitat were recorded.

KBR (2010) recorded opportunistic fauna observations (including tracks, scats, burrows, nests and other signs of presence) and undertook active searching and pitfall trapping within the Springwood Development site. Active searching generally involved rock-turning, litter raking and excavating fresh burrows. A total of eight pitfall trap lines, each with five pitfall buckets were established in Mallee Box Mature Open Woodland (six sites) and Anthropogenic Grassland with shallow strata and surface rock scatter suitable for reptiles (two sites). The fauna assessment methods are detailed further in Attachment 2 (KBR 2010).

EBS (2019) recorded opportunistic fauna observations (including tracks, scats, burrows, nests and other signs of presence).

4. Assessment outcomes

4.1 Vegetation assessment

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

The Project Area was characterised by low undulating hills, sloping south from a crest in the north of the Project Area. The upper slopes were moderately inclined and waned into gently inclined lower slopes, with an open depression beyond the southern extent of the Project Area. Scattered rock outcrops were present with slight outcrop exposure.

The Project Area has largely been subject to complete clearing and modification into an improved pasture, with a dense ground cover dominated by introduced grasses and herbs including *Dactylis glomerata* (Cocksfoot), *Phalaris aquatica* (Phalaris), *Oxalis pes-caprae* (Soursob) and the declared *Echium plantagineum* (Salvation Jane). Various broadleaf and woody weed species were also scattered throughout the Project Area, including the declared *Cynara cardunculus* (Artichoke Thistle), *Lycium ferocissimum* (African Boxthorn) and *Olea europaea* (Olive).

A total of 27 native scattered *Eucalyptus porosa* (Mallee Box) trees were assessed for clearance within the Project Area. The majority of these trees were established and of moderate to good vigour, with only Tree 11 still establishing and two Over Mature trees (5 and 17) decreasing in vigour (Table 3). No native species were observed beneath any of the scattered trees. A small number of scattered *Eucalyptus porosa* trees occurring within the Project Area were not assessed for clearance as they were deemed to be planted based on historic satellite imagery and their location and growth habit.

Eucalyptus porosa Open Woodland occurred to the southwest of the Project Area. Similar to the scattered trees assessed within the Project Area, no native understorey was present in this woodland. Indeed, only one native shrub recorded within the Springwood Development site by KBR (2010).

The Scattered Tree Assessment Scoresheet is provided in Attachment 8.

Site map showing areas of proposed impact

The scattered trees proposed to be cleared are mapped in Figure 3.

Photo log

Photos of each of the scattered trees proposed to be cleared are provided in Appendix 1.

Table 3. Details of the scattered trees proposed to be impacted. Tree age classes described in table footer.

| Tree # | Tree spp. | No. of trees | Height (m) | Hollows | Diameter (cm) | Canopy dieback (%) | Total Biodiversity Score | General comments |
|--------|--------------------------|--------------|------------|-------------------|---------------|--------------------|--------------------------|---|
| 1 | <i>Eucalyptus porosa</i> | 1 | 12.8 | 2 small, 1 large | 70 | 5 | 8.16 | Late Mature. Relatively high habitat value. |
| 2 | <i>Eucalyptus porosa</i> | 1 | 12.8 | 1 small, 2 large | 64 | 30 | 6.80 | Mature. Relatively high habitat value. |
| 3 | <i>Eucalyptus porosa</i> | 1 | 6.8 | | 26 | 5 | 1.99 | Early Mature. Relatively low habitat value. |
| 4 | <i>Eucalyptus porosa</i> | 1 | 11.6 | 4 small, 3 medium | 106 | 5 | 9.58 | Late Mature. Relatively high habitat value. |
| 5 | <i>Eucalyptus porosa</i> | 1 | 10.6 | 10 small, 1 large | 94 | 70 | 6.44 | Over Mature. Relatively high habitat value. |
| 6 | <i>Eucalyptus porosa</i> | 1 | 10.2 | 8 small, 1 large | 132 | 20 | 9.69 | Late Mature. Relatively high habitat value. |

| Tree # | Tree spp. | No. of trees | Height (m) | Hollows | Diameter (cm) | Canopy dieback (%) | Total Biodiversity Score | General comments |
|--------|--------------------------|--------------|------------|----------------------------|---------------|--------------------|--------------------------|---|
| 7 | <i>Eucalyptus porosa</i> | 1 | 9.4 | 4 small, 1 large | 126 | 40 | 8.56 | Late Mature. Relatively high habitat value. |
| 8 | <i>Eucalyptus porosa</i> | 1 | 9.6 | 5 small, 1 medium, 1 large | 120 | 5 | 10.04 | Mature. Relatively high habitat value. |
| 9 | <i>Eucalyptus porosa</i> | 1 | 8.8 | | 47 | 5 | 4.40 | Early Mature. Relatively low habitat value. |
| 10 | <i>Eucalyptus porosa</i> | 1 | 13.2 | 3 small, 2 medium, 2 large | 158 | 20 | 10.57 | Mature. Relatively high habitat value. |
| 11 | <i>Eucalyptus porosa</i> | 1 | 5.8 | | 7 | 10 | 0.54 | Young. Relatively low habitat value. |
| 12 | <i>Eucalyptus porosa</i> | 1 | 6.8 | | 27 | 5 | 2.03 | Early Mature. Relatively low habitat value. |
| 13 | <i>Eucalyptus porosa</i> | 1 | 6.7 | | 23 | 10 | 1.33 | Early Mature. Relatively low habitat value. |
| 14 | <i>Eucalyptus porosa</i> | 1 | 9.6 | | 44 | 5 | 4.42 | Early Mature. Relatively low habitat value. |
| 15 | <i>Eucalyptus porosa</i> | 1 | 10.8 | | 69 | 5 | 6.48 | Early Mature. Relatively low habitat value. |
| 16 | <i>Eucalyptus porosa</i> | 1 | 10.6 | | 29 | 10 | 3.42 | Early Mature. Relatively low habitat value. |
| 17 | <i>Eucalyptus porosa</i> | 1 | 10.2 | 3 small, 1 large | 64 | 95 | 3.81 | Over Mature. Relatively high habitat value. |
| 18 | <i>Eucalyptus porosa</i> | 1 | 13.3 | 1 small, 2 medium, 2 large | 125 | 10 | 9.95 | Late Mature. Relatively high habitat value. |
| 19 | <i>Eucalyptus porosa</i> | 1 | 14.8 | 1 small, 1 medium, 4 large | 91 | 20 | 8.41 | Mature. Relatively high habitat value. |
| 20 | <i>Eucalyptus porosa</i> | 1 | 9.2 | 2 medium | 90 | 20 | 8.38 | Late Mature. Relatively high habitat value. |
| 21 | <i>Eucalyptus porosa</i> | 1 | 14.2 | 2 small, 6 medium, 3 large | 90 | 30 | 7.94 | Mature. Relatively high habitat value. |
| A | <i>Eucalyptus porosa</i> | 6 | 8.4 | | 23 | 10 | 20.23 | Early Mature. Relatively low habitat value. |

Hollows: Small = <5 cm, Medium = 5-15 cm, Large = >15 cm.

Tree age classes: Young = establishing, usually with good vigour.

Early Mature = established, usually vigorous, increasing in height.

Mature = fully established, around half of life expectancy, generally good vigour, full height with crown still spreading.

Late Mature = moderate vigour, no additional height expected, growth rate slowing.

Over Mature = approaching end of life expectancy, vigour decreasing.

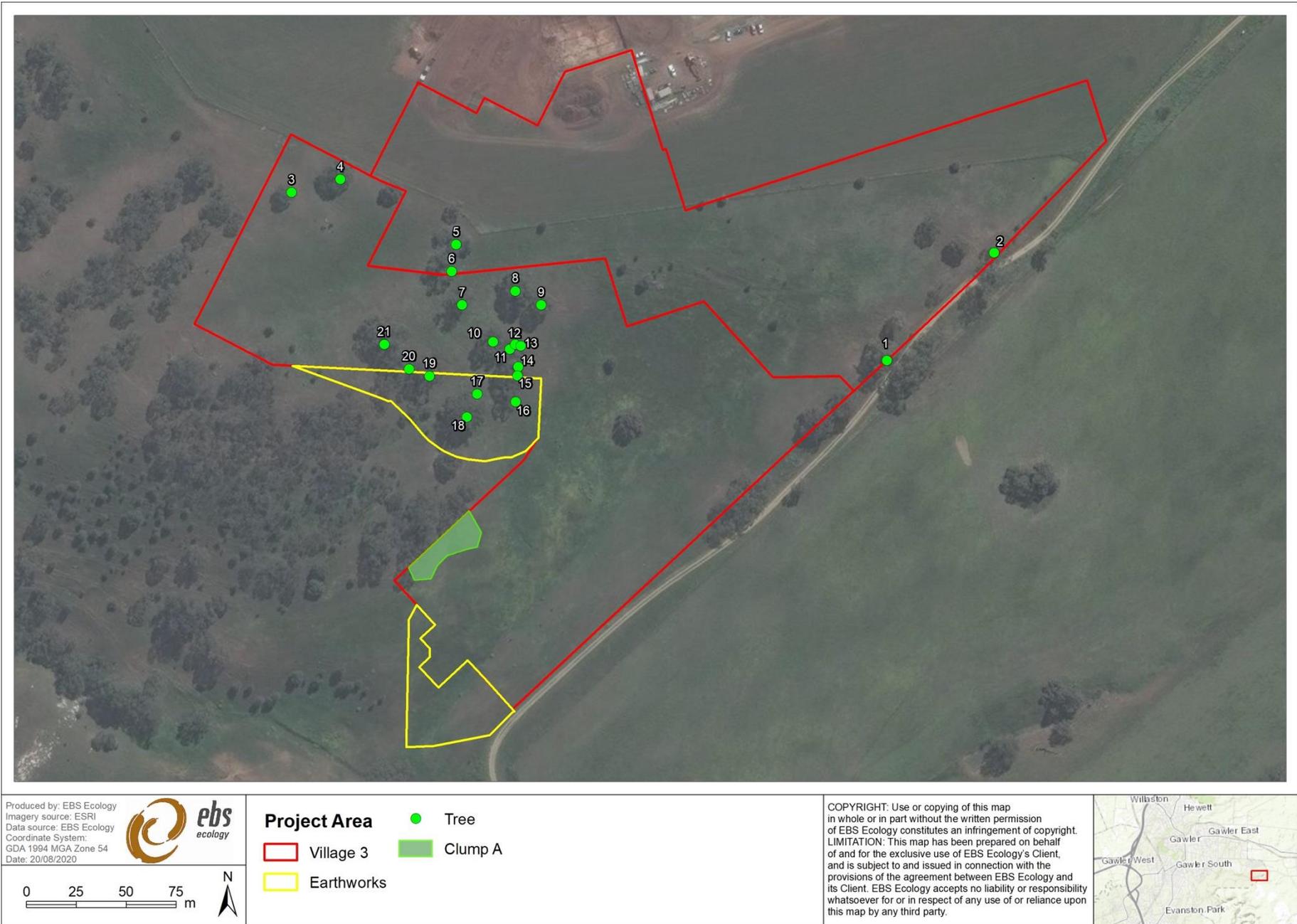


Figure 3. Scattered trees protected under the NV Act proposed to be cleared.

4.2 Threatened species assessment

Species observed on site, or recorded within 5 km of the Project Area since 1995, or the vegetation is considered to provide suitable habitat

A total of 17 bird species were recorded using the scattered trees during the current fauna assessment (Appendix 2). This include 15 native and two introduced bird species. No threatened species were recorded during the current fauna assessment.

The habitat preferences and likelihood of occurrence within the Project Area of each threatened species identified in the desktop assessment are outlined in Table 4. The fauna observations made by KBR (2010) and EBS (2019) were considered in the threatened species assessment. See Attachments 2 and 3 for the results of these surveys, respectively.

The criteria for the likelihood of occurrence of threatened species within the Project Area are described in Table 5.

No threatened flora species identified in the desktop assessment were considered likely to occur within the Project Area.

Seven and five threatened fauna species identified in the desktop assessment were considered highly likely and likely to occur within the Project Area, respectively (Table 4).

Uncommon and threatened scattered tree using fauna species entered into the Scattered Tree Scoresheet are outlined in Appendix 3. The NVC will need to review this list and update the Scattered Tree Scoresheet accordingly.

Table 4. Likelihood of occurrence of threatened species identified in the desktop assessment. Likelihood of use for habitat specifically for Stage 3 of the development. The data source and threat levels are described in the table footer.

| Species (common name) | NPW Act | EPBC Act | Data source | Date of last record | Species known habitat preferences | Likelihood of use for habitat – Comments |
|---|---------|----------|-------------|---------------------|---|---|
| Flora | | | | | | |
| <i>Acacia iteaphylla</i> (Flinders Ranges Wattle) | R | | 2 | 2012 | Hillsides amongst rocky outcrops, or valleys along rocky creek banks. | Unlikely – no native shrub layer recorded by KBR (2010). |
| <i>Acacia pendula</i> (Weeping Myall) | V | | 2 | 2012 | Floodplains in fertile alluvial clay. | Unlikely – no native shrub layer recorded by KBR (2010). |
| <i>Acacia trineura</i> (Three-nerve Wattle) | E | | 2 | 2012 | Shallow dark cracking clays. | Unlikely – no native shrub layer recorded by KBR (2010). |
| <i>Austrostipa densiflora</i> (Fox-tail Spear-grass) | R | | 2 | 2005 | Sandy soils or rich soil in rocky places. | Unlikely – degraded, weed dominated understorey. |
| <i>Austrostipa gibbosa</i> (Swollen Spear-grass) | R | | 2 | 2011 | Rich loamy soils along creeks or other seasonally wet areas. | Unlikely – degraded, weed dominated understorey. |
| <i>Austrostipa multispiculis</i> (Many-flowered Spear-grass) | R | | 2 | 2018 | Eucalypt woodlands along creek lines and in grassland. | Unlikely – degraded, weed dominated understorey. |
| <i>Bothriochloa macra</i> (Red-leg Grass) | R | | 2 | 2016 | Open grassland or grassy woodland, often recorded in disturbed sites. | Possible – recent record and suitable habitat. |

| Species (common name) | NPW Act | EPBC Act | Data source | Date of last record | Species known habitat preferences | Likelihood of use for habitat – Comments |
|--|---------|----------|-------------|---------------------|---|--|
| <i>Caladenia argocalla</i> (White-beauty Spider-orchid) | | EN | 1 | | Open grassy forests/woodlands. | Unlikely – degraded, weed dominated understorey. |
| <i>Caladenia rigida</i> (Stiff White Spider-orchid) | | EN | 1 | | Open Eucalypt forests over open low shrubs and sedges. | Unlikely – degraded, weed dominated understorey. |
| <i>Caladenia tensa</i> (Greencomb Spider-orchid) | | EN | 1 | | Open woodland, Mallee and heath with rock outcrops. | Unlikely – degraded, weed dominated understorey. |
| <i>Cladium procerum</i> (Leafy Twig-rush) | R | | 2 | 2018 | Swampland and lake margins. | Unlikely – no suitable habitat. |
| <i>Corybas dentatus</i> (Toothed Helmet-orchid) | | VU | | | Pink Gum, Brown Stringybark or Southern Cypress Pine woodland. | Unlikely – no suitable habitat. |
| <i>Dianella longifolia</i> var. <i>grandis</i> (Pale Flax-lily) | R | | 2 | 2018 | Eucalypt grassy woodlands. | Unlikely – degraded, weed dominated understorey. |
| <i>Eucalyptus fasciculosa</i> (Pink Gum) | R | | 2 | 1999 | Well-drained sandy soils of low fertility. | Unlikely – not recorded by KBR (2010). |
| <i>Maireana rohrlachii</i> (Rohrlach's Bluebush) | R | | 2 | 2013 | Saline or sandy loam soils rich in gypsum; seasonally wet areas. | Unlikely – no native shrub layer recorded by KBR (2010). |
| <i>Olearia pannosa</i> ssp. <i>pannosa</i> (Silver Daisy-bush) | V | VU | 1, 2 | 2015 | Mallee, woodland, forest and low heath. | Unlikely – no native shrub layer recorded by KBR (2010). |
| <i>Prasophyllum pallidum</i> (Pale Leek-orchid) | | VU | 1 | | Well-grassed open forests. | Unlikely – degraded, weed dominated understorey. |
| <i>Prasophyllum pruinosum</i> (Plum Leek-orchid) | | EN | 1 | | Pink Gum, SA Blue Gum and Southern Cypress Pine open woodland. | Unlikely – degraded, weed dominated understorey. |
| <i>Ptilotus angustifolius</i> (Narrow-leaf Yellow-tails) | E | | 2 | 2012 | Rocky slopes/hills in Grey Box woodlands. | Unlikely – degraded, weed dominated understorey, no Grey Box. |
| <i>Sclerolaena muricata</i> var. <i>villosa</i> (Five-spine Bindyi) | R | | 2 | 2018 | Heavier soils, especially in overgrazed areas. | Unlikely – no suitable habitat, no native shrub layer recorded by KBR (2010). |
| Birds | | | | | | |
| <i>Apus pacificus pacificus</i> (Pacific Swift) | | MI | 1 | | Aerial, over inland plains to coastal areas, sometimes over forests and cities. | Possible (Fly-over) – almost exclusively aerial in Australia. |

| Species (common name) | NPW Act | EPBC Act | Data source | Date of last record | Species known habitat preferences | Likelihood of use for habitat – Comments |
|---|---------|----------|-------------|---------------------|---|---|
| <i>Botaurus poiciloptilus</i> (Australasian Bittern) | | EN | 1 | | Permanent freshwater wetlands with tall, dense vegetation. | Unlikely – no suitable habitat. |
| <i>Calidris ferruginea</i> (Curlew Sandpiper) | | CE, MI | 1 | | Tidal mudflats, saltmarsh and wetlands. | Unlikely – no suitable habitat. |
| <i>Corcorax melanorhamphos</i> (White-winged Cough) | R | | 2, 3 | 2019 | Open forests and woodlands. Prefer wetter areas with leaf-litter for feeding and mud for nest building. | Highly Likely – very recent record, suitable habitat and recorded by KBR (2010). |
| <i>Coturnix ypsilophora australis</i> (Brown Quail) | V | | 2 | 2019 | Rank grasses near wetlands, drains, green pastures and stubbles. | Highly Likely – very recent record and suitable habitat. |
| <i>Falco hypoleucos</i> (Grey Falcon) | | VU | 1 | | Lightly treed inland plains, gibber, pastoral areas, and timbered watercourses. | Unlikely – uncommon, usually restricted to arid and semi-arid regions. |
| <i>Falco peregrinus</i> (Peregrine Falcon) | R | | 3 | | Cliffs, gorges, timbered watercourses, wetlands, plains, open woodlands and manmade structures. | Likely – suitable habitat and recorded by KBR (2010) in quarry area. |
| <i>Falcunculus frontatus frontatus</i> (Eastern Shrike-tit) | R | | 2 | 2013 | Eucalypt forests/woodlands and Red Gums on watercourses, also public green spaces. | Likely – recent record and suitable habitat. |
| <i>Gallinago hardwickii</i> (Latham's Snipe) | R | MI | 2 | 2008 | Open freshwater wetlands with low, dense vegetation. | Unlikely – no suitable habitat. |
| <i>Hieraaetus morphnoides</i> (Little Eagle) | V | | 2 | 2018 | Plains, foothills, open forests, woodlands and Red Gums on watercourses. | Likely – recent record and suitable habitat, but uncommon. |
| <i>Myiagra inquieta</i> (Restless Flycatcher) | R | | 2 | 2015 | Open forests, woodlands, Red Gums near water and public green spaces. | Likely – recent record and suitable habitat. |
| <i>Neophema elegans elegans</i> (Elegant Parrot) | R | | 2, 3 | 2018 | Open forests, woodlands, Mallee, Mulga, Red Gums on watercourses and saltbush. | Highly Likely – very recent record, suitable habitat and recorded by KBR (2010). |
| <i>Parvipsitta pusilla</i> (Little Lorikeet) | E | | 2 | 2012 | Forests, woodlands, large scattered trees, street trees and | Likely – recent record and suitable habitat. |

| Species (common name) | NPW Act | EPBC Act | Data source | Date of last record | Species known habitat preferences | Likelihood of use for habitat – Comments |
|---|---------|----------|-------------|---------------------|--|---|
| | | | | | timbered watercourses. | |
| <i>Petroica phoenicea</i> (Flame Robin) | V | | 2 | 2018 | Forests, woodlands, scrubs, paddocks and public green spaces. | Highly Likely – very recent record and suitable habitat. |
| <i>Plegadis falcinellus</i> (Glossy Ibis) | R | | 2 | 2014 | Well vegetated wetlands and wet pastures, occasionally dry grasslands. | Possible – recent record and marginal habitat. |
| <i>Rostratula australis</i> (Australian Painted Snipe) | | EN | 1 | | Well vegetated shallows/edges of wetlands, dams and sewage ponds, wet pastures and marshy areas. | Unlikely – no suitable habitat. |
| <i>Stagonopleura guttata</i> (Diamond Firetail) | V | | 2 | 2019 | Open Eucalypt forests/woodlands, Red Gums, Mallee and public green spaces. | Highly Likely – very recent record and suitable habitat. |
| <i>Tringa nebularia</i> (Common Greenshank) | | MI | 1 | | Mudflats, estuaries, saltmarshes, wetlands and claypans. | Unlikely – no suitable habitat. |
| Mammals | | | | | | |
| <i>Pteropus poliocephalus</i> (Grey-headed Flying-fox) | R | VU | 1, 2 | 2020 | Utilises open forests, woodlands, orchids and street trees. Eucalypt blossoms are a primary food source. | Highly Likely – very recent record and suitable habitat. |
| <i>Trichosurus vulpecula</i> (Common Brushtail Possum) | R | | 2, 3 | 2019 | Open Eucalypt forests/woodlands. Dens in tree hollows. Adapted well to urban landscapes. | Highly Likely – very recent record, suitable habitat and recorded by KBR (2010). |
| Reptiles | | | | | | |
| <i>Aprasia pseudopulchella</i> (Flinders Ranges Worm-lizard) | V | VU | 1, 3 | | Open woodland, native tussock grassland, riparian habitats and rocky isolates with litter and surface rocks. | Possible – although observed by KBR during earlier survey (KBR 2010), there is marginal habitat in the Stage 3 Project Area. |
| <p>Source: 1 = PMST, 2 = NatureMaps, 3 = KBR (2010) NPW Act: E= Endangered, V = Vulnerable, R= Rare EPBC Act: Ex = Extinct, CR = Critically Endangered, EN = Endangered; VU = Vulnerable</p> | | | | | | |

Table 5. Criteria for the likelihood of occurrence of threatened species within the Project 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 provide 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 provide 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. |

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 direct impact of the Project is the removal of 27 native *Eucalyptus porosa* (Mallee Box) scattered trees. All access, common services and earthworks fall within the Project Area (Figure 3), and each allotment will be devoid of vegetation so no subsequent clearance will be required for buildings, dwellings, surrounding buildings and dwellings, vehicle access, ancillary structures and fire protection.

It is possible that impact to the three trees (1–2) along Balmoral Track in the southeast of the Project Area can be avoided or minimised. These trees have been included in the assessment as a Colorbond fence is proposed along the back of the allotments in the Project Area, which will likely impact these trees. If impact to these trees can be avoided or minimised, the SEB will need to be updated accordingly.

Potential indirect impacts of the Project include:

- Dust generation, which may impact surrounding vegetation;
- Noise generation, which may impact fauna species in the area; and
- Scattered *Eucalyptus porosa* (Mallee Box) trees and/or *Eucalyptus porosa* Open Woodland will be impacted within Village 5. Furthermore, several planted trees, including regulated and significant trees will be impacted by the development, mainly within Villages 2, 4, 7 and 8 (Attachment 4). Overall, removal of 47 regulated and 40 significant trees is required, including one regulated and nine significant within Village 3.

It is unlikely that the Project and the entire Springwood Development will alter the hydrology (e.g. raised or lowered water table, flooding, impounding water or reduced water supply) and impact of the condition or health of the native vegetation being retained within the site and in surrounding areas.

Any potential impacts on the root zone of vegetation, such as adding fill to adjust ground level, have been considered with areas where earthworks are required to accommodate road levels included in the assessment (Figure 3).

4.4 Addressing the Mitigation Hierarchy

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

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

Areas of the highest density trees are of particularly high value with many having large hollows and providing other habitat values such as food resources and roosting sites. Springwood has avoided the areas of highest vegetation cover where practical and maintains over 70 ha of open space within the entire Springwood Development site.

b) Minimisation – if clearance cannot be avoided, outline measures taken to minimise 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).

A Vegetation Management Plan and a Construction Environmental Management Plan will be developed so as to guide the development of the site. These will include weed control and hygiene measures to ensure weeds are not introduced/spread in the Project Area and entire Springwood Development site. Reserves have been incorporated into the strategic design where remnant trees are present where possible in a bid to reduce native vegetation clearance and SEB requirements while also improving the amenity value of the development.

EBS recommends that weed control be undertaken within the reserves that have been incorporated into the strategic design in a bid to improve native vegetation and the amenity value of the development.

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

A preliminary stormwater treatment strategy for the site has been prepared, which considers the drainage for the Springwood Development and includes elements such as macrophyte beds, shallow wetland ponds and ecological sponges/reed beds. KBR provided input into the most suitable sites and has assisted in the initial stormwater treatment planning. The wetland systems and ponds along the eastern section of the Springwood Creek avoids the important reptile habitat areas, all of the remnant trees and will allow for development of biologically productive riparian habitats in what is currently a weed infested gully.

EBS recommends that material (e.g. hollows, trunk sections) from cleared scattered trees be utilised as habitat features in the *Eucalyptus porosa* Open Woodland to the southeast of the Project Area. Habitat features should be placed within the woodland so as to resemble the natural distribution of fallen timber and hollows within the woodland.

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

The adverse impacts to native vegetation that cannot be avoided or minimised will be offset by Springwood through the achievement of a SEB that outweighs the proposed impact (see Section 6).

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

The NVC 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 NVC will consider all the Principles of clearance of the NV Act as relevant, when considering an application referred under the *Planning, Development and Infrastructure Act 2016*.

The assessment of the proposed clearance against the Principles of Clearance is provided in Table 6.

Table 6. Assessment against the Principles of Clearance.

| Principle of clearance | Considerations |
|--|--|
| Principle 1(a) – it comprises a high level of diversity of plant species | <u>Relevant information</u> One native scattered tree species. Six introduced ground layer species. Two introduced scattered woody weeds. Native Plant Species Diversity Score – n/a. |
| | <u>Assessment against the principles</u> Not at Variance |
| | <u>Moderating factors that may be considered by the NVC</u> n/a |
| Principle 1(b) – significance as a habitat for wildlife | <u>Relevant information</u> A total of 15 native bird species were recorded using the scattered trees during the current fauna assessment (Appendix 2). No threatened species were recorded during the current fauna assessment. A total of 38 uncommon, two State rare, three State endangered and one nationally endangered fauna species may use the scattered trees (Appendix 3). The scattered trees provide habitat in a heavily cleared area. Fauna Habitat Score – 1.8 (all scattered trees). Biodiversity Score – various (see Table 7). |
| | <u>Assessment against the principles</u> Seriously at Variance – all scattered trees. |
| | <u>Moderating factors that may be considered by the NVC</u> Is the clearance likely to: <ul style="list-style-type: none"> • Lead to a long-term decrease in the size of a population; • Reduce the area of occupancy of the species; • Fragment an existing population into two or more populations; • Adversely affect habitat critical to the survival of a species; • Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline; • Result in invasive species that are harmful to a threatened species becoming established in the threatened species habitat; and • Interfere with the recovery of the species. |
| Principle 1(c) – plants of a rare, vulnerable or | <u>Relevant information</u> No threatened species were recorded for the site or may have been present but undetectable at the time of assessment. Threatened Flora Score(s) – 0 (all scattered trees). |

| | |
|--|--|
| endangered species | <u>Assessment against the principles</u> Not at Variance – all scattered trees. |
| | <u>Moderating factors that may be considered by the NVC</u> n/a |
| Principle 1(d) – the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered | <u>Relevant information</u> No threatened communities under the EPBC Act or threatened ecosystems under the DEW Provisional list of threatened ecosystems are present within Stage 3 of the development. Threatened Community Score – n/a |
| | <u>Assessment against the principles</u> Not at Variance – all scattered trees. |
| | <u>Moderating factors that may be considered by the NVC</u> n/a |
| Principle 1(e) – it is significant as a remnant of vegetation in an area which has been extensively cleared | <u>Relevant information</u> Rosedale IBRA Association remnancy – 5% Mount Lofty Ranges IBRA Subregion remnancy – 15% Majority of trees established and of moderate to good vigour, with only Tree 11 still establishing and two Over Mature trees (5 and 17) decreasing in vigour. Total Biodiversity Score – 146.42 |
| | <u>Assessment against the principles</u> Seriously at Variance – all scattered trees. |
| | <u>Moderating factors that may be considered by the NVC</u> <ul style="list-style-type: none">Is <i>Eucalyptus porosa</i> (Mallee Box) underrepresented within the IBRA Environmental Association or IBRA Subregion. |
| Principle 1(f) – it is growing in, or in association with, a wetland environment | <u>Relevant information</u> All the scattered trees are not associated with a wetland environment. |
| | <u>Assessment against the principles</u> Not at Variance – all scattered trees. |
| | <u>Moderating factors that may be considered by the NVC</u> n/a |
| Principle 1(g) – it contributes significantly to the amenity of the area in which it is growing or is situated | <u>Relevant information</u> Being on private property, the trees are not in an area frequented by the public. No cultural or historical values of the trees have been identified. Although the trees are being removed, the affected lots of the subdivision will retain amenity value in the trees/woodland that are being retained. |
| | <u>Assessment against the principles</u> n/a |
| | <u>Moderating factors that may be considered by the NVC</u> n/a |

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

4.6 Risk assessment

The level of risk associated with the application

The level of risk associated with the application is Level 4 (Table 7). Although the risk assessment outcome of clearing 27 trees with a Total Biodiversity Score of 146.42 is Level 3, the risk assessment outcome was escalated to Level 4 as the clearance is seriously at variance with principle 1(b) of the Principles of Clearance (wildlife habitat). Moderating factors that the NVC may consider in order to update the outcome of the assessment against the principles are outlined in Table 6. Any further clearance applications associated with the development will consider the level of risk of this application and the determining factors.

Table 7. Summary of the level of risk associated with the application.

| | | |
|---|--------------------------|---------|
| Total clearance | No. of trees | 27 |
| | Area (ha) | 0 |
| | Total Biodiversity Score | 146.42 |
| Seriously at variance with principle 1(b), 1(c) or 1 (d) | | (b) |
| Risk assessment outcome | | Level 4 |

4.7 NVC guidelines

Other information that demonstrates that the clearance complies with any relevant NVC guidelines related to the activity

n/a

5. Clearance summary

Scattered trees clearance summary table

The clearance summary table for the 27 scattered trees is provided in Table 8. The Scattered Tree Clearance Summary Scoresheet is provided in Attachment 9.

Table 8. Scattered trees clearance summary.

| Tree / Cluster ID | Number of trees | Fauna Habitat score | Threatened flora score | Total Biodiversity score | Loss factor | SEB Points required | SEB Payment | Admin Fee |
|-------------------|-----------------|---------------------|------------------------|--------------------------|-------------|---------------------|--------------------|-------------------|
| 1 | 1 | 1.8 | 0 | 8.16 | 1 | 8.57 | \$5,706.19 | \$313.84 |
| 2 | 1 | 1.8 | 0 | 6.80 | 1 | 7.14 | \$4,754.09 | \$261.48 |
| 3 | 1 | 1.8 | 0 | 1.99 | 1 | 2.09 | \$1,393.80 | \$76.66 |
| 4 | 1 | 1.8 | 0 | 9.58 | 1 | 10.05 | \$6,697.77 | \$368.38 |
| 5 | 1 | 1.8 | 0 | 6.44 | 1 | 6.76 | \$4,505.49 | \$247.80 |
| 6 | 1 | 1.8 | 0 | 9.69 | 1 | 10.17 | \$6,777.59 | \$372.77 |
| 7 | 1 | 1.8 | 0 | 8.56 | 1 | 8.99 | \$5,986.26 | \$329.24 |
| 8 | 1 | 1.8 | 0 | 10.04 | 1 | 10.54 | \$7,020.87 | \$386.15 |
| 9 | 1 | 1.8 | 0 | 4.40 | 1 | 4.62 | \$3,075.63 | \$169.16 |
| 10 | 1 | 1.8 | 0 | 10.57 | 1 | 11.09 | \$7,390.53 | \$406.48 |
| 11 | 1 | 1.8 | 0 | 0.54 | 1 | 0.57 | \$377.09 | \$20.74 |
| 12 | 1 | 1.8 | 0 | 2.03 | 1 | 2.13 | \$1,421.86 | \$78.20 |
| 13 | 1 | 1.8 | 0 | 1.33 | 1 | 1.40 | \$933.28 | \$51.33 |
| 14 | 1 | 1.8 | 0 | 4.42 | 1 | 4.64 | \$3,092.87 | \$170.11 |
| 15 | 1 | 1.8 | 0 | 6.48 | 1 | 6.80 | \$4,531.70 | \$249.24 |
| 16 | 1 | 1.8 | 0 | 3.42 | 1 | 3.59 | \$2,393.50 | \$131.64 |
| 17 | 1 | 1.8 | 0 | 3.81 | 1 | 4.00 | \$2,667.06 | \$146.69 |
| 18 | 1 | 1.8 | 0 | 9.95 | 1 | 10.45 | \$6,962.43 | \$382.93 |
| 19 | 1 | 1.8 | 0 | 8.41 | 1 | 8.83 | \$5,881.48 | \$323.48 |
| 20 | 1 | 1.8 | 0 | 8.38 | 1 | 8.80 | \$5,860.68 | \$322.34 |
| 21 | 1 | 1.8 | 0 | 7.94 | 1 | 8.34 | \$5,554.43 | \$305.49 |
| A | 6 | 1.8 | 0 | 13.49 | 1 | 14.16 | \$9,434.95 | \$518.92 |
| Total | 27 | | | 146.42 | | 153.75 | \$97,542.41 | \$5,364.83 |

Totals summary table

The clearance summary totals table for the 27 scattered trees is provided in Table 9. The Economies of Scale and Rainfall (mm) factors used in the SEB calculations are provided in Table 10.

Table 9. Scattered trees clearance summary totals.

| Application | Total Biodiversity score | Total SEB points required | SEB Payment | Admin Fee | Total Payment |
|--------------------|---------------------------------|----------------------------------|--------------------|------------------|----------------------|
| 27 scattered trees | 146.42 | 153.75 | \$97,542.41 | \$5,364.83 | \$102,907.24 |

Table 10. Economies of Scale and Rainfall (mm) factors.

| | |
|----------------------------------|-----|
| Economies of Scale Factor | 0.5 |
| Rainfall (mm) | 481 |

6. Significant Environmental Benefit

A 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. Provide information below.
- Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. _____
- Apply to have SEB Credit assigned from another person or body. The [application form](#) needs to be submitted with this Data Report.
- Apply to have an SEB to be delivered by a Third Party. The [application form](#) needs to be submitted with this Data Report.
- Pay into the Native Vegetation Fund. Provide details below.

PAYMENT SEB

Springwood proposes to achieve the SEB by paying into the Native Vegetation Fund. The total SEB payment required for the clearance of 27 scattered trees with a Total Biodiversity Score of 146.42 is \$102,907.24, which includes an administration fee of \$5,364.83 (Table 9).

7. References

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8. Appendices and attachments

Appendices

Appendix 1. Scattered tree photos.

Appendix 2. Fauna observed during the native vegetation clearance assessment.

Appendix 3. Scattered tree using fauna identified from reliable BSBSA records within 5 km of the Project Area (NatureMaps 2020) and the list of scattered trees using fauna in the Scattered Tree Assessment Manual (NVC 2020).

Attachments

Attachment 1 – Springwood Land Tenure Plan

Attachment 2 – Gawler East Development Plan Amendment, Gawler East Ecological Survey (KBR 2010).

Attachment 3 – Springwood Flora and Fauna Assessment March 2019 (EBS 2019).

Attachment 4 – Springwood Village Staging Plan.

Attachment 5 – Springwood Tree Retention Plan.

Attachment 6 – Springwood Village 3 Design Plans.

Attachment 7 – Development Approval 490/D026/19 and 960/D025/19.

Attachment 8 – Scattered Tree Assessment Scoresheet.

Attachment 9 – Scattered Tree Clearance Summary Scoresheet.

Appendix 1. Scattered tree photos.



Tree 1



Tree 2



Tree 3



Tree 4



Tree 5



Tree 6



Tree 7



Tree 8



Tree 9



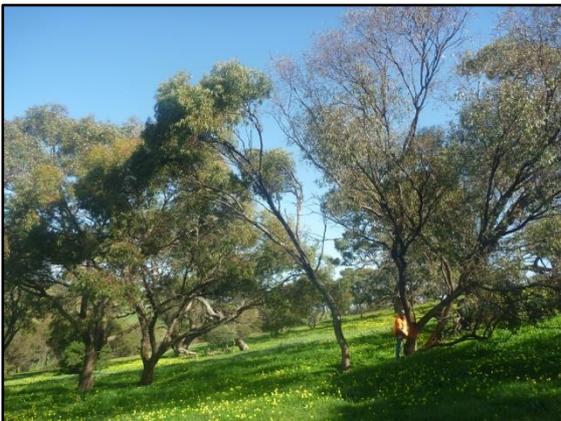
Tree 10



Tree 11



Tree 12



Tree 13



Tree 14



Tree 15



Tree 16



Tree 17



Tree 18



Tree 19



Tree 20



Tree 21



Clump A

Appendix 2. Fauna observed during the native vegetation clearance assessment.

| Scientific name | Common name | NPW Act | EPBC Act | Introduced |
|---|--|---------|----------|------------|
| <i>Anthochaera carunculata woodwardi</i> | Red Wattlebird (MLR, AP, YP, EP, far west, Yellabinna) | | | |
| <i>Cacatua galerita</i> | Sulphur-crested Cockatoo | | | |
| <i>Coracina novaehollandiae</i> | Black-faced Cuckooshrike | | | |
| <i>Colluricincla harmonica</i> | Grey Shrikethrush | | | |
| <i>Corvus coronoides</i> | Australian Raven | | | |
| <i>Dacelo novaeguineae</i> | Laughing Kookaburra | | | |
| <i>Eolophus roseicapilla</i> | Galah | | | |
| <i>Falco berigora</i> | Brown Falcon | | | |
| <i>Glossopsitta concinna</i> | Musk Lorikeet | | | |
| <i>Gymnorhina tibicen</i> | Australian Magpie | | | |
| <i>Macropus fuliginosus</i> | Western Grey Kangaroo | | | |
| <i>Pardalotus striatus</i> | Striated Pardalote | | | |
| <i>Passer domesticus domesticus</i> | House Sparrow | | | * |
| <i>Platycercus elegans</i> | Crimson Rosella | | | |
| <i>Platycercus elegans fleurieuensis</i> | Adelaide Rosella (southern MLR) | | | |
| <i>Ptilotula ornata</i> | Yellow-plumed Honeyeater | | | |
| <i>Rhipidura leucophrys leucophrys</i> | Willie Wagtail | | | |
| <i>Sturnus vulgaris vulgaris</i> | Common Starling | | | * |
| <p>NPW Act: E = Endangered, V = Vulnerable, R = Rare EPBC Act: Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable Subspecies distributions: MLR = Mount Lofty Ranges, AP = Adelaide Plains, YP = Yorke Peninsula, EP = Eyre Peninsula Introduced: * = Introduced</p> | | | | |

Appendix 3. Scattered tree using fauna identified from reliable BSBSA records within 5 km of the Project Area (NatureMaps 2020) and the list of scattered trees using fauna in the Scattered Tree Assessment Manual (NVC 2020).

| Scientific name | Common name | NPW Act | EPBC Act | MLR | Resource use | Habitat / status |
|-------------------------------------|---------------------------|---------|----------|-----|--------------|------------------|
| AVES | Birds | | | | | |
| <i>Aegotheles cristatus</i> | Australian Owlet-nightjar | | | RA | H | w |
| <i>Milvus migrans</i> | Black Kite | | | RA | P | s |
| <i>Melithreptus gularis</i> | Black-chinned Honeyeater | V | | CR | F | w |
| <i>Climacteris picumnus</i> | Brown Treecreeper | | | VU | P, H | w |
| <i>Melithreptus brevirostris</i> | Brown-headed Honeyeater | | | NT | F | w |
| <i>Stagonopleura guttata</i> | Diamond Firetail | V | | VU | P, N | w |
| <i>Artamus cyanopterus</i> | Dusky Woodswallow | | | RA | P | w |
| <i>Tyto alba</i> | Eastern Barn Owl | | | RA | P, N | r |
| <i>Neophema elegans</i> | Elegant Parrot | R | | VU | P, N | w |
| <i>Phalacrocorax carbo</i> | Great Cormorant | | | RA | P | s |
| <i>Ardea modest</i> | Great Egret | | | VU | P | s |
| <i>Chrysococcyx basalis</i> | Horsfield's Bronze Cuckoo | | | NT | P | s |
| <i>Hieraaetus morphnoides</i> | Little Eagle | | | EN | P | w |
| <i>Glossopsitta pusilla</i> | Little Lorikeet | E | | CR | F, H | w/s |
| <i>Anas superciliosa</i> | Pacific Black Duck | | | RA | H | s |
| <i>Cacomantis pallidus</i> | Pallid Cuckoo | | | RA | P | s |
| <i>Geopelia placida</i> | Peaceful Dove | | | VU | P | w |
| <i>Malacorhynchus membranaceus</i> | Pink-eared Duck | | | RA | H | s |
| <i>Glossopsitta porphyrocephala</i> | Purple-crowned Lorikeet | | | NT | F, P, H | w/s |
| <i>Merops ornatus</i> | Rainbow Bee-eater | | | VU | P | s |
| <i>Petroica goodenovii</i> | Red-capped Robin | | | RA | P | w |
| <i>Psephotus haematonotus</i> | Red-rumped Parrot | | | NT | P, H | w/r |
| <i>Megalurus mathewsi</i> | Rufous Songlark | | | VU | P | s |
| <i>Pachycephala rufiventris</i> | Rufous Whistler | | | NT | P, F | w/s |
| <i>Todiramphus sanctus</i> | Sacred Kingfisher | | | NT | P, H | w |
| <i>Zosterops lateralis</i> | Silvereye | | | NT | P, F | w/s |
| <i>Aphelocephala leucopsis</i> | Southern Whiteface | | | VU | P, H | w |
| <i>Circus assimilis</i> | Spotted Harrier | | | RA | P, N | w/s |
| <i>Pardalotus punctatus</i> | Spotted Pardalote | | | NT | P, F | w/s |
| <i>Pardalotus punctatus</i> | Spotted Pardalote | | | NT | P, F | w |
| <i>Petrochelidon nigricans</i> | Tree Martin | | | NT | P, H | w/s |
| <i>Haliastur sphenurus</i> | Whistling Kite | | | VU | P, N | w |
| <i>Melithreptus lunatus</i> | White-naped Honeyeater | | | NT | P, F | w |
| <i>Ardea pacifica</i> | White-necked Heron | | | VU | P, N | s |
| <i>Lalage tricolor</i> | White-winged Triller | | | RA | P, F | s |
| <i>Rhipidura leucophrys</i> | Willie Wagtail | | | NT | P, F, N | w/r |
| <i>Acanthiza nana</i> | Yellow Thornbill | | | NT | P, F | w |
| <i>Acanthiza chrysorrhoa</i> | Yellow-rumped Thornbill | | | NT | P, N | w/r |
| MAMMALIA | Mammals | | | | | |
| | Common Brushtail Possum | R | | | H, F | r |
| | Grey-headed Flying-fox | R | VU | | F | |

NPW Act: E = Endangered, V = Vulnerable, R = Rare

EPBC Act: Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable

MLR: LC = Least Concern (Common), NT = Near Threatened (Uncommon), RA = Rare, VU = Vulnerable, 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.