

PROPOSED BRIDGE AND ROAD UPGRADE, RAILWAY PARADE, UPPER SWAN

FLORA AND VEGETATION SURVEY

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The logo for PGV Environmental is located at the bottom of the page. It features the letters 'PGV' in a large, bold, white sans-serif font. Below 'PGV', the word 'ENVIRONMENTAL' is written in a smaller, white, all-caps sans-serif font. The background of the bottom half of the page is a vibrant orange with a subtle, curved, wavy pattern that flows from the left and right sides towards the center.

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1. INTRODUCTION

1.1 Purpose

The City of Swan is proposing to upgrade the eastern road access to the expanding suburbs of The Vines, Ellenbrook and Aveley. The upgrade will require widening of Apple Street and Railway Parade within existing road reserves and the construction of a new traffic bridge over Ellen Brook.

The road widening will require clearing of native vegetation within existing road reserves. A level 1 flora and vegetation survey undertaken by PGV Environmental in 2013 as part of the Environmental Assessment of the road upgrade proposal (PGV Environmental, 2013) described the vegetation as mostly being in degraded condition due to an abundance of weeds. However, the survey identified the potential for conservation significant flora species or ecological communities to occur in the existing road reserve.

PGV Environmental was commissioned by the City of Swan to undertake a Level 2 Spring Flora and Vegetation Survey of the Apple Street and Railway Parade road reserves from the Great Northern Highway to Maralla Road (the site) (Figure 1).

1.2 Scope of Works

The Level 2 Spring Flora and Vegetation survey was undertaken in accordance with Guidance Statement 51: *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004) and included the following:

- Desktop search and review of DPaW's Declared Rare and Priority Flora database and Threatened Ecological Communities database;
- Examination of recent aerial photography and contour maps to provisionally identify vegetation types and condition;
- Field survey in spring using quadrats or relevés to record native and introduced species as well as a thorough site walkover of any areas of native vegetation;
- Recording of any significant plant species using a hand-held GPS;
- Description and mapping of vegetation types and vegetation condition; and
- Compilation of a flora list.

The survey included the vegetated road reserve both sides of Apple Street and Railway Parade from the Great Northern Highway to Maralla Road, a distance of approximately 3.2km.

2. EXISTING ENVIRONMENT

2.1 Land Use

The site is all unused vegetated road reserve. An open drain occurs on both sides of Apple Street.

2.2 Topography

The site is flat except in the vicinity of Ellen Brook where it is very gently undulating north and south of the Brook. Elevations range from approximately 18 to 22m AHD (DoW, 2012). There is a small depression to the north of Ellen Brook with an elevation of approximately 15m AHD. The creek bed of Ellen Brook is at 12m AHD.

2.3 Geology and Soils

The site is located on the eastern side of the Swan Coastal Plain, predominately on the Pinjarra System. The Pinjarra system consists of poorly drained coastal plain with variable alluvial and aeolian soils.

The north of the site is mapped in the Yanga System which is described as poorly drained plain with pale sands and deep sandy duplex, wet, semi-wet and saline wet soils (Churchward and McArthur, 1978).

2.4 Hydrology

The depth to groundwater over the site varies with the topography from approximately 3.5m near the Ellen Brook to about 7m to the south and 4m in the north of the site (DoW, 2012b). Groundwater is at approximately 11.5 to 20m AHD.

Groundwater generally flows towards Ellen Brook (DoW, 2012b).

A section of Ellen Brook runs east to west through the middle portion of Railway Parade. Surface water in the vicinity of the Brook generally drains towards Ellen Brook. The southern part of the site contains heavy soils that collect surface water from road run-off. Open drains on Apple Street direct the water away from the site.

The northern end of Railway Parade north of Ellen Brook and associated wetlands is generally sandy and free-draining with run-off from the road soaking into the sands.

2.5 Wetlands

Three Resource Enhancement and Multiple Use Wetlands occur on the site.

A Multiple Use Palusplain (UFI 15282) occurs to the south of Ellen Brook. Immediately to the north of Ellen Brook is a Multiple Use Palusplain that extends north and is located on the site near Maralla Avenue (UFI 15732). A Palusplain is defined as a seasonally waterlogged flat (Semeniuk, 1987).

A Resource Enhancement Palusplain (UFI 15733) occurs to the north of Ellen Brook and adjacent to the western side of the rail reserve.

3. FLORA AND VEGETATION

3.1 Methodology

A flora and vegetation survey of the site was conducted by Dr Paul van der Moezel on 27 September 2013. The survey included sampling from 8 relevés. Relevés were used as the road reserves either side of the central road pavement were too narrow to survey using the more standard 10m x 10m quadrats. The relevés varied in size depending but were generally around 20m long and 5m wide. Site coverage was very high due to the ease of access through the open understorey and the narrow dimensions of the site.

3.2 Desktop Searches

A search of the Department of Parks and Wildlife's (DPAW's) Threatened Flora Database, the WA Herbarium database and the Declared Rare and Priority Flora Species List (Appendix 1) identified nine Threatened and 26 Priority plant species that have been located in the vicinity of the site (Table 1). The Naturemap database search had no additional species (DPAW, 2012a; Appendix 2)

The nine Threatened species under the *Wildlife Conservation Act 1950* are also listed under the EPBC Act. Nine additional Endangered species were identified by the EPBC Act Protected Matters Search Tool (SEWPaC, 2012a) (Appendix 3).

Table 1: List of Flora Species Identified from Database Searches within 5km of the Site.

| Species | Common Name | Status under Wildlife Cons. Act | Status under EPBC Act |
|--|--|---------------------------------|-----------------------|
| <i>Acacia anomala</i> | Grass Wattle, Chittering Grass Wattle | Threatened | Vulnerable |
| <i>Andersonia gracilis</i> | Slender Andersonia | Threatened | Endangered |
| <i>Caladenia huegelii</i> | King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid | Threatened | Endangered |
| <i>Centrolepis caespitosa</i> | | Priority 4 | Endangered |
| <i>Darwinia foetida</i> | Muchea Bell | Threatened | Critically Endangered |
| <i>Drakaea elastica</i> | Glossy-leaved Hammer-orchid | Threatened | Endangered |
| <i>Eleocharis keigheryi</i> | Keighery's Eleocharis | Threatened | Vulnerable |
| <i>Eucalyptus balanites</i> | Cadda Road Mallee | Threatened | Endangered |
| <i>Grevillea althoferorum</i> subsp. <i>fragilis</i> | Split-leafed Grevillea | Threatened | Endangered |
| <i>Grevillea christineae</i> | Christine's Grevillea | Threatened | Endangered |
| <i>Grevillea curviloba</i> subsp. <i>curviloba</i> | Curved-leaf Grevillea | Threatened | Endangered |
| <i>Grevillea curviloba</i> subsp. <i>incurva</i> | Narrow curved-leaf Grevillea | Threatened | Endangered |
| <i>Lepidosperma rostratum</i> | Beaked Lepidosperma | Threatened | Endangered |
| <i>Thelymitra dedmaniarum</i> (<i>Thelymitra manginii</i>) | Cinnamon Sun Orchid | Threatened | Endangered |
| <i>Thelymitra stellata</i> | Star-sun Orchid | Threatened | Endangered |
| <i>Trithuria occidentalis</i> (<i>Hydatella dioica</i>) | Swan Hydatella | Threatened | Endangered |

| Species | Common Name | Status under Wildlife Cons. Act | Status under EPBC Act |
|---|--------------------------------|---------------------------------|-----------------------|
| <i>Verticordia plumosa</i> var. <i>pleiobotrya</i> | Narrow-petalled Feather-flower | Threatened | Endangered |
| <i>Ornduffia calthifolia</i> (<i>Villarsia calthifolia</i>) | Mountain Villarsia | Threatened | Endangered |
| <i>Schoenus</i> sp. Bullsbrook (J.J. Alford 915) | | Priority 2 | |
| <i>Stenanthemum sublineare</i> | | Priority 2 | |
| <i>Stylidium aceratum</i> | Wongan Hills Triggerplant | Priority 2 | |
| <i>Stylidium squamellosum</i> | Maze Triggerplant | Priority 2 | |
| <i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i> | Woolly-bush | Priority 3 | |
| <i>Chamaescilla gibsonii</i> | Blue Stars | Priority 3 | |
| <i>Cyathochaeta teretifolia</i> | | Priority 3 | |
| <i>Eryngium pinnatifidum</i> subsp. <i>palustre</i> | Blue Devils | Priority 3 | |
| <i>Guichenotia tuberculata</i> | | Priority 3 | |
| <i>Haemodorum loratum</i> | | Priority 3 | |
| <i>Halgania corymbosa</i> | | Priority 3 | |
| <i>Meionectes tenuifolia</i> | | Priority 3 | |
| <i>Platysace ramosissima</i> | | Priority 3 | |
| <i>Schoenus capillifolius</i> | | Priority 3 | |
| <i>Schoenus</i> sp. Waroona (G.J. Keighery 12235) | | Priority 3 | |
| <i>Stylidium asteroideum</i> | Star Triggerplant | Priority 3 | |
| <i>Stylidium longitubum</i> | Jumping Jacks | Priority 3 | |
| <i>Stylidium trudgenii</i> | | Priority 3 | |
| <i>Tetradlea pilifera</i> | Lilac Bells | Priority 3 | |
| <i>Cyanicula ixiooides</i> subsp. <i>ixiooides</i> | Yellow China Orchid | Priority 4 | |
| <i>Darwinia pimelioides</i> | Sunset Bell | Priority 4 | |
| <i>Hydrocotyle lemnooides</i> | Aquatic Pennywort | Priority 4 | |
| <i>Oxymyrrhine coronata</i> | | Priority 4 | |
| <i>Persoonia sulcata</i> | Snottygobble | Priority 4 | |
| <i>Schoenus natans</i> | Floating Bog-rush | Priority 4 | |
| <i>Tripterococcus paniculatus</i> | | Priority 4 | |

A list of the definitions of the Conservation Codes is in Appendix 4.

The likelihood of each species occurring on the site is discussed in Table 2.

Table 2: Likelihood of Identified Significant Flora Species occurring on the Site

| Species | Preferred Habitat* | Likelihood of presence on site |
|------------------------------|--|--------------------------------|
| <i>Acacia anomala</i> | Lateritic soils. Slopes | Unlikely |
| <i>Andersonia gracilis</i> | White/grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps. | Possible |
| <i>Caladenia huegelii</i> | Grey or brown sand, clay loam | Unlikely |
| <i>Centolepis caespitosa</i> | White/grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps. | Possible |
| <i>Darwinia foetida</i> | Grey-white sand on swampy, seasonally wet sites and on winter-damp to wet clay | Unlikely |

| Species | Preferred Habitat* | Likelihood of presence on site |
|---|---|--------------------------------|
| <i>Drakaea elastica</i> | White or grey sand. Low-lying situations adjoining winter-wet swamps | Possible |
| <i>Eleocharis keigheryi</i> | Clay, sandy loam. Emergent in freshwater: creeks, claypans | Possible |
| <i>Eucalyptus balanites</i> | Sandy soils with lateritic gravel. | Unlikely |
| <i>Grevillea althoferorum</i> subsp. <i>fragilis</i> | Peaty sand, clay. | Possible |
| <i>Grevillea christineae</i> | Clay loam, sandy clay, often moist | Possible |
| <i>Grevillea curviloba</i> subsp. <i>curviloba</i> | Grey sand. Winter-wet heath | Possible |
| <i>Grevillea curviloba</i> subsp. <i>incurva</i> | Sand, sandy loam. Winter-wet heath | Possible |
| <i>Lepidosperma rostratum</i> | Peaty sand, clay | Possible |
| <i>Thelymitra dedmaniarum</i> (<i>Thelymitra manginii</i>) | Granite | Unlikely |
| <i>Thelymitra stellata</i> | Sand, gravel, lateritic loam | Unlikely |
| <i>Trithuria occidentalis</i> (<i>Hydatella dioica</i>) | Muddy (inundated) areas | Possible |
| <i>Verticordia plumosa</i> var. <i>pleiobotrya</i> | Clay, sandy loam. Seasonally inundated swamps, road verges. | Possible |
| <i>Ornduffia calthifolia</i> (<i>Villarsia calthifolia</i>) | + Restricted to the Porongurup Range where it is found in moist sheltered positions on the upper slopes of granite outcrops | Highly Unlikely |
| <i>Schoenus</i> sp. Bullsbrook (J.J. Alford 915) | Grey peaty sand. Low-lying flats | Possible |
| <i>Stenanthemum sublineare</i> | Littered white sand. Coastal plain | Possible |
| <i>Stylidium aceratum</i> | Sandy soils. Swamp heathland. | Possible |
| <i>Stylidium squamellosum</i> | Brown to red-brown clay loam. Winter-wet habitats and depressions, open woodland, shrubland. | Unlikely |
| <i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i> | Grey sand, lateritic gravel | Unlikely |
| <i>Chamaescilla gibsonii</i> | Clay to sandy clay. Winter-wet flats, shallow water-filled claypans | Possible |
| <i>Cyathochaeta teretifolia</i> | Grey sand, sandy clay. Swamps, creek | Possible |
| <i>Eryngium pinnatifidum</i> subsp. <i>palustre</i> | Clay, sandy clay. Claypans, seasonally wet flats. | Possible |
| <i>Guichenotia tuberculata</i> | Sand clay over laterite, sand | Unlikely |
| <i>Haemodorum loratum</i> | Grey or yellow sand, gravel | Unlikely |
| <i>Halgania corymbosa</i> | Gravelly soils, soils over granite | Unlikely |
| <i>Meionectes tenuifolia</i> | Aquatic species | Possible |
| <i>Platysace ramosissima</i> | Sandy soils | Possible |
| <i>Schoenus capillifolius</i> | Brown mud. Claypans | Possible |
| <i>Schoenus</i> sp. Waroona (G.J. Keighery 12235) | Clay or sandy clay. Winter-wet flats. | Possible |
| <i>Stylidium asteroideum</i> | Gravelly soils | Unlikely |
| <i>Stylidium longitubum</i> | Sandy clay, clay. Seasonal wetlands. | Possible |
| <i>Stylidium trudgenii</i> | Grey sand, dark grey to black sandy peat. Margins of winter-wet swamps, depressions | Possible |
| <i>Tetratheca pilifera</i> | Gravelly soils | Unlikely |
| <i>Cyanicula ixioides</i> subsp. <i>ixioides</i> | Laterite, gravel | Unlikely |

| Species | Preferred Habitat* | Likelihood of presence on site |
|-----------------------------------|--|--------------------------------|
| <i>Darwinia pimelioides</i> | Loam, sandy loam. Granite outcrops | Unlikely |
| <i>Hydrocotyle lemnoides</i> | Swamps | Possible |
| <i>Oxymyrrhine coronata</i> | Lateritic habitats on the Darling Range | Unlikely |
| <i>Persoonia sulcata</i> | Lateritic or granitic soils | Unlikely |
| <i>Schoenus natans</i> | Winter-wet depressions | Possible |
| <i>Tripterococcus paniculatus</i> | Grey, black or peaty sand. Winter-wet flats. | Possible |

* sourced from Florabase (DPaW, 2014), DoE SPRAT Database (DoE, 2014), + Gilfillan and Barrett, 2004,

A search of DPaW's Threatened (TEC) and Priority Ecological Communities (PEC) database was conducted for the site (Appendix 5; 51-1012EC). There are no known occurrences of any TECs or PECs on the site. Six TECs and four PECs have been recorded in the vicinity of the site (Table 3). The EPBC Act Protected Matters Search Tool database search also identified two of the TECs as being present within the area (Appendix 3).

Table 3: Threatened and Priority Ecological Communities Identified in Database Searches within 5km of the Site

| Community Identification | Community Name | Status under Wildlife Cons. Act | Status under EPBC Act |
|--------------------------|--|---------------------------------|-----------------------|
| Mound Springs SCP | Communities of Tumulus Springs (Organic Mound Springs, Swan Coastal Plain) | Critically Endangered | Endangered |
| SCP3c | <i>Eucalyptus calophylla</i> - <i>Xanthorrhoea preissii</i> woodlands and shrublands, Swan Coastal Plain | Critically Endangered | Endangered |
| Muchea Limestone | Shrublands and woodlands on Muchea Limestone | Endangered | Endangered |
| SCP08 | Herb rich shrublands in clay pans (Part of 'Claypans of the Swan Coastal Plain') | Vulnerable | Critically Endangered |
| SCP15 | Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain | Vulnerable | |
| SCP18 | Shrublands on calcareous silts of the Swan Coastal Plain | Vulnerable | |
| SCP21c | Low lying <i>Banksia attenuata</i> woodlands or shrublands | Priority 3 | |
| SCP22 | <i>Banksia ilicifolia</i> woodlands | Priority 3 | |
| SCP23b | Swan Coastal Plain <i>Banksia attenuata</i> - <i>Banksia menziesii</i> woodlands | Priority 3 | |
| SCP25 | Southern <i>Eucalyptus gomphocephala</i> - <i>Agonis flexuosa</i> woodlands | Priority 3 | |

Conservation Codes are outlined in Appendix 4

3.3 Survey Conditions

The conditions that the survey was undertaken in are presented in Table 4 in order to assess the adequacy of the survey. In summary, there were no constraints to the survey.

Table 4: Statement of Botanical Survey Conditions

| ISSUE | CONSTRAINTS (YES/NO); SIGNIFICANT, MODERATE OR NEGLIGIBLE | COMMENT |
|---|---|---|
| Competency/experience of the consultant conducting the survey | No constraints | Dr Paul van der Moezel has extensive survey experience on the Swan Coastal Plain. |
| Proportion of the flora identified | No constraints | The timing of the survey in late September should have identified most of the native species on the site. |
| Sources of information (historic/recent or new data) | No constraints | The flora of the Swan Coastal Plain is relatively well documented. |
| Proportion of the task achieved and further work that may need to be undertaken | No constraints | No follow-up survey required. |
| Timing/weather/season/cycle | No constraints | Generally slightly below average rainfall in winter 2013 but above average spring rainfall in the Perth Metropolitan Region. Late September survey ideal for identifying rare orchids and maximising flowering of most species. |
| Intensity of survey (e.g. In retrospect was the intensity adequate) | No constraints | The small size and open understorey made access and coverage easy. Approximately 5 hours spent on the site. |
| Completeness (e.g. was relevant area fully surveyed) | No constraints | |
| Resources (e.g. degree of expertise available for plant identification) | No constraints | Experienced botanist undertook plant identifications mostly on site with some identification off-site using standard reference material |
| Remoteness and/or access problems | No constraints | Easily accessible site traversed entirely on foot. |
| Availability of contextual (e.g. bioregional) information for the study area. | No constraints | Hedde et al. (1980), Government of Western Australia (2000), Gibson et al. (1994). |

Fungi and nonvascular flora (e.g. algae, mosses and liverworts) were not specifically surveyed for during the survey.

3.4 Results

3.4.1 Flora

A total of 95 species were recorded during the September 2013 flora survey (Appendix 6). This total consisted of 48 native species and 47 introduced species (49%). It is difficult to compare the total number of native species recorded within long, narrow road reserves with the results of other

surveys of blocks of vegetation in the vicinity of the site. However, the total of 48 native species over 3.2km of road reserves is considered to be very low compared to intact road reserve vegetation over this length.

None of the native species recorded is a Threatened (Declared Rare) or Priority flora species.

The 49% of introduced species recorded is a very high percentage and reflects the overall degraded condition of most the vegetation. A large number of introduced grass species was recorded with a total of 14 species. *Watsonia (Watsonia bulbifera)* was particularly dense in many places where the soils were heavy and waterlogged (Plate 1 and Releve 5 – Appendix 7).

Plate 1: Dense stands of *Watsonia* in Apple Street Road Reserve.



3.4.2 Vegetation

Vegetation Complexes

Vegetation Complexes are a broad level of vegetation description which is based on the underlying geomorphology and rainfall (Hedde *et al.*, 1980). The vegetation on the site is part of three vegetation complexes as follows:

Yanga Complex – This complex occurs in the northern portion of the site between Ellen Brook and associated wetlands and Maralla Road. The Yanga Complex is described as “Predominantly a closed scrub of *Melaleuca* spp. and low open forest of *C. obesa* on the flats subject to inundation. On drier sites the vegetation reflects the adjacent vegetation complexes of Bassendean and Coonambidgee”. The latter part of the description fits the vegetation in the drier northern section of the site.

Guildford Complex – This complex occurs around Ellen Brook and associated wetlands. The Guildford Complex is described as “A mixture of open forest to tall open forest of *E. calophylla*-*E. marginata* and woodland of *E. wandoo* (with rare occurrences of *E. lane-polei*). Minor components include *E. rudis* – *M. raphiophylla*”.

Swan Complex – This complex occurs south of Ellen Brook to the Great Northern Highway. The Swan Complex is described as “Fringing woodland of *E. rudis* – *M. raphiophylla* with localised occurrence of low open forest of *C. obesa* and *M. cuticularis*”.

Vegetation Associations

Vegetation Associations are a finer level of vegetation mapping than the Vegetation Complex and are defined by the composition and structure of the dominant vegetation.

Most of the site was completely cleared of native vegetation and contained a variety of introduced weed species. In the areas which contained native vegetation seven vegetation associations were mapped (Figure 3) and are described below.

- **CcAs** *Corymbia calophylla* (Marri) Low Open Woodland over *Acacia saligna* Closed Heath over *Watsonia bulbillifera* Closed Herbland

This vegetation association occurred in a short stretch of the site near the southern part of Railway Parade. The Marri trees are sparse and relatively young, around 6-7m high. The understorey in places contains numerous *Acacia saligna* plants 1.5-2m high over dense stands of *Watsonia* (*Watsonia bulbillifera*). Releve 1 is representative of this vegetation association.

- **Cc** *Corymbia calophylla* (Marri) Low Woodland over *Watsonia bulbillifera* Closed Herbland

This vegetation association is similar to the CcAs but lacks any *Acacia saligna* and occurs at the top of the bank of Ellen Brook on the southern side only. A carpet of *Watsonia* covers the ground beneath scattered 8m high Marri trees. Releve 4 is representative of this vegetation association.

- **Js** *Jacksonia sternbergiana* Tall Open Shrubland over *Grevillea crithmifolia*/*Xanthorrhoea preissii* Open Shrubland over weeds

This vegetation association occurs in two locations on Railway Parade south of Ellen Brook. The *Jacksonia sternbergiana* shrubs are sparse, 5-10% cover, and around 3m high over a mixture of native shrubs including *Grevillea crithmifolia*, *Xanthorrhoea preissii* and *Hakea prostrata*. The understorey contains abundant weeds such as *Watsonia*, Veldtgrass (*Ehrharta longiflora*), Blowfly Grass (*Briza maxima*), and Lovegrass (*Eragrostis curvula*). Relevés 2 and 3 are representative of this vegetation association.

- **Er** *Eucalyptus rudis* (Flooded Gum) Low Woodland over *Watsonia bulbillifera* Closed Herbland

The northern and southern slopes of Ellen Brook contain *Eucalyptus rudis* (Flooded Gum) 8-10m high over dense weed understorey containing *Watsonia* and Veldtgrass. The association continues north of the Brook for a distance of around 80m. Releve 5 is representative of this vegetation association.

- **ErMr** *Eucalyptus rudis/Melaleuca raphiophylla* Low Open Woodland over weeds

This vegetation association occurs in two locations including the banks of Ellen Brook and within the Resource Enhancement wetland north of the Brook. *Eucalyptus rudis* trees are up to 10m high over scattered *Melaleuca raphiophylla* (Paperbark) trees 4m high. The understorey contains very few native species but an abundance of weeds including Watsonia, Fumitory (*Fumaria capreolata*), Arum Lily (*Zantedeschia aethiopica*), Kikuyu (*Cenchrus clandestinum*), Veldtgrass and Wild Oats (*Avena fatua*). Releve 6 is representative of this vegetation association

- **Ba** *Banksia attenuata* Low Open Woodland over weeds

The soil type changes north of the Resource Enhancement wetland to be more sandy and dry. A small section of *Banksia attenuata* Low Open Woodland occurs on the eastern side of the road reserve. The area was burnt recently but the main species regeneration were clearly introduced species such as Veldtgrass, Rose Pelargonium (*Pelargonium capitatum*), Capeweed (*Arctotheca calendula*), *Brassica tournefortii* and Ryegrass (*Lolium perenne*). Some native species were common in the understorey including *Podotheca angustifolia* and *Desmocaldus flexuosus*. Releve 7 is representative of this vegetation association.

- **Nf** *Nuytsia floribunda* (WA Christmas Tree) Low Open Woodland over mixed shrubs and herbs

This vegetation association occurs in the sandy soils north of Ellen Brook on the western side of Railway Parade. This association contained the largest number and density of native species in the understorey. However, the high number of weeds still resulted in an overall Good condition rating. The Christmas Trees were sparse and up to 4-5m high. Common native species in the understorey included *Hypolaena exsulca*, *Haemodorum laxum*, *Patersonia occidentalis*, *Podotheca angustifolia* and *Conostylis aculeata*. Releve 8 is representative of this vegetation association.

The Completely Degraded vegetation dominated by weeds contained a mix of introduced species with the most dominant being Watsonia (*Watsonia bulbifera*), Tambookie Grass (*Hyparrhenia hirta*), Lovegrass (*Eragrostis curvula*), Veldtgrass (*Ehrharta longiflora* and *E. calycina*), Wild Oats (*Avena fatua*) and Arum lily (*Zantedeschia aethiopica*) in the wetland soils north of Ellen Brook.

Floristic Community Types

Floristic Community Types (FCT) are based on the whole floristic composition of the vegetation rather than being determined by soil type and geomorphology (Vegetation Complex) or the nature of the dominant species (Vegetation Association). The FCT level of vegetation is required to identify whether any of the vegetation on the site is a Threatened or Priority Ecological Community.

Analysis of releve or quadrat data to determine FCTs either by computer analysis or other tabular means such as the species-Community type table 12 in Gibson *et al.* (1994) requires vegetation to be in very good condition or better. Analysis using vegetation in Degraded or Good condition such as occurs on the site is not possible to accurately determine the FCT.

A large number of seasonal wetland and upland FCTs are known to occur in the Upper Swan area (Government of Western Australia, 2000). Therefore, it is difficult to determine what FCT the various vegetation associations on the site would have represented had they been in better condition.

3.4.3 Vegetation Condition

The vegetation condition over the site was assessed using the condition scale adopted in Bush Forever (Table 5). The vegetation condition over the site ranged from Completely Degraded for the areas cleared of native vegetation and those predominantly containing weeds in the understorey to Degraded for the areas containing some remnant native species in the southern road reserve (Figure 3). Only one small section of road reserve in the north of the site contained vegetation considered to be in Good condition. Good condition vegetation describes vegetation that has been significantly altered.

Table 5: Vegetation Condition Rating Scale.

| Condition | Description |
|---------------------|--|
| Pristine | Pristine or nearly so, no obvious signs of disturbance. |
| Excellent | Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. |
| Very Good | Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing. |
| Good | Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing. |
| Degraded | Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing. |
| Completely Degraded | The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs. |

Source: Government of Western Australia, 2000.

3.4.4 Conservation Significance of Flora and Vegetation

Flora

None of the plant species recorded is a Threatened (Declared Rare) flora or listed as significant in Bush Forever.

Vegetation

The vegetation is part of the Yanga, Guildford and Swan vegetation complexes.

The State Government's Bush Forever process aimed to protect areas of regionally significant vegetation on the Swan Coastal Plain in the Perth Metropolitan Region. Bush Forever adopted one of the key commitments in the *Urban Bushland Strategy* (Government of Western Australia, 1995) which was to protect (rather than retain) at least 10% or 400ha, whichever is the largest, of each vegetation complex in at least five separate areas.

The percentage of each vegetation complex remaining in the System 6/Part System 1 part of the Swan Coastal Plain in 2002 (EPA, 2006) is listed below:

Yanga Complex - 18.7% remaining, 1% in secure reserves

Guildford Complex - 5% remaining, 0.1% in secure reserves

Swan Complex - 15.6% remaining, 0% in secure reserves

The Bush Forever process would have increased the percentage of each vegetation complex in secure reserves, however the percentages are still likely to be well under the 10% target. As a result, any vegetation from these vegetation complexes in good condition or better, and of a size that can be managed as a nature reserve would be a priority for protection. The vegetation on the site, however, is nearly all either Completely Degraded or Degraded and is not of sufficient quality to have conservation significance. The small area of Good quality vegetation in the northern part of the site is too small (about 200m long and 5m wide) and surrounded by cleared or poor quality vegetation to be of conservation value.

Ellen Brook has been identified as part of Bush Forever Site 300, Maralla Road Bushland, Ellenbrook/Upper Swan. Bush Forever site 300 is 641.5ha and links to Bush Forever sites 301 and 399. The part of Bush Forever Site 300 that is within the site has been identified as significant as it is vegetation associated with a creekline. The creekline vegetation provides the narrow link between the eastern side of Bush Forever site 300 and the Ellen Brook Nature Reserve (Bush Forever Site 3010) a short distance to the east. While the condition of the understorey along the banks of Ellen Brook is in poor condition, this could be rehabilitated over time to a better condition. The Flooded Gum and Paperbark trees along the creekline provide habitat for fauna along the creekline corridor.

The vegetation in the road reserve, together with the vegetation in the rail reserve to the east provides a tenuous north-south link between Twin Swamps Nature Reserve (Bush Forever Site 400) to the north and Ellen Brook and further south to the Swan River. However, the value of the native vegetation as a wildlife corridor is diminished significantly by the degraded nature of most of the vegetation in the road reserve.

4. CONCLUSIONS AND SUMMARY

The level 2 flora and vegetation survey of the Apple Street and Railway Parade road reserves between the Great Northern Highway and Maralla Road resulted in the following findings:

- A total of 95 plant species was recorded including 48 native and 47 introduced species. The high percentage of introduced species (49%) reflected the overall degraded nature of the vegetation;
- None of the species is a Threatened (Declared Rare) or Priority listed flora species or listed in Bush Forever as having conservation significance.
- Seven vegetation types were described and mapped for the site, none of which was particularly dominant. The vegetation types around Ellen Brook and south to the Great Northern Highway were all associated with heavy soils that are waterlogged in winter. The vegetation north of Ellen Brook and associated wetlands changed to low open woodlands of Banksia and WA Christmas Tree on dry sandy soils;
- The condition of the vegetation on the site was generally Completely Degraded to Degraded with only one small area of Good condition vegetation in the northern part of the site. The most dominant weed species were Watsonia (*Watsonia bulbifera*), Tambookie Grass (*Hyparrhenia hirta*), Lovegrass (*Eragrostis curvula*), Veldtgrass (*Ehrharta longiflora* and *E. calycina*), Wild Oats (*Avena fatua*) and Arum lily (*Zantedeschia aethiopica*) in the wetland soils north of Ellen Brook;
- The vegetation belongs to the Yanga, Guildford and Swan vegetation complexes which are all under-protected on the Swan Coastal Plain. However, the conservation significance of the native vegetation on the site as representative of these vegetation complexes is negligible due to the very poor condition of the vegetation;
- The vegetation is considered too degraded to assign a Floristic Community. Therefore the vegetation would not be considered a Threatened or Priority Ecological Community;
- The vegetation along Ellen Brook is part of Bush Forever site 300 and provides an ecological corridor between the balance of Bush Forever site to the west and the Ellen Brook Nature Reserve to the east. The vegetation in the road reserve is part of a tenuous north-south link, however the ecological value of the corridor is significantly diminished by the very poor condition of the vegetation.

5. REFERENCES

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FIGURES



N

0 50 100 150 200 250m

SCALE 1 : 7 500 at A3 (MGA)

Legend

- - - Site Boundary
- Cadastral Boundary
- - - Easement Boundary
- Topographic Contour

CADASTRAL SOURCE: Landgate, February 2013.
 AERIAL PHOTOGRAPH SOURCE: NearMap, flown January 2013.
 CONTOURS SOURCE: Landgate, 1:50,000 Topographic Mapping.

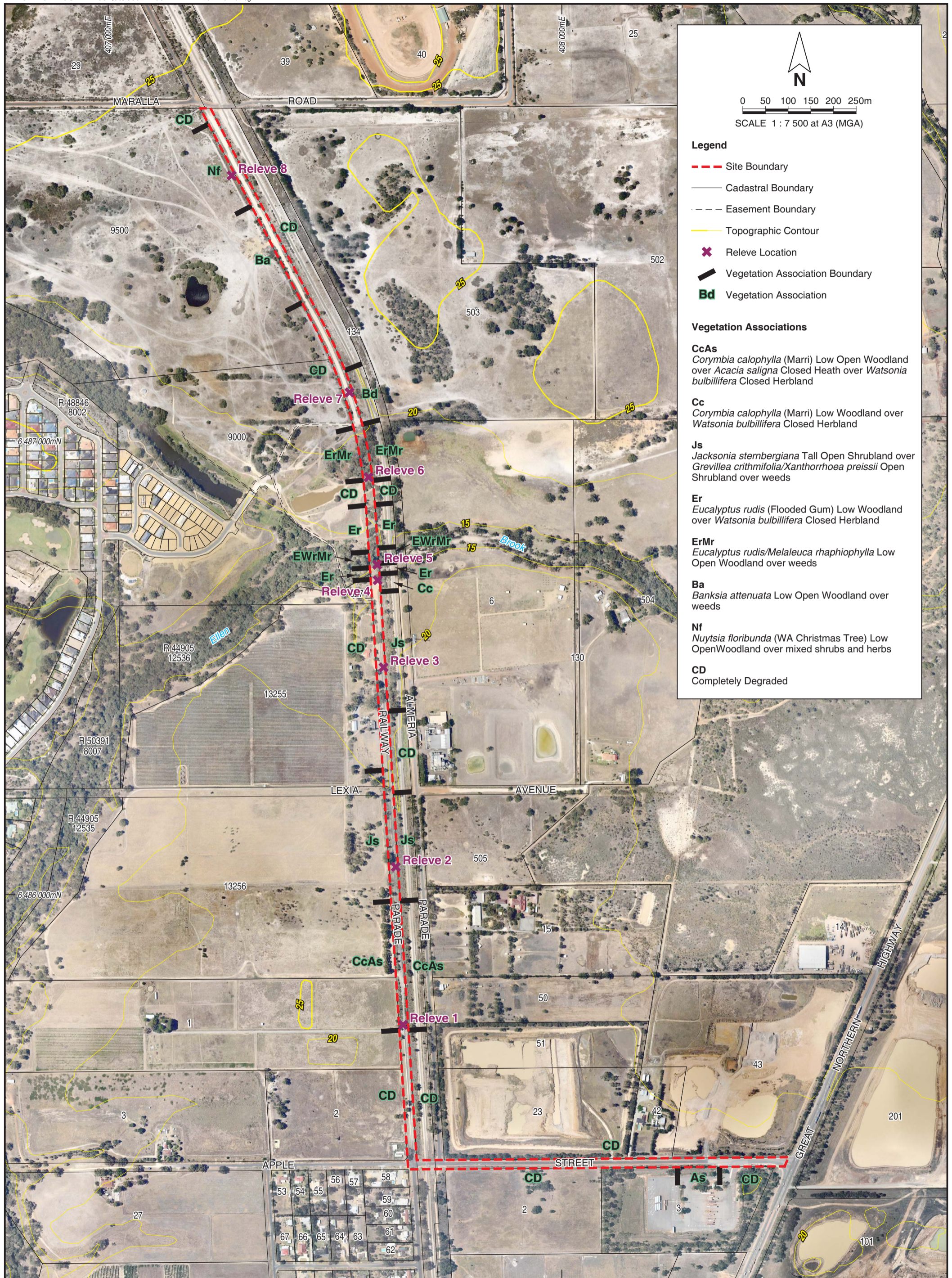
pgv ENVIRONMENTAL

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|--------------------------|-------------------|
| Drawn: P. van der Moezel | Date: 12 Mar 2014 |
| Job: 10112 Rpt: 2014-137 | Revision: A |

City of Swan
 ENVIRONMENTAL ASSESSMENT
 PROPOSED BRIDGE AND ROAD UPGRADE, RAILWAY PARADE, UPPER SWAN

SITE LOCATION AND TOPOGRAPHY

Figure 1



N

0 50 100 150 200 250m
SCALE 1 : 7 500 at A3 (MGA)

Legend

- - - Site Boundary
- Cadastral Boundary
- Easement Boundary
- Topographic Contour
- ✕ Releve Location
- Vegetation Association Boundary
- Bd Vegetation Association

Vegetation Associations

CcAs
Corymbia calophylla (Marri) Low Open Woodland over *Acacia saligna* Closed Heath over *Watsonia bulbifera* Closed Hermland

Cc
Corymbia calophylla (Marri) Low Woodland over *Watsonia bulbifera* Closed Hermland

Js
Jacksonia sternbergiana Tall Open Shrubland over *Grevillea crithmifolia*/*Xanthorrhoea preissii* Open Shrubland over weeds

Er
Eucalyptus rudis (Flooded Gum) Low Woodland over *Watsonia bulbifera* Closed Hermland

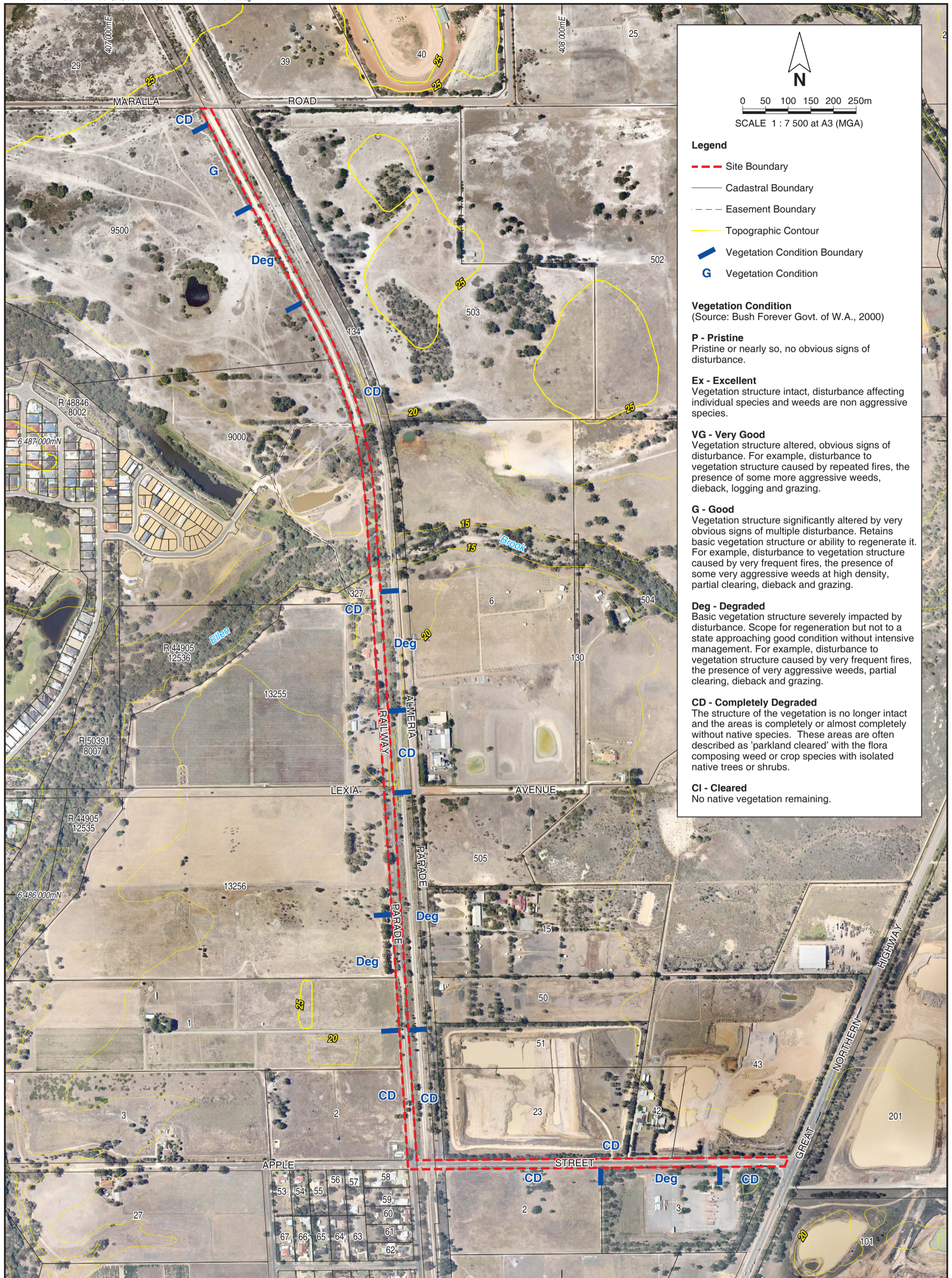
ErMr
Eucalyptus rudis/*Melaleuca raphiophylla* Low Open Woodland over weeds

Ba
Banksia attenuata Low Open Woodland over weeds

Nf
Nuytsia floribunda (WA Christmas Tree) Low Open Woodland over mixed shrubs and herbs

CD
Completely Degraded

CADASTRAL SOURCE: Landgate, February 2013.
AERIAL PHOTOGRAPH SOURCE: NearMap, flown January 2013.
CONTOURS SOURCE: Landgate, 1:50,000 Topographic Mapping.



N

0 50 100 150 200 250m

SCALE 1 : 7 500 at A3 (MGA)

- Legend**
- Site Boundary
 - Cadastral Boundary
 - Easement Boundary
 - Topographic Contour
 - █ Vegetation Condition Boundary
 - G Vegetation Condition

Vegetation Condition
(Source: Bush Forever Govt. of W.A., 2000)

P - Pristine
Pristine or nearly so, no obvious signs of disturbance.

Ex - Excellent
Vegetation structure intact, disturbance affecting individual species and weeds are non aggressive species.

VG - Very Good
Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.

G - Good
Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.

Deg - Degraded
Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.

CD - Completely Degraded
The structure of the vegetation is no longer intact and the areas is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora composing weed or crop species with isolated native trees or shrubs.

CI - Cleared
No native vegetation remaining.

CADASTRAL SOURCE: Landgate, February 2013.
AERIAL PHOTOGRAPH SOURCE: NearMap, flown January 2013.
CONTOURS SOURCE: Landgate, 1:50,000 Topographic Mapping.

pgv ENVIRONMENTAL

Drawn: P. van der Moezel Date: 12 Mar 2014

Job: 10112 Rpt: 2014-137 Revision: A

City of Swan
ENVIRONMENTAL ASSESSMENT
PROPOSED BRIDGE AND ROAD UPGRADE, RAILWAY PARADE, UPPER SWAN

VEGETATION CONDITION

Figure 3

APPENDIX 1

DPaW Flora Database Searches

| Taxon | Status | Rank | IUCNCriteria | EPBC | DECRegion | DECDistrict | Distribution | FloweringPeriod | RecoveryPlan |
|--|--------|------|------------------------------------|------|---------------------|--|--|-----------------|--------------|
| <i>Acacia anomala</i> | T | VU | C2a | VU | SWAN | PERTH HILLS,SWAN COASTAL | Darling Scarp, Bullsbrook, Muchea, Pickering Brook, Kalamunda, Bickley, Chittering | Aug,Sep | |
| <i>Chamaescilla gibsonii</i> | 3 | | | | SWAN,SWST,WARR | SWAN COASTAL,BLACKWOOD,WELLINGTON,DO NNELLY | Ellen Brook, Yule Brook, Mogumber, Muchea, Drakesbrook, Capel, Brunswick Jun, Quindinup | | |
| <i>Cyathochaeta teretifolia</i> | 3 | | | | SWAN,WARR | SWAN COASTAL,FRANKLAND | Whiteman Park, Lake Gngangara, Ellenbrook, Muchea, Denbarker, Yelverton, Wellard, Mundijong | Dec | |
| <i>Darwinia pimelioides</i> | 4 | | | | SWAN | PERTH HILLS | John Forrest N.P., Walyunga, Darlington, Red Hill | Oct | |
| <i>Eleocharis keigheryi</i> | T | VU | B1 | VU | MWST,SWAN,SWST,WHTB | PERTH HILLS,SWAN COASTAL,WELLINGTON,MOORA,GREAT SOUTHERN,CENTRAL WHEATBELT | Kenwick, Lesueur, Cataby, Wannamal, Ellenbrook, Boyanup, Waterloo, Julimar, Lesueur, Bolgart, Beverley, Woodanilling Serpentine, Kenwick, Upper Swan, Gingin, Forrestdale, Bullsbrook, Mandurah, Arrowsmith, Capel | - | |
| <i>Eryngium pinnatifidum</i> subsp. <i>palustre</i> | 3 | | | | SWAN | SWAN COASTAL | Forrestdale, Bullsbrook, Mandurah, Arrowsmith, Capel | - | |
| <i>Grevillea althoferorum</i> subsp. <i>fragilis</i> | T | CR | B1ab(iii,v)+2ab(iii,v); C2a(iii,v) | EN | SWAN | PERTH HILLS | Bullsbrook | | IRP |
| <i>Grevillea christineae</i> | T | EN | B1+2c | EN | MWST,SWAN,WHTB | PERTH HILLS,MOORA,CENTRAL WHEATBELT | Mortlock River, Goomalling, Watheroo, Upper Swan | Sep | |
| <i>Grevillea curviloba</i> subsp. <i>curviloba</i> | T | CR | B1ab(iii)+B2ab(iii) | EN | SWAN | PERTH HILLS,SWAN COASTAL | Bullsbrook, Muchea | Oct | IRP |
| <i>Guichenotia tuberculata</i> | 3 | | | | MWST,SWAN | PERTH HILLS,MOORA | Mogumber, New Norcia, Gillingarra, Wannamal, Bullsbrook | Aug,Sep | |
| <i>Haemodorum loratum</i> | 3 | | | | MWST,SWAN | PERTH HILLS,SWAN COASTAL,MOORA | Eneabba, Cockleshell Gully, Bullsbrook, Wattle Grove, Boonanaring, Mogumber | Sep-Nov | |
| <i>Meionectes tenuifolia</i> | 3 | | | | MWST,SWAN,SWST | PERTH HILLS,SWAN COASTAL,WELLINGTON,MOORA | Ruabon, Maddington, Harvey, Pinjarra, Upper Swan, Gingin, Cooljarloo, (Woorooloo, Midland, Byfields Mill), Mt Helena | Nov-Dec | |
| <i>Oxymyrrhine coronata</i> | 4 | | | | SWAN | PERTH HILLS | Chittering, Bullsbrook, Avon Valley | Dec,Jan | |
| <i>Platysace ramosissima</i> | 3 | | | | MWST,SWAN,SWST | PERTH HILLS,SWAN COASTAL,WELLINGTON,MOORA | Yalgorup, Boonanaring, Gingin, Lancelin, Bullsbrook Nature Reserve | | |
| <i>Schoenus capillifolius</i> | 3 | | | | SWAN,SWST,WHTB | PERTH HILLS,SWAN COASTAL,WELLINGTON,GREAT SOUTHERN,CENTRAL WHEATBELT | Upper Swan, Kenwick, Waterloo, Beauford River, Beverley, Goomalling, Carousel Swamp, Pearce, Waroona, Karnup, Baldivis | Sep-Nov | |
| <i>Schoenus</i> sp. Bullsbrook (J.J. Alford 915) | 2 | | | | SWAN | SWAN COASTAL | Bullsbrook | Oct-Nov | |
| <i>Stenanthemum sublineare</i> | 2 | | | | SWAN | SWAN COASTAL | Bullsbrook | Oct-Dec | |
| <i>Stylidium aceratum</i> | 2 | | | | SWAN | SWAN COASTAL | Bullsbrook | Oct-Nov | |
| <i>Stylidium asteroideum</i> | 3 | | | | SWAN,WHTB | PERTH HILLS,CENTRAL WHEATBELT | Clackline, Walyunga N.P., Mount Caroline N.R., Wandoo N.P., Wambyn N.R. | Sep-Oct | |
| <i>Stylidium longitubum</i> | 3 | | | | SWAN,SWST,WHTB | SWAN COASTAL,BLACKWOOD,WELLINGTON,GREAT SOUTHERN | Upper Swan, Bullsbrook, Bunbury, Midland, Busselton, Arthur River, Jandakot, Mundijong, Karnup | Nov | |
| <i>Stylidium squamelosum</i> | 2 | | | | SWAN,SWST | PERTH HILLS,BLACKWOOD | Bowelling, Muchea, Wonnerup Rd, Bullsbrook | | |
| <i>Stylidium trudgenii</i> | 3 | | | | SWAN,SWST | PERTH HILLS,BLACKWOOD,WELLINGTON | Ellenbrook, Scott River, Gingilup Swamp, Harvey | Oct,Nov | |
| <i>Tripterococcus paniculatus</i> | 4 | | | | SWAN,SWST | SWAN COASTAL,BLACKWOOD | Cannington, Armadale, Leeming, Forrestfield, Upper Swan, Willetton, Forrestdale, Busselton | Nov | |
| <i>Trithuria occidentalis</i> | T | CR | B1ab(iii)+2ab(iii) | EN | SWAN | SWAN COASTAL | Ellenbrook N.R., (Midland) | Sep-Nov | |
| <i>Verticordia plumosa</i> var. <i>pleiobotrya</i> | T | VU | B1ab(iii,v)+2ab(iii,v) | EN | SWAN | PERTH HILLS,SWAN COASTAL | Mundijong West Road, Bullsbrook NR | Nov | IRP |

| OID_ | POPID | NAMEID | TAXON | CONSSTAT US | WARANK | POPNUM BER | SUBPOPC ODE | POPSTAT US | VESTING | PURPOSE 1 | PURPOSE 2 | COUNTDATE |
|--------|-------|--------|--|----------------|--------|---------------|----------------|---------------|-------------|--------------|--------------|-----------------|
| 89659 | 11336 | | Adenanthos cygnorum subsp. chamaephyton | 3 | | 19 | | | LGA | VER | | 14/05/1999 0:00 |
| 84938 | 1596 | | Caladenia huegelii | T | CR | 25 | | | PRI | | | 15/10/1997 0:00 |
| 84940 | 1596 | | Caladenia huegelii | T | CR | 32 | | U | CC | CFF | | 29/09/2004 0:00 |
| 84941 | 1596 | | Caladenia huegelii | T | CR | 34 | | U | PRI | | | 29/09/2004 0:00 |
| 84942 | 1596 | | Caladenia huegelii | T | CR | 35 | | U | CC | CFF | | 29/09/2004 0:00 |
| 93193 | 16245 | | Cyathochaeta teretifolia | 3 | | 1 | | | CC | CFF | | 3/11/1995 0:00 |
| 93197 | 16245 | | Cyathochaeta teretifolia | 3 | | 13 | | | CC | CFF | | 3/11/1995 0:00 |
| 93992 | 17605 | | Eleocharis keigheryi | T | VU | 1 | | | CC | CFA | | 9/11/2007 0:00 |
| 85477 | 1976 | | Grevillea christineae | T | EN | 9 | | | LGA | OTH | | 25/07/2007 0:00 |
| 92200 | 14408 | | Grevillea curviloba subsp. curviloba | T | CR | 2 | | | CC | CFF | | 10/12/1998 0:00 |
| 92201 | 14408 | | Grevillea curviloba subsp. curviloba | T | CR | 3 | | | CC | CFF | | 1/09/2004 0:00 |
| 92202 | 14408 | | Grevillea curviloba subsp. curviloba | T | CR | 4 | A | | CC | CFF | | 3/09/2004 0:00 |
| 92204 | 14408 | | Grevillea curviloba subsp. curviloba | T | CR | 4 | B | | CC | CFF | | 6/07/2012 0:00 |
| 102716 | 14408 | | Grevillea curviloba subsp. curviloba | T | CR | 10 | A | | CC | CFF | NRE | 30/06/2009 0:00 |
| 102717 | 14408 | | Grevillea curviloba subsp. curviloba | T | CR | 10 | B | | PRI | | | 30/06/2009 0:00 |
| 92209 | 14409 | | Grevillea curviloba subsp. incurva | T | EN | 17 | | | CC | CFF | | 15/02/2000 0:00 |
| 84894 | 1469 | | Haemodorum loratum | 3 | | 2 | | | UNKNOW N | | | 13/11/1981 0:00 |
| 88387 | 6233 | | Hydrocotyle lemnoides | 4 | | 1 | | | CC | CFA | | 2/11/1990 0:00 |
| 96547 | 33638 | | Meionectes tenuifolia | 3 | | 4 | | | PRI | | | 3/11/1995 0:00 |
| 84517 | 980 | | Schoenus capillifolius | 3 | | 3 | | | CC | CFF | | 2/11/1990 0:00 |
| 89291 | 7756 | | Stylidium longitubum | 3 | | 1 | | | AGR | GVT | | 12/11/1989 0:00 |
| 89302 | 7756 | | Stylidium longitubum | 3 | | 2 | | | CC | CFA | | 28/12/1971 0:00 |
| 89307 | 7756 | | Stylidium longitubum | 3 | | 3 | | | CC | NRE | | 3/10/1988 0:00 |
| 89308 | 7756 | | Stylidium longitubum | 3 | | 4 | | | UNKNOW N | | | 30/10/1992 0:00 |
| 87125 | 4540 | | Tetratheca pilifera | 3 | | 15 | | | CC | NPK | | 12/11/2003 0:00 |
| 96349 | 32658 | | Trithuria occidentalis | T | CR | 1 | | | CC | NRE | | 27/10/1982 0:00 |

| OID_ | SHEET_NO | TAXON | CONS_CO DE | SITE | VEGETATION | LOCALITY | COLL_DATE |
|-------------------|----------|--|---------------|---|---|---|------------|
| PERTH 07132832 | | <i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i> | 3 | Swale. Grey sand. | Low woodland. <i>Banksia attenuata</i> , <i>B. menziesii</i> , <i>Eucalyptus marginata</i> subsp. <i>thalassica</i> . | Road verge on Jenkins Road opposite Lot 41, Bushplan Site 291 | 14 05 1999 |
| PERTH 256935 | | <i>Cyanicula ixioides</i> subsp. <i>ixioides</i> | 4 | | | Upper Swan | 09 1913 |
| PERTH 06570240 | | <i>Cyathochaeta teretifolia</i> | 3 | Edge of seasonal wetland, gentle slope, north aspect, dark brown loam over red sand with limestone, well drained. | Associated species: <i>Eucalyptus calophylla</i> . | Cardinal Drive Bushland (Bush Forever Site 23) approx. 200 m N Bordeaux Road (adjacent to System 6 Update quadrat vines01) Ellenbrook Bushland | 03 11 1995 |
| PERTH 02266865 | | <i>Eleocharis keigheryi</i> | T | Clay soil, under 6 inches water, dries in summer. | | Ellen Brook Tortoise Reserve, 21 miles N of Perth, | 19 10 1978 |
| PERTH 07782020 | | <i>Eleocharis keigheryi</i> | T | Seasonally inundated claypans with grey to brown clay. | Transitions from open clay pans comprised exclusively of of <i>E. keigheryi</i> to vegetated clay pans. <i>Melaleuca</i> spp., <i>Verticordia</i> sp. <i>Chorizandra enodis</i> , herbs, <i>Avena fatua</i> and <i>Briza maxima</i> . | Ellen Brook Nature Reserve, W side of the Great N Highway, Upper Swan | 09 11 2007 |
| PERTH 07782047 | | <i>Eleocharis keigheryi</i> | T | Claypan with brown clay. Found in open water ponds. | <i>Chorizandra enodis</i> . Trees and shrubs 1-2 m. | Ellen Brook Nature Reserve, upper swan | 12 10 2007 |
| PERTH 06512283 | | <i>Eryngium pinnatifidum</i> subsp. <i>palustre</i> | 3 | Dampland; grey sand. | <i>Melaleuca</i> shrubland. | Wetland area to the N of quadrat Vines 01, W Vines residential area. Shire of Swan (Bush Forever Site 23) | 03 11 1995 |
| PERTH 07708602 | | <i>Grevillea christineae</i> | T | Valley slope outcrop. Brown sand / loam / clay over granite boulder. | Scattered <i>Eucalyptus rudis</i> with <i>Grevillea</i> <i>enlicheriana</i> , <i>Calothamnus quadrifidus</i> , <i>Hakea</i> <i>erinacea</i> , <i>Labichea lanceolata</i> , <i>Darwinia citriodora</i> , <i>Petrophile biloba</i> , <i>Gastrolobium spinosum</i> , weeds. | Bells Rapid Park, Cathedral ave, Upper Swan. On the S side of the footbridge between the Swan River and the EW railway line | 09 07 2007 |
| PERTH 06512836 | | <i>Grevillea curviloba</i> subsp. <i>curviloba</i> | T | Edge of seasonal wetland, gentle slope, N aspect. Dark brown loam over red sand with limestone, well drained. | Associated species: <i>Eucalyptus calophylla</i> . | Cardinal Drive Bushland (Bush Forever Site 23). c. 200 m N Bordeaux Road (adjacent to System 6 Update quadrat vines 01) Ellenbrook Bushland | 03 11 1995 |
| PERTH 05492963 | | <i>Grevillea curviloba</i> subsp. <i>curviloba</i> | T | Flat, near shallow seasonal creekline. Grey sand. | Shrubland/Sedgeland. Characteristic species: <i>Hakea</i> <i>varia</i> . | Ellenbrook, | 15 02 2000 |
| PERTH 1044567 | | <i>Haemodorum loratum</i> | 3 | Lateritic loam. | Wandoo woodland. | 20 km ESE Muchea. | 13 11 1981 |
| PERTH 1111167 | | <i>Halgania corymbosa</i> | 3 | Lateritic soil. | | Susannah Brook, Millendon. | 03 09 1980 |
| PERTH 06207154 | | <i>Hydatella dioica</i> | T | In water. Open muddy clay pan. | | Ellen Brook Reserve, ca 15 km N Midland | 14 10 1980 |
| PERTH 1048139 | | <i>Hydrocotyle lemnoides</i> | 4 | Growing in fresh water, stem rooted in clay. | | 15 km N of Midland on Great Northern Highway. Martyn Reserve | 07 10 1976 |
| PERTH 1048104 | | <i>Hydrocotyle lemnoides</i> | 4 | Growing in fresh water, stem rooted in clay. | | 15 km N of Midland on Great Northern Highway, Martyn Reserve | 07 10 1976 |
| PERTH 03401332 | | <i>Hydrocotyle lemnoides</i> | 4 | | | 21 mile peg Reserve Great Northern Highway [10 km S of Bullsbrook East] | 09 1963 |
| PERTH 1048112 | | <i>Hydrocotyle lemnoides</i> | 4 | Growing in shallow water over mud. | | Short-necked Tortoise Reserve ca. 15 km N of Midland | 13 09 1985 |

| OID_ | SHEET_NO | TAXON | CONS_CO DE | SITE | VEGETATION | LOCALITY | COLL_DATE |
|------|-------------------|--|---------------|---|---|--|------------|
| | PERTH 05991714 | <i>Persoonia sulcata</i> | 4 | Laterite. | Eucalypt woodland with low shrubby understory. | Great Northern Highway, 102.6 km N of Perth GPO, 12.4 km N of turnoff to Toodyay, | 18 12 1980 |
| | PERTH 01278215 | <i>Schoenus capillifolius</i> | 3 | Clay pan dry - some mud in deeper sections with live plants. | | J. Martyn Reserve, 13 km N Midland | 14 11 1980 |
| | PERTH 02239108 | <i>Schoenus capillifolius</i> | 3 | Winter wet claypan. | With <i>Glossostigma</i> sp., <i>Hydatella</i> sp. and <i>Trithuria</i> sp. surrounded by regenerating heath B of <i>Melaleuca lateritica</i> . | Ellen Brook Nature Reserve, Upper Swan | 02 11 1990 |
| | PERTH 07514271 | <i>Schoenus natans</i> | 4 | Flooded claypan. | <i>Melaleuca lateritia</i> shrubland over <i>Chorizandra</i> <i>enodis</i> and aquatic herbs. | Ellenbrook Nature Reserve | 07 10 2004 |
| | PERTH 04097610 | <i>Schoenus</i> sp. Bullsbrook (J.J. Alford 915) | 2 | Low lying flat, grey peaty sand over ? clay. | Herbs and low shrubs. | Twin Swamps Nature Reserve, 8 km S of Bullsbrook | 31 10 1986 |
| | PERTH 04750411 | <i>Schoenus</i> sp. Waroona (G.J. Keighery 12235) | 3 | Winter wet flats, dark brown loam clay over clay. | Burnt low heath. | J & B Martyn Reserve, 13 km N of Midland | 31 10 1988 |
| | PERTH 03510042 | <i>Stylidium longitubum</i> | 3 | | | Ellenbrook area, west of Vines golf course | 30 10 1992 |
| | PERTH 01643061 | <i>Stylidium longitubum</i> | 3 | Grows in clayey sand, in small winter-wet depressions. | Under and around shrubs. | In a paddock on the W side of Railway Parade, 0.5 km N of Apple Road, Upper Swan | 12 11 1989 |
| | PERTH 01631098 | <i>Stylidium longitubum</i> | 3 | Winter wet claypan. | <i>Melaleuca lateritia</i> shrubland; burnt. | J. & R. Martyn Reserve, 13 km N Midland | 03 10 1988 |
| | PERTH 08161119 | <i>Stylidium longitubum</i> | 3 | Flat, clay pan. Moist grey clay. | <i>Jacksonia</i> , <i>Acacia</i> , <i>Asteraceae</i> , <i>Villarsia</i> , weeds. | Ellen Brook Nature Reserve, Great Northern Highway, West Swan | 28 11 2008 |
| | PERTH 06724884 | <i>Tetradlea pilifera</i> | 3 | Towards top of hill on lower part of breakaway. Steep slope below, scarp. Outcropping laterite and smooth quartz pebbles over granite; grey clayey sand. Charcoal litter on surface. | <i>Corymbia calophylla</i> , <i>Eucalyptus wandoo</i> woodland with <i>Xanthorrhoea preissii</i> and low shrub understorey including <i>Acacia pulchella</i> , <i>Macrozamia</i> <i>riedlei</i> , <i>Trymalium ledifolium</i> , <i>Hibbertia</i> <i>hypericoides</i> , <i>Dryandra nivea</i> , <i>Hakea</i> sp. | Hillslope behind Ranger's residence, Walyunga National Park | 12 11 2003 |
| | PERTH 02472635 | <i>Trithuria occidentalis</i> | T | In water, muddy open. | | J.R. & B. Martyn Reserve, Ellen Brook, 13 km N Midland | 27 10 1982 |
| | PERTH 07855885 | <i>Trithuria occidentalis</i> | T | Low-lying depression next to a low sand ridge covered by <i>Petrophile</i> sp. and <i>Eucalyptus</i> trees. Soil grey-brown clay, soft and damp to dry and hardening where higher. | Open shrubland of <i>Melaleuca lateritia</i> to 1.5 m tall with open ground between shrubs, colourful with flowering herbs including <i>Villarsia capitata</i> , <i>Gratiola</i> <i>pubescens</i> , <i>Rhodanthe pyrethrum</i> , <i>Stylidium</i> sp., <i>Utricularia inaequalis</i> , <i>Aphelia drummondii</i> , <i>Lachnagr</i> | Ellenbrook Nature Reserve (Reserve No A 27620), 15 km N of Midland | 06 11 2007 |
| | PERTH 02841886 | <i>Trithuria occidentalis</i> | T | Slightly submerged clay pan, open. | | Warbrook Siding, Upper Swan | 18 10 1978 |
| | PERTH 02841851 | <i>Trithuria occidentalis</i> | T | Drying pools, muddy claypan. | <i>Melaleuca laterite</i> scrub. | J.R. and B. Martyn Reserve, Ellen Brook, 13 km N Midland | 27 10 1982 |

APPENDIX 2

NatureMap Report

NatureMap Species Report

Created By Jackalyn Hams on 24/01/2013

Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 116°01' 27" E,31°45' 03" S
Buffer 5km
Group By Conservation Status

| Conservation Status | Species | Records |
|---|------------|-------------|
| Rare or likely to become extinct | 9 | 149 |
| Protected under international agreement | 2 | 4 |
| Other specially protected fauna | 1 | 1 |
| Priority 2 | 1 | 1 |
| Priority 3 | 10 | 26 |
| Priority 4 | 4 | 8 |
| Priority 5 | 2 | 38 |
| Non-conservation taxon | 557 | 1482 |
| TOTAL | 586 | 1709 |

| Name ID | Species Name | Naturalised | Conservation Code | Endemic To Query Area |
|--|---|-------------|-------------------|-----------------------|
| Rare or likely to become extinct | | | | |
| 1. | 1596 <i>Caladenia huegelii</i> (Grand Spider Orchid) | | T | |
| 2. | 24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo (short-billed black-cockatoo)) | | T | |
| 3. | 17605 <i>Eleocharis keigheryi</i> | | T | |
| 4. | 1976 <i>Grevillea christineae</i> | | T | |
| 5. | 14408 <i>Grevillea curviloba</i> subsp. <i>curviloba</i> | | T | |
| 6. | 14409 <i>Grevillea curviloba</i> subsp. <i>incurva</i> | | T | |
| 7. | 24168 <i>Macrotis lagotis</i> (Bilby) | | T | |
| 8. | 25345 <i>Pseudemys umbrina</i> (Western Swamp Turtle, tortoise) | | T | |
| 9. | 32658 <i>Trithuria occidentalis</i> (Swan Hydatella) | | T | |
| Protected under international agreement | | | | |
| 10. | 24598 <i>Merops ornatus</i> (Rainbow Bee-eater) | | IA | |
| 11. | 24843 <i>Plegadis falcinellus</i> (Glossy Ibis) | | IA | |
| Other specially protected fauna | | | | |
| 12. | 25240 <i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python) | | S | |
| Priority 2 | | | | |
| 13. | 16279 <i>Schoenus</i> sp. <i>Bullsbrook</i> (J.J. Alford 915) | | P2 | Y |
| Priority 3 | | | | |
| 14. | 11336 <i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i> | | P3 | |
| 15. | 16245 <i>Cyathochaeta teretifolia</i> | | P3 | |
| 16. | 34027 <i>Galaxiella nigrostriata</i> (Black-stripe Minnow) | | P3 | |
| 17. | 1469 <i>Haemodorum loratum</i> | | P3 | |
| 18. | 6686 <i>Halgania corymbosa</i> | | P3 | |
| 19. | 33638 <i>Meionectes tenuifolia</i> | | P3 | |
| 20. | 25249 <i>Neelaps calonotos</i> (Black-striped Snake) | | P3 | |
| 21. | 980 <i>Schoenus capillifolius</i> | | P3 | |
| 22. | 17731 <i>Schoenus</i> sp. <i>Waroona</i> (G.J. Keighery 12235) | | P3 | |
| 23. | 7756 <i>Stylidium longitubum</i> (Jumping Jacks) | | P3 | |
| Priority 4 | | | | |
| 24. | 13826 <i>Cyanicula ixioides</i> subsp. <i>ixioides</i> | | P4 | |
| 25. | 6233 <i>Hydrocotyle lemnoides</i> (Aquatic Pennywort) | | P4 | |
| 26. | 2278 <i>Persoonia sulcata</i> | | P4 | |
| 27. | 1003 <i>Schoenus natans</i> (Floating Bog-rush) | | P4 | |
| Priority 5 | | | | |
| 28. | 24153 <i>Isoodon obesulus</i> subsp. <i>fusciventer</i> (Quenda, Southern Brown Bandicoot) | | P5 | |
| 29. | 24131 <i>Macropus eugenii</i> subsp. <i>derbianus</i> (Tamar Wallaby (WA subsp)) | | P5 | |
| Non-conservation taxon | | | | |

| Name ID | Species Name | Naturalised | Conservation Code | ¹ Endemic To Query Area |
|---------|--|-------------|-------------------|------------------------------------|
| 30. | 15466 <i>Acacia applanata</i> | | | |
| 31. | 3254 <i>Acacia celastrifolia</i> (Glowing Wattle) | | | |
| 32. | 3324 <i>Acacia erinacea</i> | | | |
| 33. | 3454 <i>Acacia nervosa</i> (Rib Wattle) | | | |
| 34. | 15483 <i>Acacia pulchella</i> var. <i>pulchella</i> | | | |
| 35. | 3515 <i>Acacia restiacea</i> | | | |
| 36. | 3527 <i>Acacia saligna</i> (Orange Wattle) | | | |
| 37. | 30032 <i>Acacia saligna</i> subsp. <i>saligna</i> | | | |
| 38. | 24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill) | | | |
| 39. | 24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill) | | | |
| 40. | 24262 <i>Acanthiza inornata</i> (Western Thornbill) | | | |
| 41. | 24560 <i>Acanthorhynchus superciliosus</i> (Western Spinebill) | | | |
| 42. | 1791 <i>Adenanthos obovatus</i> (Basket Flower) | | | |
| 43. | 184 <i>Aira caryophyllea</i> (Silvery Hairgrass) | Y | | |
| 44. | 185 <i>Aira cupaniana</i> (Silvery Hairgrass) | Y | | |
| 45. | 187 <i>Aira praecox</i> (Early Hairgrass) | Y | | |
| 46. | 1056 <i>Alexgeorgea nitens</i> | | | |
| 47. | 1375 <i>Allium neapolitanum</i> (Naples Onion) | Y | | |
| 48. | 1728 <i>Allocasuarina fraseriana</i> (Sheoak) | | | |
| 49. | 2652 <i>Alternanthera nodiflora</i> (Common Joyweed) | | | |
| 50. | -14519 <i>Amblyomma triguttatum</i> | | | |
| 51. | 200 <i>Amphipogon turbinatus</i> | | | |
| 52. | 24312 <i>Anas gracilis</i> (Grey Teal) | | | |
| 53. | 24313 <i>Anas platyrhynchos</i> (Mallard) | | | |
| 54. | 24316 <i>Anas superciliosa</i> (Pacific Black Duck) | | | |
| 55. | 6300 <i>Andersonia aristata</i> (Rice Flower) | | | |
| 56. | 11470 <i>Anigozanthos bicolor</i> subsp. <i>bicolor</i> | | | |
| 57. | 6949 <i>Anthocercis littorea</i> (Yellow Tailflower) | | | |
| 58. | 24561 <i>Anthochaera carunculata</i> (Red Wattlebird) | | | |
| 59. | 24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird) | | | |
| 60. | 12724 <i>Anthotium junciforme</i> | | | |
| 61. | 25670 <i>Anthus australis</i> (Australian Pipit) | | | |
| 62. | 1117 <i>Aphelia cyperoides</i> | | | |
| 63. | 1118 <i>Aphelia drummondii</i> | | | |
| 64. | 24990 <i>Aprasia pulchella</i> | | | |
| 65. | 24991 <i>Aprasia repens</i> | | | |
| 66. | 24285 <i>Aquila audax</i> (Wedge-tailed Eagle) | | | |
| 67. | 7838 <i>Arctotheca calendula</i> (Cape Weed) | Y | | |
| 68. | 207 <i>Aristida contorta</i> (Bunched Kerosene Grass) | | | |
| 69. | 25566 <i>Artamus cinereus</i> (Black-faced Woodswallow) | | | |
| 70. | 24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow) | | | |
| 71. | 6330 <i>Astroloma macrocalyx</i> (Swan Berry) | | | |
| 72. | 6334 <i>Astroloma pallidum</i> (Kick Bush) | | | |
| 73. | 6339 <i>Astroloma xerophyllum</i> | | | |
| 74. | 17233 <i>Austrostipa campylachne</i> | | | |
| 75. | 17240 <i>Austrostipa flavescens</i> | | | |
| 76. | 17244 <i>Austrostipa macalpinei</i> | | | |
| 77. | 17254 <i>Austrostipa tenuifolia</i> | | | |
| 78. | 233 <i>Avena barbata</i> (Bearded Oat) | Y | | |
| 79. | 234 <i>Avena fatua</i> (Wild Oat) | Y | | |
| 80. | 235 <i>Avena sativa</i> (Common Oat) | Y | | |
| 81. | 24318 <i>Aythya australis</i> (Hardhead) | | | |
| 82. | 36441 <i>Babingtonia camphorosmae</i> (Camphor Myrtle) | | | |
| 83. | 32682 <i>Banksia armata</i> var. <i>armata</i> | | | |
| 84. | 1800 <i>Banksia attenuata</i> (Slender Banksia) | | | |
| 85. | 32576 <i>Banksia dallanneyi</i> (Couch Honeywort) | | | |
| 86. | 32577 <i>Banksia dallanneyi</i> var. <i>mellicula</i> | | | |
| 87. | 32523 <i>Banksia fraseri</i> var. <i>fraseri</i> | | | |
| 88. | 1834 <i>Banksia menziesii</i> (Firewood Banksia) | | | |
| 89. | 1835 <i>Banksia micrantha</i> | | | |
| 90. | 32076 <i>Banksia sessilis</i> (Parrot Bush) | | | |
| 91. | 32080 <i>Banksia sessilis</i> var. <i>sessilis</i> | | | |
| 92. | 15037 <i>Bartsia trixago</i> | Y | | |
| 93. | 740 <i>Baumea arthropophylla</i> | | | |
| 94. | 741 <i>Baumea articulata</i> (Jointed Rush) | | | |
| 95. | 743 <i>Baumea juncea</i> (Bare Twigrush) | | | |
| 96. | 3165 <i>Billardiera variifolia</i> | | | |
| 97. | 7856 <i>Blennospora drummondii</i> | | | |
| 98. | 17665 <i>Boronia purdieana</i> subsp. <i>purdieana</i> | | | |
| 99. | 1272 <i>Borya scirpoidea</i> | | | |

| Name ID | Species Name | Naturalised | Conservation Code | ¹ Endemic To Query Area |
|---------|---|-------------|-------------------|------------------------------------|
| 100. | 1273 <i>Borya sphaerocephala</i> (Pincushions) | | | |
| 101. | 24251 <i>Bos taurus</i> (European Cattle) | Y | | |
| 102. | 3710 <i>Bossiaea eriocarpa</i> (Common Brown Pea) | | | |
| 103. | 8661 <i>Brachypodium distachyon</i> (False Brome) | Y | | |
| 104. | 7875 <i>Brachyscome glandulosa</i> | | | |
| 105. | 7878 <i>Brachyscome iberidifolia</i> | | | |
| 106. | -19511 <i>Brachyurophis fasciolatus</i> subsp. <i>fasciolatus</i> | | | |
| 107. | -19669 <i>Brachyurophis semifasciatus</i> | | | |
| 108. | 244 <i>Briza maxima</i> (Blowfly Grass) | Y | | |
| 109. | 245 <i>Briza minor</i> (Shivery Grass) | Y | | |
| 110. | 249 <i>Bromus diandrus</i> (Great Brome) | Y | | |
| 111. | 250 <i>Bromus hordeaceus</i> (Soft Brome) | Y | | |
| 112. | 253 <i>Bromus rubens</i> (Red Brome) | Y | | |
| 113. | 1383 <i>Burchardia bairdiae</i> | | | |
| 114. | 12770 <i>Burchardia congesta</i> | | | |
| 115. | 1385 <i>Burchardia multiflora</i> (Dwarf Burchardia) | | | |
| 116. | 25716 <i>Cacatua sanguinea</i> (Little Corella) | | | |
| 117. | 24729 <i>Cacatua tenuirostris</i> (Eastern Long-billed Corella) | Y | | |
| 118. | 1276 <i>Caesia micrantha</i> (Pale Grass-lily) | | | |
| 119. | 1592 <i>Caladenia flava</i> (Cowslip Orchid) | | | |
| 120. | 15348 <i>Caladenia flava</i> subsp. <i>flava</i> | | | |
| 121. | 15354 <i>Caladenia hirta</i> subsp. <i>hirta</i> | | | |
| 122. | 15380 <i>Caladenia splendens</i> | | | |
| 123. | 2856 <i>Calandrinia liniflora</i> (Parakeelya) | | | |
| 124. | 19309 <i>Calectasia narragara</i> | | | |
| 125. | 35816 <i>Calothamnus quadrifidus</i> subsp. <i>quadrifidus</i> | | | |
| 126. | 5439 <i>Calytrix angulata</i> (Yellow Starflower) | | | |
| 127. | 5461 <i>Calytrix glutinosa</i> | | | |
| 128. | 5481 <i>Calytrix sylvana</i> | | | |
| 129. | -16582 <i>Carassius auratus</i> | | | |
| 130. | 2956 <i>Cassylia pomiformis</i> (Dodder Laurel) | | | |
| 131. | 1742 <i>Casuarina obesa</i> (Swamp Sheoak) | | | |
| 132. | 41567 <i>Cenchrus macrourus</i> (African Feather Grass) | Y | | |
| 133. | 41568 <i>Cenchrus setaceus</i> (Fountain Grass) | Y | | |
| 134. | 6539 <i>Centaureum erythraea</i> (Common Centaury) | Y | | |
| 135. | 1120 <i>Centrolepis alepyroides</i> | | | |
| 136. | 1121 <i>Centrolepis aristata</i> (Pointed Centrolepis) | | | |
| 137. | 1125 <i>Centrolepis drummondiana</i> | | | |
| 138. | 1129 <i>Centrolepis glabra</i> (Smooth Centrolepis) | | | |
| 139. | 1132 <i>Centrolepis mutica</i> | | | |
| 140. | -14766 <i>Cercophonius sulcatus</i> | | | |
| 141. | 11878 <i>Chamaescilla corymbosa</i> var. <i>paradoxa</i> | | | |
| 142. | 35598 <i>Chamaelacium</i> sp. <i>Winchester</i> (C. <i>Chapman</i> s.n. PERTH 07879180) | | | |
| 143. | 3169 <i>Cheiranthra preissiana</i> | | | |
| 144. | 25337 <i>Chelodina oblonga</i> (Oblong Turtle) | | | |
| 145. | 24321 <i>Chenonetta jubata</i> (Australian Wood Duck) | | | |
| 146. | 2491 <i>Chenopodium macrospermum</i> | Y | | |
| 147. | 33939 <i>Cherax cainii</i> (Marron) | | | |
| 148. | 763 <i>Chorizandra enodis</i> (Black Bristlerush) | | | |
| 149. | 6543 <i>Cicendia filiformis</i> (Slender Cicendia) | Y | | |
| 150. | 25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush) | | | |
| 151. | 24399 <i>Columba livia</i> (Domestic Pigeon) | Y | | |
| 152. | 40864 <i>Commersonia cygnorum</i> | | | |
| 153. | 1864 <i>Conospermum crassinervium</i> (Summer Smokebush) | | | |
| 154. | 6347 <i>Conostephium minus</i> (Pink-tipped Pearl flower) | | | |
| 155. | 6349 <i>Conostephium preissii</i> | | | |
| 156. | 11513 <i>Conostylis aculeata</i> subsp. <i>cygnorum</i> | | | |
| 157. | 1420 <i>Conostylis androstemma</i> (Trumpets) | | | |
| 158. | 1436 <i>Conostylis juncea</i> | | | |
| 159. | 11597 <i>Conostylis setigera</i> subsp. <i>setigera</i> | | | |
| 160. | 1455 <i>Conostylis setosa</i> (White Cottonhead) | | | |
| 161. | 25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike) | | | |
| 162. | 2891 <i>Corrigiola litoralis</i> (Strapwort) | Y | | |
| 163. | 25592 <i>Corvus coronoides</i> (Australian Raven) | | | |
| 164. | 17104 <i>Corymbia calophylla</i> (Marri) | | | |
| 165. | 7945 <i>Cotula coronopifolia</i> (Waterbuttons) | Y | | |
| 166. | 7946 <i>Cotula cotuloides</i> (Smooth Cotula) | | | |
| 167. | 25595 <i>Cracticus tibicen</i> (Australian Magpie) | | | |
| 168. | 25596 <i>Cracticus torquatus</i> (Grey Butcherbird) | | | |
| 169. | 3137 <i>Crassula colorata</i> (Dense Stonecrop) | | | |

| Name ID | Species Name | Naturalised | Conservation Code | ¹ Endemic To Query Area |
|---------|--|-------------|-------------------|------------------------------------|
| 170. | 3142 <i>Crassula natans</i> | Y | | |
| 171. | 15706 <i>Crassula natans</i> var. <i>minus</i> | Y | | |
| 172. | 24918 <i>Crenadactylus ocellatus</i> subsp. <i>ocellatus</i> | | | |
| 173. | 25398 <i>Crinia georgiana</i> (Quacking Frog) | | | |
| 174. | 25400 <i>Crinia insignifera</i> (Squelching Froglet) | | | |
| 175. | 13527 <i>Croninia kingiana</i> | | | |
| 176. | 13470 <i>Cryptandra arbutiflora</i> var. <i>arbutiflora</i> | | | |
| 177. | 9076 <i>Cryptandra myriantha</i> | | | |
| 178. | 30893 <i>Cryptoblepharus buchananii</i> | | | |
| 179. | 25039 <i>Ctenotus fallens</i> | | | |
| 180. | 25047 <i>Ctenotus impar</i> | | | |
| 181. | 15114 <i>Cyanicula gemmata</i> | | | |
| 182. | 768 <i>Cyathochaeta avenacea</i> | | | |
| 183. | 40661 <i>Cycnogeton lineare</i> | | | |
| 184. | 24322 <i>Cygnus atratus</i> (Black Swan) | | | |
| 185. | 283 <i>Cynodon dactylon</i> (Couch) | Y | | |
| 186. | 794 <i>Cyperus gymnocaulos</i> (Spiny Flat-sedge) | | | |
| 187. | 806 <i>Cyperus polystachyos</i> (Bunchy Sedge) | Y | | |
| 188. | 815 <i>Cyperus tenellus</i> (Tiny Flatsedge) | Y | | |
| 189. | -15906 <i>Cyprinus carpio</i> | | | |
| 190. | 17692 <i>Cytogonidium leptocarpoides</i> | | | |
| 191. | 30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra) | Y | | |
| 192. | 7428 <i>Dampiera coronata</i> (Wedge-leaved Dampiera) | | | |
| 193. | 7451 <i>Dampiera lavandulacea</i> | | | |
| 194. | 7454 <i>Dampiera linearis</i> (Common Dampiera) | | | |
| 195. | 25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella) | | | |
| 196. | 5508 <i>Darwinia citriodora</i> (Lemon-scented Darwinia) | | | |
| 197. | 1218 <i>Dasyogon bromeliifolius</i> (Pineapple Bush) | | | |
| 198. | 6218 <i>Daucus glochidiatus</i> (Australian Carrot) | | | |
| 199. | 3793 <i>Daviesia angulata</i> | | | |
| 200. | 3832 <i>Daviesia physodes</i> | | | |
| 201. | 17663 <i>Desmocladus asper</i> | | | |
| 202. | 17838 <i>Dielsia stenostachya</i> | | | |
| 203. | 17736 <i>Digitaria aequiglumis</i> | Y | | |
| 204. | 311 <i>Digitaria ciliaris</i> (Summer Grass) | Y | | |
| 205. | 320 <i>Digitaria sanguinalis</i> (Crab Grass) | Y | | |
| 206. | 24929 <i>Diplodactylus granariensis</i> subsp. <i>granariensis</i> | | | |
| 207. | 4746 <i>Diplopeltis huegelii</i> | | | |
| 208. | 18541 <i>Diplopeltis huegelii</i> subsp. <i>huegelii</i> | | | |
| 209. | 18589 <i>Diplopeltis huegelii</i> subsp. <i>lehmannii</i> | | | |
| 210. | 3011 <i>Diplotaxis muralis</i> (Wall Rocket) | Y | | |
| 211. | 7055 <i>Dischisma capitatum</i> (Woolly-headed Dischisma) | Y | | |
| 212. | 7961 <i>Dittrichia graveolens</i> (Stinkwort) | Y | | |
| 213. | 1634 <i>Diuris laxiflora</i> (Bee Orchid) | | | |
| 214. | 24470 <i>Dromaius novaehollandiae</i> (Emu) | | | |
| 215. | 3095 <i>Drosera erythrorhiza</i> (Red Ink Sundew) | | | |
| 216. | 13211 <i>Drosera erythrorhiza</i> subsp. <i>collina</i> | | | |
| 217. | 3097 <i>Drosera gigantea</i> (Giant Sundew) | | | |
| 218. | 15453 <i>Drosera gigantea</i> subsp. <i>gigantea</i> | | | |
| 219. | 3098 <i>Drosera glanduligera</i> (Pimpernel Sundew) | | | |
| 220. | 3101 <i>Drosera heterophylla</i> (Swamp Rainbow) | | | |
| 221. | 11853 <i>Drosera menziesii</i> subsp. <i>menziesii</i> | | | |
| 222. | 13216 <i>Drosera menziesii</i> subsp. <i>penicillaris</i> | | | |
| 223. | 3113 <i>Drosera neesii</i> (Jewel Rainbow) | | | |
| 224. | 3117 <i>Drosera paleacea</i> (Dwarf Sundew) | | | |
| 225. | 3123 <i>Drosera platystigma</i> (Black-eyed Sundew) | | | |
| 226. | 3124 <i>Drosera pulchella</i> (Pretty Sundew) | | | |
| 227. | 8911 <i>Drosera rosulata</i> | | | |
| 228. | 3131 <i>Drosera stolonifera</i> (Leafy Sundew) | | | |
| 229. | 347 <i>Ehrharta calycina</i> (Perennial Veldt Grass) | Y | | |
| 230. | 349 <i>Ehrharta longiflora</i> (Annual Veldt Grass) | Y | | |
| 231. | 24290 <i>Elanus caeruleus</i> subsp. <i>axillaris</i> (Australian Black-shouldered Kite) | | | |
| 232. | 822 <i>Eleocharis acuta</i> (Common Spikerush) | | | |
| 233. | 1644 <i>Elythranthera emarginata</i> (Pink Enamel Orchid) | | | |
| 234. | 2409 <i>Emex australis</i> (Doublegee) | Y | | |
| 235. | 374 <i>Eragrostis cilianensis</i> (Stinkgrass) | Y | | |
| 236. | 376 <i>Eragrostis curvula</i> (African Lovegrass) | Y | | |
| 237. | 415 <i>Eriachne ovata</i> | | | |
| 238. | 1646 <i>Eriochilus dilatatus</i> (White Bunny Orchid) | | | |
| 239. | 4332 <i>Erodium botrys</i> (Long Storksbill) | Y | | |

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|---------|---|-------------|-------------------|------------------------------------|
| 240. | 4335 <i>Erodium cygnorum</i> (Blue Heronsbill) | | | |
| 241. | 6219 <i>Eryngium pinnatifidum</i> (Blue Devils) | | | |
| 242. | 5763 <i>Eucalyptus rudis</i> (Flooded Gum) | | | |
| 243. | 5767 <i>Eucalyptus salubris</i> (Gimlet) | | | |
| 244. | 12906 <i>Eucalyptus wandoo</i> subsp. <i>wandoo</i> | | | |
| 245. | 15137 <i>Euchiton sphaericus</i> | | | |
| 246. | 25622 <i>Falco cenchroides</i> (Australian Kestrel) | | | |
| 247. | 894 <i>Fimbristylis velata</i> | | | |
| 248. | 25727 <i>Fulica atra</i> (Eurasian Coot) | | | |
| 249. | 2969 <i>Fumaria capreolata</i> (Whiteflower Fumitory) | Y | | |
| 250. | 32370 <i>Funaria hygrometrica</i> | | | |
| 251. | 907 <i>Gahnia trifida</i> (Coast Saw-sedge) | | | |
| 252. | 34028 <i>Galaxias occidentalis</i> (Western Minnow) | | | |
| 253. | 7323 <i>Galium murale</i> (Small Goosegrass) | Y | | |
| 254. | 25729 <i>Gallinula tenebrosa</i> (Dusky Moorhen) | | | |
| 255. | 20483 <i>Gastrolobium linearifolium</i> | | | |
| 256. | 20512 <i>Gastrolobium praemorsum</i> | | | |
| 257. | 3924 <i>Gastrolobium spinosum</i> (Prickly Poison) | | | |
| 258. | 25530 <i>Gerygone fusca</i> (Western Gerygone) | | | |
| 259. | 1520 <i>Gladiolus caryophyllaceus</i> (Wild Gladiolus) | Y | | |
| 260. | 2836 <i>Glinus oppositifolius</i> | | | |
| 261. | 7061 <i>Glossostigma drummondii</i> (Mudmat) | | | |
| 262. | 3951 <i>Gompholobium marginatum</i> | | | |
| 263. | 3957 <i>Gompholobium tomentosum</i> (Hairy Yellow Pea) | | | |
| 264. | 8614 <i>Goodenia claytoniacea</i> | | | |
| 265. | 12551 <i>Goodenia micrantha</i> | | | |
| 266. | 7538 <i>Goodenia pulchella</i> | | | |
| 267. | 24443 <i>Grallina cyanoleuca</i> (Magpie-lark) | | | |
| 268. | 14282 <i>Gratiola pubescens</i> | | | |
| 269. | 13450 <i>Grevillea manglesii</i> subsp. <i>manglesii</i> | | | |
| 270. | 2066 <i>Grevillea pilulifera</i> (Woolly-flowered Grevillea) | | | |
| 271. | 5014 <i>Guichenotia sarotes</i> | | | |
| 272. | 1465 <i>Haemodorum discolor</i> | | | |
| 273. | 1468 <i>Haemodorum laxum</i> | | | |
| 274. | 1472 <i>Haemodorum simplex</i> | | | |
| 275. | 2158 <i>Hakea erinacea</i> (Hedge-hog Hakea) | | | |
| 276. | 2166 <i>Hakea incrassata</i> (Marble Hakea) | | | |
| 277. | 2175 <i>Hakea lissocarpha</i> (Honey Bush) | | | |
| 278. | 2185 <i>Hakea myrtooides</i> (Myrtle Hakea) | | | |
| 279. | 2216 <i>Hakea varia</i> (Variable-leaved Hakea) | | | |
| 280. | 25409 <i>Heleioporus barycragus</i> (Hooting Frog) | | | |
| 281. | 25410 <i>Heleioporus eyrei</i> (Moaning Frog) | | | |
| 282. | 3016 <i>Heliophila pusilla</i> | Y | | |
| 283. | 6838 <i>Hemiandra linearis</i> (Speckled Snakebush) | | | |
| 284. | 6839 <i>Hemiandra pungens</i> (Snakebush) | | | |
| 285. | 25119 <i>Hemiergis quadrilineata</i> | | | |
| 286. | 1526 <i>Hesperantha falcata</i> | Y | | |
| 287. | 5112 <i>Hibbertia aurea</i> | | | |
| 288. | 5114 <i>Hibbertia commutata</i> | | | |
| 289. | 5118 <i>Hibbertia cunninghamii</i> | | | |
| 290. | 20051 <i>Hibbertia diamesogenos</i> | | | |
| 291. | 5135 <i>Hibbertia hypericoides</i> (Yellow Buttercups) | | | |
| 292. | 5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower) | | | |
| 293. | 20034 <i>Hibbertia</i> sp. <i>Gnangara</i> (J.R. Wheeler 2329) | | | |
| 294. | 5173 <i>Hibbertia subvaginata</i> | | | |
| 295. | 24491 <i>Hirundo neoxena</i> (Welcome Swallow) | | | |
| 296. | 445 <i>Holcus setiger</i> (Annual Fog) | Y | | |
| 297. | 6222 <i>Homalosciadium homalocarpum</i> | | | |
| 298. | 17575 <i>Hordeum distichon</i> | Y | | |
| 299. | 12741 <i>Hyalosperma cotula</i> | | | |
| 300. | 6223 <i>Hydrocotyle alata</i> | | | |
| 301. | 6226 <i>Hydrocotyle callicarpa</i> (Small Pennywort) | | | |
| 302. | 6229 <i>Hydrocotyle diantha</i> | | | |
| 303. | 5817 <i>Hypocalymma angustifolium</i> (White Myrtle) | | | |
| 304. | 35070 <i>Hypocalymma angustifolium</i> subsp. <i>Swan Coastal Plain</i> (G.J. Keighery 16777) | | | |
| 305. | 8086 <i>Hypochaeris glabra</i> (Smooth Catsear) | Y | | |
| 306. | 1070 <i>Hypolaena exsulca</i> | | | |
| 307. | 1500 <i>Hypoxis glabella</i> (Tiny Star) | | | |
| 308. | 1503 <i>Hypoxis occidentalis</i> | | | |
| 309. | 11736 <i>Hypoxis occidentalis</i> var. <i>occidentalis</i> | | | |

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|---------|--|-------------|-------------------|------------------------------------|
| 310. | 11 <i>Isoetes drummondii</i> (Quillwort) | | | |
| 311. | 910 <i>Isolepis cernua</i> (Nodding Club-rush) | | | |
| 312. | 14540 <i>Isolepis hystrix</i> | Y | | |
| 313. | 917 <i>Isolepis marginata</i> (Coarse Club-rush) | Y | | |
| 314. | 919 <i>Isolepis oldfieldiana</i> | | | |
| 315. | 921 <i>Isolepis producta</i> | | | |
| 316. | 924 <i>Isolepis stellata</i> (Star Club-rush) | | | |
| 317. | 2229 <i>Isopogon dubius</i> (Pincushion Coneflower) | | | |
| 318. | 7398 <i>Isotoma pusilla</i> (Small Isotome) | | | |
| 319. | 4012 <i>Jacksonia furcellata</i> (Grey Stinkwood) | | | |
| 320. | 4029 <i>Jacksonia sternbergiana</i> (Stinkwood) | | | |
| 321. | 1178 <i>Juncus bufonius</i> (Toad Rush) | Y | | |
| 322. | 1180 <i>Juncus capitatus</i> (Capitate Rush) | Y | | |
| 323. | 1188 <i>Juncus pallidus</i> (Pale Rush) | | | |
| 324. | 4044 <i>Kennedia prostrata</i> (Scarlet Runner) | | | |
| 325. | 4045 <i>Kennedia stirlingii</i> (Bushy Kennedia) | | | |
| 326. | 5835 <i>Kunzea micrantha</i> | | | |
| 327. | 17461 <i>Kunzea micrantha</i> subsp. <i>micrantha</i> | | | |
| 328. | 5841 <i>Kunzea recurva</i> | | | |
| 329. | 11289 <i>Labichea lanceolata</i> subsp. <i>lanceolata</i> | | | |
| 330. | 19955 <i>Lachnagrostis plebeia</i> | | | |
| 331. | 29046 <i>Lactuca serriola</i> forma <i>serriola</i> | Y | | |
| 332. | 468 <i>Lamarckia aurea</i> (Goldentop) | Y | | |
| 333. | 4052 <i>Latrobea tenella</i> | | | |
| 334. | 1303 <i>Laxmannia grandiflora</i> | | | |
| 335. | 1309 <i>Laxmannia squarrosa</i> | | | |
| 336. | 1051 <i>Lemna disperma</i> (Duckweed) | | | |
| 337. | 18074 <i>Lepidobolus preissianus</i> subsp. <i>preissianus</i> | | | |
| 338. | 925 <i>Lepidosperma angustatum</i> | | | |
| 339. | 930 <i>Lepidosperma costale</i> | | | |
| 340. | 936 <i>Lepidosperma leptostachyum</i> | | | |
| 341. | 937 <i>Lepidosperma longitudinale</i> (Pithy Sword-sedge) | | | |
| 342. | 940 <i>Lepidosperma pubisquamum</i> | | | |
| 343. | 1653 <i>Leporella fimbriata</i> (Hare Orchid) | | | |
| 344. | 5847 <i>Leptospermum erubescens</i> (Roadside Teatree) | | | |
| 345. | 1088 <i>Lepyrodia macra</i> (Large Scale Rush) | | | |
| 346. | 25128 <i>Lerista christinae</i> | | | |
| 347. | 25133 <i>Lerista elegans</i> | | | |
| 348. | 25165 <i>Lerista praepedita</i> | | | |
| 349. | 6439 <i>Leucopogon pulchellus</i> (Beard-heath) | | | |
| 350. | 40803 <i>Leucopogon squarrosus</i> subsp. <i>squarrosus</i> | | | |
| 351. | 6451 <i>Leucopogon tenuis</i> | | | |
| 352. | 7677 <i>Levenhookia stipitata</i> (Common Stylewort) | | | |
| 353. | 25005 <i>Lialis burtonis</i> | | | |
| 354. | 24581 <i>Lichenostomus virescens</i> (Singing Honeyeater) | | | |
| 355. | 25661 <i>Lichmera indistincta</i> (Brown Honeyeater) | | | |
| 356. | 4363 <i>Linum trigynum</i> (French Flax) | Y | | |
| 357. | 36160 <i>Liparophyllum capitatum</i> | | | |
| 358. | 25378 <i>Litoria adelaidensis</i> (Slender Tree Frog) | | | |
| 359. | 25388 <i>Litoria moorei</i> (Motorbike Frog) | | | |
| 360. | 1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush) | | | |
| 361. | 4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil) | Y | | |
| 362. | 1092 <i>Loxocarya cinerea</i> | | | |
| 363. | 4065 <i>Lupinus angustifolius</i> (Narrowleaf Lupin) | Y | | |
| 364. | 1097 <i>Lyginia barbata</i> | | | |
| 365. | 18049 <i>Lyginia imberbis</i> | | | |
| 366. | 36375 <i>Lysimachia arvensis</i> (Pimpernel) | Y | | |
| 367. | 34736 <i>Lysinema pentapetalum</i> | | | |
| 368. | 25654 <i>Malurus splendens</i> (Splendid Fairy-wren) | | | |
| 369. | 17683 <i>Meeboldina cana</i> | | | |
| 370. | 17747 <i>Meeboldina decipiens</i> | | | |
| 371. | 34676 <i>Meionectes brownii</i> (Swamp Raspwort) | | | |
| 372. | 5926 <i>Melaleuca lateritia</i> (Robin Redbreast Bush) | | | |
| 373. | 5958 <i>Melaleuca radula</i> (Graceful Honeymyrtle) | | | |
| 374. | 5959 <i>Melaleuca raphiophylla</i> (Swamp Paperbark) | | | |
| 375. | 19365 <i>Melaleuca ryeae</i> | | | |
| 376. | 5978 <i>Melaleuca teretifolia</i> (Banbar) | | | |
| 377. | 5987 <i>Melaleuca viminea</i> (Mohan) | | | |
| 378. | 25663 <i>Melithreptus brevirostris</i> (Brown-headed Honeyeater) | | | |
| 379. | 25184 <i>Menetia greyii</i> | | | |

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|---------|---|-------------|-------------------|------------------------------------|
| 380. | 25693 <i>Microeca fascinans</i> (Jacky Winter) | | | |
| 381. | 485 <i>Microlaena stipoides</i> (Weeping Grass) | | | |
| 382. | 1657 <i>Microtis alba</i> (White Mignonette Orchid) | | | |
| 383. | 15419 <i>Microtis media</i> subsp. <i>media</i> | | | |
| 384. | 8105 <i>Millotia myosotidifolia</i> | | | |
| 385. | 4100 <i>Mirbelia spinosa</i> | | | |
| 386. | 7410 <i>Monopsis debilis</i> | Y | | |
| 387. | 37440 <i>Monopsis debilis</i> var. <i>depressa</i> | Y | | |
| 388. | 4666 <i>Monotaxis occidentalis</i> | | | |
| 389. | 19179 <i>Moraea flaccida</i> (One-leaf Cape Tulip) | Y | | |
| 390. | 25191 <i>Morethia lineocellata</i> | | | |
| 391. | 2412 <i>Muehlenbeckia adpressa</i> (Climbing Lignum) | | | |
| 392. | 8114 <i>Myriocephalus appendiculatus</i> (White-tip Myriocephalus) | | | |
| 393. | 8117 <i>Myriocephalus helichrysoides</i> | | | |
| 394. | 14187 <i>Myriocephalus occidentalis</i> | | | |
| 395. | 6189 <i>Myriophyllum crispatum</i> | | | |
| 396. | 6192 <i>Myriophyllum drummondii</i> | | | |
| 397. | 25426 <i>Neobatrachus pelobatoides</i> (Humming Frog) | | | |
| 398. | 492 <i>Neurachne alopecuroidea</i> (Foxtail Mulga Grass) | | | |
| 399. | 25252 <i>Notechis scutatus</i> (Tiger Snake) | | | |
| 400. | 2401 <i>Nuytsia floribunda</i> (Christmas Tree) | | | |
| 401. | 25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron) | | | |
| 402. | 24407 <i>Ocyphaps lophotes</i> (Crested Pigeon) | | | |
| 403. | -14595 <i>Oecobius navus</i> | | | |
| 404. | 8143 <i>Olearia paucidentata</i> (Autumn Scrub Daisy) | | | |
| 405. | 18255 <i>Opercularia vaginata</i> (Dog Weed) | | | |
| 406. | 36177 <i>Ornduffia albiflora</i> | | | |
| 407. | 7122 <i>Orobanche minor</i> (Lesser Broomrape) | Y | | |
| 408. | 4355 <i>Oxalis perennans</i> | | | |
| 409. | 4356 <i>Oxalis pes-caprae</i> (Soursob) | Y | | |
| 410. | 13135 <i>Ozothamnus ramosus</i> | | | |
| 411. | 25680 <i>Pachycephala rufiventris</i> (Rufous Whistler) | | | |
| 412. | 25253 <i>Parasuta gouldii</i> | | | |
| 413. | 25681 <i>Pardalotus punctatus</i> (Spotted Pardalote) | | | |
| 414. | 25682 <i>Pardalotus striatus</i> (Striated Pardalote) | | | |
| 415. | 7089 <i>Parentucellia latifolia</i> (Common Bartsia) | Y | | |
| 416. | 7090 <i>Parentucellia viscosa</i> (Sticky Bartsia) | Y | | |
| 417. | 519 <i>Paspalidium constrictum</i> (Knottybutt Grass) | | | |
| 418. | 1550 <i>Patersonia occidentalis</i> (Purple Flag) | | | |
| 419. | 6006 <i>Pericalymma ellipticum</i> (Swamp Teatree) | | | |
| 420. | 16478 <i>Pericalymma ellipticum</i> var. <i>floridum</i> | | | |
| 421. | 13911 <i>Persicaria decipiens</i> | | | |
| 422. | 24659 <i>Petroica goodenovii</i> (Red-capped Robin) | | | |
| 423. | 2284 <i>Petrophile biloba</i> (Granite Petrophile) | | | |
| 424. | 20391 <i>Petrophile juncifolia</i> | | | |
| 425. | 2299 <i>Petrophile linearis</i> (Pixie Mops) | | | |
| 426. | 2308 <i>Petrophile seminuda</i> | | | |
| 427. | 19825 <i>Petrohragia dubia</i> | Y | | |
| 428. | 24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant) | | | |
| 429. | 25699 <i>Phalacrocorax varius</i> (Pied Cormorant) | | | |
| 430. | 551 <i>Phalaris minor</i> (Lesser Canary Grass) | Y | | |
| 431. | 24409 <i>Phaps chalcoptera</i> (Common Bronzewing) | | | |
| 432. | 1173 <i>Philydrella pygmaea</i> (Butterfly Flowers) | | | |
| 433. | 24596 <i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater) | | | |
| 434. | 4675 <i>Phyllanthus calycinus</i> (False Boronia) | | | |
| 435. | <i>Phytophthora cinnamomi</i> | | | |
| 436. | 78 <i>Piilularia novae-hollandiae</i> (Austral Pillwort) | | | |
| 437. | 11404 <i>Pimelea imbricata</i> var. <i>major</i> | | | |
| 438. | 11402 <i>Pimelea imbricata</i> var. <i>piligera</i> | | | |
| 439. | 12041 <i>Pimelea suaveolens</i> subsp. <i>suaveolens</i> (Tall Mulla Mulla) | | | |
| 440. | 25721 <i>Platycercus zonarius</i> (Australian Ringneck) | | | |
| 441. | 24750 <i>Platycercus zonarius</i> subsp. <i>semitorquatus</i> (Twenty-eight Parrot) | | | |
| 442. | 24751 <i>Platycercus zonarius</i> subsp. <i>zonarius</i> | | | |
| 443. | 25007 <i>Pletholax gracilis</i> subsp. <i>gracilis</i> | | | |
| 444. | 8175 <i>Podolepis gracilis</i> (Slender Podolepis) | | | |
| 445. | 8177 <i>Podolepis lessonii</i> | | | |
| 446. | 8183 <i>Podotheca chrysantha</i> (Yellow Podotheca) | | | |
| 447. | 8184 <i>Podotheca gnaphalioides</i> (Golden Long-heads) | | | |
| 448. | 24907 <i>Pogona minor</i> subsp. <i>minor</i> | | | |
| 449. | 24681 <i>Poliiocephalus poliocephalus</i> (Hoary-headed Grebe) | | | |

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|---------|--|-------------|-------------------|------------------------------------|
| 450. | 582 <i>Polypogon monspeliensis</i> (Annual Beardgrass) | Y | | |
| 451. | 583 <i>Polypogon tenellus</i> | | | |
| 452. | 30854 <i>Polytelis anthopeplus</i> subsp. <i>westralis</i> | | | |
| 453. | 25731 <i>Porphyrio porphyrio</i> (Purple Swampphen) | | | |
| 454. | 1671 <i>Prasophyllum elatum</i> (Tall Leek Orchid) | | | |
| 455. | 1672 <i>Prasophyllum fimbria</i> (Fringed Leek Orchid) | | | |
| 456. | 25261 <i>Pseudechis australis</i> (Mulga Snake) | | | |
| 457. | 25259 <i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite) | | | |
| 458. | 25433 <i>Pseudophryne guentheri</i> (Crawling Toadlet) | | | |
| 459. | 11118 <i>Pterostylis pyramidalis</i> (Snail Orchid) | | | |
| 460. | 2716 <i>Ptilotus declinatus</i> (Curved Mulla Mulla) | | | |
| 461. | 2720 <i>Ptilotus esquamatus</i> | | | |
| 462. | 2742 <i>Ptilotus manglesii</i> (Pom Poms) | | | |
| 463. | 8195 <i>Quinetia urvillei</i> | | | |
| 464. | 25271 <i>Ramphotyphlops australis</i> | | | |
| 465. | 25288 <i>Ramphotyphlops waitii</i> | | | |
| 466. | 2932 <i>Ranunculus colonorum</i> (Common Buttercup) | | | |
| 467. | 2937 <i>Ranunculus sessiliflorus</i> (Smallflower Buttercup) | | | |
| 468. | 3061 <i>Raphanus raphanistrum</i> (Wild Radish) | Y | | |
| 469. | 24245 <i>Rattus rattus</i> (Black Rat) | Y | | |
| 470. | 6012 <i>Regelia ciliata</i> | | | |
| 471. | 25614 <i>Rhipidura leucophrys</i> (Willie Wagtail) | | | |
| 472. | 13312 <i>Rhodanthe pyrethrum</i> | | | |
| 473. | 1556 <i>Romulea rosea</i> (Guildford Grass) | Y | | |
| 474. | 11544 <i>Romulea rosea</i> var. <i>australis</i> (Guildford Grass) | Y | | |
| 475. | 14924 <i>Romulea rosea</i> var. <i>communis</i> | Y | | |
| 476. | 2433 <i>Rumex crispus</i> (Curled Dock) | Y | | |
| 477. | 40430 <i>Rytidosperma pilosum</i> | | | |
| 478. | 40427 <i>Rytidosperma setaceum</i> | | | |
| 479. | 6483 <i>Samolus junceus</i> | | | |
| 480. | 41660 <i>Schenkia australis</i> | | | |
| 481. | 968 <i>Schoenoplectus pungens</i> (Sharpleaf Rush) | | | |
| 482. | 975 <i>Schoenus bifidus</i> | | | |
| 483. | 984 <i>Schoenus curvifolius</i> | | | |
| 484. | 985 <i>Schoenus discifer</i> | | | |
| 485. | 994 <i>Schoenus humilis</i> | | | |
| 486. | 1006 <i>Schoenus odontocarpus</i> | | | |
| 487. | 17614 <i>Schoenus plumosus</i> | | | |
| 488. | 1011 <i>Schoenus rigens</i> | | | |
| 489. | 18164 <i>Schoenus</i> sp. <i>smooth culms</i> (K.R. Newbey 7823) | | | |
| 490. | 1017 <i>Schoenus subbulbosus</i> | | | |
| 491. | 1023 <i>Schoenus tenellus</i> | | | |
| 492. | 1026 <i>Schoenus unispiculatus</i> | | | |
| 493. | 17409 <i>Schoenus variicellae</i> | | | |
| 494. | 6033 <i>Scholtzia involucreta</i> (Spiked Scholtzia) | | | |
| 495. | 6 <i>Selaginella gracillima</i> (Tiny Clubmoss) | | | |
| 496. | 20663 <i>Senecio multicaulis</i> subsp. <i>multicaulis</i> | | | |
| 497. | 2909 <i>Silene gallica</i> (French Catchfly) | Y | | |
| 498. | 15972 <i>Silene gallica</i> var. <i>gallica</i> | Y | | |
| 499. | 11803 <i>Silene gallica</i> var. <i>quinquevulnera</i> | Y | | |
| 500. | 8225 <i>Siloxerus humifusus</i> (Procumbent Siloxerus) | | | |
| 501. | 25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake) | | | |
| 502. | 30948 <i>Smicromis brevirostris</i> (Weebill) | | | |
| 503. | 6988 <i>Solanum americanum</i> (Glossy Nightshade) | Y | | |
| 504. | 7022 <i>Solanum nigrum</i> (Black Berry Nightshade) | Y | | |
| 505. | 8230 <i>Sonchus asper</i> (Rough Sowthistle) | Y | | |
| 506. | 8231 <i>Sonchus oleraceus</i> (Common Sowthistle) | Y | | |
| 507. | 1312 <i>Sowerbaea laxiflora</i> (Purple Tassels) | | | |
| 508. | 623 <i>Spartochloa scirpoidea</i> | | | |
| 509. | 6930 <i>Stachys arvensis</i> (Staggerweed) | Y | | |
| 510. | 16197 <i>Stenanthemum emarginatum</i> | | | |
| 511. | 2316 <i>Stirlingia latifolia</i> (Blueboy) | | | |
| 512. | 25597 <i>Strepera versicolor</i> (Grey Currawong) | | | |
| 513. | 25589 <i>Streptopelia chinensis</i> (Spotted Turtle-Dove) | Y | | |
| 514. | 25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove) | Y | | |
| 515. | 24943 <i>Strophurus spinigerus</i> subsp. <i>inornatus</i> | | | |
| 516. | 24942 <i>Strophurus spinigerus</i> subsp. <i>spinigerus</i> | | | |
| 517. | 7693 <i>Stylidium brunonianum</i> (Pink Fountain Triggerplant) | | | |
| 518. | 7712 <i>Stylidium despectum</i> (Dwarf Triggerplant) | | | |
| 519. | 7713 <i>Stylidium dichotomum</i> (Pins-and-needles) | | | |

| Name ID | Species Name | Naturalised | Conservation Code | ¹ Endemic To Query Area |
|---------|--|-------------|-------------------|------------------------------------|
| 520. | 7717 <i>Stylidium divaricatum</i> (Daddy-long-legs) | | | |
| 521. | 7719 <i>Stylidium ecome</i> (Foot Triggerplant) | | | |
| 522. | 25800 <i>Stylidium paludicola</i> | | | |
| 523. | 7773 <i>Stylidium petiolare</i> (Horn Triggerplant) | | | |
| 524. | 30274 <i>Stylidium purpureum</i> subsp. non stilted (J.A. Wege & F. Hort JAW 1384) | | | |
| 525. | 33106 <i>Stylidium recurvum</i> | | | |
| 526. | 7785 <i>Stylidium repens</i> (Matted Triggerplant) | | | |
| 527. | 25806 <i>Stylidium scarosum</i> | | | |
| 528. | 25830 <i>Stylidium</i> sp. Darling Range (H. Bowler 371) | | | |
| 529. | 3181 <i>Stylobasium australe</i> | | | |
| 530. | 2325 <i>Synaphea pinnata</i> (Helena Synaphea) | | | |
| 531. | 25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe) | | | |
| 532. | 24331 <i>Tadorna tadornoides</i> (Australian Shelduck) | | | |
| 533. | 24167 <i>Tarsipes rostratus</i> (Honey Possum) | | | |
| 534. | -13561 <i>Tasmanicosa leuckartii</i> | | | |
| 535. | 1701 <i>Thelymitra antennifera</i> (Vanilla Orchid) | | | |
| 536. | 673 <i>Themeda triandra</i> | | | |
| 537. | 24844 <i>Threskiornis molucca</i> (Australian White Ibis) | | | |
| 538. | 24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis) | | | |
| 539. | 1328 <i>Thysanotus dichotomus</i> (Branching Fringe Lily) | | | |
| 540. | 1343 <i>Thysanotus patersonii</i> | | | |
| 541. | 1357 <i>Thysanotus thyrsoides</i> | | | |
| 542. | 25203 <i>Tiliqua occipitalis</i> (Western Bluetongue) | | | |
| 543. | 25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher) | | | |
| 544. | 6280 <i>Trachymene pilosa</i> (Native Parsnip) | | | |
| 545. | 1481 <i>Tribonanthes australis</i> | | | |
| 546. | 1483 <i>Tribonanthes longipetala</i> | | | |
| 547. | 4383 <i>Tribulus terrestris</i> (Caltrop) | Y | | |
| 548. | 1361 <i>Tricoryne elatior</i> (Yellow Autumn Lily) | | | |
| 549. | 17763 <i>Trifolium campestre</i> var. <i>campestre</i> (Hop Clover) | Y | | |
| 550. | 4295 <i>Trifolium dubium</i> (Suckling Clover) | Y | | |
| 551. | 4313 <i>Trifolium subterraneum</i> (Subterranean Clover) | Y | | |
| 552. | 19039 <i>Triglochin bulbosa</i> | Y | | |
| 553. | 148 <i>Triglochin muelleri</i> | | | |
| 554. | 1139 <i>Trithuria bibracteata</i> | | | |
| 555. | 1141 <i>Trithuria submersa</i> | | | |
| 556. | 708 <i>Triticum aestivum</i> (Wheat) | Y | | |
| 557. | 33418 <i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i> | | | |
| 558. | 24852 <i>Tyto alba</i> subsp. <i>delicatula</i> (Barn Owl) | | | |
| 559. | 8255 <i>Ursinia anthemoides</i> (Ursinia) | Y | | |
| 560. | 38388 <i>Ursinia anthemoides</i> subsp. <i>anthemoides</i> | Y | | |
| 561. | 7131 <i>Utricularia dichotoma</i> (Fairy Aprons) | | | |
| 562. | 7138 <i>Utricularia inaequalis</i> | | | |
| 563. | 7148 <i>Utricularia multifida</i> | | | |
| 564. | 7153 <i>Utricularia tenella</i> | | | |
| 565. | 7157 <i>Utricularia violacea</i> (Violet Bladderwort) | | | |
| 566. | 34772 <i>Vachellia karroo</i> | Y | | |
| 567. | 25526 <i>Varanus tristis</i> (Racehorse Monitor) | | | |
| 568. | 8257 <i>Vellereophyton dealbatum</i> (White Cudweed) | Y | | |
| 569. | 15431 <i>Verticordia acerosa</i> var. <i>acerosa</i> | | | |
| 570. | 6076 <i>Verticordia densiflora</i> (Compacted Featherflower) | | | |
| 571. | 15432 <i>Verticordia densiflora</i> var. <i>densiflora</i> | | | |
| 572. | 6088 <i>Verticordia huegeli</i> (Variegated Featherflower) | | | |
| 573. | 15434 <i>Verticordia insignis</i> subsp. <i>insignis</i> | | | |
| 574. | 4322 <i>Vicia sativa</i> (Common Vetch) | Y | | |
| 575. | 4325 <i>Viminaria juncea</i> (Swishbush) | | | |
| 576. | 17042 <i>Vitis vinifera</i> | Y | | |
| 577. | 722 <i>Vulpia bromoides</i> (Squirrel Tail Fescue) | Y | | |
| 578. | 724 <i>Vulpia myuros</i> (Rat's Tail Fescue) | Y | | |
| 579. | 1567 <i>Watsonia meriana</i> (Bulbil Watsonia) | Y | | |
| 580. | 18118 <i>Watsonia meriana</i> var. <i>meriana</i> | Y | | |
| 581. | 12072 <i>Wurmbea dioica</i> subsp. <i>alba</i> | | | |
| 582. | 1253 <i>Xanthorrhoea gracilis</i> (Graceful Grass Tree) | | | |
| 583. | 1256 <i>Xanthorrhoea preissii</i> (Grass tree) | | | |
| 584. | 6284 <i>Xanthosia candida</i> | | | |
| 585. | 6285 <i>Xanthosia ciliata</i> | | | |
| 586. | 25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye) | | | |

Conservation Codes
T - Rare or likely to become extinct

| Name ID | Species Name | Naturalised | Conservation Code | ¹ Endemic To Query Area |
|---------|--------------|-------------|-------------------|------------------------------------|
|---------|--------------|-------------|-------------------|------------------------------------|

X - Presumed extinct
 IA - Protected under international agreement
 S - Other specially protected fauna
 1 - Priority 1
 2 - Priority 2
 3 - Priority 3
 4 - Priority 4
 5 - Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

APPENDIX 3

Protected Matters Search Tool Report



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 24/01/13 16:56:34

[Summary](#)

[Details](#)

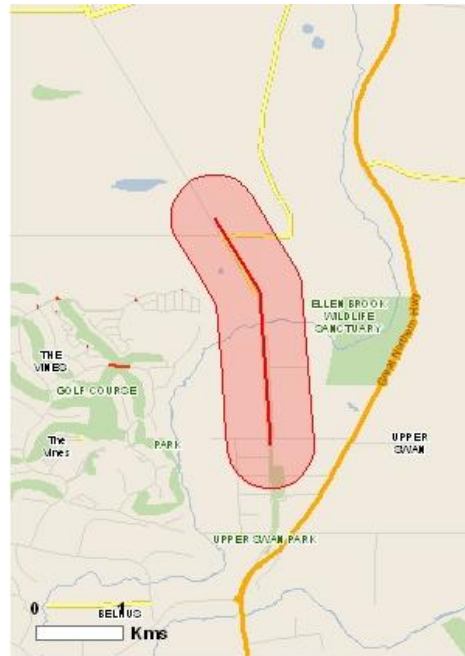
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 0.5Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

| | |
|---|------|
| World Heritage Properties: | None |
| National Heritage Places: | None |
| Wetlands of International Importance: | None |
| Great Barrier Reef Marine Park: | None |
| Commonwealth Marine Areas: | None |
| Listed Threatened Ecological Communities: | 2 |
| Listed Threatened Species: | 17 |
| Listed Migratory Species: | 8 |

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As [heritage values](#) of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

| | |
|---|------|
| Commonwealth Land: | None |
| Commonwealth Heritage Places: | None |
| Listed Marine Species: | 6 |
| Whales and Other Cetaceans: | None |
| Critical Habitats: | None |
| Commonwealth Reserves: | None |

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

| | |
|--|------|
| Place on the RNE: | None |
| State and Territory Reserves: | 1 |
| Regional Forest Agreements: | 1 |
| Invasive Species: | 16 |
| Nationally Important Wetlands: | None |
| Key Ecological Features (Marine) | None |

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [\[Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

| Name | Status | Type of Presence |
|--|-----------------------|---------------------------------------|
| Corymbia calophylla - Xanthorrhoea preissii woodlands and shrublands of the Swan Coastal Plain | Endangered | Community known to occur within area |
| Claypans of the Swan Coastal Plain | Critically Endangered | Community likely to occur within area |

Listed Threatened Species [\[Resource Information \]](#)

| Name | Status | Type of Presence |
|--|------------|--|
| Birds | | |
| Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo [67034] | Vulnerable | Species or species habitat may occur within area |
| Calyptorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-Cockatoo [769] | Vulnerable | Species or species habitat likely to occur within area |
| Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523] | Endangered | Breeding likely to occur within area |
| Rostratula australis Australian Painted Snipe [77037] | Vulnerable | Species or species habitat may occur within area |
| Insects | | |
| Synemon gratiosa Graceful Sun Moth [66757] | Endangered | Species or species habitat may occur within area |
| Mammals | | |
| Dasyurus geoffroi Chuditch, Western Quoll [330] | Vulnerable | Species or species habitat likely to occur within area |
| Plants | | |

| Name | Status | Type of Presence |
|--|-----------------------|--|
| Andersonia gracilis Slender Andersonia [14470] | Endangered | Species or species habitat likely to occur within area |
| Centrolepis caespitosa [6393] | Endangered | Species or species habitat likely to occur within area |
| Darwinia foetida Muchea Bell [83190] | Critically Endangered | Species or species habitat likely to occur within area |
| Drakaea elastica Glossy-leaved Hammer-orchid, Praying Virgin [16753] | Endangered | Species or species habitat may occur within area |
| Eucalyptus balanites Cadda Road Mallee, Cadda Mallee [24264] | Endangered | Species or species habitat may occur within area |
| Grevillea curviloba subsp. curviloba Curved-leaf Grevillea [64908] | Endangered | Species or species habitat likely to occur within area |
| Grevillea curviloba subsp. incurva Narrow curved-leaf Grevillea [64909] | Endangered | Species or species habitat likely to occur within area |
| Lepidosperma rostratum Beaked Lepidosperma [14152] | Endangered | Species or species habitat likely to occur within area |
| Thelymitra manginii K.Dixon & Batty ms. [67443] | Endangered | Species or species habitat may occur within area |
| Thelymitra stellata Star Sun-orchid [7060] | Endangered | Species or species habitat likely to occur within area |
| Villarsia calthifolia Mountain Villarsia [10886] | Endangered | Species or species habitat may occur within area |
| Listed Migratory Species | | [Resource Information] |
| * Species is listed under a different scientific name on the EPBC Act - Threatened Species list. | | |
| Name | Threatened | Type of Presence |
| Migratory Marine Birds | | |
| Apus pacificus Fork-tailed Swift [678] | | Species or species habitat likely to occur within area |
| Ardea alba Great Egret, White Egret [59541] | | Species or species habitat may occur within area |
| Ardea ibis Cattle Egret [59542] | | Species or species habitat may occur within area |
| Migratory Terrestrial Species | | |
| Haliaeetus leucogaster White-bellied Sea-Eagle [943] | | Species or species habitat likely to occur within area |
| Merops ornatus Rainbow Bee-eater [670] | | Species or species habitat may occur within area |
| Migratory Wetlands Species | | |

| Name | Threatened | Type of Presence |
|---|-------------|--|
| Ardea alba Great Egret, White Egret [59541] | | Species or species habitat may occur within area |
| Ardea ibis Cattle Egret [59542] | | Species or species habitat may occur within area |
| Rostratula benghalensis (sensu lato) Painted Snipe [889] | Vulnerable* | Species or species habitat may occur within area |

Other Matters Protected by the EPBC Act

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

| Name | Threatened | Type of Presence |
|---|-------------|--|
| Birds | | |
| Apus pacificus Fork-tailed Swift [678] | | Species or species habitat likely to occur within area |
| Ardea alba Great Egret, White Egret [59541] | | Species or species habitat may occur within area |
| Ardea ibis Cattle Egret [59542] | | Species or species habitat may occur within area |
| Haliaeetus leucogaster White-bellied Sea-Eagle [943] | | Species or species habitat likely to occur within area |
| Merops ornatus Rainbow Bee-eater [670] | | Species or species habitat may occur within area |
| Rostratula benghalensis (sensu lato) Painted Snipe [889] | Vulnerable* | Species or species habitat may occur within area |

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

| Name | State |
|-------------|-------|
| Ellen Brook | WA |

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included.

| Name | State |
|-----------------------------------|-------------------|
| South West WA RFA | Western Australia |

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

| Name | Status | Type of Presence |
|------|--------|------------------|
|------|--------|------------------|

Mammals

[Capra hircus](#)

| | | |
|----------|--|--|
| Goat [2] | | Species or species habitat likely to occur within area |
|----------|--|--|

[Felis catus](#)

| | | |
|-----------------------------------|--|--|
| Cat, House Cat, Domestic Cat [19] | | Species or species habitat likely to occur within area |
|-----------------------------------|--|--|

[Oryctolagus cuniculus](#)

| | | |
|-------------------------------|--|--|
| Rabbit, European Rabbit [128] | | Species or species habitat likely to occur within area |
|-------------------------------|--|--|

[Sus scrofa](#)

| | | |
|---------|--|--|
| Pig [6] | | Species or species habitat likely to occur within area |
|---------|--|--|

[Vulpes vulpes](#)

| | | |
|-------------------|--|--|
| Red Fox, Fox [18] | | Species or species habitat likely to occur within area |
|-------------------|--|--|

Plants

[Asparagus asparagoides](#)

| | | |
|---|--|--|
| Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473] | | Species or species habitat likely to occur within area |
|---|--|--|

[Brachiaria mutica](#)

| | | |
|-------------------|--|--|
| Para Grass [5879] | | Species or species habitat may occur within area |
|-------------------|--|--|

[Cenchrus ciliaris](#)

| | | |
|--|--|--|
| Buffel-grass, Black Buffel-grass [20213] | | Species or species habitat may occur within area |
|--|--|--|

[Chrysanthemoides monilifera](#)

| | | |
|------------------------------|--|--|
| Bitou Bush, Boneseed [18983] | | Species or species habitat may occur within area |
|------------------------------|--|--|

[Genista sp. X Genista monspessulana](#)

| | | |
|---------------|--|--|
| Broom [67538] | | Species or species habitat may occur within area |
|---------------|--|--|

[Lantana camara](#)

| | | |
|--|--|--|
| Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] | | Species or species habitat likely to occur within area |
|--|--|--|

[Lycium ferocissimum](#)

| | | |
|------------------------------------|--|--|
| African Boxthorn, Boxthorn [19235] | | Species or species habitat may occur within area |
|------------------------------------|--|--|

| Name | Status | Type of Presence |
|---|--------|--|
| Olea europaea Olive, Common Olive [9160] | | Species or species habitat may occur within area |
| Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780] | | Species or species habitat may occur within area |
| Rubus fruticosus aggregate Blackberry, European Blackberry [68406] | | Species or species habitat likely to occur within area |
| Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665] | | Species or species habitat likely to occur within area |

Coordinates

-31.740089 116.019495,-31.747856 116.024139,-31.763922 116.025358

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgements

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- [Department of Environment, Climate Change and Water, New South Wales](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment and Natural Resources, South Australia](#)
- [Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [Environmental and Resource Management, Queensland](#)
- [Department of Environment and Conservation, Western Australia](#)
- [Department of the Environment, Climate Change, Energy and Water](#)
- [Birds Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [SA Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence](#)
- [State Forests of NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- Other groups and individuals

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Please feel free to provide feedback via the [Contact Us](#) page.

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APPENDIX 4

Definitions of Conservation Codes

Western Australian and Commonwealth of Australia Conservation Codes

Flora

Definitions of the Conservation Codes for the Status of Flora under the Wildlife Conservation Act 1950 follow:

T: Threatened Flora (Declared Rare Flora — Extant)

Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such (Schedule 1 under the Wildlife Conservation Act 1950).

Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria:

CR: Critically Endangered

Considered to be facing an extremely high risk of extinction in the wild

EN: Endangered

Considered to be facing a very high risk of extinction in the wild

VU: Vulnerable

Considered to be facing a high risk of extinction in the wild.

X: Presumed Extinct Flora (Declared Rare Flora — Extinct)

Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such (Schedule 2 under the Wildlife Conservation Act 1950).

Taxa that have not yet been adequately surveyed to be listed under Schedule 1 or 2 are added to the Priority Flora List under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna. Taxa that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Conservation Dependent species are placed in Priority 5.

Priority One: Poorly-known taxa

Taxa that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Taxa may be included if they are comparatively well known from one or

more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.

Priority Two: Poorly-known taxa

Taxa that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.

Priority Three: Poorly-known taxa

Taxa that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

Priority Four: Rare, Near Threatened and other taxa in need of monitoring

Rare. Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

Near Threatened. Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.

Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Priority Five: Conservation Dependent taxa

Taxa that are not threatened but are subject to a specific conservation program, the cessation of which would result in the taxon becoming threatened within five years.

Vegetation

Definitions and criteria for presumed totally destroyed, critically endangered, endangered and vulnerable ecological communities are outlined below.

Presumed Totally Destroyed (PD)

An ecological community that has been adequately searched for but for which no representative occurrences have been located. The community has been found to be totally destroyed or so extensively modified throughout its range that no occurrence

of it is likely to recover its species composition and/or structure in the foreseeable future.

Critically Endangered (CR)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.

Endangered (EN)

An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.

Vulnerable (VU)

An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.

Possible threatened ecological communities that do not meet survey criteria are added to DEC's Priority Ecological Community Lists under Priorities 1, 2 and 3. Ecological Communities that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

Priority One: Poorly-known ecological communities

Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤ 5 occurrences or a total area of ≤ 100 ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.

Priority Two: Poorly-known ecological communities

Communities that are known from few occurrences with a restricted distribution (generally ≤ 10 occurrences or a total area of ≤ 200 ha). At least some occurrences are

not believed to be under immediate threat of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.

Priority Three: Poorly known ecological communities

(i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:

(ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;

(iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes.

Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.

Priority Four: Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.

(i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands.

(ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.

(iii) Ecological communities that have been removed from the list of threatened communities during the past five years.

Priority Five: Conservation Dependent ecological communities

Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Fauna

In Western Australia, all native fauna species are protected under the *Wildlife Conservation Act 1950-1979*. Fauna species that are considered rare, threatened with extinction or have a high conservation value are specially protected under the Act. In addition, some species of fauna are covered under the 1991 ANZECC convention, while certain birds are listed under the Japan and Australian Migratory Bird Agreement (JAMBA) and the China and Australian Migratory Bird Agreement (CAMBA). In addition to the above classification, DEC also classifies fauna under five different Priority codes and rare and endangered fauna are classified under the Wildlife Conservation (Specially Protected Fauna) Notice 2006 into four schedules of taxa.

Schedule 1

Fauna which are rare or likely to become extinct and are declared to be fauna in need of special protection.

Schedule 2

Fauna which are presumed to be extinct and are declared to be fauna in need of special protection.

Schedule 3

Birds which are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction which are declared to be fauna in need of special protection.

Schedule 4

Fauna that are in need of special protection, otherwise than for the reasons mentioned in Schedule 1, 2 or 3.

In addition to the above classification, the DEC also classifies fauna under five different priority codes:

Priority One: Taxa with few, poorly known populations on threatened lands

Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority Two: Taxa with few, poorly known populations on conservation lands

Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority Three: Taxa with several, poorly known populations, some on conservation lands

Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority Four: Taxa in need of monitoring

Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

Priority Five: Taxa in need of monitoring (conservation dependent)

Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Commonwealth of Australia Conservation Codes

The Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* has the following nine conservation codes for Flora and Fauna.

Extinct

Taxa not definitely located in the wild during the past 50 years

Extinct in the Wild

Taxa known to survive only in captivity

Critically Endangered

Taxa facing an extremely high risk of extinction in the wild in the immediate future

Endangered

Taxa facing a very high risk of extinction in the wild in the near future

Vulnerable

Taxa facing a high risk of extinction in the wild in the medium-term

Near Threatened

Taxa that risk becoming Vulnerable in the wild

Conservation Dependent

Taxa whose survival depends upon ongoing conservation measures. Without these measures, a conservation dependent taxon would be classified as Vulnerable or more severely threatened.

Data Deficient (Insufficiently Known)

Taxa suspected of being Rare, Vulnerable or Endangered, but whose true status cannot be determined without more information.

Least Concern

Taxa that are not considered Threatened

APPENDIX 5

DPaW TEC and PEC Database Search

| FID | BDY_ID | OCC_UNIQUE | COM_ID | COM_NAME | CT_DESC | S_ID_COUNT | FIRST_S_ID | LAST_S_ID | BUFFER | OCC_CONFID |
|-----|--------|------------|-------------------|--|-----------------------|------------|------------|-----------|--------|------------|
| 0 | 0 | 3008 | SCP23b | Swan Coastal Plain Banksia attenuata - Banksia menziesii woodlands | Priority 3 | 1 | BAW9 | | 500 | Yes |
| 1 | 0 | 2975 | SCP22 | Banksia ilicifolia woodlands | Priority 3 | 1 | BIW9 | | 500 | Yes |
| 2 | 0 | 3179 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | BAS25 | | 500 | Yes |
| 3 | 0 | 3180 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | BAS26 | | 500 | Yes |
| 4 | 237 | 167 | SCP15 | Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain | Vulnerable | 1 | TWIN05 | | 500 | No |
| 5 | 0 | 3168 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | TWIN07 | | 500 | No |
| 6 | 0 | 3169 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | TWIN08 | | 500 | No |
| 7 | 774 | 168 | SCP15 | Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain | Vulnerable | 1 | TWIN10 | | 500 | No |
| 8 | 0 | 3115 | SCP25 | Southern Eucalyptus gomphocephala-Agonis flexuosa woodlands | Priority 3 | 1 | SEW1 | | 500 | Yes |
| 9 | 241 | 29 | Mound Springs SCP | Communities of Tumulus Springs (Organic Mound Springs, Swan Coastal Plain) | Critically Endangered | 1 | EG01 | | 1500 | No |
| 10 | 0 | 3059 | SCP23b | Swan Coastal Plain Banksia attenuata - Banksia menziesii woodlands | Priority 3 | 1 | ELE01 | | 500 | No |
| 11 | 0 | 4979 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | ELE02 | | 500 | No |
| 12 | 0 | 3058 | SCP23b | Swan Coastal Plain Banksia attenuata - Banksia menziesii woodlands | Priority 3 | 1 | ELE03 | | 500 | No |
| 13 | 0 | 3057 | SCP23b | Swan Coastal Plain Banksia attenuata - Banksia menziesii woodlands | Priority 3 | 1 | ELE08 | | 500 | No |
| 14 | 0 | 4981 | SCP18 | Shrublands on calcareous silts of the Swan Coastal Plain | Vulnerable | 1 | ELE13 | | 500 | No |
| 15 | 0 | 4983 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | ELE22 | | 500 | No |
| 16 | 0 | 4984 | SCP22 | Banksia ilicifolia woodlands | Priority 3 | 1 | ELE23 | | 500 | No |
| 17 | 0 | 3039 | SCP23b | Swan Coastal Plain Banksia attenuata - Banksia menziesii woodlands | Priority 3 | 1 | ELE24 | | 500 | No |
| 18 | 0 | 4988 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | ELE25 | | 500 | No |
| 19 | 0 | 4989 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | ELE27 | | 500 | No |
| 20 | 0 | 3063 | SCP23b | Swan Coastal Plain Banksia attenuata - Banksia menziesii woodlands | Priority 3 | 1 | ELE28 | | 500 | No |
| 21 | 0 | 4985 | SCP21c | Low lying Banksia attenuata woodlands or shrublands | Priority 3 | 1 | ELE29 | | 500 | No |
| 22 | 1099 | 222 | SCP08 | Herb rich shrublands in clay pans | Vulnerable | 1 | ELLEN01 | | 1000 | No |
| 23 | 1099 | 222 | SCP08 | Herb rich shrublands in clay pans | Vulnerable | 1 | ELLEN02 | | 1000 | No |
| 24 | 1099 | 222 | SCP08 | Herb rich shrublands in clay pans | Vulnerable | 1 | ELLEN03 | | 1000 | No |
| 25 | 1099 | 222 | SCP08 | Herb rich shrublands in clay pans | Vulnerable | 1 | ELLEN04 | | 1000 | No |
| 26 | 1099 | 222 | SCP08 | Herb rich shrublands in clay pans | Vulnerable | 1 | ELLEN05 | | 1000 | No |
| 27 | 1095 | 120 | SCP3c | Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain | Critically Endangered | 1 | ELLEN06 | | 500 | No |
| 28 | 1096 | 1962 | SCP3c | Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain | Critically Endangered | 1 | ELLEN07 | | 500 | No |
| 29 | 1097 | 1963 | SCP3c | Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain | Critically Endangered | 1 | ELLEN08 | | 500 | No |
| 30 | 560 | 40 | Muchea Limestone | Shrublands and woodlands on Muchea Limestone | Endangered | 1 | VINESSE | | 1000 | No |
| 31 | 560 | 40 | Muchea Limestone | Shrublands and woodlands on Muchea Limestone | Endangered | 1 | VINESSW | | 1000 | No |
| 32 | 1098 | 1964 | SCP3c | Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain | Critically Endangered | 1 | ELLEN09 | | 500 | No |
| 33 | 0 | 4428 | SCP25 | Southern Eucalyptus gomphocephala-Agonis flexuosa woodlands | Priority 3 | 1 | vines01 | | 500 | No |

APPENDIX 6
Species List

SPECIES LIST – Railway Parade Bridge

PTERIDOPHYTES

DENNSTAEDTIACEAE
Pteridium esculentum

GYMNOSPERMS

CYCADACEAE
Macrozamia fraseri

MONOCOTYLEDONS

ARACEAE
**Zantedeschia aethiopica*

ASPARAGACEAE
Sowerbaea laxiflora

COLCHICACEAE
Burchardia congesta

CYPERACEAE
Mesomelaena tetragona
Lepidosperma longitudinale

DASYPOGONACEAE
Dasypogon bromeliifolius

HAEMODORACEAE
Conostylis aculeata subsp. *aculeata*
Haemodorum laxum

HEMEROCALLIDACEAE
Tricoryne elatior

IRIDACEAE
**Gladiolus caryophyllaceus*
**Hesperantha falcata*
**Moraea flaccida*
Patersonia occidentalis
**Sparaxis pillansii*
**Watsonia bulbifera*

JUNCACEAE
Juncus pallidus

ORCHIDACEAE
Thelymitra spiralis

POACEAE
**Arundo donax*
**Avena fatua*
**Briza maxima*
**Briza minor*
**Ehrharta calycina*
**Ehrharta longiflora*
**Eragrostis curvula*
**Hordeum leporinum*
**Hyparrhenia hirta*
**Lolium perenne*
**Melinis repens*
**Pennisetum clandestinum*
**Pentaschistis airoides*
Neurachne alopecuroidea
Sporobolus virginicus
**Vulpia myuros*

RESTIONACEAE
Desmocladus flexuosus
Hypolaena exsulca

TYPHACEAE
**Typha orientalis*

XANTHORRHOEACEAE
Xanthorrhoea brunonis
Xanthorrhoea preissii

DICOTYLEDONS

AMARANTHACEAE
Ptilotus polystachyus

ASTERACEAE
**Arctotheca calendula*
**Hypochaeris glabra*
Podotheca angustifolia
**Sonchus oleraceus*
**Taraxacum officinale*

**Ursinia anthemoides*

CAMPANULACEAE

**Wahlenbergia capensis*

BORAGINACEAE

**Echium plantagineum*

BRASSICACEAE

**Brassica tournefortii*

CARYOPHYLLACEAE

**Petrorhagia dubia*

**Silene gallica* var. *gallica*

CRASSULACEAE

Crassula colorata

DILLENACEAE

Hibbertia hypericoides

DROSERACEAE

Drosera glanduligera

Drosera menziesii subsp. *menziesii*

EUPHORBIACEAE

Phyllanthus calycinus

FABACEAE

**Acacia iteaphylla*

Acacia saligna

Bossiaea eriocarpa

Jacksonia furcellata

Jacksonia sternbergiana

Kennedia prostrata

**Ornithopus sativus*

**Lotus subbiflorus*

**Lupinus cosentinii*

**Trifolium campestre*

**Trifolium arvense* subsp. *arvense*

**Vicia sativa*

FUMARIACEAE

**Fumaria capreolata*

GERANIACEAE

**Erodium cicutarium*

**Pelargonium capitatum*

GOODENIACEAE

Dampiera trigona

LORANTHACEAE

Nuytsia floribunda

MYRTACEAE

Corymbia calophylla

Eucalyptus rudis

Hypocalymma angustifolium

Melaleuca raphiophylla

Melaleuca seriata

OROBANCHACEAE

**Orobanche minor*

**Parentucellia*

OXALIDACEAE

**Oxalis pes-caprae*

**Oxalis purpurea*

POLYGONACEAE

**Acetosella vulgaris*

PROTEACEAE

Adenanthos cygnorum subsp. *cygnorum*

Banksia attenuata

Banksia menziesii

Banksia littoralis

Banksia dallanneyi

Grevillea crithmifolia

Hakea prostrata

Petrophile linearis

RUBIACEAE

Opercularia vaginata

SOLANACEAE

**Solanum nigrum*

Solanum symonii

APPENDIX 7

Releve Data

Releve 1

407650 E 6485713 S

Vegetation: *Corymbia calophylla* Low Open Woodland over *Acacia saligna*
Closed Heath over *Watsonia bulbillifera* Closed Herbland

Condition: Degraded



| SPECIES | HEIGHT (m) | COVER (%) |
|----------------------------------|------------|-----------|
| <i>Corymbia calophylla</i> | 6-7 | |
| <i>Acacia saligna</i> | 1.5-2 | 75 |
| * <i>Watsonia bulbillifera</i> | 0.5 | 90 |
| <i>Xanthorrhoea preissii</i> | | |
| <i>Jacksonia sternbergiana</i> | | |
| <i>Hakea prostrata</i> | | |
| <i>Hypocalymma angustifolium</i> | | |
| * <i>Oxalis pes-caprae</i> | | |
| * <i>Eragrostis curvula</i> | | |
| * <i>Hyparrhenia hirta</i> | | |

* introduced species

Releve 2

407634 E 64856061 S

Vegetation: *Jacksonia sternbergiana*/*Grevillea crithmifolia* Tall Open Shrubland
over *Watsonia bulbifera* Closed Herbland

Condition: Degraded



| SPECIES | HEIGHT (m) | COVER (%) |
|---------------------------------|------------|-----------|
| <i>Jacksonia sternbergiana</i> | 3 | 5 |
| <i>Grevillea crithmifolia</i> | 1.3 | 30 |
| <i>Watsonia bulbifera</i> | 0.4 | 90 |
| <i>Xanthorrhoea preissii</i> | | |
| <i>Hakea prostrata</i> | | |
| * <i>Petrorhagia dubia</i> | | |
| * <i>Hypochaeris glabra</i> | | |
| * <i>Lotus subbiflorus</i> | | |
| * <i>Melinis repens</i> | | |
| * <i>Hesperantha falcata</i> | | |
| * <i>Pentaschistis airoides</i> | | |
| * <i>Sonchus oleraceus</i> | | |
| * <i>Taraxacum officinale</i> | | |
| * <i>Sparaxis pillansii</i> | | |
| * <i>Briza maxima</i> | | |

* introduced species

Releve 3

407607 E 6486501 S

Vegetation: *Jacksonia sternbergiana* Tall Open Shrubland over *Xanthorrhoea preissii* Open Shrubland over weeds

Condition: Degraded



| SPECIES | HEIGHT (m) | COVER (%) |
|--------------------------------|------------|-------------|
| <i>Jacksonia sternbergiana</i> | 3 | 10 |
| <i>Xanthorrhoea preissii</i> | 1 | 2 |
| * <i>Briza maxima</i> | | Very common |
| * <i>Ehrharta longiflora</i> | | Very common |
| <i>Hakea prostrata</i> | | |
| <i>Neurachne alopecuroidea</i> | | |
| <i>Haemodorum laxum</i> | | |
| * <i>Erodium cicutarium</i> | | |
| * <i>Sparaxis pillansii</i> | | |
| * <i>Watsonia bulbifera</i> | | |
| <i>Drosera glanduligera</i> | | |
| * <i>Briza minor</i> | | |
| * <i>Trifolium campestre</i> | | |
| * <i>Eragrostis curvula</i> | | |
| * <i>Oxalis purpurea</i> | | |

* introduced species

Releve 4

407594 E 6486693 S

Vegetation: *Corymbia calophylla* (Marri) Low Woodland over *Watsonia bulbillifera* Closed Herbland

Condition: Completely Degraded



| SPECIES | HEIGHT (m) | COVER (%) |
|--------------------------------|-------------------|------------------|
| <i>Corymbia calophylla</i> | 8 | 10 |
| * <i>Watsonia bulbillifera</i> | 1 | 100 |
| * <i>Eragrostis curvula</i> | | |
| * <i>Avena fatua</i> | | |
| * <i>Ehrharta longiflora</i> | | |

* introduced species

Releve 5

407593 E 6486727 S

Vegetation: *Eucalyptus rudis* Low Woodland over *Watsonia bulbillifera* Closed Herbland

Condition: Completely Degraded



| SPECIES | HEIGHT (m) | COVER (%) |
|-------------------------------|------------|-------------|
| <i>Eucalyptus rudis</i> | 8-10 | 25 |
| <i>Watsonia bulbillifera</i> | 1 | 100 |
| <i>Melaleuca raphiophylla</i> | | |
| * <i>Ehrharta longiflora</i> | | Very common |
| * <i>Fumaria capreolata</i> | | |
| * <i>Vulpia myuros</i> | | |

* introduced species

Releve 6

407574 E 6486920 S

Vegetation: *Eucalyptus rudis*/*Melaleuca raphiophylla* Low Open Woodland over weeds

Condition: Completely Degraded



| SPECIES | HEIGHT (m) | COVER (%) |
|----------------------------------|------------|-------------|
| <i>Eucalyptus rudis</i> | 8-10 | 25 |
| <i>Melaleuca raphiophylla</i> | 4 | 5 |
| * <i>Fumaria capreolata</i> | | Very common |
| * <i>Avena fatua</i> | | Very common |
| * <i>Ehrharta longiflora</i> | | Very common |
| * <i>Zantedeschia aethiopica</i> | | Common |
| * <i>Watsonia bulbifera</i> | | Common |
| * <i>Lupinus cosentinii</i> | | Common |
| * <i>Vulpia myuros</i> | | |
| * <i>Typha orientalis</i> | | |
| * <i>Sonchus oleraceus</i> | | |
| * <i>Pennisetum clandestinum</i> | | |
| <i>Acacia saligna</i> | | |
| * <i>Conyza bonariensis</i> | | |
| <i>Juncus pallidus</i> | | |
| * <i>Solanum nigrum</i> | | |

* introduced species

Releve 7

407532 E 6487107 S

Vegetation: *Banksia attenuata* Low Open Woodland over weeds

Condition: Completely Degraded



| SPECIES | HEIGHT (m) | COVER (%) |
|------------------------------------|------------|-----------|
| <i>Banksia attenuata</i> | 4 | 20 |
| * <i>Ehrharta longiflora</i> | 1 | |
| * <i>Pelargonium capitatum</i> | | common |
| <i>Macrozamia fraseri</i> | | |
| <i>Podotheca angustifolium</i> | | |
| * <i>Brassica tournefortii</i> | | |
| * <i>Lolium perenne</i> | | |
| * <i>Arctotheca calendula</i> | | |
| <i>Desmodium flexuosus</i> | | |
| * <i>Gladiolus caryophyllaceus</i> | | |
| * <i>Ursinia anthemoides</i> | | |

* introduced species

Releve 8

407272 E 6487585 S

Vegetation: *Nuytsia floribunda* Low Open Woodland over mixed shrubs and herbs (recovering from fire)

Condition: Good



| SPECIES | HEIGHT (m) | COVER (%) |
|--|------------|-------------|
| <i>Nuytsia floribunda</i> | 4-5 | 10 |
| <i>Haemodorum laxum</i> | | very common |
| <i>Desmocladus flexuosus</i> | | common |
| <i>Hypolaena exsulca</i> | | |
| * <i>Pelargonium capitatum</i> | | |
| * <i>Ehrharta longiflora</i> | | |
| * <i>Trifolium arvense</i> subsp. <i>arvense</i> | | |
| <i>Patersonia occidentalis</i> | | |
| <i>Conostylis aculeata</i> | | |
| <i>Burchardia congesta</i> | | |
| <i>Xanthorrhoea brunonis</i> | | |
| <i>Bossiaea eriocarpa</i> | | |
| * <i>Acetosella vulgaris</i> | | |
| <i>Dasyogon bromeliifolius</i> | | |
| * <i>Wahlenbergia capensis</i> | | |
| * <i>Moraea flaccida</i> | | |
| <i>Podotheca angustifolia</i> | | |
| <i>Sowerbaea laxiflora</i> | | |
| * <i>Brassica tournefortii</i> | | |
| * <i>Orobanche minor</i> | | |
| <i>Burchardia congesta</i> | | |

* introduced species